

Proposal

Letting Date: January 29, 2025

Bids Close: 9:30 a.m. CST

NOTICE TO BIDDERS: ALL BIDS MUST BE SUBMITTED ELECTRONICALLY VIA BID EXPRESS.

TO FURNISH AND DELIVER ALL MATERIALS AND TO PERFORM ALL WORK IN ACCORDANCE WITH THE CONTRACT, THE PLANS AND THE APPROVED DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION, 2020 EDITION" (USING English UNITS), ON FILE IN THE OFFICE OF THE COMMISSIONER OF TRANSPORTATION EXCEPT AS STATED OTHERWISE IN THE SPECIAL PROVISIONS, WHICH ARE PART OF THIS PROPOSAL, FOR:

Contract ID: 250003
Prime SP: 8828-139
State Project No.: 8828-139
FHWA Project No.: STBG-PRO 8825(068)
Location: In Various Counties on Various State Trunk Highways
Type of Work: Districtwide Culvert Repair
Length:

Starting Date:
March 31, 2025

Completion Date:
October 31, 2025

This Contract Contains Intermediate Completion Dates

The proposal package is complete and approved for letting.

Nancy Hanzlik Digitally signed by Nancy Hanzlik
Date: 2024.12.24 04:34:57 -06'00'

Nancy P. Hanzlik, Provisions Engineer

KMJ

BID RIGGING IS A SERIOUS CRIME. IF YOU HAVE ANY INFORMATION CONCERNING COLLUSIVE BIDDING, EVEN A REQUEST TO SUBMIT A COMPLIMENTARY BID, PLEASE CALL THE MINNESOTA ATTORNEY GENERAL'S OFFICE AT Tel: (651) 296-3353 (Twin Cities Calling Area) or (800) 657-3787 (Outside the Twin Cities); (800) 627-3529 (Minnesota Relay)

To request this document in an alternate format, please contact the Office of Equity and Diversity Office at 651-366-4720. You may also send an email to ADArequest.dot@state.mn.us. Please request at least one week in advance.

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To the Commissioner of Transportation of the State of Minnesota:

Commissioner: According to the advertisement of the Commissioner of Transportation inviting proposals for the improvement of the section of highway hereinbefore named, and in conformity with the Contract, Plans, Specifications and Special Provisions pertaining thereto, all on file in the office of the Commissioner of Transportation:

(I)(We) hereby certify that (I am)(we are) the only person(s) interested in this proposal as principal(s); that this proposal is made and submitted without fraud or collusion with any other person, firm or corporation at all; that an examination has been made of the site of the work and the Contract form, with the Plans, Specifications and Special Provisions for the improvement.

(I)(We) understand that the quantities of work shown herein are approximate only and are subject to increase or decrease; that all quantities of work, whether increased or decreased within the limits specified in Mn/DOT 1903, are to be done at the unit prices shown on the attached schedule; that, at the time of opening bids, totals only will be read, but that comparison of bids will be based on the correct summation of item totals obtained from the unit prices bid, as provided in Mn/DOT 1301.

(I)(We) propose to furnish all necessary machinery, equipment, tools, labor and other means of construction and to furnish all materials specified, in the manner and at the time prescribed, all according to the terms of the Contract and Plans, Specifications, and the Special Provisions forming a part of this.

(I)(We) further propose to do all Extra Work that may be required to complete the contemplated improvement, at unit prices or lump sums to be agreed upon in writing before starting such work, or if such prices or sums cannot be agreed upon, to do such work on a Force Account basis, as provided in Mn/DOT 1904.

(I)(We) further propose to execute the form of Contract within 10 days after receiving written notice of award, as provided in Mn/DOT 1306.

(I)(We) further propose to furnish a payment bond equal to the Contract amount, and a performance bond equal to the Contract amount, with the aggregate liability of the bond(s) equal to twice the full amount of the Contract, as security for the construction and completion of the improvement according to the Plans, Specifications and Special Provisions as provided in Mn/DOT 1305.

(I)(We) further propose to do all work according to the Plans, Specifications and Special Provisions, and to renew or repair any work that may be rejected due to defective materials or workmanship, before completion and acceptance of the Project by the Commissioner of Transportation.

(I)(We) agree to all provisions of Minnesota Statutes, Section 181.59.

(I)(We) further propose to begin work and to prosecute and complete the same according to the time schedule set forth in the Special Provisions for the improvement.

(I)(We) assign to the State of Minnesota all claims for overcharges as to goods and materials purchased in connection with this Project resulting from antitrust violations that arise under the antitrust laws of the United States and the antitrust laws of the State of Minnesota. This clause also applies to subcontractors and first tier suppliers under this Contract.

NOTICE TO ALL BIDDERS

To report bid rigging activities call:

1-800-424-9071

The U.S. Department of Transportation (DOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

**MINNESOTA DEPARTMENT OF TRANSPORTATION
NOTICE TO BIDDERS:
SUSPENSIONS/DEBARMENTS
THIS NOTICE APPLIES TO STATE-FUNDED AND FEDERALLY-FUNDED PROJECTS**

Do not use suspended or debarred parties as subcontractors or material suppliers on this project!

Both the federal government and the State of Minnesota suspend and debar vendors. Review the list of suspended and debarred vendors before submitting a bid or a request to sublet. If your bid is based on using a suspended or debarred vendor, you will not be entitled to additional compensation for replacing the suspended or debarred vendor with a qualified vendor.

State Suspensions and Debarments

The State of Minnesota's list of suspended and debarred vendors is maintained by the Minnesota Department of Administration, Office of State Procurement, and can be found at this link: <https://mn.gov/admin/osp/government/suspended-debarred/index2.jsp> . This list includes parties suspended and debarred by the Minnesota Department of Transportation and the Minnesota Department of Administration.

Federal Suspensions and Debarments

The federal government maintains a searchable database of suspensions and debarments, called the System for Award Management (SAM), which is found at this link: <https://www.sam.gov/SAM/> . You can use the "Search Records" function without registering for an account.

September 29, 2023

FEDERALLY FUNDED CONSTRUCTION CONTRACTS

SPECIAL PROVISIONS DIVISION A - LABOR

February 1, 2006

I. PREAMBLE

It is in the public interest that public buildings and other public works projects be constructed and maintained by the best means and the highest quality of labor reasonably available and that persons working on public works projects be compensated according to the real value of the services they perform.¹

Therefore, the department shall administer this contract pursuant to the **Federal Davis-Bacon and Related Acts, Required Contract Provisions Federal-Aid Construction Contracts, Form-1273, U.S. Department of Labor's Field Operations Handbook, State of Minnesota Statutes and Rules, MN/DOT's Standard Specifications for Construction, MN/DOT's Contract Administration Manual and MN/DOT's State Aid Manual.**

II. DEFINITIONS²

- A. **Contract**: The written agreement between the contracting authority and the prime contractor setting forth their obligations, including, but not limited to, the performance of the work, the furnishing of labor and materials, the basis of payment, and other requirements contained in the contract documents.
- B. **Contracting Authority**: The political subdivision, governmental body, board, department, commission, or officer making the award and execution of contract as the party of the first part.
- C. **Contractor**: The term "contractor" in these provisions shall include the prime contractor, subcontractor, agent, or other person doing or contracting to do all or part of the work under this contract.³
- D. **Department**: The Department of Transportation of the State of Minnesota, or the political subdivision, governmental body, board, commission, office, department, division, or agency constituted for administration of the contract work within its jurisdiction.
- E. **First Tier Subcontractor**: An individual, firm, corporation, or other entity to which the prime contractor sublets part of the contract.
- F. **Independent Truck Owner/Operator (ITO)**: An individual, partnership, or principal stockholder of a corporation who owns or holds a vehicle under lease and who contracts that vehicle and the owner's services to an entity that provides construction services to a public works project.⁴
- G. **Laborer or Mechanic**: A worker in a construction industry labor class identified in or pursuant to Minnesota Rules 5200.1100, Master Job Classifications.⁵
- H. **Plan**: The plan, profiles, typical cross-sections, and supplemental drawings that show the locations, character, dimensions, and details of the work to be done.
- I. **Prime Contractor**: The individual, firm, corporation, or other entity contracting for and undertaking prosecution of the prescribed work; the party of the second part to the contract, acting directly or through a duly authorized representative.

¹ Minnesota Statute 177.41

² MN/DOT Standard Specifications for Construction, Section 1103

³ Minnesota Statute 177.44, Subdivision 1

⁴ Minnesota Rules 5200.1106, Subpart 7(A)

⁵ Minnesota Rules 5200.1106, Subpart 5(A)

- J. **Project**: The specific section of the highway, the location, or the type of work together with all appurtenances and construction to be performed under the contract.
- K. **Second Tier Subcontractor**: An individual, firm, corporation, or other entity to which a first tier subcontractor sublets part of the contract.
- L. **Special Provisions**: Additions and revisions to the standard and supplemental specifications covering conditions peculiar to an individual project.
- M. **Specifications**: A general term applied to all directions, provisions, and requirements pertaining to performance of the work.
- N. **Subcontractor**: An individual, firm, corporation, or other entity to which the prime contractor or subcontractor sublets part of the contract.
- O. **Substantially In Place**: Mineral aggregate is deposited on the project site directly or through spreaders where it can be spread from or compacted at the location where it was deposited.⁶
- P. **Trucking Broker**: An individual or business entity, the activities of which include, but are not limited to: contracting to provide trucking services in the construction industry to users of such services, contracting to obtain such services from providers of trucking services, dispatching the providers of the services to do work as required by the users of the services, receiving payment from the users in consideration of the trucking services provided and making payment to the providers for the services.⁷
- Q. **Trucking Firm/Multiple Truck Owner (MTO)**: Any business entity that owns more than one vehicle and hires the vehicles out for services to brokers or contractors on public works projects.⁸
- R. **Work**: The furnishing of all labor, materials, equipment, and other incidentals necessary or convenient to the successful completion of the project and the carrying out of all the duties and obligations imposed by the contract upon the contractor. Also used to indicate the construction required or completed by the contractor.

III. SCOPE – SPECIAL PROVISIONS DIVISION A & CONTRACT

- A. These provisions shall apply to this contract, which is funded in whole or in part with federal funds⁹ and state funds.¹⁰
- B. These provisions shall apply to the prime contractor and all subcontractors contracting to do all or part of the work under this contract.¹¹
- C. The provisions established in this document do not necessarily represent all federal, state, and local laws, ordinances, rules and regulations. It is the responsibility of the prime contractor to inform itself and all subcontractors about other regulations that may be applicable to this contract.
- D. The prime contractor is responsible to ensure that each subcontractor performing work under this contract receives copies of all required contract provisions.¹² These provisions shall be incorporated into written subcontracts and must be displayed on the poster board.¹³
- E. The department shall administer this contract in accordance with all applicable federal regulations, state statutes and rules¹⁴, along with the plans, specifications and provisions, which are incorporated into and found elsewhere in this contract.

⁶ Minnesota Rules 5200.1106, Subpart 5(C)

⁷ Minnesota Rules 5200.1106, Subpart 7(C)

⁸ Minnesota Rules 5200.1106, Subpart 7(B)

⁹ 29 CFR Part 5.5(a)

¹⁰ Minnesota Statute 177.41

¹¹ Minnesota Statute 177.44, Subdivision 1

¹² 29 CFR Part 5.5(a)(6)

¹³ Minnesota Statute 177.44, Subdivision 5

- F. An unpublished decision from the Minnesota Court of Appeals affirms the authority of the Minnesota Commissioner of Transportation to enforce the Minnesota Prevailing Wage Law on a case-by-case basis.¹⁵ Therefore, the department shall provide enforcement in a manner consistent with the decision notwithstanding any prior notices on the subject.
- G. For additional information refer to: www.dot.state.mn.us/const/labor/.

IV. PAYROLLS AND STATEMENTS

- A. Each week, in which work was performed under this contract, all contractors shall submit a payroll statement to the department.¹⁶ Each statement shall be submitted within seven days after the regular payment date of the payroll period.¹⁷ Each payroll submitted shall include all employees that performed work under this contract and provide at a minimum the following information:¹⁸
 - 1. Contractor's name, address, and telephone number.
 - 2. State project number.
 - 3. Payroll report number.
 - 4. Project location.
 - 5. Workweek ending date.
 - 6. Name, social security number, and home address for each employee.
 - 7. Labor classification(s) and/or three-digit code for each employee.
 - 8. Hourly straight time and overtime wage rates paid to each employee.
 - 9. Daily and weekly hours worked in each labor classification, including overtime hours for each employee.
 - 10. Authorized legal deductions for each employee.
 - 11. Project gross amount, weekly gross amount and net wages paid to each employee.
- B. Payroll records may be submitted in any form provided it includes all the information contained in **Subpart A (1 - 11)** of this section.¹⁹ However, contractors needing a payroll form may utilize the "front side" of the **U.S. Department of Labor's, WH-347 - Payroll Form**. This form is available by visiting the Labor Compliance website.²⁰
- C. All payroll records must be accompanied with a completed and signed **MN/DOT, 21658 - Statement of Compliance Form**.²¹
- D. The prime contractor is responsible for assuring that its payroll records and those of all subcontractors include all employees that performed work under this contract and accurately reflect the hours worked, regular and overtime rates of pay and classification of work performed.²²
- E. The prime contractor is responsible to maintain all certified payroll records, including those of all subcontractors, throughout the course of a construction project and retain all records for a period of three years after the final contract voucher has been issued.²³

¹⁴ Minnesota Rules 8820.3000, Subpart 2

¹⁵ Minnesota Court of Appeals Case Number: C6-97-1582

¹⁶ Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section V, Subpart 2(c)

¹⁷ 29 CFR Part 3.4(a)

¹⁸ Minnesota Rules 5200.1106, Subpart 10

¹⁹ Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section V, Subpart 2(c)

²⁰ www.dot.state.mn.us/const/labor/

²¹ Minnesota Rules 5200.1106, Subpart 10

²² 29 CFR Part 5.5(a)(6)

²³ Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section V, Subpart 2(a)

- F. At the end of each pay period, each contractor shall provide every employee, in writing, an accurate detailed earnings statement.²⁴
- G. Upon request from the U.S. Department of Labor (U.S. DOL), Federal Highway Administration (FHWA), Minnesota Department of Labor and Industry (MN/DLI) or the Department, the prime contractor shall promptly furnish copies of payroll records for its workers and those of all subcontractors, along with other records, deemed appropriate by the requesting agency to determine compliance with these contract provisions.²⁵
- H. At the department's discretion, the project engineer may administer the submission of payroll records according to MN/DOT's Payroll Maintenance Program. The guidelines for the implementation and administration of this program are outlined in the **MN/DOT Contract Administration Manual, Section A(4)(d)**. The program has not been approved for federal-aid contracts administered by local units of government and will not be allowed for such contracts. However, the program may be utilized for local state-aid contracts.
- I. If, after written notice, the prime contractor fails to submit its payroll reports and certification forms and those of any subcontractor, the department may implement the actions prescribed in section **XVI (NON-COMPLIANCE AND ENFORCEMENT)**.

V. WAGE RATES

- A. The prime contractor is responsible to ensure that its workers and those of all subcontractors are compensated according to the U.S. DOL federal general decision(s) and the MN/DLI state prevailing wage determination(s) incorporated into and found elsewhere in this contract, **whichever is greater**. All contractors shall pay each worker the required minimum total hourly wage rate for all hours worked on the project and for the appropriate classification of labor.
 - 1. Federal building, heavy and highway general decisions are specific to the county in which the construction work is being performed; a decision does not cross county or state lines.²⁶ If a project extends into more than one county or state, the applicable wage decision for each county or state shall be incorporated into and found elsewhere in this contract.
 - 2. State highway and heavy wage determinations are specific to ten separate regions throughout the state of Minnesota. If a project extends into more than one region, the applicable wage decision for each region shall be incorporated into and found elsewhere in this contract.
 - a. If this contract contains multiple highway and heavy wage determinations, there shall be only one standard of hours of labor and wage rates.²⁷
 - 3. State commercial wage determinations are specific to the county in which the construction work is being performed. If a project extends into more than one county, the applicable wage determination for each county shall be incorporated into and found elsewhere in this contract.
 - a. If this contract contains multiple commercial wage determinations, there shall be only one standard of hours of labor and wage rates.²⁸
- B. Wage rates listed in the federal and/or state wage determination(s) contain two components: the hourly basic rate and the fringe rate; together they equal the total prevailing wage rate. A

²⁴ Minnesota Statute 181.032

²⁵ Minnesota Statute 177.44, Subdivision 7 and Minnesota Rules 5200.1106, Subpart 10

²⁶ 29 CFR Part 1.7(a)

²⁷ Minnesota Statute 177.44, Subdivision 4

²⁸ Minnesota Statute 177.44, Subdivision 4

contractor shall compensate a worker at a minimum, a combination of cash and fringe benefits equaling the total prevailing wage rate.²⁹

- C. The applicable certified wage decisions incorporated into and found elsewhere in this contract remain in effect for the life of this contract. The wage decisions do not necessarily represent the workforce that can be obtained at the rates certified by the U.S. DOL or MN/DLI. It is the responsibility of the prime contractor and any subcontractor to inform themselves about local labor conditions and prospective changes or adjustments to the wage rates. No increase in this contract price shall be allowed or authorized due to wage rates that exceed those incorporated into this contract.
- D. A contractor shall not reduce a worker's private, regular rate of pay when the wage rate certified by the U.S. DOL or MN/DLI is less than the worker's normal hourly wage.³⁰
- E. From the time a worker is required to report for duty at the project site until the worker is allowed to leave the site, no deductions shall be made from the worker's hours for any delays of less than twenty consecutive minutes.³¹
 - 1. In situations where a delay may exceed twenty consecutive minutes and the contractor requires a worker to remain on the premises or so close to the premises that the worker cannot use the time effectively for the worker's own purposes, the worker is considered "on-call"³² and shall be compensated in accordance with **Subpart B** of this section, unless the worker is allowed or required to leave the project site.
- F. A contractor making payment to an employee, laborer, mechanic, worker, or truck owner-operator shall not accept a rebate for the purpose of reducing or otherwise decreasing the value of the compensation paid.³³
- G. Any employee who knowingly permits a contractor to pay less than the total prevailing wage or gives up any part of the compensation to which the employee is entitled may be subject to penalties.³⁴

VI. BONA FIDE FRINGE BENEFITS

- A. A "funded" fringe benefit plan is one that allows the contractor to make irrevocable contributions on behalf of an employee to a financially responsible trustee, third person, fund, plan or program, without prior approval from the U.S. Department of Labor. Types of "funded" fringe benefits may include, but are not limited to: pension, health and life insurance.³⁵
- B. An "unfunded" fringe benefit plan or program is one that allows the contractor to furnish an in-house benefit on behalf of an employee. The cost to provide the benefit is funded from the contractor's general assets rather than funded by contributions made to a trustee, third person, fund, plan or program. Types of "unfunded" fringe benefits may include, but are not limited to: holiday plans, vacation plans and sick plans.³⁶
- C. Credit toward the total prevailing wage rate shall be determined for each individual employee and is allowed for bona fide fringe benefits that:³⁷
 - 1. include contributions irrevocably made by a contractor on behalf of an employee to a financially responsible trustee, third person, fund, plan, or program;

²⁹ Minnesota Statute 177.42, Subdivision 6

³⁰ Minnesota Statute 181.03, Subdivision 1(2)

³¹ Minnesota Rules 5200.0120, Subpart 1

³² Minnesota Rules 5200.0120, Subpart 2

³³ Minnesota Rules 5200.1106, Subpart 6

³⁴ Minnesota Statute 177.44, Subdivision 6

³⁵ 29 CFR Parts 5.26 and 5.27

³⁶ 29 CFR Part 5.28

³⁷ 29 CFR Part 5.23

2. are legally enforceable;
 3. have been communicated in writing to the employee; and
 4. are made available to the employee once he/she has met all eligibility requirements.
- D. No credit shall be allowed for benefits required by federal, state or local law, such as: worker's compensation, unemployment compensation, and social security contributions.³⁸
- E. Upon request from the Minnesota Department of Labor and Industry (MN/DLI) or the Department, the prime contractor shall promptly furnish copies of fringe benefit records for its workers and those of all subcontractors, along with other records, deemed appropriate by the requesting agency to determine compliance with these contract provisions.³⁹
- F. In addition to the requirements set forth in **Subpart C** of this section, it is the responsibility of the prime contractor and any subcontractor to inform themselves about other federal and state fringe benefit regulations that may be applicable to this contract.
- G. Contractors shall submit a completed and signed **MN/DOT, 21658 - Statement of Compliance Form**, identifying any fringe contributions made on behalf of a worker.⁴⁰ The form must be submitted in accordance with section **IV (PAYROLLS AND STATEMENTS), Subparts A and C**.
- H. Pursuant with *Minnesota Statute 181.74, Subdivision 1*, a contractor that is obligated to deposit fringe benefit contributions on behalf of its employees into a financially responsible trustee, third person, fund, plan, or program and fails to make timely contributions may be guilty of a gross misdemeanor. A contractor found in violation of the above-mentioned statute shall compel the department to take such actions as prescribed in section **XVI, (NON-COMPLIANCE AND ENFORCEMENT)**.

VII. OVERTIME

- A. A contractor shall not permit or require a worker to work in excess of 40 hours per week unless the worker is compensated at a rate not less than 1-1/2 times the basic hourly rate as determined by the United States Secretary of Labor.⁴¹
- B. A contractor shall not permit or require a worker to work longer than the prevailing hours of labor unless the worker is paid for all hours in excess of the prevailing hours at a rate of at least 1-1/2 times the hourly basic hourly rate of pay.⁴² The prevailing hours of labor is defined as not more than 8 hours per day or more than 40 hours per week.⁴³
- C. In addition to the requirements set forth in **Subparts A and B** of this section, it is the responsibility of the prime contractor and any subcontractor to inform themselves about other federal and state overtime regulations that may be applicable to this contract.

VIII. LABOR CLASSIFICATIONS

- A. All contractors shall refer to the federal general decision or the state wage determination incorporated into and found elsewhere in this contract to obtain an applicable job classification. Workers must be classified and compensated for the actual work performed regardless of the worker's skill level.⁴⁴ The prime contractor shall ensure that all contractors adhere to the following requirements:

³⁸ 29 CFR Part 5.29(f)

³⁹ Minnesota Statute 177.44, Subdivision 7 and Minnesota Rules 5200.1106, Subpart 10

⁴⁰ Minnesota Rules 5200.1106, Subpart 10

⁴¹ Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 7

⁴² Minnesota Statute 177.44, Subdivision 1

⁴³ Minnesota Statute 177.42, Subdivision 4

⁴⁴ Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 1(a)

1. Prior to performing work under this contract, all contractors shall review the federal general decision and complete a **U.S. DOL, SF-1444 - Request for Authorization of Additional Classification and Wage Rate Form** for any labor classification missing from the decision and submit it to the MN/DOT Labor Compliance Unit for processing.⁴⁵
2. If a contractor cannot determine an appropriate job classification, state law requires that the worker be assigned a job classification that is the "same or most similar".⁴⁶ Contractors should refer to the Master Job Classification List⁴⁷ to obtain an applicable labor classification. Clarification regarding labor classifications should be directed to the MN/DLI or the MN/DOT Labor Compliance Unit.

IX. INDEPENDENT CONTRACTORS, OWNERS, SUPERVISORS AND FOREMAN

- A. An independent contractor performing work as a laborer or mechanic is subject to the contract prevailing wage requirements⁴⁸ for the classification of work performed and shall adhere to the requirements established in sections **IV (PAYROLLS AND STATEMENTS); V (WAGE RATES); VI (FRINGE BENEFITS); VII (OVERTIME) and VIII (LABOR CLASSIFICATIONS)**. In order to ensure compliance, the department may examine the subcontract agreement to determine if the bid price submitted covers the applicable prevailing wage rate for the number of hours worked, along with other records, deemed appropriate by the department.⁴⁹
- B. Pursuant with state regulations, owners, supervisors and foreman performing work under the contract⁵⁰ shall be compensated in accordance with section **V (WAGE RATES)**. Furthermore, the prime contractor and any subcontractor shall adhere to the requirements established in sections **IV (PAYROLLS AND STATEMENTS); VI (FRINGE BENEFITS); VII (OVERTIME) and VIII (LABOR CLASSIFICATIONS)**.
- C. Pursuant with federal regulations, the contract labor provisions do not apply to owners, supervisors or foreman whose duties are primarily associated with bona fide administrative, executive or clerical positions. These individuals are not deemed to be laborers or mechanics.⁵¹
 1. However, working owners, supervisors and/or foreman who devote more than 20 percent of their time during a workweek to laborer or mechanic duties are considered laborers or mechanics for the time so spent and are subject to the requirements established in sections **IV (PAYROLLS AND STATEMENTS); V (WAGE RATES); VI (FRINGE BENEFITS); VII (OVERTIME) and VIII (LABOR CLASSIFICATIONS)**.

X. APPRENTICES, TRAINEES AND HELPERS

- A. An apprentice is not subject to the federal and/or state wage decisions incorporated into and found elsewhere in this contract, provided the contractor can demonstrate compliance with **Subparts (1 - 4)** of this section:⁵²
 1. The apprentice is performing the work of his/her trade.
 2. The apprentice is registered with the U.S. DOL Bureau of Apprenticeship and Training or MN/DLI Division of Voluntary Apprenticeship.
 3. The apprentice is compensated according to the rate specified in the program for the level of progress.

⁴⁵ Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 2

⁴⁶ Minnesota Statute 177.44, Subdivision 1

⁴⁷ Minnesota Rules 5200.1100

⁴⁸ 29 CFR Part 5.2(o) and Minnesota Statute 177.41

⁴⁹ Minnesota Statute 177.44, Subdivision 7 and Minnesota Rules 5200.1106, Subpart 10

⁵⁰ Minnesota Statute 177.44, Subdivision 1

⁵¹ 29 CFR Part 5.2(m)

⁵² Minnesota Rules 5200.1070

4. The ratio of apprentices to journeyman workers on the project is not greater than the ratio permitted for the contractor's entire work force under the registered program.⁵³
- B. A trainee is not subject to the federal general decision incorporated into and found elsewhere in this contract, provided the contractor can demonstrate compliance with **Subparts (1 - 4)** of this section:⁵⁴
1. The trainee is performing the work of his/her trade.
 2. The trainee is registered with the U.S. DOL Employment and Training Administration.
 3. The trainee is compensated according to the rate specified in the program for the level of progress.
 4. The ratio of trainees to journeyman workers on the project is not greater than the ratio permitted under the program.
 5. All hours worked in excess of the prescribed hours allowed under the program and/or this contract shall be paid at the journeyman wage rate incorporated into and found elsewhere in this contract.
 6. A trainee is not exempt under state law; the contractor shall assign the trainee a job classification that is the "same or most similar"⁵⁵ and compensate the trainee for the actual work performed regardless of the trainee's skill level, unless the trainee is:⁵⁶
 - a. employed and registered in a bona-fide apprenticeship program; or
 - b. employed in the first 90 days of probationary employment as an apprentice, is not registered in the apprenticeship program, but has been certified by the proper government authorities to be eligible for probationary employment as an apprentice.
- C. A helper may perform work only if the helper classification is specified and defined in the federal general decision incorporated into and found elsewhere in this contract or is approved pursuant to the federal conformance procedure:⁵⁷
1. A helper is not exempt under state law; a contractor shall assign the helper a job classification that is the "same or most similar"⁵⁸ and compensate the helper for the actual work performed regardless of the helper's skill level.⁵⁹
- D. If a contractor fails to demonstrate compliance with the terms established in **Subparts A - C** of this section, the contractor shall compensate the worker not less than the applicable total prevailing wage rate for the actual work performed.⁶⁰

XI. SUBCONTRACTING PART OF THIS CONTRACT⁶¹

- A. If the prime contractor intends to sublet any portion of this contract, it shall complete and submit a **MN/DOT, TP-21834, Request To Sublet Form** to the project engineer 10 days prior to the first day of work for any subcontractor.
- B. The prime contractor shall not subcontract any portion of this contract without prior written consent from the project engineer.

⁵³ MN/DOLI Division of Apprenticeship – April 6, 1995 Memorandum from Jerry Briggs, Director

⁵⁴ Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 4(b)

⁵⁵ Minnesota Statute 177.44, Subdivision 1

⁵⁶ Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 1(a)

⁵⁷ Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 4(c)

⁵⁸ Minnesota Statute 177.44, Subdivision 1

⁵⁹ Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 1(a)

⁶⁰ Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 4(a)(b)(c)

⁶¹ MN/DOT Standard Specifications for Construction, Section 1801

- C. The prime contractor's organization shall perform work amounting to not less than 40 percent of the total original contract cost. However, contracts with Disadvantaged Business Enterprise (DBE) or Targeted Group Business (TGB) established goals, or both, the contractor's organization shall perform work amounting to not less than 30 percent of the total original contract cost.
- D. A first tier subcontractor shall not subcontract any portion of its work under this contract unless approved by the prime contractor and the project engineer. In addition, a first tier subcontractor may only subcontract up to 50% of its original subcontract.
- E. A second tier subcontractor shall not subcontract any portion of its work under this contract.
- F. Written consent to subcontract any portion of this contract does not relieve the prime contractor of liabilities and obligations under the contract and bonds.
- G. Contractors shall not subcontract with or purchase materials or services from a debarred or suspended person.⁶²

XII. POSTER BOARDS

- A. The prime contractor shall construct and display a poster board, which contains all required posters, is legible and is accessible to all workers from the first day of work until the project is 100 percent complete.⁶³ The prime contractor is not allowed to place a poster board at an off-site location.
 - 1. The prime contractor can obtain the required posters by contacting MN/DOT at (651) 366-3091. The prime contractor will need to furnish its name, mailing address, the type of posters (federal-aid) and the quantity needed.

XIII. EMPLOYEE INTERVIEWS

- A. At any time the prime contractor shall permit representatives from the U.S. DOL, FHWA, MN/DLI, or the Department to interview its workers and those of any subcontractor during working hours on the project.⁶⁴

XIV. TRUCKING / OFF-SITE FACILITIES

- A. The prime contractor is responsible to ensure that its workers and those of all subcontractors are compensated in accordance with the federal wage decision incorporated into and found elsewhere in this contract for the following work duties:
 - 1. The processing or manufacturing of material, including the hauling of material to and from an immediately adjacent, dedicated off-site facility.⁶⁵
 - 2. The hauling of any or all stockpiled or excavated materials on the project work site to other locations on the same project.⁶⁶
- B. The prime contractor is responsible to ensure that its workers and those of all subcontractors, are compensated in accordance with the state wage determination incorporated into and found elsewhere in this contract for the following work duties:
 - 1. The processing or manufacturing of material, including the hauling of material to and from a prime contractor's material operation that is not a separate commercial establishment.⁶⁷

⁶² Minnesota Statute 161.315, Subdivision 3(3)

⁶³ Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 1(a)

⁶⁴ Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section V, Subpart 2(g)

⁶⁵ 29 CFR Part 5.2(l)(2)

⁶⁶ 29 CFR Part 5.2(j)(1)

⁶⁷ ALJ Findings of Fact, Conclusions of Law, and Recommendation, Conclusions (7), Case #12-3000-11993-2

2. The processing or manufacturing of material, including the hauling of material to and from an off-site material operation that is not considered a commercial establishment.⁶⁸
 3. The hauling of any or all stockpiled or excavated materials on the project work site to other locations on the same project even if the truck leaves the work site at some point.⁶⁹
 4. The delivery of materials from a non-commercial establishment to the project and the return haul.⁷⁰
 5. The delivery of materials from another construction project site to the public works project and the return haul, either empty or loaded. Construction projects are not considered commercial establishments.⁷¹
 6. The hauling required to remove any materials from the project to a location off the project site and the return haul, either empty or loaded from other than a commercial establishment.⁷²
 7. The delivery of mineral aggregate materials from a commercial establishment, which is deposited "substantially in place" and the return haul, either empty or loaded.⁷³
- C. The work duties prescribed in **Subpart A (1 - 2) and Subpart B (1 - 7)** of this section do not represent all possible hauling activities and/or other work duties that may be performed under this contract. It is the responsibility of the prime contractor to inform itself and all subcontractors about other applicable job duties that may be subject to this contract labor provisions.
- D. A contractor acquiring trucking services from an ITO, MTO and/or Truck Broker to perform and/or provide "covered" hauling activities shall comply with the payment of the certified state truck rental rates,⁷⁴ which are incorporated into and found elsewhere in this contract.
1. Each month, in which hauling activities were performed under this contract, the prime contractor and all subcontractors shall submit a **MN/DOT, TP-90550 - Month-End Trucking Report** and **MN/DOT, TP-90551 - Statement of Compliance Form**, along with each ITOs, MTOs and/or Truck Brokers reports to the department.⁷⁵ The specifications regarding the dates for submission can be found near the bottom of the **MN/DOT, TP-90551 - Statement of Compliance Form**.
- E. A Truck Broker contracting to provide trucking services in the construction industry may charge a reasonable broker fee to the provider of trucking services.⁷⁶ The prime contractor and any subcontractor contracting to receive trucking services shall not assess a broker fee.
- F. A contractor with employee truck drivers shall adhere to the requirements established in **Sections IV (PAYROLLS AND STATEMENTS); V (WAGE RATES); VI (FRINGE BENEFITS); VII (OVERTIME) and VIII (LABOR CLASSIFICATIONS)**.
- G. If after written notice, the prime contractor fails to submit its month-end trucking reports and certification forms and those of any subcontractor, MTO and/or Truck Broker, the department may take such actions as prescribed in section **XVI, (NON-COMPLIANCE AND ENFORCEMENT)**.

⁶⁸ Minnesota Rules 5200.1106, Subpart 3B(2)

⁶⁹ Minnesota Rules 5200.1106, Subpart 3B(1)

⁷⁰ Minnesota Rules 5200.1106, Subpart 3B(2)

⁷¹ Minnesota Rules 5200.1106, Subpart 3B(3)

⁷² Minnesota Rules 5200.1106, Subpart 3B(4)

⁷³ Minnesota Rules 5200.1106, Subpart 3B(5)(6)

⁷⁴ Minnesota Rules 5200.1106, Subpart 1

⁷⁵ Minnesota Rules 5200.1106, Subpart 10

⁷⁶ Minnesota Rules 5200.1106, Subpart 7(C)

XV. CHILD LABOR

- A. No worker under the age of 18 is allowed to perform work on construction projects.⁷⁷
- B. In accordance with state law, a worker under the age of 18, employed in a corporation totally owned by one or both parents that is supervised by the parent(s), may perform work on construction projects.⁷⁸ However, if this contractor is subject to the federal Fair Labor Standards Act, a worker under the age of 18 is not allowed to perform work in a hazardous occupation.⁷⁹
- C. To protect the interests of the department, the project engineer may remove a worker that appears to be under the age of 18 from the construction project until the contractor or worker can demonstrate proof of age⁸⁰ and compliance with all applicable federal and/or state regulations.⁸¹

XVI. NON-COMPLIANCE AND ENFORCEMENT

- A. The prime contractor shall be liable for any unpaid wages to its workers or those of any subcontractor, ITO, MTO and/or Truck Broker.⁸²
- B. If it is determined that a contractor has violated federal and/or state prevailing wage laws, or any portion of this contract, the department may implement, after written notice, one or more of the following sanctions:
 - 1. Withhold or cause to be withheld from the prime contractor under this contract, or any other federally funded contract with the same prime contractor, as much of the accrued payments or advances as may be considered necessary to pay workers employed by the prime contractor or any subcontractor the full amount of wages required by this contract.⁸³
 - 2. Withhold or cause to be withheld from the prime contractor such amounts in considerations or assessments against the prime contractor, whether arising from this contract or other contract with the department.⁸⁴
 - 3. The department may reject a bid from a prime contractor that has demonstrated continued or persistent noncompliance with the prevailing wage law on previous or current contracts with the department.⁸⁵
 - 4. The department may take the prosecution of the work out of the hands of the prime contractor, place the contractor in default and terminate this contract for failure to demonstrate compliance with these provisions.⁸⁶
- C. Any contractor who violates the state prevailing wage law is guilty of a misdemeanor and may be fined not more than \$300 or imprisoned not more than 90 days or both. Each day that the violation continues is a separate offense.⁸⁷
- D. All required documents and certification reports are legal documents; willful falsification of the documents may result in civil action and/or criminal prosecution⁸⁸ and may be grounds for debarment proceedings.⁸⁹

⁷⁷ Minnesota Rules 5200.0910, Subpart F

⁷⁸ Minnesota Rules 5200.0930, Subpart 4

⁷⁹ 29 CFR Part 570.2(a)(ii)

⁸⁰ Minnesota Statute 181A.06, Subdivision 4

⁸¹ MN/DOT Standard Specifications for Construction, Section 1701

⁸² MN/DOT Standard Specifications for Construction, Section 1801

⁸³ Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 6

⁸⁴ MN/DOT Standard Specifications for Construction, Section 1906

⁸⁵ Minnesota Statute 161.32, Subdivision 1(d)

⁸⁶ MN/DOT Standard Specifications for Construction, Section 1808

⁸⁷ Minnesota Statute 177.44, Subdivision 6

⁸⁸ Minnesota Statutes 16B, 161.315, Subdivision 2, 177.43, Subdivision 5 177.44, Subdivision 6, 609.63

⁸⁹ Minnesota Statute 161.315

NOTICE TO BIDDERS
TRAFFIC CONTROL
PREVAILING WAGE COVERAGE

The following defines the United States Department of Labor's interpretation of contract labor provision coverage for employees who work for traffic control companies and /or perform traffic control duties.

Non-covered Supplier Designated Duties:

Employees of bona fide "Material Persons/Suppliers" are not covered. A Material Person/Supplier is limited to supply, delivery, and routine maintenance (once a week) of barricades, cones, flashers, etc. to the job site.

The following functions, except as qualified in "6." below, do not come under the prevailing wage requirements of the contracts:

1. Supply and delivery of traffic control devices such as barricades, cones, barrels, flashers and signboards.
2. Routine and periodic maintenance service (usually once a week).
3. Removal of equipment from job site.
4. In connection with delivery, they may drop the equipment at a central stockpile location or at various locations along the project. Employees of company may set-up the equipment as long as such set-up is by dropping barrels and cones from the back of a moving truck.
5. Maintenance would consist of inspecting and cleaning the equipment, replacing broken or lost equipment, replacing barricades knocked down or out of line, and changing light bulbs and barricades.
6. If an employee spends more than 20% of their workweek performing the above duties on a Davis-Bacon (Federal-Aid) project or other Davis-Bacon (Federal-Aid) projects, prevailing wage rates would apply for the time so spent.

Covered Contractor or Subcontractor Duties:

The following functions are covered under the contract labor provisions. Any contractor performing these duties will need to be listed on a Request to Sublet form and their employees performing the duties will need to be listed on a Certified Payroll form and submitted following the appropriate procedures.

Related and continuing traffic control services such as, but not limited to:

1. Moving barricades and barriers as construction work progresses.
2. Moving barricades for lane closures and changes.
3. Painting traffic lines.
4. Sandblasting to remove traffic lines.
5. Applying and removing traffic tape.
6. Setting up barrels or barricades other than those dropped from the back of a moving truck.
7. Digging postholes to erect temporary warning signs (only).
8. Erection of advance temporary warning signs.
9. Placing temporary signboards.

On Federal-aid Projects (only) when there is no appropriate classification listed under either the state or federal wage determinations, a classification wage rate will be negotiated using the procedures under FHWA 1273, REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS, Part IV. PAYMENT OF PREDETERMINED MINIMUM WAGE, Subp. 2. Classifications.

Superseded General Decision Number: MN20240238

State: Minnesota

Construction Types: Heavy and Highway

Counties: Chippewa, Kandiyohi, Lac Qui Parle, Lincoln, Lyon, McLeod, Meeker, Murray, Pipestone, Redwood, Renville and Yellow Medicine Counties in Minnesota.

Heavy and Highway Construction Projects

Please refer to Minnesota Rules 5200.1100, 5200.1101, and 5200.1102 for definitions of labor classifications on this wage determination, and direct any questions regarding such classifications to the Branch of Construction Wage Determinations.

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	<ul style="list-style-type: none">◆ Executive Order 14026 generally applies to the contract.◆ The contractor must pay all covered workers at least \$17.75 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	<ul style="list-style-type: none">◆ Executive Order 13658 generally applies to the contract.◆ The contractor must pay all covered workers at least \$13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours performing on that contract in 2025.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

State: Minnesota

Construction Types: Heavy and Highway

Counties: Chippewa, Kandiyohi, Lac Qui Parle, Lincoln, Lyon, McLeod, Meeker, Murray, Pipestone, Redwood, Renville and Yellow Medicine Counties in Minnesota.

Heavy and Highway Construction Projects

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If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	<ul style="list-style-type: none">◆ Executive Order 14026 generally applies to the contract.◆ The contractor must pay all covered workers at least \$17.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	<ul style="list-style-type: none">◆ Executive Order 13658 generally applies to the contract.◆ The contractor must pay all covered workers at least \$12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours performing on that contract in 2024.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number Publication Date
0 01/03/2025

SAMN2024-008 11/18/2024

	Rates	Fringes
ARTICULATED HAULER.....	\$ 42.49	25.00
ASBESTOS ABATEMENT WORKER.....	\$ 39.86	24.61
BLASTER.....	\$ 39.64	24.24
BOILERMAKER.....	\$ 46.00	31.93
BOOM TRUCK.....	\$ 31.16	23.45
CARPENTER.....	\$ 37.65	27.08
CEMENT MASON.....	\$ 43.00	23.72
ELECTRICIAN.....	\$ 41.00	23.10
FLAG PERSON.....	\$ 36.64	24.68
GROUND PERSON.....	\$ 16.63 **	6.38
HEATING AND FROST INSULATORS.....	\$ 17.50 **	2.79
IRONWORKER.....	\$ 46.00	34.11
LABORER: Common or General (GENERAL LABOR WORK).....	\$ 36.64	24.68
LABORER: Landscape (GARDENER, SOD LAYER AND NURSERY OPERATOR).....	\$ 30.04	21.16
LABORER: Skilled (ASSISTING SKILLED CRAFT JOURNEYMAN).....	\$ 36.64	24.68
LANDSCAPING EQUIPMENT (INCLUDES HYDRO SEEDER OR MULCHER, SOD ROLLER, FARM TRACTOR WITH ATTACHMENT SPECIFICALLY SEEDING, SODDING, OR PLANT, AND TWO-FRAMED FORKLIFT (EXCLUDING FRONT, POSIT-TRACK, AND SKID STEER LOADERS), NO EARTHWORK OR GRADING FOR ELEVATIONS).....	\$ 30.04	21.16
LINEMAN.....	\$ 50.86	23.06
MILLWRIGHT.....	\$ 38.23	29.18
OFF-ROAD TRUCK.....	\$ 41.29	23.45
PAINTER (INCLUDING HAND		

<http://www.dol.gov/whd/govcontracts>.

Modification Number Publication Date
0 12/13/2024

SAMN2024-008 11/18/2024

	Rates	Fringes
ARTICULATED HAULER.....	\$ 42.49	25.00
ASBESTOS ABATEMENT WORKER.....	\$ 39.86	24.61
BLASTER.....	\$ 39.64	24.24
BOILERMAKER.....	\$ 46.00	31.93
BOOM TRUCK.....	\$ 31.16	23.45
CARPENTER.....	\$ 37.65	27.08
CEMENT MASON.....	\$ 43.00	23.72
ELECTRICIAN.....	\$ 41.00	23.10
FLAG PERSON.....	\$ 36.64	24.68
GROUND PERSON.....	\$ 16.63 **	6.38
HEATING AND FROST INSULATORS.....	\$ 17.50	2.79
IRONWORKER.....	\$ 46.00	34.11
LABORER: Common or General (GENERAL LABOR WORK).....	\$ 36.64	24.68
LABORER: Landscape (GARDENER, SOD LAYER AND NURSERY OPERATOR).....	\$ 30.04	21.16
LABORER: Skilled (ASSISTING SKILLED CRAFT JOURNEYMAN).....	\$ 36.64	24.68
LANDSCAPING EQUIPMENT (INCLUDES HYDRO SEEDER OR MULCHER, SOD ROLLER, FARM TRACTOR WITH ATTACHMENT SPECIFICALLY SEEDING, SODDING, OR PLANT, AND TWO-FRAMED FORKLIFT (EXCLUDING FRONT, POSIT-TRACK, AND SKID STEER LOADERS), NO EARTHWORK OR GRADING FOR ELEVATIONS).....	\$ 30.04	21.16
LINEMAN.....	\$ 50.86	23.06
MILLWRIGHT.....	\$ 38.23	29.18
OFF-ROAD TRUCK.....	\$ 41.29	23.45
PAINTER (INCLUDING HAND BRUSHED, HAND SPRAYED, AND THE TAPING OF PAVEMENT		

BRUSHED, HAND SPRAYED, AND THE TAPING OF PAVEMENT MARKINGS).....	\$ 33.91	23.49
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PAVEMENT MARKING OR MARKING REMOVAL EQUIPMENT ((ONE OR TWO PERSON OPERATORS); SELF-PROPELLED TRUCK OR TRAILER MOUNTED UNITS).....	\$ 33.91	23.49
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Piledriver (INCLUDING VIBRATORY DRIVER OR EXTRACTOR FOR PILING AND SHEETING OPERATIONS).....	\$ 45.71	29.73
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PIPEFITTER/STEAMFITTER.....	\$ 41.97	25.92
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PIPELAYER (WATER, SEWER AND GAS).....	\$ 40.14	24.68
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PLUMBER.....	\$ 51.04	30.58
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POWER EQUIPMENT OPERATOR: (Highway/Heavy Group 2).....	\$ 45.61	26.90
HELICOPTER PILOT; CONCRETE PUMP; ALL CRANES WITH OVER 135-FOOT BOOM, EXCLUDING JIB; DRAGLINE, CRAWLER, HYDRAULIC BACKHOE (TRACK OR WHEEL MOUNTED) AND/OR OTHER SIMILAR EQUIPMENT WITH SHOVEL-TYPE CONTROLS THREE CUBIC YARDS AND OVER MANUFACTURER.S RATED CAPACITY INCLUDING ALL ATTACHMENTS; GRADER OR MOTOR PATROL; PILE DRIVING; TUGBOAT 100 H.P. AND OVER WHEN LICENSE REQUIRED		

POWER EQUIPMENT OPERATOR: (Highway/Heavy Group 3).....	\$ 45.01	26.90
ASPHALT BITUMINOUS STABILIZER PLANT; CABLEWAY; CONCRETE MIXER, STATIONARY PLANT; DERRICK (GUY OR STIFFLEG)(POWER)(SKIDS OR STATIONARY); DRAGLINE, CRAWLER, HYDRAULIC BACKHOE (TRACK OR WHEEL MOUNTED) AND/OR SIMILAR EQUIPMENT WITH SHOVEL-TYPE CONTROLS, UP TO THREE CUBIC YARDS MANUFACTURER.S RATED CAPACITY INCLUDING ALL ATTACHMENTS; DREDGE OR ENGINEERS, DREDGE (POWER) AND ENGINEER; FRONT END LOADER, FIVE CUBIC YARDS AND OVER INCLUDING ATTACHMENTS; LOCOMOTIVE CRANE OPERATOR; MIXER (PAVING) CONCRETE PAVING, ROAD MOLE, INCLUDING MUCKING OPERATIONS, CONWAY OR SIMILAR TYPE; MECHANIC ON POWER EQUIPMENT; TRACTOR, BOOM TYPE; TANDEM SCRAPER; TRUCK CRANE, CRAWLER CRANE; TUGBOAT 100 H.P AND OVER		

POWER EQUIPMENT OPERATOR: (Highway/Heavy Group 4).....	\$ 44.67	26.90
AIR TRACK ROCK DRILL; AUTOMATIC ROAD MACHINE (CMI OR SIMILAR); BACKFILLER OPERATOR; CONCRETE BATCH PLANT OPERATOR; BITUMINOUS ROLLERS, RUBBER TIRED OR STEEL DRUMMED (EIGHT TONS AND OVER); BITUMINOUS SPREADER AND FINISHING MACHINES (POWER), INCLUDING PAVERS, MACRO SURFACING AND MICRO SURFACING, OR SIMILAR TYPES (OPERATOR AND SCREED PERSON); BROKK OR R.T.C. REMOTE CONTROL OR SIMILAR TYPE WITH ALL ATTACHMENTS; CAT CHALLENGER TRACTORS OR SIMILAR TYPES PULLING ROCK WAGONS, BULLDOZERS AND SCRAPERS; CHIP HARVESTER AND TREE CUTTER; CONCRETE DISTRIBUTOR AND SPREADER FINISHING MACHINE, LONGITUDINAL FLOAT, JOINT MACHINE, AND SPRAY MACHINE; CONCRETE MIXER ON JOBSITE; CONCRETE MOBIL; CRUSHING PLANT (GRAVEL AND STONE) OR GRAVEL WASHING, CRUSHING AND SCREENING PLANT; CURB MACHINE; DIRECTIONAL BORING MACHINE; DOPE MACHINE (PIPELINE); DRILL RIGS, HEAVY ROTARY OR CHURN OR CABLE DRILL; DUAL TRACTOR; ELEVATING GRADER; FORK LIFT OR STRADDLE CARRIER; FORK LIFT OR LUMBER STACKER; FRONT END, SKID		

MARKINGS).....\$ 33.91	23.49
PAVEMENT MARKING OR MARKING REMOVAL EQUIPMENT ((ONE OR TWO PERSON OPERATORS); SELF-PROPELLED TRUCK OR TRAILER MOUNTED UNITS).....\$ 33.91	
	23.49
Piledriver (INCLUDING VIBRATORY DRIVER OR EXTRACTOR FOR PILING AND SHEETING OPERATIONS).....\$ 45.71	29.73
PIPEFITTER/STEAMFITTER.....\$ 41.97	25.92
PIPELAYER (WATER, SEWER AND GAS).....\$ 40.14	24.68
PLUMBER.....\$ 51.04	30.58
POWER EQUIPMENT OPERATOR: (Highway/Heavy Group 2).....\$ 45.61	
	26.90
HELICOPTER PILOT; CONCRETE PUMP; ALL CRANES WITH OVER 135-FOOT BOOM, EXCLUDING JIB; DRAGLINE, CRAWLER, HYDRAULIC BACKHOE (TRACK OR WHEEL MOUNTED) AND/OR OTHER SIMILAR EQUIPMENT WITH SHOVEL-TYPE CONTROLS THREE CUBIC YARDS AND OVER MANUFACTURER.S RATED CAPACITY INCLUDING ALL ATTACHMENTS; GRADER OR MOTOR PATROL; PILE DRIVING; TUGBOAT 100 H.P. AND OVER WHEN LICENSE REQUIRED	
POWER EQUIPMENT OPERATOR: (Highway/Heavy Group 3).....\$ 45.01	
	26.90
ASPHALT BITUMINOUS STABILIZER PLANT; CABLEWAY; CONCRETE MIXER, STATIONARY PLANT; DERRICK (GUY OR STIFFLEG)(POWER)(SKIDS OR STATIONARY); DRAGLINE, CRAWLER, HYDRAULIC BACKHOE (TRACK OR WHEEL MOUNTED) AND/OR SIMILAR EQUIPMENT WITH SHOVEL-TYPE CONTROLS, UP TO THREE CUBIC YARDS MANUFACTURER.S RATED CAPACITY INCLUDING ALL ATTACHMENTS; DREDGE OR ENGINEERS, DREDGE (POWER) AND ENGINEER; FRONT END LOADER, FIVE CUBIC YARDS AND OVER INCLUDING ATTACHMENTS; LOCOMOTIVE CRANE OPERATOR; MIXER (PAVING) CONCRETE PAVING, ROAD MOLE, INCLUDING MUCKING OPERATIONS, CONWAY OR SIMILAR TYPE; MECHANIC ON POWER EQUIPMENT; TRACTOR, BOOM TYPE; TANDEM SCRAPER; TRUCK CRANE, CRAWLER CRANE; TUGBOAT 100 H.P AND OVER	
POWER EQUIPMENT OPERATOR: (Highway/Heavy Group 4).....\$ 44.67	
	26.90
AIR TRACK ROCK DRILL; AUTOMATIC ROAD MACHINE (CMI OR SIMILAR); BACKFILLER OPERATOR; CONCRETE BATCH PLANT OPERATOR; BITUMINOUS ROLLERS, RUBBER TIRED OR STEEL DRUMMED (EIGHT TONS AND OVER); BITUMINOUS SPREADER AND FINISHING MACHINES (POWER), INCLUDING PAVERS, MACRO SURFACING AND MICRO SURFACING, OR SIMILAR TYPES (OPERATOR AND SCREED PERSON); BROKK OR R.T.C. REMOTE CONTROL OR SIMILAR TYPE WITH ALL ATTACHMENTS; CAT CHALLENGER TRACTORS OR SIMILAR TYPES PULLING ROCK WAGONS, BULLDOZERS AND SCRAPERS; CHIP HARVESTER AND TREE CUTTER; CONCRETE DISTRIBUTOR AND SPREADER FINISHING MACHINE, LONGITUDINAL FLOAT, JOINT MACHINE, AND SPRAY MACHINE; CONCRETE MIXER ON JOBSITE; CONCRETE MOBIL; CRUSHING PLANT (GRAVEL AND STONE) OR GRAVEL WASHING, CRUSHING AND SCREENING PLANT; CURB MACHINE; DIRECTIONAL BORING MACHINE; DOPE MACHINE (PIPELINE); DRILL RIGS, HEAVY ROTARY OR CHURN OR CABLE DRILL; DUAL TRACTOR; ELEVATING GRADER; FORK LIFT OR STRADDLE CARRIER; FORK LIFT OR LUMBER STACKER; FRONT END, SKID STEER OVER 1 TO 5 C YD; GPS REMOTE OPERATING OF EQUIPMENT; HOIST ENGINEER (POWER); HYDRAULIC TREE PLANTER; LAUNCHER	

STEER OVER 1 TO 5 C YD; GPS REMOTE OPERATING OF EQUIPMENT;
 HOIST ENGINEER (POWER); HYDRAULIC TREE PLANTER; LAUNCHER
 PERSON (TANKER PERSON OR PILOT LICENSE); LOCOMOTIVE; MILLING,
 GRINDING, PLANNING, FINE GRADE, OR TRIMMER MACHINE; MULTIPLE
 MACHINES, SUCH AS AIR COMPRESSORS, WELDING MACHINES,
 GENERATORS, PUMPS; PAVEMENT BREAKER OR TAMPING MACHINE (POWER
 DRIVEN) MIGHTY MITE OR SIMILAR TYPE; PICKUP SWEEPER, ONE CUBIC
 YARD AND OVER HOPPER CAPACITY; PIPELINE WRAPPING, CLEANING OR
 BENDING MACHINE; POWER PLANT ENGINEER, 100 KWH AND OVER; POWER
 ACTUATED HORIZONTAL BORING MACHINE, OVER SIX INCHES; PUGMILL;
 PUMPCRETE; RUBBER-TIRED FARM TRACTOR WITH BACKHOE INCLUDING
 ATTACHMENTS; SCRAPER; SELF-PROPELLED SOIL STABILIZER; SLIP
 FORM (POWER DRIVEN) (PAVING); TIE TAMPER AND BALLAST MACHINE;
 TRACTOR, BULLDOZER; TRACTOR, WHEEL TYPE, OVER 50 H.P. WITH PTO
 UNRELATED TO LANDSCAPING; TRENCHING MACHINE (SEWER, WATER,
 GAS) EXCLUDES WALK BEHIND TRENCHER; TUB GRINDER, MORBARK, OR
 SIMILAR TYPE; WELL POINT DISMANTLING OR INSTALLATION

POWER EQUIPMENT OPERATOR:

(Highway/Heavy Group 5).....\$ 41.36	26.90
AIR COMPRESSOR, 600 CFM OR OVER; BITUMINOUS ROLLER (UNDER EIGHT TONS); CONCRETE SAW (MULTIPLE BLADE) (POWER OPERATED); FORM TRENCH DIGGER (POWER); FRONT END, SKID STEER UP TO 1C YD; GUNITE GUNALL; HYDRAULIC LOG SPLITTER; LOADER (BARBER GREENE OR SIMILAR TYPE); POST HOLE DRIVING MACHINE/POST HOLE AUGER; POWER ACTUATED AUGER AND BORING MACHINE; POWER ACTUATED JACK; PUMP; SELF-PROPELLED CHIP SPREADER (FLAHERTY OR SIMILAR); SHEEP FOOT COMPACTOR WITH BLADE . 200 H.P. AND OVER; SHOULDERING MACHINE (POWER) APSCO OR SIMILAR TYPE INCLUDING SELF-PROPELLED SAND AND CHIP SPREADER; STUMP CHIPPER AND TREE CHIPPER; TREE FARMER (MACHINE)	

POWER EQUIPMENT OPERATOR:

(Highway/Heavy Group 6).....\$ 38.06	25.00
CAT, CHALLENGER, OR SIMILAR TYPE OF TRACTORS, WHEN PULLING DISK OR ROLLER; CONVEYOR; DREDGE DECK HAND; FIRE PERSON OR TANK CAR HEATER; GRAVEL SCREENING PLANT (PORTABLE NOT CRUSHING OR WASHING); GREASER (TRACTOR); LEVER PERSON; OILER (POWER SHOVEL, CRANE, TRUCK CRANE, DRAGLINE, CRUSHERS, AND MILLING MACHINES, OR OTHER SIMILAR HEAVY EQUIPMENT); POWER SWEEPER; SHEEP FOOT ROLLER AND ROLLERS ON GRAVEL COMPACTION, INCLUDING VIBRATING ROLLERS; TRACTOR, WHEEL TYPE, OVER 50 H.P., UNRELATED TO LANDSCAPING	

SHEET METAL WORKER.....\$ 40.88	25.10
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Survey Field Technician

(OPERATE TOTAL STATION, GPS RECEIVER, LEVEL, ROD OR RANGE POLES, STEEL TAPE MEASUREMENT; MARK AND DRIVE STAKES; HAND OR POWER DIGGING FOR AND IDENTIFICATION OF MARKERS OR MONUMENTS; PERFORM AND CHECK CALCULATIONS; REVIEW AND UNDERSTAND CONSTRUCTION PLANS AND LAND SURVEY MATERIALS).....\$ 35.00	11.50
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TRAFFIC CONTROL PERSON

(TEMPORARY SIGNAGE).....\$ 21.49	14.80
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TRUCK DRIVER (Group 1).....\$ 36.00	11.50
MECHANIC; TRACTOR TRAILER DRIVER; TRUCK DRIVER (HAULING MACHINERY INCLUDING OPERATION OF HAND AND POWER OPERATED	

PERSON (TANKER PERSON OR PILOT LICENSE); LOCOMOTIVE; MILLING, GRINDING, PLANNING, FINE GRADE, OR TRIMMER MACHINE; MULTIPLE MACHINES, SUCH AS AIR COMPRESSORS, WELDING MACHINES, GENERATORS, PUMPS; PAVEMENT BREAKER OR TAMPING MACHINE (POWER DRIVEN) MIGHTY MITE OR SIMILAR TYPE; PICKUP SWEEPER, ONE CUBIC YARD AND OVER HOPPER CAPACITY; PIPELINE WRAPPING, CLEANING OR BENDING MACHINE; POWER PLANT ENGINEER, 100 KWH AND OVER; POWER ACTUATED HORIZONTAL BORING MACHINE, OVER SIX INCHES; PUGMILL; PUMPCRETE; RUBBER-TIRED FARM TRACTOR WITH BACKHOE INCLUDING ATTACHMENTS; SCRAPER; SELF-PROPELLED SOIL STABILIZER; SLIP FORM (POWER DRIVEN) (PAVING); TIE TAMPER AND BALLAST MACHINE; TRACTOR, BULLDOZER; TRACTOR, WHEEL TYPE, OVER 50 H.P. WITH PTO UNRELATED TO LANDSCAPING; TRENCHING MACHINE (SEWER, WATER, GAS) EXCLUDES WALK BEHIND TRENCHER; TUB GRINDER, MORBARK, OR SIMILAR TYPE; WELL POINT DISMANTLING OR INSTALLATION

POWER EQUIPMENT OPERATOR:

(Highway/Heavy Group 5).....\$ 41.36 26.90
AIR COMPRESSOR, 600 CFM OR OVER; BITUMINOUS ROLLER (UNDER EIGHT TONS); CONCRETE SAW (MULTIPLE BLADE) (POWER OPERATED); FORM TRENCH DIGGER (POWER); FRONT END, SKID STEER UP TO 1C YD; GUNITE GUNALL; HYDRAULIC LOG SPLITTER; LOADER (BARBER GREENE OR SIMILAR TYPE); POST HOLE DRIVING MACHINE/POST HOLE AUGER; POWER ACTUATED AUGER AND BORING MACHINE; POWER ACTUATED JACK; PUMP; SELF-PROPELLED CHIP SPREADER (FLAHERTY OR SIMILAR); SHEEP FOOT COMPACTOR WITH BLADE . 200 H.P. AND OVER; SHOULDERING MACHINE (POWER) APSCO OR SIMILAR TYPE INCLUDING SELF-PROPELLED SAND AND CHIP SPREADER; STUMP CHIPPER AND TREE CHIPPER; TREE FARMER (MACHINE)

POWER EQUIPMENT OPERATOR:

(Highway/Heavy Group 6).....\$ 38.06 25.00
CAT, CHALLENGER, OR SIMILAR TYPE OF TRACTORS, WHEN PULLING DISK OR ROLLER; CONVEYOR; DREDGE DECK HAND; FIRE PERSON OR TANK CAR HEATER; GRAVEL SCREENING PLANT (PORTABLE NOT CRUSHING OR WASHING); GREASER (TRACTOR); LEVER PERSON; OILER (POWER SHOVEL, CRANE, TRUCK CRANE, DRAGLINE, CRUSHERS, AND MILLING MACHINES, OR OTHER SIMILAR HEAVY EQUIPMENT); POWER SWEEPER; SHEEP FOOT ROLLER AND ROLLERS ON GRAVEL COMPACTION, INCLUDING VIBRATING ROLLERS; TRACTOR, WHEEL TYPE, OVER 50 H.P., UNRELATED TO LANDSCAPING

SHEET METAL WORKER.....\$ 40.88 25.10

Survey Field Technician

(OPERATE TOTAL STATION, GPS RECEIVER, LEVEL, ROD OR RANGE POLES, STEEL TAPE MEASUREMENT; MARK AND DRIVE STAKES; HAND OR POWER DIGGING FOR AND IDENTIFICATION OF MARKERS OR MONUMENTS; PERFORM AND CHECK CALCULATIONS; REVIEW AND UNDERSTAND CONSTRUCTION PLANS AND LAND SURVEY MATERIALS).....\$ 35.00 11.50

TRAFFIC CONTROL PERSON

(TEMPORARY SIGNAGE).....\$ 21.49 14.80

TRUCK DRIVER (Group 1).....\$ 36.00 11.50

MECHANIC; TRACTOR TRAILER DRIVER; TRUCK DRIVER (HAULING MACHINERY INCLUDING OPERATION OF HAND AND POWER OPERATED WINCHES)

WINCHES)

TRUCK DRIVER (Group 2).....\$ 33.00	11.50
FOUR OR MORE AXLE UNIT, STRAIGHT BODY TRUCK	
TRUCK DRIVER (Group 3).....\$ 31.00	11.50
BITUMINOUS DISTRIBUTOR DRIVER; BITUMINOUS DISTRIBUTOR (ONE PERSON OPERATION); THREE AXLE UNITS	
TRUCK DRIVER (Group 4).....\$ 23.70	6.91
BITUMINOUS DISTRIBUTOR SPRAY OPERATOR (REAR AND OILER); DUMP PERSON; GREASER; PILOT CAR DRIVER; RUBBER-TIRED, SELF-PROPELLED PACKER UNDER 8 TONS; TWO AXLE UNIT; SLURRY OPERATOR; TANK TRUCK HELPER (GAS, OIL, ROAD OIL, AND WATER); TRACTOR OPERATOR, UNDER 50 H.P.	
Tunnel Miner.....\$ 38.14	24.24
UNDERGROUND AND OPEN DITCH LABORER (EIGHT FEET BELOW STARTING GRADE LEVEL).....\$ 38.14	
	24.68
WIRING SYSTEM TECHNICIAN.....\$ 41.42	18.16
WIRING SYSTEMS INSTALLER.....\$ 29.02	16.46

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$17.75) or 13658 (\$13.30). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

TRUCK DRIVER (Group 2).....\$ 33.00	11.50
FOUR OR MORE AXLE UNIT, STRAIGHT BODY TRUCK	
TRUCK DRIVER (Group 3).....\$ 31.00	11.50
BITUMINOUS DISTRIBUTOR DRIVER; BITUMINOUS DISTRIBUTOR (ONE PERSON OPERATION); THREE AXLE UNITS	
TRUCK DRIVER (Group 4).....\$ 23.70	6.91
BITUMINOUS DISTRIBUTOR SPRAY OPERATOR (REAR AND OILER); DUMP PERSON; GREASER; PILOT CAR DRIVER; RUBBER-TIRED, SELF-PROPELLED PACKER UNDER 8 TONS; TWO AXLE UNIT; SLURRY OPERATOR; TANK TRUCK HELPER (GAS, OIL, ROAD OIL, AND WATER); TRACTOR OPERATOR, UNDER 50 H.P.	
Tunnel Miner.....\$ 38.14	24.24
UNDERGROUND AND OPEN DITCH LABORER (EIGHT FEET BELOW STARTING GRADE LEVEL).....\$ 38.14	24.68
WIRING SYSTEM TECHNICIAN.....\$ 41.42	18.16
WIRING SYSTEMS INSTALLER.....\$ 29.02	16.46

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

=====

** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$17.20) or 13658 (\$12.90). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

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Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

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A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

- a) a survey underlying a wage determination
- b) an existing published wage determination
- c) an initial WHD letter setting forth a position on a wage determination matter
- d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator

is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

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Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

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Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.

U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210.

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END OF GENERAL DECISION"

Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

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Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210.

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END OF GENERAL DECISION"

MINNESOTA DEPARTMENT OF LABOR AND INDUSTRY PREVAILING WAGES FOR STATE FUNDED CONSTRUCTION PROJECTS



THIS NOTICE MUST BE POSTED ON THE JOBSITE IN A CONSPICUOUS PLACE

Construction Type: Highway and Heavy

Region Number: 08

Counties within region:

- CHIPPEWA-12
- KANDIYOHI-34
- LAC QUI PARLE-37
- LINCOLN-41
- LYON-42
- MCLEOD-46
- MEEKER-47
- MURRAY-51
- PIPESTONE-59
- REDWOOD-64
- RENVILLE-65
- YELLOW MEDICINE-87

Effective: 2024-11-18 Revised: 2024-12-09

This project is covered by Minnesota prevailing wage statutes. Wage rates listed below are the minimum hourly rates to be paid on this project.

All hours worked in excess of eight (8) hours per day or forty (40) hours per week shall be paid at a rate of one and one half (1 1/2) times the basic hourly rate. *Note: Overtime pay after eight (8) hours on the project must be paid even if the worker does not exceed forty (40) hours in the work week.*

Violations on MnDOT highways and road projects should be reported to:

Department of Transportation
Office of Construction
Transportation Building MS650
John Ireland Blvd
St. Paul, MN 55155
(651) 366-4209

All other prevailing wage violations and questions should be sent to:

Department of Labor and Industry
Prevailing Wage Section
443 Lafayette Road N
St Paul, MN 55155
(651) 284-5091
DLI.PrevWage@state.mn.us

LABOR CODE AND CLASS		EFFECT DATE	BASIC RATE	FRINGE RATE	TOTAL RATE
LABORERS (101 - 112) (SPECIAL CRAFTS 701 - 730)					
101	LABORER, COMMON (GENERAL LABOR WORK)	2024-11-18	36.64	24.68	61.32
		2025-05-01	39.01	26.01	65.02

LABOR CODE AND CLASS		EFFECT DATE	BASIC RATE	FRINGE RATE	TOTAL RATE
102	LABORER, SKILLED (ASSISTING SKILLED CRAFT JOURNEYMAN)	2024-11-18	36.64	24.68	61.32
		2025-05-01	39.01	26.01	65.02
103	LABORER, LANDSCAPING (GARDENER, SOD LAYER AND NURSERY OPERATOR)	2024-11-18	30.04	21.53	51.57
		2025-05-01	31.66	22.78	54.44
104	FLAG PERSON	2024-11-18	36.64	24.68	61.32
		2025-05-01	39.01	26.01	65.02
105	WATCH PERSON	2024-11-18	16.25	12.94	29.19
106	BLASTER	2024-11-18	39.64	24.24	63.88
107	PIPELAYER (WATER, SEWER AND GAS)	2024-11-18	40.14	24.68	64.82
		2025-05-01	42.51	26.01	68.52
108	TUNNEL MINER	2024-11-18	38.14	24.24	62.38
109	UNDERGROUND AND OPEN DITCH LABORER (EIGHT FEET BELOW STARTING GRADE LEVEL)	2024-11-18	38.14	24.68	62.82
		2025-05-01	40.51	26.01	66.52
110	SURVEY FIELD TECHNICIAN (OPERATE TOTAL STATION, GPS RECEIVER, LEVEL, ROD OR RANGE POLES, STEEL TAPE MEASUREMENT; MARK AND DRIVE STAKES; HAND OR POWER DIGGING FOR AND IDENTIFICATION OF MARKERS OR MONUMENTS; PERFORM AND CHECK CALCULATIONS; REVIEW AND UNDERSTAND CONSTRUCTION PLANS AND LAND SURVEY MATERIALS). THIS CLASSIFICATION DOES NOT APPLY TO THE WORK PERFORMED ON A PREVAILING WAGE PROJECT BY A LAND SURVEYOR WHO IS LICENSED PURSUANT TO MINNESOTA STATUTES, SECTIONS 326.02 TO 326.15.	2024-11-18	35.00	11.50	46.50
111	TRAFFIC CONTROL PERSON (TEMPORARY SIGNAGE)	2024-11-18	21.49	14.80	36.29

LABOR CODE AND CLASS		EFFECT DATE	BASIC RATE	FRINGE RATE	TOTAL RATE
112	QUALITY CONTROL TESTER (FIELD AND COVERED OFF-SITE FACILITIES; TESTING OF AGGREGATE, ASPHALT, AND CONCRETE MATERIALS); LIMITED TO MN DOT HIGHWAY AND HEAVY CONSTRUCTION PROJECTS WHERE THE MN DOT HAS RETAINED QUALITY ASSURANCE PROFESSIONALS TO REVIEW AND INTERPRET THE RESULTS OF QUALITY CONTROL TESTERS. SERVICES PROVIDED BY THE CONTRACTOR.	2024-11-18	16.04	0.00	16.04
SPECIAL EQUIPMENT (201 - 204)					
201	ARTICULATED HAULER	2024-11-18	42.49	25.00	67.49
202	BOOM TRUCK	2024-11-18	31.16	23.45	54.61
203	LANDSCAPING EQUIPMENT, INCLUDES HYDRO SEEDER OR MULCHER, SOD ROLLER, FARM TRACTOR WITH ATTACHMENT SPECIFICALLY SEEDING, SODDING, OR PLANT, AND TWO-FRAMED FORKLIFT (EXCLUDING FRONT, POSIT-TRACK, AND SKID STEER LOADERS), NO EARTHWORK OR GRADING FOR ELEVATIONS	2024-11-18	30.04	21.53	51.57
		2025-05-01	31.66	22.78	54.44
204	OFF-ROAD TRUCK	2024-11-18	41.29	23.45	64.74
205	PAVEMENT MARKING OR MARKING REMOVAL EQUIPMENT (ONE OR TWO PERSON OPERATORS); SELF-PROPELLED TRUCK OR TRAILER MOUNTED UNITS.	2024-11-18	33.91	23.49	57.40
HIGHWAY/HEAVY POWER EQUIPMENT OPERATOR					
GROUP 2		2024-11-18	45.61	26.90	72.51
		2025-05-05	47.24	29.40	76.64
302	HELICOPTER PILOT (HIGHWAY AND HEAVY ONLY)				
303	CONCRETE PUMP (HIGHWAY AND HEAVY ONLY)				
304	ALL CRANES WITH OVER 135-FOOT BOOM, EXCLUDING JIB (HIGHWAY AND HEAVY ONLY)				

LABOR CODE AND CLASS	EFFECT DATE	BASIC RATE	FRINGE RATE	TOTAL RATE
305				
				DRAGLINE, CRAWLER, HYDRAULIC BACKHOE (TRACK OR WHEEL MOUNTED) AND/OR OTHER SIMILAR EQUIPMENT WITH SHOVEL-TYPE CONTROLS THREE CUBIC YARDS AND OVER MANUFACTURER.S RATED CAPACITY INCLUDING ALL ATTACHMENTS. (HIGHWAY AND HEAVY ONLY)
306				GRADER OR MOTOR PATROL
307				PILE DRIVING (HIGHWAY AND HEAVY ONLY)
308				TUGBOAT 100 H.P. AND OVER WHEN LICENSE REQUIRED (HIGHWAY AND HEAVY ONLY)
GROUP 3	2024-11-18	45.01	26.90	71.91
	2025-05-05	46.61	29.40	76.01
309				ASPHALT BITUMINOUS STABILIZER PLANT
310				CABLEWAY
311				CONCRETE MIXER, STATIONARY PLANT (HIGHWAY AND HEAVY ONLY)
312				DERRICK (GUY OR STIFFLEG)(POWER)(SKIDS OR STATIONARY) (HIGHWAY AND HEAVY ONLY)
313				DRAGLINE, CRAWLER, HYDRAULIC BACKHOE (TRACK OR WHEEL MOUNTED) AND/OR SIMILAR EQUIPMENT WITH SHOVEL-TYPE CONTROLS, UP TO THREE CUBIC YARDS MANUFACTURER.S RATED CAPACITY INCLUDING ALL ATTACHMENTS (HIGHWAY AND HEAVY ONLY)
314				DREDGE OR ENGINEERS, DREDGE (POWER) AND ENGINEER
315				FRONT END LOADER, FIVE CUBIC YARDS AND OVER INCLUDING ATTACHMENTS. (HIGHWAY AND HEAVY ONLY)
316				LOCOMOTIVE CRANE OPERATOR
317				MIXER (PAVING) CONCRETE PAVING, ROAD MOLE, INCLUDING MUCKING OPERATIONS, CONWAY OR SIMILAR TYPE
318				MECHANIC . WELDER ON POWER EQUIPMENT (HIGHWAY AND HEAVY ONLY)
319				TRACTOR . BOOM TYPE (HIGHWAY AND HEAVY ONLY)
320				TANDEM SCRAPER
321				TRUCK CRANE . CRAWLER CRANE (HIGHWAY AND HEAVY ONLY)
322				TUGBOAT 100 H.P AND OVER (HIGHWAY AND HEAVY ONLY)
GROUP 4	2024-11-18	44.67	26.90	71.57
	2025-05-05	46.25	29.40	75.65
323				AIR TRACK ROCK DRILL
324				AUTOMATIC ROAD MACHINE (CMI OR SIMILAR) (HIGHWAY AND HEAVY ONLY)
325				BACKFILLER OPERATOR
326				CONCRETE BATCH PLANT OPERATOR (HIGHWAY AND HEAVY ONLY)
327				BITUMINOUS ROLLERS, RUBBER TIRED OR STEEL DRUMMED (EIGHT TONS AND OVER)
328				BITUMINOUS SPREADER AND FINISHING MACHINES (POWER), INCLUDING PAVERS, MACRO SURFACING AND MICRO SURFACING, OR SIMILAR TYPES (OPERATOR AND SCREED PERSON)
329				BROKK OR R.T.C. REMOTE CONTROL OR SIMILAR TYPE WITH ALL ATTACHMENTS
330				CAT CHALLENGER TRACTORS OR SIMILAR TYPES PULLING ROCK WAGONS, BULLDOZERS AND SCRAPERS
331				CHIP HARVESTER AND TREE CUTTER
332				CONCRETE DISTRIBUTOR AND SPREADER FINISHING MACHINE, LONGITUDINAL FLOAT, JOINT MACHINE, AND SPRAY MACHINE

LABOR CODE AND CLASS	EFFECT DATE	BASIC RATE	FRINGE RATE	TOTAL RATE
333	CONCRETE MIXER ON JOBSITE (HIGHWAY AND HEAVY ONLY)			
334	CONCRETE MOBIL (HIGHWAY AND HEAVY ONLY)			
335	CRUSHING PLANT (GRAVEL AND STONE) OR GRAVEL WASHING, CRUSHING AND SCREENING PLANT			
336	CURB MACHINE			
337	DIRECTIONAL BORING MACHINE			
338	DOPE MACHINE (PIPELINE)			
339	DRILL RIGS, HEAVY ROTARY OR CHURN OR CABLE DRILL (HIGHWAY AND HEAVY ONLY)			
340	DUAL TRACTOR			
341	ELEVATING GRADER			
342	FORK LIFT OR STRADDLE CARRIER (HIGHWAY AND HEAVY ONLY)			
343	FORK LIFT OR LUMBER STACKER (HIGHWAY AND HEAVY ONLY)			
344	FRONT END, SKID STEER OVER 1 TO 5 C YD			
345	GPS REMOTE OPERATING OF EQUIPMENT			
346	HOIST ENGINEER (POWER) (HIGHWAY AND HEAVY ONLY)			
347	HYDRAULIC TREE PLANTER			
348	LAUNCHER PERSON (TANKER PERSON OR PILOT LICENSE)			
349	LOCOMOTIVE (HIGHWAY AND HEAVY ONLY)			
350	MILLING, GRINDING, PLANING, FINE GRADE, OR TRIMMER MACHINE			
351	MULTIPLE MACHINES, SUCH AS AIR COMPRESSORS, WELDING MACHINES, GENERATORS, PUMPS (HIGHWAY AND HEAVY ONLY)			
352	PAVEMENT BREAKER OR TAMPING MACHINE (POWER DRIVEN) MIGHTY MITE OR SIMILAR TYPE			
353	PICKUP SWEEPER, ONE CUBIC YARD AND OVER HOPPER CAPACITY(HIGHWAY AND HEAVY ONLY)			
354	PIPELINE WRAPPING, CLEANING OR BENDING MACHINE			
355	POWER PLANT ENGINEER, 100 KWH AND OVER (HIGHWAY AND HEAVY ONLY)			
356	POWER ACTUATED HORIZONTAL BORING MACHINE, OVER SIX INCHES			
357	PUGMILL			
358	PUMPCRETE (HIGHWAY AND HEAVY ONLY)			
359	RUBBER-TIRED FARM TRACTOR WITH BACKHOE INCLUDING ATTACHMENTS (HIGHWAY AND HEAVY ONLY)			
360	SCRAPER			
361	SELF-PROPELLED SOIL STABILIZER			
362	SLIP FORM (POWER DRIVEN) (PAVING)			
363	TIE TAMPER AND BALLAST MACHINE			
364	TRACTOR, BULLDOZER (HIGHWAY AND HEAVY ONLY)			
365	TRACTOR, WHEEL TYPE, OVER 50 H.P. WITH PTO UNRELATED TO LANDSCAPING (HIGHWAY AND HEAVY ONLY)			
366	TRENCHING MACHINE (SEWER, WATER, GAS) EXCLUDES WALK BEHIND TRENCHER (HIGHWAY AND HEAVY ONLY)			
367	TUB GRINDER, MORBARK, OR SIMILAR TYPE			
368	WELL POINT DISMANTLING OR INSTALLATION (HIGHWAY AND HEAVY ONLY)			
GROUP 5	2024-11-18	41.36	26.90	68.26

LABOR CODE AND CLASS		EFFECT DATE	BASIC RATE	FRINGE RATE	TOTAL RATE
		2025-05-05	42.77	29.40	72.17
369	AIR COMPRESSOR, 600 CFM OR OVER (HIGHWAY AND HEAVY ONLY)				
370	BITUMINOUS ROLLER (UNDER EIGHT TONS)				
371	CONCRETE SAW (MULTIPLE BLADE) (POWER OPERATED)				
372	FORM TRENCH DIGGER (POWER)				
373	FRONT END, SKID STEER UP TO 1C YD				
374	GUNITE GUNALL (HIGHWAY AND HEAVY ONLY)				
375	HYDRAULIC LOG SPLITTER				
376	LOADER (BARBER GREENE OR SIMILAR TYPE)				
377	POST HOLE DRIVING MACHINE/POST HOLE AUGER				
378	POWER ACTUATED AUGER AND BORING MACHINE				
379	POWER ACTUATED JACK				
380	PUMP (HIGHWAY AND HEAVY ONLY)				
381	SELF-PROPELLED CHIP SPREADER (FLAHERTY OR SIMILAR)				
382	SHEEP FOOT COMPACTOR WITH BLADE . 200 H.P. AND OVER				
383	SHOULDERING MACHINE (POWER) APSCO OR SIMILAR TYPE INCLUDING SELF-PROPELLED SAND AND CHIP SPREADER				
384	STUMP CHIPPER AND TREE CHIPPER				
385	TREE FARMER (MACHINE)				
GROUP 6		2024-11-18	38.06	25.00	63.06
387	CAT, CHALLENGER, OR SIMILAR TYPE OF TRACTORS, WHEN PULLING DISK OR ROLLER				
388	CONVEYOR (HIGHWAY AND HEAVY ONLY)				
389	DREDGE DECK HAND				
390	FIRE PERSON OR TANK CAR HEATER (HIGHWAY AND HEAVY ONLY)				
391	GRAVEL SCREENING PLANT (PORTABLE NOT CRUSHING OR WASHING)				
392	GREASER (TRACTOR) (HIGHWAY AND HEAVY ONLY)				
393	LEVER PERSON				
394	OILER (POWER SHOVEL, CRANE, TRUCK CRANE, DRAGLINE, CRUSHERS, AND MILLING MACHINES, OR OTHER SIMILAR HEAVY EQUIPMENT) (HIGHWAY AND HEAVY ONLY)				
395	POWER SWEEPER				
396	SHEEP FOOT ROLLER AND ROLLERS ON GRAVEL COMPACTION, INCLUDING VIBRATING ROLLERS				
397	TRACTOR, WHEEL TYPE, OVER 50 H.P., UNRELATED TO LANDSCAPING				
TRUCK DRIVERS					
GROUP 1		2024-11-18	36.00	11.50	47.50
601	MECHANIC . WELDER				
602	TRACTOR TRAILER DRIVER				
603	TRUCK DRIVER (HAULING MACHINERY INCLUDING OPERATION OF HAND AND POWER OPERATED WINCHES)				

LABOR CODE AND CLASS		EFFECT DATE	BASIC RATE	FRINGE RATE	TOTAL RATE
GROUP 2		2024-11-18	33.00	11.50	44.50
604	FOUR OR MORE AXLE UNIT, STRAIGHT BODY TRUCK				
GROUP 3		2024-11-18	31.00	11.50	42.50
605	BITUMINOUS DISTRIBUTOR DRIVER				
606	BITUMINOUS DISTRIBUTOR (ONE PERSON OPERATION)				
607	THREE AXLE UNITS				
GROUP 4		2024-11-18	23.70	6.91	30.61
608	BITUMINOUS DISTRIBUTOR SPRAY OPERATOR (REAR AND OILER)				
609	DUMP PERSON				
610	GREASER				
611	PILOT CAR DRIVER				
612	RUBBER-TIRED, SELF-PROPELLED PACKER UNDER 8 TONS				
613	TWO AXLE UNIT				
614	SLURRY OPERATOR				
615	TANK TRUCK HELPER (GAS, OIL, ROAD OIL, AND WATER)				
616	TRACTOR OPERATOR, UNDER 50 H.P.				
SPECIAL CRAFTS					
701	HEATING AND FROST INSULATORS	2024-11-18	17.50	2.79	20.29
702	BOILERMAKERS	2024-11-18	46.00	31.93	77.93
		2025-01-01	48.35	31.93	80.28
703	BRICKLAYERS	FOR RATE CALL 651-284-5091 OR EMAIL DLIPREVVAGE@STATE.MN.US			
704	CARPENTERS	2024-11-18	37.65	27.08	64.73
		2025-01-01	37.65	27.08	64.73
		2025-05-01	42.85	27.08	69.93
705	CARPET LAYERS (LINOLEUM)	FOR RATE CALL 651-284-5091 OR EMAIL DLIPREVVAGE@STATE.MN.US			
706	CEMENT MASONS	2024-11-18	43.00	23.72	66.72
707	ELECTRICIANS	2024-11-18	41.00	23.10	64.10

LABOR CODE AND CLASS	EFFECT DATE	BASIC RATE	FRINGE RATE	TOTAL RATE
711 GROUND PERSON	2024-11-18	16.63	6.38	23.01
712 IRONWORKERS	2024-11-18	46.00	34.11	80.11
713 LINEMAN	2024-11-18	50.86	23.06	73.92
714 MILLWRIGHT	2024-11-18	38.23	29.18	67.41
715 PAINTERS (INCLUDING HAND BRUSHED, HAND SPRAYED, AND THE TAPING OF PAVEMENT MARKINGS)	2024-11-18	33.91	23.49	57.40
716 PILEDRIVER (INCLUDING VIBRATORY DRIVER OR EXTRACTOR FOR PILING AND SHEETING OPERATIONS)	2024-11-18	45.71	29.73	75.44
	2025-01-01	45.71	29.73	75.44
	2025-05-01	49.46	30.23	79.69
717 PIPEFITTERS . STEAMFITTERS	2024-11-18	41.97	25.92	67.89
719 PLUMBERS	2024-11-18	51.04	30.58	81.62
	2025-05-01	54.79	30.58	85.37
721 SHEET METAL WORKERS	2024-11-18	40.88	25.10	65.98
723 TERRAZZO WORKERS	FOR RATE CALL 651-284-5091 OR EMAIL DLLPREVWAGE@STATE.MN.US			
724 TILE SETTERS	FOR RATE CALL 651-284-5091 OR EMAIL DLLPREVWAGE@STATE.MN.US			
725 TILE FINISHERS	FOR RATE CALL 651-284-5091 OR EMAIL DLLPREVWAGE@STATE.MN.US			
727 WIRING SYSTEM TECHNICIAN	2024-11-18	41.42	18.16	59.58
728 WIRING SYSTEMS INSTALLER	2024-11-18	29.02	16.46	45.48
729 ASBESTOS ABATEMENT WORKER	2024-11-18	39.86	24.61	64.47
	2025-01-01	41.23	25.99	67.22
730 SIGN ERECTOR				

LABOR CODE AND CLASS

EFFECT DATE BASIC RATE FRINGE RATE TOTAL RATE

FOR RATE CALL 651-284-5091 OR EMAIL
DLI.PREVIEWAGE@STATE.MN.US

Dec. 18, 2023

Notice of truck rental rate certification and effective date

The Department of Labor and Industry (DLI) commissioner has certified the minimum truck rental rates for state-funded highway projects effective Dec. 18, 2023. This certification follows the publication of the Notice of Truck Rental Rate Determination in the State Register on Nov. 27, 2023, and the informal conference held pursuant to Minnesota Rules, part 5200.1105 on Dec. 11, 2023.

According to Minnesota Rules, part 5200.1105, the purpose of the informal conference was for DLI to obtain further input regarding the determined rates prior to the certification. No written input regarding the determination was received by DLI prior to the informal conference.

The truck rental rate is determined for each equipment type by adding the average hourly cost of operating the vehicle to the certified prevailing-wage rate for the driver. The average hourly operating costs are determined by voluntary survey of truck owner operators, trucking contractors and trucking firms. Cost data used in DLI's analysis must be representative of five trucking firms of various size and five independent truck owner operators for each type of truck.

The determination of the minimum truck rental rates by region are as follows.

Three-axle units

Region	Effective date	607 driver rate	Operating cost	Truck rental rate
Region 1	Certification date	\$58.61	\$37.35	\$95.96
	Increase May 1, 2024	\$61.54	\$37.35	\$98.89
Region 2	Certification date	\$51.97	\$37.35	\$89.32
	Increase May 1, 2024	\$54.57	\$37.35	\$91.92
Region 3	Certification date	\$45.02	\$37.35	\$82.37
Region 4	Certification date	\$51.97	\$37.35	\$89.32

Region	Effective date	607 driver rate	Operating cost	Truck rental rate
	Increase May 1, 2024	\$54.57	\$37.35	\$91.92
Region 5	Certification date	\$39.50	\$37.35	\$76.85
Region 6	Certification date	\$54.16	\$37.35	\$91.51
Region 7	Certification date	\$46.65	\$37.35	\$84.00
Region 8	Certification date	\$32.16	\$37.35	\$69.51
Region 9	Certification date	\$56.36	\$37.35	\$93.71
Region 10	Certification date	\$55.96	\$37.35	\$93.31

Four or more axle units

Region	Effective date	604 driver rate	Operating cost	Truck rental rate
Region 1	Certification date	\$58.71	\$51.50	\$110.21
	Increase May 1, 2024	\$61.65	\$51.50	\$113.15
Region 2	Certification date	\$52.11	\$51.50	\$103.61
	Increase May 1, 2024	54.72	\$51.50	\$106.22
Region 3	Certification date	\$38.51	\$51.50	\$90.01
Region 4	Certification date	\$53.73	\$51.50	\$105.23
Region 5	Certification date	\$44.00	\$51.50	\$95.50
Region 6	Certification date	\$54.26	\$51.50	\$105.76

Region 7	Certification date	\$46.20	\$51.50	\$97.70
Region 8	Certification date	\$43.75	\$51.50	\$95.25
Region 9	Certification date	\$56.46	\$51.50	\$107.96
Region 10	Certification date	\$56.06	\$51.50	\$107.56

Tractor

Region	Effective date	602 driver rate	Operating cost	Tractor-only truck rental rate	Plus trailer operating cost	Tractor trailer rental rate
Region 1	Certification date	\$59.29	\$54.96	\$114.25	\$11.46	\$125.71
	Increase May 1, 2024	\$62.25	\$54.96	\$117.21	\$11.46	\$128.67
Region 2	Certification date	\$52.66	\$54.96	\$107.62	\$11.46	\$119.08
	Increase May 1, 2024	\$55.29	\$54.96	\$110.25	\$11.46	\$121.71
Region 3	Certification date	\$48.35	\$54.96	\$103.31	\$11.46	\$114.77
Region 4	Certification date	\$38.30	\$54.96	\$93.26	\$11.46	\$104.72
Region 5	Certification date	\$42.00	\$54.96	\$96.96	\$11.46	\$108.42
Region 6	Certification date	\$39.50	\$54.96	\$94.46	\$11.46	\$105.92
Region 7	Certification date	\$45.40	\$54.96	\$100.36	\$11.46	\$111.82
Region 8	Certification date	\$48.45	\$54.96	\$103.41	\$11.46	\$114.87
Region 9	Certification date	\$48.75	\$54.96	\$103.71	\$11.46	\$115.17

Region 10	Certification date	\$48.45	\$54.96	\$103.41	\$11.46	\$114.87
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The current operating costs and truck rental rates may be reviewed by accessing DLI's website at <https://dli.mn.gov/business/employment-practices/prevaling-wage-minimum-truck-rental-rates>. Questions about the truck rental rates or the informal conference notice below can be answered by calling 651-284-5192.

The minimum truck rental rate for these four types of trucks in the State's 10 highway and heavy construction areas will be effective for all highway and heavy construction projects financed in whole or part with state funds advertised for bid on or after the day the notice of certification is published in the *State Register*.

Sincerely,

Nicole Blissenbach

DLI commissioner

NOTICE TO BIDDERS
WORK UNDER THE CONTRACT
July 8, 2016

Pursuant to Special Provisions Divisions A-Labor, bidders are advised that “work under the contract” for the purposes of performing on a MnDOT contract generally means, “ all construction activities associated with the public works project, including any required hauling activities on the site of, or to or from a public works project and work conducted pursuant to a contract...regardless of whether the construction activity or work is performed by the prime contractor, subcontractor, trucking broker, trucking firms, independent contractor, or employee or agent of any of the foregoing entities, and regardless of which entity or person hire or contracts with another.” *J.D. Donovan, Inc. vs. Minnesota Department of Transportation*, 878 N.W.2d 1 (2016) quoting Minn. R. 5200.1106, subp. 2(A).

Bidders are further advised that pursuant to the Minnesota Supreme Court’s decision in *J.D. Donovan, Inc. vs. Minnesota Department of Transportation*, 878 N.W.2d 1 (2016), “work under the contract” excludes hauling oil offsite in hauling activities **not** to, from, or on the project work site.

For the purposes of the Prevailing Wage Act, a laborer must be “doing or contracting to do all or part of the work under a contract.” Minn. Stat. § 177.44, subd. 1. Therefore, the Prevailing Wage Act does **not** apply to hours worked when hauling oil offsite in hauling activities not to, from, or on the project work site.

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DIVISION S

S-1 CONTACT INFORMATION

Direct questions about this Project, including pre-bid questions, to Ben Sandoz at 320-441-9111 and benjamin.sandoz@state.mn.us.

S-2 SPECIAL PROVISIONS RELATING TO TRIBAL EMPLOYMENT

REVISED 06/30/22

The Department promotes and encourages Indian employment on transportation Projects on or near reservations, consistent with 23 USC §140 (d).

S-2.1 This Project is on or near a reservation. The Contractor must work with the tribal governments to use Indian labor in performing Contract Work. The Contractor must contact the Tribal employment rights officers to identify Indian employment opportunities.

Lower Sioux	Mike Watterson	507-430-8911	mike.watterson@lowersioux.com
Lower Sioux	Miranda Sam	507-697-8630	miranda.sam@lowersioux.com
Upper Sioux	Jeremy McLaughlin	320-564-6372	jeremym@uppersiouxcommunity-nsn.gov

S-2.2 The Department advises the Contractor to consider Indians for designated On-the-Job Training (OJT) positions. OJT positions can be in Highway heavy trades classifications (such as heavy Equipment operators, truck drivers, carpenters, laborers, cement masons, iron workers, electricians, painters, pipefitters and plumbers).

See S-45 (2041) ON-THE-JOB TRAINING PROGRAM for OJT goals.

S-2.3 If the Contractor or Subcontractor is not in compliance with these Special Provisions, the Department will address the noncompliance with the Contractor or Subcontractor and the Tribal employment rights officer. The Contractor must meet with the Tribal employment rights officer to discuss Indian employment issues if requested by the tribe.

The Contractor must submit the Indian Employment Tracking Form, <http://www.dot.state.mn.us/civilrights/indian-employment.html>, to the Department's Office of Civil Rights no later than 90 Calendar Days after receipt of the semi-final estimate as defined in MnDOT 1908.2 and as per 1516.3(7) Completion of Work. If the Contractor fails to submit the form, the Engineer may assess a Monetary Deduction, in accordance with the Contract. The form must list all Indians who were hired for the Project, by the Contractor or a Subcontractor, after being referred by one of the federally-recognized tribal TERO offices in Minnesota.

S-2.4 If the Contractor is considering suspending or terminating an employee referred by the Tribal employment rights officer, the Contractor must notify the Tribal employment rights officer to seek assistance in resolving the problem prior to releasing the employee. Nothing in these Special Provisions is intended to interfere with the Contractor's ability to dismiss any employee for cause including, but not limited to, lack of adequate skills or training, inability to perform because of State or Federal law, or breach of the Contractor's safety standards or other standards of conduct.

S-2.5 Indian employment requirements supplement, but do not replace, other equal opportunity requirements.

S-3 **PROTECTION OF FISH AND WILDLIFE RESOURCES**
REVISED 06/28/24

S-3.1 Compliance with Environmental Documentation

The Project is located in an area with protected fish & wildlife resources and/or threatened & endangered species. The Contractor must protect these resources in accordance with State and Federal regulations and must implement all applicable avoidance and minimization measures (AMMs).

The Environmental Document for this Project is available. See S-26 (1712) PROTECTION AND RESTORATION OF PROPERTY.

A ENDANGERED INSECT PROTECTION

Contractor must not apply insecticides or fungicides.

Contractor must minimize the use of herbicides. If herbicides are to be used, Contractor must apply herbicides via spot treatments. Contractor must not apply herbicides through broadcast applications, including but not limited to, aerial applications or vehicle mounted sprayers.

Contractor must contact the Department's wildlife ecologist (<https://www.dot.state.mn.us/environment/wildlife.html>) if an exception is requested.

B BAT PROTECTION

The Project is located in an area inhabited by one or more protected bat species. The Contractor must ensure all operators, employees, and Contractors working in areas of known or presumed bat habitat are aware of environmental commitments and avoidance and minimization measures (AMMs) to protect both bats and their habitat. The Contractor must notify Project Subcontractors during the preconstruction meeting.

Contractor must direct temporary lighting, if used, away from wooded areas during the bat active season (April 1 to November 14, inclusive).

Contractor must immediately report (within 24 hours) all bat sightings, live or dead, to the Department's wildlife ecologist, <https://www.dot.state.mn.us/environment/wildlife.html>.

B.1 Tree Clearing Requirements

Winter tree clearing required – tree clearing allowed November 15 to March 31, inclusive.

Contractor must ensure tree removal is limited to that specified in the Plans. The Contractor must provide all Subcontractors performing Work with the clearing limits and how they are marked in the field (e.g., install bright colored stakes, flagging, or fencing) prior to any tree clearing to ensure that all clearing stays within identified clearing limits.

C BALD EAGLE PROTECTION

Bald Eagles are protected by the Bald and Golden Eagle Protection Act. No Bald Eagle nests are known within the project limits. However, if a Bald Eagle nest is discovered during Project activities, Contractor must stop Work and immediately report Bald Eagle nests to the Department's wildlife ecologist, <https://www.dot.state.mn.us/environment/wildlife.html>. Contractor must not Work within 300 feet of a Bald Eagle nest at any time. This includes foot traffic, vehicle parking, and/or equipment or material staging.

Contractor must not work within 300 ft of a Bald Eagle nest at any time. This includes foot traffic, vehicle parking, and/or equipment or material staging.

Contractor must immediately report all Bald Eagle nests to the Department's wildlife ecologist, <https://www.dot.state.mn.us/environment/wildlife.html>.

D MIGRATORY BIRD PROTECTION

Contractor must cover soil stockpiles when any surface of a stockpile is not in use for 48 hours or longer, Contractor must prevent bird nesting by either covering that surface with fabric or tarps or by grading that surface to a slope no steeper than 65 degrees.

S-4 **EQUAL EMPLOYMENT OPPORTUNITY**

REVISED 10/14/22

The Equal Employment Opportunity (EEO) Special Provisions contain the EEO rules and regulations for federal and/or state funded highway construction Projects in Minnesota.

The source of funding determines which EEO regulations and workforce participation goals apply to a specific Project:

- If the Project contains any federal funding, and has a total dollar value exceeding \$10,000, federal EEO regulations and workforce participation goals apply. The Minnesota Department of Transportation's Office of Civil Rights (MnDOT's Office of Civil Rights) monitors and reviews these Projects on behalf of the Federal Highway Administration (FHWA), under federal law (23 U.S.C. § 140) and its accompanying rules (23 C.F.R. § 230). The FHWA allows MnDOT's Office of Civil Rights to apply the state's workforce participation goals to federally funded construction Contracts.
- If the Project contains any state funding, and has a total dollar value exceeding \$100,000, state EEO regulations and workforce participation goals apply. MnDOT's Office of Civil Rights monitors and reviews these Projects in conjunction with the Minnesota Department of Human Rights under state law (Minn. Stat. § 363A.36) and its accompanying rules (Minn. R. 5000.3520 - .3530).
- If the Project contains any state and federal funding, and meets the total dollar value thresholds outlined above, both federal and state EEO regulations, and workforce participation goals apply. MnDOT's Office of Civil Rights monitors and reviews these Projects via a single review and monitoring process that meets federal and state requirements.

NOTICE OF REQUIREMENTS FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY

23 U.S.C. § 140, 23 C.F.R. § 230, 41 C.F.R. § 60, Minn. Stat. § 363A.36, Minn. R. 5000.3520 - .3530

A. The Contractor's attention is directed to the following:

1. Required Contract Provisions: Federal-Aid Construction Contracts Attachment (FHWA 1273) can be found here: https://edocs-public.dot.state.mn.us/edocs_public/DMResultSet/download?docId=19624648
2. Equal Employment Opportunity (EEO) State and Federal Laws, Policies and Rules Attachment: Minnesota Affirmative Action Requirements (Pages 1-2); Violence-Free and Respectful Workplace (Pages 3-7); Specific Federal Equal Employment Opportunity Responsibilities (Pages 8-11); Standard Federal and State Equal Employment Construction Contract Specifications (Pages 12-15); Equal Opportunity Clause (Pages 16-17) can be found here: https://edocs-public.dot.state.mn.us/edocs_public/DMResultSet/download?docId=19624471

B. The Contractor's compliance with 41 C.F.R. § 60-4, and Minn. Stat. § 363A.36 and its accompanying rules shall be based on the following: implementation of the Equal Opportunity Clause (Pages 16-17); adherence to the specific affirmative action obligations of the state and federal authorities outlined in these EEO Special Provisions and the Equal Employment Opportunity (EEO) State and Federal Laws, Policies and Rules Attachment; and good faith efforts to meet the applicable workforce participation goals detailed below.

C. Highway construction Contracts in excess of \$100,000 in state funds and/or \$10,000 in federal funds are subject to the workforce participation goals for minorities and women established by the Commissioner of the Minnesota Department of Human Rights (MDHR) under Minn. R. 5000.3520. The FHWA allows MnDOT's Office of Civil Rights to apply the state's workforce participation goals to federally funded construction Contracts. The Contractor's attention is directed to the following:

1. Workforce participation goals are percentages of total labor hours that minorities and women should perform in each trade on the Project. Compliance is measured against the total labor hours performed. The Contractor must ensure that labor hours for minorities and women remain substantially uniform in each trade for the duration of the Project.
2. Workforce participation goals are applied on a county-by-county basis.
3. For Projects spanning more than one county, the workforce participation goals of the assigned county apply. For statewide Projects, the highest workforce participation goals of any county located within the covered work area apply.
4. If the applicable workforce participation goals will not be met, the Contractor and any Subcontractor with estimated labor hours on the Project (except independent trucking operators) must demonstrate that specific and significant actions to recruit, hire, and retain minorities and women are being taken. The Contractor is responsible for ensuring Subcontractors are making these requisite good faith efforts.

D. The transfer of minorities and/or women, including employees and trainees, from different Projects or among Contractors for the sole purpose of meeting the workforce participation goals violates 41 C.F.R. § 60-4, and Minn. Stat. § 363A.36 and its accompanying rules. Such action is a breach of Contract.

E. The Contractor is directed to the following written notification requirements concerning Subcontracts:

1. If the Project is federally funded: The Office of Federal Contract Compliance Programs must receive written notification of any construction Subcontract over \$10,000 executed at any tier within ten (10) working days of the Contract award.
2. If the Project is state funded: The Office of Equity and Inclusion for Minnesota Businesses, a division of MDHR, must receive written notification of any construction Subcontracts over \$100,000 executed at any tier within ten (10) working days of the Contract award.

The written notification must provide the following information: Name, address, telephone number, and employee identification number of the Subcontractor; estimated amount of the Subcontract; Project location; and estimated start and end dates.

NOTICE TO CONTRACTOR AND SUBCONTRACTORS: REPORTING REQUIREMENTS

23 U.S.C. § 140, 23 C.F.R. § 230, Minn. Stat. § 363A.36, Minn. R. 5000.3520 - .3530

Workforce participation goals are applied on a county-by-county basis. For Projects spanning more than one county, the workforce participation goals of the assigned county apply. For statewide Projects, the highest workforce participation goals of any county located within the covered work area apply.

The workforce participation goals for this Project are:

Minority: 15%

Women: 12%

PRE-AWARD

A. The Contractor must complete and submit a Workforce Plan if the low bid amount is \$5,000,000 or more.

B. The Workforce Plan includes the following documents:

1. Project Information Form: To be completed by the Contractor;
2. Contractor Workforce Commitment Form: To be completed by the Contractor and any Subcontractors with estimated labor hours on the Project;
3. Workforce Hours – Project Overview Form: To be completed by the Contractor; and
4. Total Company Workforce Report: To be completed by the Contractor and any Subcontractors upon request.

- a. The Total Company Workforce Report can be found here:
mndot.gov/civilrights/forms.html.

The Contractor must select the regional Workforce Plan template that corresponds with Project location. The Workforce Plan templates can be found here: mndot.gov/civilrights/bid-results.html.

C. Approval of the Workforce Plan by MnDOT's Office of Civil Rights (OCR) is a condition of Contract award.

D. Approval is contingent upon the following:

1. Completion and submission of the Workforce Plan within five (5) business days of the bid opening. The five-day (5) period begins the first full business day after the bid opening date;
2. Completion and submission of all responses to specific Workforce Plan inquiries made by MnDOT's Office of Civil Rights of the Contractor or any of its Subcontractors with estimated labor hours on the Project; and
3. Ability of the Contractor or any of its Subcontractors with estimated labor hours on the Project to demonstrate that specific and significant actions to recruit, hire, and retain minorities and/or women are being taken if the applicable workforce participation goals will not be met.

E. Failure to complete and submit the Workforce Plan will result in the bid being rejected for failure to meet a condition precedent.

F. The execution of a collective bargaining agreement granting a union exclusive referral rights does not preclude compliance with the requirements of this section. As such, the inability of a union to provide candidates for employment relieves neither the Contractor nor any of its Subcontractors with estimated labor hours on the Project of the requirement to demonstrate that specific and significant actions to recruit, hire, and retain minorities and/or women are being taken if the applicable workforce participation goals will not be met.

POST-AWARD

A. The Contractor is directed to the following requirements concerning payroll submission:

1. The Contractor and its Subcontractors must complete and submit payroll weekly via the Civil Rights Labor Management System (CRL). Workforce participation goals are percentages of total labor hours captured through Contractor payroll submission.
2. All Contractors working on federal-aid highway construction Contracts of at least \$10,000 during the last week of July must report their workforce by job category, gender, and ethnicity. MnDOT's Office of Civil Rights compiles this data into a single report for the FHWA. Information on how to submit the required data can be found here: mndot.gov/civilrights/federal-aid-highway-construction-contractors-annual-eeo-report.html.

Failure to meet these post-award reporting requirements may result in the imposition of Contract sanctions, including withholding of progress payments.

B. MnDOT's Office of Civil Rights determines whether Contractors on highway construction Projects are meeting state and federal laws, rules, and regulations relating to EEO by conducting annual compliance reviews. Accordingly, it reserves the right to audit the Contractor or any of its Subcontractors.

C. Information concerning specific reporting requirements for On-the-Job Training and Tribal Employment is accessible via reference to the Index for Division S.

FINAL CLEARANCE

Pursuant to MnDOT Standard Specifications for Construction, Section 1516.3, "Completion of the Work, note (7)", the Contractor must notify the Engineer and MnDOT Office of Civil Rights when work is complete. MnDOT's Office of Civil Rights will issue a Final Clearance letter under MnDOT Standard Specifications for Construction, Section 1516.3, "Completion of the Work, note (7)".

S-5 ELECTRONIC SUBMISSION OF PAYROLLS AND STATEMENTS AND BIDDERS LISTS FOR FEDERALLY FUNDED PROJECTS

REVISED 08/08/22

These provisions govern: (1) how the Contractor and all Subcontractors must submit all certified payroll reports; (2) how the Contractor must submit electronic Subcontractor data; (3) how the Contractor and Subcontractors will demonstrate compliance with payment requirements; and (4) how Apparent Low Bidders must submit the Bidder/Quoter List. The Contractor must submit electronic payrolls through the AASHTOWare Project Civil Rights and Labor (CRL) system. These provisions supersede the requirements for paper submissions in SPECIAL PROVISIONS DIVISION A – LABOR and FHWA-1273, Section IV, paragraphs 3(b)(1) and 3(b)(2). These provisions supersede the DBE Consolidated Good Faith Efforts Form Parts E, F, G, and H; and the Contractor Payment Form provided in the DBE Special Provisions.

The Department will not provide additional compensation to ensure compliance with these provisions.

The MnDOT Contractor (Vendor) Lookup search engine, available at <https://transport.dot.state.mn.us/reference/refvendor.aspx>, allows Contractors to search for vendors, Subcontractors, and suppliers to ensure that they are in the CRL system.

S-5.1 SYSTEM REQUIREMENTS

The Contractor must submit certified payroll reports (CPRs), Bidder/Quoter List, prompt payment information, and Subcontractor data electronically into CRL. The Department will provide access to CRL. To use CRL, the Contractor must have the following:

- A computer running Windows 7 or newer
- Internet Explorer 11 or Google Chrome
- Microsoft Excel 2007 or newer
- Internet access

The CRL website is located at: <http://www.dot.state.mn.us/const/labor/civil-rights-labor.html>. The Department will provide login identification (ID) to designated employees of the Contractor and approved Subcontractors entered into the system for the Contract. The Contractor and all Subcontractors must follow the “Vendor Login Access to MnDOT AASHTOWare” located on the website prior to working on the Project. The login ID and password are unique to each designated employee and must not be shared with others.

Manuals, eLearning tools, and other important information are available on the CRL website.

S-5.2 CERTIFIED PAYROLL & SUBCONTRACTOR DATA SUBMISSION

The Contractor and all Subcontractors, including multiple truck operators (MTOs), must use CRL to submit CPRs. The Contractor must ensure that all Subcontractors have submitted their Vendor Forms to the Department and have received their login IDs prior to working on the Project. The Contractor must submit Request to Sublet data electronically into CRL prior to Subcontractors performing Work on the Project. The Engineer may at any time require, upon written demand, paper Request to Sublet documents from the Contractor for any Subcontractor(s) working on the Project; MTOs would be submitted on the MTO Request to Sublet form, available at: <http://www.dot.state.mn.us/const/labor/documents/forms/mtosubletform.pdf>.

The Contractor must request from the Engineer the Contract number and Project ID(s) and provide the information to approved Subcontractors working on the Project, including MTOs subject to SPECIAL PROVISIONS DIVISION A – LABOR. The Contractor may use the Contract search engine located at: <http://transport.dot.state.mn.us/reference/refprojectId.aspx>. The Contractor must ensure all Subcontractors and MTOs submit CPRs electronically into CRL. The Contractor must provide assistance to their Subcontractors and MTOs to enter CPR data accurately into the system.

There are four ways to submit certified payrolls electronically into the system:

- Manually add, copy, or modify data into CRL;
- Import payroll data with the CRL payroll spreadsheet XML converter tool available at: <https://xml.cloverleaf.net/spreadsheet/>;
- Convert payroll system program data to Payroll XML and import into CRL. Information on how to convert to Payroll SML may be found at: <https://xml.cloverleaf.net/resourcekit/>; or
- The Contractor may submit, on behalf of a Subcontractor and MTO, a payroll based on a signed, certified paper payroll through the Electronic Proxy Payroll Process.

Month-End Truck Report forms must be submitted directly to the Engineer and not through the electronic system.

The Engineer may at any time require, upon written demand, paper certified payroll reports from any Contractor(s) working on the Project.

S-5.3 BIDDER/QUOTER LIST REQUIREMENTS

The Apparent Low Bidder (ALB) is required to submit a Bidder/Quoter List electronically in CRL. The ALB must ensure that all Subcontractors and suppliers are listed in CRL by using the MnDOT Contractor (Vendor) Lookup search engine located at: <https://transport.dot.state.mn.us/reference/refvendor.aspx>. If a company is not listed or if any company information is incorrect, the ALB must ensure that the Subcontractor or supplier submit a Vendor Form, available at: <http://www.dot.state.mn.us/const/labor/documents/forms/contractorform.pdf>. The electronic list is completed by selecting the name of the firm from a prepopulated vendor list. The Contractor must enter the information below for each Subcontractor or supplier who provided a quote or bid to perform Work or supply Materials on the Project:

- Firm name (selected from drop-down list); and
- Bid items/scope of Work the firm will perform and total dollar amount of each bid item.

This requirement applies to all DBE and non-DBE Subcontractors and suppliers. The Bidder/Quoter List is due on the Submission Due Date specified in the DBE Special Provisions. The Contractor must submit the name of the company's authorized signatory. If you need additional assistance, please contact the Department's Office of Civil Rights.

S-5.4 PAYMENT

The Contractor shall enter all payments made to the first tier Subcontractor(s) into the Payment area of CRL for each estimate. The first tier Subcontractor will validate their payments received from the Contractor and must enter any payments made to lower tier Subcontractor(s). Lower tier Subcontractors must validate their payments received.

S-5.5 MINNESOTA GOVERNMENT DATA PRACTICES ACT

All CRL data are subject to the Minnesota Government Data Practices Act (MGDPA), Minnesota Statutes, Chapter 13. All users of CRL, including Bidders, Contractors, and Subcontractors, must establish security measures to prevent access to not public data or risk facing civil remedies under Minnesota Statutes, section 13.08, for the unauthorized access to or release of not public data.

S-5.6 APPROVAL OF PAYROLLS

"Approval" of payrolls within CRL does not indicate that the Department's Labor Compliance Unit has reviewed this data for accuracy or compliance with prevailing wage laws, nor does it indicate approval in writing as discussed in the Standard Specifications. "Approval" of payrolls within CRL only indicates that specific payrolls have been received by the Department's District offices. The Department reserves the right under the Contract and SPECIAL PROVISIONS DIVISION A – LABOR to review payrolls to ensure compliance with State and Federal prevailing wage laws and other applicable labor laws.

S-6 (1102) ABBREVIATIONS AND MEASUREMENT UNITS

RESTORED AND REVISED 06/30/23

S-6.1 Add the following to Table 1102.1-1 in MnDOT 1102:

Acronym or Short Form	Full Name or Meaning
NPT	American National Standard Taper Pipe Thread
RMC	Rigid Metal Conduit
SMC	Schedule of Materials Control

- S-6.2 Delete the following from Table 1102.1-1 in MnDOT 1102:

Acronym or Short Form	Full Name or Meaning
RSC	Rigid Steel Conduit

S-7 (1103) DEFINITIONS

RESTORED AND REVISED 06/30/23

- S-7.1 Delete and replace the definition for “Unit Day” in MnDOT 1103 with the following:

Unit Day
12:00 a.m. to 11:59 p.m. (0000-2359) or any portion thereof.

- S-7.2 Delete and replace the definition for “Working Day” in MnDOT 1103 with the following:

Working Day
Any Calendar Day, exclusive of Saturdays, Sundays, and Holidays, on which weather and other conditions not under the control of the Contractor will permit construction operations to proceed with the normal working force engaged in performing critical work.

- S-7.3 Add the following to MnDOT 1103:

Professional Land Surveyor
The Contract may require that the Contractor provide a Professional Land Surveyor, currently licensed by the State of Minnesota, to perform or supervise certain activities and/or responsibilities related to the Contract.

S-8 (1206) PREPARATION AND DELIVERY OF PROPOSAL

RESTORED 06/30/23

- S-8.1 Delete and replace MnDOT 1206.1 with the following:

1206.1 PREPARATION AND DELIVERY

The Bidder shall use the electronic submittal process. The Bidder shall submit the electronic Proposal in accordance with AASHTOWare Project Bids software and the [Bid Express](http://www.bidx.com) website (www.bidx.com).

The Bidder shall submit its Proposal by the date and time for opening Proposals. Bid Express will not accept Proposals past the date and time of the opening of Proposals.

The Bidder shall submit the Proposal Guaranty electronically through the Project Bids software or via email at biddocsubmittal.DOT@state.mn.us by the due date and time of the opening of Proposals.

If a Bidder fails to provide a Unit Price for any Pay Item on the Bid Schedule, except for “Lump Sum” Pay Items, the Department will reject the Proposal.

If a Pay Item in the Proposal requires the Bidder to choose an alternate Pay Item, the Bidder shall indicate its choice in accordance with the Specifications for that Pay Item.

- S-8.2 Add the following to MnDOT 1206:

1206.3 RESPONSIBLE CONTRACTOR

The Department cannot award a construction Contract in excess of \$50,000 unless the Bidder is a “Responsible Contractor” as defined in Minnesota Statutes §16C.285, subdivision 3.

A Bidder must verify it meets the minimum criteria detailed in the law. A Bidder must submit its verification electronically by completing the “Responsible Contractor” section in the “Officers and Acknowledgements” Folder within the Electronic Bid File. A company officer must certify statements in that section. Bidders only need to complete the electronic verification; DO NOT email, fax, or send paper forms to the Department. The Department will not accept emailed, faxed, or other paper submissions and will only accept electronic verifications.

A Bidder must obtain verification from each Subcontractor it will have a direct contractual relationship with. At the Department’s request, a Bidder must submit signed Subcontractor verifications. A Contractor or Subcontractor must obtain annual verification from each motor carrier with which it has a direct contractual relationship. A motor carrier must give immediate written notice if it no longer meets the minimum responsible Contractor criteria. The requirement for Subcontractor verifications does not apply to:

- Design professionals licensed under Minnesota Statutes §326.06; and
- A business or person that supplies Materials, Equipment, or supplies to a Subcontractor on the Project, including performing delivering and unloading services in connection with the supply of Materials, Equipment, and supplies. But, a business or person must submit a verification if it delivers mineral Aggregate such as sand, Gravel, or stone that will be incorporated into the Work by depositing the Material substantially in place, directly or through spreaders, from the transporting vehicle.

A Bidder or Subcontractor who does not meet the minimum criteria specified in the statute, or who fails to verify compliance with the criteria, is not a “Responsible Contractor” and is ineligible to be awarded the Contract for this Project or to Work on this Project. Submitting a false verification makes the Bidder or Subcontractor ineligible to be awarded a construction Contract for this Project. Additionally, submitting a false statement may lead to Contract termination. If only one Bidder submits a bid, the Department may, but is not required to, award a Contract even if that Bidder does not meet the minimum criteria.

S-9 **(1208) PROPOSAL GUARANTY**
RESTORED 06/30/23

S-9.1 Delete and replace MnDOT 1208 with the following:

The Bidder shall include with its Proposal a Proposal Guaranty that meets the following requirements:

- (1) Equal to 5 percent of the total amount of the Proposal
- (2) Made payable to the Department
- (3) In the form of a bond

A Proposal Guaranty in the form of a bond must meet the following requirements:

- (1) Issued by a corporation authorized by the Minnesota Department of Commerce to contract as a Surety in the State of Minnesota
- (2) Conditioned on the execution of the Contract in accordance with 1306, “Execution and Approval of Contract”

S-10 **(1401) INTENT OF CONTRACT (PARTNERING)**
RESTORED 06/30/23

S-10.1 Add the following to MnDOT 1401:

1401.1 PARTNERING
Partnering is required on this Contract.

The Engineer will send out the pre-construction letter and questionnaire prior to the pre-construction conference. The Contractor must fill out and return the Questionnaire to the Engineer no later than 5 Working Days after receiving the request. An example pre-construction letter and questionnaire can be found in Appendix A, of MnDOT's "Partnering Field Guide".

Pre-activity planning discussions will be held prior to each major construction Activity and prior to any minor Activity when required by the Engineer. An example pre-activity discussion checklist can be found in Appendix G, of MnDOT's "Partnering Field Guide".

Partnering shall be conducted in accordance with MnDOT's "[Partnering Field Guide](#)."

All Work associated with partnering is Incidental, except as otherwise provided in the Contract.

S-11 **(1407) FINAL CLEANUP (RAILROAD)**
REVISED 06/30/23

Note: Wherever used in Sections 1407 (FINAL CLEANUP), 1505 (COOPERATION BY CONTRACTORS), 1708 (RAILROAD-HIGHWAY PROVISIONS), and 1717 (AIR, LAND and WATER POLLUTION) of the Special Provisions, the terms "Railway," "Railroad," "BNSF" and "Company" mean BNSF Railway Company.

S-1.1 The first paragraph set forth under MnDOT 1407 is supplemented as follows:

BNSF's property shall be left in a condition at least equal to that existing before the work was started, as determined by the Engineer and BNSF after consultation.

S-12 **(1505) COOPERATION BY CONTRACTORS (RAILROAD)**
NEW 11/08/21

The provisions of MnDOT 1505 are supplemented with the following:

Note: Wherever used in Sections 1407 (FINAL CLEANUP), 1505 (COOPERATION BY CONTRACTORS), 1708 (RAILROAD-HIGHWAY PROVISIONS), and 1717 (AIR, LAND and WATER POLLUTION) of the Special Provisions, the terms "Railway," "Railroad," "BNSF" and "Company" mean BNSF Railway Company.

The Contractor will be required to make his own arrangements with the Company for coordinating his operations and those of the Company. No compensation in addition to the Contract prices will be made to the Contractor for any costs incurred by him, or because of any delays to his forces or equipment, which may be caused by the operations of the Company.

COMPANY ADDRESS and PHONE NUMBER:

BNSF Railway Company
80 – 44th Ave. NE
Minneapolis, MN 55421

CONTACT PERSON

Alex Fiorini
BNSF Manager Public Projects
(Phone – 763/782-3476)

Average train traffic per 24-hour period on this route is a combination of 2 freight and 0 passenger trains at a timetable speed of 25 MPH (this information was provided by the Company in 2019 – if additional/current information is necessary, please contact the Company's Manager of Public Projects.

S-13 (1507) UTILITY PROPERTY AND SERVICE

REVISED 01/27/23

S-13.1 Delete and replace the second to the last paragraph of MnDOT 1507.1 with the following:

All utilities related to this Project are classified as "Level D," unless the Plans specifically state otherwise. This utility quality level was determined according to the guidelines of CI/ASCE 38-22, entitled to "Standard Guideline for Investigating and Documenting Existing Utilities."

S-13.2 Add the following to MnDOT 1507.2:

(3) The Contractor shall acquire a Positive Response confirmation from the Department for all proposed excavations when the Gopher State One Call has indicated that proposed excavations may affect the Department's utilities. The Contractor may call the Department's Electrical Services Section (ESS) Dispatch Locating to confirm the status of Department-owned Utility infrastructure. Contractor can contact the Department's Electrical Services Section (ESS) Dispatch Locating at (651) 366 -5750 or (651) 366-5751. The Contractor shall be responsible for all damage to Department-owned Utility infrastructure if the Contractor did not acquire a Positive Response confirmation from the Department.

S-13.3 Add the following to MnDOT 1507.2:

The following utility owners have existing facilities that may be affected by the work under this contract, all of which they intend where necessary to relocate or adjust in advance of or concurrently with the Contractor's operations.

CenturyLink

Dan Cobenais 612-500-6766 daniel.cobenais@lumen.com

See location(s) as depicted in the plans. MnDOT Contractor to provide 1-week minimum notification to utility owner to coordinate the relocation/adjustment for the proposed construction.

Dooley's Natural Gas

Nick Kniefel 320-979-0762 nkniefel@dooleypetro.com

D07-51 and D07-52 – TH 7 at approx. Sta 527+03. MnDOT Contractor to provide 1-week minimum notification to Dooley's Natural Gas to coordinate the gas line adjustment for the culvert installation. Allow Dooley's Natural Gas 3 days to adjust their gas line after removing the culvert in Prinsburg.

Federated Telephone

Tom Lorenz 320-324-7111 tommytt@fedtel.net

See location(s) as depicted in the plans. MnDOT Contractor to provide 1-week minimum notification to utility owner to coordinate the relocation/adjustment for the proposed construction.

Frontier Communications

Chuck Salen 712-541-1941 charles.salen@ftr.com

Jeremiah Mathews 218-393-6208 jeremiah.mathews@ftr.com

See location(s) as depicted in the plans. MnDOT Contractor to provide 1-week minimum notification to utility owner to coordinate the relocation/adjustment for the proposed construction.

Interstate Telecommunications Cooperative

Josh Cokens 605-874-2181 joshua.cokens@itccoop.com

Jerome Salanoa 605-874-2181 jerome.salanoa@itccoop.com

See location(s) as depicted in the plans. MnDOT Contractor to provide 1-week minimum notification to utility owner to coordinate the relocation/adjustment for the proposed construction.

Lyon-Lincoln Electric Cooperative

Lyle Lamote 507-247-5505 llamote@llec.coop

LL68-01 – TH 68 at approx. STA 19+19. MnDOT Contractor to provide 1-week minimum notification to Lyon-Lincoln Electric to get the power service shut off for culvert installation.

Midcontinent

Derrick Abraham 320-980-3523 Derrick.Abraham@Midco.com

See location(s) as depicted in the plans. MnDOT Contractor to provide 1-week minimum notification to utility owner to coordinate the relocation/adjustment for the proposed construction.

Minnesota Valley Telephone

Kyle Larson 507-557-2275 ktlarson@mnval.net

See location(s) as depicted in the plans. MnDOT Contractor to provide 1-week minimum notification to utility owner to coordinate the relocation/adjustment for the proposed construction.

Redwood Electrical Coop

Chad Nelsen 507-692-2214 cnelsen@redwoodelectric.com

REC68-01 - TH 68 at intersection of CSAH 5 at approx. Sta. 433+27 and REC68-05 – TH 68 at approx. Sta. 969+82. MnDOT Contractor to provide 1-week minimum notification to utility owner to coordinate the relocation/adjustment for the proposed construction.

The Work under this Contract will affect the City of Prinsburg utilities such as storm sewer, sanitary sewer, and water supply. Those affected utilities are included in the Plans for adjustment or relocation. The Contractor shall notify Nolan Slagter at telephone number 320-894-0162, before the date the Contractor intends to start Work. The Contractor shall give that office any information necessary for the responsible authorities to make suitable arrangements.

S-14 (1601) SOURCE OF SUPPLY AND QUALITY

REVISED 06/13/24

S-14.1 Add the following to MnDOT 1601:

The provisions of the Build America, Buy America (BABA) Act, Public Law No.117-58 §§ 70901-70952, the Buy America law, 23 U.S.C. § 313, 2 CFR Part 184 and 23 CFR § 635.410 require the Contractor to furnish iron and steel materials (including miscellaneous items such as fasteners, nuts, bolts, and washers) and construction materials which will be permanently incorporated on projects funded at least partly with federal funds to be produced in the United States.

1. Iron and Steel. In the case of iron and steel materials, produced in the United States means that all manufactured processes from the initial melting stage through the application of coatings, occur in the United States. Foreign source materials are any domestic products taken out of the United States for any process (e.g., change of chemical content, permanent shape or size, or final finish of product).

All bids must be based on furnishing domestic iron and steel, which includes the application of the coatings.

Prior to performing Work, the Contractor shall submit to the Engineer a certification stating that all iron and steel materials supplied are produced in the United States.

Raw materials such as iron ore, pig iron, processed, pelletized, and reduced iron ore, waste products (including scrap, iron or steel no longer useful in its present form from old automobiles, machinery, pipe, railroad rail, and steel trimmings from mills or product manufacturing) and other raw materials used in the production of iron or steel products may be imported from outside of the United States. Extracting, handling, or crushing the raw materials which are inherent to the transporting of these Materials for later use in the manufacturing process are exempt from the BABA Act.

A de minimis amount of non-compliant iron and steel material may be incorporated in the permanent work on a federal-aid contract provided that the cost of such materials or products does not exceed one-tenth of one percent (0.1%) of the total contract cost or \$2500, whichever is greater. The cost of the non-compliant iron or steel material is defined as its monetary value delivered to the job site and documented by invoices or bill of sale to the Contractor.

2. Construction Materials. BABA Act applies to the following construction materials. Each construction material is followed by a standard for the material to be considered produced in the United States.

Construction materials include any article, material, or supply that is or consists primarily of:

- a) Non-ferrous metals, all manufacturing processes, from initial smelting or melting through final shaping, coating, and assembly, occurred in the United States;
- b) Plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables), All manufacturing processes, from initial combination of constituent plastic or polymer-based inputs, or, where applicable, constituent composite materials, until the item is in its final form, occurred in the United States;
- c) Glass (including optic glass), all manufacturing processes, from initial batching and melting of raw materials through annealing, cooling, and cutting, occurred in the United States;
- d) Fiber optic cable (including drop cable), all manufacturing processes, from the initial ribboning (if applicable), through buffering, fiber stranding and jacketing, occurred in the United States. All manufacturing processes also include the standards for glass and optical fiber, but not for non-ferrous metals, plastic and polymer-based products, or any others;
- e) Optical fiber, all manufacturing processes, from the initial preform fabrication stage through the completion of the draw, occurred in the United States;
- f) Lumber, All manufacturing processes, from initial debarking through treatment and planing, occurred in the United States;
- g) Engineered Wood, all manufacturing processes from the initial combination of constituent materials until the wood product is in its final form, occurred in the United States; or
- h) Drywall, all manufacturing processes, from initial blending of mined or synthetic gypsum plaster and additives through cutting and drying of sandwiched panels, occurred in the United States.

The BABA Act does not apply to: cement, cementitious materials, aggregates such as stone, sand, or gravel, aggregate binding agents or additives, or asphalt.

With the exception of minor additions of articles, materials, supplies, or binding agents to a construction material, if any of the listed construction materials is combined through a manufacturing process with a second listed material or with a non-listed item, then BABA Act does not apply to those items unless the construction material is combined with iron or steel. If the construction material is combined with iron or steel, the iron and steel material provisions apply.

A de minimis amount of non-compliant construction materials may be incorporated in the permanent work provided that the total value of the non-compliant products does not exceed five percent (5%) of the applicable project costs up to a maximum of \$1,000,000. The applicable project costs are defined as the cost of materials in the project that are subject to a domestic preference requirement, including materials that are within the scope of an existing waiver; for example, manufactured products.

The process of receiving a waiver is provided in the BABA Act and any federal regulation adopted in accordance with this law. The Contractor shall not anticipate that any of these provisions will be waived.

The Contractor is required to submit a Certificate of Compliance prior to incorporating any Materials into the Project containing iron or steel, or construction materials. This shall be accomplished by the

Contractor submitting the appropriate Certificate of Compliance to the Department when the Materials are delivered to the project site. The Certifications of Compliance for iron and steel will certify the Materials are considered produced in the United States. The Certifications of Compliance for construction materials will certify that the final two manufacturing processes for the construction materials occurred in the United States. The certificate must be signed and dated by the Prime Contractor's authorized representative, include a BABA Act submittal number, and a statement: The Materials herein referenced are produced in the United States and comply with the requirements of 23 CFR § 635.410, 2 CFR Part 184, Public Law No.117-58 §§ 70901-70952, and 23 U.S.C. § 313.

Supporting documentation to demonstrate compliance with BABA Act provisions (such as mill test reports, manufacturer/supplier certifications, etc.) shall be organized and maintained by the Contractor from the date of delivery until six years after 1516.4, "Final Contract Acceptance".

The Department may review the Contractor's supporting documentation to verify compliance with the BABA Act provisions at any time upon request. The burden of proof to meet the BABA Act provisions rest with the Contractor. If the supporting documentation does not demonstrate to the Department that the iron or steel and construction materials identified in the Certificates of Compliance were produced in the United States, then the iron, steel, or construction materials will be considered unauthorized Work and must be removed and replaced according to 1512.2, "Unauthorized Work".

S-15 (1602) NATURAL MATERIAL SOURCES

S-15.1 Add the following to MnDOT 1602:

The expansion of any existing natural material sources, or the creation of new natural material sources, is subject to the requirements of the Farmland Protection Act of 1981 (FPPA or the ACT). Contractor is responsible for coordination to comply with FPPA. Contact the Natural Resources Conservation Service (NRCS) office for the County in which the source is located for further information.

S-16 (1606) STORAGE OF MATERIALS

REVISED 09/27/24

S-16.1 Add the following to MnDOT 1606:

If the Contractor elects to crush excavated Materials within the Project Limits, the quantity of crushed Material will be limited to only the quantity required for this Project. Unless approved in writing by the Engineer, the Contractor must not crush Materials other than those found within the Project Limits or remove crushed Material from the Project Limits.

The Contractor may request to use space outside of the Project Site, and within the Department's Right-of-Way, for storing materials or placing mobile production plant and Equipment. The Contractor shall submit, in writing, to the Engineer for approval. The submittal shall include the proposed location, description of items that will be stored, erosion control plans, restoration plans, and dates that the space will be used. The use of the additional space and restoration to an acceptable condition will be at no additional cost to the Department. The use of the space shall be approved, in writing, by the Engineer prior to any use. The Engineer may revoke this approval, at any time.

S-17 (1701) LAWS TO BE OBSERVED
RESTORED AND REVISED 06/30/23

S-17.1 Delete and replace the second paragraph of MnDOT 1701.5B with the following:

For purposes of paying out retainage, a Subcontractor's Work is satisfactorily completed when all the tasks called for in the subcontract have been accomplished and final documentation is received. Final documentation includes certified payrolls, Material certifications, haul road releases, pit releases, warranties, operating manuals, product literature, verification of final quantities, and Contractor Affidavit (Form IC134). When the Department has made an incremental acceptance of a portion of the prime Contract, the Work of a Subcontractor covered by that acceptance is deemed to be satisfactorily completed.

S-17.2 Add the following to MnDOT 1701:

1701.6 EQUAL PAY

The Department cannot execute a Contract in excess of \$500,000 with a business that has 40 or more employees on a single day during the prior 12 months in this State or a State where the business has its primary place of business unless the business has an equal pay certificate or has certified in the Electronic Bid File that the business is exempt. Bidders may find more information on the Equal Pay Certificate Requirement in Minnesota Statutes Section 363A.44 or at the [Department of Human Rights, Equal Pay Certificate](https://mn.gov/mdhr/certificates/equalpay) website (mn.gov/mdhr/certificates/equalpay).

1701.7 Compliance with Tax Law Requirements

The Department cannot make final payment to the Contractor until the Contractor demonstrates that it and all its Subcontractors have complied with the Income Tax withholding requirements of Minnesota Statutes, section 290.92 and section 270C.66 for wages paid for Work performed under the Contract. To establish compliance, the Contractor must submit a "Contractor Affidavit" either online or in paper form (IC134) to the Minnesota Department of Revenue. The Contractor will receive a written certification of compliance when the Department of Revenue determines that all withholding tax returns have been filed and all withholding taxes attributable to the Work performed on the Contract have been paid. The Contractor must then provide this written certification to the Department to receive final payment.

Every Subcontractor working on the Project must submit an approved "Contractor Affidavit" from the Minnesota Department of Revenue to the Contractor before the Contractor can file its own Contractor Affidavit. The Contractor is advised to obtain the certification from each Subcontractor as soon as the Subcontractor completes Work on the Project. Experience has shown that waiting until the Project is complete to obtain the forms from all Subcontractors is likely to result in significant additional Work for the Contractor as it will be difficult or impossible to collect all forms.

The Department of Revenue, in association with the Department of Employment and Economic Development, offers a free seminar to help Contractors understand tax law requirements. The Department strongly urges the Contractor and all Subcontractors to attend the "[Employment Taxes & Employer Responsibilities Seminar](#)" or similarly offered classes. You can find a schedule and more information on the [Department of Revenue](#) website (www.revenue.state.mn.us).

Complying with this requirement is considered part of the Work under this Contract. The Department will enforce this requirement equally with all other Contract requirements. The Contractor delay in complying with this requirement will cause the Department to delay final payment and Contract Acceptance. The Department may also report non-compliance to the Department of Revenue, which may result in enforcement action by the Department of Revenue.

Contractor Affidavit requirements and Form IC134 can be found on the [Department of Revenue](#) website (www.revenue.state.mn.us).

1701.8 Use of Equipment from Certain Telecommunications Supplier Prohibited
By signing this Contract, Contractor certifies that consistent with section 889 of the John McCain National Defense Authorization Act for fiscal year 2019, Public Law 115-233 (Aug. 13, 2018) the Contractor may not use funding covered by this Contract to procure or obtain, or extend, renew, or enter into any Contract to procure or obtain, any Equipment, system, or service that uses "covered telecommunications Equipment or services" (as that term is defined in section 889 of the Act) as a substantial or essential component of any system, or as critical technology as part of any system. The contractor must include this certification as a flow-down clause in any subcontract related to this Contract.

S-18 (1701) LAWS TO BE OBSERVED (WETLANDS)

REVISED 06/30/22

S-18.1 Add the following to MnDOT 1701:

If the Contractor operations involve the excavation and/or disposal of material off Department Right-of-way, the Contractor is advised of the following:

MN Statutes Sections 103G.2212 and 103G.241 stipulate that an agent or employee of another may not:

- 1) drain, excavate, or fill a wetland, wholly or partially; or
- 2) construct, reconstruct, remove, or make any change in any reservoir, dam, or the course, current, or cross-section of any public water.

Unless a signed statement from the property owner is obtained stating that any permit or Wetland Replacement Plan required for the Work is in place, or that a permit or replacement plan is not required; and this statement is mailed to the appropriate office with jurisdiction over the wetland or public water prior to initiating the Work.

The "Landowner Statement and Contractor Responsibility For Work in Wetlands or Public Waters" can be found at <http://www.bwsr.state.mn.us/wca-forms-and-templates>. The Contractor shall provide the Engineer with a copy of the completed "Landowner Statement and Contractor Responsibility For Work in Wetlands or Public Waters" for the excavation and/or disposal site prior to initiating the Work.

S-19 (1701) LAWS TO BE OBSERVED (CULTURAL RESOURCES – FEDERALLY AND STATE FUNDED)

REVISED 04/14/23

S-19.1 Add the following to MnDOT 1701:

A For any Project that the Department funds or conducts, or that is located in Department Right-of-way, including owned or leased Natural Materials Resources, the following terms will apply:

A.1 The Department is responsible for obtaining a Cultural Resources Unit (CRU) findings letter.

A.2 Contractor will notify the Engineer if the Contractor intends to use any material from a proposed excavation area on land controlled by the Department. The Engineer must request a review from the Department's CRU before allowing a Contractor to use any material from a proposed excavation area on any land controlled by the Department. The review may take 60 Calendar Days

after receipt of request, including up to 45 days for tribal consultation when necessary. If the Department's CRU determines that a survey is needed, the review period may be even longer. Contractor is responsible for ensuring that such reviews do not affect the timely completion of the Project, and for any delays due to the length of the review. Contractor may not base a claim for damages due to delay of Contract on the length of the review.

B If the Contractor selects the excavation and disposal of material from locations other than the Department's Right-of-way, the following terms will apply:

B.1 A CRU findings letter is not necessary.

B.2 Contractor must comply with Minnesota Statutes § 307.08, Minnesota Private Cemeteries Act, if applicable.

C If any human remains are encountered within the Project limits, the Contractor shall immediately stop Work in the vicinity, notify the Engineer, and request suspension of Work near the discovery area, in accordance with 1803.3.

S-20 (1701) LAWS TO BE OBSERVED (CARGO PREFERENCE ACT, USE OF UNITED STATES - FLAGGED VESSELS)

S-20.1 Add the following to MnDOT 1701:

The Contractor must comply with requirements of the Cargo Preference Act (46 USC §55305) and its implementing regulations (46 CFR §381).

The requirements of 46 CFR § 381.7 (a) and (b) are incorporated into this Contract by reference. The Contractor must include or incorporate this provision in all subcontracts.

S-21 (1705) FEDERAL-AID PROVISIONS (FORM 1273)
NEW 08/08/22

S-21.1 Add the following to MnDOT 1705:

Federal Form 1273. Pursuant to 23 CFR Section 633.102, the required contract provisions contained in FHWA Form 1273 apply to all work performed under this contract by the Contractor's own organization or by a subcontractor at any tier. The Contractor must insert FHWA Form 1273 in each subcontract. The Contractor must also require each subcontractor to include FHWA Form 1273 in its lower-tier subcontracts. FHWA Form 1273 must not be "incorporated by reference" in any tier of subcontract. The Contractor is responsible for compliance with this requirement in any subcontract or lower tier subcontract. The form, entitled *Required Contract Provisions Federal Aid Construction Contracts*, is attached.

S-22 (1706) EMPLOYEE HEALTH AND WELFARE
RESTORED 06/30/23

S-22.1 Add the following to MnDOT 1706:

A The Contractor must not use motor vehicle Equipment that has an obstructed rear view unless either of the following is ensured:

- (1) The vehicle has a reverse alarm that is audible above the surrounding noise level
- (2) An observer signals to the operator that it is safe to reverse

B The Department may assess a Monetary Deduction of \$500 per incident for a violation of safety standards that could result in death or serious injury.

C The areas of special concern include excavation stability protection, fall protection, protection from overhead hazards, vehicle backup protection, confined space safety, blasting operations, and personal safety devices.

D The Contractor cannot avoid complying with safety standards by paying the deduction.

S-23 (1707) PUBLIC CONVENIENCE AND SAFETY

RESTORED 06/30/23

S-23.1 Add the following to MnDOT 1707:

The Contractor shall ensure that employees and Subcontractors do not display items such as, but not limited to, flags, banners, and symbols on the Project Site, that may disrupt the proper prosecution of the Work, impede public safety, or create a distraction for the traveling public.

S-24 (1708) RAILROAD HIGHWAY PROVISIONS

NEW 01/27/23

S-24.1 Delete and replace the ninth paragraph of MnDOT 1708.1 with the following:

The Contractor shall be responsible for damages from unscheduled delays of freight or passenger trains caused by the Contractor. If the Contractor's operations cause the railroad company to perform extra work to maintain railroad traffic, the Contractor shall reimburse the railroad company for the cost of the extra work and damages associated with delays to trains.

S-24.2 Delete and replace the third paragraph and note 1 of MnDOT 1708.2 with the following:

The Contractor shall prepare detailed Plans indicating the construction methods and protective measures intended for use adjacent to the railroad company's tracks or at any Structures that are part of the Project. The detailed Plans shall indicate the protective measures used to safeguard railroad property, embankment, traffic, and trainmen from damage and accident during construction operations adjacent to and over or under the railroad company's track. The detailed Plans and methods shall include the following:

- (1) Before excavating for any Structure Work adjacent to the railroad company's track, the Contractor shall construct a railing, approved by the railroad company before construction, between the tracks and the Structure excavation and at the ends of the excavation as approved by the railroad company.

S-25 (1708) RAILROAD HIGHWAY PROVISIONS (BNSF RAILWAY COMPANY)
REVISED 01/27/23

Note: Wherever used in Sections 1407 (FINAL CLEANUP), 1505 (COOPERATION BY CONTRACTORS), 1708 (RAILROAD-HIGHWAY PROVISIONS), and 1717 (AIR, LAND and WATER POLLUTION) of the Special Provisions, the terms "Railway," "Railroad," "BNSF" and "Company" mean BNSF Railway Company.

All work over, below, or adjacent to the Company's right of way shall be performed in conformance with the provisions of MnDOT 1708 and the following:

S-26.1 The provisions of MnDOT 1708.3 are modified to the extent that the Contractor shall provide evidence of Insurance, in accordance with the following provisions:

INSURANCE REQUIREMENTS:

- (A) Before commencing any work under this contract, the Contractor must provide and maintain in effect insurance, at Contractor's expense, covering all of the work and services to be performed hereunder by the Contractor and each of its subcontractors, as described below.
- (1) Workers' compensation coverage as required by Minnesota law, but if optional under Minnesota law the insurance must cover all employees anyway. THE CERTIFICATE MUST CONTAIN A SPECIFIC WAIVER OF THE INSURANCE COMPANY'S SUBROGATION RIGHTS AGAINST THE BNSF RAILWAY COMPANY.
 - (2) Commercial general liability insurance covering liability, including but not limited to public liability, personal injury and property damage, with coverage of at least \$2,000,000 per occurrence and \$6,000,000 in the aggregate. Where explosion, collapse, or underground hazards are involved, the X, C and U exclusions must be removed from the policy;
 - (3) Automobile liability insurance, including bodily injury and property damage, with coverage of at least \$1,000,000 combined single limit or the equivalent;
 - (4) Railroad protective liability insurance stating BNSF RAILWAY COMPANY is the named insured covering all of the liability assumed by the Contractor under the provisions of this Agreement with coverage of at least \$5,000,000 per occurrence and \$10,000,000 in the aggregate. The form of the Railroad protective liability insurance policy shall be reasonably acceptable to the Company.

All insurance shall be placed with insurance companies licensed to do business in the States in which the work is to be performed, and with current Best's Insurance Guide Ratings of A and Class X, or better.

If any work is to be performed within 50 feet of a railroad track, then insurance must provide coverage of incidents occurring within 50 feet of a railroad track, and any provision to the contrary in the insurance policy must be specifically deleted.

In all cases, the certificate must specifically state that "BNSF RAILWAY COMPANY IS AN ADDITIONAL INSURED"

Any coverage afforded to the Company, the certificate holder, as an additional insured shall apply as primary and not excess to any insurance issued in the name of the Company.

- (B) Before commencing any work hereunder, the Contractor shall furnish to the Company a certificate of insurance on a form acceptable to the Company, evidencing the issuance to the

Contractor of the policies of insurance providing the types of insurance and limits of liability prescribed above, and certifying that the Company shall be given not less than 30 days' written notice prior to any material change, substitution or cancellation prior to normal expiration dates. Cancellation or expiration of any of said policies of insurance shall not preclude the Company from recovery thereunder for any liability arising under this Agreement.

- (C) The purchase of insurance as herein provided shall not in any way limit the liability of the Contractor to the Company.

The following information must appear on the Certificate of General Liability Insurance and entire Railroad Protective Insurance Policies to identify the Project policies are issued to cover:

Project: Project: S.P. 8828-139 (US 75), Agreement No. 1057929, Railroad flagging services in Bellingham, Lac qui Parle County, MN

Send Certificate of General Liability Insurance and entire Railroad Protective Insurance Policies for approval to:

BNSF@certfocus.com

Mail:
BNSF Railway Company
PO BOX 140528
Kansas City, MO. 64114

Copy:
Alex Fiorini
Manager Public Projects
BNSF Railway Company
80 – 44th Ave NE
Minneapolis, MN 55421

S-26.2 The insurance coverage's as required shall be in full force and effect before any work or operations are commenced on the Railway's property and shall be kept in full force until all work to be performed under the terms of the Contract has been accepted by the Engineer.

The policy shall provide that, in the event the insurance should be changed or cancelled, such change or cancellation shall not be effective until 15 days after the Director of Railroad Administration has received notice of such change or cancellation from the insurance company. The insurance coverage shall be executed by an insurer qualified to write such policies in the State of Minnesota.

In addition, the Contractor shall furnish either two (2) duplicate original copies or two (2) certified copies of the certificate of insurance at least 10 days in advance of the starting date of the work for which insurance is required. These shall be delivered to the Manager of Railroad Administration, Mail Stop 470, 395 John Ireland Blvd., St. Paul, MN 55155-1899. The Railroad Administration Manager will make the necessary distribution of certificates and policies.

S-3.3 The fourth paragraph set forth under MnDOT 1708.4 is supplemented as follows:

The Contractor is advised that MnDOT and the Railway have entered into MnDOT Agreement Number 1057929, wherein MnDOT and the Railway have agreed to the amount MnDOT will pay for flagging and protective services.

S-26 **(1712) PROTECTION AND RESTORATION OF PROPERTY**
REVISED 09/29/23

S-26.1 Add the following to MnDOT 1712:

Bidders may review environmental documents and permits concerning this Project before bidding.

The Environmental Document for this Project is available at https://edocs-public.dot.state.mn.us/edocs_public/DMResultSet/DisplayDoc?docnumber=38648113&identifier=38648113.

S-27 **(1717) AIR, LAND, AND WATER POLLUTION**
NEW 06/28/24

S-28.1 Add the following to MnDOT 1717.2:

The Contractor shall not use recycled concrete aggregate (RCA) in temporary work such as causeways, staging areas, or stockpiles that will be in contact with surface water or groundwater. The Contractor shall:

- 1) Manage stormwater runoff from temporary work such as laydown areas, staging areas, and stockpiles that contain RCA. Prevent any discharge outside of construction limits or into surface water of water that is turbid or has a pH of greater than 8.5 or less than 6.0.
- 2) Monitor runoff from temporary work containing RCA during every stormwater inspection. Check for pH and turbidity. Monitor more frequently if needed to maintain acceptable clarity and pH.
- 3) Provide a Site Management Plan showing how they will manage stormwater runoff, monitor the pH and clarity of runoff, and isolate crushed concrete from surface water and groundwater as described above.

S-28 **(1717) AIR, LAND, AND WATER POLLUTION (BNSF RAILROAD COMPANY)**

Note: Wherever used in Sections 1407 (FINAL CLEANUP), 1505 (COOPERATION BY CONTRACTORS), 1708 (RAILROAD-HIGHWAY PROVISIONS), and 1717 (AIR, LAND and WATER POLLUTION) of the Special Provisions, the terms "Railway," "Railroad," "BNSF" and "Company" mean BNSF Railway Company.

S-28.2 The provisions of MnDOT 1717 are modified with these additional BNSF Requirements:

1717.3 BNSF Requirements:

(A) As used in this subsection 1717.3:

The terms "hazardous waste", "pollutant", and "contaminant" will have the meaning given to such terms in the Resource Conservation and Recovery Act ("RCRA"), Minnesota Statutes Chapters 115A and 116, and the regulations promulgated under RCRA and Minnesota Statutes Chapters 115A and 116. The term "Environmental Laws" means all federal and State of Minnesota statutes, regulations, codes, and rules applicable to the contractor's work and pertaining in any way to the protection of

human health or the environment, including, but not limited to, RCRA, the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), the Toxic Substances Control Act, the Clean Air Act, the Clean Water Act, Minnesota Statutes Chapters 115A and 116, and the Minnesota Environmental Response and Liability Act ("MERLA"). The term "Environmental Laws" also includes any lawful order of a federal or State of Minnesota department, agency, or court acting pursuant to applicable Environmental Laws. The term "Hazardous Substance" means (1) hazardous waste (as defined above) and (2) any and every other hazardous, toxic, radioactive, or infectious substance, material, or waste as defined in, listed in, or regulated under any Environmental Law, including, but not limited to, petroleum oil and any of its fractions. The terms "release" and "threatened release" have the meaning given to them in CERCLA and MERLA.

- (B) The contractor and its employees, agents, and subcontractors shall not:
- (1) Treat, store or dispose of any hazardous waste, pollutant, or contaminant in such a way as to subject it to permitting requirements for a treatment, storage, or disposal facility under the RCRA or other applicable Environmental laws; or
 - (2) Knowingly or negligently cause, contribute to, or exacerbate the release of any Hazardous Substance, Pollutant, or Contaminant on BNSF's property or any public right of way traversing BNSF's property.
- (C) If the contractor (or any of its employees, agents, or subcontractors) discovers any Hazardous Substance, Pollutant, or Contaminant including but not limited to any non-containerized commodity or material, on BNSF's property or any public right of way traversing BNSF's property while performing the work under this contract, the contractor shall immediately notify BNSF's Resource Operations Center at (800) 832-5452 of such discovery and shall take the actions set forth in subsections 1717.1 and 1717.2. In addition, if such discovery occurs, the contractor will take safeguards necessary to protect its employees, subcontractors, agents, and/or third parties, and exercise due care with respect to the Hazardous Substance, including the taking of all appropriate measures to minimize the impact of the release of such Hazardous Substance, Pollutant, or Contaminant.

S-29 (1717) AIR, LAND, AND WATER POLLUTION (MPCA CONSTRUCTION STORM WATER PERMIT)

REVISED 04/14/23

S-29.1 Add the following to MnDOT 1717.2:

D MPCA CONSTRUCTION STORM WATER PERMIT

The Contractor must complete the application for coverage under the State of Minnesota Construction Stormwater General Permit, MNR100001, which is part of the National Pollutant Discharge Elimination System (NPDES) and the State Disposal System (SDS) Program. This Construction Stormwater General Permit is administered by the Minnesota Pollution Control Agency (MPCA) and for the purpose of this provision will be referred to as the CSW Permit or simply the Permit. By completing the online CSW Permit application the Contractor becomes a co-permittee with the Department and must ensure compliance with

the terms and conditions of the Permit that reference the “operator.” A copy of the Permit is available at <http://www.pca.state.mn.us/water/stormwater/stormwater-c.html> or by calling 651-296-6300.

D.1 This Project requires a CSW Permit. The Department will initiate the on-line Permit application for this Project and share the application with the Contractor after Contract Award. The Service ID number for this Project is 463371. The Contractor must complete the application through the electronic online process and pay for the Permit on this Project. The application fee is Incidental.

The Contractor must follow the steps below to complete the CSW Permit application:

- (1) Create User ID account with MPCA E-services (if Contractor already has an account, skip to next step).
- (2) Provide the Contractor’s E-services user ID to the Engineer and request that they share the Service application for the Service ID listed above.
- (3) Wait to receive email from MPCA E-services that the permit is now shared.
- (4) Log into E-Services.
- (5) Select shared document.
- (6) Select Section 5 Contacts, click on the “2. Contractor” tab, and replace the MnDOT contact information with the Contractor’s contact information.
- (7) Navigate to Section 11 Certification by clicking the “Continue” button in sections 5 through 10.
- (8) Complete certification signature in Section 11.
- (9) Complete payment section in Section 12.

The Contractor must complete the application process.

The Contractor must submit a copy of the MPCA confirmation and a signed Permit Affidavit form with the Contract and Bond – this is a condition precedent to Contract approval. The Contractor is not authorized to perform any Project Work which disturbs soil or which involves Work in waters of the State until the Permit is in effect and the Department has received the required documentation.

D.2 Contractor must provide an Erosion Control Supervisor as per MnDOT 2573.3. The Contractor is solely responsible for all inspections, maintenance, and records required in Section 11 of the Permit. Contractor must use standard forms for logging all required inspection and maintenance activities. Contractor must submit all inspection and maintenance forms used on this Project to the Engineer weekly for retention in accordance with the permit. The Contractor must also have the forms available for on-site review.

Contractor must immediately notify the Engineer of site visits by Local Permitting Authorities performed in accordance with Section 24.10 of the Permit. The Contractor must obtain the Engineer’s approval before starting any Work required by regulatory authorities which (1) the Contractor believes will result in additional compensation from the Department; or (2) will impact the design or requirements of the Contract documents or impact traffic.

D.3 The Contractor must use Best Management Practices to help minimize turbidity of surface waters and relieve runoff from extreme weather events. The Contractor must report a stormwater sediment release from the Project Site to the Minnesota Duty Officer and the Resident Engineer at the time the Contractor or Department discovers the release. The Contractor must also immediately contact the State Duty Officer (at 1-800-422-0798 or 1-651-649-5451) during any emergency situation involving an uncontrolled stormwater release.

**Table SP1717-2
NPDES Permit Requirements**

CSG Permit Requirements	Cross-Reference within this Contract
Obtain Permit Permit Compliance Submit Notice of Termination	MnDOT 1701, 1702; and 1717; Special Provisions: 1717 (MPCA Construction Stormwater Permit))
Certified Personnel in Erosion / Sediment Control Site Management Develop a Chain of Command	MnDOT 1506, 1717, and 2573; Special Provisions: 1717 (MPCA Construction Stormwater Permit)
Certified Personnel in Erosion / Sediment Control Site installation	MnDOT 2573
Project / Weekly Schedule (for Erosion / Sediment Control) Completing Inspection / Maintenance Log / Records	MnDOT 1717 and 2573; Special Provisions: 1717 (MPCA Construction Stormwater Permit)
Project Specific Construction Staging	The Plans; MnDOT 1717; Special Provisions: 1717 (MPCA Construction Stormwater Permit); and 1806 (Determination and Extension of Contract Time)
Temporary Erosion / Sediment Control	The Plans; MnDOT 2573, 2574. and 2575
Maintenance of Devices / Sediment removal Removal of Tracked Sediment Removal of Devices	The Plans; MnDOT 1717.2, 2573.3K, and 2573.3.R.; Special Provisions: 1717 (MPCA Construction Stormwater Permit)
Dewatering	MnDOT 2573.3A.6 and 3875; May also require DNR Permit
Temporary Work not shown in the Plans Grading areas (unfinished acres exposed to erosion)	MnDOT 1717, 2573, 2574, and 2575; Special Provisions: 1717 (MPCA Construction Stormwater Permit), 2574.3.A.1
Permanent Erosion / Sediment Control and Turf Establishment	The Plans; MnDOT 1717, 2573, 2574, and 2575; Special Provisions: 1717 (MPCA Construction Stormwater Permit)

**S-30 (1717) AIR, LAND, AND WATER POLLUTION (IMPLEMENTATION OF CLEAN AIR
ACT AND FEDERAL WATER POLLUTION CONTROL ACT)**

REVISED 01/21/22

The Bidder agrees that the following statements are true by signing this Contract.

- (1) That any facility to be utilized in the performance of this Contract, unless such Contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub. L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub. L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 C.F.R. Part 15), is not listed on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 C.F.R. 15.20.
- (2) That the State Transportation Department shall be promptly notified prior to Contract award of the receipt by the Bidder of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility to be utilized for the Contract is under consideration to be listed on the EPA List of Violating Facilities.

S-31 (1718) FURNISHING RIGHT OF WAY

S-31.1 Add the following to MnDOT 1718:

The Contractor will not perform Work outside the existing Right-of-way without the authority of the Project Engineer at the following locations:

TH (Alignment)	Parcel #	RT or LT	Engineer's Station	Estimated Title and Possession Date
7	302	LT	639+00 – 639+60	6/6/2025
7	302	LT	645+00 – 646+00	6/6/2025
7	302	LT	649+60 – 650+40	6/6/2025
7	302A	RT	649+85 – 650+35	6/6/2025
7	304	LT	653+50 – 656+00	6/6/2025
7	27	LT	896+74 – 897+30	6/6/2025
7	305X	RT	896+75 – 897+23	6/6/2025
7	319E	LT	1156+95 – 1157+26	6/6/2025
7	319F	LT	1157+26 – 1158+76	6/6/2025
75	37	LT	768+00 – 768+40	7/14/2025
40	212	LT	219+00 – 219+40	6/6/2025
68	216	RT	362+26 – 362+80	6/6/2025
68	219	RT	381+56 – 381+99	6/6/2025
68	201	LT	18+26.9 – 20+39.5	6/6/2025
68	201A	RT	18+26.9 – 20+68.8	6/6/2025

S-32 (1801) SUBLETTING OF CONTRACT

REVISED 10/14/22

S-32.1 Delete and replace the second sentence of the first paragraph of MnDOT 1801 with the following:

The Contractor may, with the Engineer's consent, sublet a portion of the Contract as long as the Contractor self-performs Work amounting to at least 30 percent of the total original Contract Amount.

S-32.2 Delete the second paragraph of MnDOT 1801.

S-33 **(1802) QUALIFICATIONS OF WORKERS**
NEW 06/30/23

S-33.1 Delete and Replace MnDOT 1802 with the following:

The Contractor shall provide workers with sufficient skill and experience to perform the Work assigned to them. Upon request by the Engineer, the Contractor shall submit evidence of qualification for any person engaged in special Work requiring professional training or certification. If any Subcontractor employed by the Contractor or any person employed by the Contractor or by a Subcontractor fails to perform assigned Work in a proper and skillful manner, or becomes intemperate, disorderly, abusive, or harassing, or shows signs of impairment from drug or alcohol use, the Contractor shall remove that Subcontractor or person from the Project as directed in writing by the Engineer. The Contractor shall not employ that Subcontractor or person again on any portion of the Project unless approved in writing by the Engineer. If the Contractor fails to remove a Subcontractor or person as directed by the Engineer, or fails to provide suitable and sufficient personnel for the proper prosecution of the Work, the Engineer may suspend the Work until the Contractor complies with the direction from the Engineer.

S-34 **(1803) PROGRESS SCHEDULES (BAR CHART/CPM SCHEDULE)**
REVISED 01/27/23

S-34.1 Delete and replace MnDOT 1803 with the attached (1803) Project Schedules.

S-34.2 Modify the attached (1803) Project Schedules with the following:

A This Contract allows for the use of a “Bar Chart Schedule” as the Project Schedule for the Project. The Contractor shall meet the requirements of 1803.1, “Bar Chart”.

B Delete and replace 1803.1.B.1, “Weather Contingency,” with the following:

The Contractor shall allow for normal weather delays when developing the Bar Chart Schedule. The Department will extend the Contract Time, except as limited by 1806.4, “Extension of Contract Time Due to Weather on Calendar Day and Completion Date Contracts,” for delays in excess of the anticipated Working days lost to inclement weather as specified in the table below. The days in the table below are cumulative and shall be prorated when Contract Time starts or ends mid-month. For example, if Contract Time starts May 1st and there are days lost to weather in May or June, then the Contract must lose 7 days to weather (4 days from May and 3 days from June) in addition to the anticipated days in July before a time extension would be considered due to weather days lost in July.

Table 1803.1-1
Weather Contingency By Time Period

Time Period	Anticipated Working Days Lost Due To Weather
January	all
February	all
March	all
April 1-15	all
April 16-30	4
May	4
June	3
July	3
August	3

Time Period	Anticipated Working Days Lost Due To Weather
September	3
October	4
November 1-14	4
November 15-30	all
December	all

S-35 **(1804) PROSECUTION OF WORK (CONSTRUCTION)**

NEW 01/21/22

- S-34.1 The Contractor may not start work on two control sections at the same time. The Contractor may not start work on any control section prior to completing work started on all other control sections.
- S-34.2 No detoured road closures will be allowed prior to May 21, 2025.

S-36 **(1806) DETERMINATION AND EXTENSION OF CONTRACT TIME**

REVISED 01/27/23

- S-36.1 Add the following to MnDOT 1806:
- 1806.5 Contract Time
- A The Contractor must start clearing operations on March 31, 2025 or no later than eight Calendar days after the date of Notice Contract Approval, whichever is later. The Contractor shall complete clearing operations required for this Project prior to April 15, 2025. The Contractor must not begin clearing operations before Contract approval.
- B The Contractor must start remaining construction operations on May 5, 2025.
- C The Contractor must not perform Work that will restrict or interfere with traffic between 12:00 noon on the day before and 9:00 a.m. on the day after any consecutive combination of a Saturday, Sunday, and Holiday. The Contractor may request exceptions to this requirement. Exceptions must be approved in writing by the Engineer.
- D The Contractor must complete all Work required to have traffic on the planned permanent configuration, including all paving, permanent safety devices, lighting, signing, striping, detour removal, and the installation of permanent turf establishment under this Contract before August 29, 2025.
- E The Contractor must complete all Work to meet the requirements of 1516.2, "Project Acceptance," under this Contract before October 31, 2025.
- F The Contractor must complete all Work to meet the requirements of 1516.3, "Completion of the Work," under this Contract within 90 Calendar Days of receipt of the Semi-Final Estimate in accordance with 1908.2, "Semi-Final Estimate Following Project Acceptance."

S-37 **(1807) FAILURE TO COMPLETE THE WORK ON TIME**
RESTORED 06/30/23

S-37.1 Delete and replace the first paragraph of MnDOT 1807.1 with the following:

The Department will deduct liquidated damages from money due the Contractor for each Calendar Day that the Work remains incomplete after expiration of the Contract Time, according to the completion requirements of 1516.2, "Project Acceptance". The Engineer will deduct liquidated damages based on the original Contract Amount and Table 1807.1-1.

S-38 **(1807) FAILURE TO COMPLETE THE WORK ON TIME (MONETARY DEDUCTIONS)**
REVISED 09/27/24

S-38.1 Add the following to MnDOT 1807:

- A The Department will assess the Contractor a Monetary Deduction in an amount equal to \$1,500 for each Calendar Day that any of the Work specified in S-36.1D (1806) DETERMINATION AND EXTENSION OF CONTRACT TIME remains incomplete after the expiration of the working period provided therefore.
- B The Department will assess the Contractor a Monetary Deduction in an amount equal to \$200 for each Calendar Day that any Work specified under 1516.3, "Completion of the Work," are not met after the expiration of the 90 day period of the Semi-Final Estimate requirements.
- C For informational purposes only, Bidders are advised that in addition to the requirements of 1807, other Sections of these Special Provisions contain requirements for assessment of Monetary Deductions to this Contract:

Table SP1807-1
Special Provision Sections with Monetary Deduction Requirements

Division	Section Title
S	(1706) EMPLOYEE HEALTH AND WELFARE
S	(2563) TRAFFIC CONTROL

- D The liquidated damages set forth in MnDOT 1807 and any Monetary Deductions as set forth above may apply equally, separately, and may be assessed concurrently.

S-39 **(1901) MEASUREMENT OF QUANTITIES**
RESTORED 06/30/23

S-39.1 Delete and replace the first paragraph of MnDOT 1901.8 with the following:

For measuring or proportioning Material by mass, the Contractor shall provide certified weights or weigh Material on calibrated, approved scales. The Contractor shall give the Engineer a copy of the inspection certificate.

S-39.2 Add the following to MnDOT 1901.8C:

The Contractor shall not provide a ticket to truck drivers if the weight of the load is in excess of the legal load limits in place.

S-39.3 Add the following to MnDOT 1901.8:

D. Computerized Loader Bucket Scales

The Contractor may use computerized Loader Bucket Scales to weigh materials when the quantity of material included in the bid item list is 5000 tons or less.

The Contractor shall equip loader bucket scales with an onboard computer that produces weigh tickets.

The Contractor shall load trucks on a level loading area and with the loader scale in dynamic mode and operate the loader scale in accordance with the manufacturer's guidelines.

The computerized loader bucket scale must be accurate to within 1.0 percent of the true weight of the applied load throughout the range of use.

D.1 Computerized Loader Bucket Scales – Comparison Test

Before the first use of the loader bucket scale on the project and any time the scale is recertified, the Contractor shall perform a comparison test using one of the following methods:

(a) Independent Scale Method.

After placing the load in a truck, weigh the loaded truck on a certified scale owned and operated by an entity other than the Contractor. Provide the tare weight of the truck along with the comparison weigh ticket.

(b) Certified Weighted Object Method.

Weigh an object on the project scale and compare its certified weight to the loader bucket scale readout. Use an object that is free of mud and dirt and has a certified weight of at least 60 percent of the capacity of the loader bucket.

Weld a plate onto the object showing its certified weight.

Provide an affidavit affirming the weight of the object, as measured on a certified scale.

Provide a new affidavit when requested by the Engineer or if changes are made to the object that will affect the certified weight.

D.2 Computerized Loader Bucket Scales – Random Comparison Tests

If a comparison test reveals that the scale is out of tolerance, repair and recertify the scale.

At any time, the Engineer may require the scale to be checked for accuracy utilizing any test method in 1908.D.1, "Computerized Loader Bucket Scales – Comparison Test".

The Engineer may prohibit the use of loader bucket scales if two consecutive tests fail.

D.3 Computerized Loader Bucket Scales – Documentation

The Contractor shall generate weigh tickets using the onboard computer and loader bucket scale printer and provide tickets to the truck driver. The Contractor shall provide daily haul summaries by computer-generated spreadsheet as provided by the Engineer. The Contractor shall provide the fully completed spreadsheet to the Engineer daily.

S-40 **(1902) SCOPE OF PAYMENT**

RESTORED 06/30/23

S-40.1 Delete and replace MnDOT 1902 with the following:

The Contractor will receive compensation provided for in the Contract as full payment for providing Materials and performing Work in accordance with the Contract requirements. This includes compensation for all risk, loss, damage, and expense incurred by the Contractor for performing the Work required by the Contract. Payment is subject to 1720, "No Waiver of Legal Rights." The Department prohibits the Contractor from accepting payment from any other party for performing the Work required by the Contract, including any Incentive or bonus payment. The Department does not prohibit the following payments from third parties:

- (1) Payments from sureties
- (2) Quantity-based rebates or credits from suppliers
- (3) Payments under another contract for excess material removed under this Contract

S-41 **(1910) COST ESCALATION**

REVISED 06/30/22

S-41.1 MnDOT 1910 is hereby supplemented with the attached Fuel Escalation Clause.

S-42 **(2011) CONSTRUCTION SURVEYING**

REVISED 04/14/23

S-42.1 DESCRIPTION

This Work consists of Contractor provided Construction Surveying in accordance with MnDOT 1401 and MnDOT 1508.

MnDOT 1508 is herewith modified to the extent that the Contractor shall meet all the requirements of, and provide all the services listed in, MnDOT 1508 which would otherwise be provided by the Department.

Furthermore, in accordance with MnDOT 1401, the Contractor is advised that the Contract may not fully describe every detail or make specific allowances for all probable exceptions and contingencies related to the Construction Surveying requirements.

Additional best management practices (BMP's) for Construction Surveying are identified in Appendix A of the MnDOT Surveying and Mapping Manual, in addition to the requirements shown below:

S-42.2 MATERIALS – Blank

S-42.3 CONSTRUCTION REQUIREMENTS

A Surveying to be Performed by the Department

The Department will set the initial horizontal and vertical control points in the field for the Project as indicated in the Plans. Upon request, the Department will also provide electronic data on the control so established. This electronic data will be provided in the format that was used in the accomplishment of the surveys for the Plans and Plan development. However, due to the many different processes that the design survey data goes through and the large variety of sources of input in the final production of the Plans, no warrantee is made as to the value or adaptability of the electronic data to the Surveyor. No warrantee is made that the data systems used by the Department or any consultants employed by the Department for Surveying or Plan preparation will be compatible with the systems used by the Contractor's Surveyor. Information shown on the printed "Plan" shall always govern over any electronic "Plan" data.

The Engineer may perform spot checks upon the Contractor's surveying calculations, records, field procedures, and actual staking. If the Engineer determines that the work is not being performed in a manner that will assure proper controls and accuracy, the Engineer will order the Contractor to redo such work, to the standards specified in the Contract, at no additional cost to the Department.

A.1 Pay Quantities

The Engineer will measure all quantities.

A.2 Final Monumentation

The Department will be responsible for setting the following final monumentation:

Horizontal Control

Vertical Control

Alignment

Right of Way

B Construction Surveying by the Contractor

B.1 Contractor Construction Surveying Requirements

Construction Surveying is defined as accurately providing all necessary computations, stakes and marks to establish lines, slopes, elevations, points, continuous profile grades in accordance with MnDOT 1508 and the requirements shown in the Plans for Construction Staking; so that the Contractor's forces are able to construct all required work for the Project in accordance with the Contract requirements; and so that the Engineer and Inspectors are able to complete all necessary inspection and Contract Administration duties. The staking shall include, but not be limited to, clearing and grubbing, removals, grading, culverts, embankments, borrow, aggregate base course, pavements, bridges, utilities, signs, pavement markings, erosion control and turf establishment items to complete the Project as represented in the Plans. The Surveying must be done in a way that is timely, and that is reflective of the continuing and ongoing nature of construction and inspection activities which will generally require frequent, separate Project visits by the Contractor's survey crew to the Project to accommodate the various stages of construction and inspection activities that will occur.

The Surveyor shall be prepared to make all necessary surveying checks for field verification of actual conditions and shall make the necessary minor surveying and staking adjustments to fit the construction to actual field conditions. In addition, some Plan details may be dependent upon actual field conditions at the time of construction. It may be necessary to perform some field survey or office computations in order to stake these components. All work

referred to in this paragraph is considered part of the work of Construction Surveying and no additional payment will be made for this work.

The Contractor shall retain a Professional Land Surveyor or Professional Engineer, licensed in the State of Minnesota, to directly supervise the Construction Surveying. Any determination of, or marking of, Right of Way must be performed under the supervision of a Licensed Land Surveyor. Additionally, an individual holding a National Society of Professional surveyors (NSPS) Level III certification in Construction Surveying, a Land Surveyor in Training (LSIT), or a Professional Land Surveyor or Professional Engineer, shall be on the Project site at all times to directly supervise the survey crew(s).

The Contractor shall:

- (1) Be responsible for the preservation of all reference points, monuments, government land corners, horizontal and vertical control points, stakes, and marks that are established by the Department or others within the Project limits. If the Contractor or its surveyor fails to preserve these items and if they must be reestablished by the Department, the Department will charge the Contractor on an hourly rate as shown in S-42.5.
- (2) Be responsible to review, balance, adjust, correct, and investigate the Department provided data and to perform work on survey data and control points that may be necessary to use the survey points and data, all at no additional cost to the Department, unless it is determined by the Engineer that latent errors existed in the information provided by the Department.
- (3) Start and end all level runs, traverses, or Global Positioning System (GPS) control surveys, from known control. Complete all control surveys at no worse than the standards specified for supplemental control in Chapter 2, *Surveying and Mapping Manual*.
- (4) Unless otherwise agreed to, set all stakes and marks in accordance with the Staking Information Sheets included in the Plans.
- (5) Furnish and install traffic control devices in accordance with the *Minnesota Temporary Traffic Control Field Manual Part VI*, (MN MUTCD), when crew members are exposed to traffic.
- (6) Perform all Construction Surveying for all Project construction as shown in MnDOT 1508, and shall install reference points as needed for the use of any public utility crews that are staking or accomplishing utility relocation or construction associated with this Contract.
 - (a) From Horizontal and Vertical Control Points established by the Engineer.
 - (b) According to the Plans, Proposal, and Standard Specifications.
 - (c) According to the *Surveying and Mapping Manual*.
 - (d) According to actual existing field conditions.
- (7) Perform Bridge and Structure Construction staking which includes setting and reestablishing Working Points and Reference Points by XYZ coordinates to

provide line and grade during all stages of work, and at all substructures and segments of Bridge or Structure Construction, as shown below:

- (a) Establish Working Points or Reference Points, approved by the Engineer, on the ground as shown on the Bridge Layout Sheet in the Plans.
 - (b) Transfer of required points from the ground to the top of footing after completion of concrete footing construction. If the structure is a curved wall or bridge edge of slab, curb, coping, median, or railing, the Contractor's Surveyor shall mark a curved line on the footings, forms, or deck slab, to the proper degree of curvature within 1/8 inch in 10 feet, 1:1000, as needed for construction and inspection activities.
 - (c) Transfer required points to the top of all finished structures.
 - (d) Transfer required points to the superstructure deck forming. (The Department will complete all work associated with beam stool elevations.)
- (8) Bear all costs, including but not limited to the cost of actual reconstruction of Contract work, that may be incurred due to errors in Contractor's Construction Surveying.
- (9) Document surveying during construction in a form acceptable to the Engineer and allow the Engineer access to surveying notes and calculations. The survey documentation includes:
- (a) Control station monumentation with reference ties.
 - (b) Field notes that were used to set construction stakes, control the Project, and document monument locations. The Contractor shall use bound, hard cover field books for recording survey data and field notes; store field notes on an electronic medium; or use both methods. If an electronic medium is used, the raw field data files must be available. When using an electronic medium, the Contractor shall make all files and data available in the Standard formats used by the Department.
- (10) Provide the following As-built Survey Data to the Engineer:
- (a) Changes from the Plans
 - (i) Alignment
 - (ii) Profile
 - (iii) Sewer
 - (iv) (List other items as desired)
 - (b) Locations of utilities relocated or emplaced as part of the Project
 - (c) Identify any alignment, Right of Way, property, or control monumentation destroyed during the Project

- (d) Any alignment, Right of Way, property, or control monumentation that was placed during the Project and that still exists at Project completion.
 - (e) The information shall include the x, y and, if applicable, the z coordinates in the Project datum. If the original item had no coordinate reference, then show the revised centerline station and offset.
 - (f) The information shall be provided in both electronic (MicroStation and Geopak) and hard copy format.
 - (g) In the case of new monumentation, there should also be a report describing how the monumentation was placed. This will include copies of any fieldwork (traverse or leveling) as well as any adjustments used. It shall also include tie sheets, to include a description of the physical object placed as the monument.
- (11) Furnish survey documentation and As-built Survey Data to the Engineer within the time limits indicated in the surveying work schedule.

B.2 Contractor Construction Surveying Activities

- (1) The Contractor shall give the Engineer a 14 calendar day written notice before the Contractor needs the Department to establish any horizontal and vertical control points shown in the Plans for Construction Surveying.
- (2) At the preconstruction conference, the Contractor shall submit to the Engineer for approval a written Construction Surveying Work Plan and Schedule detailing:
 - (a) Pertinent information as to how the requirements in these specifications, and the requirements in Appendix A of the *Surveying and Mapping Manual*, are being met by the Contractor's Surveyor.
 - (b) A Project specific Construction Surveying Work Schedule for the Construction Surveying and how it relates to the time frame for construction activities and the Department inspection needs.
 - (c) A proposed method of communications between the Contractor, Surveyor, and the Engineer.
 - (d) How and when the Contractor's Surveyor will make delivery of the As-built Survey Data to the Department.
- (3) During the course of construction, the Contractor shall give notice of commencement of any Construction Surveying activities according to 1803.4, "Temporary Suspensions".

S-42.4 METHOD OF MEASUREMENT
The Engineer will measure Construction Surveying as a lump sum in accordance with MnDOT 1901.12.

S-42.5 BASIS OF PAYMENT

The Contract Unit Price for Construction Surveying is compensation in full for Equipment, Materials and labor required to complete the Work.

A Excess Checking

If the Department sustains undue costs in checking excessive amounts of Contractor Construction Surveying, or must perform survey work that is the Contractor's responsibility, the Engineer may deduct Department's cost from monies due or becoming due the Contractor in accordance with the following rates:

	Hourly Rates
Registered Engineer or Licensed Land Surveyor	\$150 per hour
3-person crew and equipment	\$250 per hour
2-person crew and equipment	\$195 per hour
1-person with equipment	\$110 per hour

B Payment Schedule

The Department will provide partial payments for construction surveying in accordance with the following table:

**Table SP2011-1
Construction Surveying Partial Payments**

Percent of Original Contract Complete	Pay this Percentage of Construction Surveying
5	20
15	50
50	75
90	90
* The percent of Original Contract Amount = the amount earned by the Contractor, excluding money earned for mobilization and material on hand, divided by the total value of the original contract (all contract items).	

The Contractor will receive the final 10 percent of the lump sum bid price when the survey computations, notes, miscellaneous documents, and As-built Survey Data as specified have been received and accepted by the Engineer within the time limits specified by the Survey Work Schedule. If the Contractor fails to provide acceptable documentation and the As-built Survey Data within the time limits specified, the Department reserves the right to reduce the lump sum payment for Contractor Construction Surveying by a percentage of up to 10 percent of the lump sum bid price.

C Payment for Extra Work

When the Engineer determines that extra or additional Construction Surveying beyond the scope of the original Contract is required and orders the Contractor to accomplish this work, compensation will be made as Extra Work in accordance with MnDOT 1904 and at the same rate shown for a Department survey crew above. If the Construction Surveying is accomplished by a Subcontractor, the prime Contractor allowance will be five percent.

D Schedule

The Department will pay for Construction Surveying on the basis of the following schedule:

Item No.	Item	Unit
2011.601	Construction Surveying.....	lump sum

S-43 (2011) AS BUILT
REVISED 06/30/23

- S-43.1 DESCRIPTION
This Work consists of capturing As-built Asset Features in standard Asset Class deliverable formats.
- S-43.2 MATERIALS – BLANK
- S-43.3 CONSTRUCTION REQUIREMENTS
- A As-built Deliverables in Project Scope
Complete deliverables marked with an “X” in Table SP2011-1. Certain asset classes use multiple.

Table SP2011-1
As Built Deliverables

In scope	Deliverable Name
X	As-built Feature Survey Memorandum
	Blowing Snow Control Systems As-built Mark-up Plan
	Blowing Snow Control Systems As-built Survey Data
	Bridge As-built Mark-up Plan
	Bridge As-Built Data
	Bridge Uncontaminated Concrete Management Record
	Bridge Paint System Quality Manual (final submitted by Contractor)
X	Drainage As-built Mark-up Plan
X	Drainage Pipes As-built Survey Data
	Drainage Ponds-Basins As-built Survey Data
X	Drainage Structures As-built Survey Data
	Drainage Ponds-Basins Bathymetry Contours
	Drainage Professional Surveyor Letter
	Facility Site As-built Survey Data
	Geotech Earth Retaining Structures (ERS) As-built Survey Data
	Geotech Slopes (Reinforced; Anchoring; Armoring) As-built Survey Data
	Geotech Subgrade (Ground Improvement) As-built Survey Data
	Geotech Special Drainage (Groundwater Controls) As-built Survey Data
	Geotech Instrumentation As-built Survey Data <i>[Inclinometer, Piezometer, Shape Accel Array, Data Cabinet, etc.]</i>
	Lighting Systems As-built Mark-up Plan
	Lighting Systems As-built Survey Data
	Pavement Messages As-built Survey Data
	Signal Systems As-built Mark-up Plan
	Signal Systems As-built Survey Data
	Stationary Anti-Icing Systems As-built Mark-up Plan
	Stationary Anti-Icing Systems As-built Survey Data
	Traffic Management Systems (TMS) As-built Mark-up Plan
	Traffic Management Systems (TMS) As-built Survey Data
	Weigh Station Systems As-built Mark-up Plan
	Weigh Station Systems As-built Survey Data

Include installed or modified As-built Asset Features. Examples of modified features: existing Structures connected to new pipe, existing pipe with new liner, existing pond or basin regraded, existing conduit with new cable pulled through, and Bridge footings left in place.

Use the As-built Website's respective Asset Class tab for Feature Collect Indexes, Deliverable Templates, and Go-by Examples. As-built Website URL is <http://www.dot.state.mn.us/gisspec/index.html>.

B As-built Mark-up Plan Deliverables

Record As-built Asset Feature elevations, locations, and material changes on the Plans. Include mark-ups from the Contractor unit(s) that performed respective Work. Include revisions due to Change Orders and/or Supplemental Agreements. Use red text and red revision cloud to clearly highlight changes.

Subdivide the Plans by Asset Class.

Write "No Changes" if no revisions on pages. Include final elevations for drainage pipe ends, aprons, Structures, ponds/basins, special features, etc. Include final wiring diagrams for signals, Lighting, and TMS systems. Create an enlarged supplemental depiction for high density TMS cable and Structure areas. Include red box on the first page of each subdivided Plan, enclosing information:

As-built Mark-up Plan "Asset Class"
Department Inspector name
Department Engineer name
Prime Contractor Company name
Prepared By

C As-built Survey Data Deliverables

Conduct survey of As-built Asset Features to match changes captured by As-built Mark-up Plans and use standards defined by As-built Website Templates and Feature Collect Indexes representing final elevations, locations, and descriptive attributes. Collect drainage pipe bends and reducers and geotechnical Subgrade (ground improvement) features prior to trench backfilling. Collect conduit and cables prior to disturbance of plow line, otherwise after electromagnetic Equipment locate. Additional Pipe End Section elevations shall be recorded, as directed by the Engineer.

Achieve survey grade accuracy with datum criteria:

Horizontal Reference Datum: WGS 1984
Horizontal Coordinate System: Geographic (Latitude/Longitude)
Horizontal Units: Decimal Degrees
Horizontal accuracy: +/- 1 foot
Vertical datum: NAVD88; Units: Feet
Vertical accuracy: +/- 0.1 foot

Use of mapping grade Equipment (+/- 3 feet horizontal) permissible for non-Bridge/Drainage/Geotechnical Asset Classes.

D As-built Special Deliverables

For "Bathymetry Contours" deliverable, survey new or regraded ponds and basins with laser scan or total station, bottom must be dry if using a laser scan, total pond/basin area and 15 to 20 feet outside the pond/basin boundary unless retaining wall or other Structure is in the way, the whole pond/basin, not just what was cleaned out, DTM/TIN or DGN deliverable file provides minimum 0.5 foot contours, and includes 1 foot contour labels.

For "Drainage Professional Surveyor Letter" deliverable, enclose the following content: Minnesota Board of AELSLAGID Land Surveyor License number, signature, and statement attesting to how drainage feature coordinates and elevations data were collected to meet survey grade accuracy.

For special Bridge Asset Class deliverables, complete as instructed in respective form or report.

For drainage Projects with an additional elevation for end sections, include a supplemental file identifying each by Plan ID.

E As-built Kick-off Coordination and Deliverable Submittal Process
Provide a contact list with names of Contractors assigned to submitting deliverables and attend As-built specific kick-off meeting, held at discretion of the Engineer.

Email deliverables to: The Engineer and AsBUILTS.DOT@state.mn.us. Submit deliverables prior to 1516.2, "Project Acceptance."

Name files with convention: "State Project Number Table SP2011-1 Deliverable Name Submittal Date" (For example: 0282-34_Lighting Systems As-built Survey Data_04-19-2021.csv).

Resolve comments provided by the Engineer. The Engineer will comment no later than 20 Calendar Days upon receipt.

S-43.4 METHOD OF MEASUREMENT

The Engineer will measure As Built as a lump sum in accordance with MnDOT 1901.12.

S-43.5 BASIS OF PAYMENT

The Department will pay for As Built on the basis of the following schedule:

Item No.	Item	Unit
2011.601	As Built.....	lump sum

S-44 (2021) MOBILIZATION

REVISED 12/11/24

S-44.1 Delete and replace Table 2021.5-1 of MnDOT 2021.5 with the following:

**Table 2021.5-1
Mobilization Partial Payments**

When	Contract Unit Price for mobilization is less than 10 percent of the total Contract amount, pay	Contract Unit Price for mobilization exceeds 10 percent of the total Contract amount, pay
Percent of Original Contract Amount Completed	Percent of Mobilization	Percent of Original Contract Amount *
5	50	5
15	75	7.5
25	100	10
90	100	—
*If the Contract Unit Price for mobilization exceeds 10 percent of the total original Contract amount, the Department may withhold (on any partial estimate) the portion in excess of 10 percent until the Contractor earns at least 90 percent of the original Contract amount.		

S-44.2 Add the following to MnDOT 2021.5:

The Engineer is authorized to pay actual costs for the payment and performance bond ahead of scheduled mobilization payments provided:

- The remaining amount to be paid for (2021) Mobilization is greater than the cost of the payment and performance bonds.
- The Contractor provides the actual invoice for the bonds.
- The Contractor provides proof of payment for the bonds
- The amount paid for the bonds is subtracted from subsequent mobilization payments.

S-45 (2041) ON-THE-JOB-TRAINING PROGRAM

REVISED 10/14/22

Delete and replace Section II. 6.b of the "Required Contract Provisions-Federal-Aid Contracts" set forth in the Equal Employment Opportunity Special Provision with the following:

As part of the Contractor's equal employment opportunity (EEO) affirmative action program, on-the-job training (OJT) must be provided in accordance with these Special Provisions and 23 C.F.R. Part 230.

S-45.1 PURPOSE

The primary objective of the MnDOT OJT Program is to create a diverse workforce through the training and upgrading of minorities, women and disadvantaged people in highway heavy construction. The program seeks to improve access for people to reach journey level positions.

S-45.2 OJT GOAL

The OJT goal for this project is:

Trainees:	2
Hours:	300

S-45.3 TRAINEE ELIGIBILITY

- A A trainee must be a minority, woman or disadvantaged person. MnDOT's Office of Civil Rights will review the OJT Trainee Application for disadvantaged persons on a case-by-case basis. It is the Contractor's responsibility to provide information and documentation illustrating the OJT applicant is a disadvantaged person.
- B A person is not eligible to be a trainee in any trade in which the person is considered a journeyman or is otherwise skilled.
- C A trainee is eligible to be in the OJT program up to the following hours:

**Table SP2041.3-1
OJT Trainee Eligibility Hours**

Trade	Hours
Carpenter	7,000
Cement Mason	6,000
Crane Operator	8,000
Electrician	8,000
Iron Worker	6,000

Laborer	4,000
Operating Engineer	4,000
Painter	6,000
Pile Driver	8,000
Pipefitter	8,750
Truck Driver	2,000

- D A trainee may work on various projects or for different Contractors. However, the Contractor will only receive OJT credit for trainee hours worked on a Project with an OJT goal. Moving employees strictly to meet an OJT goal is a violation of affirmative action under 41 C.F.R. § 60-4.

S-45.4 OJT PROGRAM PROPOSAL

- A The Contractor must complete the OJT Program Proposal within five (5) business days of the bid opening. The OJT Program Proposal can be found here: mndot.gov/civilrights/ojt-proposal.html.
- B Approval of the OJT Program Proposal is a condition of Contract award. If approved, the Contractor will receive an email notification from MnDOT's Office of Civil Rights. Failure to submit the OJT Program Proposal will result in the bid being rejected for failure to meet a condition precedent.
- C The OJT Program Proposal must include the 1) number of trainees, 2) selected trades and 3) the planned training program. The number of trainees must be distributed amongst the trades on the basis of the Contractor's needs and the availability of journeypersons in the various trades within a reasonable area of recruitment. This section does not apply if the Contractor is an approved participant in the OJT Alternative Program under S-45.13.
1. The Contractor does not need to attach a training plan to the OJT Program Proposal if it has an apprenticeship program registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved but not necessarily sponsored by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship. The apprenticeship program must be administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts.
- D MnDOT's Office of Civil Rights and the Federal Highway Administration will approve a program if it is reasonably calculated to:
1. meet the equal employment opportunity obligations of the Contractor; and
 2. qualify the average trainee for journey-level status in the classification concerned by the end of the training period.
- E If the Contractor does not commit to meeting the OJT goal stated in this Proposal, then MnDOT's Office of Civil Rights may choose to perform a compliance review. The purpose of the compliance review will be to analyze the Contractor's employment practices and to facilitate good faith efforts to reach the OJT goal.

S-45.5 OJT TRAINEE APPLICATION

- A The Contractor must submit an OJT Trainee Application prior to the start of construction or within 30 business days of the trainee's start date on this project. The OJT Trainee Application can be found here: mndot.gov/civilrights/ojt-application.html.
1. The Contractor must submit an OJT Trainee Application each calendar year until the trainee reaches journey level status or the Project ends.
- B If a trainee indicates to the Contractor that the trainee is a graduate of a MnDOT OJT Supportive Services Program, the Contractor must confirm this by requesting a Certificate of Completion from the trainee or by contacting MnDOT's Office of Civil Rights.
- C At the time the Contractor submits the OJT Trainee Application, the Contractor must provide the trainee with a copy of the training program.
- D Trainee eligibility approval is not established until the Contractor receives the OJT Trainee Approval Letter from MnDOT's Office of Civil Rights.
- E The Contractor will only receive credit and reimbursement for work performed by a trainee on or after the effective reimbursement date, which is specified in the OJT Trainee Approval Letter.
1. Retroactive reimbursement: The Contractor will only receive credit or reimbursement for work performed by the trainee 30 business days prior to submission of the OJT Trainee Application.

S-45.6 OJT MENTORSHIP AGREEMENT

- A For the trainee to be eligible for the mentor assignment reimbursement rate outlined in the OJT Request for Reimbursement section of these Special Provisions, the Contractor must submit an OJT Mentorship Agreement and a training plan. The OJT Mentorship Agreement and training plan must be approved by MnDOT's Office of Civil Rights. The OJT Mentorship Agreement can be found here: mndot.gov/civilrights/ojt-mentor.html.
- B Mentorship renewal: An OJT Mentorship Agreement and training plan must be submitted each calendar year. The Contractor will only receive credit or reimbursement for work performed by the trainee 30 business days prior to submission of the OJT Mentorship Agreement.
- C The maximum mentorship ratio is two (2) trainees to one (1) mentor.

S-45.7 OJT TRAINEE DEPARTURE

If a trainee voluntarily or involuntarily departs from the company, the Contractor must complete and submit the OJT Trainee Departure Form within 15 business days to MnDOT's Office of Civil Rights. The OJT Trainee Departure form can be found here: mndot.gov/civilrights/ojt-departure.html. The OJT Trainee Departure form is not required for seasonal layoffs.

S-45.8 OJT CERTIFICATE OF COMPLETION

The Contractor must provide the trainee and MnDOT's Office of Civil Rights with an OJT Certificate of Completion indicating the type and length of training the trainee satisfactorily completed. The OJT Certificate of Completion template can be found here: mndot.gov/civilrights/forms.html.

S-45.9 OJT REQUEST FOR REIMBURSEMENT

- A** The Contractor may be reimbursed at one of the following rates for each trainee:
1. \$1.00 per hour worked;
 2. \$5.00 per hour worked by a graduate of a MnDOT OJT Supportive Services Program;
 3. \$10.00 per hour worked by a graduate of a MnDOT OJT Supportive Services Program and who is assigned a mentor by the Contractor.
- B** The Contractor must submit an OJT Request for Reimbursement to the Engineer at a time determined by the MnDOT Project Engineer, but no later than Completion of the Work as provided in 1516.3. The OJT Request for Reimbursement can be here: mndot.gov/civilrights/forms.html.
- C** The Contractor must maintain records and, upon request from the Office of Civil Rights, provide periodic reports documenting the Contractor's performance under these Special Provisions.
- D** The Contractor will only be reimbursed for trainee hours worked:
1. on projects with an OJT goal,
 2. in the trade that the trainee was approved in, and
 3. on or after the effective reimbursement date indicated on the OJT Trainee Approval Letter.
- E** The Contractor will receive reimbursement for any Subcontractor contributing trainee hours to the OJT goal. It is at the Contractor's discretion to reimburse a Subcontractor for any hours contributed to the OJT goal.
- F** Upon approval, some offsite training is permissible as long as the training is an integral part of an approved training program and does not comprise a substantial part of the overall training. Reimbursement for offsite training may only be made where the trainee is concurrently employed on a Federal-aid Project and the Contractor does one or more of the following:
1. contributes to the cost of the training;
 2. provides the instruction to the trainee; or
 3. pays the trainee's wages during the offsite training period.
- Prior to offsite training, the Contractor must submit an offsite training plan to MnDOT's Office of Civil Rights for review and approval.
- G** Engineer will not reimburse the Contractor if either 1) the failure to provide the required training, or 2) the failure to hire the trainee as a journey person, is caused by the Contractor and demonstrates the Contractor's lack of good faith to meet the requirements of this Special Provision.
- H** Payment for OJT hours will be paid under Item 1402621/00020 Change Order Trainees.

S-45.10 FINAL CLEARANCE

Pursuant to MnDOT Standard Specifications for Construction, Section 1516.3, "Completion of the Work", note (7), the Contractor must notify the Engineer and MnDOT's Office of Civil Rights when the OJT goal is met and/or work is complete. MnDOT's Office of Civil Rights will issue a Final Clearance letter under MnDOT Standard Specifications for Construction, Section 1516.3, "Completion of the Work", note (7).

S-45.11 GOOD FAITH EFFORTS REVIEW

If the Contractor is unable to meet the OJT goal, the Contractor must provide documentation demonstrating good faith efforts. The following standards apply to the review of a Contractor's good faith efforts to meet the OJT goal:

- A The Contractor must demonstrate that it made every effort to employ minorities, women and disadvantaged persons by conducting systematic and direct recruitment through public and private sources likely to yield minorities, women and disadvantaged persons.
- B The Contractor is responsible for demonstrating the actions it took to recruit minorities, women and disadvantaged persons as trainees prior to a determination as to whether the Contractor is in compliance with these requirements.
- C This training commitment is not intended and must not be used to discriminate against any applicant for training, whether a member of a minority group or not.
- D MnDOT's Office of Civil Rights may perform a compliance review if the Contractor fails to demonstrate good faith efforts. The purpose of this review will be to analyze the Contractor's employment practices and facilitate good faith efforts to reach future OJT goals.

S-45.12 TRAINING PROGRAM STANDARDS

- A The Contractor will receive credit for each trainee employed on the Project who is currently enrolled or becomes enrolled in an approved program. The Contractor will be reimbursed for such trainees as outlined in the OJT Request for Reimbursement section of these Special Provisions.
- B Training must be provided for construction trades rather than clerical positions. Training is permissible in entry-level management positions, such as office engineers, estimators, etc., where the training is oriented toward construction applications. If approved, the Contractor must provide documentation of hours worked by the trainee (e.g., payroll, timesheets) in a format approved by MnDOT's Office of Civil Rights.
- C It is expected that a trainee will begin training on the Project as soon as feasible after start of work in the trainee's trade and remain on the Project as long as training opportunities exist in the trainee's trade or until the trainee has completed an approved training program.
- D It is not required that a trainee work on the Project for the entire length of the Contract.
- E All training provided by the Contractor to meet the obligations in these Special Provisions must provide a significant and meaningful training experience for the trainee.
- F The Contractor will have fulfilled its responsibilities under this Special Provision if it has provided a significant, meaningful training experience and/or acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the Contract for a significant period.
- G In the event the Contractor subcontracts a portion of the work, the Contractor must determine how much of the training requirement will be fulfilled by the Subcontractor. Despite a

subcontract, the Contractor remains responsible for meeting the OJT training requirements. The Contractor must ensure that the On-the-Job Training Program special provisions are incorporated into its subcontracts.

- H Where feasible, 25 percent of apprentices or trainees in each trade must be in their first year of apprenticeship or training.
- I The language established in subpart (A) and (A)(I) of this section replaces the language established in the February 1, 2006 FEDERALLY FUNDED CONSTRUCTION CONTRACTS SPECIAL PROVISIONS DIVISION A – LABOR, Subpart X(B)(3) or the May 17, 2006 FEDERALLY FUNDED “ONLY” CONSTRUCTION CONTRACTS SPECIAL PROVISIONS DIVISION A – LABOR, Subpart X(B)(3).
 - 1. The trainee must be paid at not less than the rate specified in the program for the level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable federal wage decision.
 - i. The level of progress, expressed as a percentage requires the Contractor to pay the trainee at least 60 percent of the appropriate minimum journeyman’s rate specified in the applicable federal wage decision for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period.

S-45.13 OJT ALTERNATE PROGRAM

Contractors participating in the OJT Alternative Program must receive written approval from MnDOT’s Office of Civil Rights. An approved Contractor in the alternative program must submit their annual, company-wide training plan in accordance with specified timeframes. The trainees approved under the OJT Alternative Program must be utilized in accordance with the OJT Special Provisions. Approved Contractors participating in the OJT Alternative Program are subject to an annual goal rather than Project specific goals. Joint ventures are subject to Project specific goals.

S-46 (2051) HAUL ROAD MAINTENANCE AND RESTORATION

REVISED 04/14/23

S-46.1 Add the following to MnDOT 2051.5:

In addition to the amount the Contractor bids for Item 2051.501 (Maintenance and Restoration of Haul Roads), the Department agrees to reimburse the Contractor at the predetermined Unit Prices set forth below for Materials ordered by the Engineer. All Materials ordered by the Engineer for the Maintenance and Restoration of Haul Roads will be measured as set forth in the applicable section of the Standard Specifications.

Each of the following Materials measured as provided above, will be paid for at the following predetermined Unit Prices:

Table SP2051.5-1
Unit Prices for Additional Haul Road Material

Item No.	Item	Unit Price
2118.509	Aggregate Surfacing Class 1	\$12.00/ton
2130.523	Water	\$25.00/1000 gal.
2131.506	Calcium Chloride Solution	\$0.75/gal.
2211.509	Aggregate Base Class 5	\$13.00/ton
2211.509	Aggregate Base Class 6	\$13.00/ton
2360.509	Type SP 9.5 Wearing Course Mixture*	\$40.00/ton
2360.509	Type SP 12.5 Wearing Course Mixture*	\$40.00/ton
2231.509	Bituminous Patching Mixture*	\$75.00/ton

Crushing will not be required in the production of Class 1 material.

*Bituminous mixture must be (3,B) or better.

The above prices are compensation in full for Equipment, Materials and labor required to complete the Work. When Materials other than those listed above are ordered by the Engineer, they will be paid for as Extra Work in accordance with 1402.5, with the Contractor and the Department sharing equally in the costs. Blading and reshaping necessary for the maintenance and restoration of haul Roads is Incidental.

The above shall be performed to restore visible damage.

S-47 **(2101) CLEARING AND GRUBBING**
NEW 06/30/23

S-47.1 Delete and replace the first paragraph of MnDOT 2101.4B with the following:

The Engineer will make all measurements horizontally to points 10 feet outside the trunks of qualifying trees or stumps on the perimeter of the area being measured. The Engineer will measure separate areas less than 0.05 acre as 0.05 acre.

S-48 **(2101) CLEARING AND GRUBBING (TREE CLEARING)**
REVISED 09/29/23

S-48.1 Add the following to MnDOT 2101.3:

E See S-3 PROTECTION OF FISH AND WILDLIFE RESOURCES for dates of completion of tree clearing operations.

S-49 **(2104) REMOVING PAVEMENT AND MISCELLANEOUS STRUCTURES (REMOVE AND DISPOSE OF TREATED WOOD)**
REVISED 06/30/22

S-49.1 Add the following to MnDOT 2104.3:

F Remove and dispose of treated wood

Reuse the treated wood for its original intended purpose unless the condition of the treated wood is unsuitable for reuse. Replace treated wood damaged during the removal process at no expense to MnDOT.

If the in-place treated wood cannot be reused and the material must be disposed of:

- (1) Furnish a completed Transfer of Ownership form to the Engineer prior to removing treated wood from the Project limits. The Transfer of Ownership form is available at the following website:
<http://www.dot.state.mn.us/environment/buildingbridge/index.html>.
- (2) Dispose of all waste treated wood in a MPCA permitted Minnesota solid waste or industrial landfill or landfills listed under Landfills/Regulated Waste at <http://www.dot.state.mn.us/environment/buildingbridge/index.html>. Do not dispose of waste treated wood in a demolition landfill.
- (3) Within 30 Calendar days after the treated wood is transported to the landfill, provide the Engineer with shipping manifests, Scale tickets and invoices. Shipping manifests shall include the following information: specify treated wood as the type of waste, quantity of wood, date of hauling and disposal, and location of disposal.

S-49.2 Add the following to MnDOT 2104.5:

The Department will pay for the removal and disposal of treated wood as Extra Work in accordance with 1402.5.

S-50 (2106) EXCAVATION AND EMBANKMENT (COMPACTED VOLUME METHOD)
REVISED 10/14/22

S-50.1 Add the following to the beginning of MnDOT 2106.5:

Embankment, such as required for additional backfilling a muck excavation, may be subject to the provisions of 1402, "Contract Revisions."

S-50.2 Delete and replace the last sentence of MnDOT 2106.5A with:

The Department will make monetary price adjustments for Excavation - Muck in accordance with Table 2106.5-1.

S-50.3 Delete and replace MnDOT Table 2106.5-1 in MnDOT 2106.5A with the following:

Table 2106.5-1
Monetary Price Adjustments for Excavation – Muck
Areas Where Muck is Shown in the Plan

Muck Location	Compensation
For the muck located at a depth between 0 to 5 feet below the Plan Depth	Muck Excavation Unit Price
For the muck located at a depth between 5 to 15 feet below the Plan Depth	Muck Excavation Unit Price plus \$2.00 per cubic yard

Muck Location	Compensation
For the muck located at a depth greater than 15 feet below the Plan Depth	Negotiated Price

Additional Areas Where Muck is not Shown in the Plan

Muck Location	Compensation
For the muck located between 0 to 10 feet below the Subgrade Excavation	Muck Excavation Unit Price
For the muck located at a depth greater than 10 feet to 20 feet below the Subgrade Excavation	Muck Excavation Unit Price plus \$2.00 per cubic yard
For muck located at a depth greater than 20 feet below Subgrade Excavation	Negotiated Price

In addition to the monetary price adjustments listed above, compensation for additional muck excavation may be subject to the provisions of MnDOT 1402, "Contract Revisions" if additional shoring, dewatering, requisition of additional disposal site(s) because of increased volume of muck, or additional hauling beyond original disposal site(s), or other related activities are required.

S-51 (2106) DEWATERING

S-51.1 DESCRIPTION

This Work consists of dewatering for salvaging and installing pipe culvert aprons, repairing culvert joints, pipe ties – flat bar, and lining culvert pipe special to complete the Work in accordance with the detail shown on Plan Sheet No. 37 and MnDOT 2106.

S-51.2 MATERIALS

Provide all necessary pumping equipment, material, and labor to remove surface water and groundwater as required for the Work.

Water Treatment MnDOT 3875

Flocculants..... MnDOT 3898

S-51.3 CONSTRUCTION REQUIREMENTS

The Contractor shall isolate the aprons or culvert replacement locations with a temporary cofferdam (sandbags, plywood perimeter, etc.) to allow for dewatering to perform the Work. Dewatering (e.g. pumped discharges, trench/ditch cuts for drainage) related to the Work that may have turbid or sediment laden discharge water must be discharged to a temporary or permanent sedimentation basin on the Project site whenever possible. If the water cannot be discharged to a sedimentation basin prior to entering the surface water, it must be treated with the appropriate BMPs, such that the discharge does not adversely affect the receiving water or downstream landowners (MnDOT 3875 and MnDOT 3898). The Contractor must ensure that discharge points are adequately protected from erosion and scour. The discharge must be dispersed over natural rock riprap, sandbags, plastic sheeting or other accepted energy dissipation measures. Adequate sedimentation control measures are required for discharge water that contain suspended solids.

All water from dewatering activities must be discharged in a manner that does not cause nuisance conditions, erosion in receiving channels or on downslope properties, or inundation in wetlands causing significant adverse impact to the wetland.

At least 15 Calendar Days prior to submitting permits or starting Work, submit a dewatering site plan to the Engineer for acceptance. The Contractor's dewatering site plan shall be in writing and shall contain sufficient drawings to fully illustrate staging concepts involved. The Plans shall describe all facilities and procedures required to dewater the work area as necessary. Contractor may incorporate permanent Project features into the dewatering.

S-51.4 METHOD OF MEASUREMENT

The Engineer will measure the number of Dewatering locations as identified in the Plan.

S-51.5 BASIS OF PAYMENT

The Contract Unit Price for Dewatering is compensation in full for Equipment, Material and labor required to complete the Work.

The Department will pay for Dewatering on the basis of the following schedule:

Item No.:	Item:	Unit:
2106.602	Dewatering.....	each

S-52 (2106) DITCH CLEANING

S-52.1 DESCRIPTION

This Work consists of grading the existing ditch which runs parallel to the roadway centerline in accordance the detail on Plan sheet 30, MnDOT 2104, and MnDOT 2106.

S-52.2 MATERIALS - See Standard Specifications for Construction

S-52.3 CONSTRUCTION REQUIREMENTS

Remove and dispose of debris and excess material as detailed in the Plan to provide positive drainage from the existing culvert centerline.

The Engineer will inspect the ditch after the grading.

Excess material and debris will become property of the Contractor and disposed of outside of the right-of-way in accordance with MnDOT 2104.3D.3.

S-52.4 METHOD OF MEASUREMENT

The Engineer will measure length of cleaned ditch along the centerline of ditch at each of the locations.

S-52.5 BASIS OF PAYMENT

The Contract Unit Price for Ditch Cleaning is compensation in full for Equipment, Materials and labor required to complete the Work.

Erosion Control and Turf Establishment items will be measured and paid for separately.

The Department will pay for Ditch Cleaning on the basis of the following schedule:

Item No.:	Item:	Unit:
2106.603	Ditch Cleaning	linear foot

S-53 (2108) GEOSYNTHETIC CONSTRUCTION MATERIALS
REVISED 06/28/24

S-53.1 Delete and replace note (5) in MnDOT 2108.1 with the following:

(5) Provide confinement of granular materials.

S-53.2 Add the following to MnDOT 2108.1:

(6) Provide a geotextile interlayer to concrete pavement.

S-53.3 Add the following to MnDOT 2108.3A:

Do not place Recycled Concrete Aggregate (RCA) within 6 inches of Type 13 geotextile.

S-53.4 Delete and replace MnDOT 2108.3B with the following:

B Geotextile

If multiple pieces of geotextile are required, overlap geotextiles a minimum of 36-inches. In lieu of overlapping, the Contractor may sew the geotextile provided there is a passing Departmental Quality Assurance sewing test prior to installation.

Use a "double spool" machine capable of sewing a Federal Type 401 locking stitch per *ASTM D6193-16, Standard Practice for Stitches and Seams*. Sew a flat, "J," or butterfly seam per *ASTM D6193-16, Standard Practice for Stitches and Seams*, using thread with a minimum strength of 25 pounds, with 1-2 rows of stitching and 5-7 stitches per inch. Meet the required seam strength for the specified geotextile type. Install the geotextile, using the same geotextile, seamstress, thread, and sewing machine as used for the test.

The Contractor may use adhesives listed on the "Geosynthetic products/Adhesive seams" APL in lieu of overlapping or sewing for Types 3, 4, and 5 geotextiles. Apply adhesive per the Adhesive Seams Guidelines found on the "Geosynthetic products/Adhesive seams" APL.

S-53.5 Add the following to MnDOT 2108.3:

D Concrete Pavement Geotextile Interlayer

When a geotextile interlayer for concrete pavement is required, install Type 8 geotextile in accordance with 2301.3F, "Placement on Type 8 Non-woven Geotextile Interlayer."

S-53.6 Delete and replace MnDOT 2108.5 with the following:

The Contract Unit Price for Geosynthetic Construction Materials is compensation in full for Equipment, Materials, and labor required to complete the Work and includes the cost of providing, placing, overlapping, or sewing or gluing, testing, anchoring, and any needed repairs.

The Department will pay for Geosynthetic Construction Material based on the following schedule:

Item No.	Item	Unit
2108.504	Geotextile Fabric Type *	square yard
2108.504	Geogrid Type 	square yard

Notes:

* Specify Type: 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, or 13.

|| Specify Type: 1 or 2

S-54 (2112) SUBGRADE PREPARATION

- S-54.1 DESCRIPTION
This Work consists of preparing the subgrade in the radius widening for the Redwood County and Yellow Medicine County detours in accordance with Plan sheets 165 and 168 and MnDOT 2112
- S-54.2 MATERIALS - See Standard Specifications
- S-54.3 CONSTRUCTION REQUIREMENTS
Construct subgrade preparation to the depth shown in the plans.
- S-54.4 METHOD OF MEASUREMENT
The Engineer will measure the surface area of Subgrade Preparation constructed.
- S-54.5 BASIS OF PAYMENT
The Contract Unit Price for Subgrade Preparation is compensation in full for Equipment, Material, and labor required to complete the Work.

The Department will pay for Subgrade Preparation on the basis of the following schedule:

Item No.	Item	Unit
2112.604	Subgrade Preparation 6-12"	square yard

S-55 (2123) HYDRAULIC BACKHOE

REVISED 06/30/22

- S-55.1 DESCRIPTION
This Work consists of furnishing and operating a hydraulic backhoe in accordance with MnDOT 2123.
- S-55.2 MATERIALS – See Standard Specifications for Construction
- S-55.3 CONSTRUCTION REQUIREMENTS
Provide required transportation for this equipment.

Provide flaggers and traffic control, if necessary, while this equipment is in use.
- A Tractor Mounted Backhoe
The backhoe shall be tractor mounted and power operated, and of sufficient size and operating depth for the purpose intended and to the satisfaction of the Engineer.
- B Crawler Mounted Backhoe
The backhoe shall be crawler mounted and rated for at least 3/4 cubic yards capacity on the smallest bucket recommended for the unit by the manufacturer.
- S-55.4 METHOD OF MEASUREMENT
The Engineer will measure Hydraulic Backhoe in accordance with MnDOT 2123.4A.

S-55.5 BASIS OF PAYMENT

The Contract Unit Price for Hydraulic Backhoe is compensation in full for Equipment, Materials and labor required to complete the Work.

The Department will pay for Hydraulic Backhoe on the basis of the following schedule:

Item No.	Item	Unit
2123.610	Tractor Mounted Backhoe	hour
2123.610	Crawler Mounted Backhoe	hour

S-56 (2232) MILLED RUMBLE STRIPS

REVISED 06/30/22

S-56.1 DESCRIPTION

This Work consists of constructing rumble strips in accordance with MnDOT 2232, MnDOT 2355, and MnDOT 1717.

S-56.2 MATERIALS – See Standard Specifications for Construction

S-56.3 CONSTRUCTION REQUIREMENTS

A Bituminous Pavement

Milling shall be the only acceptable method of constructing the rumble strips.

A.1 Corrugated Rumble Strips (Stop Sign)

Rumble strips are to be located in advance of "Stop Ahead" and "Stop" signs as shown in the Plans.

A rumble strip consists of two strips each 5 feet long and one placed in each wheel track.

A.2 Continuous Rectangular and Sinusoidal Rumble Strips

Construct rumble strips within 2 inches of the specified alignment.

The grinding Equipment must be equipped with at sighting device enabling the operator to maintain the rumble strip alignment.

Indentations must comply with the specified dimensions in the Plans within 62.5 mil (1/16 inch) in depth and 10 percent in length and width.

Do not construct rumble strips on Structures or approach slabs.

A.3 Intermittent Rectangular and Shoulder Sinusoidal Rumble Strips

Construct rumble strips within 2 inches of the specified alignment.

Do not construct rumble strips on Structures or approach slabs.

B Concrete Pavement

Milling with diamond cutting blades shall be the only acceptable method of constructing the rectangular corrugated rumble strips.

Construct rumble strips within 1 inch of the specified alignment.

The grinding Equipment must be a self-propelled machine equipped with gang stacked diamond cutting blades with controls capable of providing the specified depths following the sinusoidal or rectangular corrugated pattern.

The resulting bottom of the rumble strip shall have a fine corduroy finish. If a course tooth pattern is present, increase the number of blades and/or decrease the thickness of the spacers on the cutting head.

The Equipment must also be equipped with a sighting device enabling the operator to maintain the rumble strip alignment.

Indentations must comply with the specified dimensions in the Plans within 62.5 mil (1/16 inch) in depth and 10 percent in length and width.

Do not construct rumble strips on Structures or approach slabs.

S-56.4 METHOD OF MEASUREMENT

For Corrugated Rumble Strips (Stop Sign), the Engineer will measure the number of rumble strips constructed.

For Continuous and Intermittent Rectangular and Sinusoidal Rumble Strips, the Engineer will measure the length of milled rumble strips constructed. Breaks for side streets, entrances, ramps, and turn lanes will be excluded from this measurement.

S-56.5 BASIS OF PAYMENT

The Contract Unit Price for Milled Rumble Strips is compensation in full for Equipment, Materials and labor required to complete the Work.

The Department will pay for Milled Rumble Strips on the basis of the following schedule:

Item No.	Item	Unit
2232.602	Milled Rumble Strips	each
2232.603	Milled Rumble Strips	linear foot
2232.603	Milled Rumble Strips (Concrete)	linear foot
2232.603	Milled Rumble Strips - Intermittent.....	linear foot
2232.603	Milled Rumble Strips-CL.....	linear foot
2232.603	Milled Sinusoidal Rumble Strips.....	linear foot
2232.603	Milled Sinusoidal Rumble Strips (Concrete).....	linear foot
2232.603	Milled Sinusoidal Rumble Strips - Intermittent	linear foot
2232.603	Milled Sinusoidal Rumble Strips (Concrete) - Intermittent.....	linear foot
2232.603	Milled Sinusoidal Rumble Strips-CL	linear foot
2232.603	Milled Sinusoidal Rumble Strips Concrete-CL	linear foot

S-57 (2357) BITUMINOUS TACK COAT

REVISED 01/27/23

S-57.1 Delete and replace the Emulsified Asphalt section of MnDOT 2357.2A with the following:

Emulsified Asphalt

AASHTO M 208, "Standard Specification for Cationic Emulsified Asphalt," dilution of the emulsion is only allowed by the supplier. No field dilution is allowed. The storage tank for diluted emulsion must have a recirculation system or agitator that will prevent settlement or separation of the Material.

**Table 2357.2-1
Residual Asphalt Content**

	Minimum Residual Asphalt Content		
Emulsion	Undiluted	Diluted (7:3), D30	Diluted (8.5:1.5), D15
CSS-1 or CSS-1h	57 percent	40 percent	N/A
CQS-1h	N/A	N/A	53 percent

S-57.2 Delete and replace Table 2357.3-1 in MnDOT 2357.3D with the following:

**Table 2357.3-1
Tack Coat Application Rates**

	Application Rates – gallon/square yard			
Material Type	CSS-1 or CSS-1h	CSS-1 or CSS-1h	CQS-1h	MC
Surface Type	Undiluted Emulsion	Diluted* Emulsion (7:3), D30	Diluted* Emulsion (8.5:1.5), D15	Cutback
New Asphalt	0.04 to 0.06	0.06 to 0.09	0.05 to 0.07	0.05 to 0.07
Old Asphalt† and PCC	0.05 to 0.09	0.07 to 0.135	0.08 to 0.10	0.09 to 0.11
Milled Asphalt and Milled PCC	0.06 to 0.09	0.09 to 0.135	0.09 to 0.11	0.09 to 0.11
Notes: * As provided by the asphalt emulsion supplier (see 2357.2A, “Bituminous Material”) Use when approved by the Engineer † Older than 1 year				

S-57.3 Delete and replace MnDOT 2357.5A with the following:

A Monetary Adjustments

The Department must apply Incentives and Disincentives and may apply monetary deductions for Bituminous Tack Coat. The amounts of these adjustments are deemed reasonable.

The Engineer in conjunction with the Bituminous Engineer may deduct up to 5 percent of the mixture Unit Price for failures related to 3151, “Bituminous Material”.

S-58 (2360) PLANT MIXED ASPHALT PAVEMENT

REVISED 09/27/24

S-58.1 Delete and replace Table 2360.1-1 of MnDOT 2360.1B(4) with the following:

**Table 2360.1-1
Traffic Levels**

Traffic Level	20 year Design ESALs
2 *	< 1
3	1 – < 3
4	3 – < 10
5	10 – ≤ 30
6	>30 (See SMA Provision)

Traffic Level	20 year Design ESALs
NOTE: The requirements for gyratory mixtures in this section are based on the 20 year design traffic level of the Project, expressed in Equivalent Single Axle Loads (ESALs) 1×10^6 ESALs	
* AADT < 2,300	
AADT > 2,300 to < 6,000	

S-58.2 Delete and replace the first paragraph of MnDOT 2360.2E.5.a(2)

At least 7 Working Days before the start of asphalt production, submit the proposed job mix formula (JMF) in writing and signed by a MnDOT Certified Bituminous Mix Designer for each combination of Aggregates to be used in the mixture. Include test data to demonstrate conformance to mixture properties as specified in Table 2360.2-4, and 3139.2, "Graded Aggregate for Bituminous Mixtures, Requirements." Use forms approved by the Department for the submission.

S-58.3 Delete and replace the first paragraph of MnDOT 2360.2E.5.b with the following:

The Contractor may use the modified mixture design if testing shows that the Aggregates meet the requirements of 3139.2, "Graded Aggregate for Bituminous Mixtures, Requirements," in the current construction season and if the MnDOT Certified Bituminous Mix Designer submitting the mixture design has at least 2 years' experience in mixture design. The Department will not require mixture submittal.

S-58.4 Delete and replace MnDOT 2360.2E.5.b(2) with the following:

E.5.b(2) JMF Submittal

At least 2 Working Days before beginning asphalt production, submit a proposed JMF in writing to the District Materials Laboratory signed by a MnDOT Certified Bituminous Mix Designer for each combination of Aggregates. For each JMF submitted, include documentation in accordance with 2360.2E.5.a, "Option 1 – Laboratory Mixture Design," to demonstrate conformance to mixture properties as specified in Table 2360.2-4 and Table 3139.2-3. Submit the JMF on forms approved by the Department.

S-58.5 Delete and replace the first paragraph of MnDOT 2360.2E.5.c with the following:

A production mixture design is a new mixture design developed by modifying an existing approved mixture design using plant produced Material or laboratory produced Material. Production mixture designs are allowed only when approved by the Engineer and require an interactive process with the District Materials Laboratory to discuss the proposed modification. Only a MnDOT Certified Bituminous Mix Designer with at least 2 years' experience in mixture design can request a production mixture design.

S-58.6 Delete and replace the first paragraph of MnDOT 2360.2E.5.c(2) with the following:

At least 2 Working Days before beginning asphalt production with the Option 3 mix design begin the interactive process with the District Materials Engineer and submit a proposed JMF. Option 3 mix design submittals must be signed by a MnDOT Certified Bituminous Mix Designer. If directed by the District Materials Engineer submit an optimum asphalt content point for the proposed JMF (new design). If the Option 3 mix design is utilized for Aggregate substitution submit an optimum asphalt content point when directed by the District Materials Engineer. When an optimum asphalt content point is required include documentation showing the mixture is in accordance with 2360.2E.5.b, "Option 2 – Modified Mixture Design," and meets the requirements of Table 2360.2-4.

S-58.7 Delete and replace the second paragraph of MnDOT 2360.2F with the following:

Show the JMF limits for gradation control Sieves in accordance with Aggregate gradation broadbands shown in Table 3139.2-2, percent asphalt binder content, air voids, and adjusted AFT. If the Department issues a Mixture Design Report, this report only confirms that the Department reviewed the mixture and that it meets volumetric properties shown in Table 2360.2-4 and Table 2360.2-5. The Department makes no guaranty or warranty, either express or implied, that compliance with volumetric properties ensures Specification compliance regarding placement and compaction of the mixture, or any other requirements.

S-58.8 Delete and replace 2360.2G.2(1) with the following:

(1) Conduct QA and verification testing

S-58.9 Delete and replace the first paragraph of MnDOT 2360.2G.3 with the following:

The Engineer will obtain at least one random verification sample per day per mix type from behind the paver or from the truck box. At least once per day, the Engineer will randomly determine when the mixture sample will be sampled. The Engineer will observe the Contractor sampling and splitting this QA-Verification sample and take immediate possession of the sample after it is split. The split of this sample, given to the Contractor, must be tested by the Contractor and will replace the next scheduled QC sample. Sample enough Material to accommodate retesting in case the samples fail.

S-58.10 Delete and replace the second paragraph of MnDOT 2360.2G.4.a with the following:

Provide QC technicians certified as a Bituminous Plant Tester meeting the requirements of the MnDOT Technical Certification Program for QC testing and a MnDOT Bituminous Mix Designer to make process adjustments. Provide at least one person per paving operation certified as a Bituminous Street Inspector.

S-58.11 Delete and replace the second paragraph of MnDOT 2360.2G.4.b with the following:

If coarse and fine Aggregate angularity are not evaluated for every QC sample retain the extracted gradation samples for the respective QC samples for additional testing. Keep the Aggregate samples in containers with field identification labels for a period of 10 Calendar Days. The Engineer will identify which extracted gradation sample is the verification companion and test for coarse and fine Aggregate angularity.

S-58.12 Delete and replace the second paragraph of MnDOT 2360.2G.7.g with the following:

The Contractor may test mixtures containing only virgin Aggregates from composite belt samples. Test mixtures containing RAP from extracted Aggregates taken from standard production samples.

S-58.13 Delete and replace the second paragraph of MnDOT 2360.2G.13.a with the following:

A Certified MnDOT Bituminous Mix Designer will review the requested change for the Department. If the request meets the design requirements in Table 3139.2-2, Table 3139.2-3, and Table 2360.2-4, the Department will issue a revised Mixture Design Report. Each trial mixture design submittal in accordance with 2360.2E, "Mixture Design," may have three JMF adjustments per mixture per Project without charge.

S-58.14 Delete and replace the first paragraph of MnDOT 2360.5B.6 with the following:

If the individual test result for adjusted AFT is less than 7.5 microns, the Department may either apply monetary deductions in accordance with Table 2360.5-2 or order the Material removed and replaced represented by the individual test. This tonnage includes all Material placed from the sample point of the failing test to the sample point when the test result meets Specification requirements. If the failure occurs at the first test after the start of daily production, the Engineer may include the tonnage from the start of production that day with the tonnage subject to monetary deduction or removal and replacement.

S-58.15 Delete and replace Table 2360.5-2 of MnDOT 2360.5B.6 with the following:

Table 2360.5-2
Monetary Deduction Schedule for Individual Test Results, Adjusted AFT

Individual Adjusted AFT, microns	Monetary Deduction, percent
≥ 7.5	0
7.4 – 7.0	10
6.9 – 6.1	25
≤ 6.0	Remove and replace at no expense to the Department.

S-58.16 Delete and replace the second paragraph of MnDOT 2360.5B.10 with the following:

The Engineer will calculate the moving average (n=4) Adjusted AFT during the sixth test after the beginning of mixture production of that specific mixture. The Engineer will include the individual results of calculations for tests No. 3, No. 4, No. 5, and No. 6 with this calculation. The Department may consider Material with the moving average (n=4) of the Adjusted AFT is less than 8.0 microns as unsatisfactory and apply monetary deductions of 80 percent of the relevant Contract Unit Price. The Department may calculate the quantity of Material subject to replacement or monetary deductions as the tons placed from the sample point of all Individual Adjusted AFT results less than 8.0 micrometers, which contributed to the moving average value that was less than 8.0 microns, to the sample point where the Individual Adjusted AFT is at least 8.0 microns. If the failure occurs at the first test after the start of daily production, the Engineer will include the tonnage from the start of production that day with the tonnage subject to monetary deductions.

S-58.17 Delete and replace Table 2360.5-6 of MnDOT 2360.5B.13 with the following:

Table 2360.5-6
Incentive and Disincentive for Longitudinal Joint Density, 4% Design Void*

Longitudinal Joint (Confined Edge) Density, percent	Pay Factor B Longitudinal (Confined Edge)		Longitudinal Joint (Unsupported Edge) Density, percent	Pay Factor C (Unsupported Edge)	
	Traffic Level 2 & 3	Traffic Level 4 & 5		Traffic Level 2 & 3	Traffic Level 4 & 5
≥ 92.6	1.02 [†]	1.03 [†]	≥ 91.5	1.02 [†]	1.03 [†]
92.0 – 92.5	1.01 [†]	1.02 [†]	90.5 – 91.4	1.01 [†]	1.02 [†]
91.0 – 91.9	1.00	1.00	89.5 – 90.4	1.00	1.00
89.5 – 90.9	0.98	0.98	88.0 – 89.4	0.98	0.98
88.0 – 89.4	0.95	0.95	86.5 – 87.9	0.95	0.95
87.0 – 87.9	0.91	0.91	85.0 – 86.4	0.91	0.91
< 87.0	0.85	0.85	< 85.0	0.85	0.85
<p>* The Department will limit incentive payment for longitudinal joint density to lots with evaluated longitudinal joint densities.</p> <p> Calculate the percent of maximum specific gravity to the nearest tenth.</p> <p>† Payment will only apply if the day's weighted average individual production air voids fall within - ½ percent of the target air void value. Base the weighted average air voids on all the mixture production tests in accordance with 2360.2.G.7, "Production Tests" for the corresponding day and weight by the tons the corresponding test represents.</p>					

S-58.18 Delete and replace Table 2360.5-7 of MnDOT 2360.5B.13 with the following:

Table 2360.5-7

Incentive and Disincentive Schedule for Longitudinal Joint Density, 3 percent Design Void*

Longitudinal Joint (Confined Edge) Density, percent	Pay Factor B Longitudinal (Confined Edge)		Longitudinal Joint (Unsupported Edge) Density, percent	Pay Factor C (Unsupported Edge)	
	Traffic Level 2 & 3	Traffic Level 4 & 5		Traffic Level 2 & 3	Traffic Level 4 & 5
≥ 93.6	1.02†	1.03†	≥ 93.0	1.02†	1.03†
93.0 – 93.5	1.01†	1.02†	92.0 – 92.9	1.01†	1.02†
92.0 – 92.9	1.00	1.00	90.5 – 91.9	1.00	1.00
90.5 – 91.9	0.98	0.98	88.0 – 90.4	0.98	0.98
89.0 – 90.4	0.95	0.95	87.0 – 87.9	0.95	0.95
88.0 – 88.9	0.91	0.91	86.0 – 86.9	0.91	0.91
< 88.0	0.85	0.85	< 86.0	0.85	0.85

* The Department will limit incentive payment for longitudinal joint density to lots with evaluated longitudinal joint densities.

|| Calculate the percent of maximum specific gravity to the nearest tenth.

† Payment will only apply if the day's weighted average individual production air voids fall within ½ percent of the target air void value. Base the weighted average air voids on all the mixture production tests in accordance with 2360.2.G.7, "Production Test" for the corresponding day and weight by the tons the corresponding test represents.

S-59 (2399) PAVEMENT SURFACE SMOOTHNESS

REVISED 12/29/23

S-59.1 Delete and replace Table 2399.3-1 of MnDOT 2399.3B with the following:

Table 2399.3-1
Areas Excluded from Smoothness Evaluation

Pavement	Excluded Areas
Bituminous or concrete	Paving in areas with a posted vehicle speed less than or equal to 45 mph
	Ramps, Loops
	Acceleration and deceleration lanes less than 1,000 feet in length
	Physically isolated segments less than 1,000 feet in length
	Projects less than 1,000 feet in length
	Intersections constructed under traffic – begin and end exclusion 100 feet from the Intersection radius
Bituminous	Single Lift overlays placed directly on concrete
Concrete	Doweled Shoulders greater than or equal to 10 feet in width

S-59.2 Delete and replace Table 2399.3-2 of MnDOT 2399.3B with the following:

Table 2399.3-2
Areas Excluded from Smoothness and ALR Evaluation

Pavement	Excluded Areas
Bituminous or concrete	Paving in areas with a posted vehicle speed less than or equal to 35 mph
	Paving in areas with a cautionary vehicle speed less than or equal to 35 mph
	Turn Lanes, crossovers
	20 feet on either side of obstructions in lane that obstruction is located
	Side Streets, side connections
	150 feet before stop signs at an Intersection

Pavement	Excluded Areas
	150 feet before yield signs or concrete curb/median areas at a roundabout
	Bridge decks, approach panels
	20 feet from Bridge decks or approach panels
	20 feet from terminal headers tying into existing pavement
Bituminous	Paved Shoulders
	Intersections where mainline profiles are merged or blended into the cross Street profile – begin and end exclusion 100 feet from the Intersection radius
Concrete	Doweled Shoulders less than 10 feet in width
	Undoweled Shoulders
	Headers adjacent to colored concrete

S-59.3 Delete and replace MnDOT 2399.3D.1.a with the following:

D.1.a Bituminous Pavements

See Section 2360, “Plant Mixed Asphalt Pavement” of the Special Provisions for the Smoothness equation requirements. If no Smoothness equation is specified in the Contract, evaluate with equation HMA-C.

S-59.4 Delete and replace Table 2399.5-1 of MnDOT 2399.5A.1.a with the following:

Table 2399.5-1
Smoothness Incentive/Disincentive and Corrective Work for Bituminous Pavements

Equation	Smoothness inches/mile	Incentive/Disincentive \$/0.1 mile
HMA-A	< 25.0	400.00
	25.0 – 75.0	800.00 – 16.000 × Smoothness
	> 75.0	Corrective Work to ≤ 50.0 inches per mile
HMA-B	< 30.0	270.00
	30.0 – 80.0	594.00 – 10.800 × Smoothness
	> 80.0	Corrective Work to ≤ 55.0 inches per mile
HMA-C	< 35.0	180.00
	35.0 – 95.0	390.00 – 6.000 × Smoothness
	> 95.0	Corrective Work to ≤ 95.0 inches per mile

S-60 (2411) PLUG AND ABANDON CATTLE PASS

S-60.1 DESCRIPTION

This Work consists of constructing an 8-inch minimum thickness masonry bulkhead, filling, and abandoning in place cattle passes in accordance with MnDOT 2506, MnDOT 2411, MnDOT 2461, MnDOT 3107 and the detail on Plan sheet 32.

S-60.2 MATERIALS

A Fill material used shall be washed granular material meeting the following gradations:

Table SP2411-1
Gradation Chart

Sieve Size	Limits
3/8 inch	100
No. 4	95-100
No. 8	80-100
No. 16	50-85
No. 30	25-60
No. 50	5-30
No. 100	0-10
No. 200	0.0-3.0

B ConcreteMnDOT 2461
3AGrout

C Masonry Mortar.....MnDOT 3107

S-60.3 CONSTRUCTION REQUIREMENTS

Construct a masonry bulkhead on each end in accordance with MnDOT 2506.2 and MnDOT 2506.3 using 3AGrout concrete material. Place a 2 inch PVC standpipe vertically at each bulkhead location to allow for granular material to be blown in from one end while the other 2 inch PVC standpipe allows for the air to escape the voided area within the pipe. Once the granular material begins to blow out the exhaust riser the pipe will be deemed full, after which the standpipes will be removed. Cut off fill and exhaust riser below grade. Plug with a Masonry Mortar in accordance with MnDOT 3107.

S-60.4 METHOD OF MEASUREMENT

The Engineer will measure the number of cattle passes plugged, filled and abandoned.

S-60.5 BASIS OF PAYMENT

The Contract Unit Price for Plug and Abandon Cattle Pass is compensation in full for Equipment, Materials and labor required to complete the Work.

The Department will pay for Plug and Abandon Cattle Pass based on the following schedule:

Item No.	Description	Unit
2411.602	Plug and Abandon Cattle Pass	each

S-61 (2412) PRECAST CONCRETE BOX CULVERTS

NEW 06/28/24

S-61.1 Add the following to MnDOT 2412.3A:

Do not use bedding or backfill material composed of recycled concrete aggregate (RCA).

S-62 (2433) STRUCTURE RENOVATION

REVISED 06/30/23

S-62.1 Delete and replace the second paragraph of MnDOT 2433.3C.5.b with the following:

Collect all debris and other Material removed from the surface and cracks and dispose of it in accordance with 2104.3D, "Disposal of Materials and Debris."

S-63 (2461) STRUCTURAL CONCRETE

REVISED 06/28/24

S-63.1 Delete and replace the second sentence of MnDOT 2461.2E.1.e with the following:

Use "EX" for exposed Aggregate mixes, "CO" for colored concrete mixes, and "FRC" for fiber reinforced concrete mixes.

S-63.2 Delete and replace Table 2461.2-5 of MnDOT 2461.2E.2.a(2) with the following:

**Table 2461.2-5
Concrete Mix Design Requirements for Grout and Lean Mix Backfill Mixes**

Mix Number	Maximum W/C Ratio	Water Content (pounds)	Cement Content (pounds)	Fly Ash Content (pounds)	Fine Aggregate Calculation (pounds)	Coarse Aggregate Calculation (pounds)	Percent Air Content	Slump Range	Minimum 28-Calendar Day Compressive Strength, f'c
1A Grout*	0.50	379	758	0	100 percent †	0	3.0	As needed	4000 psi
3A Grout *	0.44	379	865	0	100 percent †	0	10.0	As needed	4000 psi
Lean Mix	1.00	375	125	250	50 percent†	50 percent† ‡	N/A	10 inches ± 1 inch	#

* Do not provide 1A or 3A grout containing coarse Aggregate or fly ash.

|| Coarse Aggregate quality meets requirements of 3137.2D.1, "Coarse Aggregate for General Use."

† After adding the specified quantities of cement, fly ash, and water, provide the remaining Aggregate to an absolute volume 27.00 – 27.27 cubic feet.

‡ Meeting #67 gradation as shown in Table 3137.2-4.

Maximum 28-Calendar Day compressive strength of 1500 psi.

S-63.3 Delete and replace the first sentence of MnDOT 2461.2E.2 with the following:

Acceptance of concrete is contingent on meeting all specification requirements, including but not limited to requirements related to field placement and performance.

S-63.4 Delete and replace the second paragraph of 2461.2E.2.b with the following:

The Contractor assumes full responsibility for the concrete mix design and performance of the concrete, including meeting all specification requirements.

S-63.5 Delete and replace Table 2461.2-6 of MnDOT 2461.2E.2.b(1) with the following:

Table 2461.2-6
Concrete Mix Design Requirements (Not applicable to High-Performance Concrete or Mass Concrete)

Concrete Grade	Mix Number	Intended Use *	Maximum W/C Ratio 	Maximum Cementitious Content (pounds/ cubic yard)	Maximum percent SCM (Fly Ash/ Slag/Ternary)	Design Slump Range (inches)	Minimum 28-day Compressive Strength, f'c	3137, "Coarse Aggregate for Portland Cement Concrete."
B Bridge Substructure	3B52	Abutment, stems, wingwalls, paving brackets, pier columns, pier caps, pier struts	0.45	750	30/35/40	2 - 5	4000 psi	2D.1
F Flatwork	3F32	Curb and gutter	0.42	750	30/35/0	1/2 - 3 #	4500 psi	2D.1
	3F52 3F57EX + 3F52CO ‡	Sidewalk, curb and gutter, slope paving, median Sidewalk, driveway entrances, ADA pedestrian Sidewalk	0.45	750	25/30/0	2 – 5	4500 psi	2D.1
	1G52	Footings and pilecap	0.55	750	30/35/40	2 - 5	4500 psi	2D.1
G General Concrete	3G52	Footings, pilecap, walls, cast-in-place manholes and catch basins, fence posts, signal bases, Light Pole foundations, erosion control Structures, cast-in-place box culverts, Culvert headwalls, open flumes, cast-in-place wall stems	0.45	750	30/35/40	2 - 5	4500 psi	2D.1
M Median Barrier	3M12	Slipform barrier, Median barrier, non-bridge	0.42	750	30/35/40	1/2 - 1 #	4500 psi	2D.1
	3M52	Barrier, Median barrier, non-bridge	0.45	750	30/35/40	2 – 5	4500 psi	2D.1
P Piling	1P42	MSE and gravity wall leveling pad	0.63	750	30/35/40	2 – 4	3000 psi	2D.1
	1P62	Piling, spread footing leveling pad	0.63	750	30/35/40	3 – 6	3000 psi	2D.1
R Pavement Rehabilitation	3R52	CPR – Full-depth concrete repairs, concrete base	0.45	750	30/35/40	2 – 5	4000 psi	2D.3
S Bridge Superstructure	3S12	Slipform Bridge barrier, parapets, end post	0.42	750	30/35/40	1/2 - 1 #	4000 psi	2D.2
	3S52	Median barrier, raised median, pilaster, curb, Sidewalk, approach panel, formed Bridge barrier, parapet, end post, collar	0.45	750	30/35/40	2 - 5	4000 psi	2D.2
X Miscellaneous Bridge	1X62	Cofferdam seals, rock sockets, drilled shafts	0.45	750	30/35/40	3 – 6	5000 psi	2D.1
	3X62	Drilled shafts above the frost line	0.45	750	30/35/40	3 – 6	5000 psi	2D.1

Concrete Grade	Mix Number	Intended Use *	Maximum W/C Ratio 	Maximum Cementitious Content (pounds/ cubic yard)	Maximum percent SCM (Fly Ash/ Slag/Ternary)	Design Slump Range (inches)	Minimum 28-day Compressive Strength, f'c	3137, "Coarse Aggregate for Portland Cement Concrete."
Y Bridge Deck	3Y42-M § 3Y42-S §	Bridge decks, integral abutment diaphragms, pier continuity diaphragms, expansion joint replacement mix	0.45	750	30/35/40	2 - 4	4000 psi	2D.2
	3Y47 **	Deck patching mix	0.45	750	30/35/40	2 – 4	4000 psi	2D.2
<p>If the intended use is not included elsewhere in the Specification or Special Provisions, use mix 3G52, unless otherwise directed by the Engineer.</p> <p> The minimum Water/Cement (W/C) ratio is 0.30.</p> <p>† Mix 3F57EX requires the use of Coarse Aggregate Designation "7", "2" or "3" for the 4th digit in accordance with Table 2461.2-3.</p> <p>‡ Identify the specific color used on the Certificate of Compliance. Colored concrete is only allowed when specified in the Plans or the Contract.</p> <p># Adjust slump in accordance with 2461.3G.7.a, "Concrete Placed by the Slip-Form Method," for slip-form concrete placement.</p> <p>§ The "-S" indicates a Bridge deck with a structural slab and "-M" indicates a monolithic Bridge deck.</p> <p>** Mix 3Y47 requires the use of Coarse Aggregate Designation "7" or "3" for the 4th digit in accordance with Table 2461.2-3.</p>								

S-63.6 Delete and replace the first sentence of MnDOT 2461.2E.2.b(2) with the following:

Design High-early (HE) concrete to achieve the minimum design strength and time required in accordance with Table 2461.2-7.

S-63.7 Delete and replace Table 2461.2-7 of MnDOT 2461.2E.2.b(2) with the following:

Table 2461.2-7
High-Early (HE) Concrete Requirements
(Not applicable to Bridge Superstructure or Mass Concrete)

Mix Number	Concrete Grades Allowed	Minimum Design Time	Maximum W/C Ratio	Maximum Cementitious Content (pounds/cubic yard)*	Slump Range	Minimum Design Strength	Minimum 28-Calendar Day Compressive Strength, f'c	3137 "Coarse Aggregate for Portland Cement Concrete"
1PHE62	P	-	0.63	750	3 – 6 inches	-	3000 psi	2.D.1
3HE32	F	48 hours	0.42	750	1/2 – 3 inches †	2000 psi	4500 psi	2.D.1
3HE52	F	48 hours	0.42	750	2 – 5 inches	2000 psi	4500 psi	2.D.1
3HE52	B and G	48 hours	0.42	750	2 – 5 inches	3000 psi	4500 psi	2.D.1
3YHE52	Y (Repairs Only)	48 hours	0.42	750	2 – 5 inches	3000 psi	4000 psi	2.D.2
3RHE52	R (Repairs Only)	48 hours	0.42	750	2 – 5 inches	2000 psi	4000 psi	2.D.3
<p>* Supplementary cementitious Materials allowed.</p> <p> Used only for placing concrete in piles during freezing temperatures, provide 30 percent additional cement to the concrete mix for concrete 10 feet below the ground line or water line in accordance with 2451.3D.6, "Cast-in-Place Concrete Piles."</p> <p>† Adjust slump in accordance with 2461.3G.7.a, "Concrete Placed by the Slip-Form Method."</p>								

S-63.8 Delete and replace Table 2461.2-8 of MnDOT 2461.2E.2.b(3) with the following:

Table 2461.2-8
Project Specific Contractor Designed Mixes

Concrete Grade	Intended Use	Specification	3137 "Coarse Aggregate for Portland Cement Concrete"
A	Concrete Pavement	2301, "Concrete Pavement"	2.D.3
M, V, W, Z	Precast Concrete	2462, "Precast Concrete"	Varies
HPC	High Performance Concrete	2401, "Concrete Bridge Construction"	2.D.2
MC	Mass Concrete	Special Provision 2401	Varies
SCC	Self-consolidating Concrete	Special Provision 2401	Varies
CLSM, LCCF	Cellular Concrete Grout	2519, "Cellular Concrete"	None
Non-MnDOT Designated	Per Contract	Per Contract	Per Contract
All concrete grades	Delivery Time is > 90 minutes	2461.3G.3.a, "Delivery Time Beyond 90 minutes"	Varies

S-63.9 Delete and replace the first, second, and third paragraphs of MnDOT 2461.2E.3 with the following:

At least 21 Calendar Days before initial placement of the concrete, submit the appropriate General concrete mix design form to the Concrete Engineer for review. Use the most current forms, specific gravity, and absorption data available from the MnDOT Concrete Engineering website.

Design the concrete mix to an absolute volume of 27.00 – 27.27 cubic feet.

MnDOT will review the Contractor's proposed mixture design solely for compliance with applicable mix design properties in 2461.2. The Department makes no guaranty or warranty, either express or implied, that compliance with mix design properties ensures compliance with any other requirements.

S-63.10 Delete and replace Table 2461.2-11 of MnDOT 2461.2E.4 with the following:

Table 2462.2-11 Mix Design Adjustments/Requirements		
	Type of Change or Adjustment	Mix Design Resubmittal Requirements
Level 1 mixes	Cementitious Sources Admixture Sources Admixture Dosage Rate	No resubmittal required
	Aggregate Sources Aggregate Proportions Any cementitious proportion ($\leq 15\%$ max fly ash)	Resubmittal of Mix Design
	Any cementitious proportion ($> 15\%$ max fly ash)	Resubmittal in accordance with 2461.2E.3.a, "Preliminary Test Data Requirements for Level 2 Mixes"
Level 2 mixes	Cementitious Sources Admixture Dosage Rate	No resubmittal required
	Aggregate Source, no change in Aggregate Class $\leq 5\%$ Total Cementitious $\leq 10\%$ Individual Aggregate Weights	Resubmittal of Mix Design
	Aggregate Source and Class of Coarse Aggregate Supplementary Cementitious Proportion $> 5\%$ Total Cementitious $> 10\%$ Individual Aggregate Weights Admixture Sources	Resubmittal in accordance with 2461.2E.3.a, "Preliminary Test Data Requirements for Level 2 Mixes"
* Only one (1) increase in total cementitious allowed per mix design, next adjustment requires resubmittal in accordance with 2461.2E.3.a, "Preliminary Test Data Requirements for Level 2 Mixes"		

S-63.11 Delete and replace MnDOT 2461.2E.5 with the following:

E.5 MnDOT Review of Continual Acceptance of Contractor Mix Designs

The Concrete Engineer will review test results relating to each individual Contractor concrete mix design. The Concrete Engineer will review the following test results:

- (1) Plant and Field Test Results
- (2) Compressive Strength at 28 Calendar Days
- (3) Monthly Aggregate Quality Testing

Provided the concrete continues to meet specification requirements, the Contractor will have that mix design available for future use.

S-63.12 Add the following to MnDOT 2461.3D.1:

D.1.g Fiber Proportioning

Do not incorporate fiber packaging materials into the Concrete. The Engineer considers the following fiber addition methods acceptable on all jobs:

- (1) Open bag and distribute fibers on Aggregate belt at Ready-mix Concrete plant
- (2) Open bag, break apart any fiber clumps, and introduce fibers into Ready-mix Concrete truck in a well-distributed manner

Any alternate methods to add fibers to the concrete mix must be submitted for acceptance by the Engineer and demonstrated by a successful trial placement.

Ensure fibers are uniformly dispersed in the Concrete to avoid balling. Balling of fibers is defined as a 2 inch diameter or greater conglomerate of fibers at the point of placement. The Engineer will consider any balling more prevalent than 1 per load of Concrete as unacceptable and may reject the load of concrete.

S-63.13 Delete and replace MnDOT 2461.3D.1.b with the following:

D.1.b Weighing Equipment and Tolerances

Weigh or measure concrete mixture ingredients using load cells or meters for Ready-mix and paving concrete to within the targeted batch weight in accordance with the following:

- (1) Water – 1 percent
- (2) Cement – 1 percent or 30 pounds, whichever is greater
- (3) Other cementitious Materials – 3 percent or 30 pounds, whichever is greater
- (4) Aggregates – 2 percent
- (5) Admixtures – 3 percent

In accordance with 1503, the Producer will make plant adjustments when out of tolerance values are reoccurring on the same day or over a period of 7 calendar days.

S-63.14 Delete and replace MnDOT 2461.3F.1.a(7) with the following:

- (7) Supply a working email address, including an active internet connection with availability for Department use, at the certified ready-mix plant.

S-63.15 Delete and replace the second sentence of MnDOT 2461.3F.2 with the following:

If the computer that generates the Certificate of Compliance malfunctions, the Engineer may allow the Contractor to finish any pours in progress if the Producer issues a handwritten or computer-generated Department Form 0042, *Certificate of Compliance* with each load. The Engineer will not allow the Producer to begin new pours without a working computerized Certificate of Compliance.

S-63.16 Add the following to MnDOT 2461.3F.2:

- (22) Fibers, brand, and dosage per cubic yard
- (23) Ready-Mix Sheet Number (RMX###-###), JMF Sheet Number (JMF##-###), or PS Sheet Number (PS##-###)
- (24) MnDOT Designation Plant/Unit Number (RM###)

S-63.17 Delete and replace MnDOT 2461.3F.3.c with the following:
Place concrete meeting the aggregate gradation requirements in the Work.

Identify QC companion gradation samples with the following information:

- (1) Date
- (2) Test number
- (3) Time
- (4) Type of Material
- (5) Plant
- (6) Sampling Location

If any gradation fails, immediately take second gradation. If the second gradation passes, resume testing as required. The Engineer will not allow the second gradation as a substitute for the next required QC gradation.

If the second gradation fails, refer to Table 2461.5-1 for additional requirements. The Engineer will not allow a verification companion gradation as a substitute for a QC gradation.

S-63.18 Delete the second paragraph of MnDOT 2461.3F.3.d.

S-63.19 Delete and replace the first and second paragraphs of MnDOT 2461.3F.3.e with the following:

The Producer will complete and maintain the Concrete Ready-mix Plant QC Workbook in Real Time for all materials and sources incorporated into the concrete mix, using their full name for the diary and each test performed.

S-63.20 Add the following to MnDOT 2461.3G.2:

The Contractor and Engineer will perform random sampling and testing in accordance with ASTM C172, Standard Practice for Sampling Freshly Mixed Concrete; ASTM C1064, Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete; and the Schedule of Materials Control.

S-63.21 Add the following to MnDOT 2461.3G.5:

For all cast-in-place concrete as specified in 2461, including HE concrete, place concrete meeting the strength requirements of Table 2461.2-6 and Table 2461.2-7 unless otherwise specified in the Contract into the Work. Unless otherwise included in the Plans, HE concrete requires approval of the Engineer before incorporation into the Work.

S-63.22 Delete 2461.3G.5.b(2) and replace with the following:

(2) Mark cylinder for identification of the represented unit or section of concrete

S-63.23 Delete and replace Table 2461.3-3 of MnDOT 2461.3G.6.a(1) with the following:

Table 2461.3-3
Chronological Testing Ages of Strength Specimens

Type of Concrete	Testing Ages*
Concrete Pavement as defined in 2301, "Concrete Pavement"	Test at least 2 sets of strength specimens before and the remaining sets after the anticipated opening strength
Normal Strength Concrete as defined in 2461, "Structural Concrete"	1, 3, 7, 14, and 28-Calendar Days
High-early (HE) Concrete as defined in 2461, "Structural Concrete"	12 hours, 1, 2, 7, and 28-Calendar Days
Ultra High-Early (UHE) Concrete as defined in 2302, Concrete Pavement Rehabilitation"	3, 4, and 8 hours, 1 and 14-Calendar Days
* The Contractor may adjust the testing ages if approved by the Engineer, in conjunction with the Concrete Engineer.	

S-63.24 Delete and replace the second sentence of MnDOT 2461.3G.7 with the following:

The Contractor and Engineer will perform random sampling and testing in accordance with ASTM C172, Standard Practice for Sampling Freshly Mixed Concrete; ASTM C143, Standard Test Method for Slump of Hydraulic-Cement Concrete; ASTM C1611, Standard Test Method for Slump Flow of Self-Consolidating Concrete; and the Schedule of Materials Control.

S-63.25 Delete and replace the second sentence of MnDOT 2461.3G.8 with the following:

The Contractor and Engineer will perform random sampling and testing in accordance with *ASTM C172, Standard Practice for Sampling Freshly Mixed Concrete*; *ASTM C231, Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method*; and the Schedule of Materials Control.

S-63.26 Delete and replace the fourth paragraph of MnDOT 2461.3G.8 with the following:
Test the air content at the point of delivery (eg., end of concrete chute) unless otherwise specified in the Contract.

S-63.27 Delete and replace MnDOT 2461.5A.2.d with the following:

A.2.d Moving Average Below f'_c

If the moving average of 3 consecutive strength tests is less than the required f'_c , the Concrete Engineer will review the strength test results and determine if a new mix design is required in accordance with Table 2461.2-6 or Table 2461.2-7.

The Concrete Engineer in conjunction with the Engineer will remove any strength test results from the moving average if the following occurs:

- (1) After investigation, the cause for the deficient concrete strength is due to improper handling, curing, or testing of the cylinder
- (2) Cylinders kept in the field longer than 7-Calendar Days that negatively impact the moving average calculation
- (3) The suspect concrete was removed and replaced
- (4) Dispute resolution coring identified the concrete acceptable to remain in place

For the quantity of non-conforming concrete not meeting the moving average of 3 consecutive strength tests, the Engineer will make determinations regarding the disposition, payment, or removal of the concrete in accordance with Table 2461.5-5.

**Table 2461.5-5
All Concrete Grades**

Moving average of 3 consecutive strength tests	Monetary Deductions for Moving Average Failure *
> 96.0 percent of f'_c	No deductions for the Materials placed as approved by the Engineer.
91.0 percent to 96.0 percent of f'_c	\$20.00 per cubic yard or 10 percent of the Contractor-provided invoice for quantity represented by test that brought moving average into non-conformance.
≥ 87.5 percent and \leq 91.0 percent of f'_c	\$50.00 per cubic yard or 25 percent of the Contractor-provided invoice for quantity represented by test that brought moving average into non-conformance.
< 87.5 percent of f'_c	Remove and replace concrete in accordance with 1503, "Conformity with Contract Documents," and 1512, "Unacceptable and Unauthorized Work," as directed by the Engineer. If the Engineer, in conjunction with the Concrete Engineer, determines the concrete can remain in-place, the Engineer will adjust the concrete at a reduction of \$100.00 per cubic yard or 50 percent of the Contractor-provided invoice for quantity represented by test that brought moving average into non-conformance.

S-64 (2462) PRECAST CONCRETE

REVISED 06/28/24

S-64.1 Delete and replace MnDOT 2461.2E.3 with the following:

At least 21 Calendar Days before initial placement of the concrete, submit a Precast Mix Design Submittal to the Concrete Engineer for review. Use the most current Precast mix design form, specific gravity, and absorption data available from the MnDOT Concrete Engineering website.

Design the concrete mix to an absolute volume of 27.00 – 27.27 cubic feet.

MnDOT will review the Contractor's proposed concrete mix design solely for compliance with the applicable mix design properties in Table 2462.2-4. The Department makes no guaranty or warranty, either express or implied, that compliance with mix design properties ensures compliance with any other requirements.

S-64.2 Delete and replace the first and fourth paragraphs of MnDOT 2462.3G.4 with the following:

Take samples randomly in accordance with *ASTM D3665, Standard Practice for Random Sampling of Construction*, Section 5, at a rate defined in accordance with the Schedule of Materials Control.

Perform random sampling and testing in accordance with *ASTM C172, Standard Practice for Sampling Freshly Mixed Concrete*; *ASTM C1064, Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete*; *ASTM C231, Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method*; *ASTM C143, Standard Test Method for Slump of Hydraulic-Cement Concrete*; *ASTM C1611, Standard Test Method for Slump Flow of Self-Consolidating Concrete*; and the *Schedule of Materials Control*.

Furnish 4-inch by 8-inch cylinder molds, unless the maximum Aggregate size is greater than 1 1/4 inches, then furnish 6-inch by 12-inch cylinder molds.

S-65 (2501) PIPE CULVERTS

REVISED 06/28/24

S-65.1 Delete and replace MnDOT 2501.2H with the following:

H Geotextile, Type 3 3733

S-65.2 Add the following to MnDOT 2501.3A:

Do not use bedding or backfill materials containing recycled concrete aggregate (RCA).

S-65.3 Add the following to MnDOT 2501.3:

H. Geotextile

Use Geotextile 3733 Type 1 to wrap concrete pipe joints or for other drainage applications.

S-66 (2501) PIPE TIES-FLAT BAR

S-66.1 DESCRIPTION

This Work consists of furnishing and installing Pipe Ties-Flat Bar in accordance with Plan sheet 31 and MnDOT 2501.

S-66.2 MATERIALS

See Pipe Ties-Flat Bar detail in the Plans.

Bars MnDOT 3306
Galvanized in accordance with MnDOT 3392.

Geotextile Fabric..... MnDOT 3733
Type 3

Bituminous Mastic Joint Sealer.....MnDOT 3728.

S-66.3 CONSTRUCTION REQUIREMENTS

The Contractor will drill the necessary holes, furnish and install the pipe ties and cover the exposed portion of the pipe joints with a 24 inch wide strip of geotextile fabric and mastic on the culverts listed in the Plans.

S-66.4 METHOD OF MEASUREMENT

The Engineer will measure the number of pipe ties furnished and installed.

S-66.5 BASIS OF PAYMENT

The Contract Unit Price for Pipe Ties and Pipe Ties – Flat Bar is compensation in full for Equipment, Materials and labor required to complete the Work.

The Department will pay for Pipe Ties and Pipe Ties – Flat Bar on the basis of the following schedule:

Item No.	Description	Unit
2501.602	Pipe Ties – Flat Bar	each

S-67 (2501) REPAIR CULVERT JOINT

S-67.1 DESCRIPTION

This Work consists of repairing concrete culvert joint with a sealant comprised of water reactive closed cell polyurethane resin and dry oil free oakum in accordance with MnDOT 2104 and MnDOT 2501.

S-67.2 MATERIALS

- A Oakum.....Federal Specification HH-P-117
- B Closed cell polyurethane resin shall meet the specifications of Table SP2501-1.

Table SP2501-1
Closed Cell Polyurethane Resin

Tensile Strength	300 - 450 psi	ASTM D-3574 or D-638
Tensile Elongation	300 - 400%	ASTM D-3574 or D-638
Toxicity	Non toxic (in accordance with ANSI/NSF Standard 61)	

- C Epoxy gel compound meeting the requirements of Table SP2501-2 and recommended by the Manufacturer for both surface sealing and protecting the grout from UV exposure.

Table SP2501-2
Epoxy Gel

Tensile strength	>150 psi	ASTM D-638
Elongation	>30%	ASTM D-638
Viscosity	Non Sag Gel	

S-67.3 CONSTRUCTION REQUIREMENTS

Provide supervision, training, tools, lighting, equipment and cleaning for the performance of all operations necessary to repair each noted culvert joint. Remove water, sediment, and debris from the culvert, washing the entire culvert with water using a power washer, and wire brush cleaning affected joints to be repaired.

The Contractor shall be an Approved Contractor of the Manufacturer of the specified product and shall provide written certification from the Manufacturer attesting to their Approved Contractor status.

Provide product documentation and Contractor submittals to the Engineer prior to or at the preconstruction conference.

Follow the Manufacturer's installation instructions throughout the repair process and install components in accordance with Manufacturer's specifications.

Provide safe storage and handling of materials prior to delivery and at the project site. Material installation, handling and storage shall be in accordance with Manufacturer's and OSHA recommendations.

Provide worker and inspector safety and worker protective gear in accordance with the Manufacturer recommendations and OSHA requirements, including chemical goggles, face shields, eye wash system and NBR gloves.

Thoroughly clean the dewatered culvert and the specified joints using a power washer with water pressure of at least 2500 psi and wire brush. The culvert must be in a clean condition so that no deleterious material is tracked between the joints being repaired. The Engineer will inspect the culvert after cleanout, to determine if additional cleaning is necessary. The Contractor shall dispose of debris removed from the culverts during the cleaning operation in accordance with MnDOT 2104.3D.

Place polyurethane resin saturated Oakum behind and into the joint to fill it. Narrow joint openings can be filled with resin alone. Allow the resin to fully expand and cure before installing more product. Fill joints flush to the inner pipe surface with soaked Oakum fibers in polyurethane resin.

After the joint repair is fully cured, grind off Oakum seal to create a depression approximately 1/8 inch deep and cover the grouted Oakum seal with a two-part epoxy system gel sealant to protect the repair. The epoxy shall be troweled onto the face of the joint, ensuring complete coverage. Additional epoxy application will be required if bubble holes or other imperfections result in less than 100% coverage of the cured Oakum and resin. Mix and place the epoxy gel compound in accordance with the Manufacturer's recommendations.

The term joint may also include cracks between the noted culvert joints.

Seal culvert lift holes of the affected culvert segments with oakum soaked resin, and/or two-part epoxy system gel sealant depending on depth of seal, is included in this pay item.

S-67.4 METHOD OF MEASUREMENT
The Engineer will measure the number of culvert joints repaired.

S-67.5 BASIS OF PAYMENT
The Contract Unit Price for Repair Culvert Joint includes the cost of Equipment, Materials and labor required to complete the Work.

The Department will pay for Repair Culvert Joint on the basis of the following schedule:

Item No.	Description	Unit
2501.602	Repair Culvert Joint	each

S-68 (2501) CLEAN PIPE CULVERT

REVISED 09/27/24

S-68.1 DESCRIPTION
This Work consists of cleaning out, removing, and disposing of the earth and debris within existing Culverts in accordance MnDOT 2104 and MnDOT 2501.

S-68.2 MATERIALS - See Standard Specifications for Construction

S-68.3 CONSTRUCTION REQUIREMENTS
The sizes of the existing culverts are shown in the Plans.

Remove sediment and debris so the interior surface of the culvert is completely exposed.

The Engineer will inspect the structural condition of the cleaned Culvert to determine if repairs are necessary.

Dispose of material in accordance with MnDOT 2104.3D.3

S-68.4 METHOD OF MEASUREMENT
The Engineer will measure the length of culverts cleaned.

S-68.5 BASIS OF PAYMENT
The Department will pay for structural Culvert repairs as Extra Work in accordance with MnDOT 1402.5.

The Contract Unit Price for Clean Pipe Culvert is compensation in full for Equipment, Materials and labor required to complete the Work.

The Department will pay for Clean Pipe Culvert on the basis of the following schedule:

Item No.	Description	Unit
2501.602	Clean Pipe Culvert	each

S-69 (2501) REPAIR CULVERT

S-69.1 This Work consists of cleaning and repairing culverts in accordance with MnDOT 2404, MnDOT 2461, and MnDOT 2501.

S-69.2 MATERIALS

A Structural Concrete (Mix 3U18) MnDOT 2461

B Bonding Grout MnDOT 2404.2B

S-69.3 CONSTRUCTION REQUIREMENTS
Dewater the culvert as necessary to complete the Work.

Place sediment control log across outlet apron to contain concrete slurry from leaving the culvert or from entering the flow path of the culvert.

Clean the culvert using a power washer with pressure between 2500 to 3000 psi. Do not create or expand existing voids. Other cleaning methods may be allowed with acceptance from the Engineer.

Prior to placement of the concrete, place bonding grout as recommended by the manufacturer. Completely fill the area flush with the existing surface using a trowel to force the concrete material into the damaged areas of the culvert and finish to create a surface similar to that of the surrounding area of the culvert.

Vacuum concrete slurry and remove excess concrete and bonding grout prior to removing sediment control log.

Do not allow concrete slurry, or excess concrete and bonding grout to escape the culvert or enter the flow path of the culvert.

Escaped concrete slurry, concrete, or bonding grout is unacceptable Work in accordance with MnDOT 1512.

S-69.4 METHOD OF MEASUREMENT
The Engineer will measure the area of the culvert repaired.

S-69.5 BASIS OF PAYMENT
The Contract Unit Price for Repair Culvert is compensation in full for Equipment, Materials, and labor required to complete the Work.

Sediment Control Log is paid for separately.

Dewatering will be paid for separately.

The Department will pay for Repair Culvert on the basis of the following Schedule.

Item No.	Description	Unit
2501.618	Repair Culvert	square feet

S-70 (2502) CONNECT TO EXISTING PIPE DRAIN

S-70.1 DESCRIPTION

This Work consists of connecting new drain tile to existing drain tile in accordance with Plan sheet 30, MnDOT 2461 and MnDOT 2502.

S-70.2 MATERIALS

A Concrete..... MnDOT 2461
Mix Design 3G52.

B Rigid Connector
As recommended by the drain tile manufacturer.

S-70.3 CONSTRUCTION REQUIREMENTS

Excavate around the end of the existing drain tile. Neatly cut the end of existing drain tile.

Place a manufactured rigid connector and foundation concrete material in accordance with the detail on Plan sheet 30.

Remove and replace unacceptable damage to the existing pipe drain at no cost to the Department in accordance with MnDOT 1512.

S-70.4 METHOD OF MEASUREMENT

The Engineer will measure the number of connections constructed.

S-70.5 BASIS OF PAYMENT

The Contract Unit Price for Connect to Existing Pipe Drain is compensation in full for Equipment, Materials and labor required to complete the Work.

The Department will pay for Connect to Existing Pipe Drain on the basis of the following schedule:

Item No.	Item	Unit
2502.602	Connect to Existing Pipe Drain	each

S-71 (2502) PE INSPECTION TEES

S-71.1 DESCRIPTION

This Work consists of constructing PE inspection tees in accordance with MnDOT 2502 and MnDOT 3247.

S-71.2 MATERIALS

Corrugated Polyethylene Pipe and fittings..... MnDOT 3247

S-71.3 CONSTRUCTION REQUIREMENTS

Connect the inspection tee and couplers to the proposed 18" CP pipe sewer and existing 18 inch VC pipe sewer at the location as shown on Plan sheet 76.

Place inspection tees 10 feet inside the Right of Way. The Engineer will determine of the exact placement during construction.

Extend inspection tee 12 inches above the ground. Neither a concrete slab nor a casting will be required. Cover inspection tee with a round non split PE cap, with tightening screws that firmly adheres the cap to the riser tee.

S-71.4 METHOD OF MEASUREMENT

This Engineer will measure the number of inspection tees furnished and installed.

S-71.5 PAYMENT

The Contract Unit Price for PE Inspection Tees includes the cost of all Equipment, Materials, and labor required to complete the Work.

The Department will pay for PE Inspection Tees on the Basis of the following schedule:

Item No.	Item	Unit
2502.602	18" PE Inspection Tees	each

S-72 (2503) PIPE SEWERS

RESTORED AND REVISED 06/30/23

S-72.1 Delete and replace MnDOT 2503.2E with the following:

E Geotextile, Type 3 3733

S-72.2 Add the following to MnDOT 2503.3:

G. Geotextile

Use Geotextile 3733 Type 1 to wrap concrete pipe joints or for other drainage applications.

S-73 (2503) PLUG FILL AND ABANDON PIPE SEWER

S-73.1 DESCRIPTION

This Work consists of plugging, filling and abandoning in place pipe sewers in accordance with MnDOT 2503, MnDOT 2506, MnDOT 2519, MnDOT 2520, MnDOT 3106, MnDOT 3107, MnDOT 3128, MnDOT 3149, and MnDOT 3616.

S-73.2 MATERIALS

A Cellular Concrete Grout – Controlled Low Strength Material (CLSM) MnDOT 2519

B Lean Mix Backfill MnDOT 2520

C Mortar

C.1 Hydrated Lime..... MnDOT 3106

C.2	Masonry Mortar	MnDOT 3107
C.3	Aggregate For Use In Masonry Mortar	MnDOT 3128
D	Sewer Brick (Concrete).....	MnDOT 3616
E	Select Granular Borrow Super Sand.....MnDOT 3149.2B Table 3149.2-1, Select Granular Material (Super Sand)	
S-73.3	CONSTRUCTION REQUIREMENTS Completely fill and abandon the pipes shown in the Plan. Fill pipes with Select Granular Material (Super Sand), CLSM or lean mix backfill (unless material noted specifically in the Plan) and plug ends by either a water tight concrete plug seal done in the field or by pre-cast method or other mechanical means to provide a water tight seal.	
S-73.4	METHOD OF MEASUREMENT The Engineer will measure the length of pipes plugged, filled and abandoned.	
S-73.5	BASIS OF PAYMENT The Contract Unit Price for Plug Fill and Abandon Pipe Sewer is compensation in full Equipment, Materials and labor required to complete the Work.	

The Department will pay for Plug Fill and Abandon Pipe Sewer on the basis of the following schedule:

Item No.	Item	Unit
2503.603	Plug Fill and Abandon Pipe Sewer	linear foot

S-74 (2506) MANHOLES AND CATCH BASINS

REVISED 09/27/24

S-74.1 Delete and replace MnDOT 2506.2B with the following:

B Masonry Mortar (Mortar)3107

S-74.2 Delete and replace MnDOT 2506.3G with the following:

Provide vertical adjustment of access castings made to the planned elevation on the Structure. Meet the criteria that full support for the casting is obtained above the cone section. Limit thickness of each adjusting ring to 6 inches or less. Encase adjusting rings in mortar according to the Plan.

Construct new structures so the height above the cone does not exceed 9 inches, including mortar but not including the frame. Use no more than 2 adjusting rings.

Reconstruct in-place structures so the height above the cone does not exceed 12 inches, including mortar but not including the frame. Use no more than 3 adjusting rings. If these criteria cannot be met by vertical adjusting Work, reconstruct the Structure.

For upward adjustment of castings, the Contractor may use any of the Structure Materials or applicable construction methods specified in this subsection, provided they are compatible with the in-place construction. The Contractor may use auxiliary ring castings and adjusting rings as shown on the Plans.

S-75 (2506) RECONSTRUCT DRAINAGE STRUCTURE

S-75.1 DESCRIPTION
This Work consists of installing salvaged materials and furnishing and installing drainage structure components in accordance with the detail on Plan sheet 30, MnDOT 2506, and MnDOT 3728.

S-75.2 MATERIALS — See Standard Specifications for Construction.

A Bituminous Mastic Joint Sealer for Pipes MnDOT 3728

S-75.3 CONSTRUCTION REQUIREMENTS
Reconstruction the drainage structure in accordance with the Plan detail.

S-75.4 METHOD OF MEASUREMENT
The Engineer will measure the number of drainage structures reconstructed.

S-75.5 BASIS OF PAYMENT
The Contract Unit Price for Reconstruct Drainage Structure is compensation in full for Equipment, Materials and labor required to complete the Work.

The Department will pay for Reconstruct Drainage Structure on the basis of the following schedule:

Item No.	Item	Unit
2506.602	Reconstruct Drainage Structure	each

S-76 (2506) CONNECT INTO EXISTING STORM SEWER

S-76.1 DESCRIPTION
This Work consists of connecting new pipe or a new Structure into an existing storm sewer in accordance with MnDOT 2503 and MnDOT 2506.

S-76.2 MATERIALS — See Standard Specifications for Construction.

S-76.3 CONSTRUCTION REQUIREMENTS
Neatly cut the existing pipe off and trim flush with the proposed pipe or inside wall of proposed Structure.

Provide a clean, water-tight connection between the new pipe or structure and the existing storm sewer.

Remove and replace unacceptable damage to the existing storm sewer at no cost to the Department in accordance with MnDOT 1512.

S-76.4 METHOD OF MEASUREMENT
The Engineer will measure the number of connections constructed.

S-76.5 BASIS OF PAYMENT
The Contract Unit Price for Connect into Existing Storm Sewer is compensation in full for Equipment, Materials and labor required to complete the Work.

The Department will pay for Connect into Existing Storm Sewer on the basis of the following schedule:

Item No.	Item	Unit
2506.602	Connect into Existing Storm Sewer	each

S-77 (2507) LINING CULVERT PIPE SPECIAL

NEW 06/30/23

S-77.1 DESCRIPTION

This Work consists of furnishing and installing a Cured-In-Place Pipe (CIPP) liner into existing culvert pipe in accordance with the Plan, manufacturer recommendations, and MnDOT 2507.

S-77.2 MATERIALS

- A Ultraviolet (UV) cured CIPP..... ASTM F2019
Uniform thickness wet-out tube that meets or exceeds the design thickness when compressed at installation pressures.

Saturate the glass fiber tube with the resin using a resin bath system to allow for the lowest possible amount of air entrapment. The wet out of the liner must be done in an indoor environmentally controlled manufacturing setting that meets current ISO 9001 standard compliant and registered quality management system for the wet-out facility. No onsite wet out will be allowed.

Provide CIPP liner having a light reflective color interior wall surface after installation.

Cured liner must be seamless in its cured state and have homogenous physical properties around the circumference of the cured liner.

Inspect each lot of glass fiber tube liner for defects at the time of manufacture. Confirm the liner is homogeneous throughout, uniform in color free of cracks, holes, foreign materials, blisters, and deleterious faults at the time of manufacture.

**Table SP2507-1
UV Cured Liner Physical Properties**

Property	Minimum Value
Flexural Modulus	725,500 psi
Flexural Strength	15,000 psi
Modulus of Elasticity (initial)	725,500 psi
Long Term Modulus of Elasticity (50 years)	675,000 psi
Long Term Tensile Bending Strength (50 years)	13,500 psi

- A.1 Fiberglass liner tube
Glass reinforced plastic (GRP) fabric tube consisting of at least two separate tubes made of corrosion resistant (E-CR or equivalent) glass fibers in accordance with Specification ASTM D578, ASTM D3567.
- A.2 Resin System..... ASTM F1216
Polyester, vinyl-ester, or orthothalic (either ppg or npg grade) UV resin including required catalysts in accordance with the requirements of ASTM F2019 and ASTM F1216. Resins created from recycled materials are not allowed.
- A.3 Interior and Exterior Film
Exterior and interior membrane on the glass fiber tubing must be impervious to airborne styrene and protects and contains the polyester, vinyl-ester or ortho based resin used in the liner.

Exterior film shall have UV blocking characteristics.

- B Manufacture Requirements
Liner tube shall be marked at regular intervals along its entire length. Markings shall include a bar and the manufacturer name or identifying symbol.

S-77.3 CONSTRUCTION REQUIREMENTS

A Structural Design Requirements

Contractor's Professional Engineer licensed in the State of Minnesota shall prepare and certify structural design calculations for liner thickness based on ASTM F1216 Appendix X.1 and ASTM F2019 Appendix X1. The Professional Engineer may use calculator sheets based on ASTM standards and approved by the manufacture when calculating the liner thickness.

Assume no bonding to the existing culvert pipe wall in the CIPP design computations.

Obtain field verified dimensions and deflection from contractor.

Use the following design parameters for computing the CIPP wall thickness:

A.1 Partially Deteriorated Design Parameters

Use the following values for partially deteriorated CIPP design computations:

- (1) Enhancement factor: $K = 7$
- (2) Poisson's ratio of the CIPP liner: $n = 0.3$
- (3) Minimum deflection: $\Delta (\%) = 2\%$ or measured deflection, whichever is larger.
- (4) Minimum CIPP liner long-term modulus of elasticity: $E_L (\text{psi})$
 - a. Thermal cured CIPP $E_L (\text{psi}) = 125,000$ psi
 - b. UV cured CIPP $E_L (\text{psi}) = 675,000$ psi

Table SP2507-2
Site Specific Partially Deteriorated Design Parameters

Design Parameter	Value
Culvert Pipe Inside Diameter (inch)	See Plan.
Height of water or groundwater above Pipe Invert (feet)	See Plan. If a value is not provided in the Plan use the shoulder PI adjacent to the pipe.
Culvert Pipe deflection: $\Delta (\%)$	Use a minimum deflection of 2%. See Plan for estimate if deflection is greater than 2%. Actual pipe deflection to be field verified by installer.

A.2 Fully Deteriorated Design Parameters

Use the following for values for fully deteriorated CIPP design computations:

- (1) Live load: $W_s (\text{psi})$ according to AASHTO LRFD Bridge Design Specifications (AASHTO, 2012)
- (2) Modulus of soil reaction $E''_s (\text{psi})$ in accordance with AASHTO LRFD Bridge Design Specifications (AASHTO, 2012) Table 12.12.3.5-1
- (3) Soil Density: $w (\text{pcf}) = 120$
- (4) Minimum deflection: $\Delta (\%) = 2\%$ or measured deflection, whichever is larger.
- (5) Minimum CIPP liner long-term modulus of elasticity: $E_L (\text{psi})$
 - a. Thermal cured CIPP $E_L (\text{psi}) = 125,000$ psi
 - b. UV cured CIPP $E_L (\text{psi}) = 675,000$ psi
- (6) Factor of Safety: $N = 2$

Table SP2507-3
Site Specific Fully Deteriorated Design Parameters

SP 8828-139 TH 7	STA 368+00	STA 439+00	STA 466+20	STA 492+64
Culvert Pipe Inside Diameter (inch)	24" RCP	24" RCP	24" RCP	24" RCP
Height of Water above Culvert Pipe Crown: HW (feet)	2'	1'	1'	0'
Height of Soil above Pipe Crown: H (feet)	4'	5'	5'	5'

SP 8828-139 TH 7	STA 368+00	STA 439+00	STA 466+20	STA 492+64
Culvert Pipe deflection: Δ (%) Field Verify by Manufacturer or Supplier	<2	<2	<2	<2
Soil Classification	A5	A5	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000	675,000	675,000

SP 8828-139 TH 7	STA 532+00	STA 545+98	STA 560+99	STA 639+27
Culvert Pipe Inside Diameter (inch)	24" RCP	24" RCP	36" RCP	36" RCP
Height of Water above Culvert Pipe Crown: HW (feet)	2'	0'	2'	0'
Height of Soil above Pipe Crown: H (feet)	8'	9'	5'	29'
Culvert Pipe deflection: Δ (%) Field Verify by Manufacturer or Supplier	<2	<2	<2	<2
Soil Classification	A5	A5	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000	675,000	675,000

SP 8828-139 TH 7	STA 645+84	STA 650+02	STA 654+06	STA 657+33
Culvert Pipe Inside Diameter (inch)	36" CMP	36" RCP	36" CMP	24" RCP
Height of Water above Culvert Pipe Crown: HW (feet)	0'	2'	0'	0'
Height of Soil above Pipe Crown: H (feet)	22'	20'	23'	7'
Culvert Pipe deflection: Δ (%) Field Verify by Manufacturer or Supplier	<2	<2	<2	<2
Soil Classification	A5	A5	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000	675,000	675,000

SP 8828-139 TH 7	STA 662+33	STA 680+85	STA 690+45	STA 701+99
Culvert Pipe Inside Diameter (inch)	24" RCP	24" RCP	24" RCP	24" RCP
Height of Water above Culvert Pipe Crown: HW (feet)	0'	0'	1'	1'

SP 8828-139 TH 7	STA 662+33	STA 680+85	STA 690+45	STA 701+99
Height of Soil above Pipe Crown: H (feet)	9'	4'	5'	5'
Culvert Pipe deflection: Δ (%) Field Verify by Manufacturer or Supplier	<2	<2	<2	<2
Soil Classification	A5	A5	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000	675,000	675,000

SP 8828-139 TH 7	STA 719+30	STA 743+49	STA 757+44	STA 860+24
Culvert Pipe Inside Diameter (inch)	36" RCP	36" RCP	24" RCP	36" RCP
Height of Water above Culvert Pipe Crown: HW (feet)	0'	1'	0'	12'
Height of Soil above Pipe Crown: H (feet)	4'	4'	5'	17'
Culvert Pipe deflection: Δ (%) Field Verify by Manufacturer or Supplier	<2	<2	<2	<2
Soil Classification	A5	A5	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000	675,000	675,000

SP 8828-139 TH 7	STA 889+28	STA 897+02	STA 933+99	STA 953+00
Culvert Pipe Inside Diameter (inch)	24" RCP	24" RCP	24" RCP	24" RCP
Height of Water above Culvert Pipe Crown: HW (feet)	1'	0'	1'	1'
Height of Soil above Pipe Crown: H (feet)	6'	6'	4'	5'
Culvert Pipe deflection: Δ (%) Field Verify by Manufacturer or Supplier	<2	<2	<2V	<2
Soil Classification	A5	A5	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000	675,000	675,000

SP 8828-139 TH 7	STA 974+48	STA 1004+98	STA 1020+48	STA 1064+25
Culvert Pipe Inside Diameter (inch)	24" RCP	30" RCP	24" RCP	36" RCP

SP 8828-139 TH 7	STA 974+48	STA 1004+98	STA 1020+48	STA 1064+25
Height of Water above Culvert Pipe Crown: HW (feet)	0'	0'	0'	2'
Height of Soil above Pipe Crown: H (feet)	4'	6'	7'	4'
Culvert Pipe deflection: Δ (%) Field Verify by Manufacturer or Supplier	<2	<2	<2	<2
Soil Classification	A5	A5	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000	675,000	675,000

SP 8828-139 TH 7	STA 1090+50	STA 1124+00	STA 1156+95	STA 1177+57
Culvert Pipe Inside Diameter (inch)	24" RCP	24" RCP	72" CSP	24" RCP
Height of Water above Culvert Pipe Crown: HW (feet)	0'	0'	0'	0'
Height of Soil above Pipe Crown: H (feet)	9'	5'	9'	4'
Culvert Pipe deflection: Δ (%) Field Verify by Manufacturer or Supplier	<2	<2	<2	<2
Soil Classification	A5	A5	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000	675,000	675,000

SP 8828-139 TH 7	STA 1217+59
Culvert Pipe Inside Diameter (inch)	24" RCP
Height of Water above Culvert Pipe Crown: HW (feet)	0'
Height of Soil above Pipe Crown: H (feet)	13'
Culvert Pipe deflection: Δ (%) Field Verify by Manufacturer or Supplier	<2
Soil Classification	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000

SP 8828-139 TH 40	STA 126+66	STA 144+72	STA 158+99	STA 118+90
Culvert Pipe Inside Diameter (inch)	24" RCP	24" RCP	24" RCP	24" RCP
Height of Water above Culvert Pipe Crown: HW (feet)	1'	0'	0'	0'
Height of Soil above Pipe Crown: H (feet)	4'	4'	4'	8'
Culvert Pipe deflection: Δ (%) Field Verify by Manufacturer or Supplier	<2	<2	<2	<2
Soil Classification	A5	A5	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000	675,000	675,000

SP 8828-139 TH 40	STA 292+15	STA 306+02	STA 348+28	STA 427+11
Culvert Pipe Inside Diameter (inch)	24" RCP	24" RCP	24" RCP	36" RCP
Height of Water above Culvert Pipe Crown: HW (feet)	1'	3'	1'	8'
Height of Soil above Pipe Crown: H (feet)	7'	8'	6'	7'
Culvert Pipe deflection: Δ (%) Field Verify by Manufacturer or Supplier	<2	<2	<2	<2
Soil Classification	A5	A5	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000	675,000	675,000

SP 8828-139 TH 40	STA 478+06	STA 552+90	STA 571+84	STA 589+63
Culvert Pipe Inside Diameter (inch)	24" RCP	24" RCP	24" RCP	24" RCP
Height of Water above Culvert Pipe Crown: HW (feet)	2'	1'	2'	1'
Height of Soil above Pipe Crown: H (feet)	6'	4'	6'	7'
Culvert Pipe deflection: Δ (%) Field Verify by Manufacturer or Supplier	<2	<2	<2	<2
Soil Classification	A5	A5	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000	675,000	675,000

SP 8828-139 TH 40	STA 600+21	STA 616+38	STA 317+70	STA 357+66
Culvert Pipe Inside Diameter (inch)	24" RCP	24" RCP	24" RCP	30" RCP
Height of Water above Culvert Pipe Crown: HW (feet)	2'	0'	0'	1'
Height of Soil above Pipe Crown: H (feet)	7'	7'	7'	4'
Culvert Pipe deflection: Δ (%) Field Verify by Manufacturer or Supplier	<2	<2	<2	<2
Soil Classification	A5	A5	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000	675,000	675,000

SP 8828-139 TH 68	STA 184+01	STA 291+02	STA 310+51	STA 381+75	STA 414+93
Culvert Pipe Inside Diameter (inch)	24" RCP	36" RCP	24" RCP	24" CMP	24" RCP
Height of Water above Culvert Pipe Crown: HW (feet)	0'	0'	0'	7'	1'
Height of Soil above Pipe Crown: H (feet)	7'	4'	4'	9'	6'
Culvert Pipe deflection: Δ (%) Field Verify by Manufacturer or Supplier	<2	<2	<2	<2	<2
Soil Classification	A5	A5	A5	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000	675,000	675,000	675,000

SP 8828-139 TH 68	STA 433+80	STA 437+32	STA 446+61	STA 514+39	STA 541+32
Culvert Pipe Inside Diameter (inch)	24" CAS	30" RCP	24" RCP	24" CMP	42" RCP
Height of Water above Culvert Pipe Crown: HW (feet)	1'	0'	0'	0'	1'
Height of Soil above Pipe Crown: H (feet)	5'	4'	5'	6'	4'

SP 8828-139 TH 68	STA 433+80	STA 437+32	STA 446+61	STA 514+39	STA 541+32
Culvert Pipe deflection: Δ (%) Field Verify by Manufacturer or Supplier	<2	<2	<2	<2	<2
Soil Classification	A5	A5	A5	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000	675,000	675,000	675,000

SP 8828-139 TH 68	STA 542+52	STA 595+25	STA 597+94	STA 646+72
Culvert Pipe Inside Diameter (inch)	30" RCP	24" RCP	30" RCP	30" RCP
Height of Water above Culvert Pipe Crown: HW (feet)	0'	0'	0'	1'
Height of Soil above Pipe Crown: H (feet)	4'	3'	4'	4'
Culvert Pipe deflection: Δ (%) Field Verify by Manufacturer or Supplier	<2	<2	<2	<2
Soil Classification	A5	A5	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000	675,000	675,000

SP 8828-139 TH 68	STA 669+11	STA 691+04	STA 712+40	STA 735+04
Culvert Pipe Inside Diameter (inch)	36" RCP	42" CMP	24" RCP	24" RCP
Height of Water above Culvert Pipe Crown: HW (feet)	0'	0'	1'	0'
Height of Soil above Pipe Crown: H (feet)	3'	8'	5'	5'
Culvert Pipe deflection: Δ (%) Field Verify by Manufacturer or Supplier	<2	<2	<2	<2
Soil Classification	A5	A5	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000	675,000	675,000

SP 8828-139 TH 68	STA 754+71	STA 773+05	STA 806+82	STA 807+43
Culvert Pipe Inside Diameter (inch)	24" RCP	24" RCP	24" RCP	24" RCP

SP 8828-139 TH 68	STA 754+71	STA 773+05	STA 806+82	STA 807+43
Height of Water above Culvert Pipe Crown: HW (feet)	1'	0'	0'	0'
Height of Soil above Pipe Crown: H (feet)	5'	5'	5'	6'
Culvert Pipe deflection: Δ (%) Field Verify by Manufacturer or Supplier	<2	<2	<2	<2
Soil Classification	A5	A5	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000	675,000	675,000

SP 8828-139 TH 68	STA 817+71	STA 860+70	STA 899+31	STA 969+82
Culvert Pipe Inside Diameter (inch)	24" RCP	24" RCP	24" RCP	24" RCP
Height of Water above Culvert Pipe Crown: HW (feet)	2'	0'	0'	1'
Height of Soil above Pipe Crown: H (feet)	5'	5'	4'	6'
Culvert Pipe deflection: Δ (%) Field Verify by Manufacturer or Supplier	<2	<2	<2	<2
Soil Classification	A5	A5	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000	675,000	675,000

SP 8828-139 TH 75	STA 647+00	STA 659+00	STA 111+66	STA 382+79
Culvert Pipe Inside Diameter (inch)	24" RCP	24" RCP	24" RCP	36" RCP
Height of Water above Culvert Pipe Crown: HW (feet)	1'	1'	1'	3'
Height of Soil above Pipe Crown: H (feet)	3'	3'	4'	8'
Culvert Pipe deflection: Δ (%) Field Verify by Manufacturer or Supplier	<2	<2	<2	<2
Soil Classification	A5	A5	A5	A5

SP 8828-139 TH 75	STA 647+00	STA 659+00	STA 111+66	STA 382+79
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000	675,000	675,000

SP 8828-139 TH 75	STA 581+25	STA 704+25	STA 768+20	STA 461+12
Culvert Pipe Inside Diameter (inch)	24" RCP	24" RCP	24" RCP	24" RCP
Height of Water above Culvert Pipe Crown: HW (feet)	0'	2'	0'	2'
Height of Soil above Pipe Crown: H (feet)	5'	11'	3'	6'
Culvert Pipe deflection: Δ (%)	<2	<2	<2	<2
Field Verify by Manufacturer or Supplier				
Soil Classification	A5	A5	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000	675,000	675,000

SP 8828-139 TH 75	STA 454+01	STA 421+34
Culvert Pipe Inside Diameter (inch)	24" RCP	24" RCP
Height of Water above Culvert Pipe Crown: HW (feet)	2'	3'
Height of Soil above Pipe Crown: H (feet)	6'	12'
Culvert Pipe deflection: Δ (%)	<2	<2
Field Verify by Manufacturer or Supplier		
Soil Classification	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000

SP 8828-139 TH 212	STA 373+45	STA 459+49	STA 465+70	STA 526+72
Culvert Pipe Inside Diameter (inch)	24" RCP	24" RCP	24" RCP	24" RCP
Height of Water above Culvert Pipe Crown: HW (feet)	0'	0'	0'	0'
Height of Soil above Pipe Crown: H (feet)	4'	4'	6'	5'

SP 8828-139 TH 212	STA 373+45	STA 459+49	STA 465+70	STA 526+72
Culvert Pipe deflection: Δ (%) Field Verify by Manufacturer or Supplier	<2	<2	<2	<2
Soil Classification	A5	A5	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000	675,000	675,000

SP 8828-139 TH 212	STA 716+99	STA 732+20	STA 745+49	STA 760+22
Culvert Pipe Inside Diameter (inch)	24" RCP	24" RCP	24" RCP	24" RCP
Height of Water above Culvert Pipe Crown: HW (feet)	2'	0'	1'	3'
Height of Soil above Pipe Crown: H (feet)	6'	4'	4'	5'
Culvert Pipe deflection: Δ (%) Field Verify by Manufacturer or Supplier	<2	<2	<2	<2
Soil Classification	A5	A5	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000	675,000	675,000

SP 8828-139 TH 212	STA 773+12	STA 789+00	STA 797+78	STA 811+48
Culvert Pipe Inside Diameter (inch)	24" RCP	24" RCP	24" CMP	24" CMP
Height of Water above Culvert Pipe Crown: HW (feet)	3'	0'	0'	0'
Height of Soil above Pipe Crown: H (feet)	5'	4'	7'	3'
Culvert Pipe deflection: Δ (%) Field Verify by Manufacturer or Supplier	<2	<2	<2	<2
Soil Classification	A5	A5	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000	675,000	675,000

SP 8828-139 TH 212	STA 816+02	STA 959+34
Culvert Pipe Inside Diameter (inch)	24" RCP	24" RCP
Height of Water above Culvert Pipe Crown: HW (feet)	0'	0'

SP 8828-139 TH 212	STA 816+02	STA 959+34
Height of Soil above Pipe Crown: H (feet)	5'	5'
Culvert Pipe deflection: Δ (%)	<2	<2
Field Verify by Manufacturer or Supplier		
Soil Classification	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000

SP 8828-139 TH 271	STA 204+16	STA 232+82	STA 310+90
Culvert Pipe Inside Diameter (inch)	24" RCP	24" RCP	24" RCP
Height of Water above Culvert Pipe Crown: HW (feet)	0'	3'	1'
Height of Soil above Pipe Crown: H (feet)	6'	8'	8'
Culvert Pipe deflection: Δ (%)	<2	<2	<2
Field Verify by Manufacturer or Supplier			
Soil Classification	A5	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000	675,000

SP 8828-139 TH 271	STA 321+94	STA 336+70	STA 360+23	STA 365+20
Culvert Pipe Inside Diameter (inch)	24" RCP	24" RCP	24" RCP	24" RCP
Height of Water above Culvert Pipe Crown: HW (feet)	0'	0'	4'	1'
Height of Soil above Pipe Crown: H (feet)	4'	4'	6'	5'
Culvert Pipe deflection: Δ (%)	<2	<2	<2	<2
Field Verify by Manufacturer or Supplier				
Soil Classification	A5	A5	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000	675,000	675,000

SP 8828-139 TH 271	STA 383+20	STA 392+99	STA 410+03	STA 445+49
Culvert Pipe Inside Diameter (inch)	24" RCP	24" RCP	30" RCP	60" RCP

SP 8828-139 TH 271	STA 383+20	STA 392+99	STA 410+03	STA 445+49
Height of Water above Culvert Pipe Crown: HW (feet)	0'	0'	0'	5'
Height of Soil above Pipe Crown: H (feet)	6'	9'	5'	14'
Culvert Pipe deflection: Δ (%) Field Verify by Manufacturer or Supplier	<2	<2	<2	<2
Soil Classification	A5	A5	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000	675,000	675,000

SP 8828-139 TH 271	STA 478+50	STA 502+11	STA 510+48	STA 533+00
Culvert Pipe Inside Diameter (inch)	24" RCP	24" RCP	24" RCP	24" RCP
Height of Water above Culvert Pipe Crown: HW (feet)	0'	4'	4'	2'
Height of Soil above Pipe Crown: H (feet)	4'	6'	8'	9'
Culvert Pipe deflection: Δ (%) Field Verify by Manufacturer or Supplier	<2	<2	<2	<2
Soil Classification	A5	A5	A5	A5
Minimum CIPP liner long-term modulus of elasticity: E_L (psi)	675,000	675,000	675,000	675,000

General

Obtain the Engineer's approval prior to commencing any Work.

Comply with manufacturer recommendations and OSHA requirements for the following:

- (1) Shipping, handing, storage, installation, and the wet-out process.
- (2) Liners damaged during shipping, handling or storage shall be replace at no cost to the Department.
- (2) Provide worker and inspector safety and protective gear.
- (3) Field verify the length and diameter of the pipe for proper sizing of the liner tube.

Field verify pipe deflection and dimensions. Identify conditions that impact liner thickness, size, or installation.

Manufacture liner to a size that will tightly fit the internal circumference and length of the pipe. Make allowance for circumferential and longitudinal stretching during installation.

Construct CIPP Liner to withstand installation pressures, have sufficient strength to meet the structural requirements for site conditions and stretch to fit irregular pipe sections.

Final, in-place, CIPP shall be impermeable to water and provide corrosion resistance and have an optimum friction factor for flow.

Remove and replace CIPP where testing samples do not meet the design requirements, exhibit delamination, or fail leakage tests.

B.1 Manufacturer and Contractor Qualifications

Products used in the work of this section shall be produced by manufacturers regularly engaged in the manufacture of cured-in-place liners for highway drainage pipe, municipal storm water or wastewater systems and with a history of successful production acceptable to the Owner.

Provide certification from the Manufacturer attesting the contractor has Approved Contractor status for the CIPP liner products being installed.

Manufacturer's representative must be on site for the first two installations if the site foreman does not have a minimum of five successful installations in the last 24 months.

C Flow Diversion or Dewatering

Divert surface water to install liner in dry conditions.

Meet permit requirements for flow diversion. Do not damage the environment, adjacent property, pavement, or structures.

Follow the requirements of Minnesota Department of Natural Resources General Public Waters Permit (GP) 2004-0001 on DNR Public Waters.

Control groundwater infiltration to prevent interference with installation of the CIPP liner. Dewatering may be necessary.

DNR Water Appropriations permit is required for withdrawal of more than 10,000 gallons of water per day or 1 million gallons per year from surface water or ground water. DNR GP1997-0005 (temporary water appropriations) covers a variety of activities including dewatering associated with road construction and should be applied if required. All equipment intended for use at a project site must be free of prohibited invasive species and aquatic plants prior to being transported into or within the state and placed into state waters.

Provide a site plan in accordance with MnDOT 1717 to the Engineer for approval prior to beginning flow diversions or dewatering.

D General Pipe Preparation

Inspect and videotape the interior of the pipeline. Note location of any conditions which may prevent proper installation. Provide a copy of the videotape and notes to the Engineer.

Remove or repair obstructions that would prevent installation or damage CIPP liner during installation prior to liner installation.

Cut off existing pipe tie bolts flush with the nut. Cut off tie bar ends without nuts within 1/2 inch of the pipe wall.

Remove internal joint bands as identified in the Plan.

Thoroughly clean pipe using a high-pressure water jet or hydro-mechanical methods. Manage wastewater according to the site management plan. Clean water without sediment or other pollutants may be discharged on site.

Prepare the pipe surface to produce an abraded surface with no evidence of laitance, loose material, debris, or contaminants.

The pipe must be clean and dry prior to installation.

The Engineer will inspect the pipe after cleaning.

Securely affix a liner end seal system to the interior circumference of the existing pipe at inlets and outlets located at a manhole, catch basin or structure in accordance with manufacturer's recommendation. The end seal system shall provide a watertight seal and may consist of hydrophilic rubber O-rings, strips, or boots.

E Installation of CIPP

Prevent leakage or spillage of resin to the environment.

Collect and dispose of escaped resin in accordance with MnDOT 2104.D.

Provide continuous finished liner over the length of the inversion run free from visual defects, including foreign inclusions, dry spots, pinholes, and delamination. Correct defects using methods of repair approved by the Engineer prior to completing the Work.

Wrinkles in the finished pipe, other than at pipe bends and abrupt changes, which cause a deformity of 1-inch or more and do not follow the surface of the cleaned pipe wall parallel to the pipe flow line or reduce the structural stability of the pipe are unacceptable. Remove the wrinkle and repair or replace the liner. Provide methods of wrinkle removal and repair or replacement to the Engineer for review and approval prior to the work.

Trim liner so that a minimum of 2 inches extends beyond the end of the pipe section. For flared aprons end the liner before the start of the apron flare. For safety aprons end the liner 2 inches past the last joint.

Provide a tight seal at the ends of the CIPP after the liner is cured. Apply a seal consisting of a UV resistant resin mixture or product compatible with the CIPP material fully covering the cut or exposed ends of the liner.

Restore service connections without damaging the liner after CIPP liner has cured.

E.1 Installation of Thermal cured CIPP

Handle and install Cured-in-place pipe (CIPP) in accordance with the CIPP manufacturer's recommended procedures and one of the following: ASTM F1216 or ASTM F1743 as modified by these provisions. Use either air inversion with steam cured CIPP, or water inversion with hot water CIPP.

Impregnate tube prior to installation. Notify the Engineer of time and location of vacuum impregnation with resin (wet-out) and allowed the Engineer to witness the procedure. On-site wet-out requirements:

- (1) Conduct on-site wet-out within a suitable structure (large enough to house the wet-out operation. If necessary, the structure shall have sidewalls and be heated or cooled to maintain the temperature range required for this operation.
- (2) The structure must be constructed of light-colored, opaque materials, to minimize heat generation within the structure.
- (3) Use the same type of equipment, procedures, and quality control as required by ASTM and as normally conducted at the manufacturer's factory wet-out facility for the on-site wet-out.

Provide suitable temperature gauges and monitors so that the resin curing process can be monitored by Engineer.

Insert impregnated tube through manhole or end of culvert pipe by means of an air or water inversion process or the pull-through method. Use lubricant as necessary.

Provide a suitable heat source and steam/water circulation equipment. Use specifically designed and controlled hydrostatic pressures to cure impregnated tube into a rigid pipe. Determine required temperature based on resin catalyst employed.

Monitor the temperature of ingoing and outgoing steam/water supply with a gauge placed inside the impregnated felt tube to determine the temperatures during cure.

Use steam/water temperatures and cure period durations that meets manufacturer recommendations. Time the recirculation of the hot water and cycling of the heat exchanger to maintain the temperature during the cure period for hot water cured CIPP.

Confirm that the initial cure is complete, exposed portions of the pipe are hard, and sound and the remote temperature sensor indicates that the temperature was sufficient to complete pipe curing.

Cool the hardened hot water cured pipe liner to a temperature below 100 degrees Fahrenheit before relieving static head in the inversion standpipe or calibration hose. Cool down may be accomplished by the introduction of cool water into the inversion standpipe to replace water drained from a small hole in the downstream end of the CIPP. Release static head slowly to avoid development of a vacuum that may damage newly installed CIPP.

Rinse entire interior surface of finished liner thoroughly.

Cool heated water that has not been in contact with the resin before discharging, do not discharge directly into any waters of the state.

Do not discharge liquid or other by-product waste resulting from the construction or curing processes of liner installation directly into waters of the state. Capture and transport rinse water and chemical containing liquids including water that has been in contact with the resin to a suitable wastewater treatment facility willing to accept the process water and liquid by-product waste.

E.2 Installation of UV cured CIPP

Install in accordance with the manufacturer's recommended procedures and ASTM F2019 as modified by these provisions.

The system must utilize an outer and inner film to ensure that the liner remains intact during the insertion process and to protect the resin at all times during the installation and curing process from water and debris contamination, and resin migration. Remove the inner membrane after the installation and curing processes are completed.

Use a constant tension winch to pull the glass fiber liner into position in the pipe. The liner shall have a longitudinal fiberglass reinforcement band which runs the entire length of the liner ensuring that the pulling force is transferred to the band and not the fiberglass liner.

Provide, insert, and secure end plugs on inserted liner to cap each end of the glass fiber liner to prepare for pressurizing the liner.

Install a slip sheet on the bottom one third to one half of the pipe prior to liner insertion unless it is a part of the manufactured outer film of the liner.

Cure the glass fiber liner with UV light sources at a constant inner pressure. Damaged caused by inserting the curing equipment in the liner shall be repaired.

Assemble the UV light sources according to the manufacturer's specifications for the liner diameter.

Control the following parameters during the entire curing process. Record the curing parameters over every segment of the entire length of the liner and a post CCTV inspection to the Engineer using a computer and database that are tamper proof. Use infrared sensors to record curing data. The record shall include curing speed, light source working & wattage, inner air pressure, curing temperatures, date and time, length of liner.

Determine the optimal curing speed, or travel speed of the energized UV light sources, for each length of liner based on liner diameter, liner thickness, and exothermic reaction temperature. Curing speed shall comply with manufacturer's recommendations and be adjusted by Contractor based on site specific field conditions.

F Submittals

Submit the following a minimum of ten working days prior to commencing prescribed work:

- (1) Manufacturer and Contractor qualifications specified in S-77.3.B.1.
- (2) License or certificate verifying manufacturer's/licensor approval of installer.
- (3) The name of the liner and resin manufacturer, the location of the facility where each was manufactured, and a list of appurtenant materials and accessories to be furnished.
- (4) Manufacturer's certification that materials to be used meet the referenced standards and these specifications.
- (5) Written manufacturer's warranty.
- (6) List of equipment and procedures for accomplishing work including manufacturer cure method procedure detailing curing medium and method of application.
- (7) Structural design calculations and liner thickness recommendations certified by an engineer licensed in the State of Minnesota and product data sheets listing parameters used in the liner design and thickness calculations.
- (8) Detailed shop drawings, schedule, and Materials Safety Data Sheets (MSDS) for all materials.
- (9) Curing schedule for each lining segment.
- (10) Quality control plan that ensures CIPP liner wet out resin saturation process, shipping, storage, and handling meet manufacture's recommendations. At a minimum, include resin saturation documentation, date of wet-out, storage/transportation controls, and quality assurance procedures in the quality control document.
- (11) Site plan.
- (12) Site management plan in accordance with MnDOT 1717.
- (13) Plan for treatment of process water including a permit or verification from the wastewater treatment facility that they will accept CIPP process water.

Submit the following within 30 Days of liner installation:

- (12) One copy of the post installation CCTV inspection on a USB flash drive, or other method and format approved by the Engineer.
- (13) Results of test samples taken for quality control.
- (14) Results of delamination tests, thickness tests, physical properties tests.

- (15) Receipts from treatment facilities documenting time, state and estimated gallons of processed water being treated.
- (16) Record of the curing parameters over every segment for the entire length of the liner. The record shall include curing speed, light source working & wattage, inner air pressure, curing temperatures, date and time, length of liner.

G Quality Control

Notify the Engineer so the Engineer is present during and after cleaning and televising the existing pipe, placing liner, inversion of the liner, and taking of samples.

The Engineer will conduct a visual inspection. Any deficiencies in the finished liner system shall be marked and repaired according to the procedures set forth by the Manufacturer.

Conduct an internal CCTV inspection of completed work and provide a copy to the Engineer. Culverts less than 60 feet in length will not require unless the Engineer observes deficiencies or flaws during the visual inspection. CCTV inspections are incidental to the liner installation.

G.1 Samples

Provide a set of four (4) test samples for strength of materials and thickness testing from locations of soft spots, measured thin spots, visible flaws or irregularities when directed by the Engineer.

- (1) Take samples in the presence of the Engineer and delivered to a testing laboratory by the Contractor. Failing test samples may be retested at no cost to the Department.
- (2) Take cored coupons within the pipe as thickness samples. Two additional thickness samples shall be collected at each location where the CIPP thickness is scheduled to change within a CIPP segment. Repair method for sample area shall be proposed by the Contractor and submitted to the Engineer for review and approval. Sample area shall be immediately repaired following sample removal.
- (3) Flatplate and thickness samples for testing will be individually labeled and logged to record the following:
 - (a) Project number and title.
 - (b) Sample number.
 - (c) Segment number of line as noted on plans, and location (station and clock position).
 - (d) Date and time sample taken.
 - (e) Name of contractor.
 - (f) Date, location, and by whom tested.
 - (g) Results of test.
- (4) Samples shall be numbered as follows:
 - (a) Sample #/A: Flat plate sample (2 samples per CIPP segment).
 - (b) Sample #/B: Thickness test (2 cores per CIPP segment).
 - (c) Additional samples will be lettered consecutively after "B".
- (5) Updated copies of the log shall be submitted to the Engineer within 10 days after each section is completed.

G.2 Testing

The Engineer may at any time direct the manufacturer to obtain compound samples and prepare test specimens in accordance with the latest applicable ASTM standards.

(1) Delamination Tests

Conduct delamination testing in accordance with ASTM F1216 or F1743, and ASTM D903 for all types of resin impregnated CIPP, for each nonhomogeneous layer of representative field sample.

(2) Physical Properties Tests

Run the CIPP between two release-agent coated, smooth surface, aluminum plates of sufficient size to obtain two cured samples, each 6" x 16" in size, at the end of each segment to be lined.

Seal the edges of the sample with polymer suitable for protecting the edges from chemical intrusion. Seal the CIPP material in a heavy-duty plastic envelope within the aluminum plate molds and cured with the CIPP which the samples represent.

Conduct tests for modulus of elasticity and flexural strength in accordance with ASTM D790. The test results shall meet or exceed the values used for design.

(3) Thickness Tests

Drill two 2-inch diameter cores for each CIPP segment from the lower half of the host pipe, below the spring line. Remove the CIPP material from the host pipe core sample and test for thickness, deducting any liner film thickness.

Obtain three thickness measurements from each sample. The average thickness shall be equal to or greater than the required design thickness.

G.3 Failure to Meet Test Requirements

Where test results do not meet the design requirements, exhibits delamination, or fails leakage tests; bring the liner into compliance by either removal and replacement of the CIPP; or if hydraulic capacity allows it addition of a second CIPP, after acceptable preparation of the in-place CIPP interior surface; or by another method subject to approval by the Engineer. Repair of defects will be made at no cost to the Department.

Alternatively, at the sole discretion of Engineer, the payment due to the Contractor for furnishing and installing the CIPP which failed to meet test requirements shall be reduced in proportion to (a) the deficiency in thickness and (b) the total installed length of CIPP in which the deficiency occurs.

H Cleanup and restoration

Stabilize soils in accordance with the project SWPPP and permit requirements. Stabilize all exposed soils within 7 days. Stabilize culvert ends and ditch conveyances within 24 hours.

Final cleanup at each work site shall be completed within 30 calendar days following liner installation unless noted otherwise in the plans. Restore site to preconstruction conditions or better.

Dispose of debris removed from the pipe in accordance with MnDOT 2104.3D.

S-1.4 METHOD OF MEASUREMENT

The Engineer will measure Lining Pipe by the linear foot of pipe lined with CIPP.

S-1.5 BASIS OF PAYMENT

The Contract Unit Price for each diameter of Culvert Pipe lined with CIPP is compensation in full for Equipment, Materials and labor required to complete the Work.

The Department will pay separately for traffic control, filling voids outside of the pipe and pipe joint repair.

The contract unit price for the relevant lining item includes but is not limited to cleanup and restoration, flow diversion, obstruction removal, debris removal, cleaning, dewatering, infiltration control, wastewater management, cured-in-placed pipe liner, culvert inspection, CCTV inspection, sampling, testing, and repair of defects except for such costs that are specifically compensated under other contract items.

A Schedule

The Department will pay for Lining Culvert Pipe on the basis of the following schedule:

Item No.:	Item:	Unit:
2507.603	Lining Culvert Pipe ___" Special.....	linear foot

S-78 (2511) RIPRAP

REVISED 09/29/23

S-78.1 Delete and replace MnDOT 2511.2C with the following:

C 3A Grout.....2511

S-78.2 Delete and replace MnDOT 2511.3F with the following:

F. Quality Control (QC)

Refer to the requirements in the Schedule of Materials Control for Project specific requirements.

F.1 Gradation and Certification Requirements

For riprap meeting 3601.2A, "Random Riprap," test one gradation per year for each product using either:

- (1) FHWA Hydraulic Toolbox, Test method 5-692.212 in the Grading and Base Manual. Record and submit results using form G&B-108a, "Riprap Gradation D85 and FHWA Hydraulic Toolbox," found on the MnDOT Grading and Base website
- (2) WipFrag or an alternative image analysis software, approved by the Engineer. Record and submit results using and submit form G&B-108a, "Riprap Gradation D85 and FHWA Hydraulic Toolbox," found on the MnDOT Grading and Base website
- (3) Wolman Count Method. Test method 5-692.211 in the Grading and Base Manual. Record and submit results using form G&B-108b, "Riprap Gradation Wolman Method," found on the MnDOT Grading and Base website

For riprap meeting 3601.2B, "Hand placed Riprap," provide certification that the stone meets Contract-required thickness of riprap, following guidance in 2511.3C.2, "Hand-Placed Riprap", and individual stones have a weight of at least 50 pounds.

F.2 Carbonate Quarried Riprap

For riprap meeting 3601.2A, "Random Riprap," or 3601.2B, "Hand-placed Riprap," the supplier is required to have an approved QC Plan, prior to delivery of stone, when either of the following apply:

- (1) Quantities are greater than 100 cubic yards
- (2) Riprap is used for Bridge protection, as shown in the Plan

The Carbonate riprap QC Plan requirements are found on the MnDOT Geology Web page. Contact the MnDOT Geology Unit a minimum of 60-Calendar Days prior to supplying riprap.

Provide certification, for each product, using form G&B-104b, "Riprap Quality Control Plan," and attach required test(s).

F.3 Riprap meeting 3601.2C, "Gabions and Revet Mattresses," 3601.2D, "Granular Filter under Class I Random Riprap," and 3601.2E, "Granular Filter Under Riprap, Gabion, and Revet Mattress".

Provide certification using form G&B-104, "Certification of Aggregates and Granular Materials," found on the MnDOT Grading and Base website.

S-78.3 Delete and replace MnDOT 2511.3G.1 with the following:

G.1 Riprap meeting 3601.2A, "Random Riprap," or 3601.2B, "Hand-placed Riprap".

For gradation compliance of riprap meeting 3601.2A, "Random Riprap," the Engineer will visually inspect the riprap and perform the D85 test, test method 5-692.210, listed in the Grading and Base Manual and complete form G&B-108a, "Riprap Gradation D85 and FHWA Hydraulic Toolbox," found on the MnDOT Grading and Base website.

If the material fails to meet requirements based on the visual check or the D85 results, the Engineer will test the gradation using one of the following methods:

- (1) FHWA Hydraulic Toolbox, 5-692.212 test method, listed in the Grading and Base Manual and form G&B-108a, "Riprap Gradation D85 and FHWA Hydraulic Toolbox"
- (2) WipFrag or a similar image analysis software, as approved by the Engineer, and form G&B-108a, "Riprap Gradation D85 and FHWA Hydraulic Toolbox"
- (3) The Wolman Count, 5-692.211 test method, listed in the Grading and Base Manual and form G&B-108b, "Riprap Gradation Wolman Method"

For riprap meeting 3601.2B, "Hand-placed Riprap," the Engineer will visually inspect the riprap to ensure it meets the requirements of 2511.3C.2, "Hand-Placed Riprap."

S-79 (2515) REVETMENT SYSTEMS

NEW 06/28/24

S-79.1 Add the following to the first paragraph of MnDOT 2512.2B:

Do not use bedding material contains recycled concrete aggregate (RCA).

S-79.2 Delete and replace MnDOT 2515.3 G with the following:

If vegetation is shown in the Plans, fill voids of the revetment system with screened common topsoil borrow per 3877 "Topsoil Material." Plant Mesic Inslope Seed Mixture per 3876 "Seed" and 2575 "Establishing Vegetation and Controlling Erosion." Install category 30 rolled erosion prevention product per 3885 "Rolled Erosion Prevention Products" and 2575 "Establishing Vegetation and Controlling Erosion" unless otherwise shown in the Plans. Perform filing and vegetation after the Engineer completes inspection of any required clamping and anchoring systems.

S-80 (2521) WALKS

REVISED 06/28/24

S-80.1 Add the following to MnDOT 2521.2A:

A.4 Concrete Truck Aprons..... Mix No. 3F52

S-80.2 Delete and replace the first paragraph of MnDOT 2521.3D.2 with the following:

For 4 inch walk thickness, divide the walk into square panels of uniform size no greater than 36 square feet. For 6-inch walk thicknesses, divide the walk into square panels of uniform size no greater than 81 square feet.

S-80.3 Delete and replace the third paragraph of MnDOT 2521.3D.2 with the following:

Sawcut all concrete curb ramp, concrete walk, and concrete truck aprons. To reduce the risk of random cracking, the Engineer will allow tooling joints on long sidewalk placements. Sawing of tooled joints is required. The Engineer will allow tooling or sawing joints in the concrete median walk located outside of the pedestrian circulation path. If tooling, round joints with a 1/4 inch radius grooving tool and round edges with an edging tool having a radius no greater than 1/2 inch.

S-80.4 Delete and replace the title of MnDOT 2521.3G to the following:

G Concrete Protection from Backfilling and Loading

S-80.5 Delete the first paragraph of MnDOT 2521.3G and replace with the following:

For a minimum of 24 hours after placement of the concrete, do not perform vibration or backfilling operations adjacent to the concrete, drill into concrete, or operate construction equipment and public traffic loading on the concrete.

Perform adjacent vibratory and backfilling operations or drilling into concrete at least 72 hours after placing the concrete or after the concrete reaches a compressive strength of at least 2,000 pounds per square inch.

The Engineer will allow construction equipment and public traffic loading on newly placed concrete at least 72 hours after placing the concrete or after the concrete reaches a compressive strength of at least 3,000 pounds per square inch and the following:

- (1) When moving on and off the concrete, construct a ramp to prevent damage to the concrete edges and joints.
- (2) Protect the concrete surface and joints from damage due to heavy loads or Equipment in accordance with 1513, "Restrictions on Movement and Storage of Heavy Loads and Equipment." Sweep the surface free of debris before placing the protective Material or tracked Equipment onto the slab.
- (3) Operate Equipment on the concrete without causing damage. If damage results, suspend operations, and take corrective action as approved by the Engineer. Do not operate the Equipment wheels or tracks within 4 inches of the concrete edge.
- (4) When hauling Aggregate and other Materials across newly constructed concrete, keep the concrete surface free of debris by sweeping or other method as approved by the Engineer to prevent spalling of the joints and edges.

S-80.6 The Engineer will cast, cure, and test the concrete field control specimens in accordance with 2461.3G.5.c, "Field Control Strength Cylinders." If damage results from any of these operations, the Engineer will suspend operations until the Contractor takes corrective action and obtains the Engineer's approval of a new method. The Engineer may require removal and replacement of the damaged concrete in accordance with 1503, "Conformity with Contract Documents," and 1512, "Unacceptable and Unauthorized Work." Add the following to MnDOT 2521.3D.2:

For concrete truck aprons, construct joints according to 2301.3N, "Joint Construction Operations," and Standard Plan 5-297.221.

S-80.7 Add the following to MnDOT 2521.4:

In the case of transitions from one thickness or design to another, the Engineer will measure the entire transition for payment under the item with the higher Contract Unit Price.

S-80.8 Delete and replace the first paragraph of MnDOT 2521.5 with the following:

Payment for concrete walk (colored) at the Contract price per unit of measure is full compensation for cost to providing concrete walk and concrete truck aprons to the specified lines, grade and minimum thickness specified in the Plans, including but not limited to: forming, joint filler Material, colored concrete test panels, furnishing and placing the concrete, reinforcement bars, expansion joint material, concrete compaction by vibration, concrete curing, and protecting the completed Work from damage.

S-81 (2531) CONCRETE CURBING

REVISED 06/28/24

S-81.1 Delete the third and fifth paragraph of MnDOT 2531.3E and replace with the following:

Tool or saw concrete curb, curb and gutter, and driveway pavement joints to a depth to prevent random/uncontrolled cracking. Unless stated otherwise in Standard Plan 5-297.250, use an edging tool with a radius no greater than 1/2 inch to round outside edges and longitudinal joints.

Sawcut concrete driveway pavement contraction joints. To reduce the risk of random cracking, the Engineer will allow tooling joints on large concrete driveway pavement placements. When tooling concrete driveways, round joints with a 1/4 inch radius grooving tool. Sawing of tooled joints on concrete driveways is required.

S-81.2 Delete and replace the title of MnDOT 2531.3H with the following:

H Concrete Protection from Backfilling and Loading

S-81.3 Delete the first paragraph of 2531.3H and replace with the following:

For a minimum of 24 hours after placement of the concrete, do not perform vibration or backfilling operations adjacent to the concrete, drill into concrete, or operate construction equipment and public traffic loading on the concrete.

Perform adjacent vibratory and backfilling operations or drilling into concrete at least 72 hours after placing the concrete or after the concrete reaches a compressive strength of at least 2,000 pounds per square inch.

The Engineer will allow construction equipment and public traffic loading on newly placed concrete 72 hours after placing the concrete or after the concrete reaches a compressive strength of at least 2,000 pounds per square inch and the following:

- (1) When moving on and off the concrete, construct a ramp to prevent damage to the concrete edges and joints.
- (2) Protect the concrete surface and joints from damage due to heavy loads or Equipment in accordance with 1513, "Restrictions on Movement and Storage of Heavy Loads and Equipment." Sweep the surface free of debris before placing the protective Material or tracked Equipment onto the slab.
- (3) Operate Equipment on the concrete without causing damage. If damage results, suspend operations, and take corrective action as approved by the Engineer. Do not operate the Equipment wheels or tracks within 4 inches of the concrete edge.

- (4) When hauling Aggregate and other Materials across newly constructed concrete, keep the concrete surface free of debris by sweeping or other method as approved by the Engineer to prevent spalling of the joints and edges.

The Engineer will cast, cure, and test the concrete field control specimens in accordance with 2461.3G.5.c, "Field Control Strength Cylinders." If damage results from any of these operations, the Engineer will suspend operations until the Contractor takes corrective action and obtains the Engineer's approval of a new method. The Engineer may require removal and replacement of the damaged concrete in accordance with 1503, "Conformity with Contract Documents," and 1512, "Unacceptable and Unauthorized Work."

S-81.4 Delete and replace the third sentence of MnDOT 2531.4B with the following:

In the case of transitions from one thickness or design to another, the Engineer will measure the entire transition for payment under the item with the higher Contract Unit Price.

S-81.5 Delete and replace the first sentence of MnDOT 2531.5A.2 with the following:

The Engineer will consider concrete Work with deviations 3/8 inch or greater in any 10 foot length of curb and gutter, either horizontal or vertical, as unacceptable Work.

S-82 **(2557) FENCING**
NEW 09/29/23

S-82.1 Delete and replace MnDOT 2557.2E with the following:

Provide concrete mix 3G52 in accordance with 2461, "Structural Concrete."

S-83 **(2562) ADDITIONAL TRAFFIC CONTROL DEVICES AND EXTENDED USE OF TRAFFIC CONTROL DEVICES**
REVISED 03/29/24

S-83.1 DESCRIPTION

This Work consists of providing additional traffic control devices in accordance with S-85 (2563) TRAFFIC CONTROL and as authorized by the Engineer.

The Engineer is authorized to:

- (1) Require extra traffic control devices in addition to the traffic control devices shown in the Traffic Control Plan or in the Field Manual.
- (2) Require additional traffic control devices for EXTRA WORK.
- (3) Require extended use for all traffic control devices which are impacted by excusable and compensable delays, as defined in MnDOT 1806.2B.
- (4) Negotiate compensation for a Lump Sum Payment.

S-83.2 MATERIALS

Devices must meet Contract requirements, quality standards detailed in the Field Manual, and be in functional and legible condition. Maintain sufficient crashworthy standards. Devices not meeting these requirements must be immediately replaced or repaired.

S-83.3 CONSTRUCTION REQUIREMENTS

Furnish the additional traffic control devices as ordered by the Engineer.

S-83.4 METHOD OF MEASUREMENT

Driven post supports and all mounting hardware for 48"X48" signs and Standard Signs are included in the Traffic Control Pay Item.

Standard Signs with Portable Supports will be calculated and paid for as follows: Total Standard Sign Sq. Ft. + Portable Support Cost (listed in Table SP2562-1) = Standard Signs with Portable Supports Cost per day.

Construction Sign-Special will be measured by the sign face area furnished, installed including supports, maintained, and removed. Install with square tube steel posts and slip bases meeting MASH crashworthy standards.

Flaggers and Police Officers will be measured by the number of hours each is in service on the job. The Police Officer must be properly uniformed including a reflectorized high-visibility safety vest and fully equipped including police car.

S-83.5 BASIS OF PAYMENT

The Department will not use the predetermined Unit Prices listed in Table SP2562-1 if payment for a device is specifically provided for elsewhere in the Contract.

A Devices, Flaggers and Police Officers:

The Engineer and Contractor are authorized to negotiate the terms of compensation for additional traffic control devices and extended use of traffic control devices. If the Engineer and Contractor are unable to agree on compensation using Contract Unit Prices or by negotiation, the Department will pay for traffic control devices according to the schedule of pre-determined prices in the following schedule:

Table SP2562-1
Additional Traffic Control Devices, Flaggers and Police Officers

Item Number	Item	Unit	Pre-determined Price
2562.602	Impact Attenuator (Extended Duration)*#	Each	\$69.00
2562.603	Pedestrian Channelizer (Extended Duration)*#	Linear Foot	\$0.33
2562.603	Portable Precast Concrete Barrier Design 8337 (Extended Duration)*#	Linear Foot	\$0.08
2562.610	Flagger	Hour	
2562.610	Police Officer†	Hour	
2562.613	Sidewalk Barricade	Unit Day	\$1.49
2562.613	Type III Barricade	Unit Day	\$2.71
2562.613	Flasher Type A (Low Intensity)	Unit Day	\$0.52
2562.613	Tubular Marker	Unit Day	\$0.45
2562.613	Type A Cone Channelizer	Unit Day	\$0.32
2562.613	Type A Weighted Channelizer	Unit Day	\$0.72
2562.613	Opposing Traffic Lane Divider	Unit Day	\$3.53
2562.613	Reflectorized Drum	Unit Day	\$0.90
2562.613	Flashing Arrow Board	Unit Day	\$35.26
2562.613	Portable Changeable Message Sign‡	Unit Day	\$78.41
2562.613	Vehicle Speed Feedback Sign	Unit Day	\$39.57
2562.613	48"X48" Sign	Unit Day	\$1.61

Item Number	Item	Unit	Pre-determined Price
2562.613	48"X48" Sign with Supports	Unit Day	\$2.48
2562.613	Portable Sign Support	Unit Day	\$0.84
2562.618	Standard Sign*	Square Foot	\$0.25
2562.618	Construction Sign Special (Additional)	Square Foot	\$38.96
2562.613	Construction Sign Special (Extended Duration)*#	Square Foot	\$0.37
2562.613	Audible Message Device	Unit Day	\$1.16
2562.613	Temporary Pedestrian Ramp	Unit Day	\$7.58
2562.613	Portable Rumble Strips (set of 3)	Unit Day	\$52.27
* Item will be paid by the item unit per each day in use. Will be paid in accordance with MnDOT 1904.4A. † Will be paid at the invoice price plus 10%. ‡ Type C Trailer Mounted Message Sign. # Only to be paid when used for extended duration and a compensable delay is approved.			

B Labor and Equipment:

The Engineer and Contractor are authorized to negotiate the terms of compensation for labor and Equipment to furnish, install and remove additional traffic control devices listed in Table SP2562-1. If the Engineer and Contractor are unable to agree on compensation by negotiation, the Department will pay for labor and Equipment according to the following mileage-based method:

The Department will pay \$500.00 for the first 30 miles for mobilization and installation of additional traffic control devices. The Engineer will determine mileage based on the distance from the Traffic Control Contractor's closest office location to the Project limits (most direct route) plus mileage from the Project limits to the furthest location of the additional placement(s), round trip. The Department will pay a minimum of \$500.00.

The Department will pay \$2.40 per mile traveled over 30 miles. The Engineer will determine mileage based on the distance from the Traffic Control Contractor's closest office location to the Project limits (most direct route) plus mileage from the Project limits to the furthest location of the additional placement(s), round trip.

The Department will pay \$500.00 for the first 30 miles for de-mobilization and removal of additional traffic control devices. The Engineer will determine mileage based on the distance from the Traffic Control Contractor's closest office location to the Project limits (most direct route) plus mileage from the Project limits to the furthest location of the additional removal(s), round trip. The Department will pay a minimum of \$500.00.

The Department will pay \$2.40 per mile traveled over 30 miles. The Engineer will determine mileage based on the distance from the Traffic Control Contractor's closest office location to the Project limits (most direct route) plus mileage from the Project limits to the furthest location of the additional removal(s), round trip.

The Department will not pay for labor and Equipment for the installation/removal of additional traffic control devices when additional traffic control Work is combined with Plan-provided traffic control devices installation/removal during the original Contract period, unless a Contract revision meets the requirements listed in MnDOT 1402.3 and the Plan does not contain Item 2563.601 (Traffic Control).

The Department will not pay for labor and Equipment to inspect and maintain additional traffic control devices during the original Contract period, unless a Contract revision meets the requirements listed in MnDOT 1402.3 and the Plan does not contain Item 2563.601 (Traffic Control).

The Department will pay for labor and Equipment to inspect and maintain all traffic control devices when an extension of Contract Time is due to an excusable and compensable delay in accordance with MnDOT 1806.2B.

The Department will not pay for labor and Equipment to remove existing traffic control devices, provided under S-85 (2563) TRAFFIC CONTROL, when Contract Time is extended.

S-84 (2563) TRAFFIC CONTROL SUPERVISOR

REVISED 06/30/22

S-84.1 DESCRIPTION

This Work consists of providing a Traffic Control Supervisor during all major traffic control modifications to this project in accordance with S-85 (2563) TRAFFIC CONTROL. The Traffic Control Supervisor is responsible for managing the traffic control operations of the project, including those of the Contractor, Subcontractors, and suppliers. Traffic Control Management must be the Traffic Control Supervisor's primary responsibility.

S-84.2 MATERIALS

See S-85 (2563) TRAFFIC CONTROL.

S-84.3 CONSTRUCTION REQUIREMENTS

The Traffic Control Supervisor must be either an employee of the Contractor other than the superintendent, or an employee of a firm which has a subcontract for overall traffic control management.

The Traffic Control Supervisor must have a copy of the Temporary Traffic Control Plan and the "Minnesota Temporary Traffic Control Field Manual". The Traffic Control Supervisor must have the authority needed to effectively complete modifications and perform maintenance of traffic controls. This includes having the authority necessary to obtain and use all labor, equipment, and materials needed to provide and maintain traffic control in routine and in emergency situations.

A Certification

Provide a copy of the designated Traffic Control Supervisor certification to the Engineer at the project pre-construction conference. The employee must be certified as a Traffic Control Supervisor by MnDOT or the American Traffic Safety Services Association (ATSSA). A person may become an ATSSA-certified Traffic Control Supervisor by receiving a certification from the ATSSA sponsored Traffic Control Supervisor-MN State Specific Course. A person may become a MnDOT-certified Traffic Control Supervisor by receiving a certification from the MnDOT sponsored Traffic Control Supervisor Course. Additional information on MnDOT's certification program may be found at: <http://www.dot.state.mn.us/const/wzs/traffic-supervisor.html>.

B Traffic Control Modifications

Provide a Traffic Control Supervisor for all major traffic control modifications listed below:

- (1) Initial startup of the Project
- (2) Whenever any bypass is placed into operation
- (3) Winter suspension traffic control adjustment operation
- (4) Spring start-up traffic control adjustment operation
- (5) Completion of the Project
- (6) Any other major changes to the Traffic Control set-up (due to Contractors staging of operations)

The Traffic Control Supervisor must be on site three days prior to all major traffic control modifications listed above until the major traffic control modification is functioning properly allowing for safe, long term accommodations for traveling public. During the three day time period prior to the major traffic control modification, the Traffic Control Supervisor will be expected to develop a site plan for the major traffic control modification, to determine and ensure timely delivery of the proper quantity of traffic control devices, and to develop staging plans for the major traffic control modification operations. The Traffic Control Supervisor will then coordinate and direct the installation of the devices as well as the staging of the traffic control modification to ensure a safe and efficient transition is completed. Following the transition, the Traffic Control Supervisor will

monitor the traffic flow of the site(s) in question and make modifications necessary to provide for the safe and efficient passage of the traveling public.

C Specific Duties

Traffic control management by the Traffic Control Supervisor includes:

- (1) Ensuring that traffic control devices are functioning as required. This includes the repair or replacement of all signs, barricades, and other traffic devices that become damaged, moved, or destroyed, or lights that cease to function properly, and barricade weights that are damaged or otherwise fail to stabilize barricades.
- (2) Providing sufficient surveillance of signs, barricades, and other traffic control devices. This includes inspecting traffic control devices on every calendar day that traffic control devices are in use (by the Traffic Control Supervisor or approved representative). Provide copies of the inspection logs on a weekly basis and at the request of the Engineer.
- (3) The Traffic Control Supervisor will be on the Project every working day, "on call" at all times, and available within 45 minutes of notification at other than normal working hours. Provide the names, addresses, and phone numbers of at least three individuals (one of which is the Traffic Control Supervisor) responsible to provide and ensure immediate attention to the traffic control management to the Engineer.

S-84.4 METHOD OF MEASUREMENT

The Engineer will measure Traffic Control Supervisor as a lump sum in accordance with MnDOT 1901.12 or the number of Unit Days of service.

S-84.5 BASIS OF PAYMENT

The Contract Unit Price for Traffic Control Supervisor is compensation in full for Equipment, Materials and labor required to complete the Work.

The Department will pay for Traffic Control Supervisor on the basis of the following schedule:

Item No.	Item	Unit
2563.601	Traffic Control Supervisor	lump sum
2563.613	Traffic Control Supervisor	unit day

S-85 (2563) TRAFFIC CONTROL

REVISED 09/27/24

S-85.1 DESCRIPTION

This Work consists of furnishing, installing, maintaining, and removing all traffic control devices required to provide safe movement of traffic and pedestrians through the Project at all times from commencement of the Work until Project Acceptance. Maintain roads and pedestrian facilities undergoing improvements in a condition that accommodates public traffic. Do not close roads or pedestrian facilities, except as authorized. The Engineer may modify the requirements for traffic control as deemed necessary.

The Department will maintain Detour Roads established by the Commissioner for through traffic diverted from the Project unless otherwise indicated in the Plan.

The use of maintenance crossovers in or near the construction area is permitted if authorized by the Engineer.

The Contractor is not responsible for snow removal from roads or pedestrian facilities open to public traffic. Do not suspend operations for the winter until meeting the requirements of 1803.4, "Temporary Suspensions". During authorized winter suspension, the Department will maintain traffic control devices. If traffic control devices are damaged or destroyed, the Department will pay the Contractor the value of the device as determined by the Engineer.

All temporary traffic management must conform to and be installed in accordance with:

- the "Minnesota Manual on Uniform Traffic Control Devices" (MN MUTCD);
- the "Minnesota Temporary Traffic Control Field Manual" (Field Manual);
- the "Speed Limits in Work Zones Guidelines";
- the "Minnesota Flagging Handbook";
- the "MnDOT Standard Signs and Markings Manual";
- the Plan;
- all applicable standard Specifications and Special Provisions.

Manuals listed above may be found at: <http://www.dot.state.mn.us/trafficeng/publ/index.html>

S-85.2 MATERIALS

A Temporary Signs and Devices

Reflectorize all signs, paddles, and other traffic control devices including those used for daytime operations. Fabricate temporary rigid signs and devices with retroreflective sheeting material of the appropriate color listed on the Approved Products List (APL) for either "Sheeting for Rigid Temporary Work Zone Signs, Delineators, and Markers (Type IX and XI)" or "Sheeting for Rigid Permanent Signs, Delineators, and Markers (Type IX and XI)". The sheeting Materials APL is located at the following link:

<http://www.dot.state.mn.us/products/signing/sheeting.html>.

Inplace signs that still apply during temporary operations need no change in sign sheeting.

B Truck/Trailer Mounted Attenuators

The Approved Products List for "Mobile Crash Attenuators" is found at:

<http://www.dot.state.mn.us/products/temporarytrafficcontrol/mobilecrashattenuators.html>

C Flashing Arrow Boards

On Projects requiring flashing arrow boards, provide Work Zone Data Exchange compliant arrow boards.

D Crashworthy Signs, Traffic Control Devices, and Ballast

Ground mounted signs and traffic control devices must be crashworthy and meet the crash testing requirements of the AASHTO Manual for Assessing Safety Hardware 2016 (MASH-16). The Department may require a letter of compliance stating that all signs and traffic control devices comply with MASH-16 requirements. The Letter of Compliance must include drawings of the different signs and devices along with a copy of the FHWA issued Letter of Eligibility or MnDOT MASH Crashworthy Evaluation.

See MnDOT Technical Memorandum No. 19-03-T-01 for information and timelines on the allowable use of crashworthy devices tested under NCHRP-350. <https://techmemos.dot.state.mn.us/techmemo.aspx>

Trailer mounted devices are not crash tested and must be delineated when deployed and removed when not needed.

The approved ballast system for signs and devices mounted on temporary portable supports is sandbags, unless it is designed, crash tested, and approved for the specific device. Add a deicer during freezing conditions to prevent the sand from freezing. Place sandbags at the base of the sign or traffic control device. Do not use any ballast that causes a sign or traffic control device to become hazardous to motorists or workers.

S-85.3 CONSTRUCTION REQUIREMENTS

A Traffic Control Plan, Maintenance, and Inspection

A.1 Submit proposed traffic control changes to the Engineer for acceptance if the Contractor modifies the traffic control Plan or Field Manual layout. Submit the proposed traffic control Plan at least seven days before implementation. If Field Manual layouts are used, specify layout number(s) but do not

submit the layouts from the Field Manual. Do not implement the proposed traffic control modification until accepted by the Engineer.

A.2 Immediately repair or replace all traffic control devices that become damaged, moved or destroyed, and all ballasts that are damaged, destroyed, or otherwise fail to stabilize the device.

A.3 Meet the traffic control device quality standards as required in the Field Manual. Immediately replace unacceptable traffic control devices. Signs that are dirty and result in a noticeable loss of reflectivity at night are considered unacceptable and must be cleaned or replaced. Respond promptly to any call from the Engineer concerning the notification of unacceptable traffic control devices.

A.4 Provide the names, addresses, and phone numbers of at least three individuals responsible for placing and maintaining traffic control devices to the Engineer at the Pre-construction Conference. These individuals will be "on call" 24 hours per day, seven days per week during the times any temporary traffic control devices are in place.

A.5 Inspect all traffic control devices on a daily basis, including one nighttime inspection per week. Verify that the devices and pavement markings are placed in accordance with the Traffic Control Plan, these Special Provisions, and the MN MUTCD. Immediately correct discrepancies between the actual placement and the required placement. Respond immediately to any call from the Engineer concerning any request for improving or correcting traffic control devices.

A.6 Make a daily log of required inspections. This log must indicate the date and time any changes in the stages, phases, or portions go into effect. The log must identify the location and verify that the devices and pavement markings are placed as directed or corrected in accordance with the Plan. The person making the inspection must sign the log and include the date and time of the entry. Provide copies of the inspection logs on a weekly basis and at the request of the Engineer.

B Traffic Control Signs and Devices

B.1 Roll-up signs are not allowed unless authorized by the Engineer.

B.2 Cover, modify, or remove all signs that are not consistent with traffic operations. Cover the entire sign or that part of the legend that is inappropriate. Sign covers must conform to the Typical Temporary Sign Covering Details Sheet found in the Plan or at the following link:
<http://www.dot.state.mn.us/trafficeng/workzone/wz-ltta/pdf/tempsigncover.pdf>

B.3 Maintain Street identification signage at all times. Signs may be installed on temporary supports if the permanent sign Structures are affected by operations. This is necessary to maintain the 911 emergency system.

B.4 Post mount all signs that will remain in the same location for more than 30 consecutive days. This does not include portable signs which are set up and taken down at the beginning and end of each Work shift.

When the proper location of a sign is on pavement, do not core through the surface. If there is a conflict with underground utilities, attempt to move the sign while maintaining its visibility to traffic. If it is not possible to drive posts into the ground, mount signs on portable supports as approved by the Engineer.

When signs are removed, the sign posts and stub posts must also be removed from the Right-of-way. Posts left in place for future use or removal at a later date must be properly delineated with tubular markers, flags, or other delineation as approved by the Engineer at no additional cost.

B.5 At the beginning of the Project, store at least 10 extra Type III barricades of which 6 shall include ROAD CLOSED TO THRU TRAFFIC R11-4 signs and 20 extra retroreflective drums to be used at the Engineer's discretion. Store the devices at a location approved by the Engineer.

If the Engineer orders additional devices, beyond the quantity specified above, the Department will compensate the Contractor according to S-83 (2562) ADDITIONAL TRAFFIC CONTROL DEVICES AND EXTENDED USE OF TRAFFIC CONTROL DEVICES.

C Traffic Safety

C.1 Do not suspend material, Equipment, tools or personnel over lanes or pedestrian facilities open to traffic.

C.2 Do not place Bridge deck concrete over lanes open to traffic or over active pedestrian facilities.

C.3 Protect traffic and pedestrians from excavations, drop-offs, falling objects, splatter or other potential construction hazards.

C.4 Do not store Materials or Equipment in the Work zone clear zone unless approved by the Engineer. If Materials or Equipment must be stored within the Work zone clear zone, protect with temporary barrier. If the Engineer agrees that temporary barrier is not practical, delineate with Type B channelizers.

C.5 Do not park vehicles or construction Equipment in the clear zone or any location that obstructs traffic control devices. Workers are not allowed to park their private vehicles within the Project limits unless approved by the Engineer.

C.6 Do not load or unload material or Equipment on the Shoulders of any Roadway without a full Shoulder closure using signs and channelizing devices shown on Layout 8 in the Field Manual.

D High Visibility Apparel

During night work or low light conditions, all workers must wear high visibility Class E long pants and retro-reflective headgear in addition to the ANSI Class 2 or 3 vest, shirt, or jacket.

All high visibility apparel must be worn in the manner for which it was designed. All apparel worn on the torso must be closed in the front to provide 360-degree visibility. A worker's high-visibility apparel must be removed from service and replaced if it becomes faded, worn, torn, dirty, or defaced, reducing the conspicuity of the apparel.

E Night Work

Night work is not permitted on this Project without prior approval of the Engineer.

F Vehicle Warning Light Specification

All vehicles and Equipment operating in the trunk highway Right-of-way, must have operable warning lights that are amber in color and meet the appropriate SAE Specification. The SAE Specification requirements are as follows:

- (1) Optical Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles- SAE Specification J845.
- (2) Directional Flashing Optical Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles - SAE Specification J595.

Details on SAE Specification can be found at: <http://www.dot.state.mn.us/const/wzs/lighting.html>

G Lane Closure Requirements

G.1 Temporary lane closures or other traffic restrictions by the Contractor, during work hours and consistent with the time restrictions, will be permitted only during those hours and at those locations approved by the Engineer. Request temporary lane closures at least 24 hours prior to such closures.

G.2 The Engineer may lengthen, shorten, or otherwise modify the following periods of restrictions as warranted by actual traffic conditions.

G.2.1 Temporary lane closures or other traffic restrictions will only be permitted between the official hours of sunrise and sunset.

G.3 Work that will restrict or interfere with traffic shall not be performed between 12:00 noon on the day preceding and 9:00 a.m. on the day following any consecutive combination of a Saturday, Sunday and legal holiday.

G.4 Place traffic control devices in any temporary lane closure that is adjacent to traffic and extends beyond 1000 feet as shown on Layout 61 of the Field Manual. When the lane closure is in place three days or longer, use only Type III barricades.

G.5 Use Drum Channelizers in all lane closure tapers and in any shifts in traffic alignment.

G.6 No center lane closures will be permitted.

G.7 Maintain a minimum of two miles between temporary lane closures.

G.8 Temporary lane closures will not be permitted during inclement weather, nor any other time when, in the opinion of the Engineer, the lane closure will be a greater than normal hazard to traffic.

G.9 When working on the Shoulder or median, provide traffic control according to Layout 8 (Work on Shoulder) of the Field Manual.

H Truck/Trailer Mounted Attenuators (TMAs) For Mobile/Short Duration Operations

Truck/Trailer Mounted Attenuators (TMA) must be used on all shadow and protection vehicles operating totally or partially in a Traffic Lane if any temporary traffic control zone is defined as "Mobile/Short Duration" by the Field Manual. All references to "should" in the Field Manual in regard to TMA use for Mobile/Short Duration layouts are hereby changed to "shall". This requirement applies to all operations utilizing Field Manual layouts 9, 10, 12, 13, 36, 41, 49, 50, 51, 54, 55, 63, 76, 77, 78, and 79. Providing TMAs for "Mobile/Short Duration" work zones is included in Traffic Control Lump Sum.

I Flagging Operations

I.1 Flaggers and Pilot Drivers must attend a training session taught by a MnDOT-Qualified Flagger Trainer. The trainer must have completed a "MnDOT Flagger Train the Trainer Session" within the last five years and be on file as a qualified Trainer with MnDOT. Provide all flaggers with the MnDOT Flagging Handbook. Flaggers must be in possession of the handbook while flagging on the Project. Furnish the signed "Checklist for Flagger Training" or "Flagger Qualification Card" to the Engineer any time a new flagger reports to work on the Project. The "Checklist for Flagger Training" and other forms and information is found at:
<http://www.dot.state.mn.us/const/wzs/flagger.html>

Flaggers must be properly uniformed in the required high visibility apparel, including a high visibility hat. The high visibility hat can be substituted for a hard hat if the work site has a hard hat requirement.

- I.2 All signs associated with the flagging operation must be removed or covered when flagging operations are not present.
- I.3 Coordinate the flagging operations in a manner that causes minimum delay to the traveling public. The maximum delay time is 10 minutes. If the operation exceeds the maximum delay time, the operation must be discontinued until a new traffic control plan is developed which meets the maximum delay requirement.
- I.4 No additional flaggers are required at any specific project locations within the limits of flagging operations.
- I.5 Provide flaggers as directed by the Engineer for Contractors operations that create hazards to the traveling public. No additional payment will be made for flaggers required for this purpose.
- J Milling, Sealcoating, and Paving Operations
 - J.1 Milling and paving operations must be completed over the full width of all traffic carrying lanes, including turn lanes, bypass, etc., under construction at the end of each day's production.
 - J.2 When traffic is allowed to drive on the milled and newly paved surfaces, install interim striping and provide appropriate warning signs such as "GROOVED PAVEMENT" and "BUMP" with "Advisory Speed" plaques as shown on Layouts 35 and 66 of the Field Manual.
 - J.3 Taper and/or chamfer any drop-off where traffic will cross from or to the inplace surface, or from or to the milled surface, so as to provide for the safe passage of traffic.
 - J.4 Schedule construction operations to minimize traffic exposure to uneven lanes, milled edges, and edge drop-offs. If these conditions cannot be avoided, provide and maintain the appropriate traffic control in accordance with the "LONGITUDINAL DROP OFF GUIDELINES" in the Field Manual.
 - J.5 Maintain traffic with a minimum of delay during milling and paving operations at Intersections controlled by signals or by all-way stop signs. Provide off-duty police officers to direct and control traffic at Intersections with fully operating traffic control signal systems.
 - J.6 Intersecting Streets, other than Intersections controlled by signals or all-way stop signs, may be closed during milling and paving operations in the Intersection if there are adequate alternate routes for the intersecting Street traffic. Do not close adjacent intersecting Streets to traffic concurrently. Notify the local Road authorities of its schedule to close intersecting Streets 48 hours in advance of the closure.
- K Maintenance and Staging of Traffic Control
 - K.1 Maintain a minimum lane width of 11 feet on all Roadways. Traffic must not be allowed or forced onto the Shoulders without prior approval of the Engineer.
 - K.2 Access to and from the Project Site is subject to approval by the Engineer.
 - K.3 Keep the Right of Way fence closed during non-working hours.

S-85.4 METHOD OF MEASUREMENT

All traffic control required to complete the Project as shown in the Plans and specified in these Special Provisions will be made as a lump sum payment under Item 2563.601 (Traffic Control). Payment includes all costs associated with furnishing, installing, maintaining, relocating and subsequently removing traffic control devices (including flaggers) as required. No additional measurement for payment will be made for individual activities and devices that constitute Traffic Control, except for other traffic control Bid items specifically listed in the Statement of Estimated Quantities.

Traffic Control layouts and devices not shown in the Plan or stated in these Special Provisions, that are necessary to facilitate traffic switches or for transitioning traffic from one stage to another, are included in the lump sum traffic control item. If the Contractor requests a change in traffic control and these changes are implemented, there will be no increase or decrease in the lump sum payment for traffic control. If the Engineer orders a change in traffic control because of a Plan error, omission, changed condition or change of Project scope, payment for such changes will be made as Extra Work.

If the Contractor fails to properly provide, install, maintain, or remove any of the required traffic control devices, the Department may correct the deficiency and to deduct the costs from any moneys due or becoming due to the Contractor in accordance with MnDOT 1512, "Unacceptable and Unauthorized Work".

S-85.5 **BASIS OF PAYMENT**
Partial payments for lump sum Item 2563.601 (Traffic Control) will be made as follows:

Table SP2563-2
Traffic Control Partial Payments

Percent of Original Contract Completed	Pay this Percentage of Traffic Control
5	50
10	75
50	95
All Work Completed And All Traffic Control Removed	100

A **Monetary Price Adjustments**
The Department must apply incentives and disincentives and may apply monetary deductions for (2563) TRAFFIC CONTROL. The amounts of these adjustments are deemed reasonable.

If the Contractor fails to adhere to the established time schedules, the Department may assess a monetary adjustment of \$1,500.00 per hour for each hour or portion of an hour that the Engineer determines that the Contractor has not complied.

B **Schedule**
The Contract Unit Price for Traffic Control is compensation in full for Equipment, Materials and labor required to complete the Work.

The Department will pay for Traffic Control on the basis of the following schedule:

Item No.	Item	Unit
2563.601	Traffic Control	Lump Sum

S-86 (2563) PORTABLE CHANGEABLE MESSAGE SIGN
REVISED 06/30/22

S-86.1 **DESCRIPTION**
This Work consists of furnishing, installing, maintaining, and removing Portable Changeable Message Signs (PCMS) in accordance with S-85 (2563) TRAFFIC CONTROL.

S-86.2 **MATERIALS**
Changeable Message Signs - Type C Temporary Traffic Control Electronic Equipment APL

S-86.3 CONSTRUCTION REQUIREMENTS

Provide Type C Trailer Mounted Message Signs that meet the requirements specified in the Minnesota Manual on Uniform Traffic Control Devices (MN MUTCD). The PCMS must have eight characters per line, three lines, and a character height of 18 inches.

Operate each PCMS at maximum legibility. Failure to operate a PCMS at maximum legibility, as determined by the Engineer, will result in no payment for each day that the Message Sign is deemed inadequate.

When the PCMS is on the Shoulder and in use, delineate the PCMS according to Layout 7 (Partial Shoulder Closure) in the Field Manual. The PCMS must be stored off the Shoulder, beyond the clear zone distance, when it is not actively being used as a traffic control device.

Revise the messages as directed by the Engineer.

S-86.4 METHOD OF MEASUREMENT

No measurement will be made of the portable changeable message signs provided.

S-86.5 BASIS OF PAYMENT

The Contract Unit Price for Portable Changeable Message Sign is compensation in full for Equipment, Materials and labor required to complete the Work.

Payment for all costs of the Portable Changeable Message Signs will be included in the lump sum payment for traffic control.

S-87 (2572) PROTECTION AND RESTORATION OF VEGETATION

NEW 06/30/23

S-87.1 Add the following to MnDOT 2572.2:

F Tree Watering Bags

Provide 20 gallon vertical tree watering bags

S-87.2 Delete and replace MnDOT 2572.3A.3 with the following:

A.3 Watering

Water root-damaged trees and trees designated in the plans to be watered once per week during the growing season using one of the following methods as specified in the Plans. Watering is not required on those weeks where local rainfall accumulation is greater than or equal to 1 inch.

Verify the soil moisture using a soil recovery probe to a depth of 10 inches within 24 hours of each watering. Adjust the intervals and frequency of watering in accordance with prevailing moisture and weather conditions.

Measure and record weekly local rainfall using an onsite rain gauge. Provide records to the Engineer as requested.

A.3.a General Watering

Maintain soil moisture by saturating the soil within the undisturbed portion of the dripline of trees to a depth of 10 inches.

A.3.b Tree Watering Bags

Install tree-watering bags in accordance with Manufacturer's recommendations prior to beginning construction activities. Install tree-watering bags after April 15 of each construction year.

Fill the tree-watering bags once per week until completion of construction activities or the end of the watering season, April 15th through October 15th.

Tree bags may be left empty for one week when local rainfall during the preceding week was greater than or equal to 1 inch.

Remove tree-watering bags and straps from each tree after October 15th but no later than November 1st of the given construction year.

For those trees where more than one bag is required, if the bags cannot be zipped together, use 1.5-inch polyethylene or polypropylene strap(s) to secure bags to the tree. Do not allow straps to penetrate the bark of the tree. Tree-watering bags are not a substitute for temporary fencing.

S-87.3 Delete and replace MnDOT 2572.4C with the following:

C Water

The Engineer will measure water by volume used to protect and restore vegetation. The Engineer will not measure the number of tree-watering bags installed or water otherwise used in performing the Work, such as for maintenance of sod.

S-88 (2573) STORM WATER MANAGEMENT

REVISED 04/14/23

S-88.1 Add the following to MnDOT 2573.5:

I Unit Prices

In addition to stormwater management Pay Items included in the Plan, the Engineer may require the items listed below. Payment for additional items as ordered by the Engineer will be made in accordance with the following schedule:

Wheel Wash off	\$5000.00/each
Flocculant Sock (250,000 gal. treatment vol.)	\$265.00 each
Bale Barrier	\$8.00/foot
Silt Fence, Type HI	\$4.50/foot
Silt Fence, Type SD	\$30.00/foot
Silt Fence, Type MS	\$2.75/foot
Flotation Silt Curtain, Type: Moving, 1.2 m (4 foot) depth	\$22.50/foot
Sediment Control Log, Type Wood Fiber	\$4.00/foot
Sediment Control Log, Type Compost	\$4.00/foot
Sediment Control Log, Type Rock	\$12.00/foot
Sediment Trap Excavation	\$10.00/cubic yard
Sandbag Barrier	\$15.00/square foot
Sand Tote Bag	\$75.00/each
Sediment Removal, Backhoe	\$240.00/hour

Sediment Removal, Vacuum truck.....	\$425.00/hour
Temporary Slope Drain (18" diameter).....	\$100.00/linear foot
Water Treatment Type Sediment Tank.....	\$20,250.00/each

S-89 (2573) STORM WATER MANAGEMENT (MPCA PERMIT)

NEW 08/07/23

S-89.1 Add the following to MnDOT 2573.3A.1, "Erosion Control Supervisor:"

Inspect and photograph dewatering operations at the beginning of dewatering and at least once every 24 hours during dewatering to ensure that the system is cleaning the water sufficient to prevent the discharge from causing nuisance conditions. Photographs must show the condition of the discharge, the discharge location, and the receiving water. Include photographs in the next stormwater inspection report.

Reduce stormwater inspection frequency to once per month in areas of the project where construction activity has been completed and the planted native vegetation has a temporary vegetation density of 70 percent.

Prior to project completion take photographs of representative locations to document that all surfaces intended for permanent vegetation have a uniform cover of perennial vegetation with a density of at least 70 percent of expected cover at maturity. Submit these photos to the Engineer to be filed with the Notice of Termination.

S-90 (2574) SOIL PREPARATION

RESTORED 06/30/23

S-90.1 Add the following to MnDOT 2574.5:

C. Unit Prices

In addition to soil preparation Pay Items included in the Plan, the Engineer may require the items listed below as site conditions warrant (provided the items listed below are not already included in the Plan). Payment for additional items as ordered by the Engineer will be made in accordance with the following schedule:

Subsoiling	\$300.00/acre
Soil Bed Preparation	\$350.00/acre
Soil Tracking.....	\$2,500.00/acre

S-91 (2575) ESTABLISHING VEGETATION AND CONTROLLING EROSION

REVISED 06/28/24

S-91.1 Delete and replace Table 2575.3-1 with the following:

**Table 2575.3-1
Seeding Dates**

Seed Mixture	Spring	Fall
Oats	May 1 – August 1	
Winter Wheat	---	August 1 – October 1
Oats and Peas	Year round	---
Two-year Cover Crop*	April 1 – July 20	July 20 – October 20

Boulevard and Turfgrass mixes, Snow Fence Ground Cover, Inslope mixes, Patch mix*	April 1 – June 1	July 20 – September 20
Roadside and Wet Ditch mixes	April 15 – July 20	September 20 – October 20
*Plant these mixes from April 15 through September 20 when working on or north of TH 2.		

S-91.2 Delete and replace the first paragraph of MnDOT 2575.3 B.2 Seeding Turf Mixes with the following:

B.2 Seeding Cover Crop and Turfgrass Mixtures

Mechanically sow or hydraulically apply Cover Crop, Boulevard, Turfgrass, Snow Fence, Inslope, and Patch mixes uniformly at the adjusted bulk application rate of each mixture. Only use hand operated mechanical spreaders on areas too small for or inaccessible by the specified equipment.

S-91.3 Delete and replace MnDOT 2575.3 B.3 with the following:

B.3 Seeding Roadside and Wet Ditch Mixtures

Seed Roadside and Wet Ditch mixes with a native seed drill, a drop type seeder, or a hydro seeder uniformly at the adjusted bulk application rate of each mixture.

Use a drill or drop seeder with separate seed boxes for fluffy seed and small flowable seed, capable of accurately metering seed of various sizes, and capable of maintaining a uniform mixture of seeds during planting.

Seed drills must have separate seed boxes for fluffy seed and small flowable seed, be capable of accurately metering seed of various sizes, and be capable of maintaining a uniform mixture of seeds during planting. They must also have disc furrow openers and a packer assembly that compacts the soil directly over the drill row. Plant seeds in rows no greater than 8 inches apart and at a depth of between 1/8 inch and 3/8 inch. Drill perpendicular to the direction of surface drainage.

Drop seeders must have separate seed boxes for fluffy seed and small flowable seed, be capable of accurately metering seed of various sizes, and be capable of maintaining a uniform mixture of seeds during planting. They must also have a packer assembly that firms the soil immediately after the seed lands on it or be followed immediately by a separate cultipacker.

Use cyclone or spinner-type seeders on areas no greater than 1 acre or on areas inaccessible to other Equipment as approved by the Engineer.

S-91.4 Delete and replace the second paragraph of MnDOT 2575.3L “Turf Establishment” with the following:

Unless otherwise shown on the Plans, establish vegetative cover by sodding or by seeding and mulching. Fertilize the areas with a slow release fertilizer in accordance with 3881.2B.3 “Type 3 – Slow Release Fertilizer” at a rate derived from a topsoil fertility test result. If seeding, provide and place Mesic Inslope seed mixture as specified in 3876 “Seed.” Stabilize seeded areas with Type 3 Mulch in accordance with 3882 “Mulch Material” and disc anchoring. Stabilize slopes steeper than or equal to 3h:1v, ditch bottoms, and other areas of concentrated flow with category 25 Rolled Erosion Prevention Product.

S-91.5 Delete and replace the first sentence of MnDOT 2575.3 L.1 Subsurface Drain Outlets with the following:

As per 2502 “Subsurface Drains,” plant the area around subsurface drain outlets with the seed mixture shown in the Plans. Plant Mesic Inslope Seed Mixture in accordance with 3876 “Seed” if no seed mixture is shown in the Plans.

S-91.6 Delete Table 2575.3-3 Rapid Stabilization and replace it with the following:

**Table 2575.3-3
Rapid Stabilization**

Method	Materials
1	2 tons per acre of Type 1 mulch followed by disc anchoring
2	1.5 tons per acre of Type 3 mulch 750 pounds per acre of Stabilized Fiber Matrix (3884.2 B.3)
3	A slurry consisting of the following and applied at a rate of 6,000 gallons per acre: <ul style="list-style-type: none"> • 330 pounds of Stabilized Fiber Matrix (3884.2 B.3) per 1,000 gallons of slurry • 10 pounds of Two-year Cover Crop Seed Mixture per 1,000 gallons of slurry • 50 pounds of 10-10-10 Type 3 slow release fertilizer per 1,000 gallons of slurry • 875 gallons of water per 1,000 gallons of slurry
4	Category 25 Rolled Erosion Prevention Product 2 pounds per 100 square yards of Two-year Cover Crop Seed Mixture 8 pounds per 100 square yards of 10-10-10 Type 3 slow release fertilizer
5	Riprap, Class II Geotextile, Type 3

S-91.1 Add the following to MnDOT 2575.4:

The Engineer will measure Seed Mixture Special in accordance with 2575.4B "Seed".

S-91.2 Add the following to MnDOT 2575.5K:

Item No.	Item	Unit
2575.608	Seed _____	pound

S-91.3 Add the following to MnDOT 2575.5:

L Unit Prices

In addition to the erosion control Pay Items included in the Plan, the Engineer may require the items listed below as site conditions warrant (provided the items below are not already included in the Plan). Payment for additional items as ordered by the Engineer will be made in accordance with the following schedule:

Disc Anchoring\$100.00/acre
Mulch Material, Type 1..... \$250.00/ton

Seed Mixtures (for temporary use)

21-111 or 21-112..... \$1.90/pound
21-113..... \$2.25/pound
22-111..... \$4.50/pound
32-241..... \$36.00/pound
34-171..... \$65.00/pound

Erosion Control Blanket

Category 25.....\$2.40/square yard
Category 30.....\$2.25/square yard
Category 72..... \$11.00/square yard

Rapid Stabilization

Method 1	\$1,000.00/acre
Method 2	\$1,300.00/acre
Method 3	\$600.00/M Gallon
Method 4	\$1.75/square yard
Hydraulic Stabilized Fiber Matrix	\$1.00/pound
Hydraulic Reinforced Fiber Matrix	\$2.00/pound
Temporary Poly (Fiber Reinforced) Covering	\$5.00/square yard
Temporary Geotextile Covering	\$7.00/square yard
Water.....	\$31.00/M Gallon
Mowing (Hand Whip)	\$100.00/hour
Mowing (Machine)	\$300.00/acre
Weed Spraying	\$150.00/acre

M Sod

The Contract Unit Price for sod includes maintenance as described in 2575.3 K.1 during the 30 day maintenance period and during any extension to the maintenance period due to sod replacements. The Contract Unit Price for sod does not include additional watering or maintenance ordered by the Engineer after the 30 day maintenance period or after any extension in the maintenance period due to sod replacements, whichever is longer.

S-92 (2575) ESTABLISHING VEGETATION AND CONTROLLING EROSION (HYDRAULIC MATRIX)

S-92.1 Add the following to MnDOT 2575.3E.2:

On Projects with a DNR Public Waters Permit that have Hydraulic Mulch Matrix, Stabilized Fiber Matrix, Bonded Fiber Matrix, or Reinforced Fiber Matrix provide a Manufacturers Letter of Certification certifying that the Hydraulic Matrix product does not contain any plastic fiber material. Submit letter and provide time for review and acceptance prior to product installation.

S-92.2 Add the following to MnDOT 2575.3M:

On Projects with a DNR Public Waters Permit that have Rapid Stabilization Method 2 or Rapid Stabilization Method 3 Provide a Manufacturers Letter of Certification certifying that the Hydraulic Matrix product does not contain any plastic fiber material. Submit letter and provide time for review and acceptance prior to product installation.

S-93 (2582) PAVEMENT MARKINGS

REVISED 09/29/23

S-93.1 Add the following to MnDOT 2582.2:

For pavement marking installations between the dates of October 15 and April 1, provide and use pavement marking Materials listed on the "Late Season Pavement Marking Materials" APL.

S-93.2 Delete and replace the fourth paragraph of MnDOT 2582.3B.7.b with :

For Pref Tape Gr In provide a recess depth between 150 mil to 200 mil. For Pref Thermo Gr In provide a recess depth of 110 mil ± 10 mil.

S-93.3 Delete and replace MnDOT 2582.3C.3 with :

C.3 Retroreflectivity

Initial pavement marking retroreflectivity is defined as the pavement marking dry and wet retroreflectivity when measured between 14 Calendar Days and 44 Calendar Days after pavement marking installation, prior to snow and ice maintenance operations.

C.3.1 Dry Retroreflectivity

Provide pavement markings meeting the following minimum initial pavement marking dry retroreflectivity when tested using 30-meter geometry in accordance with *ASTM E1710, Standard Test Method for Retroreflective Pavement Marking Materials with CEN-Prescribed Geometry Using a Portable Retroreflectometer*.

Table 2582.3-2
Minimum Initial Pavement Marking Dry Retroreflectivity

	White	Yellow
Pref Tape	600 millicandela/square meter/lux	500 millicandela/square meter/lux
Pref Thermo	300 millicandela/square meter/lux	200 millicandela/square meter/lux
Pref Thermo, ESR (Enhanced Skid Resistance)	250 millicandela/square meter/lux	150 millicandela/square meter/lux
Multi Comp	300 millicandela/square meter/lux	200 millicandela/square meter/lux
Paint	275 millicandela/square meter/lux	180 millicandela/square meter/lux

C.3.2 Wet Retroreflectivity

When recessed, provide linear pavement markings in the field meeting minimum initial pavement marking wet retroreflectivity as listed in Table 2582.3-2A in accordance with *ASTM E 2832, Standard Test Method for Measuring the Coefficient of Retroreflected Luminance of Pavement Markings in a Standard Condition of Continuous Wetting*.

Table 2582.3-2A
Minimum Initial Pavement Marking Wet Retroreflectivity

	White	Yellow
All Materials	200 millicandela/square meter/lux	200 millicandela/square meter/lux

S-94 (2582) PAVEMENT MARKINGS (SPOTTING METHOD AND WR)

REVISED 06/30/23

S-94.1 Add the following to MnDOT 2582.3B.:

Obtain acceptance from the Engineer prior to using longitudinal joints, pavement edges and existing marking as horizontal control. Provide marking related lane closures and traffic control. Locate points to provide horizontal control for permanent and temporary pavement markings. Prior to placing pavement markings, obtain acceptance of proposed locations from the Engineer.

S-94.2 Delete and replace the third paragraph of MnDOT 2582.3B.8 with:

For WR markings, apply wet reflective media per manufacturer's specifications and apply the Utah Blend beads specified in 3592.B.2 "Utah Blend" Gradation as the second drop glass bead.

S-95 **(3107) MASONRY MORTAR**
RESTORED 06/30/23

S-95.1 Delete and replace MnDOT 3107 with the following:

3107.1 SCOPE
Provide masonry mortar for use in utility/sewer and other applications.

3107.2 REQUIREMENTS

A. Utility/Sewer Application

Provide a preblended, dry, air-entrained, bagged mortar mix designed for utility/sewer applications from the approved source listed on the *Approved/Qualified Products List*, meeting the requirements of *ASTM C270, Standard Specification for Mortar for Unit Masonry*, and *ASTM C1714, Standard Specification for Preblended Dry Mortar Mix*.

Mix the preblended bagged mortar mixture onsite for the minimum time stated by the manufacturer. Do not exceed the manufacturer allowable mixing water. If the manufacturer does not recommend a minimum mixing time, mix the preblended bagged mortar mixture for a minimum of 5 minutes. The Engineer will not allow retempering the mortar mixture and will reject mortar mixtures not placed within 60 minutes of mixing.

B. Applications Other Than Utility/Sewer

For applications other than for utility/sewer, provide masonry mortar in accordance with *ASTM C270, Standard Specification for Mortar for Unit Masonry*, based on the type of mortar required by the Contract. Mix in accordance with the manufacturer's recommendations.

For site mixed masonry mortar using bagged masonry cement, submit to the Engineer a statement of compliance meeting the requirements of *ASTM C91, Standard Specification for Masonry Cement*. Label the type of masonry cement, either Type S or Type M, on each bag.

3107.3 SAMPLING AND TESTING
Provide samples for site mixed masonry mortar as required by the Contract.

S-96 **(3113) ADMIXTURES FOR CONCRETE**
RESTORED 06/30/23

S-96.1 Delete and replace MnDOT 3113.2A with the following:

Provide Class I admixtures from the Approved Products List meeting the requirements of *ASTM C494, Standard Specification for Chemical Admixtures for Concrete*.

Department identifies the following as Class I admixtures:

- (1) Type A — Water reducing
- (2) Type B — Retarding
- (3) Type C — Accelerating
- (4) Type D — Water reducing and retarding

- (5) Type E — Water reducing and accelerating
- (6) Type F — Water reducing, high range
- (7) Type G — Water reducing, high range and retarding
- (8) Type S — Specific performance admixtures

Provide Class II air-entraining admixtures from the Approved Products List meeting the requirements of *AASHTO M 154, Standard Specification for Air-Entraining Admixtures for Concrete*, except the tests for bleeding, bond strength, and volume change are not required.

Provide Class III corrosion inhibiting chloride admixtures from the Approved Products List meeting the requirements of *ASTM C1582, Standard Specification for Admixtures to Inhibit Chloride-Induced Corrosion of Reinforcing Steel in Concrete*.

S-97 **(3115) FLY ASH FOR USE IN PORTLAND CEMENT CONCRETE**

NEW 03/29/24

S-97.1 Delete and replace MnDOT 3115 with the following:

3115 **FLY ASH FOR USE IN PORTLAND CEMENT CONCRETE**

3115.1 **SCOPE**

Provide fly ash or coal ash for use in concrete and other applications.

3115.2 **REQUIREMENTS**

Provide fly ash or coal ash from the certified source listed on the Approved/Qualified Products List.

Provide materials meeting the requirements of ASTM C618, “Standard Specification for Coal Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.”

Ensure the following standardized Certification Statement is included with delivery invoices: “(insert company name) certifies that the (material name) produced at (insert plant and location) conforms to MnDOT Specification 3115 for Class (insert class) coal ash.”

3115.3 **SAMPLING AND TESTING**

Provide samples for testing meeting the requirements of the Schedule of Materials Control.

S-98 **(3116) NATURAL POZZOLAN**

NEW 06/28/24

S-98.1 **SCOPE**

Provide natural pozzolan for use in concrete and other applications.

S-98.2 **REQUIREMENTS**

Provide raw or calcined natural pozzolan material listed on the *Approved/Qualified Products List*, meeting the requirements of *ASTM C618, Standard Specification for Coal Ash and Raw or Calcined Natural Pozzolan for Use in Concrete*.

Include the following standardized Certification Statement with delivery invoices: “(insert company name) certifies that the (material name) produced at (insert plant and location) conforms to MnDOT 3116 for Class N Natural Pozzolan.”

- S-98.3 SAMPLING AND TESTING
Provide samples for testing meeting the requirements of fly ash in the *Schedule of Materials Control*.

S-99 (3131) INTERMEDIATE AGGREGATE FOR PORTLAND CEMENT CONCRETE

NEW 09/29/23

- S-99.1 Add the following to the first paragraph of MnDOT 3131.2D:

If the CIA is <15 percent of the total aggregate in the mix, Table 3137.2-3(b) is modified to a maximum of 50.0 percent by weight of Carbonate in Class C aggregate.

S-100 (3137) COARSE AGGREGATE FOR PORTLAND CEMENT CONCRETE

NEW 03/29/24

- S-100.1 Delete MnDOT 3137.2C and replace with the following:

C Washing

Wash Class B, Class C, Class D, and Class R coarse Aggregate to comply with the requirements of Table 3137.2-1(i). Wash Class A aggregate as needed to comply with the requirements of Table 3137.2-1(i), except always wash Class A aggregate for use in Concrete Pavement.

- S-100.2 In Table 3137.2-1, delete the “#” footnote and replace with the following:

Each individual fraction at the point of placement consists of dust from fracture and free of soil (eg., clay and silt) and shale.

S-101 (3138) AGGREGATE FOR SURFACE AND BASE COURSES

REVISED 03/29/24

- S-101.1 Add the following to MnDOT 3138.2C:

- (3) When mixing recycled Aggregate with virgin Aggregate, the minimum Los Angeles Rattler of Carbonate virgin Aggregate is 40%. Meet all other virgin Aggregate requirements in 3138.2B, “Virgin Materials”.

- S-101.2 Add the following note under Table 3138.2-3 of MnDOT 3138.2E:

For 100% crushed quarried class 5 aggregate, the required passing the number 4 sieve is 30 – 80, the required passing the number 10 sieve is 15 – 65, the required passing the number 40 sieve is 7 – 35, and the required passing the Number 200 sieve is 3.0 – 12.0. The 1-1/2 inch, 3/4 inch, and 3/8 inch requirements for crushed quarried class 5 aggregate are the same as in Table 3138.2-3.

- S-101.3 Delete and replace MnDOT 3138.2D(5) with the following:

- (5) Provide Aggregate with a minimum clay content of 3 percent and a Plasticity Index (PI) of 5 - 12. In lieu of meeting the minimum clay content and PI, the requirements are fulfilled if one of the following are met:
- (a) the Aggregate is composed of at least 25 percent recycled Materials.

- (b) the Aggregate is composed of at least 25 percent crushed quarry Aggregate.
- (c) If using glacial or fluvial Aggregate, a minimum of 5 percent 3/8 minus crushed limestone is added.

S-102 (3149) GRANULAR MATERIAL

NEW 06/28/24

S-102.1 Replace 3149.2D.2 with the following:

D.2 Structural Backfill

Provide 100 percent virgin structural backfill meeting the requirements of Table 3149.2-3, and the following.

**Table 3149.2-3
Structural Backfill Requirements**

Requirement	Percent
3/4 inch Sieve	100 passing
Percent Passing Ratio # 40/# 10	0 – 65
No.200 Sieve	0 – 5.0 passing
Clay Percentage as Determined by MnDOT Test Method 1302	1.5 maximum

- (1) Provide screened Material meeting the requirements of 3137.2B, “Classification,” for Class C.

S-103 (3236) REINFORCED CONCRETE PIPE

RESTORED 06/30/23

S-103.1 Delete and replace Table 3236.3-1 of MnDOT 3236.3C.2 with the following:

**Table 3236.3-1 1
Minimum Three Edge Bearing Testing Rates**

Size Range, inch	Class Range	Test Rates
12 – 15	≤ 5	1 per 1000 pieces
18 – 36	≤ 4	1 per 800 pieces
18 – 36	5	1 per 400 pieces
42 – 60	≤ 3	1 per 400 pieces
42 – 60	4 & 5	1 per 200 pieces
66 – 96	≤ 5	1 per 200 pieces

NOTE: Testing rates for sizes not shown are as required by the Project Specifications. Begin a new schedule of testing after changing the mix design, after shutting down the system for major repairs and renovations, when beginning a new production run, and when beginning a new season. These rates are for testing to the 0.01 in D-load. Testing to failure is required on each combination of pipe size, wall thickness, and class manufactured once per production year. For arch pipe smaller than 88-inches nominal span, one piece per year of each size and class manufactured is required to be tested to 0.01 in D-load. Besides, testing to failure is required for arch pipe smaller than 88-inches nominal span on each combination of pipe size and class manufactured once per production year.

S-103.2 Delete and replace MnDOT 3236.2A with the following:

A.	Materials	
A.1	Aggregate Quality.....	3126, 3131 and 3137
A.2	Form Release Agents.....	3902
A.3	Portland Cement.....	3101
	The Department will allow admixtures in accordance with 2462, "Precast Concrete."	
A.4	Blended Hydraulic Cement	3103
A.5	Fly Ash for Use in Portland cement concrete.....	3115
A.6	Ground Granulated Blast Furnace Slag Cement.....	3102
A.7	Precast Concrete.....	2462
A.8	Metal Reinforcement	2472
A.9	Preformed Gasket Seals for Concrete Pipe.....	3726
A.10	Precast Concrete Manufacturing	3240

S-103.3 Add the following to MnDOT 3236.2D:

Manufacturers of reinforced concrete pipe may produce an alternate "offset joint" on the spigot end of the pipe. This type of offset joint is to be used with the profile or pre-lubricated pipe seal systems. See MnDOT Standard Plate 3006.

S-104 (3238) PRECAST CONCRETE BOX CULVERTS

RESTORED 06/30/23

S-104.1 Add the following to MnDOT 3238.2B:

B.3	Welded Wire Reinforcement.....	3303
-----	--------------------------------	------

S-104.2 Delete and replace MnDOT 3238.2I with the following:

I. Certified Plant Requirement

Provide precast concrete box culverts, end sections, and appurtenances constructed in a precast concrete fabrication plant certified by the American Concrete Pipe Association, the National Precast Concrete Association, or another organization approved by the Materials Engineer. If requested, provide quality control and plant certification records to the Materials Engineer.

S-104.3 Add the following to MnDOT 3238.2:

J. Tolerances

Dimensional tolerances will be based on AASHTO M 259, "Standard Specification for Precast Reinforced Concrete Box Sections for Culverts, Storm Drains, and Sewers".

S-105 (3491) PRESERVATIVES AND PRESERVATIVE TREATMENT OF WOOD PRODUCTS

RESTORED 06/30/23

S-105.1 Add the following to the last paragraph of MnDOT 3491.2C:

No field treatment shall be applied within 100 feet of surface water, and any spills must be collected and properly disposed of.

S-106 (3601) RIPRAP MATERIAL

RESTORED 06/30/23

S-106.1 Add the following to MnDOT 3601.2:

F. Geotextile Filter Material

Provide geotextile filter material, meeting the requirements of 3733 and the following:

- (1) Type 3 for use under Class I and Class II random riprap
- (2) Type 4 for use under Class III and Class IV random riprap and hand-placed riprap on slopes no steeper than 3:1, horizontal to vertical
- (3) Type 7 for use under Class III and Class IV random riprap on slopes steeper than 3:1, horizontal to vertical, and under Class V random riprap

S-106.2 Add the following to MnDOT 3601.3:

An approved Quality Control Program is required for riprap derived from Carbonate quarries if used for Bridge protection or quantities greater than 100 cubic yards. The Quality Control program is administered by the MnDOT Geology Unit.

S-107 (3702) PREFORMED JOINT FILLERS

NEW 03/29/24

S-107.1 Add the following to MnDOT 3702.2

- (7) Type F - 100 percent recycled Polyvinyl Chloride (PVC) Expansion Joint Filler meeting the requirements of *ASTM D1752, Standard Specification for Preformed Sponge Rubber, Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction or Recycled Rubber* and Table 3702.2-1, "Preformed Joint Filler Requirements.

S-107.2 Delete and replace the third paragraph of MnDOT 3702.2 with following:

Provide the filler for each joint in a single piece for the full depth and width required for the joint unless otherwise approved by the Engineer. For pavement construction, provide filler in lengths equal to the width of the pavement lanes. Use ¼-inch thick Type F joint filler material as a separation material between sidewalk and back of curb.

S-107.3 Delete and replace Table 3702.2-1 with the following:

**Table 3702.2-1
Preformed Joint Filler Requirements**

Properties	Type						
	A	B	C	D-1	D-2	E	F
Compression	50-1500 psi *	50-1500 psi *	50-1500 psi *	5-300 psi 	30-60 psi *	100-750 psi *	50-1500 psi *
Recovery	> 90 percent	> 90 percent	> 90 percent	> 95 percent	> 80 percent	> 70 percent	> 90 percent
Extrusion	< 0.25 inches	< 0.25 inches	< 0.25 inches	< 0.5 inches	< 0.25 inches	< 0.25 inches	< 0.25 inches

Properties	Type						
	A	B	C	D-1	D-2	E	F
Density †	-	-	> 30 pounds / cubic feet	-	> 3.5 pounds / cubic feet	> 19 pounds / cubic feet	> 50 pounds / cubic feet
Water Absorption	-	-	-	-	< 1 percent	< 15 percent	< 1 percent
Asphalt Content	-	-	-	-	-	> 35 percent	-
Expansion	-	> 140 percent	-	-	-	-	-
* To 50 percent of the original thickness Compression requirements per <i>ASTM D7174, Standard Specification for Preformed Closed-Cell Polyolefin Expansion Joint Fillers for Concrete Paving and Structural Construction</i> † Air-dried							

S-108 (3721) PREFORMED ELASTOMERIC COMPRESSION JOINT SEALERS FOR CONCRETE

NEW 06/28/24

S-108.1 Delete and replace MnDOT 3721.2C with the following:

Provide joint sealers meeting the requirements of ASTM D2628, *Standard Specification for Preformed Polychloroprene Elastomeric Joint Seals for Concrete Pavements*.

S-109 (3733) GEOSYNTHETIC MATERIALS

RESTORED AND REVISED 06/30/23

S-109.1 Delete and replace MnDOT 3733.2B with the following:

Provide geotextiles made from woven, nonwoven, or knit fabric of polymeric filaments or yarns, such as polypropylene, polyethylene, polyester, or polyamide. Except for Type 1b (knit sock), provide geotextiles in compliance with the National Transportation Product Evaluation Program (NTPEP).

For Types 1, 3-13 meet the applicable requirements in Table 3733.2-1 through Table 3733.2-4.

Table 3733.2-1
Geotextile Properties for Types 1, 3, 4, 5, 6, 7

Geotextile Property	ASTM Test Method Units	Type *						
		1		3	4	5	6	7 †
		Fabric	Knit sock					
B1 Grab Tensile Strength minimum, each principal direction	D4632 Pounds	100	—	100	200	200	‡	300
B2 Elongation minimum, each principal direction	D4632 Percent	—	—	50	50	—	‡	50
B3 Seam Breaking Strength minimum #	D4632 Pounds	90	—	90	180	180	‡	270
B4 Apparent Opening Size (AOS) §	D4751 U.S. Sieve	40	40 as applied	50	50	30	20	50
B5 Permittivity minimum**	D4491 sec ⁻¹	0.7	2.75 relaxed	0.5	0.5	0.05	0.05	0.5
B6 Puncture strength minimum	D6241 Pounds	—	180	—	—	—	—	—
B7 Wide Width Strip Tensile Strength minimum each principal direction	D4595 pounds/feet	—	—	—	—	—	‡	—
<p>* Minimum Average Roll Values (MARV) based on an average of at least three tests per swatch.</p> <p> Provide socks made of knit polymeric Materials and meeting the requirements of <i>ASTM D6707-06, Standard Specification for Circular-Knit Geotextile for Use in Subsurface Drainage Applications</i>, for Type H as given for properties B4, B5, and B6 fabric. Ensure the sock exhibits minimum snag or run potential, is factory-applied to maintain uniform installed mass, and conforms to the outside diameter of the tubing with a snug fit.</p> <p>† Needle-punched nonwoven. Do not use thermally bonded (heat-set) fabric.</p> <p>‡ Requirements are site-specific and will be as specified in the Contract. The property values for B1 and B3 may not be less than shown for Type 5. If the Contract does not specify either B1 or B7, use a default value of 300 pounds for B1. If the Contract does not specify seam strength, use a default value of 270 pounds for B3.</p> <p># Adhere to this requirement if the Contract requires or allows seams. Strength Specifications apply to factory and field seams. Use thread for sewing that has the strength of at least 25 pounds. Sew seams with a Federal Type 401 stitch (<i>ASTM D6193-16, Standard Practices for Stitches and Seams</i>) using a two-spool sewing machine and install seams facing upward. For seaming with adhesives, see the <i>Approved/Qualified Products List</i> available on the Department's website.</p> <p>§ For U.S. Sieve sizes, the AOS Number must be equal to or greater than the Sieve size specified.</p> <p>** Permittivity: $P = K/L$, where K = fabric permeability and L = fabric thickness.</p>								

Table 3733.2-2
Type 8 Geotextile Properties

Property	Requirements	Test Procedure
Geotextile type	Nonwoven, needle-punched geotextile, no thermal treatment (calendaring or IR)	Manufacturer Certificate of Compliance
Color	Uniform/Nominally same-color fibers	Visual Inspection
Mass per unit area	≥ 14.7 ounce/square yard	ASTM D5261*
Thickness under load (pressure)	At 0.29 psi: ≥ 0.12 inches At 2.9 psi: ≥ 0.10 inches At 29 psi: ≥ 0.04 inches	ASTM D5199
Wide-width tensile strength	≥ 685 pounds/feet	ASTM D4595†
Wide-width maximum elongation	≤ 130 percent	ASTM D4595†
Water permeability in normal direction under load (pressure)	At 2.9 psi: $\geq 3.3 \times 10^{-4}$ feet/second	ASTM D5493 MnDOT Modified‡ or ASTM D4491#
In-plane water permeability (transmissivity) under load (pressure)	At 2.9 psi: $\geq 1.6 \times 10^{-3}$ feet/second At 29 psi: $\geq 6.6 \times 10^{-4}$ feet/second	ASTM D6574 MnDOT Modified§ or ASTM D4716**
Weather resistance	Retained strength ≥ 60 percent	ASTM D4355 at 500 hours exposure
Alkali resistance	≥ 96 percent polypropylene/polyethylene	Manufacturer certification of polymer

Table 3733.2-3
Types 9, 10, 11, and 12 Geotextile Properties

Properties	Test Method	Unit	Type 9		Type 11		Type 12	
			Minimum Average Roll Value					
			MD	CD	MD	CD	MD	CD
Tensile Strength at Ultimate	ASTM D4595	lbs/ft	3,500	3,200				
Tensile Strength @ 2% Strain	ASTM D4595	lbs/ft			600	1,000	480	1,800
Tensile Strength @ 5% Strain	ASTM D4595	lbs/ft			1,800	2,200	1,400	4,300
Cyclic Tensile Modulus @ 2% Strain	ASTM D7556 “Method C”	lbs/ft			50,000	70,000	50,000	120,000
Interaction Coefficient: Ci*	ASTM D6706				0.89		0.90	
Properties	Test Method	Unit	Maximum Roll Value					
Apparent Opening Size (AOS)	ASTM D4751	U.S. Sieve	30		40		40	
Properties	Test Method	Unit	Minimum Average Roll Value					
Permittivity	ASTM D4491	sec ⁻¹	0.5		0.90		1.0	
Flow Rate	ASTM D4491	gal/min/ft ²	40		75		75	
Properties	Test Method	Unit	Minimum Roll Value					
UV Resistance (at 500 hours exposure)	ASTM D4355	% Strength Retained	70		90		90	
Seam Breaking Strength	ASTM D4884	Pounds/ inch	200					
For Type 10, meet the requirements of AASHTO M288 Class 4A – Geotextile.								
* Perform test with a normal pressure of 1.0 psi. Use material in the mold consisting of GW or SP with a maximum internal angle of friction of 34 degrees.								
If required, use thread with a minimum strength of 25 pounds. Sew seams with a ASTM D6193 Federal Type 401 stitch using a two-spool sewing machine, and install seams facing upward.								

Table 3733.2-4
Type 13 Geotextile Properties

Properties	Test Method	Unit	Minimum Average Roll Value
			MD and CD
Wide Width Max Elongation	ASTM D4595	%	20
Permittivity	ASTM D4491	Sec ⁻¹	0.4
Minimum wet front movement in vertical direction	ASTM 1559 (modified for geotextiles)	Inches	4
Minimum wet front movement in horizontal direction:	ASTM 1559 (modified for geotextiles)	Inches	70
Wide Width Tensile Strength	ASTM D4595	lbs/Ft	5000

Properties	Test Method	Unit	Minimum Average Roll Value
			MD and CD
Wide Width Tensile Strength @2% Strain	ASTM D4595	lbs/Ft	450 MD and 1000 CD
Apparent Opening Size (AOS)	ASTM D4751	U.S. Sieve	40 Maximum Opening Size
Flow Rate	D4491	Gal/Min/ft ²	30 MARV

S-109.2 Renumber Table 3733.2-4, “Geogrid Properties” of MnDOT 3733.2C to Table 3733.2-5, “Geogrid Properties”.

S-110 (3876) SEED

NEW 06/28/24

S-110.1 Delete and replace Table 3876.2-1 with the following:

**Table 3876.2-1
MnDOT Seed Mixes**

Seed Mixture	Application Rate (PLS pounds per acre)
Oats	100
Winter Wheat	100
Oats and Peas	110
Two-year Cover Crop	25
Patch Mix	30
Northern Boulevard	150
Southern Boulevard	160
Turfgrass	200
Snow Fence Ground Cover	84
Mesic Inslope	65
High-traffic Inslope	60
Sandy Inslope	65
Wet Ditch	20
Northeast Roadside	26
Northwest Shortgrass Roadside	26
Northwest Tallgrass Roadside	26
Southern Shortgrass Roadside	26
Southern Tallgrass Roadside	26

S-110.2 Delete and replace MnDOT 3876.2 B with the following:

B Blending

Provide Uniformly blended seed mixtures as required by the Contract and meeting the requirements of the Seeding Manual. Blend mixtures according to the requirements of the Department’s Approved Seed Vendor Agreement.

B.1 Cover crop and turfgrass mixtures

Combine all components of cover crop, patch, boulevard, turfgrass, ground cover, and inslope mixtures.

B.2 Roadside and Wet Ditch mixtures

Blend and package components of these mixtures according to size to allow installation from the appropriate seed box of native seeding Equipment and in the following groups:

- (1) Combine seeds of sedges, rushes, and forbs with small or medium seeds for installation with the small seeds box.
- (2) Combine the seeds of grasses and large-seeded forbs for installation with the fluffy seed box.
- (3) Keep the seeds of grain cover crops such as oats and winter wheat separate for installation with the grain box.

S-111 (3885) ROLLED EROSION PREVENTION PRODUCTS
RESTORED AND REVISED 06/30/23

- S-111.1 Delete and replace Tables 3885.2-1, 3885.2-2, and 3885.2-5 of MnDOT 3885.2A with the following:

Table 3885.2-1
Temporary, Straw-based Products

Criteria	Category 10	Category 20	Category 30
Net Number (upper/lower)	1	2	2
Fiber Fill Material	100 percent Straw	100 percent Straw	70 percent Straw, 30 percent Coconut/hemp
Mass, minimum*‡ (pound per square yard)	0.43	0.43	0.42
Reported Fiber Length, 80 percent greater than (inch)	3	3	3
Reported Functional Longevity, 75 percent remaining (month)	3	4.5	9
Reported Target Service Life (month)	4	9	12
Permissible shear, unvegetated# (pound per square foot)	1.50	1.75	2.00
Flow, probable maximum# (feet per second)	4.5	6	8
Machine Direction (MD) Tensile Strength, minimum§ (pounds per foot)	70	160	160
TD Tensile Strength, minimum§ (pounds per foot)	50	110	150
Permissible Anchor Type	Wood or biodegradable plant-based plastic barbed, glue, U, or round head metal, 11-13 gage	U or round head metal, 11-13 gage, Washer/60D (6 inches) Nail†	Helical twist pin, Washer/60D (6 inches) Nail†
Minimum anchor embedment length	4 inches	6 inches	8 inches

* Dry mass at the time of manufacture following ASTM protocols.

|| Biodegradable means the product will decompose under ambient soil conditions into carbon dioxide, water, and other naturally occurring materials within one year of installation.

† Winter Utilization.

‡ ASTM D6475, *Mass per Unit Area of Erosion Control Blankets*.

ASTM D6460, *Performance in Protecting Earthen Channels from Stormwater-Induced Erosion*.

§ ASTM D6818, *Ultimate Tensile Properties of Rolled Erosion Control Products*.

Table 3885.2-2
Temporary, Wood Fiber Based Products

Criteria	Category 15	Category 25	Category 35	Category 45
Net Number (upper/lower)	Netless	2	2	2
Fiber Fill Material	100 percent Cellulose, Agricultural products, hemp, wood	100 percent Wood* Fiber	100 percent Wood* Fiber	100 percent Wood* Fiber
Mass, minimum # (pound per square yard)	0.40	0.57	0.76	1.25
Reported Fiber Length, 80 percent greater than (inch)	Varies, 0.5 to 6	6	6	6
Reported Functional Longevity, 75 percent remaining (month)	1.5	6	12	24
Reported Target Service Life (month)	3	12	24	36
Permissible shear, unvegetated§ (pound per square foot)	1.00	2.10	2.50	3.25
Flow, probable maximum§ (feet per second)	2	7	8	11
MD Tensile Strength, minimum** (pounds per foot)	4	160	160	160
TD Tensile Strength, minimum** (pounds per foot)	4	110	110	110

Criteria	Category 15	Category 25	Category 35	Category 45
Permissible Anchor Type	Wood or biodegradable† plant-based plastic barbed, glue U or round head metal 11-13 gage	U or round head metal, 11-13 gage, Washer/60D (6 inches) Nail‡	Helical twist pin, Washer/60D (6 inches) Nail‡	Helical twist pin, Washer/60D (6 inches) Nail‡
Minimum anchor embedment length	4 inches	6 inches	8 inches	10 inches
<p>* Derived from hardwood (Aspen spp.) or softwoods (pine). Dry mass at the time of manufacture following ASTM protocols. † Biodegradable means the product will decompose under ambient soil conditions into carbon dioxide, water, and other naturally occurring materials within one year of installation. ‡ Winter Utilization. # ASTM D6475, Mass per Unit Area of Erosion Control Blankets. § ASTM D6460, Performance in Protecting Earthen Channels from Stormwater-Induced Erosion. ** ASTM D6818, Ultimate Tensile Properties of Rolled Erosion Control Products.</p>				

Table 3885.2-5
Permanent, Synthetic-based, Soil or Organic Fiber Media Filled Products

Criteria	Category 70	Category 72	Category 74	Category 76
Net Number* (upper/lower)	TRM	TRM	TRM	TRM
Fill Material	3877.2C "Sandy Clay Loam Topsoil Borrow," 3890.2B "Grade 2 Compost" 3884.2B.1 "Organic Fiber Matrix (OFM)"			
Mass, minimum † (pound per square yard)	0.5	0.5	0.5	1.2
80 percent test chamber strength retained ‡ (hours)	500	1000	3000	3000
Target Service Life ‡	Permanent	Permanent	Permanent	Permanent
Shear, unvegetated, minimum # (pound per square foot)	2.00	2.25	2.50	2.75
Shear, vegetated, minimum # (pound per square foot)	6	8	10	12
MD Tensile Strength, minimum § (pounds per foot)	150	240	1400	3000
TD Tensile Strength, minimum § (pounds per foot)	130	200	1100	3000
Permissible Anchor Type	Helical twist metal hooks, Hooked No. 4 rebar, tension cable	Helical twist metal hooks, Hooked No. 4 rebar, tension cable	Tension cable per manufacturer specification	Tension cable per manufacturer specification
Minimum anchor embedment length ##	18 inches	18 inches	18 inches	18 inches
<p>*Provide mats with cells at least 3/8 – 3/4 inch in depth to allow soil filling and retention, composed of nylon, polypropylene, polyolefin, polyester, or rust inhibited metal.</p> <p> See 2575 "Establishing Vegetation and Controlling Erosion" for approximate fill quantities to achieve a 0.5 – 1 inch layer filling all voids within product surface.</p> <p>† ASTM D6566 <i>Mass Per Unit Area of Turf Reinforcement Mats</i></p> <p>‡ ASTM D4355 <i>Deterioration of Geotextiles by Exposure to Light, Moisture and Heat in a Xenon Arc-Type Apparatus</i></p> <p># ASTM D6460 <i>Performance in Protecting Earthen Channels from Stormwater-Induced Erosion</i>. Provide either vegetated or un-vegetated test results showing product meets the minimum criteria for that test. Some data may be extrapolated to show the upper value for vegetation establishment.</p> <p>## Minimum anchor embedment length may be reduced for anchors that are an alternative to straight pins or to account for site specific soil conditions.</p> <p>§ ASTM D6818 <i>Ultimate Tensile Properties of Rolled Erosion Control Products</i></p> <p>TRM products must have an average opening size sufficient for allowing introduction of soil or organic growth medium fill and to allow plant roots and shoots to grow through. Product texture must be rough enough to prevent soil from sliding off.</p>				

S-112 (3886) SILT FENCE
RESTORED 06/30/23

S-112.1 Delete and replace Table 3886.2-1 of MnDOT 3886.2A with the following:

Table 3886.2-1
Silt Fence Requirements

Silt Fence Type	Minimum Width, inches	Grab Tensile (machine direction), pounds *	Apparent Opening Size	Puncture Strength †	UV Stability, 500 hour, percent ‡	MAX Permittivity #	Maximum Flow Rates, GPM/square foot
MS, HI woven geotextile §	36	130	No. 30 Sieve	—	70	1.0 s ⁻¹	130
PA woven geotextile	36	100	No. 30 Sieve	—	70	0.1 s ⁻¹	5
SD woven or nonwoven geotextile **	36	100	—	—	70	—	—
TB polyester or polyvinyl Fabric	60	200	—	90 pounds	70	0	0

Values in the table are Minimum Average Roll Values (MARV).

* ASTM D4632, Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.

|| ASTM D4751, Standard Test Methods for Determining Apparent Opening Size of a Geotextile, Maximum average roll value.

† ASTM D4833, Standard Test Method for Index Puncture Resistance of Geomembranes and Related Products.

‡ ASTM D4355, Standard Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture, and Heat in a Xenon Arc-Type Apparatus.

ASTM D4491, Standard Test Methods for Water Permeability of Geotextiles by Permittivity.

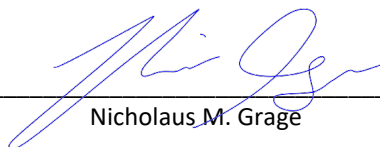
§ Provide MS, HI woven geotextile with monofilament in both directions. Do not make substitutions.

** Meeting 3733, "Geosynthetic Materials," Types 3, 4, 5, or 7, or poly/poly-reinforced sheeting meeting 3888, "Poly Sheeting" of variable width.

DIVISION ST

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I hereby certify that the Special Provisions for traffic sign construction (Division ST) contained in this proposal were prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.



Nicholaus M. Grage

Lic. No. 54519

Date 11/25/2024

DIVISION ST

ST-1 (2104) REMOVING MISCELLANEOUS STRUCTURES

ST-1.1 DESCRIPTION

Remove and salvage miscellaneous structures according to 2104, "Removing Pavement and Miscellaneous Structures" and these Special Provisions.

ST-1.2 MATERIALS

Use materials according to 2104, "Removing Miscellaneous Structures" and the 2104, "Removing Miscellaneous Structures: Construction Requirements" section of these Special Provisions.

ST-1.3 CONSTRUCTION REQUIREMENTS

A Remove Sign

Remove and dispose of the sign panels, mounting hardware, and sign structure.

When the road is open to traffic, schedule the work so that replacement signs are installed on the same work day that the in-place signs are removed.

B Contractor Responsibility for Salvaged Sign Panels

Inform the Engineer of any damaged or missing in-place sign panels prior to salvaging.

If a sign panel is damaged, lost, or stolen after being salvaged, a new sign panel shall be fabricated according to 3352 "Signs," and these Special Provisions, at no cost to the Department.

To deter theft, store sign panels in a secure area.

Prevent damage to the bracket assemblies, sign panels, and the sign sheeting materials at all times, including during storage. Methods to prevent damage during storage include but are not limited to:

Store sign panels so they are not laying on the ground.

Store sign panels so that the reflective surfaces do not come in contact with dirt, water, or grass.

Store sign panels so they are not covered with a tarp or plastic.

C Salvage Delineator/Marker

Dismantle the delineator/marker. Remove and dispose of the sign structure and mounting hardware. Salvage and store the delineator/marker panel for reinstallation.

D Salvage Sign

Dismantle the sign. Remove and dispose of the sign structure and mounting hardware. Salvage and store the sign for reinstallation.

E Salvage Sign Special

Dismantle the sign special. Remove and dispose of the sign structure and mounting hardware. Salvage and store the sign panels for reinstallation.

If the Contractor damages the street name plate,

Dispose of the damaged street name plate.

Fabricate a new street name plate according to Redwood County specifications, 3352, "Signs", and these Special Provisions, at no cost to the Department or Redwood County.

ST-1.4 METHOD OF MEASUREMENT & BASIS OF PAYMENT

The Engineer will measure each item according to the Contract and the 2104, "Removing Miscellaneous Structures: Construction Requirements" section of these Special Provisions.

The Department will include all work described in the Contract and the 2104, "Removing Miscellaneous Structures: Construction Requirements" section of these Special Provisions as part of the contract unit price per unit of measure.

The Department will pay for traffic signs and devices on the basis of the following schedule:

Item No.:	Item:	Unit:
2104.502	Remove Sign	Each
2104.502	Salvage Delineator/Marker	Each
2104.502	Salvage Sign	Each
2104.602	Salvage Sign Special	Each

The Department's payment for each item shall be compensation in full for all work, material, and costs involved in performing the work specified on the Plans and these Special Provisions.

ST-2 (2564) TRAFFIC SIGNS AND DEVICES

ST-2.1 DESCRIPTION

The Contractor shall furnish and install traffic signs in accordance with 2564, "Traffic Signs and Devices," except as modified in these Special Provisions.

ST-2.2 CONSTRUCTION REQUIREMENTS

The provisions of 2564.3A, "Construction Requirements: General" are modified and supplemented as follows:

Delete and replace 2564.1A, "Definitions," with the following:

For the purposes of the Work specified in section 2564, "Traffic Signs and Devices," the Department defines:

Extruded Panel

Extruded aluminum panels that, when bolted together, form an extruded sign panel.

Extruded Sign Panel

Extruded panels bolted together to form an extruded sign panel.

Mounting Hardware

Rivets, bolts, washers, nuts, post clips, and/or banding. These are used to attach Sign Panels or Extruded Sign Panels to structures and to attach Sign Panel Overlays to Extruded Sign Panels or Sign Panels.

Sign Panel

Sheet aluminum overlaid with sign sheeting materials.

Sign Panel Overlay

Sign Panel that is attached to Extruded Sign Panels or other Sign Panels.

Delete and replace the second paragraph of 2564.3A, "General," with the following:

Sign locations and sign structure posts lengths indicated in the Contract are approximate. Locate and stake final sign and delineator/marker locations. Obtain approval of locations by the Engineer. Determine the final post lengths for signs and delineator/markers in accordance with the offsets, mounting heights, and clearances detailed in the Contract and field verification of the proposed or in-place ground slopes. Obtain approval of the final required post lengths for I-Beam, Monotube, and Overhead Signs prior to starting fabrication of the posts. Provide shop drawings for I-Beam, Monotube, and Overhead signs in accordance with 2471.3C, "Shop Drawings."

Delete and replace the second paragraph of 2564.3A.1, "Sign Fabrication," with the following:

Use sheet aluminum sign base material for Sign Panels.

Delete and replace the third paragraph of 2564.3A.1, "Sign Fabrication," with the following:

Provide extruded panels in accordance with 3352.2A.2, "Extruded Aluminum, Bolted Type," and assemble extruded sign panel. Mount sign panel overlay to extruded sign panel with 3/16 inch stainless steel pull-through rivets as fasteners to attach the sign panel overlay to the extruded sign panel. Tightly butt the sign panel overlay sections and rivet to the extruded sign panel on centers no greater than 12 inches vertically and horizontally. Do not mount sign panel overlay sections with horizontal butt joints for extruded sign panels less than 144 inches tall. Rivet the edges and corners of each sign panel overlay section. Do not place rivets within 1 inch of the extruded sign panel joints. The sign panel overlay must be flat after attaching to the extruded sign panel.

Delete and replace the fourth paragraph of 2564.3A.1, "Sign Fabrication," with the following:

Provide fluorescent yellow retroreflective sheeting for all yellow signs, yellow markers, yellow delineators, and yellow background on Sign Panel Overlays. Provide fluorescent yellow-green retroreflective sheeting on warning signs and their supplemental plaques associated with pedestrians, bicyclists, playgrounds, schools.

Delete and replace paragraph (4) of 2564.3A.3, "Scheduling of Work," with the following:

(4) For signs not covered in the previous requirements, schedule the work so that replacement signs are installed the same workday that the in-place signs are removed on roads open to traffic.

Delete 2564.3B, "Median Barrier Footing".

Delete 2564.3C, "Sign Support – Sign Bridge or Cantilever".

Delete 2564.3E, "Install Delineator or Marker".

Delete 2564.3F, "Install Reference Location Sign".

Delete 2564.3G, "Install Sign Panel".

Delete 2564.3H, "Install Sign".

Delete 2564.3I, "Overhead Sign Identification Plate".

Delete 2564.3M, "Delineator".

Delete 2564.3N, "Bridge Number Marker".

Delete 2564.3P, "Reference Location Sign".

Delete 2564.3Q, "Object Marker".

Delete 2564.3R, "Concrete Footings".

Delete 2564.3S, "Structural Steel".

Delete 2564.3U, "Sign Panels".

Delete 2564.3V, "Sign Panel Overlay Type A, EA, EO of OH".

Delete 2564.4A, "Median Barrier Footing".

Delete 2564.4B, "Sign Support".

Delete 2564.4D, "Install Delineator".

Delete 2564.4E, "Install Marker".

Delete 2564.4F, "Install Reference Location Sign".

Delete 2564.4G, "Install Sign Panel".

Delete 2564.4H, "Install Sign".

Delete 2564.4I, "Overhead Sign Identification Plate".

Delete 2564.4M, "Delineator".

Delete 2564.4N, "Bridge Number Marker".

Delete 2564.4P, "Reference Location Sign".

Delete 2564.4Q, "Object Marker".

Delete 2564.4R, "Concrete Footings Type ____".

Delete 2564.4S, "Structural Steel".

Delete 2564.4U, "Sign Panels".

Delete 2564.4V, "Sign Panel Overlay Type ____".

A Warning Stickers

Install Department-provided warning stickers on new sign panels according to 2564.3, "Construction Requirements."

Give 30 days advance notice to the Department prior to picking up the Department-provided warning stickers:

Kevin Erickson
kevin.erickson@state.mn.us
507-401-7507

B Install Sign

Add the following to 2564.3, "Construction Requirements":

Provide and install new sign structure. Install salvaged or Department provided sign panel(s) with new stringers and mounting hardware to riser post.

Install sign structure plumb. Remove and replace bases that do not produce a plumb post.

Field Punch salvaged sign panels as needed based on the Punching Guides found in MnDOT's Standard Signs and Markings Manual website:

<http://www.dot.state.mn.us/trafficeng/publ/signsmanual/index.html>

Add the following to 2564.4, "Method of Measurement":

The Engineer will measure install sign as a complete unit, including new sign structure, new stringers, and new mounting hardware used to install salvaged or Department provided sign panel(s).

C Install Sign Special

Provide and install new sign structure. If the salvaged bracket assembly is compatible with the riser post, install the salvaged bracket assembly with street name plates attached. If the bracket assembly is not compatible with the riser post, furnish and install new bracket assembly that is compatible with the riser post and attach the salvaged street name plates.

Install sign structure plumb. Remove and replace bases that do not produce a plumb post.

The Engineer will measure install sign special as a complete unit, including new sign structure and new or salvaged bracket with street name plates attached.

D Install Delineator/Marker

Add the following to 2564.3, "Construction Requirements":

Install new sign structure. Install salvaged or Department provided delineator/marker with new mounting hardware.

Install sign structure plumb. Remove and replace bases that do not produce a plumb post.

Add the following to 2564.4, "Method of Measurement":

The Engineer will measure install delineator/marker as a complete unit, including new sign structure, and salvaged or Department provided delineator/marker attached with new mounting hardware.

E Sign

Add the following to 2564.3, "Construction Requirements":

Fabricate the sign panels in accordance with 3352, "Signs."

Package, deliver, store, and install sign panels in accordance with 1607, "Handling Materials," 3352, "Signs," and the retroreflective sheeting manufacturer's recommendations.

Provide and install new sign structure in accordance with the plans and attach new sign panels with new stringers as needed and mounting hardware.

Install sign structure plumb. Remove and replace bases that do not produce a plumb post.

Affix a Department-provided warning sticker to the backside of each sign panel directly above the fabrication sticker. Warning stickers are available at the Department's Transportation District Office specified in the Contract. Give the Transportation District's contact person thirty calendar days advance notice before picking up the stickers.

Add the following to 2564.4, "Method of Measurement":

The Engineer will measure sign by square foot based on the nominal dimensions of the sign panels. Sign panels are considered rectangular for the purpose of measurement except that the Engineer will measure triangular shaped sign panels as the actual area of the triangle. The Engineer will not make deductions for rounded corners. Sign includes new sign panels, new sign structure, new stringers, and new mounting hardware.

ST-2.3 METHOD OF MEASUREMENT AND BASIS OF PAYMENT

The Engineer will measure each item according to the Contract and the 2564, "Traffic Signs and Devices: Construction Requirements" section of these Special Provisions.

The Department will include all work described in the Contract and the 2564, "Traffic Signs and Devices: Construction Requirements" section of these Special Provisions as part of the contract unit price per unit of measure.

The Department will pay for traffic signs and devices on the basis of the following schedule:

Item No.:	Item:	Unit:
2564.602	Install Sign	Each
2564.602	Install Sign Special	Each
2564.602	Install Delineator/Marker	Each
2564.618	Sign	Square Foot

The Department's payment for each item shall be compensation in full for all work, material, and costs involved in performing the work specified on the Plans and these Special Provisions.

ST-3 (3352) SIGNS

ST-3.1 DESCRIPTION

The Contractor shall furnish signs, delineators, and markers in accordance with 3352, "Signs," except as modified in these Special Provisions.

Delete and replace the first paragraph of 3352.2, "Requirements," with the following:

Provide sign panels as specified in the Standard Signs and Markings Manual, Standard Signs and Markings Summary, the MN MUTCD, as detailed in the Contract, and in accordance with this section.

Delete and replace 3352.2A.1, "Sheet Aluminum," with the following:

Provide sheet aluminum for sign panels meeting the requirements of ASTM B209M, Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric) for Alloy 5052-H38 or Alloy 6061-T6. Use sign base Material with no warps or twists so the finished sign panel will lay flat against the post or mounting Structure. Provide sheet aluminum thickness for single section sign panels, panel sections of multiple section signs, and sign panel overlays in accordance with Table 3352.2-1.

Table 3352.2-1 Sheet Aluminum Thickness	
Length of Longest Side	Thickness
≤ 18	0.063 ± 0.004
>18 - 30	0.080 ± 0.005
>30	0.100 ± 0.005
Sign Panel Overlay	0.063 ± 0.004
X4-3 Cylinder Delineator	0.040 ± 0.005

The provisions of 3352.2A.2 "Extruded Aluminum, Bolted Type" are modified and supplemented as follows:

Delete and replace the last paragraph of 3352.2A.2, "Extruded Aluminum, Bolted Type," with the following:

Use aluminum alloy hardware or stainless steel hardware to assemble the extruded panel. Use Type 304 stainless steel post clip bolts in the post clips to attach the extruded panel to the supports. Use Type A304 stainless steel washers with nylon insert stainless steel locknuts meeting the requirements of ASTM F594, Standard Specification for Stainless Steel Nuts, Type 304 for the nuts for post clip bolts.

Add the following to 3352.2A.7, "Fasteners":

A.7.c Stainless Steel Bolts

Use stainless steel bolts as specified in 3391.2E, "Fasteners: Requirements: Stainless Steel Bolts," with zinc coated steel nylon insert lock nuts. When used to attach sign panels place a stainless steel washer and nylon washer on the sign sheeting surface.

A.7.d Galvanized Steel Screw Anchor Bolts

Use galvanized screw anchor bolts as specified in plans. Galvanize screw anchor bolts in accordance with 3392, "Galvanized Hardware."

Add the following to 3352.2A, "Materials":

A.8 Aluminum Stringers

Use extruded aluminum alloy 6061-T6 with mill finished surface for stringers used to mount sign panels to square tube posts. The stringer shall have 3/8 inch holes provided at one inch intervals on center. The nominal thickness of the stringer shall be 1/8 inch.

A.9 Stainless Steel Clamps

Use to clamp stringers to square tube posts. Use 11 gauge Type 304, #2B finished stainless steel with 3/8"-16 x 2" carriage bolt & serrated flange nut.

Add the following to 3352.2B.1, "General":

Construct sign panels from one sheet of sign base material. If sign is larger than a single sign base material sheet, than construct the sign panel with sheets placed horizontally adjacent so that only vertical splices are used. For sign panel overlays a horizontal splice is allowed for sign panels with a height that exceeds 144 inches.

Delete and replace the second paragraph of 3352.2B.4, "Applying Sign Face and Legend Sheeting," with the following:

For sign panels with brown backgrounds, provide white retroreflective sheeting for sign face material and brown transparent overlay film.

Delete and replace the fifth paragraph of 3352.2B.4, "Applying Sign Face and Legend Sheeting," with the following:

Do not splice retroreflective sign sheeting on panels with either the height or width less than 48 inches. If the retroreflective sheeting material is not available in a 48 inch width, then use the widest width material available for that type. If splicing is required to apply transparent overlay film on sign panels, provide vertical butt splices spaced so splices do not occur through letters or arrows.

ST-4 (3402) SQUARE TUBULAR SIGN POSTS

ST-4.1 DESCRIPTION

The Contractor shall furnish square tubular sign posts in accordance with 3402, "Square Tubular Sign Posts," except as modified in these Special Provisions.

Delete and replace 3402.2C, "Weight," with the following:

Use posts required by the contract and in accordance with Table 3402.2-1.

Table 3402.2-1 Properties		
Size	USS Gauge	Weight
1-1/2 inches by 1-1/2 inches	12	1.7 pounds/foot
1-3/4 inches by 1-3/4 inches	14	1.71 pounds/foot
1-3/4 inches by 1-3/4 inches	12	2.06 pounds/foot
2 inches by 2 inches	12	2.42 pounds/foot
2-3/16 inches by 2-3/16 inches	10	3.43 pounds/foot
2-1/4 inches by 2-1/4 inches	12	2.77 pounds/foot
2-1/2 inches by 2-1/2 inches	12	3.14 pounds/foot
2-1/2 inches by 2-1/2 inches	10	4.01 pounds/foot

The post weight shall be within 7 percent of the weight shown for the specified post size and gauge.

1803 PROJECT SCHEDULES**1803.1 BAR CHART****A General Requirements****A.1 General**

When the Department specifies the Work under this Contract must be scheduled using the Bar Chart method, the Work must be planned, accomplished, and reported using a Bar Chart Schedule for the Contractor's Project Schedule accompanied by a written Narrative Report. It is the Contractor's responsibility to develop a Project Schedule that provides for orderly, timely, and efficient completion of the Project and includes enough detail to allow both the Contractor and the Engineer to jointly evaluate progress and confirm contractual requirements are being met.

The Project Schedule must be the Contractor's primary tool to communicate and report their planned delivery strategy to complete the Work. The Contractor must use the Project Schedule to plan, coordinate, and control the progress of construction, including Work performed by subcontractors, suppliers and vendors. The Contractor must provide copies of the Project Schedule to subcontractors, suppliers, vendors and utility companies affected by the Work as needed.

The Project Schedule must be used by the Contractor and the Engineer for the following purposes:

- (1) To identify controlling work scopes;
- (2) To document actual performance and progress of Work;
- (3) To evaluate the effect of changes and delays to the Work;
- (4) To evaluate the best course of action for recovering schedule delays;
- (5) To evaluate resource requirements of the Contractor and the Department; and
- (6) To coordinate the Work of the Department, other contractors, and third parties (e.g., government agencies and authorities, permitting authorities) into the sequencing of the Contractor's Work where necessary.

A.2 Notice

The Contractor must give the Engineer at least 72 hours advance notice before beginning any construction and at least 24 hours advance notice before beginning each major construction operation. The Contractor must inform the Engineer of the number of hours the Contractor intends to be working each day and provide 24 hours advance notice of any changes to work day hours, equipment, forces, or sequence of operations. Submission of the Project Schedule does not meet these notice requirements. The Contractor is required to provide notice separate from the Project Schedule submission.

A.3 Acceptance

The Engineer will accept or reject a schedule submission based on whether the schedule submission meets the requirements of 1803.1, "Project Schedules, Bar Chart" and any other contractual requirements. The Engineer's acceptance of a schedule submission:

- (1) Does not modify the Contract;
- (2) Does not attest to the validity of the Contractor's Activity sequencing, Activity durations, or assumptions in creating the schedule;
- (3) Does not guarantee that the Project can be performed or completed as depicted in the schedule; and
- (4) Does not transfer any of the Contractor's responsibilities to the Department. The Contractor alone remains responsible for the accuracy of the schedule and for managing forces, equipment, and work schedules to ensure completion of the Work within the time(s) specified in the Contract.

The Engineer will return the schedule submission to the Contractor as "Accepted – No Exceptions Taken", "Accepted – As Noted", or "Rejected – As Noted." Review by the Engineer of a portion of a schedule or an incomplete schedule submission will not indicate acceptance of the entire schedule. If the Contractor or Engineer discovers an error after the Engineer has accepted a schedule, the Contractor must correct the error in the next required schedule submission.

A.4 Request for Early Completion Date

If the Contractor wants to have a contractual completion date changed to an earlier date, the Contractor must notify the Engineer of the new desired date in a written letter. The requested early completion date must be achievable as of the last accepted Bar Chart Schedule, or the Contractor must revise the Bar Chart Schedule to show completion of all Work by the requested early completion date and explicitly identify the schedule as a submission requesting an early completion date. If the Contractor's request for an early completion date is accepted, the Engineer will initiate a Change Order amending the contractual completion date to the early completion date requested and as validated by the accepted Bar Chart Schedule submission. The amended completion date will be effective upon execution of that Change Order, and all Contract provisions concerning the completion date, such as incentives, disincentives, excusable delays, compensable delays, and liquidated damages, will be measured against the amended completion date.

The Contractor is allowed to submit a schedule showing completion of all Work before the contractual completion date without requesting an early completion date. If this occurs, the time between the early project completion shown in the schedule and the contractual completion date will be considered Project Float and the contractual completion date will not be amended.

A.5 Non-Compliance

It is the Contractor's responsibility to ensure that each schedule submission meets the requirements of 1803.1, "Project Schedules, Bar Chart" and accurately reflects the Work performed in the field. The Department may withhold up to the full amount of each monthly progress estimate for failure to submit an acceptable schedule on time and in the manner required. Payment withheld for violation of the schedule requirements will be included in the next progress estimate following the Contractor's submission of an acceptable schedule. The Engineer may suspend Work under 1803.3, "Temporary Suspensions" if the schedule does not meet the requirements of 1803.1, "Project Schedules, Bar Chart" or if the schedule does not accurately reflect the progress of the Work in the field; the suspension may continue until an acceptable schedule is submitted.

B Technical Requirements**B.1 Weather Contingency**

The Contractor must reference the 1803, "Project Schedules" Special Provisions for Project-specific Weather Contingency requirements.

B.2 Actual Weather Day Reporting

The Contractor must document and obtain agreement with the Engineer for each weather day experienced at the time of each occurrence. The Contractor must include a list of the specific claimed actual weather days experienced and a brief description of the work affected on each weather day in the accompanying Narrative Report applicable to the period in which weather was experienced.

C Required Schedules**C.1 Bar Chart Schedule**

The purpose of the Bar Chart Schedule is to communicate the Contractor's plan to complete the contracted Work in a simplified graphical format. The Bar Chart Schedule must include the entire scope of Work and accurately reflect the Activity sequencing, dates and durations as described in the Contractor's accompanying Narrative Report. The Bar Chart Schedule may be prepared by hand or using a computer.

The Contractor and Engineer must meet at least monthly to assess progress in the field compared to the Bar Chart Schedule. Before meeting with the Engineer, the Contractor must update the Bar Chart Schedule to report actual start and actual finish dates for completed Work.

The Contractor must minimize the number of changes to the Bar Chart Schedule. If the project experiences an impact or the Engineer requests the Bar Chart Schedule to be revised, the Contractor must modify planned Activity sequencing, dates and durations as needed to accurately reflect the planned Work as known in the field. Changes made to the Bar Chart Schedule must be closely coordinated with the Engineer and are subject to the Engineer's review and acceptance.

C.2 Look-Ahead Schedule

The purpose of the Look-Ahead Schedule is to communicate, in a high level of detail, the Contractor's recent Work progress in the field and planned Work Activities for the upcoming 14 calendar days on a rolling basis. The Contractor must submit a detailed Look-Ahead Schedule to the Engineer each week until all Work is completed. The Contractor must prepare the schedule in Bar Chart format by hand or by using a computer. The Look-Ahead Schedule must include actual dates for Work performed since the last Look-Ahead Schedule submission and planned dates for Work to be performed in the upcoming 14 calendar days at a minimum. The Work activities included in the Look-Ahead Schedule must specifically reference the applicable Activity IDs in the Bar Chart Schedule.

D Submission Requirements**D.1 File Naming Convention**

The Contractor must include the State Project Number, submission date, and revision number, if applicable, in the file name for all Bar Chart schedule printouts and accompanying Narrative Reports. The Contractor must ensure the file naming convention remains consistent throughout the duration of the Project.

D.2 Timeline

The Contractor must submit a Bar Chart Schedule and accompanying Narrative Report for the Engineer's review and acceptance at least 7 calendar days before the preconstruction meeting. The Engineer will either accept or reject the schedule submission within 7 calendar days of receipt. If the Engineer rejects a schedule submission, the Contractor must review and respond to all of the Engineer's questions and concerns, adjust the schedule if needed, and resubmit to the Engineer within 7 calendar days.

The Contractor must submit an updated Bar Chart Schedule within 7 calendar days of each monthly progress meeting with the Engineer.

If the project experiences an impact or the Engineer requests the Bar Chart Schedule to be revised, the Contractor must submit the revised Bar Chart Schedule for the Engineer's review and acceptance within 7 calendar days.

D.3 Narrative Report

The Contractor must include a detailed Narrative Report with each Bar Chart Schedule submission.

Each Narrative Report must include and discuss at a minimum:

- (1) Explanation of the overall plan to complete the Project, including how the Work and crews will flow through the Project;
- (2) Description of the status of scheduled Milestone dates, including specifically any differences from the last accepted Bar Chart Schedule;
- (3) The quantity and estimated production rates for controlling Work scopes;
- (4) The work days per week, number of shifts per day, and number of hours per shift;
- (5) Explanation of all nonwork days, including observed Holidays;
- (6) Actual weather day reporting as required by 1803.1.B.2, "Actual Weather Day Reporting";
- (7) Description of the expected performance of each required permit that has reasonable potential to negatively affect the Work if delayed;
- (8) Identification of all Activities requiring coordination with the Department or third parties (e.g., utilities) and a description of the expected performance needed to avoid impacts to the Work;
- (9) Description of the reasons for any changes to the schedule, including but not limited to:
 - (a) Added or deleted Activities,
 - (b) Changes to planned Activity dates,
 - (c) Changes to work and nonwork days, including observed Holidays, and
 - (d) Changes to previously recorded actual dates;
- (10) Description of any unusual labor, shift, equipment or material conditions or restrictions encountered or anticipated since the previous schedule submission; and
- (11) Any other Project concerns that are currently affecting or anticipated to affect the schedule.

D.4 Schedule Printouts

The Contractor must provide a printout of the Bar Chart Schedule in .pdf format, hard copy or both as requested by the Engineer. The Bar Chart Schedule printout must include the status date (i.e., the date through which progress is being reported), an Activity information table and time-scaled Bar Chart. The Activity information table must include the following information at a minimum:

- (1) Activity ID,
- (2) Activity Name,
- (3) Original Duration,
- (4) Remaining Duration,
- (5) Percent complete,
- (6) Planned start date,
- (7) Planned finish date,
- (8) Actual start date, and
- (9) Actual finish date.

1803.2 CRITICAL PATH METHOD (CPM)**A General Requirements****A.1 General**

When the Department specifies the Work under this Contract must be scheduled using the Critical Path Method (CPM), the Work must be planned, accomplished, and reported using CPM scheduling for the Contractor's Project Schedule. The basic concept of CPM network scheduling must be followed, which shows how each given Activity is dependent on preceding Activities and affects following Activities. It is the Contractor's responsibility to develop a Project Schedule that provides for orderly, timely, and efficient completion of the Project and includes enough detail to allow both the Contractor and the Engineer to jointly evaluate progress and confirm contractual requirements are being met.

The Project Schedule must be the Contractor's primary tool to communicate and report their planned delivery strategy to complete the Work. The Contractor must use the Project Schedule to plan, coordinate, and control the progress of construction, including Work performed by subcontractors, suppliers and vendors. The Contractor must provide copies of the Project Schedule to subcontractors, suppliers, vendors and utility companies affected by the Work as needed.

The Project Schedule must be used by the Contractor and the Engineer for the following purposes:

- (1) To identify Activities on the Longest Path to project completion;
- (2) To identify Activities on the Critical Path(s) to interim Contract Milestone(s);
- (3) To document actual performance and progress of Work;
- (4) To evaluate the effect of changes and delays to the Work;
- (5) To evaluate the best course of action for recovering schedule delays;
- (6) To evaluate resource requirements of the Contractor and the Department; and
- (7) To coordinate the Work of the Department, other contractors, and third parties (e.g., government agencies and authorities, permitting authorities) into the sequencing of the Contractor's Work where necessary.

A.2 Notice

The Contractor must give the Engineer at least 72 hours advance notice before beginning any construction and at least 24 hours advance notice before beginning each major construction operation. The Contractor must inform the Engineer of the number of hours the Contractor intends to be working each day and provide 24 hours advance notice of any changes to work day hours, equipment, forces, or sequence of operations. Submission of the Project Schedule does not meet these notice requirements. The Contractor is required to provide notice separate from the Project Schedule submission.

A.3 Schedule-Related Roles

The Contractor's Project Manager and Project Scheduler must meet the requirements pertaining to the Project Schedule as specified in 1803.2.A.3.a, "Project Manager" and 1803.2.A.3.b, "Project Scheduler" respectively.

The Contractor's Project Manager and Project Scheduler roles may be performed by the same person. If the Contractor chooses to have one person perform both roles, that person must meet the requirements of both 1803.2.A.3.a, "Project Manager" and 1803.2.A.3.b, "Project Scheduler".

A.3.a Project Manager

- (1) The Project Manager must have extensive knowledge about the development and status of the Project Schedule. The Project Manager must understand and be able to explain changes made to the Project Schedule, even if the changes were made in the electronic schedule file by the Project Scheduler.
- (2) The Project Manager must attend all schedule-related meetings. Any absence from a schedule-related meeting must be approved in advance by the Engineer.

A.3.b Project Scheduler

- (1) The Contractor must designate an individual, entitled the Project Scheduler, who will develop and maintain the Project Schedule.
- (2) The Project Scheduler is recommended to have at least one (1) year of CPM scheduling experience using Primavera P6 scheduling software.
- (3) The Project Scheduler may be a full or part time position or may be filled by a consultant.
- (4) The Contractor may fill the Project Scheduler position using a person employed by the Contractor who is not on the Project, except for meetings and other times when the Project Manager deems it necessary to have the Project Scheduler at the Project site.
- (5) The Contractor must provide an explanation of the Project Scheduler's availability to work on the Project Schedule and experience with CPM scheduling at the preconstruction meeting or before the first Preliminary Schedule submission, whichever occurs first. If the Engineer determines the Project Scheduler does not have sufficient skill or experience in CPM scheduling as a result of Project Schedule submissions being substantially deficient or repeatedly not submitted within the required Contract timeframes, the Engineer may require that the person be removed from the Project in accordance with 1802, "Qualification of Workers" and replaced with a more qualified scheduler.

A.4 Acceptance

The Engineer will accept or reject a schedule submission based on whether the schedule submission meets the requirements of 1803.2, "Project Schedules, Critical Path Method (CPM)" and any other contractual requirements. The Engineer's acceptance of a schedule submission:

- (1) Does not modify the Contract;
- (2) Does not attest to the validity of the Contractor's Activity sequencing, Activity Logic, Activity durations, or assumptions in creating the schedule;
- (3) Does not guarantee that the Project can be performed or completed as depicted in the schedule; and
- (4) Does not transfer any of the Contractor's responsibilities to the Department. The Contractor alone is responsible for the accuracy of the schedule and for managing forces, equipment, and work schedules to ensure completion of the Work within the time(s) specified in the Contract.

The Engineer will return the schedule submission to the Contractor as "Accepted – No Exceptions Taken", "Accepted – As Noted", or "Rejected – As Noted." Review by the Engineer of a portion of a schedule or an incomplete schedule submission will not indicate acceptance of the entire schedule. If the Contractor or Engineer discovers an error after the Engineer has accepted a schedule, the Contractor must correct the error in the next required schedule submission.

A.5 Float Suppression / Sequestered Float

The Contractor must not suppress or sequester Float. Examples of prohibited Float suppression or sequestration include, but are not limited to:

- (1) Logic Relationships that provide no tangible or sequential value between unrelated Activities;
- (2) Logic Relationships that demand completion of an Activity that could otherwise continue beyond a Successor's start or finish dates; and
- (3) Excessively long and unreasonable Activity durations.

The Contractor is not entitled to compensation or a time extension for delays that could have been avoided by revising Logic or Activity durations used to sequester Float.

A.6 Use of Float

The Contractor acknowledges that all Float (Total Float and Free Float) is a shared commodity available to the Project and is not for the exclusive benefit of any party. Float is an expiring resource available to accommodate changes in the Work, however originated, or to mitigate the effect of events that may delay performance or completion of all or part of the Work. Float can be used by any party as long as there is no adverse effect to the other party. If the Engineer uses Float, the Contractor must notify the Engineer if the use of that Float will have an impact to the Contract in accordance with 1402, "Contract Revisions".

Weather Contingency, as described in 1803.2.C.10, "Weather Contingency", is not considered Float. For each update period, the Engineer may reserve time gained, or time that should have been gained, on Critical Path Work due to better than anticipated weather as a credit for unused Weather Contingency. The Engineer may apply credits for unused Weather Contingency toward delays to Critical Path Work caused by future weather events or other impacts not caused by the Contractor. Weather Contingency, both planned and acknowledged as a credit, is reserved for the exclusive benefit of the Department.

A.7 Request for Early Completion Date

If the Contractor wants to have a contractual completion date changed to an earlier date, the Contractor must notify the Engineer of the new desired date in a written letter. The requested early completion date must be achievable as of the last accepted Project Schedule, or the Contractor must submit a Rebaseline Schedule which is explicitly identified as a submission requesting an early completion date and shows completion of all Work by the requested early completion date. If the Contractor's request for an early completion date is accepted, the Engineer will initiate a Change Order amending the contractual completion date to the early completion date requested and as validated by the last accepted Project Schedule or the accepted Rebaseline Schedule submission. The amended completion date will be effective upon execution of that Change Order, and all Contract provisions concerning the completion date, such as incentives, disincentives, excusable delays, compensable delays, and liquidated damages, will be measured against the amended completion date.

The Contractor is allowed to submit a schedule showing completion of all Work before the contractual completion date without requesting an early completion date. If this occurs, the time between the early Project completion shown in the schedule and the contractual completion date will be considered Project Float and the contractual completion date will not be amended.

A.8 Non-Compliance

It is the Contractor's responsibility to ensure that each schedule submission meets the requirements of 1803.2, "Project Schedules, Critical Path Method (CPM)" and accurately reflects the Work performed in the field. The Department may withhold up to the full amount of each monthly progress estimate for failure to submit an acceptable schedule on time and in the manner required. Payment withheld for violation of the schedule requirements will be included in the next progress estimate following the Contractor's submission of an acceptable schedule. The Engineer may suspend Work under 1803.3, "Temporary Suspensions" if the schedule does not meet the requirements of 1803.2, "Project Schedules, Critical Path Method (CPM)" or if the schedule does not accurately reflect the progress of the Work in the field; the suspension may continue until an acceptable schedule is submitted.

B Software Requirements**B.1 Required Software**

The Contractor must use Oracle's Primavera P6 (P6). The Contractor must use a version of P6 that is compatible with the Department's current version of P6. The Contractor is responsible for any conversion discrepancies if using a version of P6 that is different than the Department's current version of P6.

B.2 Calculation Settings

The Contractor must schedule (i.e., F9 in P6) the Project Schedule to ensure all changes have been incorporated before submission to the Engineer. The Contractor must use the following settings in the P6 'Schedule Options' window:

- (1) Uncheck 'Use Expected Finish Dates'; expected finish dates are not allowed.
- (2) Select 'Retained Logic' for scheduling progressed Activities.
- (3) Select 'Longest Path' to define Critical Activities.
- (4) Select 'Finish Float = Late Finish – Early Finish' to compute Total Float.

B.3 Project-Level Settings

The Contractor must use project-level calendars, not global or resources calendars. The Contractor must use project-level codes, not global- or EPS-level codes.

B.4 Duration Format Settings

The Department considers Activity durations (e.g., Original Duration, Remaining Duration) in whole days. In the 'Time Units' tab of the P6 'User Preferences' window, the Contractor must use the following settings for the 'Duration Format':

- (1) 'Day' for the 'Unit of Time', and
- (2) '0' for the number of 'Decimals'.

B.5 Date Format Settings

The Contractor must use the DD-MMM-YY (e.g., 01-Jan-19) format to display dates in schedule printouts. This date format is typically the default P6 setting.

C Technical Requirements**C.1 Work Breakdown Structure**

The Contractor must use the following Work Breakdown Structure levels and nodes at a minimum.

Table 1803-1	
Work Breakdown Structure	
Level 1: Project Description	
	Level 2: Milestones
	Level 2: Submittals
	Level 3: Shop Drawings
	Level 3: Procurement/Fabrication
	Level 2: Construction
	Level 3: Phase TBD
	Level 4: Stage TBD
	Level 5: Detail to be defined by Contractor
	Level 5: Detail to be defined by Contractor
	Level 4: Stage TBD
	Level 5: Detail to be defined by the Contractor
	Level 5: Detail to be defined by the Contractor
	Level 3: Phase TBD

Table 1803-1 Work Breakdown Structure		
		Level 4: Stage TBD
		Level 5: Detail to be defined by Contractor
		Level 5: Detail to be defined by Contractor
		Level 4: Stage TBD
		Level 5: Detail to be defined by the Contractor
		Level 5: Detail to be defined by the Contractor
		Level 2: Post Construction

The Contractor must refine and expand on the specified Work Breakdown Structure provided, but the specified levels and nodes must still be included and maintained in the arrangement specified. The Contractor is responsible for determining an appropriate level of detail and descriptions for the Work Breakdown Structure. The Contractor must obtain acceptance from the Engineer for any deviations from the specified Work Breakdown Structure. The Contractor must ensure each Activity is assigned to the appropriate Work Breakdown Structure node.

C.2 Activity IDs

Each Activity must possess a unique Activity ID which remains constant throughout the Project. If an Activity is deleted in a subsequent schedule submission, the corresponding Activity ID must not be used for any other Activity. The Contractor must limit the complexity of Activity IDs such that Activity IDs are easy to speak and write.

If using 'smart' Activity IDs, the Contractor must develop a coding system and corresponding key to explain the meaning of the Activity IDs. The Contractor must apply the coding system consistently and accurately to all Activity IDs and provide the coding system key to the Engineer for review and acceptance.

C.3 Activity Names

Each Activity must possess a unique Activity Name. Activity Names must include a Verb, Object and Location (VOL) where practical. In addition, the Activity Name for each 'Level of Effort' Activity must start with "(LOE)". The Contractor must obtain the Engineer's acceptance for any Activity Name that does not include a Verb, Object and Location (VOL). The Contractor must use consistent language, including abbreviations and punctuation, among Activity Names with a similar scope of Work, location, or both.

C.4 Activity Durations

Activity durations must be expressed in work days. Activity durations must be limited to not more than 20 work days, unless otherwise accepted by the Engineer.

C.5 Activity Count

The Contractor is responsible for determining an appropriate level of detail to include in the Project Schedule. The number of Activities included in the Project Schedule should reflect the nature, size and complexity of the Project. The Contractor must include enough Activities to assure adequate planning of the Project, to allow for accurate monitoring and evaluation of progress, and to ensure all contractual date requirements are identifiable and being met, including any contractual time-related Work restrictions.

C.6 Logic

The Activity Relationships included in the Project Schedule must accurately represent how Predecessor and Successor Activities are dependent upon each other.

C.6.a Relationship Types

Activity Relationship types must be limited to finish-to-start (FS), start-to-start (SS), and finish-to-finish (FF). The Contractor must obtain acceptance from the Engineer before using any start-to-finish (SF) relationships.

- (1) Each Activity, except for the first Activity in the schedule, must have at least one of the following Predecessor Relationships:
 - (a) Finish-to-start, or
 - (b) Start-to-start.
- (2) Each Activity, except for the last Activity in the schedule, must have at least one of the following Successor Relationships:
 - (a) Finish-to-start, or
 - (b) Finish-to-finish.

C.6.b Missing Logic

Each Activity must have at least one Predecessor Relationship except for the first Activity in the schedule and at least one Successor Relationship except for the last Activity in the schedule.

C.6.c Open-Ended Activities

Open-Ended Activities occur when an Activity's start or finish is not logically tied to another Activity in the schedule. Open-ended Activities are prohibited.

C.6.d Redundant Logic

The Contractor must avoid using excessive Redundant Logic when possible. The Contractor must provide an explanation of the reason for Redundant Logic upon the request of the Engineer.

C.6.e Lag

The Contractor must obtain the Engineer's acceptance before using Lags. The Contractor must remove any Lag and replace with an Activity identifying the Lag upon the request of the Engineer, regardless of whether the Engineer allowed the Lag in a previous Project Schedule.

C.6.f Out-Of-Sequence Work

Out-Of-Sequence Work occurs when a logical Relationship between Activities is invalidated by actual progress (i.e., when a Successor Activity actually starts or actually finishes earlier than its Predecessor Relationship type indicates it should be able to start or finish). Out-Of-Sequence Work indicates that actual Work progress is being performed differently than was planned in the schedule.

The Department considers the degree of Out-Of-Sequence Work as major, minor or historical, as defined below. A list of major and minor Out-Of-Sequence Work can be found in the P6 'Schedule Log' after scheduling (i.e., F9 in P6) the schedule. Before making any change to the schedule, the Contractor must review each instance of Out-Of-Sequence Work reported on the P6 'Schedule Log' to determine if a corrective action is appropriate. When possible, the Contractor must minimize the number of changes to the Project Schedule resulting from any Out-Of-Sequence Work correction. If the Contractor determines a change is needed due to Out-Of-Sequence Work, a detailed explanation must be provided in the accompanying Narrative Report for each instance of Out-Of-Sequence Work and the corrective action taken. If the Contractor believes Out-Of-Sequence Work indicates a significant change in planned Work sequencing, the Contractor must notify the Engineer before making changes in the schedule. Significant numbers of Out-Of-Sequence Work instances, including major Out-Of-Sequence Work, may indicate a Rebaseline Schedule or Impact Schedule is needed. The Contractor should discuss any concerns with Out-Of-Sequence Work and the potential need for a Rebaseline Schedule or Impact Schedule with the Engineer before taking action.

- (1) Major Out-Of-Sequence Work: Each instance of Out-Of-Sequence Work may be considered major when either of the following parameters occur:
 - (a) The Predecessor is critical, and the Successor is 100% complete, or
 - (b) The Out-Of-Sequence Work is not expected to be resolved during the next update period.

- (2) Minor Out-Of-Sequence Work: Each instance of Out-Of-Sequence Work may be considered minor when the Out-Of-Sequence Work is expected to be resolved during the next update period and either of the following parameters occur:
 - (a) The Predecessor is not critical, and the Successor is 100% complete, or
 - (b) The Successor is in-progress.
- (3) Historical Out-Of-Sequence Work: Historical Out-Of-Sequence Work will not be reported on the P6 'Schedule Log'.

Major Out-Of-Sequence Work is prohibited. The Contractor must modify each instance of major Out-Of-Sequence Work to accurately reflect Activity Relationships and the planned Work sequence as known in the field.

Minor Out-Of-Sequence Work is allowed. The Contractor must not modify minor Out-Of-Sequence Work, unless requested by the Engineer or the Contractor determines that modifications are needed to reflect a change in the planned Work sequence as known in the field.

Historic Out-Of-Sequence Work is allowed. The Contractor must not modify historical Out-Of-Sequence Work, unless requested by the Engineer.

C.7 Constraints

C.7.a Constraint Date Requirements

The Contractor must reference the 1806, "Determination and Extension of Contract Time," Special Provisions for Project-specific Constraint date requirements. The Contractor's use of Constraint dates other than those specified in the Special Provisions is subject to the Engineer's review and acceptance.

C.7.b Constraint Types

Constraint types must be limited to the following types, unless otherwise approved by the Engineer:

- (1) Start on or before, and
- (2) Finish on or before.

C.8 Calendars

Each Activity must be assigned an appropriate calendar in P6. The Project Schedule must use the following calendars at a minimum, unless otherwise approved by the Engineer:

- (1) Calendar to indicate calendar days (i.e., 7 days per week with no Holidays);
- (2) Calendar(s) for Work unaffected by weather;
- (3) Calendar(s) for Work affected by weather; the Contractor must reference the 1803, "Project Schedules" Special Provisions for Project-specific Weather Contingency requirements; and
- (4) Calendar(s) for any Work subject to significant Work restriction periods as detailed in the 1806, "Determination and Extension of Contract Time," Special Provisions (e.g., closure periods, Work in water restrictions).

The Contractor must ensure the number of calendars created and used in the Project Schedule is manageable. The Contractor must provide an explanation of each calendar in the accompanying Narrative Report. Once the Baseline Schedule is accepted, the Contractor must not make changes to calendars unless the changes are clearly identified and explained in the accompanying Narrative Report.

C.8.a Work Days Per Week

The name of each calendar in P6 must include the number of planned work days per week (e.g., 5 days, 6 days). The planned number of work days per week shown in the calendars must be consistent with the number of work days listed in the accompanying Narrative Report and the number of days worked in the field. Once the Baseline Schedule is accepted, the Contractor must not make changes to the planned work days per week in the calendars unless the changes are clearly identified and explained in the accompanying Narrative Report.

C.8.b Work Hours Per Day

The Department considers Activity durations in work days and not work hours. It is not recommended for the Contractor to adjust the calendars in P6 to reflect the specific planned work hours per day because adjusting work hours in calendars can add significant complexity in schedule management and result in unintentional changes to Activity durations. If the Contractor chooses to modify the work hours per day in a

calendar after the Baseline Schedule is accepted, the changes must be clearly identified and explained in the accompanying Narrative Report.

C.8.c Nonwork Days

The calendars in P6 must indicate all days that the Contractor does not plan to work as nonwork days. Each calendar must contain nonwork days (e.g., weekends, closure periods, Holidays, Weather Contingency) as appropriate, with the exception of the calendar used to indicate calendar days.

The nonwork days shown in the calendars must be consistent with the nonwork days described in the accompanying Narrative Report. Once the Baseline Schedule is accepted, the Contractor must not make changes to the planned nonwork days in the calendars unless the changes are clearly identified and explained in the accompanying Narrative Report.

C.9 Holidays

The calendars in P6, with the exception of the calendar used to indicate calendar days, must accurately show each planned observed Holiday as a nonwork day. The Holidays shown in the calendars must be consistent with the Holidays listed in the accompanying Narrative Report. Once the Baseline Schedule is accepted, the Contractor must not make changes to the Holidays in the calendars unless the changes are clearly identified and explained in the accompanying Narrative Report. Unless otherwise noted, Holidays must be as established in MS 645.44.

C.10 Weather Contingency

C.10.a Project-Specific Weather Contingency

The Contractor must reference the 1803, "Project Schedules" Special Provisions for Project-Specific Weather Contingency requirements.

C.10.b Weather Contingency Reporting

For each update period, the Contractor must provide an assessment of the planned Weather Contingency compared to actual weather experienced on Critical Path Work, in addition to the requirements of 1803.2.C.11, "Actual Weather Day Reporting", in the accompanying Narrative Report for the Engineer's review.

- (1) The Contractor must clearly state the number of days that any contractual requirement was delayed due to weather when the Contractor believes actual weather experienced on Critical Path Work is more than the planned Weather Contingency in an update period.
- (2) The Contractor must clearly state that no contractual requirement(s) was delayed due to weather when the Contractor believes the actual weather experienced on Critical Path Work is less than or equal to the planned Weather Contingency in the update period.

For each update period, the Engineer may reserve a credit for unused Weather Contingency (i.e., the difference between the planned Weather Contingency and actual weather days experienced) when the actual weather experienced on Critical Path Work is less than the planned Weather Contingency. The Engineer will consider any credits for unused Weather Contingency as cumulative until the completion of the Project or until the Engineer determines that a time extension due to weather is necessary. The Engineer will not pursue an early completion of the Project as a result of any credits for unused Weather Contingency unless an early completion date is requested by the Contractor in accordance with 1803.2.A.7, "Request for Early Completion Date."

The Engineer will provide details regarding determination of any credits for unused Weather Contingency for the Contractor's review. If the Contractor disagrees with the Engineer's determination, the Contractor must provide a written explanation and supporting documentation (e.g., daily reports, contemporaneous correspondence, Project photos) for the Engineer's review.

C.11 Actual Weather Day Reporting

The Contractor must document and obtain agreement with the Engineer for each weather day experienced at the time of each occurrence. The Contractor must include a list of the specific claimed actual weather days experienced and a brief description of the Work affected on each weather day in the accompanying Narrative Report applicable to the period in which weather was experienced.

C.12 Actual Dates

The Contractor must report actual start and actual finish dates for Work performed before the Project Schedule Data Date. Actual dates must accurately reflect when the Work was performed in the field. The Contractor must provide an explanation in the accompanying Narrative Report for any change to a previously reported actual date.

C.13 Schedule Criticality

The Contractor must reference the 1803, "Project Schedules" Special Provisions for Project-specific schedule criticality requirements.

C.14 Activity Codes

The Contractor must reference the 1803, "Project Schedules" Special Provisions for Project-specific Activity Code requirements.

C.15 User Defined Fields

The Contractor must reference the 1803, "Project Schedules" Special Provisions for Project-specific User Defined Field requirements.

D Required Schedules

D.1 Preliminary Schedule

Acceptance of the First Preliminary Schedule is a condition of Notice to Proceed 1 (NTP1). The Contractor must reference Table 1803-2 for Preliminary Schedule file naming convention requirements and Table 1803-3 for Preliminary Schedule submission timeline requirements. A delay in submitting the Preliminary Schedule is a non-excusable delay under 1806.2.C, "Non-Excusable Delays," and the Contractor is not entitled to an extension of the Contract Time.

The purpose of the Preliminary Schedule is to show that the Contractor understands the contractual Milestones and plans to complete the Project within the contractually required interim and completion dates. The Preliminary Schedule may be submitted in either Bar Chart or CPM format. The Preliminary Schedule is not required to meet all requirements in 1803.2.B, "Software Requirements" and 1803.2.C, "Technical Requirements". At a minimum, the Contractor must include the following level of detail in the Preliminary Schedules:

- (1) First Preliminary Schedule: Show all Milestone dates are understood and provide a detailed schedule for the next 30 calendar day look-ahead period from the submission date.
- (2) Subsequent Preliminary Schedules: Show all Milestone dates are understood and provide a detailed schedule for the next 45 calendar day look-ahead period from the submission date.

Changes made between Preliminary Schedule submissions must be closely coordinated with the Engineer and are subject to the Engineer's review and acceptance. The Contractor must show the status of Work completed by reporting actual start and finish dates and by reasonably estimating the Remaining Duration for each in-progress Activity.

D.2 Baseline Schedule

Baseline Schedule acceptance is a condition of Notice to Proceed 2 (NTP2). The Contractor must reference Table 1803-2 for Baseline Schedule file naming convention requirements and Table 1803-3 for Baseline Schedule submission timeline requirements. It is the responsibility of the Contractor to ensure schedule submissions intended for Baseline Schedule review and acceptance meet all requirements included in 1803.2, "Project Schedules, Critical Path Method (CPM)". Any delay to acceptance of the Baseline Schedule and NTP2 not caused by the Department (e.g., Contractor late submissions, incomplete submissions, and repeat resubmissions due to failure to properly address comments by the Engineer) will be considered a non-excusable delay in accordance with 1806.2.C, "Non-Excusable Delays".

The purpose of the Baseline Schedule is to establish how the Contractor plans to complete all Work contracted. The Baseline Schedule must include the entire scope of Work in detail. The Contractor must notify the Engineer when a schedule is being submitted for baseline review and acceptance as opposed to a Preliminary Schedule submission.

- (1) The Baseline Schedule must indicate:

- (a) Actual dates of Work performed if the Contractor chooses to perform any Work before the Baseline Schedule being accepted.
 - (b) All contractual date requirements and Milestones, including any time-related Work restrictions, are being met and scheduled to complete within the Contract Time.
- (2) The Baseline Schedule must include the following level of detail at a minimum and when applicable:
 - (a) Mobilization;
 - (b) Work to be performed by the Contractor, subcontractors and suppliers;
 - (c) Work to be performed by the Department, other contractors, and third parties which directly affects the Contractor's Work (e.g., government agencies and authorities, permitting authorities);
 - (d) Project Milestones, phases, stages, traffic switches and availability dates specified in the Contract
 - (e) Submittal, review and acceptance Activities;
 - (f) Fabrication, delivery, installation, testing and similar Activities for materials, plants and equipment;
 - (g) Installation, erection, removal and similar Activities related to temporary systems or structures (e.g. temporary electrical system, shoring);
 - (h) Settlement or surcharge periods;
 - (i) Utility notification and relocation, including concurrent utility moves and planned suspension periods to allow for utility relocation;
 - (j) Receipt of permits;
 - (k) Substantial Completion; and
 - (l) Final Completion.

D.3 Update Schedule

The Contractor must submit an Update Schedule on a monthly basis, at a minimum, after the Baseline Schedule is accepted. The Contractor must reference Table 1803-2 for Update Schedule file naming convention requirements and Table 1803-3 for Update Schedule submission timeline requirements.

The purpose of the Update Schedule is to document progress and communicate the current status of the Project. The Contractor must update the last accepted Project Schedule to create each Update Schedule. Each Update Schedule must meet all requirements included in 1803.2, "Project Schedules, Critical Path Method (CPM)." The Contractor must update the last accepted Project Schedule by reporting actual start and actual finish dates for Work completed during the update period and by reasonably estimating the Remaining Duration for each in-progress Activity. The Contractor must minimize the number of changes to the Project Schedule. The Contractor must describe in detail the reason for any changes to the schedule in the accompanying Narrative Report submitted with each Update Schedule.

The inclusion of significant changes in a standard Update Schedule requires a detailed review by the Engineer and may affect acceptance of the Update Schedule and corresponding progress payment. Should significant changes be required during the standard update process, the Contractor must determine whether a Rebaseline Schedule or Impact Schedule is needed instead of including the changes in the Update Schedule. The Contractor must coordinate closely with the Engineer if an Update Schedule is due and a Rebaseline Schedule or Impact Schedule has been submitted and is in the review process. The Engineer will determine if the Contractor must update progress for the Update Schedule that is due using the last accepted Project Schedule or the last submitted Rebaseline Schedule or Impact Schedule.

D.4 Look-Ahead Schedule

The Contractor must submit a detailed Look-Ahead Schedule to the Engineer each week until all Work is completed. The Contractor must reference Table 1803-3 for Look-Ahead Schedule submission timeline requirements.

The purpose of the Look-Ahead Schedule is to communicate, in a high level of detail, the Contractor's recent Work progress in the field and planned Work Activities for the upcoming 14 calendar days on a rolling basis. The Contractor must prepare the schedule in Bar Chart format by hand or by using a computer. The Look-Ahead Schedule must include actual dates for Work performed since the last Look-Ahead Schedule submission

and planned dates for Work to be performed in the upcoming 14 calendar days at a minimum. The Look-Ahead Schedule is not required to meet all requirements in 1803.2.B, "Software Requirements" and 1803.2.C, "Technical Requirements". However, the Work Activities included in the Look-Ahead Schedule must specifically reference the applicable Activity IDs in the Project Schedule. The Look-Ahead Schedule may be prepared by Contractor personnel other than the designated Project Scheduler (e.g., Superintendent, Field Supervisor, Project Manager).

D.5 Rebaseline Schedule

The Contractor must not perform Work substantially different than depicted on the last accepted Project Schedule. If work is to be performed substantially different than depicted on the last accepted Project Schedule, the Contractor must seek an accepted Rebaseline Schedule.

The Contractor must submit a Rebaseline Schedule upon one of the following:

- (1) At the Engineer's Request.
 - (a) Where the Engineer has accepted an Impact Schedule and approves the Contractor to incorporate the impacts and corresponding resolution (e.g., modified completion date, re-sequenced Work, mitigation efforts) into the last accepted Project Schedule.
 - (b) Where the Engineer requires the Contractor to demonstrate a proposed recovery plan to any Milestone date significantly exceeding the contractual requirements in the last accepted Project Schedule.
 - (c) The Engineer concludes that there is a substantial difference between the sequence or duration of the Work as known in the field and the Work as depicted in the last accepted Project Schedule.
- (2) The issuance of a Contract Revision document that changes the planned sequence of Work or the method and manner of its performance.
- (3) The Contractor requests an early completion date.
- (4) The Contractor plans to substantially deviate from the last accepted Project Schedule, including significant changes to sequence or durations of remaining Work.

The Contractor must reference Table 1803-2 for Rebaseline Schedule file naming convention requirements and Table 1803-3 for Rebaseline Schedule submission timeline requirements.

The purpose of the Rebaseline Schedule is to establish the Contractor's revised plan to complete all Work when significant changes to the last accepted Project Schedule are required. The Rebaseline Schedule must meet all requirements included in 1803.2, "Project Schedules, Critical Path Method (CPM)." The Contractor must describe in detail the reasons for all proposed schedule changes in the accompanying Narrative Report.

Any requirement to prepare a Rebaseline Schedule is not a directive by the Engineer to accelerate the Work but rather a directive for the Contractor to seek the Engineer's acceptance of a proposal to revise the last accepted Project Schedule, which may or may not include acceleration. Acceptance of a Rebaseline Schedule does not approve acceleration costs without detailed support from the Contractor explaining such acceleration costs.

D.6 Impact Schedule

The Contractor must submit an Impact Schedule to model and evaluate impacts to the Project Schedule upon one of the following:

- (1) At the Engineer's request. An example of a reason for an Engineer-requested Impact Schedule may be the negotiation of a potential Contract Revision document that changes that planned sequence of Work or the method and manner of its performance.
- (2) When the Contractor believes that an Impact Schedule is necessary and obtains agreement with the Engineer.

Depending on the complexity of the proposed schedule changes required to evaluate the impact experienced, an Impact Schedule may or may not be needed. However, the Engineer still reserves the right to require the Contractor to submit an Impact Schedule regardless of complexity. The Contractor must reference Table 1803-2 for Impact Schedule file naming convention requirements and Table 1803-3 for Impact Schedule submission timeline requirements.

The purpose of the Impact Schedule is to quantify the effects of any past, current or future impacts to the Project Schedule and to establish the potential need for a time extension to a Project Milestone. When creating an Impact Schedule, the Contractor must follow the standard for preparation of an Impact Schedule as specified in 1806, "Determination and Extension of Contract Time." The Contractor must describe in detail the reasons for all proposed schedule changes in the accompanying Narrative Report.

The requirement to prepare an Impact Schedule is not a directive by the Engineer to accelerate the Work but rather a directive for the Contractor to demonstrate the effects of impacts to the accepted Project Schedule.

D.7 As-Built Schedule

At the conclusion of work, the Contractor must submit a final Project Schedule with actual start and actual finish dates for each Activity. This schedule will serve as the As-Built Project Schedule. The Department will not grant final Contract acceptance as specified in 1516.4, "Final Contract Acceptance" until the Engineer receives and accepts the Final As-Built Project Schedule.

E Submission Requirements

E.1 File Naming Convention

The Contractor must include the file naming convention as shown in Table 1803-2 for all files included in the schedule submission (i.e., Narrative Report, schedule printouts, and P6 native .xer file). The Contractor may include additional wording after the specified file naming convention to identify the schedule submission type (e.g., Narrative Report, All Activities Printout, Longest Path Printout, Near-Critical Activities Printout). The Contractor must ensure any additional wording added to the file naming convention remains consistent throughout the duration of the Project. If the schedule is not accepted, the Contractor must resubmit under the file name as modeled for resubmission. The #####-#### indicates a placeholder for the State Project Number.

The purpose of the file naming convention is to avoid confusion regarding the schedule submission type and version between the Contractor, the Engineer, and any other party receiving the Contractor's schedule submission.

Table 1803-2 Project Schedule File Naming Convention			
Schedules	Original Submission	1st Resubmission	2nd Resubmission
First Preliminary Schedule	#####-####-PR00-Rev0	#####-####-PR00-Rev1	#####-####-PR00-Rev2
1 st Subsequent Preliminary Schedule edulSchedule	#####-####-PR01-Rev0	#####-####-PR01-Rev1	#####-####-PR01-Rev2
2 nd Subsequent Preliminary Schedule, etc. edulSchedule	#####-####-PR02-Rev0	#####-####-PR02-Rev1	#####-####-PR02-Rev2
Baseline Schedule	#####-####-BSLN-Rev0	#####-####-BSLN-Rev1	#####-####-BSLN-Rev2
1 st Update Schedule	#####-####-UP01-Rev0	#####-####-UP01-Rev1	#####-####-UP01-Rev2
2 nd Update Schedule, etc.	#####-####-UP02-Rev0	#####-####-UP02-Rev1	#####-####-UP02-Rev2
1 st Rebaseline Schedule	#####-####-RB01-Rev0	#####-####-RB01-Rev1	#####-####-RB01-Rev2
2 nd Rebaseline Schedule, etc.	#####-####-RB02-Rev0	#####-####-RB02-Rev1	#####-####-RB02-Rev2
1 st Impact Schedule	#####-####-IS01-Rev0	#####-####-IS01-Rev1	#####-####-IS01-Rev2
2 nd Impact Schedule, etc.	#####-####-IS02-Rev0	#####-####-IS02-Rev1	#####-####-IS02-Rev2

E.2 Timeline

It is the Contractor's responsibility to meet with the Engineer as often as necessary to satisfy the timelines stated in Table 1803-3. If the Engineer does not accept a schedule submission, the Contractor must review and respond to all of the Engineer's questions and concerns, adjust the schedule if needed, and resubmit to the Engineer within the timelines indicated in Table 1803-3.

Table 1803-3 Schedule Submission Timelines					
Schedule Type	Section	Data Date	Submission Due Date	Engineer Review Length	Resubmission Due Date
First Preliminary	1803.2.D.1	Letting Date, or as agreed to by the Engineer	Condition of NTP1	7 Calendar Days after submitted	7 Calendar Days
Subsequent Preliminary	1803.2.D.1	One month after the Data Date of the last accepted Preliminary Schedule, or as agreed to by the Engineer	4 Business Days after Data Date	7 Calendar Days after submitted	7 Calendar Days
Baseline	1803.2.D.2	No earlier than the Data Date of the last accepted Preliminary Schedule, or as agreed to by the Engineer	Condition of NTP2	7 Calendar Days after submitted	7 Calendar Days
Update	1803.2.D.3	15 th of every month, or as agreed to by the Engineer	4 Business Days after Data Date	7 Business Days after submitted	3 Business Days
Look-Ahead	1803.2.D.4	N/A	Weekly	N/A	N/A
Rebaseline	1803.2.D.5	No earlier than the Data Date of the last accepted Project Schedule, or as agreed to by the Engineer	7 Business Days after the need for a Rebaseline Schedule is identified	7 Business Days after submitted	7 Calendar Days
Impact	1803.2.D.6	No earlier than the Data Date of the last accepted Project Schedule, or as agreed to by the Engineer	7 Business Days after the need for an Impact Schedule is identified	7 Business Days after submitted	As directed by the Engineer

E.3 Narrative Report

The Contractor must include a detailed Narrative Report with each schedule submission, including schedule resubmissions. For schedule resubmissions, the Contractor must update the Narrative Report to include comments regarding the nature of the resubmission and any changes made since the previous schedule submission.

E.3.a Baseline Schedule Narrative Report

Each Baseline Schedule Narrative Report must include and discuss at a minimum:

- (1) Explanation of the overall plan to complete the Project, including where the Work will begin and how the Work and crews will flow through the Project;
- (2) The quantity and estimated production rates for Critical Activities;
- (3) The work days per week, number of shifts per day, and number of hours per shift;
- (4) Identification of calendars used in P6 and an explanation of all non work days, including observed Holidays and Weather Contingency;
- (5) Description of the expected performance of each required permit that has reasonable potential to negatively affect the Work if delayed;

- (6) Identification of all Activities requiring coordination with the Department or third parties (e.g., utilities) and a description of the expected performance needed to avoid impacts to the Work;
- (7) Identification of all Constraints and an explanation of the reason for each Constraint;
- (8) Identification of all Relationships with Lag and an explanation of the reason for each Lag;
- (9) Schedule criticality calculations, if required by the 1803, "Project Schedules" Special Provisions; and
- (10) Any other Project concerns that are currently affecting or anticipated to affect the schedule.

E.3.b Update Schedule Narrative Report

Each Update Schedule Narrative Report must include and discuss at a minimum:

- (1) Description of the reasons for any changes to the schedule, including but not limited to:
 - (a) Added or deleted Activities;
 - (b) Added or deleted Logic;
 - (c) Changes to Original Duration;
 - (d) Increases in Remaining Duration (NOTE: decreases in Remaining Duration for Work progressed during the update period are not considered changes);
 - (e) Added, deleted, or changed Constraints;
 - (f) Added, deleted, or changed Lag;
 - (g) Changes to work and nonwork days in calendars in P6, including observed Holidays and Weather Contingency;
 - (h) Changes to calendar assignments in P6; and
 - (i) Changes to previously recorded actual dates (NOTE: new actual start and actual finish dates for Work progressed during the update period are not considered changes);
- (2) Description of the status of scheduled Milestone dates, including specifically any differences from the last accepted Project Schedule;
- (3) Actual weather day reporting as required by 1803.2.C.11, "Actual Weather Day Reporting";
- (4) Weather Contingency reporting as required by 1803.2.C.10.b, "Weather Contingency Reporting";
- (5) Description of any unusual labor, shift, equipment or material conditions or restrictions encountered or anticipated since the previous schedule submission;
- (6) Description of the expected performance of each required permit that has reasonable potential to negatively affect the Work if delayed;
- (7) Description of the status of any Activities requiring coordination with the Department or third parties (e.g., utilities) planned to occur during the next update period and expected performance needed to avoid impacts to the Work;
- (8) Schedule criticality calculations, if required by the 1803, "Project Schedules" Special Provisions; and
- (9) Any other Project concerns that are currently affecting or anticipated to affect the schedule.

E.3.c Rebaseline Schedule Narrative Report

Each Rebaseline Schedule Narrative Report must include and discuss at a minimum:

- (1) Explanation of the overall plan to complete the Project, including how the Work and crews will flow through the Project and specifically how this differs from the last accepted Project Schedule;
- (2) Description of the reasons for any changes to the schedule as listed in 1803.2.E.3.b(1);
- (3) Description of the status of scheduled Milestone dates, including specifically any differences from the last accepted Project Schedule;
- (4) The quantity and estimated production rates for Critical Activities;
- (5) Description of any changes to the work days per week, number of shifts per day, and number of hours per shift;
- (6) Description of any unusual labor, shift, equipment or material conditions or restrictions encountered or anticipated;

- (7) Description of the expected performance of each required permit that has reasonable potential to negatively affect the Work if delayed;
- (8) Identification of all Activities requiring coordination with the Department or third parties (e.g., utilities) and a description of expected performance needed to avoid impacts to the Work;
- (9) Schedule criticality calculations, if required by the 1803, "Project Schedules" Special Provisions; and
- (10) Any other Project concerns that are currently affecting or anticipated to affect the schedule.

E.3.d Impact Schedule Narrative Report

Each Impact Schedule Narrative Report must include and discuss at a minimum:

- (1) Detailed explanation of the impact being experienced and its effect on the overall plan to complete the Project, including how the impact may affect how crews will flow through the Project;
- (2) Detailed description of all changes to the schedule, as listed in 1803.2.E.3.b(1), and the reason for each change; changes must be limited to those involving the impact only;
- (3) Description of the status of scheduled Milestone dates, including specifically any differences from the last accepted Project Schedule;
- (4) Description of the expected performance of each required permit related to the impact that has reasonable potential to negatively affect the Work if delayed, if related to the impact;
- (5) Identification of all Activities related to the impact requiring coordination with the Department or third parties (e.g., utilities) and a description of expected performance needed to avoid impacts to the Work;
- (6) Schedule criticality calculations, if required by the 1803, "Project Schedules" Special Provisions; and
- (7) Any other Project concerns that are currently affecting or anticipated to affect the schedule.

E.4 Schedule Printouts

E.4.a Required Schedule Printouts

The Contractor must include the following schedule printouts in .pdf format with each schedule submission:

- (1) "All Activities". All Activities grouped by WBS and sorted by start date with the Longest Path indicated in red.
- (2) "Longest Path". Critical Path Activities, which are typically displayed using the P6 'Longest Path' filter, sorted by start date. This printout may be grouped by WBS at the Contractor's discretion.
- (3) "Near-Critical Activities". All Near-Critical Activities sorted first by Total Float and then by start date. This printout must not be grouped by WBS.
- (4) Any additional schedule printout as requested by the Engineer.

Each schedule printout must include a title block displaying the Data Date, run date, Activity bar legend, schedule printout name, and filter(s) applied. Each schedule printout must be formatted to fit the Activity table and Gantt chart to one page wide in landscape orientation on an 11x17 page size. The Engineer may require the Contractor to submit a hard copy of each schedule printout in addition to the required .pdf.

E.4.b Activity Table Information

The Activity table must contain the following information at a minimum:

- (1) Activity ID,
- (2) Activity Name,
- (3) Original Duration,
- (4) Remaining Duration,
- (5) Start,
- (6) Finish,
- (7) Late Start,
- (8) Late Finish, and

- (9) Total Float.

E.4.c Gantt Chart Information

The Gantt chart must typically be formatted as follows:

- (1) The timescale must be adjusted to appropriately show the Activities included in the printout.
- (2) Show the Data Date as a solid blue line, when applicable.
- (3) Show Logic lines, when applicable.
- (4) Do not include summary bars, percent complete bars, or baseline bars.

E.5 P6 Native File

The Contractor must submit the P6 native .xer schedule file with each schedule submission. The Contractor must reference Table 1803-2 for file naming convention requirements.

1803.3 TEMPORARY SUSPENSIONS

A Suspension of Work Ordered by the Engineer

The Engineer will issue all suspension-of-work orders in writing specifying the effective start date and end date of the suspension, the operations to be suspended, and the reasons for the suspension. The Contractor may not resume work until so authorized in writing by the Engineer and must resume work within a reasonable time upon the Engineer's direction. The Engineer will order the resumption of Work upon determining that the conditions that caused the suspension no longer exist.

If the Engineer issues a temporary suspension-of-work order because of any action or inaction by the Department, or because of incomplete Work under other contracts, and if the Contractor has not been advised in the Contract that such a suspension may be necessary, the Contractor must refer to 1402.4, "Suspensions of Work Ordered by the Engineer," regarding compensation and extension of Contract Time.

If the Engineer issues a temporary suspension-of-work order due to the Contractor's fault or negligence, such suspension is a non-excusable delay as specified in 1806.2.C, "Non-Excusable Delays," and is non-compensable.

B Suspension of Work Requested by the Contractor

The Contractor must send a written request for a temporary suspension of work to the Engineer. The Contractor's request must include the proposed effective start and end dates, the operations to be suspended, and the reasons for requesting the suspension. The Contractor must not suspend all or any part of the Work without the Engineer's written authorization. Suspension of the Work for any cause whatsoever does not relieve the Contractor of the responsibility for maintenance of traffic, except as otherwise provided in 1404, "Maintenance of Traffic," or by written agreement between the Contractor and the Department.

The Engineer will not authorize the Contractor to temporarily suspend operations until the following conditions are met:

- (1) The roads that are being used by traffic and any temporary approaches or crossings and intersections with trails, roads, streets, businesses, parking lots, residences, garages, and farms are in such condition that only routine maintenance will be required to adequately accommodate through and local traffic during the anticipated period of suspension.
- (2) The Contractor has performed such work as is necessary to protect all completed or partially completed work during the anticipated suspension period.
- (3) The Contractor has placed all traffic control devices as specified in 1710, "Traffic Control Devices."

Should the Contractor fail to perform any of this Work before suspension, the Department reserves the right to have the Work performed by others and to deduct the associated costs from any moneys due or becoming due the Contractor.

1910 Fuel Escalation Clause

The provisions set forth in 1910, “Cost Escalation” are hereby supplemented with the following:

This provision provides for compensation adjustments in the cost of motor fuels (diesel and gasoline) consumed in prosecuting the Contract work. The Engineer will calculate the Fuel Cost Adjustments. Payments or credits will be applied to progress, semi-final, and final payments for work items set forth herein.

The Department will establish a Base Fuel Index (BFI) for fuel to be used on the Contract. The BFI will be the average of the high and low rack prices shown for Ultra Low Sulfur Diesel Undyed in the “DTN FastRack” for the day of the Contract letting.

A Current Fuel Index (CFI) in cents per gallon will be established for each week. The CFI will be the average of the high and low rack prices shown for Ultra Low Sulfur Diesel Undyed in the “DTN FastRack” indicated each Wednesday.

The Engineer will compute the ratio of the CFI to the BFI (CFI/BFI) each week. If that ratio is between 0.85 and 1.15, no fuel adjustment will be made for the week following the CFI computation. If the ratio is less than 0.85, a credit to the Department will be computed. If the ratio is greater than 1.15, additional payment to the Contractor will be computed.

Credit of additional payment will be computed as follows:

1. The Engineer will estimate the quantity of work done in that week under each of the Contract items listed in Table 1910-1.
2. The Engineer will compute the gallons of fuel used in that week for each of the Contract items listed in Table 1910-1 by applying the unit fuel usage factors shown.
3. The Engineer will determine the Fuel Cost Adjustment (FCA) from the following formulas
 - a. If the CFI is greater than the BFI: $[(CFI/BFI)-1.15]*Q*BFI$ = amount of FCA to be paid to the Contractor.
 - b. If the CFI is less than the BFI: $[(CFI/BFI)-0.85]*Q*BFI$ = amount of FCA to be credited to the Department
 - i. FCA = Fuel Cost Adjustment (cents)
 - ii. CFI = Current Fuel Index (cents per gallon)
 - iii. BFI = Base Fuel Index (cents per gallon)
 - iv. Q = Weekly total gallons of fuel per item

Basis of Payment

A FCA payment to the Contractor will be made as a price adjustment to each eligible item for each payment period based on the last published CFI. An FCA credit to the Department will be deducted each payment period

from any monies due the Contractor. Only items shown in Table 1901-1 will be considered for compensation adjustments.

Table 1901-1 Schedule of Work Items

Specification Number	Item	Unit	Gallons of Fuel per Unit
2105	Common Excavation	CY	0.17
2105	Rock Excavation	CY	0.27
2105	Muck Excavation	CY	0.17
2105	Subgrade Excavation	CY	0.17
2105	Unclassified Excavation	CY	0.23
2105	Granular Borrow (EV)	CY	0.17
2105	Granular Borrow (CV)	CY	0.19
2105	Granular Borrow (LV)	CY	0.14
2105	Select Granular Borrow (EV)	CY	0.17
2105	Select Granular Borrow (CV)	CY	0.19
2105	Select Granular Borrow (LV)	CY	0.14
2105	Common Borrow (EV)	CY	0.17
2105	Common Borrow (CV)	CY	0.19
2105	Common Borrow (LV)	CY	0.14
2105	Topsoil Borrow (EV)	CY	0.17

Specification Number	Item	Unit	Gallons of Fuel per Unit
2105	Topsoil Borrow (CV)	CY	0.19
2105	Topsoil Borrow (LV)	CY	0.14
2106	Excavation – Common	CY	0.17
2106	Excavation – Subgrade	CY	0.17
2106	Excavation – Rock	CY	0.27
2106	Excavation – Muck	CY	0.17
2106	Common Embankment (CV)	CY	0.19
2106	Granular Embankment (CV)	CY	0.19
2106	Select Granular Embankment (CV)	CY	0.19
2106	Select Granular Embankment (CV) Modified (____%) (CV)	CY	0.19
2211	Aggregate Base	Ton	0.55
2211	Aggregate Base (LV)	CY	0.77
2211	Aggregate Base (CV)	CY	0.99
2211	Open Graded Aggregate Base (CV)	CY	0.99
2211	Shoulder Base Aggregate, Class	Ton	0.55
2211	Shoulder Base Aggregate (LV), Class	CY	0.77
2211	Shoulder Base Aggregate (CV), Class	CY	0.99

Specification Number	Item	Unit	Gallons of Fuel per Unit
2232	Mill Bituminous Surface t inches	SY	$0.019*t$
2301	Concrete Pavement t inches	SY	$0.027*t$
2301	Place Concrete Pavement t inches	SY	$0.027*t$
2360	Type SP () Wearing Course Mixture	Ton	0.90
2360	Type SP () Wearing Course Mixture	Ton	0.90
2360	Type () Mixture t inches thick	SY	$0.051*t$
2501	Pipe Culvert	Lin Ft	0.70
2501	Pipe Arch Culvert	Lin Ft	0.70
2501	Pipe Culvert Des 3006	Lin Ft	0.70
2503	Pipe Sewer	Lin Ft	0.70
2503	Pipe Arch Sewer	Lin Ft	0.70
2503	Pipe Sewer Des 3006	Lin Ft	0.70

t = Thickness in inches

The Department will not pay adjustments for pipes less than 12" in diameter, jacked pipes, or directionally drilled pipes.

The Department will not pay adjustments for fuel used for drying or heating aggregates.

Schedule of Materials Control 2023 Version

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Introduction Page

Minnesota Department of Transportation Schedule of Materials Control (SMC) (Federal Aid, State Funds, County/Municipal Federal Aid Projects, and State Aid Projects)

This schedule outlines the minimum sampling and testing required for most materials used in highway construction. For more information regarding contract requirements for testing, please reference the "Standard Specifications for Construction", Specification 1603 Materials: Specifications, Samples, Tests, and Acceptance. Items that are not listed in the Standard Specifications for Construction are covered by Special Provisions and are not listed herein.

Laboratories performing acceptance tests for payment shall be accredited by AASHTO resource (formerly AMRL) or a comparable accreditation program approved by MnDOT and the FHWA for all test procedures performed.

Contact the MnDOT District Independent Assurance Inspector when the project starts to provide the proper servicing of your project.

When sample sizes required for testing exceed 35 pounds, please submit multiple containers of the material with no individual container weighing more than 35 pounds.

Small quantities of materials may be accepted without sampling and testing. A small quantity is defined as any total quantity, for the whole project, of one material, which is smaller than the minimum quantity required for testing unless modified by the individual material items. These materials shall be from known, reliable sources, perform satisfactorily and meet the requirements for purpose intended. The inspection report (Form 02415) should include a statement to this effect and show the source. Form 2403 may be used to report small quantities of diverse materials from different sources. Form 02415 and Form 2403 (or approved revisions) are referenced in the Schedule of Materials Control for project record documentation and are required to be maintained in the project file.

Previously approved materials transferred from another project should be reported on Form 02415. The report should include type of material, quantities involved, source, and supplier of materials. Whenever possible, certification of "Approval documents" shall be included with the Project documents.

If Forms 02415 and 2403 are referenced by form number within the Schedule of Materials Control for materials or products received from pre-approved sources, where the field responsibility for acceptance is visual inspection and all information required to complete these forms is contained in other documents in the project file, the use of these forms becomes optional. If these forms are completed and sent to the Project Engineer by off-site inspection personnel from the District or the Office of Materials, they must be retained in the project file.

A [Telephone Index](#) is included with the Schedule giving contact information for the specialty areas if further information is required regarding the various materials. A [Form Index](#) is also included.

The Department maintains the [Approved/Qualified Products List](#) (APL/QPL) and the Certified Products and Services List, as well as the Schedule of Materials Control. All are available electronically on the [Office of Materials and Road Research website](#).

Products manufactured offsite may be pre-approved; however, final acceptance will be made at the point of incorporation, based upon review of documentation and inspection for shipping or other damage.

The Department may perform ride quality verification testing (Bituminous and/or Concrete) within 30 calendar days of the Contractor's profiling for the project or major stage of construction. The Department will randomly test at least 10 percent of the calendar year's projects that are subject to Smoothness evaluation. If the Department's weighted mean Smoothness value differs by less than or equal to 10 percent or 3 inches/mile of the Contractor's weighted mean Smoothness value, the Engineer will accept the Contractor's segment Smoothness and ALR values as the basis for acceptance, incentive/disincentive, and Corrective Work's monetary deductions. If the Department's weighted mean Smoothness value is greater than 10 percent and 3 inches/mile of the Contractor's weighted mean Smoothness value, the Engineer will use the retested segment Smoothness and ALR values as the basis for acceptance, incentive/disincentive, and Corrective Work monetary deductions.

I. Grading, Base, and Reclamation Construction Items (www.dot.state.mn.us/materials/gradingandbase.html)

Pay Item Number	Test Type / Material	Material Spec. No.	Minimum Contractor Testing Rate	Minimum Department Testing, Rate and Size	Minimum Companion (Split Lab) Sample, Rate and Size	Form No. (See Note 4)
(a) 2118 (b) 2211 (c) 2212 (d) 2221 (e) 2106	1. Gradation (a) Aggregate Surfacing (b) Aggregate Base (c) Drainable Aggregate Base (d) Shoulder Base Aggregate (e) Stabilizing Aggregate	3136 3138	<u>Production:</u> 1/1000 yd ³ (CV) Only required for 1906.2, “Material on Hand”	Random Sampling (See Notes 1, 2, 10, & 11) < 250 yd ³ (CV) or 500 tons: No tests required ≥ 250 yd ³ (CV) to ≤ 2,000 yd ³ (CV) or ≥ 500 tons to ≤ 4,000 tons: 2 random samples from each lot and average. > 2,000 yd ³ (CV) or 4,000 tons: Divide into lots with lot size no greater than 2,000 yd ³ (CV) or 4,000 tons 2 random samples from each lot and average 30 lb.	1 per project 30 lb. .	G&B-001 G&B-002b G&B-101 G&B-104
(f) 2106	(f) Granular and Select Granular Materials	3149.2B	1/10,000 yd ³ (CV) Only required for 1906.2, “Material on Hand”	1 per 40,000 yd ³ (CV) or 1 per 80,000 tons (See Notes 1, 2, 10, & 11) 30 lb.	1 per project 30 lb.	G&B-001 G&B-101 G&B-104
(g) 2215	(g) Full Depth Reclamation (FDR)	2215	None	Test at Engineer’s discretion. Inspect for oversize chunks (+3”), after the motor grader has overturned the material. 30 lb.	None	G&B-001 G&B-101
Multiple	(h) Granular Backfill (i) Aggregate Backfill (j) Granular Bedding (k) Aggregate Bedding (l) Coarse Filter Aggregate (m) Fine Filter Aggregate (n) Structural Backfill	3149	1 per source. Only required for 1906.2, “Material on Hand”	1 per source 30 lb. .	None	G&B-001 G&B-101 G&B-104
Multiple	2. Proctor Test (Used to determine optimum moisture & maximum density)	2106	None	1 per major soil type. Additionally, 1 for each granular material (3138, 3149, etc.), if using specified density. (See Notes 6 & 8) 50 lb.	1 per project. (Notes 1 & 2) 25 lb.	G&B-001 G&B-303

I. Grading, Base, and Reclamation Construction Items (www.dot.state.mn.us/materials/gradingandbase.html)

Pay Item Number	Test Type / Material	Material Spec. No.	Minimum Department Testing	Form No. (See Note 4)
Multiple	3a. Compaction Compliance-Non-Granular Material Non-granular material has greater than 20% passing the number 200 sieve. Specified Density or Light Weight Deflectometer (LWD)	2106	Roadway Embankment Within road core: 1 per 10,000 yd ³ Material outside road core: Test at Engineer's discretion Trenches for Transverse Culverts and Abutments: 1 per every 2 feet of fill height Trenches for longitudinal water-main, storm-sewer, sanitary, gas, and retaining walls. Also, sidewalks and trails: 1 per 500 feet Subgrade Preparation 1 per 25 Road Stations (See Notes 11 & 12)	G&B-001 G&B-304
Multiple	3b. Compaction Compliance -Granular Material Dynamic Cone Penetration (DCP) Index Method, LWD, or specified density (a) Aggregate Base (b) Shoulder Base Aggregate (c) Walks and Trails Granular material has 20% or less passing the number 200 sieve.	3138	For aggregate base and shoulder base: 1 per 2,000 yd ³ (CV) or 1 per 4,000 ton 1 per 500 feet for sidewalks and trails (See Note 10, 11, & 12)	G&B-001 G&B-204 G&B-601 G&B-603
(d) 2215	3b. Compaction Compliance -Granular Material (Continued) (d) Full Depth Reclamation (FDR)	2215	1 per 10,000 yd ² (See Note 11)	G&B-001 G&B-205 G&B-601 G&B-603
Multiple	(e) Granular Embankment and Subgrade Preparation, if Subgrade has less than 20% passing the number 200 sieve.	3149	Roadway Embankment: 1 per 5,000 yd ³ Trenches for Transverse Culverts and Abutments except spread footings: 1 per every 2 feet of fill height per structure. Trenches for longitudinal water-main, storm-sewer, sanitary, gas, retaining walls. Also, sidewalks and trails: 1 per 500 feet Spread Footings: Four per footing Subgrade Preparation: 1 per 25 Road Stations. (See Notes 11 & 12)	G&B-001 G&B-203 G&B-601 G&B-603

I. Grading, Base, and Reclamation Construction Items (www.dot.state.mn.us/materials/gradingandbase.html)

Pay Item Number	Test Type / Material	Minimum Contractor Testing Rate
Multiple	3c. Compaction Compliance-Test Rolling (See Note 9)	<p>Contractor to perform test rolling at top of:</p> <ul style="list-style-type: none"> • Non-granular subgrade (2106) • Granular subgrade that does not meet 3149.2.B.2 (2106), • Base (2211) and shoulder base (2221), • Unstabilized Full Depth Reclamation (2215). <p>Minimum 12' width and 300' length.</p> <p>Department to observe test rolling.</p>

Pay Item Number	Test Type / Material	Material Spec. No.	Minimum Department Testing	Form No. (See Note 4)
Multiple	4. Moisture Content Test During Compaction (a) Aggregate Surfacing (See Notes 1 & 7) (b) Aggregate Base (See Note 1) (c) Shoulder Base Aggregate (See Note 1) (d) Structure Excavations and Backfills (e) Walks and Trails	3138 3149	<p>For 2118, 2211, 2221, and 2521: 1 per 1,000 yd³ up to 10 maximum</p> <p>For 2451: 1 per structure., however, for multiple adjacent structures, may test once, use judgement</p> <p>For Quality Compaction: Test at Engineer's discretion.</p>	G&B-001 G&B-105 G&B-106
(f) 2215	(f) Full Depth Reclamation (See Note 1)	2215	1 per 20,000 yd ²	G&B-001 G&B-105 G&B-106
Multiple	(g) All embankment materials (See Note 1) (h) Subgrade Preparation (See Note 1)	2106 3149	<p>Embankment Materials: 1 per 10,000 yd³ up to 10 maximum</p> <p>Subgrade Preparation: 1 per 25 Road Stations</p> <p>For Quality Compaction: Test at Engineer's discretion.</p>	

I. Grading, Base, and Reclamation Construction Items (www.dot.state.mn.us/materials/gradingandbase.html)

Pay Item Number	Test Type / Material	Material Spec. No.	Minimum Contractor Quality Control Testing Rate	Minimum Department Testing, Rate and Size	Form No. <i>(See Note 4)</i>
Multiple	5. Aggregate Quality (a) LAR, Insoluble Residue (IR), and Lithological Exam (b) Bitumen content; % crushing; clay content; plasticity index; percentage of Concrete, Masonry Concrete, Glass, Brick and other Objectionable Material in a Recycled Aggregate Sample.	3136 3138 3149	1 per source. Only required for 1906.2, "Material on Hand" <i>(See Note 5)</i>	(a) 2 per source For larger quantities from carbonate quarries, LAR and IR are required. Always required for structures regardless of quantity. <i>(See Notes 1, 2, & 3)</i> (b) 2 per source Test at the discretion of the Engineer, however crushing is required for drainable bases regardless of quantity (2212 & 3136). <i>(See Notes 1, 2, 3, & 5)</i> 30 lb.	G&B-103 G&B-104 G&B-107

Pay Item Number	Test Type / Material	Minimum Contractor Quality Control Testing Rate	Minimum Department Testing	Form No. <i>(See Note 4)</i>
2215	6. Depth Check Full Depth Reclamation (FDR)	1 per mile	1 per day	G&B-401

General Notes: Sampling and Testing Procedures are found in the Grading and Base Manual in Section 5-692.2XX. Obtain all gradation and quality samples at time of delivery and before compaction.

Modify testing and sampling protocol for increases in Plan quantities as follows:

Time Plan Quantity Increased	Testing and Sampling
Before Collection of first sample.	Reorder sampling to account for additional quantity.
After Collection of first sample, but before sampling is complete.	Complete testing of current lot, and then reorder the sampling using the remaining quantity.
After collection of all original Plan quantity samples.	Order sampling for additional quantity.

I. Grading, Base, and Reclamation Construction Items (www.dot.state.mn.us/materials/gradingandbase.html)

Note 1: Except for backfilling structures (where tests are always required), samples, companion gradations, proctor, moistures during compaction, and aggregate quality samples are not required for 500 tons or 250 yd³ (CV) or less. Report small quantities on Form 02415 or Form 2403. Form G&B-104 is always required regardless of quantity.

Note 2: Laboratories with AASHTO accreditation that perform Department testing is not required to submit companion samples. When Department testing is not performed in an AASHTO accredited facility, obtain the Companion/Lab sample as a split sample from the first Department sample, and include the gradation results on the sample card.

Note 3:

- Carbonate aggregates require 50 lb. samples for lab testing.
- Submit the initial aggregate quality and crushing sample from the first day's placement; the Engineer may elect to sample from the stockpile.
- A second test is required, when the first test fails. Average both tests to determined compliance, when two tests are performed.
- Use the table on the following page as a guideline.

Note 4: Forms are available on the Grading & Base website at: <http://www.dot.state.mn.us/materials/gradingandbase.html>. Form G&B-104 is always required regardless of quantity.

Note 5: Use the Centrifuge Method (MnDOT Lab. Manual Method 1852) to determine bitumen content.

Note 6: Major soil types are defined in the Triaxial Chart located in the Grading and Base Manual.

Note 7: For Quality Compaction of Base and Shoulder Aggregate (2118, 2211, or 2221), the Engineer may replace the moisture testing requirement with time stamped photo documentation of water being applied.

Note 8: For estimated optimum moisture content only, may use one point proctor, full proctor, or Form G&B - 305 (granular only), to determine the optimum moisture.

Note 9: The Engineer may elect, with the concurrence of the Contractor, to have the Contractor test roll per 2111, "Test Rolling", material meeting the requirements of 3149.2.B, "Select Granular Material", in lieu of spot compaction testing. If this method is adapted, the Contractor would be required to first place 3" of base on top of the Select Granular prior to test rolling. For areas failing test rolling the Contractor is required to remove the base and recompact the material, then place the base back, and retest roll. There is no additional compensation to the Contractor, if this method is adapted. Additionally, the Select Granular is not accepted until passing test rolling has occurred.

Note 10: Test rates are determined by the method of measurement, cubic yards (CV) or tons.

Note 11: For gradations or compaction compliance, the Engineer can choose to divide lots sizes into smaller volumes, weights, or areas of non-equal sizes. For example, the Engineer may designate one or more turn or passing lanes or farm entrances as individual lots or may designate a lot as one or more day(s) production.

Note 12: For quantities less than 500 tons or 250 yd³, one may use Quality Compaction as the only test method, except when backfilling structures.

I. Grading, Base, and Reclamation Construction Items (www.dot.state.mn.us/materials/gradingandbase.html)

Table: Guidelines for Required Crushing and Aggregate Quality Tests					
Material	Crushing	Bitumen Content, Percent Concrete, PI, and clay content	LAR	Insoluble Residue	Lithological Exam & Shale Float Test
3136 Drainable Bases	Yes. Not required for quarried sources.	Not applicable	Yes, if source from a carbonate quarry.	Yes, if source from a carbonate quarry.	Yes, when not from quarried source.
3138 Aggregate for Surface and Base	Test at the discretion of the Engineer. Not required for quarried sources.	At the discretion of the Engineer.	Yes, if source is carbonate quarry and does not contain any recycled material.	Yes, if source from a carbonate quarry, and does not contain any recycled material.	Yes, for Class 3, 4, 5, and 6, when not from quarried rock, and does not contain bitumen.
3149 Granular Material *	Test at the discretion of the Engineer.	Bit. Content At the discretion of the Engineer. PI/Clay content Not applicable	Yes, for carbonate quarried Fine Aggregate Bedding (3149.2G.1), and Coarse Filter Aggregate (3149.2H) .	Yes, if source from a carbonate quarry, and does not contain recycled material.	Yes, for virgin glacial gravel: Stabilizing Aggregate (3149.2C), Fine Aggregate bedding (3149.2G.1), and Medium Filter Aggregate (3149.2I.1)
* Note for Structural Backfill (3149.2D.2), perform all tests required of 3137.2B.3, and tests as required in plan and special provisions.					

I. Grading, Base, and Reclamation Construction Items (www.dot.state.mn.us/materials/gradingandbase.html)

Contractor QC Tests Requirements for Cold in Place Recycled Bituminous (CIR) & Cold Central Plant Recycling Bituminous (CCPR) Spec 2390 & Stabilized Full Depth Reclamation (SFDR) Spec 2215		
Test Name	Rate	Method/Location
SFDR: Simple gradation for unstabilized material	1 per mile	G&B Manual .215 & Form G&B-101 Report sieves 3" & 2"
CIR, CCPR, & SFDR: Entire Gradation for material to be stabilized	1 per day	G&B Manual .215 & Form G&B-101 Report sieves 2", 1", 3/4", 3/8", #4, #10 & #30.
SFDR: Test Roll unstabilized portion		Test Roll and recompact failing areas. Repairs may be subject to 1402.5, "Extra Work".
CIR, CCPR, & SFDR: Simple gradation for material to be stabilized	1 per mile for SFDR and CIR 1 per 2,000 ton for CCPR	G&B Manual .215 & .293, Form G&B-101 Report sieves 2" & 1.5" for SFDR 1.5" and 1.25" for CIR
CIR & SFDR only: Depth Check for unstabilized and stabilized material	1 per mile for initial pulverization and stabilization	G&B Manual .284 and Form G&B- 401
SFDR: Penetration Index (DCP) for unstabilized material	2 per mile	G&B Manual .255 & Form G&B-205
CIR & SFDR: Calibrate mineral stabilizing agent application rate	Once using design rate per vane feeder	G&B Manual .286
CCPR & SFDR: Moisture determination before injecting liquid bituminous material	1 per mile of anticipated daily production and after rain & one for SFDR after mechanical drying (disking, etc.).	G&B Manual .281 & Form G&B-105
Yield check: CIR & SFDR: Cement CIR, CCPR, & SFDR: Liquid Bit. Material	1 per transport (if using cement, lime, etc.) 1 per transport	G&B Manual .286 & Forms G&B 402 & 403
CIR, CCPR, & SFDR stabilized: Compaction (Nuclear Density)	10 per lane mile, engineer can require more for suspect areas Correlate the nuclear gauge's dry measurement density by direct moisture measurement (microwave oven or equivalent).	Grading & Base manual .282 and Form G&B-405
CIR, CCPR, & SFDR stabilized: Control strip	Minimum 1 per project	
CIR, CCPR, & SFDR: Foaming asphalt checks expansion ratio & half-life	1 per load (if using foamed asphalt)	Grading & Base Manual .285 and Form G&B-404
CIR, CCPR, & SFDR: Moisture testing of stabilized layer during curing before placement of HMA	2 per day until placement of HMA. For 1st day get samples before compaction. For subsequent days, get 1 before compaction of new production, and 1 in 1 st day's production until moisture stabilizes, then get the 2 nd in new area until moisture stabilizes.	Grading & Base Manual

I. Grading, Base, and Reclamation Construction Items (www.dot.state.mn.us/materials/gradingandbase.html)

Department Tests Requirements for Cold in Place Recycled Bituminous (CIR) & Cold Central Plant Recycling Bituminous (CCPR) Spec 2390 & Stabilized Full Depth Reclamation (SFDR) Spec 2215		
Test Name	Rate	Method/Location
SFDR: Penetration Index (DCP) for unstabilized material	1 per mile	Grading & Base Manual .255 & Form G&B-205
SFDR: Test Rolling unstabilized portion		Observe Test Rolling, and recompact failing areas. Repair underlying material. Repairs may be subject to 1402.5, “Extra Work”, if due to weak underlying materials.
CIR & SFDR: Calibration of the mineral stabilizing agent application rate	Observe the Contractor	
Yield check: CIR & SFDR: Mineral Stabilizing Agent CIR, CCPR, & SFDR: Liquid Bit. Material	1 per day each	G&B Manual .286 & Forms G&B-402 & 403
CIR, CCPR, & SFDR stabilized: Compaction (Nuclear Density)	Observe the Contractor	Grading & Base Manual .282 & Form G&B-405
CIR, CCPR, & SFDR stabilized: Control Strip	Observe the Contractor	
CIR, CCPR, & SFDR stabilized: Bituminous Material Samples	1 per 250,000 gallons	1 quart from first load, then take samples randomly
CIR, CCPR, & SFDR stabilized: Foaming asphalt checks expansion ratio & half life	Observe the Contractor	G&B Manual .285 and Form G&B-404

II. Bituminous Construction Items for Specification 2360

Note: Projects with bituminous tonnage less than or equal to 300 tons per day may be accepted on a small quantity basis at the discretion of the Engineer. Retain Form 02415 or Form 2403 in Project File.

(All plant mixed asphalt from Certified Plants)

DEFINITIONS

SAMPLE TYPE	DESCRIPTION	SAMPLE LOCATION DETERMINED BY	SAMPLE TAKEN BY	SAMPLE TESTED BY
QC	Quality Control Testing performed by Contractor. Also known as Process Control Testing.	Contractor	Contractor	Contractor
QA	Quality Assurance Testing performed by the Department. This test is performed on a companion sample to the Contractor's QC sample.	Contractor (mixture) Department (density cores)	Contractor	Department
Verification	A sample to assure compliance of the Contractor's Quality Control program. The results shall be included as part of the QA Testing Program.	Department	Department	Department
Verification Companion	A companion sample to the Department's Verification sample provided to the Contractor. The Contractor <u>is required</u> to test this sample. The results <u>shall be used</u> as part of the QC program.	Department	Department	Contractor
IAST	The <u>I</u> ndependent <u>A</u> ssurance <u>S</u> ampling and <u>T</u> esting assures testers are sampling and testing properly and that equipment is calibrated correctly.	Department	Contractor or Department	Contractor or Department

II. Bituminous Construction Items for Specification 2360 (cont.)**A. Pre-Production Sampling and Testing for Specification 2360 Plant Mixed Asphalt****Minimum Sample Sizes:****Quality Sample Size for Lab Submittal:**

Plus #4 aggregate sample for quality testing and Percent Crushing	80 lb.
Minus #4 aggregate for quality testing	35 lb.
Bituminous mixture plus 2 Gyratory specimens for volumetric testing	80 lb.
Bituminous mixture for TSR testing (option A)	80 lb.
Bituminous mixture for TSR testing plus 6 Gyratory specimens (option B)	20 lb.
Mineral filler.	2 lb.
RAP for Quality Testing	80 lb.
RAS (shingles) for Gradation and Quality Testing	10 lb.
Asphalt Binder	1 quart

All aggregates and mixtures will be split according to G&B Manual 5-692.141, "Quartering Method of Sample Size Reduction"

Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Department Testing	Form No.
2360	Bituminous Mix Design (QC/QA)	2360	Contractor submits Mix Design Option 1 or Option 2	Option 1- Laboratory Mix Design: In addition to reviewing the Trial Mix data (JMF), test Contractor's mixture (at optimum asphalt content). Also, evaluate TSR per 2360.2G.7.i. Option 2- Laboratory Mix Design: Review submitted Mix data only.	Approved Mix Design Report
2360	Aggregate Quality Testing (QA only)	2360	Provide 24 hour notice of intent to sample aggregates for quality testing. Department has the option to monitor sampling. Submits to the Bituminous Engineer or the District Materials Engineer: 1 sample of each non-asphaltic aggregate type or class per source per year. Also submit the asphaltic aggregate material when the mixture contains RAP or RAS. Provide documentation that of all RAS /TOSS (Tear Off Shingle) material is from a MPCA certified supplier.	Test as directed by the Bituminous Engineer or the District Materials Engineer.	Test Report
2360	Mineral Filler (QA only)	3145	1 per shipment of 50 tons or less, unless previously inspected.	Testing as directed by the Engineer or the District Materials Engineer.	Test Report
2360	Additives (QA Only)	2360	Sample blended asphalt binder and additive, 1 quart Sample first shipment of each type of material. Then submit 1 per 250,000 gal. (approximately 1,000 ton).	Testing as directed by the Engineer or the Chemical Laboratory Director.	Test report

II. Bituminous Construction Items for Specification 2360 (cont.)**B. BITUMINOUS PRODUCTION for Specification 2360*****Verification Testing**

Verification Companion testing from Department split sample is required to be performed and used as the next QC sample that day.

SAMPLE SIZE:	Aggregate for Gradation (QC/QA)	35 lb.
	Plus #4 Aggregate Type for Quality Testing	80 lb. for each source
	Minus #4 Aggregate Type for Quality Testing	35 lb. for each source
	RAP material for Quality Testing	80 lb. for each source
	RAS (Shingles) for Processed Gradation and Quality Testing	10 lb.
	Mixture Properties (QC/QA) 3 full 6" by 12" cylinder molds for QA	65 lb.
	TSR (QC/QA) 4 full 6" by 12" cylinder molds for QA	90 lb.
	Aggregate Specific Gravity (QC/QA)	90 lb.
	Asphalt Binder (QA)	1 quart
	Emulsified Asphalt (QA)	½ gallon

All aggregates and mixtures will be split according to G&B Manual 5-692.141, "Quartering Method of Sample Size Reduction"

Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Department Testing	Form No.
2360	Aggregate Quality Testing Including aggregate specific gravity (QA Only)	2360	None	<p>Take additional samples when aggregate qualities approach specification limits or when material variation is observed, take additional field samples as requested by Project Engineer.</p> <p>Take additional samples when material variation is observed in RAP or RAS. Take additional field samples as requested by Project Engineer.</p> <p>Conduct random belt samples and test for aggregate quality as directed by the Engineer.</p>	Lab report
2360	Moisture Content in Mixture (QC/QA) Lab Manual 1855	2360	Sample and test as directed by the Engineer.	None	Test Summary Sheet (TSS)

II. Bituminous Construction Items for Specification 2360 (cont.)

Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Department Testing	Form No.
2360	Asphalt Binder Content, % AC, ADD AC, AC/Total AC ratio (QC/QA, Verification*) Lab Manual 1851, 1852, 1853	2360	<p>(a) Incinerator Oven MnDOT Lab Manual 1853 (b) Chemical Extraction MnDOT Lab Manual 1851 or 1852</p> <p>REMARKS: Contractor selects one method at the beginning of the project (when material is submitted for Trial Mix Review) and use that method for the entire project. The Contractor and Engineer may agree to change test procedures during the construction of the Project.</p> <p>When additional verification samples are taken the contractor must test the Verification companion split of this sample and include the results in the QC program (Test Summary Sheet).</p> <p>REMARKS: (See Notes #1, #2 & #4)</p> <p>A computer file of the plant's control settings is required every 20 minutes of production.</p>	<p>The inspector will witness all QC/QA mixture sampling and take possession of the Department's QA-Verification split of this sample immediately after the sample is split.</p> <p>At least once per day per mix type the Inspector will randomly determine when the QC/QA mixture sample will be sampled from either behind the paver or from the truck box. The Inspector will observe the Contractor sampling and splitting this QA-Verification sample and take immediate possession of the sample after it is split. At the end of the day randomly submit one of the QA-Verification splits to the District Lab for testing. Additional verification samples can be taken at any time or location.</p> <p>The Department reviews the computer files of the plant's control settings.</p> <p>REMARKS: (See Notes #3 & #7)</p>	TSS
2360	Mixture Properties (QC/QA, Verification*) Maximum Specific Gravity Lab Manual 1807	2360	<p>Contractor performs test 1807</p> <p>When additional verification samples are taken the contractor must test the Verification companion split of this sample and include the results in the QC program (Test Summary Sheet).</p> <p>REMARKS: (See Notes #1, #2, & #4)</p>	<p>The inspector will witness all QC/QA mixture sampling and take possession of the Department's QA-Verification split of this sample immediately after the sample is split.</p> <p>At least once per day per mix type the Inspector will randomly determine when the QC/QA mixture sample will be sampled from either behind the paver or from the truck box. The Inspector will observe the Contractor sampling and splitting this QA-Verification sample and take immediate possession of the sample after it is split. At the end of the day randomly submit one of the QA-Verification splits to the District Lab for testing. Additional verification samples can be taken at any time or location.</p> <p>REMARKS: (See Notes # 3 & #7)</p>	TSS

II. Bituminous Construction Items for Specification 2360 (cont.)

Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Department Testing	Form No.
2360	Mixture Properties (QC/QA, Verification*) Gyratory Bulk Specific Gravity - 2 Specimen Average, Lab Manual 1806, 1820	2360	Contractor performs test 1806 When additional verification samples are taken the contractor must test the Verification companion split of this sample and include the results in the QC program (Test Summary Sheet). REMARKS: (See Notes #1, #2, & #6)	The inspector will witness all QC/QA mixture sampling and take possession of the Department's QA-Verification split of this sample immediately after the sample is split. At least once per day per mix type the Inspector will randomly determine when the QC/QA mixture sample will be sampled from either behind the paver or from the truck box. The Inspector will observe the Contractor sampling and splitting this QA-Verification sample and take immediate possession of the sample after it is split. At the end of the day randomly submit one of the QA-Verification splits to the District Lab for testing. Additional verification samples can be taken at any time or location. REMARKS: (See Notes #3 & #7)	TSS
2360	Mixture Properties (QC/QA, Verification*) Adjusted Asphalt Film Thickness (AFT), Air Voids, Fines to effective, CAA, FAA and Gradation. Lab Manual 1203, 1206, 1214, 1808, 1854	2360	Verification Companion testing from Department split sample is required and used as a QC sample once per day. Bituminous mixes composed entirely of Class A and/or Class B aggregates are not required to be tested for CAA (Coarse Aggregate Angularity). When additional verification samples are taken the contractor must test the Verification companion split of this sample and include the results in the QC program (Test Summary Sheet). REMARKS: (See Notes #1, #2, #4, #5, & #6) The production start-up testing rates for the CAA and FAA are 1 per 1000 tons for the first 2000 tons. After 2000 tons, 2 test per day for at least two days. Then CAA and FAA at a rate of 1 test per week, if the CAA and FAA exceed the requirements by 8% and 5% respectively, otherwise test daily.	The inspector will witness all QC/QA mixture sampling and take possession of the Department's QA split of this sample immediately after the sample is split. At least 1 per day per mix type the Inspector will randomly determine when mix will be sampled from behind the paver or from the truck box. The Inspector will observe the Contractor sampling and splitting this Verification Sample and take immediate possession of the sample after it is split. This Department sample is then submitted to the District Lab for testing. The contractor must test the Verification companion split of this sample and include the results in the QC program (Test Summary Sheet). The verification sample replaces the next scheduled QC sample. Additional verification samples can be taken at any time or location. REMARKS: (See Notes # 3 & #7)	TSS

II. Bituminous Construction Items for Specification 2360 (cont.)

Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Department Testing	Form No.
2360	Core Density and Thickness Lab manual 1810	2360	<p>Contractor cuts 2 cores at each location. In the laboratory, measure, and saw cores into separate lifts. Sawing of cores into separate lifts is required.</p> <p>Schedule the approximate time of testing during normal project work hours so the Department may observe and record the saturated surface dry and immersed weight of the cores.</p> <p>A completed Core Density Incentive/Disincentive worksheet is to be submitted to the Laboratory (Department field or District/Division).</p>	<p>Complete core stationing spreadsheet to determine core locations and then mark all coring locations on the pavement.</p> <p>Once the Contractor has measured and sawed the Department companion cores the Department will transport their cores to the Department field lab or District Lab for testing. Transport the cores as soon as possible to the testing lab taking care to prevent damage due to improper handling or exposure to heat.</p> <p>Selects at least one of the two companion cores per lot to test for verification.</p> <p>REMARKS: (See Notes #3 & #6)</p>	<p>Core Density Worksheet</p> <p>Core Density Incentive/Disincentive worksheet.</p>
2360	Tensile Strength Ratio (T.S.R.) (QC/QA) Lab Manual 1813813	2360	Sample as directed by the Engineer. When testing is required, complete testing within 72 hours after the sample is taken.	Test as directed by the Engineer. When testing is required, complete testing within 72 hours after the sample is taken.	TSR Worksheet
2360	Mixture Moisture Content	2360	Sample as directed by the Engineer.	Test as directed by the Engineer.	Lab Report

II. Bituminous Construction Items for Specification 2360 (cont.)**C. BITUMINOUS MATERIALS for Specification 2360**

Only Bituminous Materials from Certified Sources are allowed for use. The most current list of Certified Sources: <http://www.dot.state.mn.us/products/index.html>

Minimum Sample Sizes:**Quality Sample Size for Lab Submittal:**

Asphalt Binder (QA)/Cutback Asphalt (QA)

1 quart metal can with pressure fit lid

Emulsified Asphalt (QA)

1/2 gallon plastic

Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Department Testing	Form No.
2360	Asphalt Binder (QA only)	3151.2	<p><u>Asphalt Supplier</u> QC testing is the responsibility of the bituminous material supplier as part of the Combined State Binder Certification program at the rate specified in https://engineering.purdue.edu/~csbg/method.html.</p> <p><u>During Asphalt Mixture Production (Field Verification Sample)</u> Obtain asphalt binder samples from a sampling valve located between the pump and the drum. Contractor personnel will obtain samples, under the observation of a Department representative, by random selection from shipments of material at the project site. The samples shall be taken from the first load and subsequently 1 per 1000 tons of liquid asphalt binder for each supplier and grade of asphalt binder per contract. For contracts with less than approximately 25 tons (one truck transport) of asphalt binder, sampling may be waived. A minimum of 1 gallon of binder must be drawn and wasted from the sampling valve before the actual sample is drawn.</p> <p>For batch plants, obtain the asphalt binder sample from the weigh pod. Provide asphalt binder sample in clean 1-quart steel container. The Inspector will monitor the sampling the Contractor performs.</p>	<p><u>During Asphalt Mixture Production (Field Verification Sample)</u> Observe contractor personnel taking sample from sampling valve and submit to MnDOT Chemical Lab.</p>	2413 Asphalt Sample Identification Card
2357	Emulsified Asphalt (QA only)	3151.2	<p><u>Tack Coat</u> Obtain emulsion samples from the spigot or sampling valve of the distributor for the first load placed on the project then sample 1 per 50,000 gallons. Contractor personnel will obtain samples under the observation of a Department representative. Sample emulsified asphalt in clean 1/2 gallon plastic container with wide screw top. Sample all emulsified asphalt from the distributor.</p>	<p><u>Tack Coat</u> Observe Contractor personnel taking sample from the spigot or sampling valve of the distributor and submit to MnDOT Chemical Lab within 7 calendar days of sampling.</p>	2413 Asphalt Sample Identification Card

II. Bituminous Construction Items for Specification 2360 (cont.)

Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Department Testing	Form No.
2357 2358	Cutback Asphalt (QA only)	3151.2	<u>Tack Coat</u> Obtain emulsion samples from the spigot or sampling valve of the distributor for the first load placed on the project then sample 1 per 50,000 gallons. Contractor personnel will obtain samples under the observation of a Department representative. Sample emulsified asphalt in clean 1/2 gallon plastic container with wide screw top. Sample all emulsified asphalt from the distributor.	<u>Tack Coat</u> Observe Contractor personnel taking sample from the spigot or sampling valve of the distributor and submit to MnDOT Chemical Lab within 7 calendar days of sampling.	2413 Asphalt Sample Identification Card

Note #1: All QA test samples shall be from split samples.

If a member of the monitoring team observes the Contractor Test, note and sign under remarks.

The Project Engineer is responsible for:

- 1.) Reviewing control charts & Test summary sheets for accuracy and completeness,
- 2.) Checking sampling and testing procedures,
- 3.) Discussing QC problems with the Contractor,
- 4.) Obtaining Verification Samples

Note #2: For Mixture Quality Management, acceptance will be based on Contractor's test results as verified by Department test results.

Note #3: When a member of a monitoring team observes the Contractor test, note and sign under remarks.

Note #4:

How to calculate the number of tests per day	Production Start-up testing rates (first 2000 tons of production)	Production testing rates (after 2,000 tons of mixture produced)
Divide daily tonnage by 500 and round up to next whole number	1 per 500 tons	
Divide daily tonnage by 1000 and round up to next whole number		1 per 1000 tons

Note #5: MnDOT projects will require the calculated Adjusted Asphalt Film Thickness (AFT). VMA will still be calculated for informational purposes but will not be used for acceptance criteria. The adjusted AFT will be calculated each time a gradation test is required.

Note #6: Random number generation and determination of random sample location shall be consistent with Section 5 of ASTM D3665. The Engineer may approve alternate methods of random number generation.

Note #7: QA samples retained for 10 calendar days and tested, if needed.

III. Construction Items for Bituminous Specialty Items include the following:

- 2353 Ultra-Thin Bonded Wearing Course (UTBWC)
- 2354 Micro-Surfacing
- 2355 Bituminous Fog Seal
- 2356 Otta Seal Special Provision
- 2356 Bituminous Seal Coat and Bituminous Underseal Special Provision
- 2363 Permeable Asphalt Stabilized Stress Relief Course (PASSRC) and Permeable Asphalt Stabilized Base (PASB)
- 2365 Stone Matrix Asphalt (SMA)

All aggregates and mixtures will be split according to G&B Manual 5-692.141, "Quartering Method of Sample Size Reduction"

Only Bituminous Materials from Certified Sources are allowed for use. The most current list of Certified Sources:

<http://www.dot.state.mn.us/products/index.html>

SAMPLE TYPE	DESCRIPTION	SAMPLE LOCATION DETERMINED BY	SAMPLE TAKEN BY	SAMPLE TESTED BY
QC	Quality Control Testing performed by Contractor. Also known as Process Control Testing.	Contractor	Contractor	Contractor
QA	Quality Assurance Testing performed by the Department. This test is performed on a companion sample to the Contractor's QC sample.	Contractor (mixture) Department (density cores)	Contractor	Department
Verification	A sample to assure compliance of the Contractor's Quality Control program. The results shall be included as part of the QA Testing Program.	Department	Department	Department
Verification Companion	A companion sample to the Department's Verification sample provided to the Contractor. The Contractor <u>is required</u> to test this sample. The results <u>shall be used</u> as part of the QC program.	Department	Department	Contractor
IAST	The Independent Assurance Sampling and Testing assures testers are sampling and testing properly and that equipment is calibrated correctly.	Department	Contractor or Department	Contractor or Department

III. Construction Items for Bituminous Specialty Items (cont.)**2353 Ultra-Thin Bonded Wearing Course**

Test Type	Material Spec. No.	Minimum Contractor Quality Control Testing Rate Minimum Sample Size	Minimum Department QA/Verification (Acceptance)	Form No.
Mix Design (Pre-Production)	2353 3139.4	Complete and submit 1 design per mix	Review submitted Mix Design	Reviewed Mix Design Report
Bituminous Mixture Tests Lab Manual 1203, 1807, 1852, 1853, 1854	2353 3139.4	Tests: % AC, Gradation, Max Gravity, Adjusted AFT Rate: 1 per 750 tons (min. 1 per day) (See Note 1) Submit to Department: 20 lbs. (1 cylinder from truck box)	1 per day, minimum	Test Summary Sheet
Bituminous Material	2353 3151	QC testing is the responsibility of the bituminous material supplier	The Department will observe Contractor personnel taking sample from sampling valve and MnDOT will submit to Chemical Lab Asphalt Binder: First load, then 1 per 250,000 gallons Sample Size: 1 quart Emulsified Asphalt: First load, then 1 per 50,000 gallons Sample Size: 1/2 gallon*	Test Report

*Use plastic containers for Emulsified Asphalt Samples. Send to MnDOT Chemical Lab within 7 calendar days of sampling.

Note 1: TSR testing on production mixture is at the discretion of the Engineer.

III. Construction Items for Bituminous Specialty Items (cont.)**2354 Micro Surfacing**

Test Type	Material Spec. No.	Minimum Contractor Quality Control Testing Rate Minimum Sample Size	Minimum Department QA/Verification (Acceptance)	Form No.
Mix Design (Pre-Production)	2354 3139.5	Complete 1 mix design per aggregate source. See specification. Submit to Department: 150 lbs. aggregate	Review submitted Mix Design. Perform gradation and sand equivalence test from submitted sample.	
Gradation Lab Manual 1202, 1203	3139.5	Machine Hopper: 1 per 500 tons (min. 1 per day)	Machine Hopper: 1 per 1,500 tons (min. 1 per project) Sample Size: 30 lbs.	Test Report
Moisture (In Aggregate) Grading & Base Manual, 5-692.245.B	2354	Machine Hopper: 1 per 300 tons (min. 1 per day) Sample Size: 1 lb.	1 per day Sample Size: 1 lb. split sample	Test Report
Sand Equivalence AASHTO T 176	3139.5	1 per day		Test Report
Bituminous Material	2354 3151	QC testing is the responsibility of the bituminous material supplier	First load, then 1 per 50,000 gallons, Sample Size: 1/2 gallon*	Test Report
Bituminous Material Application Rate	2354	Verify Application rate 3 per day	Verify Application rate 1 per day	

*Use plastic containers for Emulsified Asphalt Samples. Send to MnDOT Chemical Lab within 7 calendar days of sampling.

III. Construction Items for Bituminous Specialty Items (cont.)**2355 Bituminous Fog Seal and 2357 Bituminous Tack Coat**

Test type	Material Spec. No.	Minimum Contractor Quality Control Testing Rate Minimum Sample Size	Minimum Department QA/Verification (Acceptance)	Form
Bituminous Material	3151	QC testing is the responsibility of the bituminous material supplier.	First load, then 1 per 50,000 gallons Sample Size: 1/2 gallon*	Test Report
Bituminous Material Application Rate	2355 2357	Verify Application rate As needed for tack coat, 1 per project for fog seal	Verify Application rate As needed for tack coat 1 per project for fog seal	Bituminous Manual Form 21841 or ASTM D2995 Method A

*Use plastic containers for Emulsified Asphalt Samples. Send to MnDOT Chemical Lab within 7 calendar days of sampling.

2356 Otta Seal Special Provision

Test Type	Material Spec. No.	Minimum Contractor Quality Control Testing Rate Minimum Sample Size	Minimum Department QA/Verification (Acceptance)	Form No.
Gradation Lab Manual 1202, 1203	2356	Stockpile: 1 per 1,500 tons (min. 1 per day) Placement: Chip Spreader Hopper: As needed Submit to Department: 30 lbs. from Hopper	As needed	Test Report
Bituminous Material	2356 3151	QC testing is the responsibility of the bituminous material supplier. Random sampling is arranged by the MnDOT Chemical Laboratory.	First load, then 1 per 50,000 gallons Sample Size: 1/2 gallon*	Test Report
Bituminous Material Application Rate	2356	Verify Application rate As needed	Verify Application rate As needed	Bituminous Manual Form 21841 or ASTM D2995 Method A

*Use plastic containers for Emulsified Asphalt Samples. Send to MnDOT Chemical Lab within 7 calendar days of sampling.

III. Construction Items for Bituminous Specialty Items (cont.)**2356 Bituminous Seal Coat and Bituminous Underseal Special Provisions**

Test type	Material Spec. No.	Minimum Contractor Quality Control Testing Rate Minimum Sample Size	Minimum Department QA/Verification (Acceptance)	Form
Mix Design (Pre-Production)	2354	At least two weeks before beginning construction complete 1 design per mix and provide information to Engineer. Submit to Department: 150 lbs. aggregate	Review and verify submitted Mix Design.	
Gradation Lab Manual 1203	3127	Placement: Chip Spreader Hopper: As needed	Placement: 1 per material source obtained from Chip Spreader Hopper, Sample Size: 30 lbs.	Test Report
Quality Tests Lab Manual 1223	2356	None	Perform daily quality tests per Table 3127.2-2, as needed, Sample Size: 30 lbs.	Test Report
Bituminous Material	2356 3151	QC testing is the responsibility of the bituminous material supplier	First load, then 1 per 50,000 gallons Sample Size: 1/2 gallon*	Test Report
Bituminous Material Application Rate	2356	Verify Application rate As needed	Verify Application rate As needed	Bituminous Manual Form 21841 or ASTM D2995 Method A

*Use plastic containers for Emulsified Asphalt Samples. Send to MnDOT Chemical Lab within 7 calendar days of sampling.

III. Construction Items for Bituminous Specialty Items (cont.)**2363 Permeable Asphalt Stabilized Stress Relief Course (PASSRC) and Permeable Asphalt Stabilized Base (PASB)**

Test type	Material Spec. No.	Minimum Contractor Quality Control Testing Rate Minimum Sample Size	Minimum Department QA/Verification (Acceptance)	Form
Mix Design (Pre-Production)	2363 3139.3	Complete 1 Job Mix Formula (gradation blend only) per mix Submit to Department: 100 lbs. each coarse aggregate, 35 lbs. each fine aggregate & 4-quart asphalt binder	Department performs Mix Design	Mix Design Report
Production Gradation Lab manual 1202, 1203	2363 3139.3	1 per 1,000 ton with a minimum of one per day Submit to Department: 35 lbs. (See Note 1)	1 per day	Test Report
Production % Crushing (CAA) Lab manual 1214	2363 3139.3	One per 1,000 ton with a minimum of one per day Submit to Department: 35 lbs. from Belt	1 per day	Test Report
Bituminous Mixture Tests Bit Manual	2363 3151	Test: Asphalt spot check Rate: minimum 1 per day	None	Test Report
Bituminous Material	3151	QC testing is the responsibility of the bituminous material supplier.	Observe contractor personnel taking sample and submit to MnDOT Chemical Lab. First load, then 1 per 250,000 gallons Sample Size: 1 quart	Test Report

Note 1: Perform test on gradation sample taken from aggregate belt

III. Construction Items for Bituminous Specialty Items (cont.)**2365 Stone Matrix Asphalt (SMA)**

Test type	Material Spec. No.	Minimum Contractor Quality Control Testing Rate Minimum Sample Size	Minimum Department QA/Verification (Acceptance)	Form
Mix Design (Pre-Production)	2365	Complete 1 design per mix Submit to Department: 80 lb. - bituminous mixture plus 6 Gyratory specimens for TSR testing. 150 lbs. + 4 aggregate from JMF blend for VCA 80 lbs. each coarse aggregate & 30 lbs. each fine aggregate for quality testing	Review and verify submitted Mix Design Test as directed by the Engineer	Approved Mix Design Report
Bituminous Mixture Tests Lab Manual 1203, 1204, 1205, 1211, 1214, 1806, 1807, 1808, 1813, 1853, 1854, 1855, AI SP-2 AASHTO T 305	2365	Tests: % AC, Gradation, Max Gravity, Bulk Gravity, Voids, VMA, CAA, Draindown, voids in coarse aggregate (VCA) fines/effective asphalt. Rate: 1 per 1000 tons (min. 1 per day) Aggregate sp. Gravity, mix moisture content to be tested as directed by the Engineer (See Note 1) Submit companion 1 per day to Department: Sample Size: 65 lbs. 3 full 6" by 12" cylinder molds	Tests: %AC, Gradation, Max Gravity, Bulk Gravity, Voids, VMA, CAA, voids in coarse aggregate (VCA) fines/effective asphalt. (See Notes 1 & 2)	Test Summary Sheet
Bituminous Material	2365 3151	QC testing is the responsibility of the bituminous material supplier.	Observe contractor personnel taking sample and submit to MnDOT Chemical Lab. First load, then 1 per 250,000 gallons Sample Size: 1 quart	Test Report

Note 1: TSR testing on production mixture is at the discretion of the Engineer.

Note 2: Department is not required to perform draindown testing on QA/Verification samples.

IV. Concrete Construction Items (www.dot.state.mn.us/materials/concrete.html)

General Notes:

1. The testing rates shown in this Schedule of Materials Control are **minimums**. Take as many tests as necessary to ensure quality concrete. Should circumstances arise on a project which makes the testing rate impractical, contact the Concrete Engineering Unit.
2. **All samples shall be taken in a random manner.**
3. The first load of concrete each day per mix – Take sample after discharging approximately $\frac{1}{4}$ yd³, stop further discharge until both slump and air content test are completed with passing results.
4. If batching or field adjustments are made, test the adjusted load for air content and if suspect, slump, before it gets into the work. The Engineer will determine if additional testing is required after each water adjustment made during slipform placement. Continue to test for air content and slump, if suspect, when test results are inconsistent or marginal.
5. If any field test fails, reject the concrete or if the Producer adjusts the load to meet requirements, record the adjustments on the Certificate of Compliance. Retest the air content of the load, slump if required, and record the adjusted test results. Test the next load for air content and slump, if required, before it gets into the work.
6. Material not meeting requirements shall not knowingly be placed in the work. If failing concrete inadvertently gets placed in the work, review either the MnDOT Standard Specifications for Construction or contact the Concrete Engineering Unit for monetary deduction recommendations.
7. Perform quality testing as directed by the Concrete Engineer. Conduct additional random samples for aggregate quality as directed by the Engineer.

Best Practices:

1. It is recommended the Department Plant Monitor be present during critical pours, such as superstructure or paving concrete (i.e. S mixes, HPC, JMF mixes).
2. It is recommended that the Department representative continually monitor the progress of all concrete pours in the field and review Certificate of Compliances. It is not a recommended practice to only perform minimum testing requirements and leave the pour.

DEFINITIONS				
	Description	Sample Location Determined By	Sample Taken By	Sample Tested By
QC	Quality Control Testing performed by Contractor. Also known as Process Control Testing.	Contractor	Contractor	Contractor
QA	Quality Assurance Testing performed by the Department. This test is performed on a companion sample to the Contractor's QC sample.	Contractor	Contractor	Department
Verification	A sample to assure compliance of the Contractor's Quality Control program. The results shall be included as part of the QA Testing Program.	Department	Department	Department
Verification Companion	A companion sample to the Department's Verification sample provided to the Contractor. The Contractor <u>is required</u> to test this sample.	Department	Department	Contractor
IAST	The Independent Assurance Sampling and Testing assures testers are sampling and testing properly and that equipment is calibrated correctly.	Department	Contractor or Department	Contractor or Department

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)**Concrete Plant Batching Materials****Remarks:**

- (1) All materials must come from certified or qualified sources. All certified sources must state so on the delivery invoice.
- (2) The most current list of certified/approved sources can be found at www.dot.state.mn.us/products.
- (3) The Sample Log sheets are found in the Aggregate Gradation Control Charts Workbook.
- (4) Take additional random samples as directed by the Concrete Engineer.

Pay Item No.	Material	Spec. No.	Sample Size	Minimum Required Sampling Rate for Department Testing	Form No.
2301 2302 2401 2405 2406 2411 2412 2452 2461 2462 2506 2511 2514	Portland Cement Slag Cement Blended Cement Fly Ash	3101 3102 3103 3115	5 lb.	<u>Certified ready-mix and concrete paving:</u> 1 per certified source when the plant is certified. Take an additional sample: 1) If the plant changes sources, or 2) As the Contract requires. <u>For precast concrete:</u> 1 per 3 months during Department production. The Producer obtains and stores the sample in a sealed container provided by the Department and includes the supplier's delivery invoice from which the sample is obtained.	24300 ID Card Cement Samples 24308 ID Card Fly Ash Samples Sample Log
2519 2521 2531 2533 2545 2550 2554 2557 2564 2565	Admixtures (Accelerating, Retarding, Water- Reducing, Air- Entraining, etc.)	3113	1/2 pt	<u>Certified ready-mix and concrete paving:</u> Air Entrainment: 1 when the plant is certified Type A water reducer: 1 when plant is certified All other admixtures: 1 when plant is certified, or first time used Take an additional sample of any admixtures used: 1) If the plant changes sources, or 2) As the Contract requires. <u>For precast concrete:</u> 1 per 3 months during Department production. The Producer obtains samples from dispensing tubes and store the samples in a sealed plastic containers provided by the Department. Agitate admixtures prior to sampling.	2410 Sample ID Card Sample Log
	Water (Non-Potable or Clarified)	3906	1 gal	<u>Non-Potable Water:</u> 1 per any questionable source. <u>Clarified Water:</u> 1 per month during Department production. Store sample in a clean glass or plastic container	2410 Sample ID Card

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)**Minimum Concrete Aggregate Sample Sizes****Remarks:**

(1) All gradation and aggregate quality tests require companion samples, double sample sizes. Samples taken at location identified on Contact Report located at plant.

Gradation: <u>Coarse Aggregate:</u> 3/4" Plus: 30 lb. 3/4" Minus, #67: 10 lb. #7, CA-70: 6 lb. #89, CA-80: 500 g	Gradation: <u>Intermediate Aggregate:</u> CIA to meet #67: 6 lb. CIA to meet JMF: 500 g FIA, CS, FS: 500 g	Gradation: <u>Fine Aggregate:</u> Sand: 500 g	Moisture: Coarse Aggregate: 2000 g Intermediate Aggregate: 500 g Fine Aggregate: 500 g	Aggregate Quality: 3/4" Plus: 50 lb. 3/4" Minus, #67: 30 lb. #7, CA-70: 20 lb. #89, CA-80: 20 lb. CIA, FIA, CS, FS: 20 lb. Fine Aggregate: 20 lb.	-#200 Coarse Aggregate: 3/4" Plus: 5000 g 3/4" Minus, #67: 2500 g #7, CA-70: 2500 g #89, CA-80: 500 g CIA: 500 g
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Certified Ready-Mix - Concrete Plant Production**Remarks:**

(1) When <20 yd³ of Department concrete is produced in a week, plant monitoring is not required except for monthly aggregate quality testing.

Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Department Testing	Form No.
2301 2302 2401 2405 2406 2411 2452 2461 2462 2506 2511 2514 2519 2521 2531 2533 2545 2550 2554 2557 2564 2565	Gradation (QC/QA)	2461 3126 3131 3137	<u>JMFs and Bridge Deck Mix Designs:</u> Daily Concrete Quantity: 20 – 400 <u>yd</u> ³ : 1 per fraction per source >400 <u>yd</u> ³ : 1 additional per fraction per source Take the additional gradation after <u>daily</u> total exceeds 400 <u>yd</u> ³ . Passing aggregate gradations are required prior to the start of any bridge deck concrete pours. If using the same source and fraction, Producer may use daily QC gradation results to satisfy weekly QC gradation requirements. Record test results in both sections of QC Workbook. <u>All other mix designs:</u> Weekly Concrete Quantity: 20 – 400 <u>yd</u> ³ : 1 per fraction per source >400 <u>yd</u> ³ : 1 additional per fraction per source Take the additional gradation after <u>weekly</u> total exceeds 400 <u>yd</u> ³ . <u>Notes:</u> Washing the fine aggregate gradation (QC) sample is not required when the result on the -#200 sieve of the unwashed sample is less than 1.0%. Hold QA (QC companion) samples until they are picked up by the Department monitor. Discard after 14 calendar days. Performing testing on representative material at the end of the most recent day of production is allowed.	None	Concrete Ready-Mix Plant QC Workbook Aggregate Gradation Control Charts and Sample Log

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Certified Ready-Mix - Concrete Plant Production (cont.)					
Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Department Testing	Form No.
2301 2302 2401 2405 2406 2411 2452 2461 2462 2506 2511 2514	Gradation (Verification/ Verification Companion)	2461 3126 3131 3137	Test the Verification Companion sample. Complete on the day the sample was taken. Wash all fine aggregate Verification Companion samples.	Weekly Concrete Quantity: 20 – 400 yd³: 1 per fraction per source >400 yd³: 1 additional per fraction per source Take the additional gradation after <u>weekly</u> total exceeds 400 yd³. Include JMF Number and Verification Companion results on Sample ID Card. Wash all fine aggregate Verification samples.	Concrete Ready-Mix Plant QC Workbook Concrete Ready-Mix Plant QA Workbook Aggregate Gradation Control Charts and Sample Log
2519 2521 2531 2533 2545 2550 2554 2557 2564 2565	Aggregate Quality <u>including</u> Coarse Aggregate Percent Passing - #200	3126 3131 3137	Test at Producer/Contractor Discretion	<u>When Department concrete is produced:</u> 1 per fraction per source per 30 calendar days. <u>When bridge deck concrete is produced:</u> 1 per fraction per source per 30 calendar days tested for 3137.2.D.2 Identify quality samples with a “Q” on the Sample ID Card and the Quality companion sample. Write 3137.2.D.2 on bridge deck concrete Sample ID Cards.	2410 Sample ID Card
	Aggregate Moisture (QC)	2461	Daily Concrete Quantity ≥ 20 yd³: 1 per fraction per source completed every 4 hours and enter results into batching system in real time. Complete the initial moisture content prior to the start of concrete production each day. Performing moisture testing on representative material at the end of plant production the prior day is allowed. In the event of overnight precipitation, new moisture tests are required prior to the start of concrete production. In this event, the four-hour rate will commence with the first pour of the day, regardless if it is placed in Department or private work.	None	Concrete Ready-Mix Plant QC Workbook

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)**Concrete Pavement - Concrete Plant Production****Remarks:**

(1) Use *Certified Ready-Mix - Concrete Plant Production* testing rates when:

- a) The entire concrete paving project is < 3,500 cu. yd, or
- b) Minor work or fill-ins are not provided by the primary plant.

(2) When w/c incentives apply, Contractor QC Technician and Department Plant Monitor are required to be present during the entire pour or at the Engineer's discretion.

(3) If w/c incentives do not apply, the Department Plant Monitor shall monitor as necessary to ensure compliance with the requirements of the Contract.

(4) All samples shall be taken off the belt leading to the weigh hopper unless otherwise approved by the Engineer.

Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Department Testing	Form No.
2301	Gradation (QC)	3126 3131 3137	<p><u>Concrete paving batch plant:</u> Daily Concrete Quantity ≥ 250 yd³: 1 per 2500 yd³ per fraction per source</p> <p>Take initial samples for aggregate gradation testing within the first 500 yd³.</p> <p><u>Certified ready-mix plant using JMF:</u> Daily Concrete Quantity: 20 – 400 yd³: 1 per fraction per source >400 yd³: 1 additional per fraction per source</p> <p>Take the additional gradation after <u>daily</u> total exceeds 400 yd³.</p> <p><u>Notes:</u> Washing the fine aggregate gradation (QC) sample is not required when the result on the -#200 sieve of the unwashed sample is less than 1.0%.</p>	None	JMF Concrete Aggregate Workbook 2410 Sample ID Card when samples are submitted to MnDOT Laboratory
2301	Gradation (Verification/ Verification Companion)	3126 3131 3137	<p><u>Concrete paving batch plant:</u> Test the Verification Companion sample. Complete on the day the sample was taken.</p> <p><u>Certified ready-mix plant using JMF:</u> Test the Verification Companion sample. Complete on the day the sample was taken.</p> <p>Wash all fine aggregate Verification Companion samples.</p>	<p><u>Concrete paving batch plant:</u> Daily Concrete Quantity ≥ 500 yd³: 1 per fraction per source</p> <p><u>Certified ready-mix plant using JMF:</u> Daily concrete quantity ≥ 100 yd³: 1 per fraction per source</p> <p>Wash all fine aggregate Verification samples.</p> <p>Include the JMF Number and the QC Verification Companion results on Sample ID Card.</p> <p><u>Note:</u> The Department may use the Verification sample for the Coarse Aggregate Quality incentive/disincentive testing, if applies.</p>	JMF Concrete Aggregate Workbook 2410 Sample ID Card when samples are submitted to MnDOT Laboratory

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Concrete Pavement - Concrete Plant Production (cont.)					
Pay Item No.	Test Type	Spec. No.	Producer/Contract or Testing	Department Testing	Form No.
2301	Coarse Aggregate Percent Passing - #200 (QC/QA)	3131 3137	Test the Verification Companion sample Test these samples at the plant.	<p><u>For a concrete paving batch plant:</u> Test Verification sample on the first day of production and each time the Contractor mobilizes the plant, changes aggregate sources, or the cleanliness of the coarse aggregate is in question. Test 1 Verification sample per week thereafter Test these samples at the plant.</p> <p><u>For a certified ready-mix plant using JMF:</u> Test Verification sample on the first day of production and each time the Contractor mobilizes the plant, changes aggregate sources, or the cleanliness of the coarse aggregate is in question. Test 1 Verification sample per week thereafter Test these samples at the plant or the Department lab.</p>	JMF Concrete Aggregate Workbook
2301	Aggregate Quality Testing including Coarse Aggregate Percent Passing - #200	3126 3131 3137	Test at Producer/Contractor Discretion	<p>Pre-Production Testing for concrete paving batch plants: If entire project < 3,500 yd³: Pre-production sampling is not required</p> <p>If entire project ≥ 3,500 yd³: Obtain pre-production samples for quality testing at least 16 hours prior to concrete production. Samples may be taken from the stockpile and the -#200 test may be performed at the lab instead of at the plant at the discretion of the Engineer.</p> <p>During concrete production for concrete paving batch plants and certified ready-mix using JMF: 1 randomly selected test each fraction every 20,000 yd³ of production.</p> <p>Split the Quality sample 4 ways:</p> <ol style="list-style-type: none"> 1) Provide 2 quarters of the sample to the Producer/Contractor. 2) Submit 1 quarter of the sample to the lab for quality testing including testing on the -#200 sieve. 3) Retain the remaining quarter of the sample until the project is complete. <p>Identify quality samples with a “Q” on the Sample ID Card.</p> <p>See additional requirements for first sand quality sample under ASR Testing.</p>	2410 Sample ID Card

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Concrete Pavement - Concrete Plant Production (cont.)					
Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Department Testing	Form No.
2301	Aggregate Moisture Testing (QC/Verification)	2301	<p>Complete the initial moisture content prior to the start of concrete production each day.</p> <p>Performing moisture testing on representative material at the end of plant production the prior day is allowed. In the event of overnight precipitation, new moisture tests are required prior to the start of concrete production.</p> <p><i>If w/c incentives do not apply:</i> <u>For a concrete paving batch plant:</u> 1 per 1000 yd³ per fraction per source or completed every 4 hours, whichever results in the higher sampling rate.</p> <p><u>For a certified ready-mix plant using JMF:</u> 1 per fraction per source completed every 4 hours.</p> <p>Enter results into batching system in real time.</p>	<p><i>If w/c incentives apply:</i> <u>For a concrete paving batch plant:</u> 1 per 1000 yd³ or completed every 4 hours, whichever results in the higher sampling rate. Take initial samples for aggregate moisture testing within the first 250 yd³.</p> <p><u>For a certified ready-mix plant using JMF:</u> 1 per 200 yd³ or completed every 4 hours, whichever results in the higher sampling rate. Take initial samples for aggregate moisture testing within the first 100 yd³.</p> <p>Use aggregate moisture results for determining the water content to calculate the w/c ratio incentive/disincentive.</p> <p>Do not leave samples unattended.</p> <p>Enter results into batching system in real time.</p>	W/C Ratio Calculation Workbook
	Water Content Verification Testing (Microwave or Phoenix Oven Verification)	2301	Obtain the plastic concrete sample at the plant.	<p><i>If w/c incentives apply:</i> Microwave or Phoenix oven verification testing to verify the w/c ratio is completed in conjunction with Department aggregate moisture testing.</p> <p><u>For a concrete paving batch plant:</u> Take initial verification test within the first 250 yd³. At least one additional verification test should be taken if more than 1,000 yd³ is produced in a day.</p> <p><u>For a certified ready-mix plant:</u> Take initial verification test within the first 100 yd³. At least one additional verification test should be taken if more than 400 yd³ is produced in a day.</p>	
	Unit Weight (QC)		Test 1 load of concrete per day at the plant.	None	
	Air Content for Type 3 Concrete (QC)	2301 2461	Test the first load of concrete at the plant.	None	

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Concrete Pavement - Concrete Plant Production (cont.)						
Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Department Testing	Form No.	
2301	Coarse Aggregate Quality Testing for Incentive/Disincentive	3137	Test at Contractor’s discretion	If coarse aggregate quality incentives apply: Test the Class B aggregates for % absorption and Class C aggregates for % carbonate including any other tests necessary to make those determinations. Sample the 2 largest fractions in accordance with the following table and 2301:	2410 Sample ID Card Coarse Aggregate Quality Incentive/Disincentive Workbook	
				Coarse Aggregate Quality Incentive/Disincentive Sampling Rates		
				Plan Concrete yd³		Samples per fraction (n)
				3,500 – 7,500		3
				7,501 – 10,000		5
				10,001 – 25,000		10
				25,001 – 50,000		15
				> 50,000		20
				Identify incentive samples on the Sample ID Card with “I/D”		
				<u>Note:</u> The Verification Gradation sample may be used for the Coarse Aggregate Quality incentive/disincentive testing.		
2301	Alkali Silica Reactivity (ASR)	2301	None	<u>ASR</u> Testing is not required if the entire project is <3,500 cu. yd.	2410 Sample ID Card 24300 ID Card Cement Samples 24308 ID Card Fly Ash Samples	
				1 per paving project per sand source		
				Provide the following samples: 1) 5 lb. of cement 2) 5 lb. of supplementary cementitious material (fly ash or slag), and 3) 10 lb. of sand.		
				Write “Project Specific ASR Testing” on all 3 Sample ID cards.		
				Write “Verification” on the Sample ID cards if the cement and supplementary cementitious samples are also used for verification testing.		

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Concrete Plant Production - Bagged Portland Cement Concrete Patching Mix (3U18 and 3U58M)					
Remarks: (1) Mix design is provided by MnDOT unless otherwise specified in the Contract.					
Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Department Testing	Form No.
2302 2401	Cement	3101 3103	None	1 per certified source when the plant is certified. Take an additional sample: 1) If the plant changes sources, or 2) As the Contract requires. The Producer obtains and stores the sample in a sealed container provided by the Department and includes the supplier's delivery invoice from which the sample is obtained.	
2302 2401	Gradation (QC/QA)	2461 3105 3126 3131 3137	Prior to production: 1 per day per fraction per source Washing the fine aggregate gradation (QC) sample is not required when the result on the -#200 sieve of the unwashed sample is less than 1.0%, Hold QA (QC companion) samples until they are picked up by the Department monitor. Discard after 14 calendar days.	None	3U18 and 3U58M Quality Control Worksheet 2410 Sample ID Card
	Gradation Testing (Verification/ Verification Companion)	2461 3105 3126 3131 3137	Test the Verification Companion sample. Complete on the day the sample was taken. Wash all fine aggregate Verification Companion samples.	1 per fraction per source per month Include verification companion results on Sample ID Card.	
	Aggregate Moisture Testing (QC)	2461	Complete the initial moisture content prior to the start of concrete bagging each day.	None	

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Concrete Field Materials (Refer to Metallic Materials and Metal Products for sampling requirements for concrete reinforcement.)					
Pay Item No.	Material	Spec. No.	Sample Size	Minimum Required Field Sampling Rate	Form No.
2301 2302 2401 2406 2411 2514 2521 2531	Preformed Joint Filler	3702	2 ft ²	Visual Inspection Use only preformed joint filler materials from approved sources are allowed. The most current lists can be found at www.dot.state.mn.us/products .	2410 Sample ID Card
2301 2302 2401 2406	Preformed Elastomeric Type	3721	6 ft.	1 per lot source per project	
	Silicone Joint Sealer	3722	1 pt.	1 per source per project	
	Hot Poured Elastomeric Type	3725	1/2 gal.	Only joint materials from qualified sources are allowed. The most current lists can be found at www.dot.state.mn.us/products . Take samples from application wand. Store sample in one gallon steel container or silicone lined sample box.	
2301 2302 2401 2406 2411 2514 2519 2520 2521 2531 2533 2545 2550 2554 2557 2564 2565	Burlap	3751	1 yd ²	Visual Inspection Must be free from holes.	
	Colored Concrete Membrane Curing Compound	3752		Visual Inspection Only curing compound for colored concrete from approved sources is allowed. Refer to the approved products list of curing compounds for approved manufacturers www.dot.state.mn.us/products .	
	Membrane Curing Compound	3753 3754 3755	1 qt.	Visual Inspection Use only Pre-Approved Curing Compounds. Refer to the approved products list of curing compounds for pre-approved lots at http://www.dot.state.mn.us/products/concrete/curingcompounds.html If sampling is required, materials must be thoroughly stirred or agitated immediately prior to taking sample. Store sample in steel container and cover immediately.	
	Plastic	3756		Visual Inspection Must be white opaque and free from holes.	

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)**Concrete Field Testing –Ready-mix Concrete Grades F, G, M, P, R, Grout, and Lean Mix Backfill****Remarks for Air, Slump, Temperature and Cylinder Testing:**

- (1) Take all field samples at the point of placement unless otherwise allowed by the Engineer.
- (2) First load each day per mix - Take sample after discharging approximately 1/4 yd³, stop further discharge until both slump and air content test are completed.
- (3) Subsequent tests - Sample from the middle portion of the load.
- (4) If batching or field adjustments are made, test the adjusted load for air content and if suspect, slump, before it gets into the work.
- (5) It is recommended to make standard strength cylinders **after** the first load of concrete unless that is the only load of concrete for that mix that day.
- (6) MnDOT standard cylinder mold size is 4 x 8 inch. If aggregate has a maximum size greater than 1-1/4 inch, use 6 x 12 inch molds.

Pay Item No.	Test Type	Spec. No.	Contractor Testing	Department Testing	Form No.
2302 2452 2461 2506 2511 2514 2515 2520 2521 2531 2533 2545 2550 2554 2557 2564 2565	Air Content for Type 3 Concrete (Verification)	2461	None	1 per 100 yd ³ Test first load each day per mix	2409 ID Card Concrete Test Cylinder When submitting samples, record all field test results and Batch Ticket Number on the Cylinder ID Card.
	Slump (Verification)	2461	None	Test slump if concrete is suspected to be outside of required slump range	
	Ambient air and Concrete Temperature	2461	Record temperatures each time air content, slump, or strength test specimen is performed/fabricated.	Record temperatures each time air content, slump, or strength test specimen is performed/fabricated.	
	Compressive Strength (Verification)	2461	Any additional field control cylinders are the responsibility of the Contractor. Provide moist curing environments for initial and intermediate curing of all cylinders.	1 set of 3 (28-day) cylinders per 300 yd ³ per mix per day MnDOT will cast up to three (3) field control cylinders.	

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)**Concrete Field Testing – Ready-mix Bridge Concrete Grades B, S, X, Y, HPC, SCC, and Mass Concrete (MC)****Remarks for Air, Slump, Temperature and Cylinder Testing:**

- (1) Take all field samples at the point of placement unless otherwise allowed by the Engineer.
- (2) First load each day per mix - Take sample after discharging approximately ¼ yd³, stop further discharge until both slump and air content test are completed.
- (3) Subsequent tests - Sample from the middle portion of the load.
- (4) If batching or field adjustments are made, test the adjusted load for air content and if suspect, slump, before it gets into the work.
- (5) It is recommended to make standard strength cylinders **after** the first load of concrete unless that is the only load of concrete for that mix that day.
- (6) MnDOT standard cylinder mold size is 4 x 8 inch. If aggregate has a maximum size greater than 1-1/4 inch, use 6 x 12-inch molds.

Pay Item No.	Test Type	Spec. No.	Contractor Testing	Department Testing	Form No.
2401 2406 2411 2461 2506	Air Content for Type 3 Concrete (Verification)	2401 2461	None	1 per 100 yd³ Test first load each day per mix	2409 ID Card Concrete Test Cylinder When submitting samples, record all field test results and Batch Ticket Number on the Cylinder ID Card.
	Slump or Spread (SCC) (Verification)	2401 2461 SCC Special Provision	None	1 per 100 yd³ Test first load each day per mix Test slump if concrete is suspected to be outside of required slump range	
	Ambient air and Concrete Temperature	2401 2461	Record temperatures each time air content, slump, or strength test specimen is performed/fabricated.	Record temperatures each time air content, slump, or strength test specimen is performed/fabricated.	
	Compressive Strength (Verification)	2401 2461	Any additional field control cylinders are the responsibility of the Contractor. MnDOT standard cylinder mold size is 4 x 8 inch. If aggregate has a maximum size greater than 1-1/4 inch, use 6 x 12 inch molds. Provide moist curing environments for initial and intermediate curing of all cylinders.	1 set of 3 (28-day) cylinders for 100 yd³, then 1 set of 3 (28-day) cylinders per 300 yd³ thereafter per mix per day <u>For Grades HPC, SCC, and MC:</u> 1 set of 3 (56-day) cylinders per day MnDOT will cast up to three (3) field control cylinders.	

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Concrete Field Testing – Cellular Concrete					
Pay Item No.	Test Type	Spec. No.	Contractor Testing	Department Testing	Form No.
2519	Density (QC)	2519	1 per hour at the point of placement Perform in accordance with ASTM C796	Observe Contractor testing when possible	Cellular Concrete Density Worksheet
2519	Compressive Strength (QC/Verification)	2461 2519	1 set of 4 cylinders at the point of placement per 300 yd ³ per day Cast 3 x 6 cylinders in accordance with ASTM C495. Field cure in accordance with 2461.3G5.b.	Transport cylinders to the MnDOT Office of Materials and Road Research for testing. MnDOT will break 4 cylinders at 28-days in accordance with ASTM C495 (do not oven dry before testing).	2409 ID Card Concrete Test Cylinder

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)**Concrete Field Testing – Concrete Pavement****Remarks for Air Content Before Consolidation, Slump, Temperature and Strength Testing:**

- (1) Take samples prior to spreading
- (2) If batching or field adjustments are made, test the adjusted load for air content and if suspect, slump, before it gets into the work.
- (3) MnDOT standard beam box size is 6" x 6" x 20" unless other sizes or types are approved by the Concrete Engineer. If cylinders are substituted for beams, MnDOT standard cylinder mold size is 4 x 8 inch. If aggregate has a maximum size greater than 1-1/4 inch, use 6 x 12 inch molds.

Pay Item No.	Test Type	Spec. No.	Contractor Testing	Department Testing	Form No.
2301	Air Content Before Consolidation for Type 3 Concrete (QC/QA)	2301 2461	1 per 300 yd ³ or 1 per hour, whichever results in the lower testing rate Test first load each day per mix	1 correlation air test per day	Air Content Workbook
	Slump (QC/QA)	2461	Test slump if concrete is suspected to be outside of required slump range as directed by the Engineer		
	Ambient air and Concrete Temperature (QC/QA)	2461	Record temperatures each time air content, slump or strength test specimen is performed/fabricated by the Contractor.	Record temperatures each time air content, slump or strength test specimen is performed/fabricated by the Department.	
	Flexural Strength (QC)	2301 2461	<u>For information only:</u> 1 beam (28-day) per week per mix 1 cylinder (28-day) per week per mix may be substituted at the discretion of the Engineer Provide moist curing environments, fabricate beams or cylinders, deliver to curing site, and clean beam boxes.	Supply beam boxes or cylinder molds. Cure and test beams and cylinders.	Concrete Test Beam Data Worksheet
	Opening to Traffic Strength		<u>For opening to traffic:</u> Make field control beams <u>within the last hour</u> of concrete poured each day. Substitute field control cylinders for field control beams at the discretion of the Engineer Maturity testing is allowed in lieu of field control cylinders or beams Fabricate beams or cylinders, deliver to curing site, and clean beam boxes.	Supply beam boxes or cylinder molds for field control testing. Cure and test beams and cylinders.	Concrete Test Beam Data Worksheet

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)**Concrete Field Testing – Concrete Pavement (cont.)****Remarks for Lane Definition:**

- (1) From the pavement edge to the adjacent longitudinal joint
- (2) From one longitudinal joint to the next longitudinal joint
- (3) In the absence of a longitudinal joint, between pavement edges
- (4) Each Ramp and Loop greater than or equal to 18 feet in width
- (5) Doweled concrete Shoulder greater than or equal to 10 feet in width
- (6) Doweled concrete Shoulders less than 10 feet in paved width and undoweled concrete Shoulders are not included as part of a lane.

Pay Item No.	Test Type	Spec. No.	Contractor Testing	Department Testing	Form No.
2301	Concrete Pavement Texture (QC)	2301	1 texture test per 1,000 lin. lane feet in the outside wheel path Perform a minimum of 3 texture tests per project	Determine texture testing locations using random numbers. Observe Contractor testing.	Thickness, Texture and MIT-SCAN Report
	Thickness (QC/Verification)	2301	Projects \leq 3,500 cu. yd. and concrete overlay Projects where underlying pavement at any depth is concrete: 1 quality control probe (QCP) per 1,000 lin. lane feet. Measure and record probes to the nearest 1/8". 1 quality assurance core (QAC) per 4,000 lin. lane feet. <u>Projects $>$ 3,500 cu. yd. when concrete is placed directly on grade, or the concrete overlay is placed on existing asphalt pavement with no underlying concrete:</u> 1 quality control scan (QCS) per 1,000 lin. lane feet. Measure scans in millimeters and convert and record to the nearest tenth of an inch. 1 quality assurance core (QAC) per 4,000 lin. lane feet.	Determine probing, scanning and coring locations using random numbers. Observe Contractor probing or scanning. Mark pavement at core locations. Pick up the cores from the pavement and re-mark the sides of the specimens after coring to clearly verify their authenticity. Field measure cores to the nearest 1/8" Transport to the MnDOT Office of Materials and Road Research for final thickness determination.	Thickness, Texture and MIT-SCAN Report Field Probing or Scanning Report Field Coring Report
	Surface Smoothness	2399	Measure smoothness of the final concrete as required by the Contract. Perform all profiling in the presence of the Engineer unless otherwise approved by the Engineer.	Observe Contractor testing when possible	Concrete Profile Summary Worksheet
	Dowel Bar and Tie Bar Steel Location (QC)	2301	For concrete projects $>$ 3,500 cu. yd., scan the following: Test 5 random doweled contraction joints per 1,000 lin. lane feet For mechanically placed LIT joints, randomly test 45 lin. feet per 1,000 lin. feet	Observe Contractor steel location testing when possible	Thickness, Texture and MIT-SCAN Report

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)**Concrete Field Testing (Volumetric Batching)- Low Slump Concrete for Bridge Deck Overlays****Remarks:**

- (1) Mix design is provided by MnDOT on the back of the Form 21412 Weekly Report of “Low Slump Concrete” unless otherwise specified in the Contract.
- (2) All materials must come from certified or qualified sources. All certified sources must state so on the delivery invoice.
- (3) The most current list of certified/approved sources can be found at www.dot.state.mn.us/products.

Pay Item No.	Test Type	Spec. No.	Contractor Testing	Department Testing	Sample Size	Form No.
2404	Cement	3101	None	Each time cement is delivered to site: Store the sample in a sealed container and include the supplier's delivery invoice from which the sample is obtained.	5 lb.	24300 ID Card Cement Samples
	Admixtures	3113	None	Each time new lot/batch admixture delivered to site: Store the sample in a sealed plastic container.	1/2 pint	2410 Sample ID Card
	Gradation and Aggregate Quality Testing including Coarse Aggregate Percent Passing - #200	3126 3137	<u>Prior to concrete production:</u> Provide the Department with: <ul style="list-style-type: none"> Aggregate pit numbers 1 passing gradation result per aggregate fraction per source No quality test results are required.	Prior to production and each time aggregate is delivered to site: 1 gradation and quality per aggregate fraction prior to concrete production and each time aggregate is delivered to the site. Identify quality samples with a “Q” on the Sample ID Card and the Quality companion sample.		2410 Sample ID Car 21412 Weekly Report of “Low Slump Concrete”

Concrete Field Testing - Low Slump Concrete for Bridge Deck Overlays

Pay Item No.	Test Type	Spec. No.	Contractor Testing	Department Testing	Form No.
2404	Air Content for Type 3 Concrete	2461	None	1 per 15 yd ³ Test at beginning of pour each day	21412, Weekly Report of “Low Slump Concrete”
	Slump	2461	None	1 per 15 yd ³ Test at beginning of pour each day For concrete from a concrete-mobile, allow mix to hydrate 5 minutes before slump test to assure all cement is saturated.	21412, Weekly Report of “Low Slump Concrete”
	Compressive Strength	2461	None	1 set of 3 cylinders (28-day) per 100 yd ³ MnDOT standard cylinder mold size is 4 x 8 inch.	2409 ID Card Concrete Test Cylinder

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)**Concrete Field Testing – Concrete Pavement Repair (CPR) for 3U18****Remarks:**

- (1) Mix design is provided in accordance with MnDOT Spec 3105 unless otherwise specified in the Contract. 3U18 may be pre-bagged or batched volumetrically. Ready-mix batched 3U18 concrete is not allowed.
- (2) Testing rates apply to concrete that is produced on site.
- (3) All materials must come from certified or qualified sources. All certified sources must state so on the delivery invoice.
- (4) The most current list of certified/approved sources can be found at www.dot.state.mn.us/products.

Pay Item No.	Test Type	Spec. No.	Contractor Testing	Department Testing	Form No.
2302	Type 1 Cement	3101	None	<u>For volumetric batching only:</u> <u>Each time mobile mixer is calibrated:</u> Obtain a 5 lb. sample Store the sample in a sealed container and include the supplier's delivery invoice from which the sample is obtained.	24300 ID Card Cement Samples
	Admixtures	3113	None	<u>Each time mobile mixer is calibrated:</u> Obtain a 1/2 pint sample Store the sample in a sealed plastic container.	2410 Sample ID Card
	Gradation (QC/Verification)	3126 3137	<u>Prior to concrete production:</u> Provide the Department with: <ul style="list-style-type: none"> • Aggregate pit numbers • 1 passing gradation result per aggregate fraction per source. Test companion samples at Contractor's discretion.	<u>For volumetric batching only:</u> <u>Prior to concrete production and each time aggregate is delivered to the site:</u> 1 per aggregate fraction	2410 Sample ID Card
	Aggregate Quality Testing <u>including</u> Coarse Aggregate Percent Passing - #200	3126 3137	No quality test results are required.	<u>For volumetric batching only:</u> <u>Prior to production and each time aggregate is delivered to site:</u> 1 test each aggregate fraction per source The Department may use the gradation results for the Quality Samples as a substitute for 1 required field gradation. Identify quality samples with a "Q" on the Sample ID Card and the Quality companion sample.	2410 Sample ID Card

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Concrete Field Testing – Concrete Pavement Repair (CPR) for 3U18 (cont.)					
Pay Item No.	Test Type	Spec. No.	Contractor Testing	Department Testing	Form No.
2302	Air Content for Type 3 Concrete (Verification)	2461	None	1 per 15 yd ³ or 1 per 4 hours whichever results in the highest sampling rate Test at beginning of pour each day.	Concrete Pavement Repair (CPR) Workbook
	Slump (Verification)	2461	None	1 per 15 yd ³ or 1 per 4 hours whichever results in the highest sampling rate Test at beginning of pour each day. Allow mix to hydrate 5 minutes before slump test to assure all cement is saturated. Test slump if concrete is suspected to be outside of required slump range	
	Compressive Strength (Verification)	2461	Any additional field control cylinders are the responsibility of the Contractor.	1 set of 3 cylinders (28-day) per 15 yd ³ MnDOT will cast three (3) field control cylinders.	2409 ID Card Concrete Test Cylinder

Concrete Field Testing – Dowel Bar Retrofit (DBR)

Remarks:

- (1) Use MnDOT approved packaged, dry, non-shrink, rapid-hardening cementitious material for dowel bar retrofit repairs.
 (2) Testing rates apply to concrete that is produced on site. (Not from a certified ready-mix plant.)

Pay Item No.	Test Type	Spec. No.	Contractor Testing	Department Testing	Form No.
2302	Gradation Testing (Verification)	3137	None	<u>Prior to production and each time aggregate is delivered to site:</u> 1 per aggregate fraction per source	2410 Sample ID Card
	Quality Testing <u>including</u> Coarse Aggregate Percent Passing	3131 3137	None	<u>Prior to production and each time aggregate is delivered to site:</u> 1 per aggregate fraction per source Identify quality samples with a “Q” on the Sample ID Card and	2410 Sample ID Card
	Dowel Bar Retrofit Material Compressive Strength (Verification)	2302	Any additional field control cylinders are the responsibility of the Contractor.	1 set of 3 cylinders (28-day) per day MnDOT will cast three (3) field control cylinders per day.	2409 ID Card Concrete Test Cylinder

V. Landscaping and Erosion Control Items

Pay Item No	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2571 2574 2575	1. Topsoil borrow ^a	3877.2	None	Type A: 1 per 1000 cy. Type B: 1 per 500 cy - up to 5 samples from each source. Type C: 1 per 500 cy - up to 5 samples from each source, (min. 1 per project) Type E – G: Topsoil blends have certificate of compliance Type H is same as Compost	1 lb. (2-3 cups)	^a Contractor to test topsoil for soil texture, organic matter, pH, fertility and, if requested, soluble salts at a Certified Soils Lab. Soils Lab should also provide fertilizer recommendations for the proposed vegetation. Soils for infiltration/filtration must meet specification. Topsoil used for infiltration or filtration must be tested after installation by the contractor to assure flow rate. Where topsoil material is blended with compost and drainage medium (Filtration Topsoil Borrow) for use in filtration basins the following tests are required: Compost – Compost material shall be provided by vendors included on the APL/QPL. Sand Drainage Material – test sand for particle size meeting the requirements of 3126, Fine Aggregate for Portland Cement Concrete.
2571 2575 2577	2. Plant Stock & Landscape Materials ^b	3861 and 2571.2A1	Field Inspection at Job Site, submit itemized report for each shipment ^c .			^b Preliminary inspection will not be done at the source. Material must be in accordance with the Inspection and Contract Administration Guidelines for MnDOT Landscape Projects. ^c Utilize "Inspection and Contract Administration Guidelines for MnDOT Landscape Projects" to determine and measure minimum and maximum criteria thresholds. The following documentation must be provided: 1. A MnDOT Certificate of Compliance for Plant Stock, Landscape Materials, and Equipment 2. A valid copy of a nursery stock (dealer or grower) certificate registered with the MN Dept. of Agric. And/or a current nursery certificate/license from a state or provincial Dept. of Agric. for each plant stock supplier. 3. A copy of the most recent Certificate of Nursery Inspection for each plant stock supplier. 4. Plant material shipped from out-of-state nursery vendors subject to pest quarantines must be accompanied by documentation certifying all plants shipped are free of regulated pests. 5. Bills of lading (shipping documents) for all materials delivered. 6. Invoices for all materials to be used. 7. Each bundle, bale, or individual plant must be legibly and securely labeled with the name and size of each species or variety.

V. Landscaping and Erosion Control Items (cont.)

Pay Item No	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2502 2573 2575 2577	3. Rolled Erosion Prevention Products (REPP) Category 10, 20, 30, 15, 25, 35, 45 ^d	3885	Visual Inspection	1 per 18,000 lin. feet, QA Mass, ASTM D6475 test. - See Footnote ^d		^d Check Web site for list of approved products. www.dot.state.mn.us/products
2573 2577	4. REPP-Open Weave Textile Category 37, 47, 57 ^e	3885	Visual Inspection			^e Check Web site for list of approved products. www.dot.state.mn.us/products
2573	5. Silt Fence ^f	3886	Check Product Label. Obtain Manufacturer's Certificate of Compliance with Roll Number and MARV values			^f Check APL/QPL of accepted geotextiles www.dot.state.mn.us/products
2573	6. Flotation Silt Curtain ^g	3887	Visual Inspection			^g Accepted, based on manufacturers' certification of compliance. Check weight of fabric.
2573 2575	7. REPP- Permanent Products Category 50, 55, 60, 70, 72, 74, 76 ^h	3885	Visual Inspection			^h Check Web site for list of approved products. www.dot.state.mn.us/products
2573	8. Sediment Control Logs	3897	Visual Inspection			Meet specifications
2573	9. Flocculants ⁱ	3898	Visual Inspection	None		ⁱ Certificate of Compliance and MSDS to the Engineer.
2571 2575	10. Fertilizer ^j	3881	Visual Inspection			^j Bagged: Inspected on the basis of guaranteed analysis. Bulk: Inspector to obtain copy of invoice of blended material stating analysis. Check Type and NPK ratio that it matches that specified in the Plan or recommendation based on soil test.
2571 2575	11. Agricultural Lime ^k	3879	1 gradation test per 200 tons			^k Contractor must supply amount of ENP (Equivalent Neutralizing Power) for each shipment.
2575 2577	12. Mulch Material A. Type 3 Mulch - Certified Weed Free (Certified sources only) ^l	3882	Visual Inspection, Check if from Certified Vendor by Minnesota Crop Improvement Association. Must be tagged , grain straw only.			^l Certified mulch will be indicated by label. Do not accept Mulch that arrives on project without tags attached to bales.

V. Landscaping and Erosion Control Items (cont.)

Pay Item No	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2571 2575 2577	13. Mulch Material B. Type 6 Mulch – Woodchips	3882	Visual Inspection. Obtain Certificate of Compliance.			All wood chips supplied by a supplier outside the Emerald Ash Borer quarantine area or have an Emerald Ash Borer Compliance Agreement with the MDA.
2502 2575 2577	14. Seeds A. Seeds (Certified Vendors Only) (Mixes 21-000, 22-000 and 25-000 series) ^m	3876	Check for Certified Vendor tag from Minnesota Crop Improvement Association. If materials are on hand and past the twelve months, testing must be done.			^m Periodic sampling taken by Office of Environmental Services. Any moldy or insect contaminated seed must be rejected. Check seed Label test date is no more than 12 months old at the time of testing.
2502 2575 2577	14. Seeds B. Native Seed (Mixes 30-000 series) (Certified Vendors Only) ⁿ	3876	Check if from Certified Vendor by Minnesota Crop Improvement Association, must be tagged. If materials are on hand and past the twelve months, testing must be done.			ⁿ Certified seed will be indicated by label on containers. Reject all moldy or insect contaminated seed. Periodic sampling taken by Office of Environmental Services. Check seed Label test date is no more than 12 months old at the time of testing.
2575	15. Sod ^o	3878	A certified tag by Minnesota Crop Improvement Association for Salt tolerant sod. Final Visual Inspection at site.			^o A Certificate of Compliance must be furnished by the producer to the Engineer for the type of sod supplied showing correct grass varieties.
2571 2575	16. Compost A. Compost Certified Source ^p	3890	Visual Inspection			^p Check APL/QPL.
2571	17. Compost B. Compost Non-Certified Source ^q	3890	Inspection of source 6 weeks prior to delivery.			^q Retain Certificate of Compliance, 6 weeks prior to delivery. Applies only to 2571 Landscape pay items.
2575	18. Hydraulic Erosion Control Product ^r	3884				^r Check APL/QPL. Installer needs to show certificate of training.

VI. Chemical Items

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2401	Asphalt Plank	3204	Check for proper type and size as specified in plans. Lab Sample Required	1 per 1,000 plank or less of each thickness from each shipment	3 – 1 yard pieces sampled from different planks	
2131	Calcium Chloride	3911	Check for listing on Qualified Products website if product is a deicer. Lab Sample Required (See Notes)	Liquid: 1 per shipment Dry: 1 per shipment	1 pint or 1 lb. in Plastic Container	Provide copy of the BOL with sample.
2131	Magnesium Chloride	3912	Check for listing on Qualified Products website if product is a deicer. Lab Sample Required (See Notes)	1 per shipment	1 pint in Plastic Container	Provide copy of the BOL with sample.
2331	Hot-Pour Crack Sealant for Crack Sealing/Filling	3719 3725	Check for listing on Qualified Products website. (See Notes) Lab Sample Required	1 per lot. Take samples from application wand. Use caution when handling hot containers	1/2 gallon in a one gallon steel container or silicone lined sample box	Form 02415 List batch numbers and retain Certificate of Compliance.
2331	Pavement Joint Adhesive	Special Provisions	Lab Sample Required	1 per lot. Take samples from application wand. Use caution when handling hot containers	1 qt. in a steel container or silicone lined sample box	
2481	Waterproofing Materials Membrane Waterproofing System	3757	Check for listing on Qualified Products website. Lab Sample Required	1 per shipment (Membrane Only)	1 Sq. Ft	
2481	Waterproofing Materials Three Ply System Asphalt Primer	3165	Verify supplied material meets ASTM D 41 Lab Sample Required	1 per shipment	1 pint in steel container	
2481	Waterproofing Materials Three Ply System Waterproofing Asphalt	3166	Verify supplied material meets ASTM D 449 Lab Sample Required	1 per shipment	1 pint in steel container	

VI. Chemical Items (Cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2481	Waterproofing Materials Three Ply System Fabric	3201	Verify supplied material meets AASHTO M 117 Lab Sample Required	1 per shipment	1 Sq. yd.	
2582	Waterborne Latex Traffic Marking Paint.	3591	Check for listing on Qualified Products website. (See Notes) Lab Sample Required	1 per lot	1 pint	Form 02415 List batch numbers and retain Certificate of Compliance.
2582	Epoxy Traffic Paint	3590	Check for listing on Qualified Products website. (See Notes) Lab Sample Required	1 Part A per lot 1 Catalyst Part B per lot	1 pint	Form 02415 List batch numbers and retain Certificate of Compliance.
2564	Non-Traffic Marking Paints	3501 3532 3533 Special Provisions	Check for proper material as specified in plans. (See Notes) Lab Sample Required	1 per lot	1 pint	Form 02415 List batch numbers.
2401	Special Surface Finish II concrete coating	3501	Check for listing on Qualified Products website. (See Notes) Lab Sample Required	Submit Draw Down for color match/approval prior to start of painting (See Notes) Liquid sampling: 1 per lot or every 500 gallons of coating, whichever is greater	1 pint	Form 02415 List batch numbers and provide Certificate of Compliance with each batch/lot of the coating to the Engineer. Confirm that the contractor provided a color "Draw Down" sample to the MnDOT Chemical Laboratory for verification of the color.
2478	Bridge Structural Steel Paint	3501 3520	Check for listing on Approved Products website. (See Notes) No Lab Sample Required	Not Field Sampled or Lab Tested - Submit draw down for color match / approval prior to start of painting (See Notes)		Form 02415 List batch numbers and provide Certificate of Compliance with each batch/lot for each component of the paint system to the Engineer. Confirm that the contractor provided a color "Draw Down" sample to the MnDOT Chemical Laboratory for verification of the finish coat color.

VI. Chemical Items (Cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
	Exterior Masonry Paint	3584	Check for proper material as specified in plans. (See Notes) Lab Sample Required	1 per lot	1 pint	Form 02415 List batch numbers.
	Noise Wall Stain	Special Provisions	Check for listing on Qualified Products website. (See Notes) Lab Sample Required	1 per lot	1 pint	Form 02415 List batch numbers.
2582	Drop-on Glass Beads	3592	Check for listing on Qualified Products website. (See Notes) Lab Sample Required	1 per lot	1 quart	Form 02415 List lot numbers and retain Certificate of Compliance
2502 2581 2582	Preformed Pavement Marking Tape and Thermoplastic	3354 3355 3556	Check for listing on Qualified Products website. (See Notes) Lab Sample Required	1 per lot of each color and width	Tape: 3 yds if 12" or less Tape: 1 yd if greater than 12" Thermo: 1 piece for lines under 12" wide or 6" x 6" for other shapes	Form 02415 List lot numbers and retain Certificate of Compliance.
2540 2563 2564 2565 2582	Signs and Markers	3352	Check for listing on Approved Products website. No Lab Sample Required	None unless material is suspect (See Notes)		Items may be considered suspect if on visual inspection the screening or digital printing appears abnormal, the sheeting type / brand looks different than past appearance, the backing material may be the incorrect thickness / type, etc. Contact the Office of Traffic Engineering (http://www.dot.state.mn.us/trafficeng/contacts.html) for guidance on suspect items to determine need for sampling and submittal to the Chem Lab for testing.

VII. Metallic Materials and Metal Products

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2554	1. Guard Rail A. Fittings - Splicers, Bolts, etc.	3381	Visual Inspection – sample, if necessary, <i>(See Notes)</i>	Bolts: 1 Post bolt and 4 splice bolts with nuts for each 1,000 units or less.		Form 02415 or 2403 To be approved before use. Materials from H&R may be pre-sampled and tested. Call the MnDOT inspector at 218-846-3613 to see if material has been approved. For non-pre-tested, submit laboratory samples at required rate. For small quantities, lab samples are not required, but document on Form 02415 or 2403 and maintain in project file. Small Quantities: Rail Sections - 20 or less Terminals - 10 or less Post Bolts - 100 or less, Splice Bolts - 100 or less
2554	1.B.i. Non-High Tension Guard Rail Cable	3381	Visual Inspection – submit sample	1 per each spool	4 feet	Form 02415 or 2403 See VII.1.A.
2554	1. B.ii. High Tension Guard Rail Cable	Special Provisions	Visual Inspection – <i>(See Notes)</i>	None, unless material is suspect <i>(See Notes)</i>	4 feet	Sample at the rate of 1 per 50,000 feet if the strand appears damaged or suspect (Accepted as part of system)
2554	1. Guard Rail C. Structural Plate Beam	3382	Visual Inspection – <i>(See Notes)</i>	1 from one end of a section for each 200 rail sections (or portion thereof) or 1 per each 100 terminal sections	Full depth x 10 inches	Form 02415 or 2403 See VII.1.A.
2554	D. Plate Beam Guide Posts	3382	Visual Inspection	None, unless material is suspect		Form 02415 or 2403
2554	E. High Tension Guide Posts	Spec. Provisions	Visual Inspection	None, unless material is suspect		Form 02415 or 2403 (Accepted as part of system)
2545 2554 2564	2. Steel Sign Posts	3401	Visual Inspection & Certification from Contractor of compliance with Domestic source requirement under 1601, if applicable. Submit sample from material being installed, <i>(See Notes)</i>	1 post per shipment of each mass per unit length. Submit shortest full-sized length of each weight, not a scrap piece.	(See Note)	Form 02415 or 2403 Check domestic steel requirement under 1601 No Samples for project quantities less than 20

VII. Metallic Materials and Metal Products (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2554 2557	3. Posts for Traffic & Fence A. Steel fence posts, brace bars, and rails	3403 3406	Visual Inspection - submit sample of material being installed, <i>(See Notes)</i>	1 per 500 pieces. Submit full length for posts used in the ground (line, terminal, "C" and anchor posts), and 5' length of top rail and brace bar. Small Quantity (< 1000 ft. on entire project): sample line post, top rail, and brace bar only.		Form 02415 or 2403 Check domestic steel requirement under 1601 Special Provision. Retain Certificate of Compliance and certified mill analysis in project file. See link for certification form on right side of page, www.dot.state.mn.us/materials/lab.html
2557	3. Fence B. Components: includes cup, cap, nut, bolt, end clamp, tension band, truss rod tightener, hog ring, tie wire, tension stretcher bar, truss rod, clamp, & tension wire	3376	Visual Inspection - submit sample of material being installed, <i>(See Notes)</i>	1 each of cup, cap, nut, bolt, end clamp, tension bands, truss rod tightener, 12 hog rings, 6 tie wires, 1 tension stretcher bar; 1 truss rod, cut to 2-foot min. with threaded section, 3 feet of tension wire. Small Quantity (< 1000 ft. on entire project): No sample required		Form 02415 or 2403 Check domestic steel requirement under 1601 Special Provision. Retain Certificate of Compliance in the project file. See link for certification form on right side of page, www.dot.state.mn.us/materials/lab.html
2557	3. Fence C. Gates	3379	Visual Inspection, <i>(See Notes)</i>	No sample required. <i>(See Notes)</i>		Form 02415 or 2403 Check domestic steel requirement under 1601 Special Provision. Retain Certificate of Compliance in the project file. See link for certification form on right side of page, www.dot.state.mn.us/materials/lab.html
2557	3. Fence D. Barbed Wire	3376	Visual Inspection – submit sample of material being installed, <i>(See Notes)</i>	1 per 50 rolls – <i>(See Notes)</i>	3 feet	Form 02415 or 2403 Check domestic steel requirement under 1601 Special Provision. Retain Certificate of Compliance in the project file. See link for cert. form on right side of page, www.dot.state.mn.us/materials/lab.html
2557	3. Fence E. Woven Wire Fabric	3376	Visual Inspection - submit sample of materials being installed, <i>(See Notes)</i>	1 full height sample per 50 rolls	3 feet	Form 02415 or 2403 Check domestic steel requirement under 1601 Special Provision. Retain Certificate of Compliance in the project file. See link for cert. form right side of page, www.dot.state.mn.us/materials/lab.html

VII. Metallic Materials and Metal Products (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2557	3. Fence F. Chain Link Fabric	3376	Visual Inspection - submit sample of materials being installed, <i>(See Notes)</i>	1 full height sample for each 5,000 ft. of fencing.	1 foot	Form 02415 or 2403 Check domestic steel requirement under 1601 Special Provision. Retain Certificate of Compliance in the project file. See link for certification form on right side of page, www.dot.state.mn.us/materials/lab.html
2402	4. Water Pipe and other Piping Materials	3364, 3365, 3366 & Special Provisions	<i>(See Notes)</i>	No sample necessary		Form 02415 or 2403 Check domestic steel requirement under 1601 Special Provision. To be identified & tested if necessary, prior to use. See Special Provisions.
2301 2401 2405 2411 2412 2433 2452 2472 2514 2531 2533 2545 2564	5. Reinforcing Steel A. Bars – Uncoated	3301	Visual Check for Size and Grade Marking	No Field Sample Necessary		Form 02415 or 2403 For Uncoated bars - Retain Certificate of Compliance and Certified Mill Analysis in Project File.
2301 2302 2401 2405 2411 2412 2433 2452 2472 2514 2531 2533 2545 2564	5. Reinforcing Steel B. Bars - Epoxy Coated	3301	Visual Check for Size and Grade Marking and "Inspected" tag. Inspect for damage to coating, verify repairs, if necessary. (See Notes)	1 bar of each size of bar for each day's coating production	3 feet	Form 02415 or 2403 For Epoxy-Coated bars, steel will be tagged "Inspected" when sampled and tested by MnDOT prior to shipment and will be tagged "Sampled" when testing has not been completed prior to shipment. If the Epoxy-Coated bars are not tagged "Sampled" or "Inspected", submit 3 foot. samples cut from project bars, with copies of the Certificate of Compliance and Certified Mill Analysis. Replace the samples with splice bars that are supplied with the shipment. Splice bar length is 3 feet plus 40 bar diameters. Retain originals of the Certificate of Compliance and Certified Mill Analysis in the project file.

VII. Metallic Materials and Metal Products (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2401	5. Reinforcing Steel C. Bars Stainless Steel	Special Provisions	Visual check for size and grade. Send sample bars from shipment. <i>(See Notes)</i>	2 bars per heat per bar size	3 feet	Submit copies of mill test reports with samples, retain originals in project file
2401 2411 2452 2472 2564	5. Reinforcing Steel D. Spirals	3305	Submit sample, inspect for damage to coating, verify repairs, if necessary.	1 per shipment	3 feet	Same as 5.B
2301 2401 2411 2412 2472 2531	5. Reinforcing Steel E. Steel Fabric	3303	Visual inspection. <i>(See Notes)</i>	Field sample not necessary for uncoated fabric. If epoxy-coated, submit 2-ft.-square sample.		Retain Certificate of Compliance in project file. Verify material size, normally shown on metal tag on bundles of fabric. Use caliper or micrometer if there is no metal tag. If fabric is pre-bent, examine outside of bends for cracking. Do not allow cracked material to be installed.
2301 2302 2401 2411	5. Reinforcing Steel F. Dowel Bars	3302	Sample from material being used, including basket. <i>(See Notes)</i>	1 Dowel Bar from each shipment	Full Size Dowel Bars	For all types of dowels – Each project shall have a Certificate of Compliance from the Manufacturer certifying that all materials used in fabrication of the dowel bars and baskets comply with all applicable specifications. The Manufacturer shall maintain all records necessary for certification by project.
2401 2405	5. Reinforcing Steel G. Prestressing or Post-Tensioning Strand	3348	If strand is installed at project site, sample from material being used.	2 strands from each heat <i>(See Notes)</i>	6 feet	Submit one copy of mill certificate and one copy of the stress-strain curve representative of the lot with the samples. For most manufacturers, a heat equals a production lot, and an individual lot, pack, or reel is a subset of a heat/production lot.
2401 2411 2433 2472	5. Reinforcing Steel H. Mechanical Splice Couplers	3301 Special Provisions	Visual Check for Size and Grade Marking. Inspect for damage to coating, verify repairs, if necessary. <i>(See Notes)</i>	1 for each size and of each lot supplied.	Mechanical splice coupler and reinforcement bars 3 feet each	The contractor shall submit a "Certificate of Compliance" provided by manufacturer, on a per project basis for each size of mechanical splice coupler used. Verify mechanical splice type and size is listed on APL/QPL. Pre-qualification requires contractor to submit a sample to the Department for each reinforcement bar size used on the project. Test results of sample must verify compliance to original product specifications.

VII. Metallic Materials and Metal Products (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2402 2506 2565	6. Drainage and Electrical Castings	3321 2471 2565	Check APL/QPL and visual inspection at the project site. <i>(See Notes)</i>	All castings: 3 tensile bars to be cast with each heat at Foundry and submitted to the lab by an approved Foundry*. See 3321.		Form 02415 or 2403 Verify source of material is listed on APL/QPL Inspect in the field and retain Form 02415 or 2403 in project file, showing name of foundry and quantity
2401 2402 2411 2433 2545 2554 2564 2565	7. Anchor Rods (Cast in Place)	3385 3391 3392	Check APL/QPL, mill certifications, and visual inspection at the project site. Take sample if not listed on APL/QPL.	Pre-approved <i>(See Notes)</i> or 1 complete anchor rod assembly including nuts and washers from each lot supplied.		Pre-approved system requires supplier to submit a sample to the Department yearly for each anchor rod grade. Test results of sample must verify compliance to product specifications.
2401 2402 2411 2433 2545 2554 2564 2565	8. Structural Fasteners, both coated and uncoated	3385 3391 3392	Visual inspection and verify material is on APL/QPL, or submit sample for verification testing if not on APL/QPL	Pre-approved <i>(See Notes)</i> or 2 complete assemblies for each size, length, diameter, grade and finish, per increment of 1000 or fraction thereof		Pre-approved system requires the supplier to submit a sample yearly for each fastener size, grade and finish. Test results must verify compliance to specifications. If not on the APL/QPL, submit two complete assemblies for each size, length, grade and finish per increment of 1000 or fraction thereof of fasteners supplied for the project, including nuts and washers from each lot supplied. Obtain passing test results before installation.
2401 2411 2433 2545 2565	9. Anchorages (Drilled In)	Special Provisions, Standard Plates, Plan Sheet Details	Visual Inspection. Before installation, verify listing on APL/QPL. For field testing rate, of installed anchorages, see the Special Provisions.	Laboratory samples not required.		Note: Before installation, verify that anchorages are on the APL/QPL Or Verify that anchorages are in accordance with the Standard Plate or the details in the Plan.

VII. Metallic Materials and Metal Products (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2402	10. Structural Steel A. For Steel Bridge – Beams, Girders, Diaphragms, etc.	2471	Structural Metals Confirmation of Inspected Material Document and field inspection for damage/defects	None		Structural metals products will be inspected at the plant and will be shipped with a Confirmation of Inspected Material Document. A copy of the inspection documentation will be archived in eDOCs. Only approved suppliers are allowed to supply Structural Metals products. A list of approved suppliers can be found on the Bridge Office web site: http://www.dot.state.mn.us/bridge/
2402 2405	10. Structural Steel B. For Concrete Girders- Diaphragms and sole plates	2471	Structural Metals Confirmation of Inspected Material Document and field inspection for damage/defects	None		Structural metals products will be inspected at the plant and will be shipped with a Confirmation of Inspected Material Document. A copy of the inspection documentation will be archived in eDOCs. Only approved suppliers are allowed to supply Structural Metals products. A list of approved suppliers can be found on the Bridge Office web site: http://www.dot.state.mn.us/bridge/
2402	10. Structural Steel C. Expansion joints	2471	Structural Metals Confirmation of Inspected Material Document and field inspection for damage/defects	None		Structural metals products will be inspected at the plant and will be shipped with a Confirmation of Inspected Material Document. A copy of the inspection documentation will be archived in eDOCs. Only approved suppliers are allowed to supply Structural Metals products. A list of approved suppliers can be found on the Bridge Office web site: http://www.dot.state.mn.us/bridge/
2402	10. Structural Steel D. Steel Bearings	2471	Confirmation of Inspected Material Document and field inspection for damage/defects	None		Structural metals products will be inspected at the plant and will be shipped with a Confirmation of Inspected Material Document. A copy of the inspection documentation will be archived in eDOCs. Only approved suppliers are allowed to supply Structural Metals products. A list of approved suppliers can be found on the Bridge Office web site: http://www.dot.state.mn.us/bridge/

VII. Metallic Materials and Metal Products (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2402	10. Structural Steel E. Railing-Structural tube and ornamental	2471	Structural Metals a Confirmation of Inspected Material Document and field inspection for damage/defects	None		Structural metals products will be inspected at the plant and will be shipped with a Confirmation of Inspected Material Document. A copy of the inspection documentation will be archived in eDOCs. Only approved suppliers are allowed to supply Structural Metals products. A list of approved suppliers can be found on the Bridge Office web site: http://www.dot.state.mn.us/bridge/
2402	10. Structural Steel F. Drainage Systems	2471	Structural Metals Confirmation of Inspected Material Document and field inspection for damage/defects	None		Structural metals products will be inspected at the plant and will be shipped with a Confirmation of Inspected Material Document. A copy of the inspection documentation will be archived in eDOCs. Only approved suppliers are allowed to supply Structural Metals products. A list of approved suppliers can be found on the Bridge Office web site: http://www.dot.state.mn.us/bridge/
2402	10. Structural Steel G. Protection Angles	2471	Structural Metals Confirmation of Inspected Material Document and field inspection for damage/defects	None		Structural metals products will be inspected at the plant and will be shipped with a Confirmation of Inspected Material Document. A copy of the inspection documentation will be archived in eDOCs. Only approved suppliers are allowed to supply Structural Metals products. A list of approved suppliers can be found on the Bridge Office web site: http://www.dot.state.mn.us/bridge/
2564	11. Overhead Sign structures	2564 2471	Structural Metals Confirmation of Inspected Material Document and field inspection for damage/defects	None		Structural metals products will be inspected at the plant and will be shipped with a Confirmation of Inspected Material Document. A copy of the inspection documentation will be archived in eDOCs. Only approved suppliers are allowed to supply Structural Metals products. A list of approved suppliers can be found on the Bridge Office web site: http://www.dot.state.mn.us/bridge/

VII. Metallic Materials and Metal Products (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2545	12. High Mast Lighting Structures	2545 2471	Structural Metals Confirmation of Inspected Material Document and field inspection for damage/defects	None		Structural metals products will be inspected at the plant and will be shipped with a Confirmation of Inspected Material Document. A copy of the inspection documentation will be archived in eDOCs. Only approved suppliers are allowed to supply Structural Metals products. A list of approved suppliers can be found on the Bridge Office web site: http://www.dot.state.mn.us/bridge/
2565	13. Monotube Signal Structures	2565 2471	Structural Metals Confirmation of Inspected Material Document and field inspection for damage/defects	None		Structural metals products will be inspected at the plant and will be shipped with a Confirmation of Inspected Material Document. A copy of the inspection documentation will be archived in eDOCs. Only approved suppliers are allowed to supply Structural Metals products. A list of approved suppliers can be found on the Bridge Office web site: http://www.dot.state.mn.us/bridge/

VIII. Miscellaneous Materials

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2403 2422 2452 2521 2540 2545 2554 2557 2564	1. Timber, Lumber Piling & Posts	3412 to 3471 & 3491	Visual Inspection			Form 02415 or 2403 Untreated materials shall be inspected in the field and the results reported on Form 02415 or 2403. Treated materials shall be Certified on the Invoice or Shipping Ticket. Material is inspected and stamped by an Independent Agency as per Specification 3491. Contact Laboratory for additional information.
2402 2405 2557 Many	2. Miscellaneous pieces and Hardware (Galvanized)	3392 3394		3 samples of each item per shipment. Sample critical items only. (Critical items are load bearing, structurally necessary items.)	3 of each type.	Form 02415 or 2403 Will carry "Inspected" tag if sampled and tested prior to shipment. No sample necessary if "Inspected".
2504	3. Insulation Board	3760	Visual Inspection	None		Form 02415 or 2403
2402	4. Laminated Elastomeric Bearing Pads	3741 and Special Provisions	Confirmation of Inspected Material Document and field inspection for damage/defects	See Notes		See Project Special Provisions for Sampling, Testing, and Acceptance Requirements. Products will be inspected at the plant and will be shipped with a Confirmation of Inspected Material Document. A copy of the inspection documentation will be archived in eDOCs.
2402	4. Plain Elastomeric Bearing Pads	3741 and Special Provisions	Confirmation of Inspected Material Document and field inspection for damage/defects	See Notes		See Project Special Provisions for Sampling, Testing, and Acceptance Requirements. Products will be inspected at the plant and will be shipped with a Confirmation of Inspected Material Document. A copy of the inspection documentation will be archived in eDOCs.
2402	4. Cotton Duck Bearing Pads	3741 and Special Provisions	Confirmation of Inspected Material Document and field inspection for damage/defects	See Notes		See Project Special Provisions for Sampling, Testing, and Acceptance Requirements. Products will be inspected at the plant and will be shipped with a Confirmation of Inspected Material Document. A copy of the inspection documentation will be archived in eDOCs.

IX. Geosynthetics, Pipe, Tile, and Precast/Prestressed Concrete

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2402 2422 2501 2503 2506	1. Corrugated Metal Products A. Culvert Pipe Underdrains Erosion Control Structures	3225 thru 3229, 3351 and 3399	Visual Inspection: Check for good construction, workmanship, finish requirements and shipping			Form 02415 or 2403 Make certain pipe is Certified on Invoice, retain certificate of compliance and certified mill analysis in project file
2501	1. Corrugated Metal Products B. Structural Plate	3231	Visual Inspection: Invoice shall include notation that material described is in accordance with fabricator's Certificate and Guarantee			Same as 1.A
2501	1. Corrugated Metal Products C. Aluminum Structural Plate	3233				Retain certificate of compliance and certified mill analysis in project file
2503 2506	2. Clay Pipe	3251	No samples required for less than 100 pieces	1 per 200 pieces of each size.	Full Size Pipe	Form 02415 or 2403
2501 2503 2506	3. Concrete Pipe Reinforced Pipe and Arches, Precast Cattle Pass Units, and Sectional Manhole Units	2462 3236	Field Inspection: Check for damage and defects. Check dimensions as required. Check for producer's "Certified" stamp and signature on the certification document.	1 "companion" cylinder per month per plant during production, or cylinder testing machine, whichever is greater. Call Precast Inspection Engineer at 651-366-5539 for additional information.		Form 02415 or 2403 Product will be certified by producer, only spot checks are done by plant inspector. Make certain the invoice or certification document is signed and the product has the required markings. Maintain Form 2403 or 02415 in project records, showing source of materials and type and quantity used
2501 2503 2506	3. Concrete Pipe Fine Aggregate Quality	3126		1 quality test per month during production.	25 lb.	
2501 2503 2506	3. Concrete Pipe Coarse Aggregate Quality	3137		1 quality test per month during production.	25 lb.	

IX. Geosynthetics, Pipe, Tile, and Precast/Prestressed Concrete (Cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2412	4. Precast/Prestressed Concrete Structures A. Reinforced Precast Box Culvert	2462 3238	1 air test per pour (1st load) 1 set of cylinders per 25 cubic yards, with a minimum of two cylinders per set. Alternate cylinder acceptance systems may be allowed with the approval of the State Materials Engineer.	1 "companion" cylinder per month per plant during production, or cylinder testing machine, whichever is greater. Call Precast Inspection Engineer at 651-366-5539 for additional information.		Precast/prestressed Concrete Structure (beams, posts, etc.) will be inspected and stamped at plant. Field personnel are responsible for checking for plant inspector's stamp, for shipping/handling damage or defects, and dimensions. An inspection report will be completed by plant personnel and sent to the field personnel.
	Fine Aggregate Quality	3126		1 quality test per month during production.	25 lb.	
	Coarse Aggregate Quality	3137		1 quality test per month during production.	25 lb.	
2405	4. Precast/Prestressed Concrete Structures B. Precast/Prestressed Concrete Structure (beams, posts, wetcast pipe and manholes, miscellaneous concrete products, etc.).	2405 2462	1 air test per pour (1st load) 1 slump/spread test 1 set of cylinders per 25 cubic yards, with a minimum of two cylinders per set, and one set per beam. Alternate cylinder acceptance systems may be allowed with the approval of the State Materials Engineer.	1 "companion" cylinder per month per plant during production, or cylinder testing machine, whichever is greater. Call Precast Inspection Engineer at 651-366-5539 for additional information.		Precast/prestressed Concrete Structure (beams, posts, etc.) will be inspected and stamped at plant. Field personnel are responsible for checking for plant inspector's stamp, for shipping/handling damage or defects, and dimensions. An inspection report will be completed by plant personnel and sent to the field personnel.
	Fine Aggregate Gradation and Quality	3126	<u>Gradation</u> : 1 per 200 Cu. yd. or fraction thereof. 1 per day of production or 3 per week, whichever is less.	1 gradation and 1 quality test per month during production from a split sample. Include producer's gradation results on sample card.	25 lb.	
	Coarse Aggregate Gradation and Quality	3137	Gradation: 1 per 100 Cu. yd. or fraction thereof. 1 per day of production or 3 per week, whichever is less.	1 gradation and 1 quality test per month during production from a split sample. Include producer's gradation results on sample card.	25 lb.	

IX. Geosynthetics, Pipe, Tile, and Precast/Prestressed Concrete (Cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2506	5. Manholes and Catch Basins (Construction)	2462 2506 3622	Field Inspection: Check for damage and defects. Check dimensions as required. Check for Producer's "Certified" stamp and signature on the certification document.	1 "companion" cylinder per month per plant during production, or cylinder testing machine, whichever is greater. Call Precast Inspection Engineer at 651-366-5539 for additional information.		Form 02415 or 2403 Product will be certified by producer or inspected, tested and stamped at source. Only spot checks are done by plant inspector. Make certain the invoice or certification document is signed and the product has the required markings. Maintain Form 2403 or 02415 in project records, showing source of materials and type and quantity used (bricks, blocks, precast, or combination).
2502	6. Drain Tile (Clay or Concrete)	3276	Visual Inspection	2 samples of each size from each source		
2502 2503	7. Thermoplastic (TP) Pipe ABS and PVC	3245	Obtain Certificate of compliance. Check for approved marking printed on pipe. Field Inspect for damage or defects.	None		Form 02415 or 2403 See Spec. 3245 for specific AASHTO or ASTM Pipe types are approved under this specification.
2502	8. Corrugated Polyethylene Pipe – Single wall for edge drains, etc.	3278	Check for markings (AASHTO M 252) Certificate of Compliance. Field Inspect for damage or defects.	No Laboratory tests required		Form 02415 or 2403
2503	9. Sewer Joint Sealing Compound	3724	None	1 per shipment	1 pint	
2412 2501 2503	10. Preformed Plastic Sealer for Pipe	3726 Type b	None	1 from each source	1 foot	
2412 2501 2503	11. Bituminous Mastic Joint Sealer for Pipe	3728	Visual Inspection	Sample, if questionable		
2106	12. EPS Geofoam	Special Provisions	Visual Inspection Check for yellow aged material, uniformity and dimensions. Weigh 1'x1'x1' cut coupon to verify density every 250 yd3	None		Form 02415 or 2403

IX. Geosynthetics, Pipe, Tile, and Precast/Prestressed Concrete (Cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2501 2503	13. Plastic Pipe A. Corrugated Polyethylene (CP) – Dual Wall B. Polypropylene (PP) – Dual Wall C. Polyvinyl Chloride (PVC) – Profile Wall	3247 3246 3248	Inspect for damage or defects. Deflection test no less than 30 calendar days after installation. Recommend test completed at least 5-10 calendar days prior to paving. Pipe cannot be deflected more than 5%.	None		Form P2501 Send form to State Hydraulic Engineer PP, CP or PVC culvert and storm sewer pipe manufactures that meet structural requirements and are in compliance with AASHTO's National Transportation Product Evaluation Program (NTPEP) are listed on the APL/QPL. A Certificate of Compliance in accordance with Specification 1603 is required.
2108 2511	14. Geotextile Fabric and Geogrid Reinforcement	3733 and Special Provisions	Inspect for damage and uniformity of texture. Rolls of both geotextile and geotextile wrapped PE Tubing must be wrapped in UV protective plastic. (Usually Black). Obtain Certificate of Compliance If using adhesive for seams, see Approved/Qualified Product List available at the Department's website	(a) 1 per project for pipe wrap or trench lining for Permeable base designs. (b) 1 per 50,000 yd ² of each type of fabric or geogrid. (c) Seam, if required, 1 per project. Small Quantity Acceptance <ul style="list-style-type: none"> For fabric totals < 200 yd² For pipe wrap totals < 1000 Lin. Ft No sampling required Use Inspection Report for Small Quantities (Form 2403) Check: <ul style="list-style-type: none"> Certificate of Compliance Identifying label on product Geotextile Small Quantity Acceptance List at http://www.dot.state.mn.us/materials/aggregatedocs/gtxlist.pdf 	(a) 10 Lin. Ft. (b) 4 yd ² * (c) 10 Lin. Ft. **	Provide a Certificate of Compliance with minimum average roll values (MARV) for all specified geotextile properties. Values must meet Specification 3733 requirements for the specific application. Submit copy of Certificate with material samples & send to the CO Materials Laboratory. Obtain a random sample with no more than 1 sample per individual roll. For Type 6 & special geosynthetics, submit pages of Special Provisions that list required material properties. For Modular Block Walls or Reinforced Soil Slopes, submit page(s) of shop drawings that reference geogrid/geotextile to be used (product name) and/or required properties. * Do not sample first full turn of rolled product. ** Provide seam sample with 3 feet of geosynthetic material on each side of seam (in direction perpendicular to seam).

X. Brick, Stone, and Masonry Units

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2506	1. Brick A. Sewer (clay) and Building	3612 to 3615	Visual Inspection	1 per 50,000 brick or fraction thereof	6 whole bricks	
2506	1. Brick B. Sewer (Concrete)*	3616	Visual Inspection	1 per shipment.	6 whole bricks	* Air entrainment required. Obtain air content statement from supplier.
2506	2. Concrete Masonry Units A. For Sewer Construction	3621	Visual Inspection	1 per shipment	6 whole units	Air entrainment required. Obtain air content statement from supplier.
2411	2. Concrete Masonry Units B. For Modular Block Retaining Walls	Special Provisions	Visual Inspection Check for cracks and broken corners	1 per 10,000 units or fraction thereof, with a minimum of one sample per product (block) type per contract.*	5 whole units	All lots of block upon delivery shall have Manufacturer or Independent laboratory test results to verify passing both compression and freeze-thaw requirements. * Wall units and cap units are considered separate block types.
2422	3. Reinforced Concrete Cribbing	3661	Concrete control tests Air Tests Visual Inspection if previously tested	1 cylinder per 100 units, but not less than 5 cylinders for a given contract. Other materials as required herein.	6 x 12 inch Cylinders	Form 02415 or 2403 Will be stamped when inspected prior to shipment.

Pay Item No.	Kind of Material	Spec. No.	Minimum Quality Control (Contractor Testing Rate)	Quality Assurance (Department)	Notes
2511 2512 2577	4A Class I – V Random Riprap.	3601 and/or Special Provisions	1 gradation per product per year of Class I – V Random Riprap, adhering to the requirements listed in Supplemental Specification 2511.3F.1. Provide certification for each product, using Form G&B-104.	1 gradation per project, source and Class using D ₈₅ method 5-692.210 in the Grading and Base Manual. Use Form G&B 108a.	See special provisions. For questions on quality, contact District Materials or Geology Unit.
	4B All other Riprap	3601 and/or Special Provisions	Provide certification for each product, using Form G&B-104.	Visual Inspection	See special provisions. For questions on quality, contact District Materials or Geology Unit.

XI. Lighting Systems, Traffic Management Systems, and Traffic Control Signals Electrical Materials

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Notes
2545	1. Light Poles (Aluminum, Coated Steel, or Stainless Steel)	3811	Visual Inspection-verify product is as shown on MnDOT's APL/QPL for Lighting	None	The Fabricator shall submit "Certificate of Compliance", on a per project basis, to the Project Engineer. Materials should not be ordered until required shop drawings have been signed off by the Department. Verify compliance with (23CFR635.410) Buy America requirements listed under Division S 1601 Special Provisions. Retain Certificate of Compliance and certified mill analysis in the project file.
2565	2. Signal Poles and Mast Arms	3831	Visual Inspection	None	The Fabricator shall submit "Certificate of Compliance", on a per project basis, to the Project Engineer. Materials should not be ordered until required shop drawings have been signed off by the Department. Verify compliance with (23CFR635.410) Buy America requirements listed under Division S 1601 Special Provisions. Retain Certificate of Compliance and certified mill analysis in the project file.
2565	3. Signal Head Pedestal Pole	2565 Special Provisions	Visual Inspection verify product is as shown on MnDOT's APL/QPL for Signals	None	Signal Head Pedestal Poles are listed on MnDOT's APL/QPL for Signals
2545 2550 2565	4. Hand Holes for use in non-deliberate vehicular traffic applications (installed in sidewalk and along the roadside)	3819.2A	Visual Inspection - verify make and model number as shown on MnDOT's APL/QPL	None	Form 02415 or 2403 Traffic control signals and lighting projects require handholes (HH) and frames and covers for use in non-deliberate vehicular traffic applications to be listed on the MnDOT APL/QPL for signals. See Standard Specifications for Construction 3819.
2545 2550 2565	5. Hand Holes (Concrete Precast) for use in deliberate heavy vehicular traffic applications.	2545 2550 2565		None	Form 02415 or 2403 For precast concrete HH's and cast iron frame and cover: see Standard Plate 8117, VII.6, Drainage Castings and Standard Specifications for Construction 3819. Verify compliance with (23CFR635.410) Buy America requirements listed under Division S 1601 Special Provisions. Retain Certificate of Compliance and certified mill analysis in the project file.
2545 2550 2565	6. Pulling Vaults and Splice Vaults (Polymer Concrete)	3820 3821	Visual Inspection - verify make and model number as shown on MnDOT's APL/QPL	None	Form 02415 or 2403 Traffic control signals, roadway lighting projects, and traffic management systems require pulling vaults and splice vaults to be listed on MnDOT's APL/QPL for Traffic Management Systems/ITS
2545 2550 2565	7. Underground Non-Detectable Marking Tape	3806	Visual Inspection	None	Tape shall be labeled as required.

XI. Lighting Systems, Traffic Management Systems, and Traffic Control Signals Electrical Materials (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Notes
2545 2565	8. Foundation	2545	Refer to Section IV. Concrete Field Testing – General Concrete Grades F, G, M, P, and R	Refer to Section IV. Concrete Field Testing – General Concrete Grades F, G, M, P, and R	Rebar is required in concrete foundations as specified in the Contract documents for all traffic control signals and roadway lighting projects. Verify compliance with (23CFR635.410) Buy America requirements listed under Division S 1601 Special Provisions. Retain Certificate of Compliance and certified mill analysis in the project file.
2545 2565	9. Steel Screw in Foundations	2545 2565	Visual Inspection - verify make and model number as shown on MnDOT's APL/QPL	None	Steel Screw in Foundations are listed on MnDOT's APL/QPL for Lighting & Signals. Verify compliance with (23CFR635.410) Buy America requirements listed under Division S 1601 Special Provisions. Retain Certificate of Compliance and certified mill analysis in the project file.
2402 2545 2550 2565	10. Conduit and Fittings Rigid Steel Conduit (RSC)	3801	Visual Inspection	None	Form 02415 or 2403 Conduit shall be labeled as being listed by a National Recognized Testing Laboratory (NRTL). Retain Form 02415 or 2403 in Project File. Verify compliance with (23CFR635.410) Buy America requirements listed under Division S 1601 Special Provisions. Retain Certificate of Compliance and certified mill analysis in the project file.
2402 2545 2550 2565	12. Conduit and Fittings (Cont.) Non-Metallic Rigid PVC and HDPE Conduit A. Rigid PVC Conduit B. High Density Polyethylene (HDPE) Conduit	3803	Visual Inspection	None	Form 02415 or 2403 Conduit shall be labeled as being listed by a National Recognized Testing Laboratory (NRTL). Retain Form 02415 or 2403 in Project File
2402 2545 2550 2565	13. Conduit and Fittings (Cont.) Liquid Tight Flexible Non-Metallic Conduit (LFNC-B)	3804	Visual Inspection	None	Form 02415 or 2403 Conduit shall be labeled as being listed by a National Recognized Testing Laboratory (NRTL). Retain Form 02415 or 2403 in Project File

XI. Lighting Systems, Traffic Management Systems, and Traffic Control Signals Electrical Materials (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Notes
2545 2565	14. Conduit and Fittings (Cont.) PVC Coated Hot Dipped Galvanized Rigid Steel Conduit (PVC Coated RSC)	3805	Visual Inspection	None	Form 02415 or 2403 Conduit shall be labeled as being listed by a National Recognized Testing Laboratory (NRTL). Retain Form 02415 or 2403 in Project File. For traffic control signals and roadway lighting projects, specific requirements are contained in the Special Provisions for each project. Verify compliance with (23CFR635.410) Buy America requirements listed under Division S 1601 Special Provisions. Retain Certificate of Compliance and certified mill analysis in the project file.
2545 2565	15. Anchor bolts (cast in place) Epoxy Adhesive	3385			See section VII, 7.
2545 2565	16. Anchorages (Drilled In)	3885			See section VII, 9.
2545 2565	17. Accessible Pedestrian Signal (APS) Pushbutton Base Adhesive Anchoring System	2545 2565	Visual Inspection - verify product is as listed on MnDOT's APL/QPL	None	Traffic control signals require epoxy for securing anchor rods used for APS ped stations, service cabinets, and traffic control signal cabinets. Additionally, lighting projects require epoxy for securing anchor rods used for the service cabinets.
2545 2565	18. Anti-Seize and Lubricating Compound (Bridge Grease)	3842.2A	Visual Inspection - verify product is as listed on MnDOT's APL/QPL	None	Traffic control signals, roadway lighting projects, require Anti-Seize Compound to be listed on MnDOT's APL/QPL for Bridge
2545 2565	19. Conductor Anti-Oxidant Joint Compound	3842.2B	Visual Inspection	None	Traffic control signals, roadway lighting projects, require Anti-Oxidant Compound be used on grounding connections.
2545 2565	20. Ferrous Metal Electrically-Conductive Corrosion Resistant Compound	3842.2C	Visual Inspection	None	Traffic control signals, lighting projects, require Ferrous Metal Electrically-Conductive Corrosion Resistant Compound be used on rigid metal conduit threads and PVC coated rigid steel conduit threaded fittings.
2545 2565	21. Light Pole and Luminaire Numbering Labels	3844.2A	Visual Inspection - verify product is as listed on MnDOT's APL/QPL	None	Traffic control signals, lighting projects, require Light Pole and Luminaire Numbering Labels be used on all light poles and luminaires.

XI. Lighting Systems, Traffic Management Systems, and Traffic Control Signals Electrical Materials (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Notes
2545 2565	22. Arc Flash Warning Labels	3844.2B.1 and 3844.2B.2	Visual Inspection - verify the self-adhering label has proper calculated values displayed as required	None	Traffic control signals, lighting projects, require the electrical service cabinet be labeled with the appropriate arc flash warning labels.
2545 2565	23. Available Fault Current Calculation Labels	3844.2C	Visual Inspection - verify the self-adhering label has proper calculated values displayed as required	None	Traffic control signals and lighting projects, require service cabinet be labeled with the calculated available fault current calculation labels.
2545 2565	24. Miscellaneous Hardware	2545 2565	Visual Inspection	Sample critical items only. One of each item per shipment. (Critical Items are load bearing, structurally necessary items.)	Will carry "Inspected" tag if sampled and tested prior to shipment. No sample necessary if "Inspected". Do not use if not tested. Field sample at sampling rate for laboratory testing. For traffic control signals and roadway light lighting projects, various miscellaneous hardware is required to be listed on the MnDOT Signals and Lighting APL/QPL. The Contract documents indicate which items must be on the Signals and/or Lighting APL/QPL.
2545 2550 2565	25. Cable and Conductors A. Service, Feeder, and Branch Circuit Conductors PVC Loop Detector Conductors Underground Service Entrance (USE) cables	3815.2B.1	Visual Inspection	None	Form 02415 or 2403 Make certain the conductors are the type specified. Submit Field Inspection report showing type and quantities used. Shall be labeled as being listed by a National Recognized Testing Laboratory (NRTL) and type where applicable. Ensure Service Entrance Cables (SE) and Underground Service Entrance Cables (SE) are installed in accordance with the NEC
2545 2550 2565	26. Cable and Conductors (Cont.) B. Electrical Cables and Single Conductors with Jacket	3815.2B.2(b)) 3815.2B.3 3815.2B.5 3815.2C.1 3815.2C.3 3815.2C.4 3815.2C.5 3815.2C.6 3815.2C.7 3815.2C.8 3815.2C.14	Visual Inspection	1 per size per lot Sample Size: 5 feet	Form 02415 or 2403 Usually inspected at Distributor. Documentation showing project number, reel number(s), and MnDOT test number(s) will be included with each project shipment. If such documentation is not received from Contractor, submit sample for testing along with material certification from manufacturer. Do not use if not tested. Pre-inspected materials will not be tagged; an inspection report will be sent by the MnDOT inspector for each shipment. Project inspectors should verify that the shipping documents agree with this inspection report. Call the Concrete and Metals Lab at 651-366-5536 with questions.

XI. Lighting Systems, Traffic Management Systems, and Traffic Control Signals Electrical Materials (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Notes
2545 2550 2565	27. Cable and Conductors (Cont.) C. Fiber Optic Cables	3815.2C.13	Visual Inspection - verify make and model number as shown in Special Provisions	None	Form 02415 or 2403 Fiber optic cables shall be listed on the MnDOT APL/QPL for Traffic Management Systems/ITS.
	28. Saw Cut Loop Detector Conductors (Tube Loop Detector)	3815.2B.3	Visual Inspection	1 per size per lot Sample Size: 5 feet	Form 02415 or 2403 Usually inspected at the distributor. Documentation showing project number, reel number(s), and MnDOT test number(s) will be included with each project shipment. If such documentation is not received from Contractor, submit sample for testing along with material certification from manufacturer. <u>Do not</u> use if <u>not</u> tested. Pre-inspected materials will <u>not</u> be tagged; an inspection report will be sent by the MnDOT inspector for each shipment. Project inspectors should verify that the shipping documents agree with this inspection report. Call the Physical Testing Engineer at 651-366-5540 or the Concrete and Metals Lab at 651-366-5536 with questions
2545 2565	29. Grounding Electrodes (Ground Rods) (Plate Electrodes)	2545 2565 3818	Visual Inspection	None.	Form 02415 or 2403 Retain Form 02415 or 2403 in project file. Shall be labeled as being listed by a National Recognized Testing Laboratory (NRTL).
2545	30. Luminaires	3810	Visual Inspection - verify make and model number as shown on MnDOT's APL/QPL	None.	Form 02415 or 2403 Traffic control signals and roadway lighting projects require luminaries and lamps to be listed on the MnDOT APL/QPL for Lighting. The conductors shall be labeled as being listed by a National Recognized Testing Laboratory (NRTL) and type, where applicable.
2545	31. Air Obstruction Lights	3816	Visual Inspection - verify make and model number as shown on MnDOT's APL/QPL	None.	Air Obstruction Lights are listed on MnDOT's APL/QPL for Lighting.
2545	32. Navigation Lanterns	3817	Visual Inspection - verify make and model number as shown on MnDOT's APL/QPL	None.	Navigation Lanterns are listed on MnDOT's APL/QPL for Lighting.

XI. Lighting Systems, Traffic Management Systems, and Traffic Control Signals Electrical Materials (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Notes
2545 2565	33. Rodent Intrusion Barrier	3836	A. Ensure the stainless-steel woven wire cloth meets the requirements. B. Visual Inspection - verify make and model number as shown on MnDOT's APL/QPL C. Visual Inspection - verify make and model number as shown on MnDOT's APL/QPL	None.	In both lighting and traffic control signal pole bases some type of rodent intrusion barrier is required. See Standard Specifications for Construction 3836.
2545 2565	34. Sponge Rubber Expansion Joint. Used for wrapping expansion and deflection/expansion conduit joints on bridges.	3841	Visual Inspection		
2545	35. Lighting System	2545			Lighting Systems are to be certified by the Project Engineer.
2545	36. Electrical Systems				Electrical Systems are to be certified by the Project Engineer.
2565	37. Traffic Control Signal Systems	2565			Traffic Control Signal Systems are to be certified by the Project Engineer.

Material	SMC Section	Sub Section	Page	Certification Required
All Base, Surface, and Granular Materials	I. Grading & Base	Many	2-9	Form G&B-104 (24346)
Plant Mixed Asphalt (PMA)	II. Bituminous	Many	10-14	All PMA from certified supplier www.dot.state.mn.us/materials/bituminous.html
Shingles	II. Bituminous		11-12	Contractor shall provide documentation that of all RAS /TOSS (Tear Off Shingle) material is from a MPCA certified supplier.
Bituminous Material	II. Bituminous		15-16	Only Bituminous Materials from certified asphalt binder sources are allowed for use. The most current list of Certified Sources can at http://www.dot.state.mn.us/products
Emulsified Asphalt	II. Bituminous		15	Use Emulsion for seal coat from a certified emulsified asphalt source.
Portland Cement Fly Ash Slag Cement Admixtures Clarified Water	IV. Concrete		25	Concrete Plant Batching Materials: All materials must come from certified approved, or qualified sources. All certified sources must state so on the Bill of Lading Delivery invoice including MnDOT standardized certification statement for cement, fly ash, and slag. The most current list of certified/approved sources can be found at www.dot.state.mn.us/products .
Certified Ready Mix	IV. Concrete	Many	26-27	Contact Report from Ready-Mix Plant. All concrete from certified plant including a computerized certificate of compliance with each load.
Plastic for Curing	IV. Concrete		33	A Certificate of Compliance shall be submitted to the Project Engineer from the Manufacturer certifying that the plastic complies with AASHTO M171.
Profiler	Introduction IV. Concrete		1,37	Contractor provides MnDOT certified Inertial Profiler Results for bumps/dips and/or Areas of Localized Roughness for the entire project.
Aggregate for Low Slump Overlays	IV. Concrete		38	Aggregate pit numbers and 1 passing gradation result per fraction per source
Aggregate for Concrete Pavement Repair	IV. Concrete		39	Aggregate pit numbers and 1 passing gradation result per fraction per source
Aggregate for Dowel Bar Retrofits	IV. Concrete		40	Aggregate pit numbers and 1 passing gradation result per fraction per source
Plant Stock & Landscape Materials	V: Landscaping etc.	2	41	Several certifications
Silt Fence	V: Landscaping etc.	5	42	APL/QPL www.dot.state.mn.us/products
Flotation Silt Curtain	V: Landscaping etc.	6	42	Manufacturers' certification of compliance
Mulch Type 3	V: Landscaping etc.	12	45	Certified Vendor by Minnesota Crop Improvement Association must be tagged grain straw only on label.
Mulch Type 6 Wood Chips	V: Landscaping etc.	13	42	Emerald Ash Borer Compliance Agreement with the MDA
Seeds	V: Landscaping etc.	14	43	Certified Vendor by Minnesota Crop Improvement Association must be tagged.
Seeds - Native	V: Landscaping etc.	14	43	Certified Vendor by Minnesota Crop Improvement Association must be tagged.
Sod	V: Landscaping etc.	15	43	A certified tag by Minnesota Crop Improvement Association for Salt tolerant sod. A certificate of Compliance for all other types of sod listing grass varieties.

Material	SMC Section	Sub Section	Page	Certification Required
Compost	V: Landscaping etc.	16	43	APL/QPL http://www.dot.state.mn.us/products/erosioncontrolandlandscaping/compost.html
Hydraulic Erosion Control Product	V: Landscaping etc.	18	43	If DNR Permit on project Certification of Compliance stating it is plastic/synthetic free.
Waterproofing material membrane waterproof system	VI: Chemical Items		44	Certificate and test results
Waterborne latex traffic marking paint	VI: Chemical Items		45	Certificate of Compliance
Epoxy traffic paint	VI: Chemical Items		45	Certificate of Compliance
Traffic marking paint	VI: Chemical Items		45	Certificate of Compliance
Non-traffic marking paint	VI: Chemical Items		45	Certificate of Compliance
Bridge structural steel paint	VI: Chemical Items		45	Certificate of Compliance
Exterior masonry paint	VI: Chemical Items		46	Certificate of Compliance
Noise wall stain	VI: Chemical Items		46	Certificate of Compliance
Drop-on glass beads	VI: Chemical Items		46	Certificate of Compliance
Pavement marking tape	VI: Chemical Items		46	Certificate of Compliance
Steel sign posts	VII: Metallic	2	47	Certification of domestic source if applicable under 1601
Posts for traffic or fence	VII: Metallic	3A	48	Certification of domestic source if applicable under 1601 For fence: Fence certification form (Optional)
Fence components	VII: Metallic	3B	48	Fence certification form (Optional)
Fence gates	VII: Metallic	3C	48	Fence certification form (Optional)
Fence barbed wire fabric	VII: Metallic	3D	48	Fence certification form (Optional)
Fence woven wire fabric	VII: Metallic	3E	48	Fence certification form (Optional)
Fence chain link wire fabric	VII: Metallic	3F	49	Fence certification form (Optional)
Reinforcing steel uncoated bars	VII: Metallic	5A	49	Certificate of Compliance & certified mill analysis
Reinforcing steel epoxy bars	VII: Metallic	5B	49	Inspected tag or Certificate of Compliance & certified mill analysis
Steel Fabric	VII: Metallic	5E	50	Certificate of Compliance
Dowel Bars	VII: Metallic	5F	50	Certificate of Compliance
Pre or post tensioning strand	VII: Metallic	5G	50	Mill analysis
Anchor rods & Structural Fasteners	VII: Metallic	7, 8	51	Yearly MnDOT passing test report

Material	SMC Section	Sub Section	Page	Certification Required
Timber & lumber	VIII: Miscellaneous	1	55	Certified on invoice
Bearing pads	VIII: Miscellaneous	4	55	Certificate of Compliance
Corrugated metal pipe	IX: Geosynthetics & Pipe	1A	56	Certified on invoice
Corrugated metal structural plate	IX: Geosynthetics & Pipe	1B	56	Certified on invoice
Corrugated metal aluminum plate	IX: Geosynthetics & Pipe	1C	56	Fabricator's Certificate and guarantee
Concrete pipe	IX: Geosynthetics & Pipe	3A	56	Certified stamp and certification document
Precast box culverts	IX: Geosynthetics & Pipe	4A	57	Stamped & field inspection report
Prestressed beams & posts, etc.	IX: Geosynthetics & Pipe	4B	57	Stamped & field inspection report
Manholes & catch basins	IX: Geosynthetics & Pipe	5	58	Certification document or stamped
Thermoplastic pipe ABS & PVC	IX: Geosynthetics & Pipe	7	58	Certificate of Compliance
Corrugated PE Pipe: Single wall – edge drains	IX: Geosynthetics & Pipe	8	58	Certificate of Compliance
Plastic Pipe – culverts or storm sewers: A. Corrugated Polyethylene (CP) B. Polypropylene (PP) C. Polyvinyl Chloride (PVC)	IX: Geosynthetics & Pipe	13	59	Certificate of Compliance
Geotextile fabric	IX: Geosynthetics & Pipe	14	59	Manufacturers' Certification of compliance
Brick sewer concrete	X: Brick, Stone, Masonry	1B	60	Air content statement
Concrete masonry units	X: Brick, Stone, Masonry	2A	60	Air content statement
Light poles	XI: Electrical & Signal	1	61	Certificate of Compliance
Cable & Conductors	XI: Electrical & Signal	7	64	Usually inspected at the distributor. Documentation showing project number, reel number(s), & MnDOT test number(s) will be included with each project shipment. If not received from Contractor, submit sample for testing along with manufacturers' material certification.
Electrical systems	XI: Electrical & Signal	14	66	Electrical Systems are to be reported as a "System" using the Lighting, Signal, and Traffic Recorder Inspection Report.
Traffic control signal systems	XI: Electrical & Signal	15	66	Traffic Control Signal Systems are to be reported as a "System" using the Lighting, Signal, and Traffic Recorder Inspection Report.

Section	Page	Section Name	Contact	Phone
Part I	Page 2	Grading, Base & Reclamation – Specifications 2106, 2111, 2112, 2118, 2211, 2212, 2215, 2221, and 2390	Terry Beaudry John Bormann	(651) 366-5456 (651) 366-5596
Website: www.dot.state.mn.us/materials/gradingandbase.html				
Part II	Page 10	Bituminous - Spec. 2360	John Garrity	(651) 366-5577
Part II C	Page 15	Asphalt Binder	Allen Gallistel Jason Szondy	(651) 366-5545 (651) 366-5549
Website: www.dot.state.mn.us/materials/bituminous.html				
Part III	Page 17	Bituminous Specialty Items	Joel Ulring Jerry Geib	(651) 366-5432 (651) 366-5496
Part IV	Page 24	Concrete – General Aggregates, Mix Designs and Certified Ready-Mix – Metro Certified Ready Mix – Greater MN North Certified Ready Mix – Greater MN South Paving Bridges Pavement Rehabilitation	Maria Masten Matt Herbst Brad Swenson Mike Daniels Rob Golish Jake Gave Gordy Bruhn	(651) 334-4015 (651) 283-7127 (218) 232-1012 (320) 293-9421 (651) 216-0516 (612) 554-9289 (651) 398-9597
Website: www.dot.state.mn.us/materials/concrete.html				
Part V	Page 41	Landscaping and Erosion Control Items Erosion Control Landscaping Wood Chips	Ken Graeve Carol Zoff Tina Markeson	(612) 386-6101 (612) 449-0754 (651) 366-3619
Part VI	Page 44	Chemical Items	Allen Gallistel Jason Krogman	(651) 366-5545 (651) 366-5550
Part VII	Page 47	Metallic Materials and Metal Products Sampling Test Results Bridge Structural Metals	Jemal Jeju Laboratory Rich Karras	(651) 366-5539 (651) 366-5560 (651) 366-4569
Part VIII	Page 55	Miscellaneous Materials Sections 1 thru 3 Section 4 Test Results	Jemal Jeju Rich Karras Laboratory	(651) 366-5539 (651) 366-4569 (651) 366-5560
Part IX	Page 56	Geosynthetics, Pipe, Tile, and Precast/Prestressed Concrete Sections 1 -2, 6-11, & 13 Sections 3, 4 & 5 Section 12 Section 14 Test Results	Jemal Jeju Rich Lamb Blake Nelson Laboratory	(651) 366-5539 (651) 366-5595 (651) 366-5599 (651) 366-5560
Part X	Page 60	Brick, Stone and Masonry Units/Modular Retaining Wall Blocks Sections 1, 2A & 3 Section 2B Section 4 Test Results	Jemal Jeju Blake Nelson Andrea Hendrickson Laboratory	(651) 366-5539 (651) 366-5599 (651) 366-4466 (651) 366-5560
Part XI	Page 61	Electrical & Signal Sections 1, 8-11 Section 5 Section 3 Test Results	Susan Zarling Jemal Jeju Gordy Bruhn Laboratory	(651) 234-7052 (651) 366-5539 (651) 398-9597 (651) 366-5560

Grading and Base	
Form No.	Form Name
G&B – 001	Grading & Base Report
G&B – 002b	Random Sampling Acceptance for use with 2018 Spec Book
G&B – 101	Sieve Analysis
G&B – 103	Percent Crushing Report
G&B – 104	Certificate of Aggregates & Granular Materials
G&B – 105	Moisture Test
G&B – 106	Relative Moisture Test for Nuclear Gauge
G&B – 107	Excel Spreadsheet for Computing D60/D10 for Drainable Bases Specs 2212 and 3136
G&B – 203	(Table 2106.3-5) DCP Penetration Index Method
G&B – 204	(Table 2211.3-3) DCP Penetration Index Method
G&B – 205	2215 DCP Penetration Index Form – Full Depth Reclamation
G&B – 303	Moisture - Density (Proctor) Test
G&B – 304	Relative Density Test
G&B – 305	Estimated Optimum Moisture Content
G&B – 401	Depth Report – FDR, CIR, SFDR
G&B – 402	Yield Report Cement SFDR & CIR
G&B – 403	Yield Report Bitumen SFDR & CIR
G&B – 404	Foam AC Report
G&B – 405	SFDR Compaction Report
G&B – 601	LWD Option 1: Control Strip- Road Embankment
G&B – 602	LWD Option 1: Control Strip- Misc., Trench, Culvert, Tapered Construction

Bituminous	
Form No.	Form Name
2413	Asphalt Sample Identification Card
	Test Summary Worksheet
	QM Workbook
	Core Stationing Worksheet
	Core Incentive/Disincentive Worksheet
	Bituminous Profile Summary Worksheet
	Plant Certification Application
	Bituminous Batch Plant – Contact Report
	Dryer Drum Plant – Certification Report
	Daily Production Report
	Bituminous Plant Spotcheck
	Bituminous Plant Diary

Concrete	
Form No.	Form/Workbook Name
2409	ID Card Concrete Test Cylinder
21412	Weekly Report of “Low Slump Concrete”
24300	ID Card Cement Samples
24308	ID Card Fly Ash Samples
CONC-302	Aggregate Gradation Control Charts and Sample Log
CONC-304	Concrete Ready-Mix Plant QC Workbook
CONC-305	Concrete Ready-Mix Plant QA Workbook
	Concrete Profile Summary Worksheet
CONC-401	Air Content Workbook
CONC-402	Concrete Test Beam Data Worksheet
CONC-404	Thickness, Texture and MIT-SCAN Workbook
CONC-405	Coarse Aggregate Quality Incentive/Disincentive Workbook
CONC-409	W/C Ratio Calculation Workbook
CONC-410	QC - JMF Concrete Aggregate Workbook
CONC-411	QA- JMF Concrete Aggregate Workbook
CONC-501	Concrete Pavement Repair (CPR) Workbook
CONC-503	3U18 and 3U58M Quality Control Worksheet

Miscellaneous	
Form No.	Form Name
2410	Sample ID Card
02415	Inspection Report for Small Quantities (May be used for documentation or use another method to capture required documentation)
2403	Inspection Report for Small Quantities (May be used for documentation or use another method to capture required documentation)
	Certification Form for Type of Fence used (right side of page at website location below) www.dot.state.mn.us/materials/lab.html
P2501	Plastic Pipe Installation and Mandrel Test Results

Disadvantaged Business Enterprise (DBE) Special Provisions

Project Information	
State Project Number:	This contract uses the following project delivery method:
This contract will be solicited and administered by: <input type="checkbox"/> The Minnesota Department of Transportation (MnDOT) <input type="checkbox"/> A local governmental unit	<input type="checkbox"/> Design-bid-build (DBB) <input type="checkbox"/> Design-build (DB) <input type="checkbox"/> Construction Manager/General Contractor (CM/GC) <p style="text-align: center;">OR</p> <input type="checkbox"/> This is a professional-technical (PT) services contract

Introduction

Federal Regulations Govern. Some or all of the funds for this contract will come from the U.S. Department of Transportation (USDOT). Therefore, the federal Disadvantaged Business Enterprise (DBE) program described at Title 49, Part 26 of the Code of Federal Regulations (CFR) applies to this contract. The responder is responsible for understanding and following the requirements of 49 CFR Part 26.

Purpose. These special provisions (1) outline the responder's obligations under the federal DBE program, (2) explain the process MnDOT Office of Civil Rights (OCR) will follow to evaluate the responder's compliance with DBE program requirements, and (3) identify sanctions for failing to comply with DBE program requirements. These provisions apply *in addition to* any other requirements applicable to award of this contract.

Policy Statement. MnDOT must ensure nondiscrimination in the award and administration of federally eligible highway projects. The DBE program seeks to:

- Create a level playing field on which DBEs can compete fairly for federally eligible highway projects,
- Ensure that the DBE program is narrowly tailored,
- Ensure that only eligible firms are permitted to participate as DBEs,
- Help remove barriers to the participation of DBEs in federally eligible highway projects, and
- Provide flexibility in establishing and providing opportunities for DBEs.

Contract Assurance. The USDOT requires MnDOT, as a recipient of federal funds, to include the following paragraph in contracts for federally funded projects. It applies to the responder, and the responder must also include it in subcontracts the responder executes for this project.

The contractor, sub recipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to, (1) withholding monthly progress payments, (2) assessing sanctions, (3) liquidated damages, and/or (4) disqualifying the contractor from future bidding as non-responsible.

Application and Interpretation. Terms must be interpreted as follows:

- "Responder" refers to the bidder, apparent low bidder, proposer, or apparent successful proposer.
- "Proposal" includes a bid, proposal or price proposal.

- “CRL” refers to AASHTOWare Project Civil Rights and Labor. For additional information about CRL, see **Attachment 5**.

DBE Directory. A directory of all certified DBEs in the state of Minnesota is available at the following link:

<http://mnucp.metc.state.mn.us/Default.aspx>

The Minnesota Unified Certification Program (MnUCP) maintains this directory. It is the definitive source of information regarding the DBE certification status of firms in Minnesota. A firm must be certified prior to contract execution in order to qualify for credit toward the DBE goal.

False Claims. The Federal False Claims Act (31 USC §§ 3729-3733) and Minnesota False Claims Act (Minn. Stat. § 15C.02) apply to statements and certifications the responder makes in connection with the DBE program.

Before Contract Award

DBE Goal

The DBE goal for this project is ____%. or ☐ Race/Gender Neutral

To be eligible for award of this contract, the responder must demonstrate that the responder has (1) obtained sufficient DBE participation to meet the DBE goal or (2) made adequate good faith efforts (GFE) to meet the DBE goal. The responder must submit the information specified in **Table A** in the time specified in **Table B**. If the contract has a specific numerical DBE participation goal, all responders must include their DBE commitment for the contract at the time the proposal is submitted. If the responder does not properly document the responder’s efforts or submit timely and complete documentation to MnDOT OCR, MnDOT must reject the responder’s bid.

Race/Gender Neutral Goal

If the DBE goal is Race/Gender Neutral (RGN), all responders are encouraged to include their anticipated DBE utilization for the contract in their proposals. **Each responder will still be required to submit a bidders list of all subcontractors and suppliers (both DBE and non-DBE) on projects with an RGN goal.** While DBE participation is encouraged on proposals with an RGN goal, responders are not required to submit GFE documentation specified in **Table A, other than a bidders list (parts D and E of Exhibit B, the GFE Consolidated form)**. Payment information described in **Table C** is required on **all projects**.

DBE Credit

DBE work may be counted toward the DBE goal for any of the following activities:

- hiring a DBE as a subcontractor or consultant to do project work,
- purchasing materials from a DBE (typically sixty percent of the supplier’s contracted amount will count toward the goal),
- leasing equipment from a DBE,
- entering into a joint venture with a DBE (this requires approval from OCR before bid opening), or
- using DBEs for other services specifically approved by OCR before bid opening.
- If the responder is an eligible DBE, the responder may count all work being self-performed towards the subcontractor goals on this project.

DBE credit is counted for work actually performed by a DBE. The DBE must perform a commercially useful function. **Attachment 1** describes how MnDOT will count DBE credit and how MnDOT will determine whether a DBE performs a commercially useful function.

Table A – What to Submit to MnDOT	
<input type="checkbox"/> Design-bid-build administered by MnDOT <input type="checkbox"/> Construction Manager/General Contractor administered by MnDOT <input type="checkbox"/> Design-build administered by MnDOT	<input type="checkbox"/> Construction Contract administered by local governmental unit <input type="checkbox"/> PT contract administered by MnDOT or local governmental unit
IF THE DBE GOAL IS MET	IF THE DBE GOAL IS MET
<ul style="list-style-type: none"> • Exhibit A for each DBE participating on the project • Parts A, B, C, D, and I of the GFE consolidated form • The responder must submit their bidders list or bidder/quoter information electronically via CRL. For this reason, the responder does not need to fill out parts E of the GFE consolidated form. 	<ul style="list-style-type: none"> • Exhibit A for each DBE participating on the project • Parts A, B, C, D, E, and I of the GFE consolidated form
IF THE DBE GOAL IS NOT MET	IF THE DBE GOAL IS NOT MET
<ul style="list-style-type: none"> • Exhibit A for each DBE participating on the project • Parts A, B, C, D, F, G, H and I of the GFE consolidated form • The responder must submit the bidders list or bidder/quoter information electronically via CRL. For this reason, the responder does not need to fill out part E of the GFE consolidated form. • Any additional information that will help explain the responder's efforts to obtain DBE participation (ONLY IF the responder does not meet the DBE goal) 	<ul style="list-style-type: none"> • Exhibit A for each DBE participating on the project • Parts A, B, C, D, E, F, G, H and I of the GFE consolidated form • Any additional information that will help explain the responder's efforts to obtain DBE participation (ONLY IF the responder does not meet the DBE goal)

Table B – When and How to Submit Information to MnDOT

<input type="checkbox"/> Design-bid-build	<input type="checkbox"/> Professional-technical
<p><u>Date and Time</u> The submission due date is the 5th calendar day after the bid due date. Documentation is due before 4:30 PM Central Time on the 5th calendar day after the bids are due.</p> <p><u>Format and Location</u> The responder can submit documents via email, fax, hand delivery, or U.S. mail. Submit to MnDOT OCR as follows:</p> <p>Email: ocrformsubmissions.DOT@state.mn.us</p> <p>Fax: 651-366-3129.</p> <p>To hand-deliver or submit by U.S. mail, address printed documents to MnDOT Office of Civil Rights, 395 John Ireland Boulevard, Mail Stop 170, St. Paul, MN 55155. Submissions by U.S. mail will satisfy the timing requirement if <u>postmarked</u> by the time specified in the “Date and Time” section above.</p>	<p><u>Date and Time</u> The submission due date is the 5th calendar day after the successful responder is notified by MnDOT. Documentation is due before 4:30 PM Central Time on the 5th calendar day after the date of the successful responder letter/email issued by MnDOT.</p> <p><u>Format and Location</u> The responder can submit documents via email, fax, hand delivery, or U.S. mail. Submit to MnDOT OCR as follows:</p> <p>Email: ocrformsubmissions.DOT@state.mn.us</p> <p>Fax: 651-366-3129.</p> <p>To hand-deliver or submit by U.S. mail, address printed documents to MnDOT Office of Civil Rights, 395 John Ireland Boulevard, Mail Stop 170, St. Paul, MN 55155. Submissions by U.S. mail will satisfy the timing requirement if <u>postmarked</u> by the time specified in the “Date and Time” section above.</p>
<input type="checkbox"/> Construction Manager/General Contractor	<input type="checkbox"/> Design-build
<p><u>Date and Time</u> The submission due date is the letting date. Documentation is due before 4:30 PM Central Time on the letting date. Subsequent bid packages are due no later than 4:30 PM on the fifth calendar day following the letting of that bid package.</p> <p><u>Format and Location</u> The responder can submit documents via email, fax, hand delivery, or U.S. mail. Submit to MnDOT OCR as follows:</p> <p>Email: ocrformsubmissions.DOT@state.mn.us</p> <p>Fax: 651-366-3129.</p> <p>To hand-deliver or submit by U.S. mail, address printed documents to MnDOT Office of Civil Rights, 395 John Ireland Boulevard, Mail Stop 170, St. Paul, MN 55155. Submissions by U.S. mail will satisfy the timing requirement if <u>postmarked</u> by the time specified in the “Date and Time” section above.</p>	<p><u>Date and Time</u> The submission due date is 9:30AM on the Price Proposal due date. Documentation is due no later than 9:30AM on the Price Proposal due date.</p> <p><u>Format and Location</u> See the Design-Build “Instructions to Proposers” for format and location delivery specifics.</p>
On All Projects	
If the date the responder’s submission is due is a Saturday, Sunday, federal holiday, or Minnesota state holiday, the documentation is due on the next calendar day that is not a Saturday, Sunday, federal holiday, or Minnesota state holiday.	
The responder may submit a written request for an extension from the Director of MnDOT Office of Civil Rights for good cause shown. However, until the responder receives written approval of their request, the due date for its submission remains as specified above.	

If the responder does not meet the DBE goal, MnDOT OCR will conduct a Good Faith Efforts (GFE) review to determine whether the responder made adequate GFE to meet the goal based on the documentation the responder has provided by the submission due date. The standards MnDOT OCR will use to evaluate GFE are described in **Attachment 2**. Also, if MnDOT OCR determines that the responder did not make adequate GFE to meet the goal, the responder will be deemed non-responsible. The responder may request an administrative reconsideration of that determination. The process for administrative reconsideration is described in **Attachment 3**.

After Contract Award

DBE Commitments, Termination, and Replacement

The DBE Description of Work and Field Monitoring Report (Exhibit A) commits the responder to using the specified DBEs to perform work or supply materials. This commitment is binding on the responder unless the responder requests and is granted written approval from MnDOT OCR. If the responder fails to use a specified DBE for the amount of compensation the responder has specified in the Exhibit A form, without requesting and receiving written approval from MnDOT OCR, the responder has materially breached this contract and may not be entitled to payment for the work or materials that were committed to be performed by the DBE.

MnDOT OCR will not approve the responder's request to terminate a DBE unless the responder (1) gives written notice to the DBE, with a copy to MnDOT OCR, of the responder's intent to request to terminate the DBE's subcontract, (2) allow at least five business days for the DBE to advise the responder and MnDOT OCR of the reasons, if any, it objects to the proposed request to terminate, (3) demonstrate good cause to terminate the DBE as described in **Attachment 4**, and (4) either replace the DBE with another DBE for at least as much compensation as the initially specified DBE or make GFE to do so. MnDOT OCR will use the GFE standards described in **Attachment 2** to determine whether the responder made GFE. MnDOT OCR may shorten the five-day DBE response period if there is a public necessity. The responder may request assistance from MnDOT OCR to identify available replacement DBEs.

If the responder is involved in a negotiated procurement with MnDOT, the responder must obtain written approval from MnDOT as described in this section before deleting or substituting a DBE the responder has identified as part of a negotiation package. The responder must notify MnDOT OCR of any changes or substitutions to DBE participation, including changes occurring during the negotiation phase of the contract.

Continuing Good Faith Efforts

After contract award, the Contractor has a continuing obligation to make adequate good faith efforts to meet the DBE goal for the duration of the contract. Good faith efforts are explained in **Attachment 2**. To receive credit for DBE participation added after award, the responder must report the participation to MnDOT OCR and submit a DBE Description of Work and Field Monitoring Report (Exhibit A).

Prompt Payment to Subcontractors

The responder must pay each subcontractor no later than 10 business days of receiving payment for undisputed services provided by the subcontractor. This applies to all subcontractors. The responder must pay the subcontractor interest charges of 1.5 percent per month, or any part of a month, on any undisputed amount not paid within 10 days. The responder must make prompt and full payment of any retainage kept by the prime contractor to the subcontractor within 10 days after the subcontractor's work is satisfactorily completed "Satisfactorily completed" means all tasks identified in the subcontract have been accomplished and documented as required by MnDOT. If MnDOT has incrementally accepted a portion of a prime contract, the work of a subcontractor covered by that acceptance is deemed to be satisfactorily completed.

The responder must report payment information as specified in **Table C**. **If the responder fails to comply with prompt payment requirements, including reporting requirements, the responder has materially breached this contract.**

Furthermore, verification of the responder's final payment to each subcontractor is a condition of final clearance from MnDOT OCR and final payment from MnDOT.

Table C – Required Payment Submissions	
<input type="checkbox"/> Design-bid-build administered by MnDOT <input type="checkbox"/> Construction Manager/General Contractor administered by MnDOT <input type="checkbox"/> Design-build administered by MnDOT	<input type="checkbox"/> Construction Contract administered by local gov't unit <input type="checkbox"/> PT contract administered by MnDOT
<p>Within 10 business days of the responder's receipt of MnDOT payment:</p> <ul style="list-style-type: none"> the responder must submit information about individual payments to subcontractors via CRL. <p>When final payment has been made to subcontractors:</p> <ul style="list-style-type: none"> the responder must submit information about the responder's final payment to each subcontractor via CRL. the responder must submit a Total Payment Affidavit to MnDOT OCR after final payment to all DBE subcontractors. <p>To fax your submission, use 651-366-3129.</p> <p>To email your submission, attach documents as PDFs and send to ocrformsubmissions.dot@state.mn.us</p> <p>To submit by U.S. mail, address printed documents to MnDOT Office of Civil Rights, 395 John Ireland Boulevard, Mail Stop 170, St. Paul, MN 55155.</p>	<p>Within 10 business days of the responder's receipt of MnDOT or Local Government Unit payment:</p> <ul style="list-style-type: none"> the responder must submit a Contractor Payment Form to MnDOT after each payment to a subcontractor. <p>When final payment has been made to all subcontractors:</p> <ul style="list-style-type: none"> the responder must submit a Total Payment Affidavit to MnDOT OCR after final payment to all DBE subcontractors. <p>To fax your submission, use 651-366-3129.</p> <p>To email your submission, attach documents as PDFs and send to ocrformsubmissions.dot@state.mn.us</p> <p>To submit by U.S. mail, address printed documents to MnDOT Office of Civil Rights, 395 John Ireland Boulevard, Mail Stop 170, St. Paul, MN 55155.</p>

Appendices

Explanatory Attachments

- Attachment 1 – Counting and Commercially Useful Function
- Attachment 2 – Good Faith Efforts Documentation and Standards
- Attachment 3 – Administrative Reconsideration
- Attachment 4 – Good Cause to Terminate a DBE
- Attachment 5 – Information about AASHTOWare Project CRL

Forms

- Exhibit A – DBE Description of Work and Field Monitoring Report
- Exhibit B – GFE Consolidated Form (Parts A-I)
- Exhibit C – Contractor Payment Form
- Exhibit D – Total Payment Affidavit

Attachment 1 – Counting and Commercially Useful Function

DBE Counting – Generally

- (a) When a DBE participates in a contract, MnDOT will only count the value of the work actually performed by the DBE toward DBE goals.
1. The entire amount of the portion of a construction contract (or other contract not covered by paragraph 49 C.F.R. § 26.55(a)(2)) that is performed by the DBE's own forces. Include the cost of supplies and materials obtained by the DBE for the work of the contract, including supplies purchased or equipment leased by the DBE (except supplies, and equipment the DBE subcontractor purchases or leases from the prime contractor or its affiliate).
 2. The entire amount of fees or commissions charged by a DBE firm for providing a bona fide service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a DOT-assisted contract, counts toward DBE goals, provided that MnDOT determines the fee to be reasonable and not excessive as compared with fees customarily allowed for similar services.
 3. When a DBE subcontracts part of the work of its contract to another firm, the value of the subcontract work may be counted toward DBE goals only if the DBE's subcontractor is itself a DBE. Work that a DBE subcontracts to a non-DBE firm will not count toward DBE goals.
- (b) When a DBE performs as a participant in a joint venture, MnDOT will count a portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work of the contract that the DBE performs with its own forces toward DBE goals.
- (c) If a firm is not currently certified as a DBE in accordance with the standards of 49 CFR Part 26 subpart D at the time of execution of the contract, MnDOT will not count the firm's participation toward any DBE goals.
- (d) The dollar value of the work performed under a contract with a firm after it has ceased to be certified will not be counted toward the overall goal.
- (e) MnDOT will not count the participation of a DBE subcontractor toward the responder's final compliance with the responder's DBE obligations on a contract until the responder has paid the amount to the DBE.

DBE Counting – Materials and Supplies

- (f) MnDOT will count the responder's expenditures with DBEs for materials or supplies toward DBE goals as follows.
1. MnDOT will count 100% of the cost of the materials or supplies toward DBE goals if the responder obtains the materials or supplies from a DBE manufacturer.
 2. For purposes of this section (f), a manufacturer is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract and of the general character described in the specifications.
 3. If the responder purchases the materials or supplies from a DBE regular dealer, MnDOT will count 60% of the cost of the materials or supplies toward DBE goals.
 4. For purposes of this section (f), a regular dealer is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the

specifications and required under the contract are bought, kept in stock, and regularly sold to or leased to the public in the usual course of business.

- A. To be a regular dealer, the firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question.
- B. A person may be a regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone or asphalt without owning, operating, or maintaining a place of business as provided in 49 C.F.R. §26.55(e)(2)(ii) if the person both owns and operates distribution equipment for the products. Any supplementing of regular dealers' own distribution equipment shall be by a long -term lease agreement and not on an ad hoc or contract-by-contract basis.
- C. Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions are not regular dealers within the meaning of this section (e).
- D. If a DBE firm is supplying bulk materials such as petroleum products, steel, cement, gravel, stone or asphalt which are delivered to the project site or a commercial establishment for processing or storage prior to reaching the project site, the firm will receive 60% credit only for the total cost of materials and associated hauling used on this contract.

(g) With respect to materials or supplies the responder purchases from a DBE which is neither a manufacturer nor a regular dealer, MnDOT will count the entire amount of fees or commissions the responder pays for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site, toward DBE goals, provided MnDOT determines the fees to be reasonable and not excessive as compared with fees customarily allowed for similar services. MnDOT, however, will not count any portion of the cost of the materials or supplies themselves toward DBE goals.

Commercially Useful Function – Generally

(h) MnDOT will count expenditures of a DBE toward DBE goals only if the DBE performs a commercially useful function on the contract.

- 1. A DBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the DBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the materials, and installing (where applicable) and paying for the material itself. To determine whether a DBE is performing a commercially useful function, MnDOT will evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the contract is commensurate with the work it is actually performing and DBE credit claimed for its performance of the work, and other relevant factors.
- 2. A DBE does not perform a commercially useful function if its role is limited to that of an extra participant in a transaction, contract, or project through which the funds are passed in order to obtain the appearance of DBE participation. In determining whether a DBE is such an extra participant, MnDOT must examine similar transactions, particularly those in which DBEs do not participate.
- 3. If a DBE does not perform or exercise responsibility for at least 30 percent of the total cost of its contract with its own work force, or the DBE subcontracts a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involved, MnDOT must presume that it is not performing a commercially useful function.

4. When a DBE is presumed not to be performing a commercially useful function as provided in the preceding paragraph, the DBE may present evidence to rebut this presumption. MnDOT may determine that the firm is performing a commercially useful function given the type of work involved and normal industry practices.
5. MnDOT decisions regarding commercially useful function are subject to review by the concerned operating administration but are not administratively appealable to DOT.

Commercially Useful Function – Trucking

(i) MnDOT will use the following factors to determine whether a DBE trucking company performs a commercially useful function.

1. The DBE must be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract, and there cannot be a contrived arrangement for the purpose of the meeting DBE goals.
2. The DBE must itself own and operate at least one fully licensed, insured, and operational truck used on the contract.
3. The DBE receives credit for the total value of the transportation services it provides on the contract using trucks it owns, insures and operates using drivers it employs.
4. The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.
5. The DBE may lease trucks equipped with drivers from a non-DBE firm. In such a case, the DBE is entitled to credit for the total value of transportation services provided by the non-DBE firm not to exceed the value of transportation services provided by DBE-owned trucks or leased trucks with DBE employees. Additional participation by trucks and drivers from non-DBE firms will receive credit only for the fee or commission paid to the non-DBE firm as a result of the lease arrangement.
6. The DBE may also lease trucks without drivers from a non-DBE firm. If the DBE firm uses its own employees to drive the leased trucks, the DBE firm is entitled to credit for the full value of the transportation services.
7. For purposes of this section, a lease must indicate that the DBE has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for the use of the leased truck. Leased trucks must display the name and identification number of the DBE.

Attachment 2 – Good Faith Efforts Documentation and Standards

If the responder's DBE commitment falls short of the DBE goal, the responder must demonstrate adequate good faith efforts (GFE) in order to be eligible for contract award (49 CFR § 26.53). To demonstrate that the responder made adequate GFE, the responder must show documentation that the responder took all necessary and reasonable steps to achieve the DBE goal which, by their scope, intensity, and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if the responder were not fully successful.

The efforts employed by the responder should be those that one could reasonably expect the responder to take if the responder were actively and aggressively trying to obtain DBE participation sufficient to meet the DBE contract goal. Mere *pro forma* efforts are not good faith efforts to meet the contract requirements. The GFE consolidated form, attached to these provisions as Exhibit B, provides a helpful start to the responder's documentation, **but the responder is not limited to the information specified in the consolidated form.**

When the responder submits GFE documentation, the responder must explain the relevance of any documents the responder submits that are not mentioned in these special provisions or the related forms. **Responder is encouraged to submit ALL information that supports good faith efforts with an explanatory narrative.** Only documentation provided to MnDOT OCR by the submission due date can be considered by MnDOT to determine GFEs.

Good Faith Efforts Evaluation

MnDOT will consider the actions listed below when evaluating the responder's GFE documentation. This list closely resembles a list in 49 CFR Part 26, Appendix A. The listed actions are consistent with GFE, but the list is not a mandatory checklist, nor is it intended to be exclusive or exhaustive. MnDOT will also consider the performance of other bidders relative to the DBE goal. Other factors or types of efforts may be relevant in appropriate cases. MnDOT will make GFE determinations on a case-by-case basis.

(a) **Conducting market research to identify small business contractors and suppliers and soliciting through all reasonable and available means the interest of all certified DBEs that have the capability to perform the work of the contract.** This may include attendance at pre-bid and business matchmaking meetings and events, advertising and/or written notices, posting of Notices of Sources Sought and/or Requests for Proposals, written notices or emails to DBEs that specialize in the areas of work desired (as noted in the DBE directory) and which are located in the area or surrounding areas of the project. The bidder should solicit this interest as early as practicable to allow the DBEs to respond to the solicitation and submit a timely offer for the subcontract. The bidder should determine with certainty if the DBEs are interested by taking appropriate steps to follow up on initial solicitations.

(b) **Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE goals will be achieved.** This includes, where appropriate, breaking out contract work items into economically feasible units (for example, smaller tasks or quantities) to facilitate DBE participation, even when the prime contractor might otherwise prefer to perform these work items with its own forces. This may include, where possible, establishing flexible timeframes for performance and delivery schedules in a manner that encourages and facilitates DBE participation.

(c) **Providing interested DBEs with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation with their offer for the subcontract.**

(d) **Negotiating in good faith with interested DBEs.** It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBEs to perform the work. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBEs is not in itself sufficient reason for a bidder's failure to meet the contract DBE

goal, as long as such costs are reasonable. Also, the ability or desire of a prime contractor to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Prime contractors are not, however, required to accept higher quotes from DBEs if the price difference is excessive or unreasonable.

(e) Not rejecting DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The contractor's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union status) are not legitimate causes for the rejection or non-solicitation of bids in the contractor's efforts to meet the project goal. Another practice considered an insufficient good faith effort is the rejection of the DBE because its quotation for the work was not the lowest received. However, nothing in this paragraph shall be construed to require the bidder or prime contractor to accept unreasonable quotes in order to satisfy contract goals. A prime contractor's inability to find a replacement DBE at the original price is not alone sufficient to support a finding that good faith efforts have been made to replace the original DBE. The fact that the contractor has the ability to perform the contract work with its own forces does not relieve the contractor of the obligation to make good faith efforts to find a replacement DBE, and it is not a sound basis for rejecting a prospective replacement DBE's reasonable quote.

(f) Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or contractor.

(g) Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.

(h) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, State, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBEs.

Notification of MnDOT Decision

After reviewing the responder's GFE documentation and the performance of other bidders relative to the DBE goal, the Director of MnDOT OCR, or his or her designee, will determine whether the responder met the DBE goal or made adequate GFE. MnDOT OCR will mail the Director's determination to the responder approximately 15 business days after the responder's submittals are received. If the Director determines that the responder failed to meet the DBE goal or make adequate GFE, MnDOT OCR will send the notice by certified U.S. mail.

Attachment 3 – Administrative Reconsideration

If the Director determines that the responder failed to make adequate good faith efforts (GFE), the responder may request administrative reconsideration of that determination (49 CFR §26.53(d)).

Requesting Reconsideration

The responder's request for reconsideration must be written and timely. Otherwise, the responder will be deemed to have waived the right to reconsideration.

If the responder sends the request by fax or personal delivery, MnDOT must **receive** it no later than 4:30 PM on the fifth business day after the responder receives notice of the Director's determination. If the responder sends the responder's request by U.S. mail, it must be postmarked no later than the fifth business day after the responder receives notice of the Director's determination. The responder is deemed to have notice as of the date indicated on the certified mail receipt signed by the responder or the responder's representative at the time of delivery.

The responder's written request must be submitted to the attention of:

MnDOT Deputy Commissioner at: MnDOT, 395 John Ireland Blvd., St. Paul, MN 55155; or by fax at 651-366-4795.

A copy of the same request must be sent to the Director of the MnDOT Office of Civil Rights at 395 John Ireland Blvd., St. Paul, MN 55155 or by fax at 651-366-3129.

Reconsideration Process

The Commissioner of MnDOT will designate officials to serve as Reconsideration Officials. The Reconsideration Officials shall not have any role in the original determination that the responder failed to meet the DBE goal or make adequate GFE to do so.

As part of the reconsideration process, the responder will have the opportunity to:

- Provide the Reconsideration Officials written documentation and arguments as to why the responder believe the responder met the DBE goal or made adequate GFE to do so (49 CFR § 26.53(d)(1)).
- Meet in person with the Reconsideration Officials to explain why the responder believes the responder met the DBE goal or made adequate GFE to do so (49 CFR § 26.53(d)(3)).

The Reconsideration Officials will reconsider the record documenting the GFE the responder made. The reconsideration process is a review of only the GFE the responder made as of the submission due date specified in **Table B**. GFE made after that date will not be considered.

MnDOT will provide the responder with a written decision **within 5 business days following the date the responder is scheduled to meet with the Reconsideration Officials**. The written decision will include an explanation of reasons for the decision. The decision is not subject to administrative appeal to the U.S. Department of Transportation (49 CFR § 26.53(d)(5)).

Attachment 4 – Good Cause to Terminate a DBE

The responder may not, without written approval from MnDOT OCR, terminate or replace a DBE whose participation the responder represented in the original DBE commitment. MnDOT OCR will not approve a request to terminate or replace a DBE unless the responder demonstrates good cause to do so. In accordance with 49 CFR § 26.53(f), good cause includes the following circumstances.

- (a) The DBE subcontractor fails or refuses to execute a written contract;
- (b) The DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work in the subcontract results from the bad faith or discriminatory action of the prime contractor;
- (c) The DBE subcontractor fails or refuses to meet the prime contractor's reasonable, nondiscriminatory bond requirements;
- (d) The DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
- (e) The DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant to 2 CFR parts 180, 215 and 1,200 or applicable state law;
- (f) OCR has determined that the DBE subcontractor is not a responsible contractor;
- (g) The DBE subcontractor voluntarily withdraws from the project and provides to OCR written notice of its withdrawal;
- (h) The DBE is ineligible to receive DBE credit for the type of work required;
- (i) A DBE owner dies or becomes disabled with the result that the DBE contractor is unable to complete its work on the contract; or
- (j) Other documented good cause that MnDOT OCR determines compels the termination of the DBE subcontractor.

Good cause does not exist if the responder seeks to terminate a DBE represented in the responder's DBE commitment so the responder can self-perform or transfer to another subcontractor work originally committed to the DBE.

Attachment 5 – Information about AASHTOWARE Project CRL

General Information

AASHTOWare Project Civil Rights Labor (CRL) is a web-based system that currently allows contractors to submit electronic payroll, subcontract and subcontractor payment information, and Bidder/Quoter submittals.

Design-bid-build construction contracts let by MnDOT, advertised after July 1, 2013, report information through the CRL system.

More information regarding CRL requirements can be found in the MnDOT Standard Specifications for Construction: *Electronic Submission of Payrolls and Statements and Bidders Lists for Federally Funded Projects*.

Registration and Training

Information on annual contractor training, vendor and user registration, system support, forms, and manuals can be found at:

<https://www.dot.state.mn.us/const/labor/civil-rights-labor.html>

MnDOT also provides access to a CRL Interactive E-learning Tool at:

<https://www.dot.state.mn.us/onlinelearning/lcu/crl/>



Exhibit A - DBE Description of Work and Field Monitoring Report

A contract will not be awarded to the Prime Contractor unless this form is submitted with a signed subcontract, purchase order, or affidavit for each DBE participating in the contract. This form is complete when the DBE subcontractor has filled in **all of the applicable information in sections A through D and signed in section E.**

PLEASE PRINT CLEARLY OR TYPE.

Section (A): (All DBE subcontractors, including trucking firms, must complete this section.)

MUST BE COMPLETED BY THE DBE PRINCIPAL

Letting Date: _____ State Project Number: _____

Prime Contractor: _____ Phone #: _____

DBE Subcontractor: _____ Phone #: _____

DBE Principal Name: _____ Total Subcontract \$: _____

DBE Participation Claimed: Percent _____% Amount \$ _____

Section (B): (All DBE subcontractors, including trucking firms and suppliers, must complete this section.)

- Did you bid and sign a subcontract agreement with the above-named prime contractor? _____
- List the line items to be performed and the associated North American Industry Classification System (NAICS) codes for each item:

Scope of Work	Associated NAICS Code

- If equipment to be used is not owned by your firm, please provide the following information:
 - Will you be renting or leasing any of the following: (Attach a copy of the lease or rental agreement(s).
Equipment _____ Insurance _____ Operator _____ or Maintenance _____
 - Lessor's name: _____
Amount to be paid: _____ Number of days to be used: _____
- Will there be any other firm(s) providing work listed in your (DBE) subcontract?
If yes, answer the following: Firm's Name: _____ \$ amount of the work: _____
- What is the name of the person supervising your work on this project? _____
Is this your employee? _____
- Is your firm purchasing materials (including Bulk Materials such as AC Oil, Cement, Gravel, etc.) to be supplied or installed on the project?
YES _____ NO _____ (If "Yes" Complete **Section C** below)

Section (C) (DBE firms purchasing or supplying materials on the project complete this section.)

Please submit Purchase Agreement, Materials Invoice, or Purchase Order from manufacturer(s) or primary material supplier(s).

- What material(s) are you supplying? _____
- Total dollar amount of materials to be supplied? _____
- Who are you purchasing the materials from? _____
- What is the quantity of material to be purchased? _____
- Where are the materials being delivered? (ie. project site or plant) _____
- Is the delivery equipment owned and operated by your firm? YES _____ NO _____
If not, who owns and operates the equipment? _____

Section (D) TO BE COMPLETED ONLY BY DBE TRUCKING FIRMS AND MATERIAL HAULERS

1. The number of hours contracted or quantities to be hauled on this project? _____
2. How many fully operational units will be used on this Project? _____ (Tractor/trailers: _____ Dump trucks: _____)
3. How many fully operational units will be yours? _____ (Dump trucks: _____ Tractors/trailers: _____)
4. How many other units will be yours? _____ (Tractors: _____ Trailers: _____)
5. How many ITOs will be used on this project? _____ (Tractors: _____ Trailers: _____ Dump Trucks: _____)

	Name of DBE ITOs (add a list if necessary)	Dollar Amount of Contract/Agreement	Number of Dump Trucks, Tractors/Trailers (specify)
1.			
2.			
3.			
4.			

Section (E): (All DBE subcontractors, including trucking firms, must complete this section.)

I hereby certify that the information presented above is correct. I agree to inform the Office of Civil Rights in writing of any change within 10 days of the change.

DBE Company: _____

DBE Principal: _____
 _____ Signature _____ Title _____ Date _____

Section (F): TO BE COMPLETED BY MnDOT OFFICE OF CIVIL RIGHTS STAFF PERSON

Reviewed by OCR: _____

OCR Main Phone No: 651-366-3073

Email for OCR Forms: OCRFormSubmissions.DOT@state.mn.us

Section (G): TO BE COMPLETED BY PROJECT ENGINEER WHEN THE DBE'S PORTION OF WORK IS 1/3 TO 1/2 COMPLETED

1. Does it appear that the DBE firm is performing the work specified in (Exhibit "A") description of work?
Yes _____ No _____
2. Does it appear that the DBE contractor is managing their portion of the project and using their own company employees?
Yes _____ No _____
3. Does it appear that the DBE contractor is providing the equipment for their items of work or other work specified?
Yes _____ No _____
4. Does it appear that the quality of the DBE contractor's performance, scheduling and project management are meeting industry standards?
Yes _____ No _____
5. If the DBE is supplying materials, are the quantities proportionate for what is required on the project (refer to **Section C** above)?
Yes ____ No ____
6. Comments: _____

NOTE: If you, as the Project Engineer, have checked "NO" to any of the above questions or have any other comments, it is important that you contact the MnDOT Office of Civil Rights Staff Person assigned to this project.

Project Engineer: _____ Date: _____



Exhibit B - Office of Civil Rights - Good Faith Efforts Consolidated Form

(Includes Parts A-I)

This form will assist you in demonstrating that you met the DBE goal or made adequate good faith efforts to meet the goal. You must provide this form and all supporting GFE documentation to the MnDOT Office of Civil Rights prior to the submission due date identified in **Table B** of the DBE Special Provisions.

PART A – PRIME CONTRACTOR’S INFORMATION (You must complete this part.)				
COMPANY NAME				
ADDRESS	STREET	CITY	STATE	ZIP CODE
PHONE #	FAX #	EMAIL ADDRESS		
CONTACT PERSON		TITLE		

PART B - PROJECT DESCRIPTION (You must complete this part.)			
STATE PROJECT #	CONTRACT # (If Applicable)	<input type="checkbox"/> Attach copy of MnDOT Advertisement	
ANTICIPATED START DATE (Based on progress schedule)		EXPECTED COMPLETION DATE (Based on progress schedule)	
DBE GOAL	%	DBE COMMITMENT	(Type of GFE Information – Check one only) <input type="checkbox"/> Pre-award <input type="checkbox"/> Post-award/Execution
	VS		
TOTAL DBE PARTICIPATION DOLLARS BASED ON ADVERTISED DBE GOAL (Total prime bid \$ * DBE % Goal)			

PART C – PROJECT SUMMARY AMOUNTS (You must complete this part.)	
TOTAL PRIME BID	\$
TOTAL DOLLARS COMMITTED TO NON-DBE’S (Not including suppliers)	\$
TOTAL DOLLARS COMMITTED TO DBE’S (Not including suppliers)	\$
TOTAL DOLLARS COMMITTED TO DBE SUPPLIERS (Total paid to DBE suppliers 60%)	\$
WORKED PERFORMED BY PRIME	\$
PERCENT OF WORK PERFORMED BY PRIME	%
TOTAL DBE PARTICIPATION REMAINING (Difference between DBE goal \$ and DBE commitment \$)	\$

State Project Number:

Contractor:

PART D – BIDDERS LIST - DBE QUOTES SUBMITTED (You must complete this part. If the project is let by MnDOT, you must submit information through the AASHTOWare Project CRL about all bids/quotes you have received and enter your DBE Commitments on this form.)

DBE COMMITMENTS							
List all DBE firms who provided quotes or bid proposals. Indicate whether the quotes were accepted. Please include a copy of their quote(s).							
DBE Contractor Information					Description of Work	Dollar Amount Of Bid/Proposal.	Will Firm Be Used?
1.	DBE Contractor Name						Yes
	Contact Name						
	Address						
	Federal Tax #		E-mail				
	Phone		Fax:				
2.	DBE Contractor Name						Yes
	Contact Name						
	Address						
	Federal Tax #		E-mail				
	Phone		Fax				
3.	DBE Contractor Name						Yes
	Contact Name						
	Address						
	Federal Tax #		E-mail				
	Phone		Fax				
4.	DBE Contractor Name						Yes
	Contact Name						
	Address:						
	Federal Tax #		E-mail				
	Phone		Fax				

Make additional copies of this page as necessary

State Project Number:

Contractor:

PART E- BIDDERS LIST - NON-DBE QUOTES SUBMITTED (Complete this part only if the project is let by a local governmental unit. If the project is let by MnDOT, you must submit information about bids/quotes you have received through the AASHTOWare Project CRL online system rather than on this form.)							
NON-DBE COMMITMENTS List all non-DBE firms who provided quotes or bid proposals. Indicate whether the quotes were accepted. Please include a copy of their quote(s).							
NON-DBE Contractor Information				Description of Work	Dollar Amount Of Bid/Proposal.	Will Firm Be Used?	
1.	NON-DBE Contractor Name						Yes
	Contact Name						
	Address						
	Federal Tax #		E-mail				
	Phone		Fax:				
2.	NON-DBE Contractor Name						Yes
	Contact Name						
	Address						
	Federal Tax #		E-mail				
	Phone		Fax				
3.	NON-DBE Contractor Name						Yes
	Contact Name						
	Address						
	Federal Tax #		E-mail				
	Phone		Fax				
4.	NON-DBE Contractor Name						Yes
	Contact Name						
	Address:						
	Federal Tax #		E-mail				
	Phone		Fax				

Make additional copies of this page as necessary

State Project Number:

Contractor:

PART F – SOLICITATION OF SUBCONTRACTORS, SUPPLIERS, AND SERVICE PROVIDERS (Complete this part only if DBE goal is not met.)

List all subcontractors solicited, both DBE and non-DBE contractors, truckers and suppliers for this specific project. Include initial contact and follow-up dates, as well as methods of contact (Phone, Fax, Email, etc.).

The good faith effort submission should include evidence of the solicitation effort such as; copies of request for bids sent to DBE firms with the name of the DBE firms clearly identified; fax confirmation sheets showing the date, fax number, name of DBE firm, confirmation the fax was sent; list of all DBE firms called time of call, person contacted and response; or email lists with time/day sent clearly indicated etc.

Subcontractor/Supplier/Service provider		DBE?		Phone #	Dates, Method of Contact		Description of Work	Dollar Amount of Quote
		Yes	No		DATES	METHOD		
1		<input type="checkbox"/>	<input type="checkbox"/>					
2		<input type="checkbox"/>	<input type="checkbox"/>					
3		<input type="checkbox"/>	<input type="checkbox"/>					
4		<input type="checkbox"/>	<input type="checkbox"/>					
5		<input type="checkbox"/>	<input type="checkbox"/>					
6		<input type="checkbox"/>	<input type="checkbox"/>					
7		<input type="checkbox"/>	<input type="checkbox"/>					
8		<input type="checkbox"/>	<input type="checkbox"/>					
9		<input type="checkbox"/>	<input type="checkbox"/>					
10		<input type="checkbox"/>	<input type="checkbox"/>					
11		<input type="checkbox"/>	<input type="checkbox"/>					
12		<input type="checkbox"/>	<input type="checkbox"/>					

Make additional copies of this page as necessary



State Project Number:

Contractor:

PART G - DBEs QUOTED BUT NOT SELECTED (Complete this part only if DBE goal is not met.)

If DBE quotes were rejected, if necessary, attach a separate sheet of paper explaining the specific basis for rejecting any DBE quote.

Note: Additional cost is not in itself sufficient reason for rejecting a DBE quote. However, prime contractors need not accept excessive or unreasonable DBE quotes. The contractor's standing within its industry or memberships in specific groups (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of a quote in the contractor's efforts to meet the project goal. Please include a copy of the quote(s) received.

DBE QUOTE	DBE FIRMS WHO QUOTED, BUT WERE NOT SELECTED	TYPE OF WORK QUOTED	FIRM SELECTED FOR SCOPE QUOTED	REASON NOT SELECTED
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

Make additional copies of this page as necessary

Office of Civil Rights– Good Faith Efforts Consolidated Form

State Project Number:

Contractor:

PART H – DESCRIPTION OF GOOD FAITH EFFORTS (Complete this part only if DBE goal is not met. Use additional sheets if necessary.)

Please describe below or in a separate letter any aspects of your efforts to obtain DBE participation that are not already apparent from the information provided in parts A-G. This is an opportunity to “tell the story” of your GFE. Please give special attention to the factors identified in **Attachment 2** of the DBE special provisions and 49 CFR Part 26, Appendix A. The following questions may help you organize your description. **The questions below are not intended to be a checklist or an exhaustive list of what is considered in evaluating GFE.** Information not submitted will not be considered in making a finding of Good Faith Efforts.

Questions to consider:

- Did you use the current DBE directory to identify DBEs?
- Did you break out work into units that small businesses such as DBEs could reasonably perform?
- Did you solicit DBE participation for work you could have self-performed?
- Did you overlook any DBEs whose business operations are geographically close to the project?
- Did you host any DBE informational workshops or attend any MnDOT sponsored DBE events?
- Did you contact minority business organizations about DBE opportunities?
- Did you send timely written (fax, e-mail, etc.) solicitation notices to certified DBEs?
- Did your solicitation notice include the following information? *name and location of project, bid date, scope of work requested, location where DBEs can review plans and specifications, date and time to submit quote, contact name for technical assistance, any special requirements*
- Did you provide any contacts for possible bonding, insurance, or lines of credit?
- Did you provide any technical assistance relative to bonding, insurance, or lines of credit?
- Did you maintain a follow-up log to track responses to your initial solicitations?
- Did you track the following information after initial solicitation? *name of DBE firm, type of contact (fax, telephone, e-mail, etc.), date and time DBE contacted, name of contact person, response received, reason for DBE not bidding (if applicable)*
- Did you receive bids from DBE’s that you did not accept? If so, what were your reasons?

Type Response Below:



Exhibit B – Good Faith Efforts Consolidated Form

PART I – CERTIFICATION / GOOD FAITH EFFORTS AFFIDAVIT (You must complete this part.)

STATE OF MINNESOTA

COUNTY OF _____

I, _____, being first duly sworn, state as follows:
(Full Name)

1. I am the _____ of _____
(Title) (Name of Individual, Company, Partnership, or Corporation)

that has submitted a bid for State Project _____.

2. I have the authority to make this affidavit for and on behalf of the apparent low bidder.

3. The information provided in the attached Good Faith Efforts Consolidated Form is true and accurate to the best of my belief.

SIGNATURE (Bidder or Authorized Representative)	TITLE	DATE

Subscribed and sworn to before me this _____ day of _____, 20____

 Notary Public

My commission expires _____, 20____

Pursuant to 49 CFR § 26.107, if any person or firm has willfully and knowingly provided incorrect information or made false statements in connection with the Federal DBE program, the USDOT may initiate suspension or debarment proceedings against such person or firm under 49 CFR Part 29, take enforcement action under 49 CFR Part 31, Program Fraud and Civil Remedies, and/or refer the matter to the Department of Justice for criminal prosecution under 18 U.S.C. 1001, which prohibits false statements in Federal programs.

Minnesota Department of Transportation
Office of Civil Rights

Page ____ of ____

Contractor Payment Form

State Project Number: _____ Prime Contractor: _____ 1st Tier Sub-Contractor: _____

Payment Reporting Period: From: _____ To: _____

Instructions: All Contractors making payments to Contractors/Subcontractors/Suppliers/Service Providers, regardless of their tier or DBE status, are required to complete and submit this form to the MnDOT Office of Civil Rights (OCR), each time payments are made to sub-contractors until final payment is made. Failure to comply with this form and Minnesota's prompt payment law may cause progress payments to be withheld. Submit one copy of this form to MnDOT OCR and one copy to the Project Engineer, no later than ten (10) days after receiving payment from MnDOT. Some projects require that payment information be entered into AASHTOWare Project CRL. See Table C of the DBE Special Provisions for payment submission requirements.

Contractor Information		Original Contract Amount	Committed DBE %	Actual DBE % to Date
Name:				
Address:				
Phone:				
Name of Subcontractor/Supplier	DBE? (Check if Yes)	Description of Work	Subcontract Amount	
1.	<input type="checkbox"/>	1.	1.	
2.	<input type="checkbox"/>	2.	2.	
3.	<input type="checkbox"/>	3.	3.	
4.	<input type="checkbox"/>	4.	4.	
5.	<input type="checkbox"/>	5.	5.	
6.	<input type="checkbox"/>	6.	6.	
Amount of Current Payment	Total Sub-Contractor Payment-To-Date	% Paid to date	Final Payment? Yes/No	
1.	1.	1.	1.	
2.	2.	2.	2.	
3.	3.	3.	3.	
4.	4.	4.	4.	
5.	5.	5.	5.	
6.	6.	6.	6.	
Company Officials Signature & Title		Date Signed	Name & Title of Individual Completing Report (Type or Print Clearly)	
Title:		Title:		
Phone:	Fax:	Phone:	Fax:	

DBE Total Payment Affidavit

Pursuant to MnDOT Standard Specifications for Construction, Section 1516.3, the following DBE Total Payment Affidavit shall be executed by the Prime Contractor after all work contracted to be performed by DBEs has been satisfactorily completed. This Affidavit is required prior to MnDOT Office of Civil Rights issuing final clearance on the project. Identify each DBE firm that worked on the project and the dollar amount of the subcontract. If the dollar value of a DBE firm's total work is less than the DBE's original subcontract, please attach an explanation.

State Project Number: _____

STATE OF MINNESOTA

COUNTY OF _____

I, _____, being first duly sworn, state as follows:
(Full Name)

1. I am the authorized representative of _____
(Name of Individual, Company, Partnership or Corporation)

and I have the authority to make this affidavit for and on behalf of said Prime Contractor.

2. The following DBE Subcontractors/Suppliers/Service Providers/Sub-Consultants have performed work on the above project with a total dollar value of:

	Name of DBE Firm	Dollar Amount of Subcontract	Total Dollar Amount Paid
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			

3. I have fully informed myself regarding the accuracy of the statements made in this Affidavit.

Signed: _____
(Prime Contractor or Authorized Representative)

Subscribed and sworn to before me

This _____ day of _____, 20____

(Notary Public)

My commission expires _____, 20____

Prepare affidavit in duplicate. Submit one affidavit to the Project Engineer, and one to:
MnDOT's Office of Civil Rights, 395 John Ireland Blvd., MS 170, St. Paul, MN 55155
or email completed form to: ocrformsubmissions.dot@state.mn.us

No. 1516.3 – Standard Specifications for Construction

Unless the Contractor has presented an Affidavit showing the total dollar amounts of work performed by Disadvantaged Business Enterprises (DBE), a final clearance letter will not be issued.

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

- I. General
- II. Nondiscrimination
- III. Non-segregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
- XI. Certification Regarding Use of Contract Funds for Lobbying
- XII. Use of United States-Flag Vessels:

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). 23 CFR 633.102(e).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider. 23 CFR 633.102(e).

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract). 23 CFR 633.102(b).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work

performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract. 23 CFR 633.102(d).

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR Part 230, Subpart A, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (see 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract. 23 CFR 230.409 (g)(4) & (5).

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, sexual orientation, gender identity, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action or are substantially involved in such action, will be made fully cognizant of and will implement the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action

within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs (i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance). In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 23 CFR 230.409. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide

sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants /

Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established thereunder. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:

The contractor shall not discriminate on the grounds of race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors, suppliers, and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurances Required:

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- (1) Withholding monthly progress payments;
- (2) Assessing sanctions;
- (3) Liquidated damages; and/or
- (4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women.

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of more than \$10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, the contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location under the contractor's control where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway

Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act ([29 CFR part 3](#))), the full amount of basic hourly wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act ([40 U.S.C. 3141\(2\)\(B\)](#)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided*, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH-1321) must be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in [29 CFR part 1](#), a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

(ii) The classification is used in the area by the construction industry; and

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

c. *Conformance.* (1) The contracting officer must require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is used in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent by the contracting officer by email to DBAconformance@dol.gov. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer will, by email to DBAconformance@dol.gov, refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division

under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

d. *Fringe benefits not expressed as an hourly rate.* Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

e. *Unfunded plans.* If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided*, That the Secretary of Labor has found, upon the written request of the contractor, in accordance with the criteria set forth in § 5.28, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its procurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901](#)–3907.

3. Records and certified payrolls (29 CFR 5.5)

a. Basic record requirements (1) Length of record retention. All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) Information required. Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) Additional records relating to fringe benefits. Whenever the Secretary of Labor has found under paragraph 1.e. of this section that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act, the contractor must maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

(4) Additional records relating to apprenticeship. Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. Certified payroll requirements (1) Frequency and method of submission. The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting

agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) Information required. The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (e.g., the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH-347 or in any other format desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division website at <https://www.dol.gov/sites/dolgov/files/WHDL/legacy/files/wh347.pdf> or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

(3) Statement of Compliance. Each certified payroll submitted must be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

(ii) That each laborer or mechanic (including each helper and apprentice) working on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in [29 CFR part 3](#); and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

(4) Use of Optional Form WH-347. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 will satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(3) of this section.

(5) *Signature.* The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification.* The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under [18 U.S.C. 1001](#) and [31 U.S.C. 3729](#).

(7) *Length of certified payroll retention.* The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents.* The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers.* The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements.* If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under [29 CFR part 6](#) any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures.* Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address

of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity (29 CFR 5.5)

a. *Apprentices* (1) *Rate of pay.* Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits.* Apprentices must be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio.* The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates.* Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity.* The use of apprentices and journeyworkers under this part must be in conformity with

the equal employment opportunity requirements of Executive Order 11246, as amended, and [29 CFR part 30](#).

c. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. 23 CFR 230.111(e)(2). The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeyworkers shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility. a. By entering into this contract, the contractor certifies that neither it nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of [40 U.S.C. 3144\(b\)](#) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of [40 U.S.C. 3144\(b\)](#) or § 5.12(a).

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, [18 U.S.C. 1001](#).

11. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#); or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#).

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), the following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchpersons and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. 29 CFR 5.5.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph 1. of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages and interest from the date of the underpayment. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or

mechanic, including watchpersons and guards, employed in violation of the clause set forth in paragraph 1. of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1. of this section.

* \$31 as of January 15, 2023 (See 88 FR 88 FR 2210) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

3. Withholding for unpaid wages and liquidated damages

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract subject to the Contract Work Hours and Safety Standards Act that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section IV paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

- (1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;
- (2) A contracting agency for its procurement costs;
- (3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
- (4) A contractor's assignee(s);
- (5) A contractor's successor(s); or
- (6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901](#)–3907.

4. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the

event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

5. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

- a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;
- b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;
- c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or
- d. Informing any other person about their rights under CWHSSA or this part.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" in paragraph 1 of Section VI refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

- (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
- (2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and

health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR Part 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of \$150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.327.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.327.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

1. Instructions for Certification – First Tier Participants:

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 180.300.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov/>). 2 CFR 180.300, 180.320, and 180.325.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335;.

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property, 2 CFR 180.800;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

3. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which

this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contractor). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov/>), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily

excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

* * * * *

4. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(2) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(3) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

b. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000. 49 CFR Part 20, App. A.

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or

cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

XII. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.

2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS
PREFERENCE FOR APPALACHIAN DEVELOPMENT
HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS
ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B)**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

Equal Employment Opportunity (EEO) State and Federal Laws, Policies and Rules

Minnesota Affirmative Action Requirements

Minn. Stat. § 363A.36, Minn. R. 5000.3520 - .3530

General

- A. The Contractor agrees that Minn. Stat. § 363A.36 and its accompanying rules are incorporated into any Contract executed with the Minnesota Department of Transportation (MnDOT) based on these specifications or any modification thereof. Upon request, MnDOT will provide the Contractor with a copy of Minn. Stat. § 363A.36 and its accompanying rules.
- B. MnDOT intends to execute its responsibility to require affirmative action by the Contractor. This includes providing the Minnesota Department of Human Rights (MDHR) with information indicating that the Contractor is not in compliance with Minn. Stat. § 363A.36 and its accompanying rules.

Contractor Responsibilities

- A. The Contractor must take affirmative action to employ and advance in employment qualified minorities and women at all levels of employment, including the executive level. This applies to all employment practices, including, but not limited to, the following:
 - 1. Hiring, upgrading, demotion, or transfer
 - 2. Recruitment, or recruitment advertising
 - 3. Layoff, or termination
 - 4. Rates of pay, or other forms of compensation; and selection for training, including apprenticeship
- B. The Contractor must demonstrate that specific and significant actions to recruit, hire, and retain minorities and/or women are being taken if the applicable workforce participation goals will not be met.
- C. The Contractor must comply with the affirmative action requirements of Minn. Stat. § 363A.36 and its accompanying rules, as well as any subsequent rules and relevant orders issued by MDHR pursuant to this same law.

Notice

- 1. The Contractor must post notices in a form stipulated by the Commissioner of MDHR in conspicuous places. These notices must outline the following:
 - 1. The rights of employees and applicants
 - 2. The legal obligation to take affirmative action to employ and advance in employment employees and applicants who are minorities and women. The notices can be found here:
<http://www.dot.state.mn.us/const/labor/posterboards.html>

Noncompliance

- A. The Contractor's failure to implement or make a good faith effort to implement an affirmative action plan approved under Minn. Stat. § 363A.36 and its accompanying rules may result in the suspension or revocation of its certificate of compliance. Should either of these consequences occur, MnDOT may abridge or terminate the Contract awarded.
- B. The Contractor's failure to take specific and significant actions to recruit, hire, and retain minorities and/or women if the workforce participation goals will not be met may result in the suspension or revocation of its certificate of

compliance. Should either of these consequences occur, MnDOT may abridge or terminate the Contract awarded.



VIOLENCE-FREE AND RESPECTFUL WORKPLACE

(INCLUDES GENERAL HARASSMENT, RETALIATION,
AND WEAPONS)

POLICY HR014, EFFECTIVE 2015-07-17

POLICY STATEMENT

The Minnesota Department of Transportation (MnDOT) is committed to providing a safe and respectful workplace free from inappropriate behaviors for all employees. MnDOT employees, contractors and vendors (third parties) conducting business with MnDOT must:

- Understand the [Workplace Violence Continuum](#) and the behaviors that constitute a violation of this policy;
- Report any persons who violate this policy;
- Take appropriate action in situations that involve policy violation.

MnDOT fully adopts the [MMB Respectful Workplace](#) policy, to build and maintain a workplace that is respectful and professional toward all employees and third parties.

MnDOT's Violence-Free and Respectful Workplace policy addresses only behavior and communication that do not involve protected class status. The [MnDOT Discrimination Policy](#) addresses harassment based on race, color, creed, religion, national origin, sex, marital status, disability, sexual orientation, age, genetic information, or status with regard to public assistance.

REASON FOR POLICY

- Identify the types of behavior that constitute workplace violence
- Define roles and responsibilities of all MnDOT employees and third parties
- Clarify reporting procedure for policy violation.

WHO NEEDS TO KNOW THIS POLICY?

- All MnDOT employees
- All third parties conducting business with MnDOT

DEFINITIONS

Formal Complaint

A formal complaint is a written statement of workplace concern that alleges violation of this policy by an employee or third party.

SENIOR OFFICER

Tracy Hatch

Deputy Commissioner/CFO/COO

POLICY OWNER

Karin van Dyck

Director, Office of Human Resources

POLICY CONTACT

Jodi Mathiason

Labor Relations Manager

Office of Human Resources

Jodi.Mathiason@state.mn.us

651-366-3404

POLICY HISTORY

2015-07-17, Established

[MnDOT Policy Website](#)

General Harassment

Conduct that has the effect of unreasonably interfering with the employee's work performance, behavior made with the intent to cause fear, or creating an intimidating, hostile, or offensive work environment. Legitimate job-related efforts of a supervisor to direct or evaluate an employee or to have the employee improve his or her performance are not general harassment.

Professionalism

Professionalism is a display of good judgment and proper behavior expected in the workplace from employees and third parties.

Respectful Behavior

Positive interactions with employees and third parties, in a manner that a reasonable person finds appropriate.

Retaliation

Adverse action response to an employee's participation in a complaint, report, investigation, or lawsuit about workplace violence (protected activity).

Third Party

A third party is a contractor or vendor conducting business with MnDOT.

Weapon

Weapon is anything intended to harm or intimidate another person. Examples may include, but are not limited to, all firearms, non-firearms such as knives, martial arts devices, explosives, combustible devices, and chemical substances.

Workplace Violence Continuum

Violence or inappropriate behaviors that range from bullying, verbal abuse, arguments, property damage, vandalism, sabotage, pushing, theft, physical assaults, rape, and arson, to murder. Workplace violence can occur while on state property or while performing work for MnDOT at any location, by a state employee, third party, or the public.

PROCEDURES

Obligation to Report Workplace Violence

In a life-threatening situation, call 9-1-1 or other emergency contact at the work location, if making the call does not pose a risk to the well-being of the employee.

Any employee who is the subject of, or who witnesses workplace violence must immediately report the incident in one or all of the following ways:

- Report the behavior to his/her supervisor, manager or Human Resources office;
- Submit a completed [Violent Incident Report Form](#) to the Human Resources Office;
- Report by using the [Report Wrongdoing/Questionable Activity Form](#); the information reported must include the details of the situation.

Any employee who violates this policy or is found to have witnessed an act of workplace violence and did not report it may be subject to discipline, up to and including discharge. Violation of this policy by third parties conducting business for MnDOT may jeopardize their contractual relationship with the agency.

Informal Resolution

Any employee can choose to explore options with Human Resources to address concerns.

- The employee subjected to inappropriate behavior should have a conversation with the other individual(s) involved whenever possible, if it does not pose a risk to the well-being of the employee;
- The employee is encouraged to speak with his/her supervisor, Human Resources, union representative, or Employee Assistance Program (EAP) for assistance or guidance on how to resolve the situation;
- If the concern is about a supervisor or manager, employees may contact Human Resources, union representative or EAP to discuss options for resolution.

Formal Complaints

A formal complaint must be submitted in writing to Human Resources and include the details of the situation. As with all investigations alleging employee misconduct, investigations related to this policy will occur in a timely, fair, and objective manner. ***This process does not supersede any applicable grievance or dispute resolution process under a collective bargaining agreement or plan.***

- Complaints must be submitted to the Human Resources Office, and include the details of the situation;
- The person receiving a complaint must acknowledge receipt of the complaint in writing;
- A prompt review of the complaint will be conducted and addressed;
- All data associated with a complaint, including any investigation and any outcome is government data, [Minnesota Statutes Chapter 13](#), Government Data Practices Act governs the release or non-release of data.

Retaliation

Any employee who perceives retaliation because he or she filed a complaint about workplace violence should immediately contact the Human Resources Office, Labor Relations.

RESPONSIBILITIES

Employees

- Conduct one's self in a manner that demonstrates professionalism and respect for all others while working for and representing MnDOT;
- Be familiar with this policy and understand the meanings and definitions included;
- Document and report all behaviors or incidents that may violate this policy to a manager, supervisor, or Human Resources Office;
- Fulfill all mandatory training requirements:
 - Respectful Workplace (*MnDOT employees*)
 - Workplace Violence Prevention (*MnDOT employees*)
- Cooperate in investigations of alleged violations of this policy, including investigations of general harassment, inappropriate behaviors, weapons, and retaliation.

Managers/Supervisors *In addition to the responsibilities of Employees (as described above)*

- Be familiar with this policy to achieve and maintain compliance with this policy;
- Document and take timely and appropriate action when a complaint is made alleging violations of this policy and collaborate with Human Resources in the process;
- Ensure employees fulfill mandatory training requirements:
 - Respectful Workplace (*MnDOT employees*)
 - Workplace Violence Prevention (*MnDOT employees*)

Human Resources Offices

- Assist with the resolution and investigation of inappropriate behaviors that may violate this policy;
- Provide consultation to employees, supervisors, and managers on options and the appropriate course of action, to including guidance regarding resources for alternative solutions;
- Provide consultation to employees, supervisors, and managers on applicable rules, policies, procedures, and learning opportunities;
- Design and provide mandatory training, offer resources and/or training to assist employees in dealing with situations that may lead to potential violence.

Third Parties (contractor or vendor)

- Conduct one's self in a manner that demonstrates professionalism and respect for all others while working with MnDOT and the public;
- Refer to the [MnDOT Policies](#) webpage to become familiar with all of MnDOT policies;
- Document and report all behaviors or incidents that may violate this policy;
- Cooperate in investigations of alleged violations of this policy including investigations of general harassment, inappropriate behaviors, weapons, and retaliation.

FORMS/INSTRUCTIONS

[Violent Incident Report Form](#)

[Report Wrongdoing/Questionable Activity Form](#)

RELATED INFORMATION

[MnDOT Violent Incident Advisory Team \(VIAT\)](#)

[MnDOT Discrimination Policy](#)

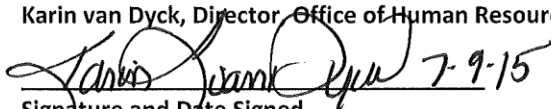
[Minnesota Statutes §609.02, Subd.6](#) *Dangerous Weapons*

[Employee Assistance Program \(EAP\)](#)

POLICY OWNERSHIP AND AUTHORIZATION

Policy Owner

Karin van Dyck, Director, Office of Human Resources


Signature and Date Signed 7-9-15

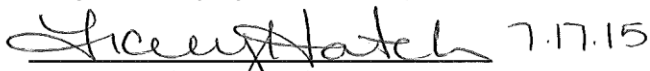
Governance Council

Sue Stein, Director, Corporate Services Division


Signature and Date Signed 7-16-15

Responsible Senior Officer

Tracy Hatch, Deputy Commissioner/CFO/COO


Signature and Date Signed 7-17-15

SPECIFIC FEDERAL EQUAL OPPORTUNITY RESPONSIBILITIES

(23 CFR 230, Subpart A, Appendix A, FAPG June 6, 1996)

1. General.

- a. Equal employment opportunity requirements not to discriminate and to take affirmative action to assure equal opportunity as required by Executive Order 11246 and Executive Order 11375 are set forth in Required contract Provisions (Form PR-1273 or 1316, as appropriate) and these Special Provisions which are imposed pursuant to Section 140 of title 23, U.S.C., as established by Section 22 of the Federal-Aid Highway Act of 1968. The requirements set forth in these Special Provisions shall constitute the specific affirmative action requirements for project activities under this contract and supplement the equal employment opportunity requirements set forth in the Required Contract Provisions.
- b. The contractor will work with the State highway agencies and the Federal Government in carrying out equal employment opportunity obligations and in their review of his/her activities under the contract.
- c. The contractor and all his/her subcontractors holding subcontracts not including material suppliers, of \$10,000 or more, will comply with the following minimum specific requirement activities of equal employment Opportunity: (The equal employment opportunity requirements of Executive Order 11246, as set forth in volume 6, Chapter 4, Section 1, Subsection 1 of the Federal-Aid Highway program Manual, are applicable to material suppliers as well as contractors and subcontractors.) The contractor will include these requirements in every subcontract of \$10,000 or more with such modification of language as is necessary to make them binding on the subcontractor.

2. Equal Employment Opportunity Policy.

The contractor will accept as his operating policy the following statement which is designed to further the provision of equal employment opportunity to all persons without regard to their race, color, religion, sex, or national origin, and to promote their full realization of equal employment through a positive continuing program:

It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, or national origin. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre apprenticeship, and/or on-the-job training.

3. Equal Employment Opportunity Officer.

The contractor will designate and make known to State highway agency contracting officers an equal employment opportunity officer (hereinafter referred to as the EEO Officer) who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of equal employment opportunity and who must be assigned adequate authority and responsibility to do so.

4. Dissemination of Policy.

- a. All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action will be made fully cognizant of, and will implement, the contractor's equal employment opportunity policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:
 - (1) Periodic meetings of supervisory and personnel office staff will be conducted before the start of work and then not less often than once every six months, at which time the contractor's equal employment opportunity policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.
 - (2) All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer or other knowledgeable company official, covering all major aspects of the contractor's equal employment opportunity obligations within thirty days following their reporting for duty with the contractor.

- (3) All personnel who are engaged in direct recruitment for the project will be instructed by the EEO officer or appropriate company official in the contractor's procedures for locating and hiring minority group employees.
- b. In order to make the contractor's equal employment policy known to all employees, prospective employees and potential sources of employees, i.e., schools, employment agencies, labor unions (where appropriate), college placement officers, etc., the contractor will take the following actions:
 - (1) Notices and posters setting forth the contractor's equal employment opportunity policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.
 - (2) The contractor's equal employment opportunity policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

5. Recruitment.

- a. When advertising for employees, the contractor will include in all advertisements for employees the notation "An Equal Opportunity Employer." All such advertisements will be published in newspapers or other publications having a large circulation among minority groups in the area from which the project work force would normally be derived.
- b. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants, including, but not limited to, State employment agencies, schools, colleges and minority group organizations. To meet this requirement, the contractor will, through their EEO Officer, identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with equal employment opportunity contract provisions. (The U.S. Department of Labor has held that where the implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)
- c. The contractor will encourage his present employees to refer minority group applicants for employment by posting appropriate notices or bulletins in areas accessible to all such employees. In addition, information and procedures with regard to referring minority group applicants will be discussed with employees.

6. Personnel Actions. Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, or national origin. The following procedures shall be followed:

- a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.
- b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
- c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.
- d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his/her obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all his avenues of appeal.

7. Training and Promotion.

- a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees and applicants for employment.
- b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor must make full use of training programs, i.e. apprenticeship, and on-the- job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event the Training Special Provision is provided under this contract, this subparagraph will be superseded as indicated in Attachment 2.
- c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.
- d. The Contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.

8. Unions.

If a contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:

- a. The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group members and women so that they may qualify for higher paying employment.
- b. The contractor will use best efforts to incorporate an equal employment opportunity clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, or national origin.
- c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the State highway department and shall set forth what efforts have been made to obtain such information.
- d. In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, or national origin; making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The U.S. Department of Labor has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the State highway agency.

9. Subcontracting.

- a. The contractor will use his best efforts to solicit bids from and to utilize minority group subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of minority-owned construction firms from State highway agency personnel.
- b. The contractor will use his best efforts to ensure subcontractor compliance with their equal employment opportunity obligations.

10. Records and Reports.

- a. The contractor shall keep such records as necessary to determine compliance with the contractor's equal employment opportunity obligations. The records kept by the contractor will be designed to indicate:
 - (1) The number of minority and non minority group members and women employed in each work classification on the project.

- (2) The progress and efforts being made in cooperation with unions to increase employment opportunities for minorities and women (applicable only to contractor's who rely in whole or in part on unions as a source of their work force),
 - (3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees, and
 - (4) The progress and efforts being made in securing the services of minority group subcontractors with meaningful minority and female representation among their employees.
- b. All such records must be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the State highway agency and the FHWA.
- c. The contractors will submit an annual report to the State highway agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form PR-1391. If on-the-job training is being required by a "Training Special Provision", the contractor will be required to furnish Form FHWA 1409.

STANDARD FEDERAL AND STATE EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS

(41 CFR 60-4.3 and Minnesota Statute §363A.36)

Unless noted, the following apply to both Federal/federally assisted projects and State/state assisted projects. Item 3 applies to Federal/federally assisted projects only.

1. As used in these specifications:
 - (a) "Covered area" means the geographical area described in the solicitation from which this contract resulted;
 - (b) "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;
 - (c) "Employer Identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.
 - (d) "Minority" includes:
 - (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
 - (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 (\$100,000 for State projects) the provisions of these specifications and the Notice which contains the applicable goals for minority and women participation and which is set forth in the solicitations from which this contract resulted.
3. If the Contractor is participating (pursuant to 41 CFR 60-4, 5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work on the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.
4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7(a) to (p) of these specifications (itemized as 4 [a] to [o], Minnesota Rules 5000.3535). The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minorities and utilization the Contractor should (shall, for State or state assisted projects) reasonably be able to achieve in each construction trade in which it has employees in the covered area. The Contractor shall make substantially uniform progress toward its goals in each craft during the period specified. Covered construction contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Federal goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any office of Federal Contract Compliance programs or from Federal procurement contracting officers. State goals are published periodically in the State Register in notice form, and may be obtained from the Minnesota Department of Human Rights or the Minnesota Department of Transportation Office of Civil Rights. The Contractor is expected to

make substantially uniform progress toward its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement nor the failure by a union, with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications and Executive Order 11246 and its associated rules and regulations for Federal or federally assisted projects, and Minnesota Statutes, Section §363A.36 of the Minnesota Human Rights Act, or the rules adopted under the Act for State or state assisted projects.
6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees shall be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees shall be trained according to training programs approved by the Minnesota Department of Human Rights, the Minnesota Department of Labor and Industry, or the United States Department of Labor.
7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications must be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following (referred to in Minnesota Rules 5000.3535 as items 4(a) to (o)):
 - (a) Ensure and maintain, or for State or state assisted projects make a good faith effort to maintain, a working environment free of harassment, intimidation, and coercion at all sites and in all facilities at which the Contractor's employees are assigned to work. For Federal or federally assisted projects, the Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or women individuals working at such sites or in such facilities.
 - (b) Establish and maintain a current list of minority and women recruitment sources, provide written notification to minority and women recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
 - (c) Maintain a current file of the names, addresses, and telephone numbers of each minority and woman off-the-street applicant and minority or woman referral from a union, a recruitment source, or community organization and of what action was taken with respect to each individual. If the individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore along with whatever additional actions the Contractor may have taken.
 - (d) Provide immediate written notification to the commissioner of the Minnesota Department of Human Rights for State or state assisted projects, or the director of the Office of Federal Contract Compliance for Federal or federally assisted projects, when the union, or unions with which the Contractor has a collective bargaining agreement, has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
 - (e) Develop on-the-job training opportunities and/or participate in training programs for the areas which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the State of Minnesota for State or state assisted projects or the Department of Labor, for Federal or federally assisted projects. The Contractor shall provide notice of these programs to the sources compiled under (b).
 - (f) Disseminate the Contractor's equal employment opportunity policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its equal employment opportunity obligations; by including it in any policy manual and collective bargaining agreement;

by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and women employees at least once a year; and by posting the company equal employment opportunity policy on bulletin boards accessible to all employees at each location where construction work is performed.

- (g) Review, at least annually, the company's equal employment opportunity policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions; including specific review of these items with onsite supervisory personnel such as superintendents, general foremen, etc., prior to the first day of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- (h) Disseminate the Contractor's equal employment opportunity policy externally by including it in any advertising in the news media, specifically including minority and women news media, and providing written notification to and discussing the Contractor's equal employment opportunity policy with other contractors and subcontractors with whom the Contractor does or anticipates doing business.
- (i) Direct its recruitment efforts, both oral and written, to minority, women, and community organizations; to schools with minority and women students; and to minority and women recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations, such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
- (j) Encourage present minority and women employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and women youth, both on the site and in other areas of a Contractor's work force.
- (k) Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3. (This requirement applies only to Federal and federally assisted projects.)
- (l) Conduct, at least annually, an inventory and evaluation at least of all minority and women personnel for promotional opportunities; and encourage these employees to seek or to prepare for, through appropriate training, such opportunities. (This is Item 4(k) in Minnesota Rules.)
- (m) Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment-related activities to ensure that the equal employment opportunity policy and the Contractor's obligations under these specifications are being carried out. (This is item 4(l) in Minnesota Rules.)
- (n) Ensure that all facilities and company activities are non segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes. (This is item 4(m) in Minnesota Rules.)
- (o) Document and maintain a record of all solicitations or offers for subcontracts from minority and women construction contractors and suppliers, including circulation of solicitations to minority and women contractor associations and other business associations. (This is item 4(n) in Minnesota Rules.)
- (p) Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's equal employment opportunity policies and affirmative action obligations. (This is item 4(o) in Minnesota Rules.)

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7(a) to (p) for Federal or federally assisted projects, and 4(a)-(o) for State or state assisted projects). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7(a) to (p) or 4(a) to (o) of these specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and women work force participation, makes a good faith effort to meet its individual goals and timetables, and can

provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor however, is required to provide equal employment opportunity and to take affirmative action for all minority groups both male and female, and all women both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order for Federal or federally assisted projects, or Minnesota Rules for State or state assisted projects, if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order or Minnesota Rules part 5000.3520 if a specific minority group is under-utilized).
10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, creed, religion, sex, or national origin. Minnesota Statutes §363A.36, part 5000.3535 (Subp. 7) also prohibits discrimination with regard to marital status, status with regard to public assistance, disability, age, or sexual orientation.
11. The Contractor shall not enter into any subcontract with any person or firm debarred from government contracts under the federal Executive Order 11246 or a local human rights ordinance, or whose certificate of compliance has been suspended or revoked pursuant to Minnesota Statutes, Section §363A.36.
12. The Contractor shall carry out such sanctions for violation of these specifications and of the equal opportunity clause, including suspension, termination, and cancellation of existing contracts as may be imposed or ordered pursuant to Minnesota Statutes, Section §363A.36, and its implementing rules for State or state assisted projects, or Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs for Federal or federally assisted projects. Any contractor who fails to carry out such sanctions shall be in violation of these specifications and Minnesota Statutes, Section §363A.36, or Executive Order 11246 as amended.
13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications (paragraph 4 in Minnesota Rules 5000.3535), so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of these Specifications or Minnesota Statutes, Section §363A.36 and its implementing rules, or Executive Order 11246 and its regulations, the commissioner or the director shall proceed in accordance with Minnesota Rules part 5000.3570 for State or state assisted projects, or 41 CFR 60-4.8 for Federal or federally assisted projects.
14. The Contractor shall designate a responsible official to monitor all employment-related activity to ensure that the company equal employment opportunity policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Minnesota Department of Human Rights or the Government, and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (for example, mechanic, apprentice trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.
15. Nothing provided in this part shall be construed as a limitation upon the application of other state or federal laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents.

EQUAL OPPORTUNITY CLAUSE
(41 CFR Part 60-1.4 b, 7-1-96 Edition)

The applicant hereby agrees that it will incorporate or cause to be incorporated into any contract for construction work, or modification thereof, as defined in the regulations of the Secretary of Labor at 41 CFR Chapter 60, which is paid for in whole or in part with funds obtained from the Federal Government or borrowed on the credit of the Federal Government pursuant to a grant, contract, loan, insurance, or guarantee, the following equal opportunity clause:

During the performance of this contract, the Contractor agrees as follows:

- a. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoffs or termination; rates of pay or other forms of compensation; and, selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the State Highway Agency (SHA) setting forth the provisions of this nondiscrimination clause.
- b. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.
- c. The Contractor will send to each labor union or representative of workers with which the Contractor has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representative of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- d. The Contractor will comply with all provisions of Executive Order 11246, Equal Employment Opportunity, dated September 24, 1965, and of the rules, regulations (41 CFR Part 60), and relevant orders of the Secretary of Labor.
- e. The Contractor will furnish all information and reports required by Executive Order 11246 and by rules, regulations, and orders of the Secretary of Labor, pursuant thereto, and will permit access to its books, records, and accounts by the Federal Highway Administration (FHWA) and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- f. In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract, or with any of such rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part, and the Contractor may be declared ineligible for further Government contracts or federally-assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions as may be imposed and remedies invoked as provided in Executive Order 11246 or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- g. The Contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraph (1) through (7) in every subcontract or purchase order so that such provisions will be binding upon each subcontractor or vendor, unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246. The Contractor will take such action with respect to any subcontract or purchase order as the Secretary of Labor, SHA, or the Federal Highway Administration (FHWA) may direct as a means of enforcing such provisions, including sanctions for noncompliance. In the event a contractor becomes a party to litigation by a subcontractor or vendor as a result of such direction, the contractor may request the SHA to enter into such litigation to protect the interest of the State. In addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: Provided, that if the applicant so

participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

Notice to Bidders – Bid Schedule

The following abbreviations and acronyms, in addition to industry standards, and those listed in 1102, may be used in item descriptions and unit of measure in the Bid Schedule.

ACRONYM OR SHORT FORM	FULL NAME OR MEANING	ACRONYM OR SHORT FORM	FULL NAME OR MEANING
AGG	AGGREGATE	MJ	MECHANICAL JOINT
A-S	ANTI-SEEPAGE	MOD	MODIFIED
B&B	BALLED & BURLAPPED	MTD	MOUNTED
BIT	BITUMINOUS	OH	OVERHEAD
BR	BRIDGE or BARE ROOT	P-A	PIPE-ARCH
CAL	CALIPER	PAVT	PAVEMENT
CL	CLASS or CENTERLINE	PC	POWDER COAT or PRECAST
COMP	COMPONENT	PERF	PERFORATED
CONC	CONCRETE	PL	PLATE
COND	CONDUCTOR	PP	POLYPROPYLENE
CONST	CONSTRUCT	PREF	PREFORMED
CONT	CONTRAST or CONTAINER	PREST	PRESTRESSED
CP	CORRUGATED POLYETHYLENE	RC	REINFORCED CONCRETE
CRS	COURSE	RCP	REINFORCED CONCRETE PIPE
DBLE	DOUBLE	REINF	REINFORCED or REINFORCEMENT
DES	DESIGN	RDST	ROAD STATION
DMS	DYNAMIC MESSAGE SIGN	RS	RIGID STEEL
ESR	ENHANCED SKID RESISTANCE	SPEC	SPECIAL
EVP	EMERGENCY VEHICLE PREEMPTION	STR	STRENGTH
EXP	EXPANSION	STRUCT	STRUCTURAL or STRUCTURE
GR	GRADE	SYS	SYSTEM
GR IN	GROUND IN	SYIN	SQUARE YARD INCH
HD	HEAVY DUTY	TCLP	TOXIC CHARACTERISTIC LEACHING PROCEDURE
HP	HIGH PRESSURE	TEMP	TEMPORARY
HT	HEIGHT	THERMO	THERMOPLASTIC
HVAC	HEATING, VENTILATION, AIR CONDITIONING	TP	THERMOPLASTIC
LIN FT	LINEAR FEET	VAR	VARIABLE
LD	LIGHT DUTY	VCP	VITRIFIED CLAY PIPE
MAINT	MAINTENANCE	WEAR	WEARING
MATL	MATERIAL	WR	WEARING or WET REFLECTIVE
MH	MANHOLE	YR	YEAR

12/05/2024

Minnesota Department Of Transportation

Proposal Schedule of Items

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Proposal ID: 250003 **SP No.:** 8828-139 **Trunk Hwy:** VARIOUS

SECTION: 0001 SP 8828-139

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0005	2011601/00003 CONSTRUCTION SURVEYING	LUMP SUM	LUMP SUM			
0010	2011601/01000 AS BUILT	LUMP SUM	LUMP SUM			
0015	2021501/00010 MOBILIZATION	LUMP SUM	LUMP SUM			
0020	2051501/00010 MAINT AND RESTORATION OF HAUL ROADS	LUMP SUM	LUMP SUM			
0025	2101505/00020 CLEARING	0.900 ACRE				
0030	2101505/00030 GRUBBING	0.400 ACRE				
0035	2104502/00070 REMOVE RC CATTLE PASS APRON	1.000 EACH				
0040	2104502/00100 REMOVE BOX CULVERT END	2.000 EACH				
0045	2104502/00110 REMOVE CONCRETE APRON	5.000 EACH				
0050	2104502/00120 REMOVE METAL APRON	6.000 EACH				
0055	2104502/00220 REMOVE FLAP GATE	1.000 EACH				
0060	2104502/00500 REMOVE GUIDE POST	9.000 EACH				
0065	2104502/00910 REMOVE DRAINAGE STRUCTURE	2.000 EACH				

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Minnesota Department Of Transportation

Proposal Schedule of Items

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Proposal ID: 250003

SP No.: 8828-139

Trunk Hwy: VARIOUS

SECTION: 0001

SP 8828-139

Alt Set ID:

Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0070	2104502/01220 REMOVE SIGN	1.000 EACH				
0075	2104502/01960 SALVAGE CASTING	1.000 EACH				
0080	2104502/02444 SALVAGE DELINEATOR / MARKER	1.000 EACH				
0085	2104502/02490 SALVAGE PIPE APRON	27.000 EACH				
0090	2104502/03300 SALVAGE SIGN	3.000 EACH				
0095	2104503/00205 SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	527.000 L F				
0100	2104503/00255 REMOVE PIPE CULVERTS	16.000 L F				
0105	2104503/00260 REMOVE CONCRETE CULVERT	64.000 L F				
0110	2104503/00265 REMOVE METAL CULVERT	484.000 L F				
0115	2104503/00285 REMOVE SEWER PIPE (STORM)	80.000 L F				
0120	2104503/00295 REMOVE PIPE SEWERS	6.000 L F				
0125	2104503/00315 REMOVE CURB AND GUTTER	48.000 L F				
0130	2104503/00750 REMOVE BARBED WIRE FENCE	514.000 L F				

12/05/2024

Minnesota Department Of Transportation

Proposal Schedule of Items

Page 3 of 11

Proposal ID: 250003 **SP No.:** 8828-139 **Trunk Hwy:** VARIOUS

SECTION: 0001 SP 8828-139

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0135	2104503/00880 REMOVE BOX CULVERT	102.000 L F				
0140	2104503/00930 REMOVE RC CATTLE PASS	12.000 L F				
0145	2104503/01380 SALVAGE CONCRETE PIPE CULVERT	56.000 L F				
0150	2104504/00120 REMOVE BITUMINOUS PAVEMENT	2,607.000 S Y				
0155	2104507/00270 REMOVE RIPRAP	25.000 C Y				
0160	2104602/00400 SALVAGE SIGN SPECIAL	2.000 EACH				
0165	2106507/00010 EXCAVATION - COMMON	7,006.000 C Y				
0170	2106507/00080 SELECT GRANULAR EMBANKMENT (CV)	3,313.000 C Y				
0175	2106507/00130 COMMON EMBANKMENT (CV)	4,063.000 C Y				
0180	2106602/00050 DEWATERING	19.000 EACH				
0185	2106603/00060 DITCH CLEANING	2,104.000 L F				
0190	2112604/00013 SUBGRADE PREPARATION 6"-12"	98.000 S Y				
0195	2118507/00110 AGGREGATE SURFACING (CV) CLASS 1	159.000 C Y				

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Proposal Schedule of Items

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Proposal ID: 250003

SP No.: 8828-139

Trunk Hwy: VARIOUS

SECTION: 0001

SP 8828-139

Alt Set ID:

Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0200	2123610/00330 TRACTOR MOUNTED BACKHOE	30.000 HOUR				
0205	2131506/00010 CALCIUM CHLORIDE SOLUTION	2,240.000 GAL				
0210	2211507/00170 AGGREGATE BASE (CV) CLASS 5	1,178.000 C Y				
0215	2231509/00010 BITUMINOUS PATCHING MIXTURE	13.000 TON				
0220	2232603/00025 MILLED RUMBLE STRIPS	1,325.000 L F				
0225	2232603/00235 MILLED SINUSOIDAL RUMBLE STRIPS-CL	476.000 L F				
0230	2360509/23200 TYPE SP 12.5 WEARING COURSE MIXTURE (3,B)	1,231.000 TON				
0235	2411602/00260 PLUG AND ABANDON CATTLE PASS	1.000 EACH				
0240	2412502/06050 6X5 PRECAST CONCRETE BOX CULVERT END SECTION	2.000 EACH				
0245	2412503/06050 6X5 PRECAST CONCRETE BOX CULVERT	142.000 L F				
0250	2451507/00190 COARSE FILTER AGGREGATE (CV)	174.000 C Y				
0255	2451507/00220 FINE FILTER AGGREGATE (CV)	678.000 C Y				

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Minnesota Department Of Transportation

Proposal Schedule of Items

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Proposal ID: 250003

SP No.: 8828-139

Trunk Hwy: VARIOUS

SECTION: 0001

SP 8828-139

Alt Set ID:

Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0260	2501502/02036 36" CAS PIPE APRON	1.000 EACH				
0265	2501502/05024 24" RC PIPE APRON	2.000 EACH				
0270	2501502/05030 30" RC PIPE APRON	1.000 EACH				
0275	2501502/05042 42" RC PIPE APRON	2.000 EACH				
0280	2501502/40024 24" CAS SAFETY APRON	1.000 EACH				
0285	2501502/44018 18" RC SAFETY APRON	1.000 EACH				
0290	2501502/44024 24" RC SAFETY APRON	6.000 EACH				
0295	2501502/45070 INSTALL PIPE APRON	27.000 EACH				
0300	2501503/00024 24" CAS PIPE CULVERT	30.000 L F				
0305	2501503/24242 24" RC PIPE CULVERT DESIGN 3006	176.000 L F				
0310	2501503/24302 30" RC PIPE CULVERT DESIGN 3006	10.000 L F				
0315	2501503/24422 42" RC PIPE CULVERT DESIGN 3006	118.000 L F				
0320	2501503/25030 INSTALL CONCRETE CULVERT	56.000 L F				

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Minnesota Department Of Transportation

Proposal Schedule of Items

Page 6 of 11

Proposal ID: 250003 **SP No.:** 8828-139 **Trunk Hwy:** VARIOUS

SECTION: 0001 SP 8828-139

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0325	2501602/47010 PIPE TIES - FLAT BAR	693.000 EACH				
0330	2501602/47070 REPAIR CULVERT JOINT	143.000 EACH				
0335	2501602/47120 CLEAN PIPE CULVERT	21.000 EACH				
0340	2501618/00010 REPAIR CULVERT	4.000 S F				
0345	2502602/00170 CONNECT TO EXISTING PIPE DRAIN	3.000 EACH				
0350	2502602/03018 18" PE INSPECTION TEES	1.000 EACH				
0355	2503503/04120 12" TP PIPE SEWER	4.000 L F				
0360	2503503/06181 18" CP PIPE SEWER (SMOOTH)	42.000 L F				
0365	2503503/08120 12" CAS PIPE SEWER	6.000 L F				
0370	2503503/13040 4" PVC PIPE SEWER	9.000 L F				
0375	2503503/19125 12" RC PIPE SEWER DESIGN 3006 CLASS V	18.000 L F				
0380	2503503/19129 12" RC PIPE SEWER DESIGN 3006 CLASS V-JACKED	80.000 L F				
0385	2503503/19182 18" RC PIPE SEWER DESIGN 3006	48.000 L F				

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Minnesota Department Of Transportation

Proposal Schedule of Items

Page 7 of 11

Proposal ID: 250003 **SP No.:** 8828-139 **Trunk Hwy:** VARIOUS

SECTION: 0001 SP 8828-139

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0390	2503503/19242 24" RC PIPE SEWER DESIGN 3006	278.000 L F				
0395	2503603/20270 PLUG FILL AND ABANDON PIPE SEWER	94.000 L F				
0400	2506502/06000 CASTING ASSEMBLY	6.000 EACH				
0405	2506502/06010 INSTALL CASTING	1.000 EACH				
0410	2506503/00080 CONSTRUCT DRAINAGE STRUCTURE DESIGN H	2.000 L F				
0415	2506503/00190 CONSTRUCT DRAINAGE STRUCTURE DESIGN SD-48	6.000 L F				
0420	2506503/02420 CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020	15.500 L F				
0425	2506602/06030 RECONSTRUCT DRAINAGE STRUCTURE	1.000 EACH				
0430	2506602/06210 CONNECT INTO EXISTING STORM SEWER	2.000 EACH				
0435	2507603/10024 LINING CULVERT PIPE (24") SPECIAL	7,049.000 L F				
0440	2507603/10030 LINING CULVERT PIPE (30") SPECIAL	513.000 L F				
0445	2507603/10036 LINING CULVERT PIPE (36") SPECIAL	1,341.000 L F				

Minnesota Department Of Transportation

Proposal Schedule of Items

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Proposal ID: 250003 **SP No.:** 8828-139 **Trunk Hwy:** VARIOUS

SECTION: 0001 SP 8828-139

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0450	2507603/10042 LINING CULVERT PIPE (42") SPECIAL	130.000 L F				
0455	2507603/10060 LINING CULVERT PIPE (60") SPECIAL	130.000 L F				
0460	2507603/20073 LINING CULVERT PIPE (73" SPAN) SPECIAL	229.000 L F				
0465	2511504/00014 GEOTEXTILE FILTER TYPE 4	594.000 S Y				
0470	2511507/00013 RANDOM RIPRAP CLASS II	52.000 C Y				
0475	2511507/00014 RANDOM RIPRAP CLASS III	119.000 C Y				
0480	2511507/00015 RANDOM RIPRAP CLASS IV	652.000 C Y				
0485	2511507/00022 GRANULAR FILTER	32.000 C Y				
0490	2519507/00020 CLSM HIGH DENSITY	4.000 C Y				
0495	2531503/02315 CONCRETE CURB AND GUTTER DESIGN B618	27.000 L F				
0500	2554502/00002 GUIDE POST TYPE B	94.000 EACH				
0505	2563601/00001 TRAFFIC CONTROL SUPERVISOR	LUMP SUM	LUMP SUM			
0510	2563601/00010 TRAFFIC CONTROL	LUMP SUM	LUMP SUM			

Minnesota Department Of Transportation

Proposal Schedule of Items

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Proposal ID: 250003 **SP No.:** 8828-139 **Trunk Hwy:** VARIOUS

SECTION: 0001 SP 8828-139

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0515	2564602/01515 INSTALL SIGN	3.000 EACH				
0520	2564602/01516 INSTALL SIGN SPECIAL	2.000 EACH				
0525	2564602/01530 INSTALL DELINEATOR / MARKER	1.000 EACH				
0530	2564618/00010 SIGN	6.000 S F				
0535	2572503/00020 TEMPORARY FENCE	4,037.000 L F				
0540	2573501/00030 EROSION CONTROL SUPERVISOR	LUMP SUM	LUMP SUM			
0545	2573502/00110 STORM DRAIN INLET PROTECTION	5.000 EACH				
0550	2573502/00140 CULVERT END CONTROLS	66.000 EACH				
0555	2573503/00023 SILT FENCE, TYPE MS	260.000 L F				
0560	2573503/00064 SEDIMENT CONTROL LOG TYPE COMPOST	25,477.000 L F				
0565	2574505/00020 SOIL BED PREPARATION	8.200 ACRE				
0570	2574508/00011 FERTILIZER TYPE 1	188.000 LB				
0575	2574508/00013 FERTILIZER TYPE 3	935.000 LB				

12/05/2024

Minnesota Department Of Transportation

Proposal Schedule of Items

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Proposal ID: 250003

SP No.: 8828-139

Trunk Hwy: VARIOUS

SECTION: 0001

SP 8828-139

Alt Set ID:

Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0580	2574508/00014 FERTILIZER TYPE 4	320.000 LB				
0585	2575504/00320 ROLLED EROSION PREVENTION CATEGORY 20	14,322.000 S Y				
0590	2575504/00325 ROLLED EROSION PREVENTION CATEGORY 25	25,631.000 S Y				
0595	2575504/00335 ROLLED EROSION PREVENTION CATEGORY 35	26.000 S Y				
0600	2575505/00021 SEEDING	8.200 ACRE				
0605	2575505/00035 MOWING	16.400 ACRE				
0610	2575505/00040 WEED SPRAYING	4.300 ACRE				
0615	2575506/00010 WEED SPRAY MIXTURE	1.200 GAL				
0620	2575608/25080 SEED TURFGRASS	194.000 LB				
0625	2575608/25100 SEED MESIC INSLOPE	166.000 LB				
0630	2575608/25130 SEED WET DITCH	77.000 LB				
0635	2575608/25180 SEED SOUTHERN TALLGRASS ROADSIDE	90.000 LB				

12/05/2024

Minnesota Department Of Transportation

Proposal Schedule of Items

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Proposal ID: 250003 SP No.: 8828-139 Trunk Hwy: VARIOUS

SECTION: 0001 SP 8828-139

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0640	2582503/40104 4" SOLID LINE MULTI-COMPONENT GROUND IN (WR)	270.000 L F				
0645	2582503/40106 6" SOLID LINE MULTI-COMPONENT GROUND IN (WR)	2,990.000 L F				
0650	2582503/40204 4" BROKEN LINE MULTI-COMPONENT GROUND IN (WR)	145.000 L F				
0655	2582503/40404 4" DOUBLE SOLID LINE MULTI- COMPONENT GROUND IN (WR)	860.000 L F				
Section: 0001			Total:			
			Total Bid:			

Letting Date: _____
State Project No.: _____
Bond No.: _____

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

PROPOSAL BOND

KNOW ALL MEN BY THESE PRESENTS, that We, _____,
_____, as Principal, and _____,
_____, as Surety, are jointly and severally held and firmly bound unto the State
of Minnesota, Department of Transportation, as Obligee, in the sum of five percent (5%) of the total amount of
the proposal price.

The CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal shall be awarded a
contract, upon the accompanying proposal dated _____ for the performance
of STATE PROJECT _____

_____ and shall, within the time stated in the proposal, enter into a contract for the performance of the work
and give bond as required by law, then this obligation shall be void; otherwise, the Principal and
Surety shall pay unto the Obligee the amount of this bond, not as a penalty, but as liquidated
damages sustained by the Obligee as the result of such failure on the part of the Principal to execute
said contract and bond.

SIGNATURES

Date _____, 20 _____

(Name of Contractor/Principal)

By: _____
(Officer)

By: _____
(Officer)

(Name of Surety)

By: _____
(Attorney-in-Fact)

(Surety Corporate Seal)

ACKNOWLEDGEMENT IN A REPRESENTATIVE CAPACITY
(Corporation, LLC, Partnership or Other Entity)

STATE OF _____

COUNTY OF _____

This instrument was acknowledged before me on _____ by _____
(date) (name)

and _____ as _____ and _____
(name) (title) (title)

of _____
(name and designation of party on behalf of whom the instrument was executed)

Notary Signature: _____

Title: Notary

Commission Expiration: _____

(Notary Stamp/Seal)

ACKNOWLEDGEMENT IN AN INDIVIDUAL CAPACITY

STATE OF _____

COUNTY OF _____

This instrument was acknowledged before me on _____ by _____
(date) (name)

and _____
(name)

Notary Signature: _____

Title: Notary

Commission Expiration: _____

(Notary Stamp/Seal)

ACKNOWLEDGEMENT OF SURETY

STATE OF _____

COUNTY OF _____

This instrument was acknowledged before me on _____ by _____
(date) (name)

as Attorney-in-Fact of _____
(name of surety)

Notary Signature: _____

Title: Notary

Commission Expiration: _____

(Notary Stamp/Seal)

NOTICE TO PERSONAL SURETIES: Bond will not be accepted unless accompanied by a sworn financial statement of each of the sureties.

NOTICE TO CORPORATE SURETIES: This bond will not be accepted unless executed by a Minnesota agent, or a duly licensed non-resident-producer, or attorney-in-fact whose name and address must be noted below.

Full Name of Surety Company _____

Home Office Address (Street) _____

City, State and Zip Code _____

Name of Attorney-in-Fact _____

Name of Local Agent and Agency or
Non-Resident Producer and Agency _____

Address of Local Agency or
Non-Resident Producer Agency (street) _____

City, State and Zip Code _____

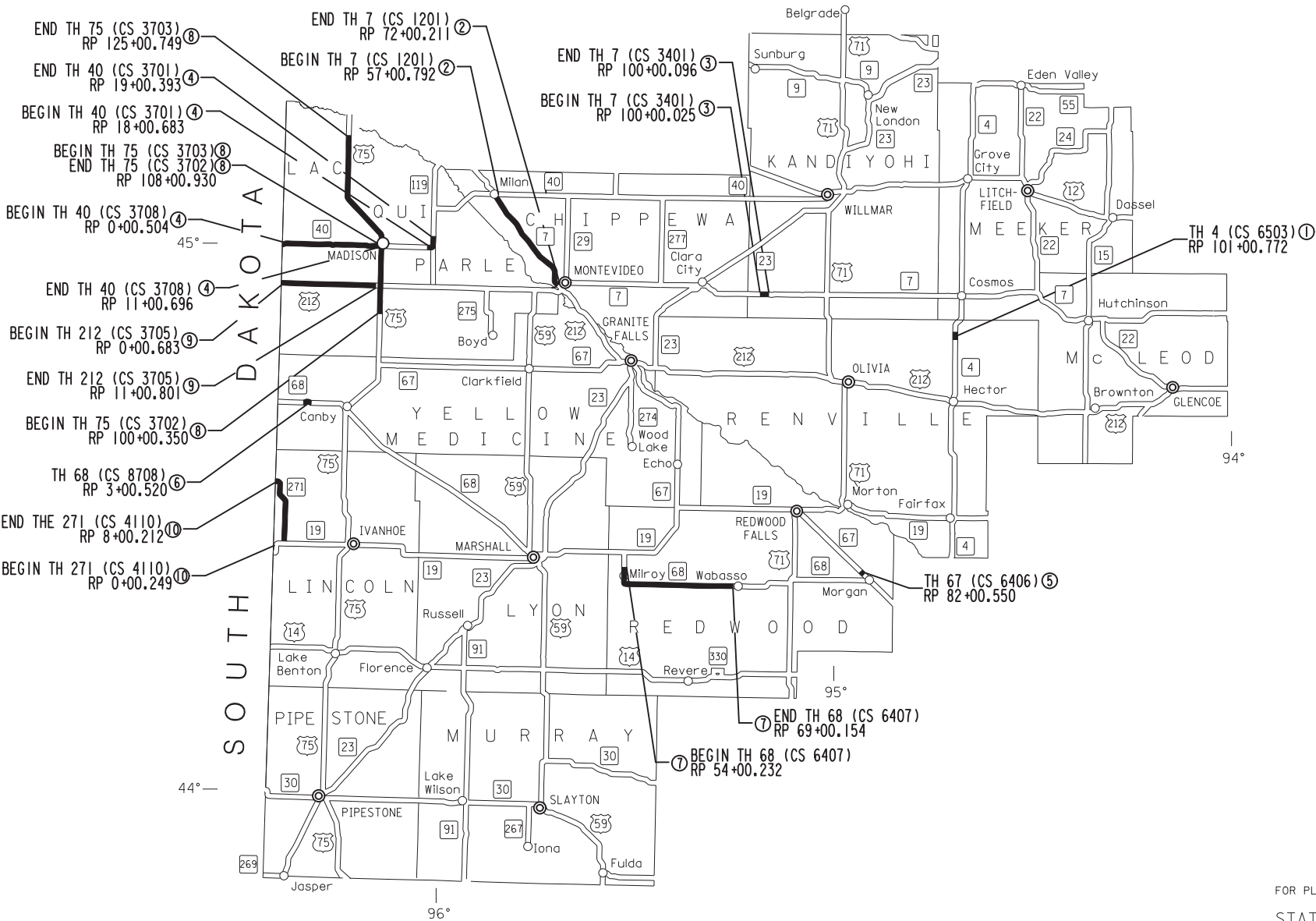
Approved and filed _____, 20____

Commissioner of Transportation
Pursuant to Delegation of Authority

MINNESOTA DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PLAN FOR DISTRICTWIDE CULVERT REPAIR

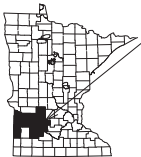
① LOCATED ON	TH 4 (CS 6503)	AT	0.01 MI N OF 870TH AVE	
② LOCATED ON	TH 7 (CS 1201)	FROM	0.18 MI S OF TH 40	TO 0.41 MI N OF CR 29
③ LOCATED ON	TH 7 (CS 3401)	FROM	0.05 MI W OF 3RD ST	TO 0.02 MI E OF 3RD ST
④ LOCATED ON	TH 40 (CS 3701 & 3708)	FROM	0.35 MI W OF 111TH AVE	TO 0.7 MI S OF 250TH ST
⑤ LOCATED ON	TH 67 (CS 6406)	AT	0.1 MI W OF FERGUS AVE	
⑥ LOCATED ON	TH 68 (CS 8708)	AT	0.08 MI W OF 140TH ST	
⑦ LOCATED ON	TH 68 (CS 6407)	FROM	0.17 MI E OF CSAH 32	TO 0.09 MI E OF CSAH 6
⑧ LOCATED ON	TH 75 (CS 3702 & 3703)	FROM	0.46 MI S OF CSAH 12	TO 0.87 MI S OF 460TH ST
⑨ LOCATED ON	TH 212 (CS 3705)	FROM	0.13 MI W OF 111TH AVE	TO 0.76 MI W OF TH 75
⑩ LOCATED ON	TH 271 (CS 4110)	FROM	0.25 MI N OF TH 19	TO 0.34 MI E OF CSAH 19



PLAN REVISIONS		
DATE	SHEET NO.	APPROVER
12/11/24	1, 12, 17, 78, 97, 123, X10 - X12	TRS

SCALES

PLAN	100'
INDEX MAP	100000'
GENERAL LAYOUT	6000'



PROJECT LOCATIONS

COUNTY: CHIPPEWA, KANDIYOH, LAC QUI PARLE, LINCOLN, REDWOOD, RENVILLE, YELLOW MEDICINE
DISTRICT: 8 - WILLMAR

FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL

STATE PROJ. NO. CHARGE IDENTIFIER
8828-139

STATE PROJ. NO. 8828-139

FED. PROJ. NO. STBG-PRO 8825(068)

GOVERNING SPECIFICATIONS

THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION
"STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2-7	GENERAL LAYOUT
8-10	STATEMENT OF ESTIMATED QUANTITIES
11	SOILS AND CONSTRUCTION NOTES, STANDARD PLATES
12-27	TABULATIONS
28-29	TYPICAL SECTIONS
30-40	CONSTRUCTION DETAILS
41-47A, 48-57	STANDARD PLANS
58	INPLACE UTILITY, TOPO, AND REMOVAL PLANS - PRINSBURG
59-96	CONSTRUCTION, DRAINAGE, AND UTILITIES PLANS
97	ROAD PROFILE - TH 68
98-103	SPECIAL SHAPE RIPRAP DETAILS
104-141	EROSION CONTROL & TURF ESTABLISHMENT PLANS
142-143	ENVIRONMENTAL MANAGEMENT PLAN
144-149	STORMWATER POLLUTION PREVENTION PLAN
150-169	TRAFFIC CONTROL PLAN
170-176	PAVEMENT MARKING & SIGNING PLANS
177-211	DRAINAGE PROFILES
X1-X12	CROSS SECTIONS - TH 68

SHEET 155 HAS BEEN DELETED

THIS PLAN CONTAINS 224 SHEETS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON LICENSE # 54298

DATE: 11/14/24 SIGNATURE: Dan Swanson
VICTORIA LINK, SARAH BARNETT, KAYLYN HALEY, ANDREW
DESIGN SQUAD MCCALLUM, NICK GRACE, KEARA FEHR, MARTHA BURKET

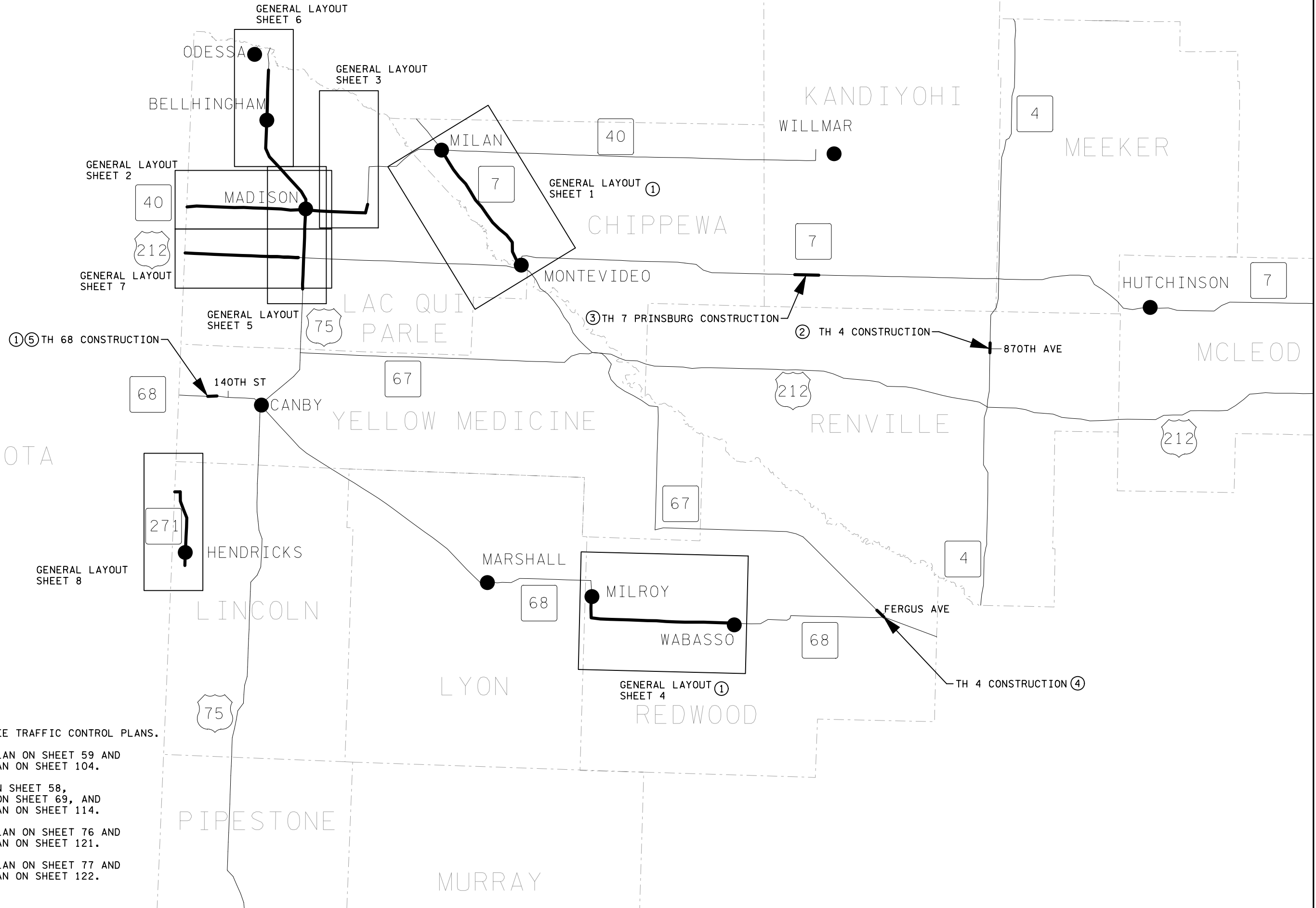
Joseph Pignato

OFFICE OF LAND MANAGEMENT APPROVAL DIRECTOR, LAND MANAGEMENT

Tom Styrbicki

APPROVED 20 STATE DESIGN ENGINEER

SHEET NO. 1 OF 212 SHEETS



SPECIFIC NOTES:

- ① DETOUR REQUIRED, SEE TRAFFIC CONTROL PLANS.
- ② SEE CONSTRUCTION PLAN ON SHEET 59 AND EROSION CONTROL PLAN ON SHEET 104.
- ③ SEE REMOVAL PLAN ON SHEET 58, CONSTRUCTION PLAN ON SHEET 69, AND EROSION CONTROL PLAN ON SHEET 114.
- ④ SEE CONSTRUCTION PLAN ON SHEET 76 AND EROSION CONTROL PLAN ON SHEET 121.
- ⑤ SEE CONSTRUCTION PLAN ON SHEET 77 AND EROSION CONTROL PLAN ON SHEET 122.

1:43:27 AM
10/16/2024
C:\Users\jswanson\OneDrive\Documents\Projects\2024\1220013\DESIGN\Plan Sheets\cd828139_g101.dgn

NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON
SIGNATURE: *Dan Swanson*
DATE: 09/19/24 LICENSE #: 54298

GENERAL LAYOUT
INDEX MAP

SP 8828-139

SHEET NO. 2 OF 212 SHEETS

LEGEND

+ ##.###

CULVERT RP

COUNTY LINE

■

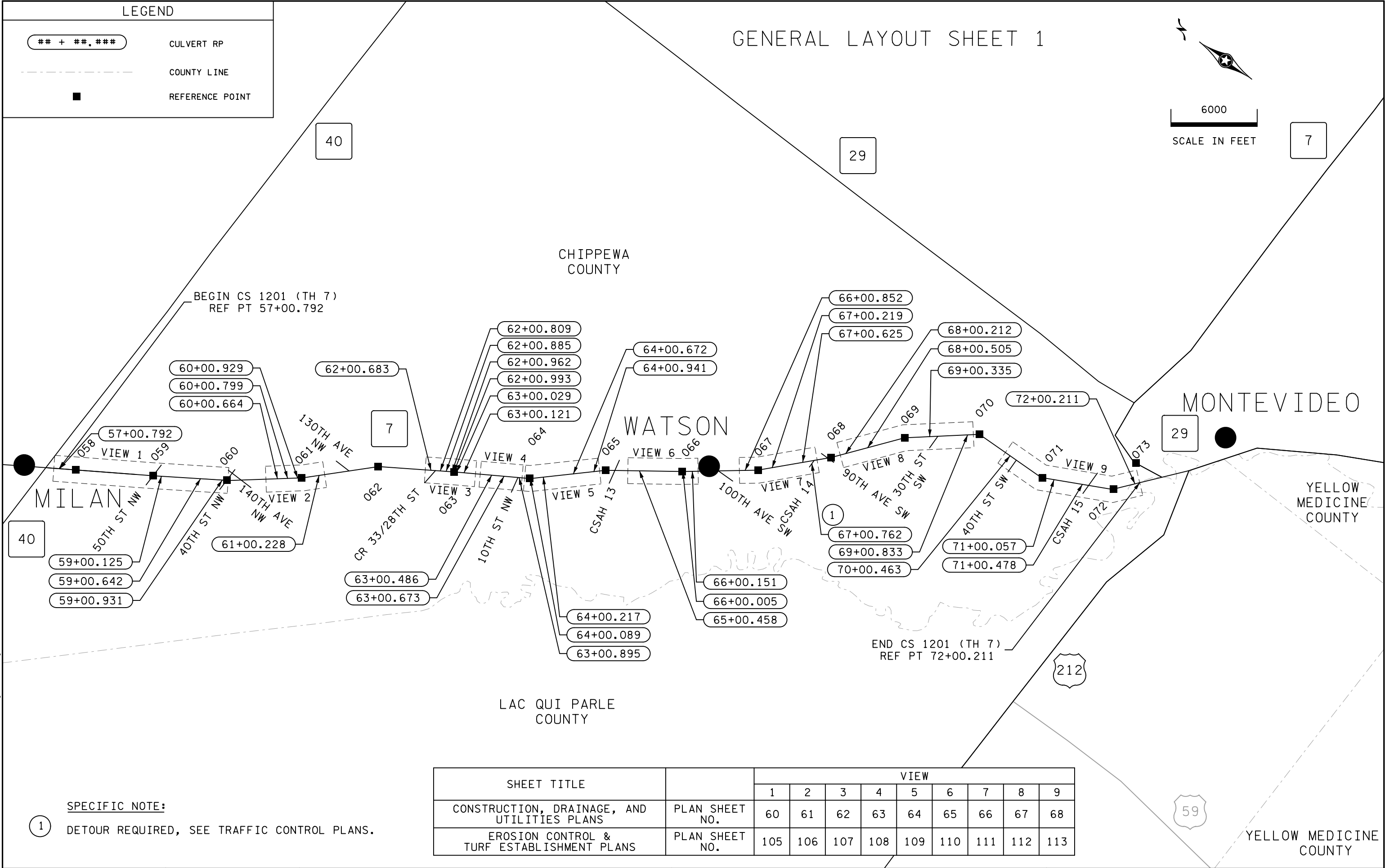
REFERENCE POINT

GENERAL LAYOUT SHEET 1



6000
SCALE IN FEET

7



SPECIFIC NOTE:
① DETOUR REQUIRED, SEE TRAFFIC CONTROL PLANS.

SHEET TITLE		VIEW								
		1	2	3	4	5	6	7	8	9
CONSTRUCTION, DRAINAGE, AND UTILITIES PLANS	PLAN SHEET NO.	60	61	62	63	64	65	66	67	68
EROSION CONTROL & TURF ESTABLISHMENT PLANS	PLAN SHEET NO.	105	106	107	108	109	110	111	112	113

1:43:35 AM
10/27/2022
C:\Users\jswanson\OneDrive\Documents\Projects\2022\1220013\DESIGN\Plan Sheets\cd828139_g102_TH 7.dgn

NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

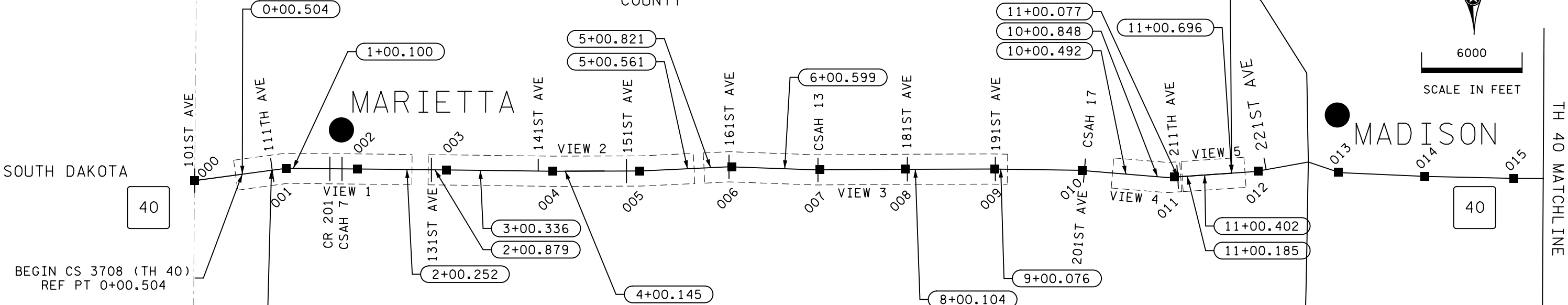
PRINT NAME: DAN SWANSON
SIGNATURE: *[Signature]*
DATE: 09/19/24 LICENSE #: 54298

GENERAL LAYOUT
TH 7

SP 8828-139
SHEET NO. 3 OF 212 SHEETS

GENERAL LAYOUT SHEET 2

LAC QUI PARLE
COUNTY



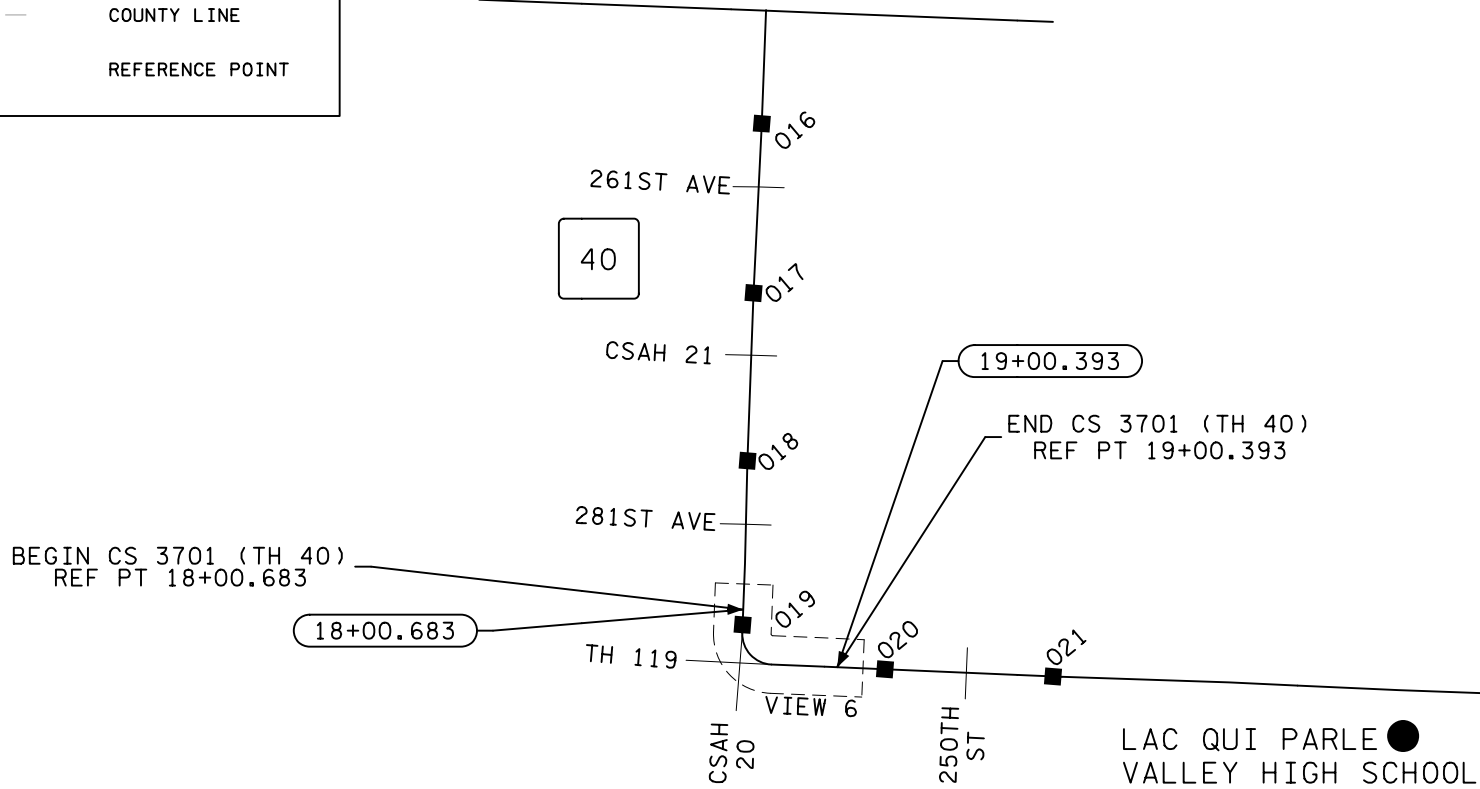
SHEET TITLE		VIEW				
		1	2	3	4	5
CONSTRUCTION, DRAINAGE, AND UTILITIES PLANS	PLAN SHEET NO.	70	71	72	73	74
EROSION CONTROL & TURF ESTABLISHMENT PLANS	PLAN SHEET NO.	115	116	117	118	119

LEGEND

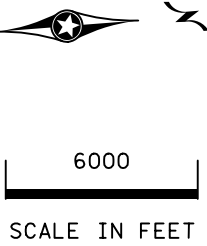
- ## + ##.### CULVERT RP
- COUNTY LINE
- REFERENCE POINT

GENERAL LAYOUT SHEET 3

TH 40 MATCHLINE



SHEET TITLE		VIEW
		6
CONSTRUCTION, DRAINAGE, AND UTILITIES PLANS	PLAN SHEET NO.	75
EROSION CONTROL & TURF ESTABLISHMENT PLANS	PLAN SHEET NO.	120



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NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON
SIGNATURE: *Dan Swanson*
DATE: 09/19/24 LICENSE #: 54298

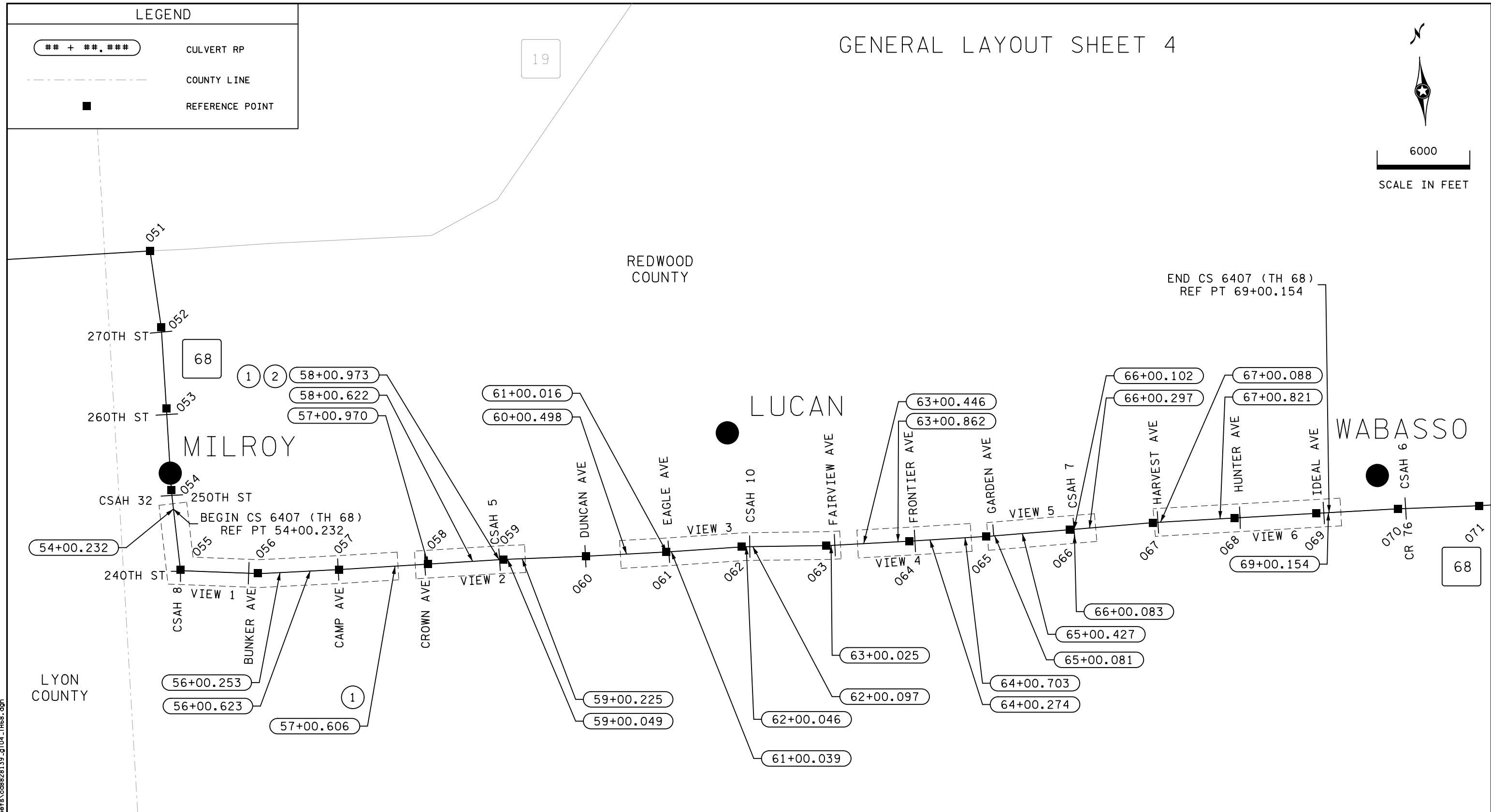
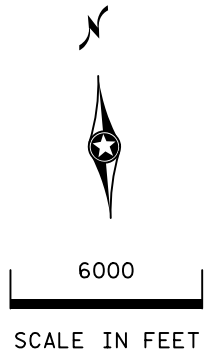
GENERAL LAYOUT
TH 40

SP 8828-139
SHEET NO. 4 OF 212 SHEETS

LEGEND

- ## + ##.### CULVERT RP
- COUNTY LINE
- REFERENCE POINT

GENERAL LAYOUT SHEET 4



SPECIFIC NOTES:

- 1 DETOUR REQUIRED, SEE TRAFFIC CONTROL PLANS.
- 2 THERE ARE TWO PIPES AT THIS LOCATION, SEE CONSTRUCTION PLANS.

SHEET TITLE		VIEW					
		1	2	3	4	5	6
CONSTRUCTION, DRAINAGE, AND UTILITIES PLANS	PLAN SHEET NO.	78	79	80	81	82	83
EROSION CONTROL & TURF ESTABLISHMENT PLANS	PLAN SHEET NO.	123	124	125	126	127	128

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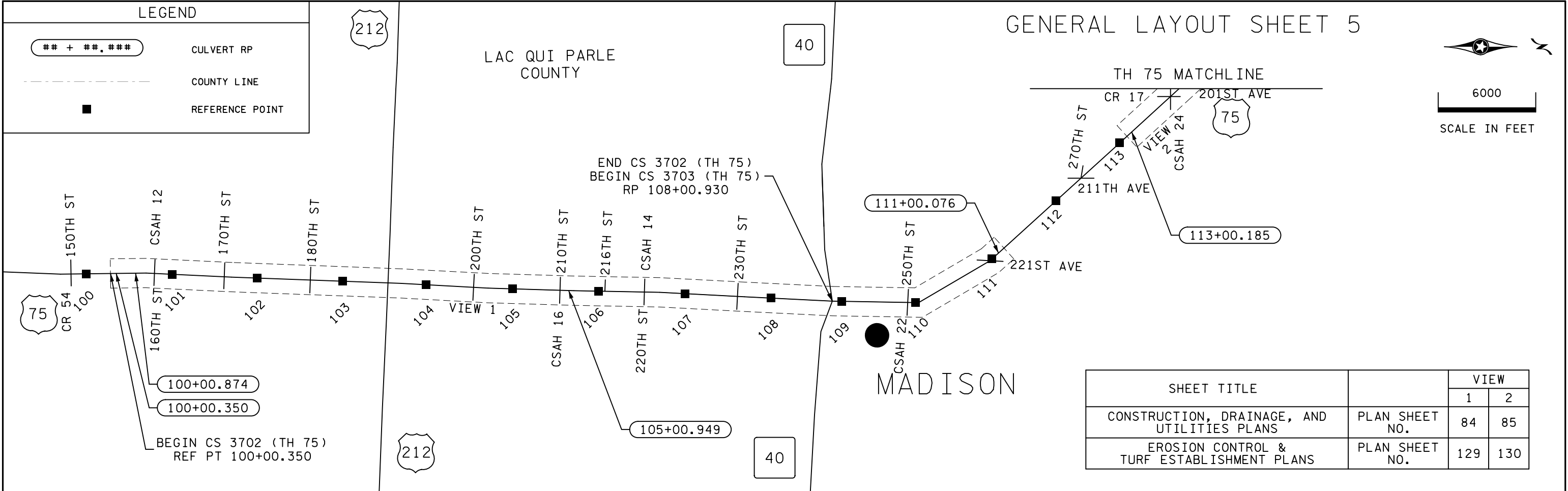
NO	DATE	DWN	CKD	REVISIONS



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PRINT NAME: DAN SWANSON
SIGNATURE: *[Signature]*
DATE: 09/19/24 LICENSE #: 54298

GENERAL LAYOUT
TH 68



GENERAL LAYOUT SHEET 7

LAC QUI PARLE
COUNTY

75



6000

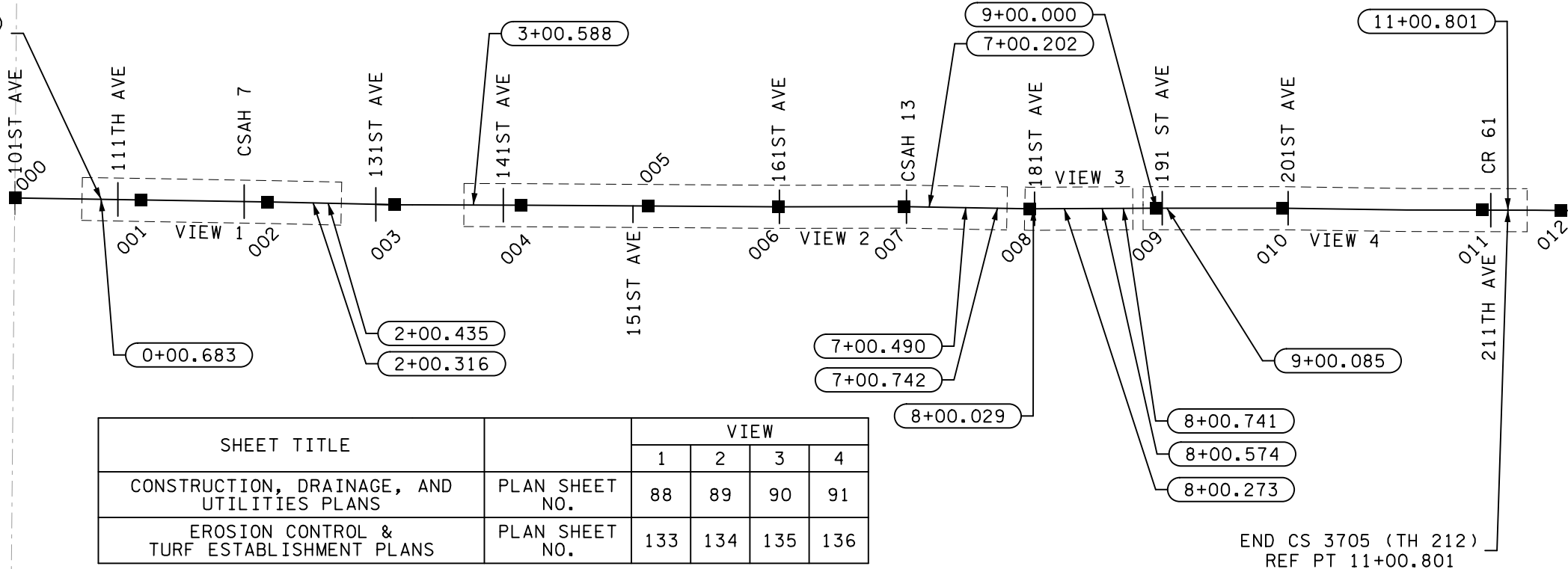
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212

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REF PT 0+00.683

SOUTH DAKOTA

212



SHEET TITLE		VIEW			
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CONSTRUCTION, DRAINAGE, AND UTILITIES PLANS	PLAN SHEET NO.	88	89	90	91
EROSION CONTROL & TURF ESTABLISHMENT PLANS	PLAN SHEET NO.	133	134	135	136

END CS 3705 (TH 212)
REF PT 11+00.801

75

LEGEND

+ ##.###

CULVERT RP

COUNTY LINE

REFERENCE POINT

GENERAL LAYOUT SHEET 8

SOUTH DAKOTA

SHEET TITLE

CONSTRUCTION, DRAINAGE, AND UTILITIES PLANS

EROSION CONTROL & TURF ESTABLISHMENT PLANS

PLAN SHEET NO.

PLAN SHEET NO.

VIEW

1	2	3	4	5
92	93	94	95	96
137	138	139	140	141

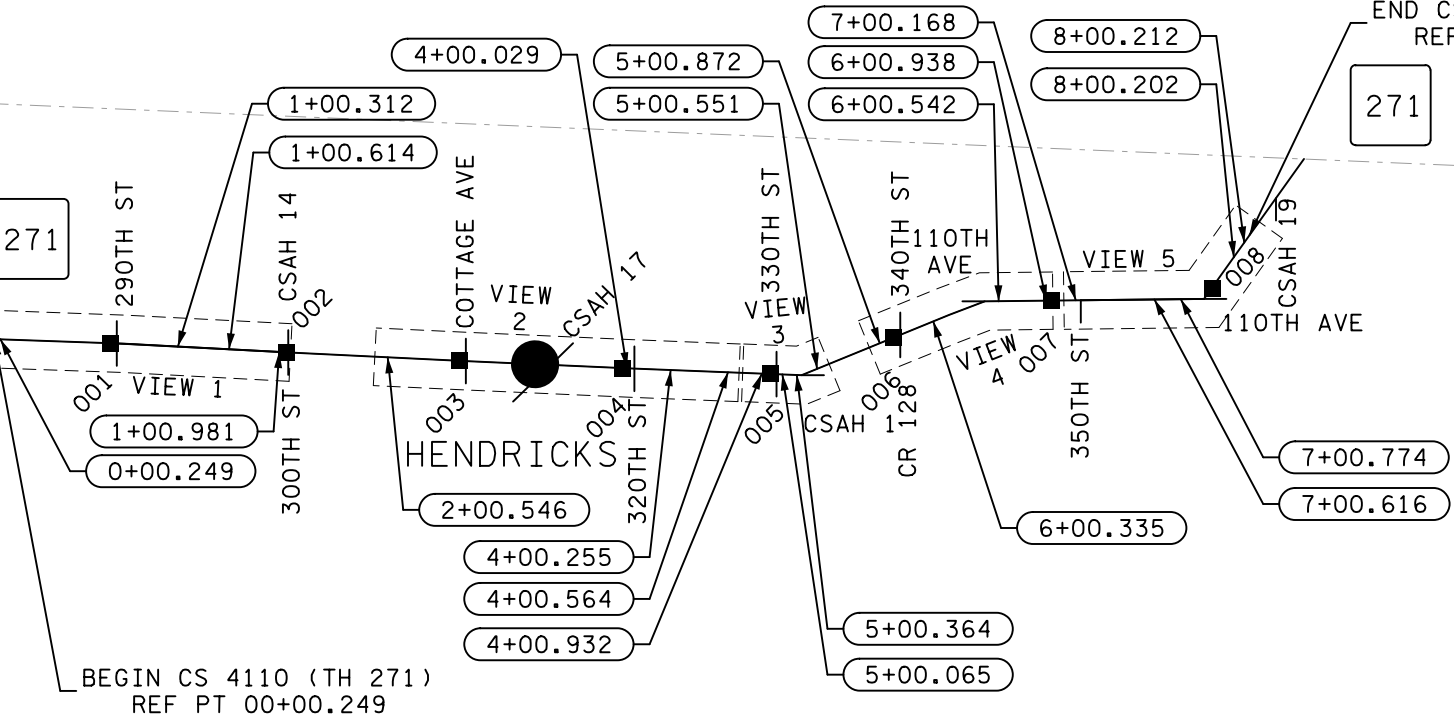


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SCALE IN FEET

LINCOLN
COUNTY

19



BEGIN CS 4110 (TH 271)
REF PT 00+00.249

END CS 4110 (TH 271)
REF PT 8+00.212

YELLOW
MEDICINE
COUNTY

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NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON
SIGNATURE: *Dan Swanson*
DATE: 09/19/24 LICENSE #: 54298

GENERAL LAYOUT
TH 212 & TH 271

SP 8828-139

SHEET NO. 7 OF 212 SHEETS

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12/19/2024
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STATEMENT OF ESTIMATED QUANTITIES (A)					
TAB	SHEET NO	ITEM NO	DESCRIPTION	UNITS	SP 8828-139 TOTAL QUANTITY
		2011.601	CONSTRUCTION SURVEYING	LUMP SUM	1
		2011.601	AS BUILT	LUMP SUM	1
		2021.501	MOBILIZATION	LUMP SUM	1
		2051.501	MAINT & RESTORATION OF HAUL ROADS	LUMP SUM	1
F	24-27	2101.505	CLEARING	ACRE	0.9
F	24-27	2101.505	GRUBBING	ACRE	0.4
B	13-21	2104.502	REMOVE RC CATTLE PASS APRON	EACH	1
B	13-21	2104.502	REMOVE BOX CULVERT END	EACH	2
B	13-21	2104.502	REMOVE CONCRETE APRON	EACH	5
B	13-21	2104.502	REMOVE METAL APRON	EACH	6
B	13-21	2104.502	REMOVE FLAP GATE	EACH	1
B	13-21	2104.502	REMOVE GUIDE POST	EACH	9
D	23	2104.502	REMOVE DRAINAGE STRUCTURE	EACH	2
ST	171	2104.502	REMOVE SIGN	EACH	1
D	23	2104.502	SALVAGE CASTING	EACH	1
ST	171	2104.502	SALVAGE DELINEATOR / MARKER	EACH	1
B	13-21	2104.502	SALVAGE PIPE APRON	EACH	27
ST	171	2104.502	SALVAGE SIGN	EACH	3
E	23	2104.503	SAWING BIT PAVEMENT (FULL DEPTH)	LIN FT	527
B	13-21	2104.503	REMOVE PIPE CULVERTS	LIN FT	16
B	13-21	2104.503	REMOVE CONCRETE CULVERT	LIN FT	64
B	13-21	2104.503	REMOVE METAL CULVERT	LIN FT	484
D	23	2104.503	REMOVE SEWER PIPE (STORM)	LIN FT	80
B	13-21	2104.503	REMOVE PIPE SEWERS	LIN FT	6
E	23	2104.503	REMOVE CURB & GUTTER	LIN FT	48
E	23	2104.503	REMOVE BARBED WIRE FENCE	LIN FT	514
B	13-21	2104.503	REMOVE BOX CULVERT	LIN FT	102
B	13-21	2104.503	REMOVE RC CATTLE PASS	LIN FT	12
B	13-21	2104.503	SALVAGE CONCRETE PIPE CULVERT	LIN FT	56
E	23	2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	2607
F	24-27	2104.507	REMOVE RIPRAP	CU YD	25
ST	171	2104.602	SALVAGE SIGN SPECIAL	EACH	2
A, TC	12, 150	2106.507	EXCAVATION - COMMON	CU YD	7006
A	12	2106.507	SELECT GRANULAR EMBANKMENT (CV)	CU YD	3313
A, F, TC	12, 24-27, 150	2106.507	COMMON EMBANKMENT (CV)	CU YD	4063
B	13-21, 37	2106.602	DEWATERING	EACH	19
F	24-27, 30	2106.603	DITCH CLEANING	LIN FT	2104
TC	150	2112.604	SUBGRADE PREPARATION 6"-12"	SQ YD	98
E, TC	23, 150	2118.507	AGGREGATE SURFACING (CV) CLASS 1	CU YD	159
		2123.610	TRACTOR MOUNTED BACKHOE (2)	hour	30
TC	150	2131.506	CALCIUM CHLORIDE SOLUTION (1)	GALLON	2240
E, TC	23, 150	2211.507	AGGREGATE BASE (CV) CLASS 5	CU YD	1178
TC	150, 162	2231.509	BITUMINOUS PATCHING MIXTURE	TON	13
E	23, 40	2232.603	MILLED RUMBLE STRIPS	LIN FT	1325
E	23, 40	2232.603	MILLED SINUSOIDAL RUMBLE STRIPS-CL	LIN FT	476
E, TC	23, 150	2360.509	TYPE SP 12.5 WEARING COURSE MIX (3,B)	TON	1231
B	13-21, 32	2411.602	PLUG & ABANDON CATTLE PASS	EACH	1

NOTES:

- (A) 80% FEDERAL PROTECT, 20% STATE FUNDS (CAPPED)
REMAINDER: 81.42% FEDERAL STBG, 18.58% STATE FUNDS.
- (1) TO BE USED FOR MAINTENANCE OF GRAVEL ROADS.
- (2) TO BE USED FOR DRAIN TILE INVESTIGATION.

NO	DATE	DWN	CKD	REVISIONS



ALLIANT

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BY ME OR UNDER MY DIRECT SUPERVISION AND THAT
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UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON
SIGNATURE:
DATE 09/19/24 LICENSE # 54298

STATEMENT OF ESTIMATED QUANTITIES

SP 8828-139

SHEET NO. 8 OF 212 SHEETS



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STATEMENT OF ESTIMATED QUANTITIES (A)					
TAB	SHEET NO	ITEM NO	DESCRIPTION	UNITS	SP 8828-139 TOTAL QUANTITY
C	22	2412.502	6X5 PRECAST CONCRETE BOX CULV END SECT	EACH	2
C	22	2412.503	6X5 PRECAST CONCRETE BOX CULVERT	LIN FT	142
C	22, 35	2451.507	COARSE FILTER AGGREGATE (CV)	CU YD	174
B, C, D	13-23	2451.507	FINE AGGREGATE BEDDING (CV)	CU YD	678
C	22	2501.502	36" CAS PIPE APRON	EACH	1
C, D	22, 23	2501.502	24" RC PIPE APRON	EACH	2
C	22	2501.502	30" RC PIPE APRON	EACH	1
C	22	2501.502	42" RC PIPE APRON	EACH	2
C	22	2501.502	24" CAS SAFETY APRON	EACH	1
D	23	2501.502	18" RC SAFETY APRON	EACH	1
C, D	22, 23	2501.502	24" RC SAFETY APRON	EACH	6
B	13-21	2501.502	INSTALL PIPE APRON	EACH	27
C	22	2501.503	24" CAS PIPE CULVERT	LIN FT	30
C	22	2501.503	24" RC PIPE CULVERT DES 3006	LIN FT	176
C	22	2501.503	30" RC PIPE CULVERT DES 3006	LIN FT	10
C	22	2501.503	42" RC PIPE CULVERT DES 3006	LIN FT	118
B	13-21	2501.503	INSTALL CONCRETE CULVERT	LIN FT	56
B, C, D	13-23,30,31,39	2501.602	PIPE TIES - FLAT BAR	EACH	693
B	13-21	2501.602	REPAIR CULVERT JOINT	EACH	143
B	13-21	2501.602	CLEAN PIPE CULVERT	EACH	21
B	13-21	2501.618	REPAIR CULVERT	SQ FT	4
D	23, 30	2502.602	CONNECT TO EXISTING PIPE DRAIN	EACH	3
D	23	2502.602	18" PE INSPECTION TEES	EACH	1
D	23	2503.503	12" TP PIPE SEWER	LIN FT	4
D	23	2502.503	18" CP PIPE SEWER (SMOOTH)	LIN FT	42
D	23	2503.503	12" CAS PIPE SEWER	LIN FT	6
D	23	2503.503	4" PVC PIPE SEWER	LIN FT	9
D	23	2503.503	12" RC PIPE SEWER DES 3006 CLASS V	LIN FT	18
D	23	2503.503	12" RCP SEWER DES 3006 CL V-JACKED	LIN FT	80
D	23	2503.503	18" RC PIPE SEWER DES 3006	LIN FT	48
D	23	2503.503	24" RC PIPE SEWER DES 3006	LIN FT	278
D	23	2503.603	PLUG FILL & ABANDON PIPE SEWER	LIN FT	94
D	23	2506.502	CASTING ASSEMBLY	EACH	6
D	23	2506.502	INSTALL CASTING	EACH	1
D	23	2506.503	CONST DRAINAGE STRUCTURE DESIGN H	LIN FT	2
D	23	2506.503	CONST DRAINAGE STRUCTURE DESIGN SD-48	LIN FT	6
D	23	2506.503	CONST DRAINAGE STRUCTURE DES 48-4020	LIN FT	15.5
D	23, 30	2506.602	RECONSTRUCT DRAINAGE STRUCTURE	EACH	1
D	23	2506.602	CONNECT INTO EXISTING STORM SEWER	EACH	2
B	13-21	2507.603	LINING CULVERT PIPE (24") SPECIAL	LIN FT	7049
B	13-21	2507.603	LINING CULVERT PIPE (30") SPECIAL	LIN FT	513
B	13-21	2507.603	LINING CULVERT PIPE (36") SPECIAL	LIN FT	1341
B	13-21	2507.603	LINING CULVERT PIPE (42") SPECIAL	LIN FT	130
B	13-21	2507.603	LINING CULVERT PIPE (60") SPECIAL	LIN FT	130
B	13-21	2507.603	LINING CULVERT PIPE (73" SPAN) SPECIAL	LIN FT	229
F	24-27	2511.504	GEOTEXTILE FILTER TYPE 4	SQ YD	594
F	24-27	2511.507	RANDOM RIPRAP CLASS II	CU YD	52
F	24-27	2511.507	RANDOM RIPRAP CLASS III	CU YD	119
F	24-27	2511.507	RANDOM RIPRAP CLASS IV	CU YD	652
F	24-27	2511.507	GRANULAR FILTER	CU YD	32
B	13-21	2519.507	CLSM HIGH DENSITY	CU YD	4

NOTE:
(A) 80% FEDERAL PROTECT, 20% STATE FUNDS (CAPPED)
REMAINDER: 81.42% FEDERAL STBG, 18.58% STATE FUNDS.

NO	DATE	DWN	CKD	REVISIONS



ALLIANT

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UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON
SIGNATURE: 
DATE 09/19/24 LICENSE # 54298

STATEMENT OF ESTIMATED QUANTITIES

SP 8828-139

SHEET NO. 9 OF 212 SHEETS

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STATEMENT OF ESTIMATED QUANTITIES (A)					
TAB	SHEET NO	ITEM NO	DESCRIPTION	UNITS	SP 8828-139 TOTAL QUANTITY
E	23	2531.503	CONCRETE CURB & GUTTER DESIGN B618	LIN FT	27
B	13-21	2554.502	GUIDE POST TYPE B	EACH	94
TC	150	2563.601	TRAFFIC CONTROL SUPERVISOR	LUMP SUM	1
TC	150	2563.601	TRAFFIC CONTROL	LUMP SUM	1
ST	171	2564.602	INSTALL SIGN	EACH	3
ST	171	2564.602	INSTALL SIGN SPECIAL	EACH	2
ST	171	2564.602	INSTALL DELINEATOR / MARKER	EACH	1
ST	171	2564.618	SIGN	SQ FT	6
F	24-27	2572.503	TEMPORARY FENCE	LIN FT	4037
		2573.501	EROSION CONTROL SUPERVISOR	LUMP SUM	1
F	24-27	2573.502	STORM DRAIN INLET PROTECTION	EACH	5
F	24-27	2573.502	CULVERT END CONTROLS	EACH	66
F	24-27	2573.503	SILT FENCE, TYPE MS	LIN FT	260
F, TC	24-27, 150	2573.503	SEDIMENT CONTROL LOG TYPE COMPOST	LIN FT	25477
F, TC	24-27, 150	2574.505	SOIL BED PREPARATION	ACRE	8.2
F	24-27	2574.508	FERTILIZER TYPE 1	POUND	188
F, TC	24-27, 150	2574.508	FERTILIZER TYPE 3	POUND	935
F	24-27	2574.508	FERTILIZER TYPE 4	POUND	320
F, TC	24-27, 150	2575.504	ROLLED EROSION PREVENTION CATEGORY 20	SQ YD	14322
F	24-27	2575.504	ROLLED EROSION PREVENTION CATEGORY 25	SQ YD	25631
F	24-27	2575.504	ROLLED EROSION PREVENTION CATEGORY 35	SQ YD	26
F, TC	24-27, 150	2575.505	SEEDING	ACRE	8.2
F, TC	24-27, 150	2575.505	MOWING	ACRE	16.4
F, TC	24-27, 150	2575.505	WEED SPRAYING	ACRE	4.3
F, TC	24-27, 150	2575.506	WEED SPRAY MIXTURE (3)	GALLON	1.2
F	24-27	2575.608	SEED TURFGRASS	POUND	194
F, TC	24-27, 150	2575.608	SEED MESIC INSLOPE	POUND	166
F	24-27	2575.608	SEED WET DITCH	POUND	77
F, TC	24-27, 150	2575.608	SEED SOUTHERN TALLGRASS ROADSIDE	POUND	90
PM	171	2582.503	4" SOLID LINE MULTI COMP GR IN (WR)	LIN FT	270
PM	171	2582.503	6" SOLID LINE MULTI COMP GR IN (WR)	LIN FT	2990
PM	171	2582.503	4" BROKEN LINE MULTI COMP GR IN (WR)	LIN FT	145
PM	171	2582.503	4" DBLE SOLID LINE MULTI COMP GR IN (WR)	LIN FT	860

NOTES:

- (A) 80% FEDERAL PROTECT, 20% STATE FUNDS (CAPPED)
REMAINDER: 81.42% FEDERAL STBG, 18.58% STATE FUNDS.
- (3) CLOPYRALID HERBICIDE LABELED FOR RIGHT OF WAY USE AND
FORMULATED AT 3 POUNDS ACID EQUIVALENT PER GALLON.

NO	DATE	DWN	CKD	REVISIONS



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SIGNATURE: *Dan Swanson*
DATE 09/19/24 LICENSE # 54298

STATEMENT OF ESTIMATED QUANTITIES

SP 8828-139				
SHEET NO.	10	OF	212	SHEETS

SOILS & CONSTRUCTION NOTES

GENERAL NOTES

1. PERPETUATE DRAINAGE ON ALL AREAS DISTURBED BY CONSTRUCTION (INCIDENTAL).
2. ALL MATERIAL NOT UTILIZED ON THIS PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OUTSIDE THE RIGHT-OF-WAY ACCORDING TO SPEC. 2104.
3. STOCKPILING OF MATERIAL WILL NOT BE ALLOWED IN ADJACENT WETLANDS.
4. IN AREAS DISTURBED BY CONSTRUCTION, ALL TOPSOIL SHALL BE STRIPPED AND BE RE-USED AS TOPSOIL (PAID FOR AS EXCAVATION - COMMON AND COMMON EMBANKMENT (CV)).
5. SOME OF THE CULVERTS TO BE LINED HAVE CULVERT TIE BARS PROTRUDING INTO THE CULVERT. THESE TIE BAR ENDS MAY NEED TO BE CUT OFF TO PLACE THE LINER. WHEN PLACING CURE IN PLACE PIPE (CIPP) LINERS THE TIE BAR ENDS SHALL BE CUT FLUSH WITH THE INSIDE OF THE PIPE. CUTTING OF THE TIE BARS SHALL BE CONSIDERED INCIDENTAL. THIS COULD INVOLVE EXCAVATION TO ACCESS THE TIE BARS. ANY EXCAVATION TO ACCESS THE TIE BARS SHALL BE CONSIDERED INCIDENTAL.
6. SOME OF THE CULVERTS TO BE LINED HAVE INTERNAL BANDS AT SOME JOINTS. THESE BANDS NEED TO BE REMOVED PRIOR TO PLACING THE LINER. REMOVAL OF THE BANDS SHALL BE CONSIDERED INCIDENTAL.
7. IN SOME LOCATIONS WHERE CULVERT LINERS ARE TO BE PLACED THERE IS A NARROW DITCH WITH AN ELEVATED BACKSLOPE. EXCAVATION MAY BE NEEDED TO PLACE THE CULVERT LINER AND SHALL BE CONSIDERED INCIDENTAL.
8. CLEANING OF CULVERTS AND OUTLETS MAY BE REQUIRED BEFORE CULVERTS ARE LINED AND SHALL BE CONSIDERED INCIDENTAL.
9. SEED ALL DISTURBED AREAS.
10. THE PROCESS OF PLACING CULVERT LINERS, RELAYING APRONS, RELATED DITCH CLEANING, AND TURF ESTABLISHMENT SHALL BE A CONTINUOUS OPERATION. NO PAYMENT SHALL BE MADE FOR CULVERT LINER INSTALLATION, CULVERT REPAIR ACTIVITIES, FLUME REPLACEMENTS, AND DITCH CLEANING UNTIL TURF ESTABLISHMENT HAS BEEN COMPLETED FOR EACH INDIVIDUAL SITE.
11. ACTION SHALL BE TAKEN TO ENSURE RESOURCES ARE PROTECTED FROM EXCESS SLURRY MIX AND ANY OTHER CONSTRUCTION MATERIALS USED FOR THE CULVERT REPAIR. ANY EXCESS GROUT OR SLURRY SHALL BE REMOVED FROM THE SITE.
12. CONTRACTOR SHALL SUPPLY A SITE PLAN DEFINED BY MNDOT SPEC. 1717 TO THE ENGINEER FOR APPROVAL PRIOR TO BEGINNING FLOW DIVERSIONS OR DEWATERING.
13. ALL APRON WORK MUST BE COMPLETE PRIOR TO CULVERT LINING.
14. FURNISHING AND INSTALLATION OF METAL APRON CONNECTION RINGS AND CORRUGATED STEEL PIPE COUPLING BANDS SHALL BE INCIDENTAL.
15. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL LINING LENGTHS BEFORE LINING. NO ADDITIONAL COMPENSATION SHALL BE MADE FOR RESTOCKING/REORDERING MATERIALS.
16. BITUMINOUS TACK COAT MUST BE APPLIED BETWEEN BITUMINOUS PAVEMENT LIFTS AND MUST MEET THE REQUIREMENTS OF MNDOT SPEC. 2357. BITUMINOUS TACK COAT IS INCIDENTAL.

UTILITY NOTES

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE GOPHER STATE ONE CALL EXCAVATION NOTICE SYSTEM REQUIRED BY MINNESOTA STATUE, CHAPTER 216D FOR ALL UNDERGROUND UTILITY LOCATIONS AT ALL LOCATIONS REGARDLESS IF THE LOCATION SHOWS CONFLICT OR NOT.
2. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-22, ENTITLED "STANDARD GUIDELINES FOR INVESTIGATING AND DOCUMENTING EXISTING UTILITIES".
3. CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITY LOCATIONS AND ELEVATIONS, PRIOR TO CONSTRUCTION, WITH RESPECTIVE UTILITY COMPANIES.
4. ALL UTILITY WORK TO BE DONE BY OTHERS UNLESS OTHERWISE NOTED.
5. POWER LINES WITHIN THE PROJECT ARE DISTRIBUTION UNLESS NOTED OTHERWISE.
6. UTILITY DEPTHS SHOWN IN THE PLAN SET ARE ASSUMED DEPTHS AND SHOULD NOT BE RELIED UPON FOR ACCURACY.
7. THE FOLLOWING UTILITY OWNERS HAVE EXISTING FACILITIES IN THE AREA OF CONSTRUCTION. THESE UTILITIES WILL BE AFFECTED BY THE WORK UNDER THIS CONTRACT:

- CENTURYLINK

- DOOLEY'S NATURAL GAS

- FEDERATED TELEPHONE

- FRONTIER COMMUNICATIONS

- INTERSTATE TELECOMMUNICATIONS

- LYON - LINCOLN ELECTRICAL COOP, INC.

- MIDCONTINENT COMMUNICATIONS

- MINNESOTA VALLEY TELEPHONE

- REDWOOD ELECTRICAL COOP

8. THE FOLLOWING UTILITY OWNERS HAVE EXISTING FACILITIES IN THE AREA OF CONSTRUCTION. THESE UTILITIES WILL NOT BE AFFECTED BY WORK UNDER THIS CONTRACT:

- ARVIG

- BROOKINGS - DEUEL RURAL WATER

- CHARTER SPECTRUM

- CITY OF BELLINGHAM

- CITY OF HENDRICKS

- CITY OF MARIETTA

- CITY OF MILAN

- CITY OF MILROY

- CITY OF MONTEVIDEO

- CITY OF MORGAN

- CITY OF PRINSBURG

- CITY OF WATSON

- GRANTS - ROBERTS RURAL WATER

- GREAT PLAINS NATURAL GAS

- ITC MIDWEST

- KANDIYOHI POWER COOP

- LINCOLN COUNTY ENVIRONMENTAL OFFICE

- LINCOLN - PIPESTONE RURAL WATER

- MCLEOD COOPERATIVE POWER

- MEDIACOM

- MINNESOTA VALLEY COOP

- MNDOT

- NORTHERN BORDER PIPELINE

- OTTER TAIL POWER COMPANY

- XCEL ENERGY

THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT	
STANDARD PLATES	
PLATE NO.	DESCRIPTION
3000M	REINFORCED CONCRETE PIPE (6 SHEETS)
3006H	GASKET JOINT FOR R.C. PIPE (2 SHEETS)
3007F	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3022C	PRECAST CONCRETE SAFETY APRON (3 SHEETS)
3040F	CORRUGATED METAL PIPE CULVERT (STANDARD 2-2/3" X 1/2" CORRUGATION)
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3123J	METAL APRON FOR C.S. PIPE
3124B	METAL APRON CONNECTION
3128H	METAL SAFETY APRON & GRATE (2 SHEETS)
3133D	RIPRAP AT RCP OUTLETS
3134D	RIPRAP AT CSP OUTLETS
3143C	INSPECTION TEES
3145G	CONCRETE PIPE OR PRECAST BOX CULVERT TIES
3221D	CORRUGATED STEEL PIPE COUPLING BAND (3 SHEETS)
4006L	MANHOLE OR CATCH BASIN PRECAST - DESIGNS G AND H
4010I	CONCRETE SHORT CONE & ADJUSTING RING (SECTIONAL CONCRETE)
4011E	PRECAST CONCRETE BASE
4020J	MANHOLE OR CATCH BASIN (FOR USE WITH OR WITHOUT TRAFFIC LOADS) (2 SHEETS)
4024A	48" DIA. PRECAST SHALLOW DEPTH CATCH BASIN - DESIGN SD
4026B	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4110F	COVER CASTING FOR MANHOLE (FOR USE IN ALL TRAFFIC AREAS) - CASTING NO. 715 AND 716
4143E	STOOL GRATE & CONCRETE FRAME (MEDIAN DRAINS) - CASTING NO. 731
4150C	GRATE CASTING FOR ALL PIPE DRAINAGE STRUCTURES
4180J	MANHOLE OR CATCH BASIN STEP
7100H	CONCRETE CURB AND GUTTER (DESIGN B AND DESIGN V)
8000K	TEMPORARY CHANNELIZERS (3 SHEETS)
9101B	SHAPING AND SODDING OF SLOPES AT BOX CULVERT ENDS

NO	DATE	DWN	CKD	REVISIONS



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PRINT NAME: DAN SWANSON
SIGNATURE: *[Signature]*
DATE 09/19/24 LICENSE # 54298

SOILS & CONSTRUCTION NOTES
STANDARD PLATES

SP 8828-139
SHEET NO. 11 OF 212 SHEETS

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TH 68 EARTHWORK TABULATION			
STATION	SPEC 2106		
	EXCAVATION - COMMON	SELECT GRANULAR EMBANKMENT (CV)	COMMON EMBANKMENT (CV)
	CU YD		
CS 8708 (TH 68)			
18+13.91			
18+20.00	9		16
18+40.00	80	49	24
18+60.00	218	123	200
18+80.00	803	500	512
19+00.00	1007	368	413
19+10.00	916	440	450
19+19.00	617	393	353
19+30.00	946	355	223
19+40.00	691	389	376
19+60.00	210	128	211
19+80.00	95	48	87
20+00.00	47	24	44
TABULATION TOTAL	5639	2817	2909

EARTHWORK SUMMARY						A
STATION TO STATION	LOCATION	SPEC 2106				
		EXCAVATION COMMON	SELECT GRANULAR EMBANKMENT (CV)	COMMON EMBANKMENT (CV)		
						CU YD
CS 1201 (TH 7)						
655+36.84 TO 655+46.84	CL				14	
981+83.54 TO 982+77.52	RT				122	
1004+66 TO 1005+30	CL	88			92	
CS 1201 (TH 7) TOTAL		88			228	
CS 3401 (TH 7)						
526+06.07 TO 528+13.35	CL	63			117	
CS 3401 (TH 7) TOTAL		63			117	
CS 6407 (TH 68)						
358+75.00 TO 363+40.00	CL	1127	496		582	
433+52.73 TO 433+97.02	RT				16	
CS 6407 (TH 68) TOTAL		1127	496		598	
CS 8708 (TH 68)						
18+13.91 TO 20+00.00	CL	5639	2817		2909	
CS 8708 (TH 68) TOTAL		5639	2817		2909	
EARTHWORK TABULATION TOTAL		6917	3313		3852	

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PRINT NAME: DAN SWANSON
SIGNATURE: *Dan Swanson*
DATE 12/11/24 LICENSE # 54298

TABULATIONS

SP 8828-139
SHEET NO. 12 OF 212 SHEETS

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INPLACE DRAINAGE TABULATION																																	B						
TAMS	RP	STATION	LOCATION	EXISTING PIPE CULVERT	LEAVE AS IS	SPEC 2104																SPEC 2106	SPEC 2411	(3)	SPEC 2501						SPEC 2507						SPEC 2519	SPEC 2554	NOTES
						REMOVE RC CATTLE PASS APRON	REMOVE BOX CULVERT END	REMOVE CONCRETE APRON	REMOVE METAL APRON	REMOVE FLAP GATE	REMOVE GUIDE POST	SALVAGE PIPE APRON	REMOVE PIPE CULVERTS	REMOVE CONCRETE CULVERT	REMOVE METAL CULVERT	REMOVE PIPE SEWERS	REMOVE BOX CULVERT	REMOVE RC CATTLE PASS	SALVAGE CONCRETE PIPE CULVERT	(1)	(2)	INSTALL PIPE APRON	INSTALL CONCRETE CULVERT		(4) PIPE TIES - FLAT BAR	REPAIR CULVERT JOINT	CLEAN PIPE CULVERT	REPAIR CULVERT	LINING CULVERT PIPE SPECIAL (5)						CLSM HIGH DENSITY	GUIDE POST TYPE B			
																				24"	30"								36"	42"	60"	73" SPAN							
																																	EACH	LIN FT			EACH	CU YD	
2240335	1+00.100	158+99	CL	24" RCP									1																							1	SALVAGE & INSTALL PIPE APRON LT, GUIDE POST LT		
2240336	1+00.235	165+26	CL	24" RCP	X																																		
2240337	1+00.711	90+08	CL	36" RCP	X																																		
2240338	1+00.712	90+26	CL	24" RCP	X																																		
2240339	1+00.740	91+20	CL	12" RCP	X																																		
2240340	1+00.770	93+07	CL	12" RCP	X																																		
2240341	1+00.820	95+14	CL	12" RCP	X																																		
2240342	1+00.901	99+82	CL	24" RCP	X																																		
2240343	2+00.046	107+95	CL	24" RCP	X																																		
2240344	2+00.252	118+90	CL	24" RCP				1												1									90							2	REMOVE & PLACE PIPE APRON LT (SEE DRAINAGE TABS) Q2 = 12.6 CFS		
2240345	2+00.879	151+90	CL	60" RCP																1					36	12												TIE ALL JOINTS Q2 = 106.0 CFS	
2240346	3+00.336	176+22	CL	65" RCP-A																1					30	10												TIE ALL JOINTS Q2 = 105.0 CFS	
2240347	4+00.145	219+19	CL	48" RCP																1					45	10										2	TIE ALL JOINTS Q2 = 22.2 CFS		
2240348	4+00.589	242+51	CL	26" HDPE LINED	X																																		
2240349	5+00.561	292+15	CL	24" RCP								1										4	1						86							2	SALVAGE & INSTALL PIPE APRON RT		
2240350	5+00.821	306+02	CL	24" RCP																									93										
2240351	6+00.150	325+00	CL	24" RCP	X																																		
2240352	6+00.339	336+00	CL	24" RCP	X																																		
2240353	6+00.599	348+28	CL	24" RCP																									75										
2240354	7+00.260	383+68	CL	20" HDPE LINED	X																																		
2240355	7+00.746	409+90	CL	20" HDPE LINED	X																																		
2240356	8+00.104	427+11	CL	36" RCP									2						8	1		16	2	8			1				87					2	SALVAGE & INSTALL PIPE APRON LT/RT, SALVAGE & INSTALL PIPE CULVERT RT (IF APRON & CULVERT CANNOT BE RESET, INSLOPE REPAIR LT/RT (6)) Q2 = 76.6 CFS		
2240357	9+00.076	478+06	CL	24" RCP									1									8	1							77						2	SALVAGE & INSTALL PIPE APRON LT (IF APRON & CULVERT CANNOT BE RESET, INSLOPE REPAIR LT (6))		
2240358	10+00.221	538+63	CL	24" RCP	X																																		
2240359	10+00.492	552+90	CL	24" RCP				1				1	1									4	1							64							2	SALVAGE & INSTALL PIPE APRON RT, REMOVE & PLACE PIPE APRON LT (SEE DRAINAGE TABULATIONS)	
2240360	10+00.848	571+84	CL	24" RCP								1	1									4	1							80							1	SALVAGE & INSTALL PIPE APRON RT, REMOVE GUIDEPOST RT, GUIDE POST RT	
2240361	11+00.077	583+93	CL	48" RCP								2	2							1		5	2		51	11										2	TIE ALL JOINTS Q2 = 48.5 CFS		
2240362	11+00.185	589+63	CL	24" RCP																1										74								Q2 = 10.4 CFS	
2240363	11+00.402	600+21	CL	24" RCP																										88								INSLOPE REPAIR RT (6)	
SHEET TOTAL								2			4	9							8	7		45	9	8	162	43	1		716	77	87					16			

NO	DATE	DWN	CKD	REVISIONS



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PRINT NAME: DAN SWANSON
SIGNATURE: *Dan Swanson*
DATE: 09/19/24 LICENSE #: 54298

TABULATIONS

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INPLACE DRAINAGE TABULATION																																	B				
TAMS	RP	STATION	LOCATION	EXISTING PIPE CULVERT	LEAVE AS IS	SPEC 2104														SPEC 2106	SPEC 2411	(3)	SPEC 2501						SPEC 2507						SPEC 2519	SPEC 2554	NOTES
						REMOVE RC CATTLE PASS APRON	REMOVE BOX CULVERT END	REMOVE CONCRETE APRON	REMOVE METAL APRON	REMOVE FLAP GATE	REMOVE GUIDE POST	SALVAGE PIPE APRON	REMOVE PIPE CULVERTS	REMOVE CONCRETE CULVERT	REMOVE METAL CULVERT	REMOVE PIPE SEWERS	REMOVE BOX CULVERT	REMOVE RC CATTLE PASS	SALVAGE CONCRETE PIPE CULVERT	(1)	(2)		INSTALL PIPE APRON	INSTALL CONCRETE CULVERT	(4) PIPE TIES - FLAT BAR	REPAIR CULVERT JOINT	CLEAN PIPE CULVERT	REPAIR CULVERT	LINING CULVERT PIPE SPECIAL (5)						CLSM HIGH DENSITY	GUIDE POST TYPE B	
																				24"	30"								36"	42"	60"	73" SPAN					
																																	EACH	LIN FT			
2240364	11+00.696	616+38	CL	24" RCP														1																			INSLOPE REPAIR RT (6) Q2 = 24.4 CFS
2240367	12+00.443	655+23	CL	24" RCP	X																																
CS 3708 (TH 40) TOTAL									2											8	8		49	10	8	162	43	2			924	77	87				17
CS 3701 (TH 40)																																					
2240368	13+00.981	69+34	CL	24" RCP	X																																
2240369	14+00.655	105+23	CL	24" RCP	X																																
2408213	14+00.690	106+44	CL	72" CATTLE PASS	X																																
2240370	15+00.141	133+19	CL	24" RCP	X																																
2240371	15+00.571	152+97	CL	24" RCP	X																																
2240372	15+00.704	160+10	CL	24" RCP	X																																
2240373	15+00.954	173+20	CL	24" RCP	X																																
2240374	16+00.164	184+54	CL	24" RCP	X																																
2240375	16+00.244	198+78	CL	24" RCP	X																																
2240376	16+00.634	209+35	CL	24" RCP	X																																
2240377	17+00.220	240+51	CL	24" RCP	X																																
2240378	17+00.485	254+55	CL	24" RCP	X																																
2240379	18+00.047	284+07	CL	24" RCP	X																																
2240380	18+00.222	293+34	CL	24" RCP	X																																
2240381	18+00.522	310+77	CL	48" RCP	X																																
2240382	18+00.683	317+70	CL	24" RCP																																	
4056387	19+00.061	337+31	RT	18" CSP	X																																
2240383	19+00.393	357+66	CL	30" RCP																															1	GUIDE POST LT	
2240384	19+00.707	374+18	CL	24" RCP	X																																
2240385	20+00.009	389+78	CL	24" RCP	X																																
2240386	20+00.157	397+46	CL	24" RCP	X																																
15705641	20+00.250	402+61	CL	15" RCP	X																																
2248387	20+00.774	430+04	CL	24" RCP	X																																
2240388	21+00.364	461+00	CL	24" RCP	X																																
2240389	22+00.082	498+25	CL	30" RCP	X																																
2300674	23+00.060	550+47	CL	24" RCP	X																																
4056362	22+00.150	502+00	LT	18" CMP	X																																
2240390	23+00.326	564+00	CL	24" RCP	X																																
2240391	23+00.770	587+05	CL	24" RCP	X																																
CS 3701 (TH 40) TOTAL																																				1	
CS 6406 (TH 67)																																					
N/A	82+00.550	651+43	CL	12" RCP/8" VCP																															4	(SEE STORM SEWER TABS)	
CS 6406 (TH 67) TOTAL																																			4		
CS 8708 (TH 68)																																					
2240485	3+00.520	18+98	CL	5' X 5' BOX CULVERT			2																														
N/A	3+00.521	19+19	CL	6' X 5' BOX CULVERT																															2	(SEE DRAINAGE TABS)	
CS 8708 (TH 68) TOTAL							2																												2		
SHEET TOTAL							2																												7		

NO	DATE	DWN	CKD	REVISIONS



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PRINT NAME: DAN SWANSON
SIGNATURE: *Dan Swanson*
DATE 09/19/24 LICENSE # 54298

TABULATIONS

SP 8828-139
SHEET NO. 16 OF 212 SHEETS

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INPLACE DRAINAGE TABULATION																																			B																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
TAMS	RP	STATION	LOCATION	EXISTING PIPE CULVERT	LEAVE AS IS	SPEC 2104																SPEC 2106	SPEC 2411	SPEC 2501								SPEC 2507						SPEC 2519	SPEC 2554	NOTES																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
						REMOVE RC CATTLE PASS APRON	REMOVE BOX CULVERT END	REMOVE CONCRETE APRON	REMOVE METAL APRON	REMOVE FLAP GATE	REMOVE GUIDE POST	SALVAGE PIPE APRON	REMOVE PIPE CULVERTS	REMOVE CONCRETE CULVERT	REMOVE METAL CULVERT	REMOVE PIPE SEWERS	REMOVE BOX CULVERT	REMOVE RC CATTLE PASS	SALVAGE CONCRETE PIPE CULVERT	(1)	(2)	(3)	INSTALL PIPE APRON	INSTALL CONCRETE CULVERT	(4)	REPAIR CULVERT JOINT	CLEAN PIPE CULVERT	REPAIR CULVERT	LINING CULVERT PIPE SPECIAL (5)						CLSM HIGH DENSITY	GUIDE POST TYPE B																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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2211516	110+00.041	328+70	CL	36" RCP	X																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									

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PRINT NAME: DAN SWANSON
SIGNATURE: *[Signature]*
DATE 09/19/24 LICENSE # 54298

TABULATIONS

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INPLACE DRAINAGE TABULATION																																		B						
TAMS	RP	STATION	LOCATION	EXISTING PIPE CULVERT	LEAVE AS IS	SPEC 2104																SPEC 2106	SPEC 2411	SPEC 2501								SPEC 2507						SPEC 2519	SPEC 2554	NOTES
						REMOVE RC CATTLE PASS APRON	REMOVE BOX CULVERT END	REMOVE CONCRETE APRON	REMOVE METAL APRON	REMOVE FLAP GATE	REMOVE GUIDE POST	SALVAGE PIPE APRON	REMOVE PIPE CULVERTS	REMOVE CONCRETE CULVERT	REMOVE METAL CULVERT	REMOVE PIPE SEWERS	REMOVE BOX CULVERT	REMOVE RC CATTLE PASS	SALVAGE CONCRETE PIPE CULVERT	(1)	(2)	(3)	INSTALL PIPE APRON	INSTALL CONCRETE CULVERT	(4)	REPAIR CULVERT JOINT	CLEAN PIPE CULVERT	REPAIR CULVERT	LINING CULVERT PIPE SPECIAL (5)						CLSM HIGH DENSITY	GUIDE POST TYPE B				
																				24"	30"	36"			42"				60"	73" SPAN										
																				EACH	LIN FT								EACH	CU YD	EACH	LIN FT	EACH	SQ FT			LIN FT			
2211551	126+00.339	390+23	CL	48" RCP	X																																			
2211522	126+00.607	376+23	CL	18" HDPE LINER	X																																			
CS 3703 (TH 75) TOTAL																2																				8				
CS 3705 (TH 212)																																								
2240941	0+00.052	339+36	CL	24" RCP	X																																			
2288789	0+00.242	349+86	CL	24" RCP	X																																			
2240942	0+00.683	373+45	CL	24" RCP																																				
2240943	1+00.085	394+66	CL	24" RCP	X																																			
2240944	1+00.333	412+79	CL	24" RCP	X																																			
2240945	1+00.478	415+42	CL	24" RCP	X																																			
2240946	2+00.316	459+49	CL	24" RCP																																				
2240948	2+00.435	465+70	CL	24" RCP																																				
2240947	2+00.557	472+15	CL	24" RCP	X																																			
2240949	2+00.822	486+20	CL	24" RCP	X																																			
2240950	2+00.954	492+82	CL	18" HDPE LINED	X																																			
2240987	3+00.405	516+98	CL	18" HDPE LINED	X																																			
2240988	3+00.588	526+72	CL	24" RCP																																				
2240989	3+00.850	540+53	CL	24" RCP	X																																			
2240990	4+00.124	555+00	CL	24" RCP	X																																			
2288790	5+00.148	609+05	CL	24" RCP	X																																			
2240991	5+00.594	632+47	CL	30" RCP	X																																			
2240992	5+00.817	644+19	CL	24" RCP	X																																			
2240993	6+00.903	701+41	CL	24" RCP	X																																			
2240994	7+00.202	716+99	CL	24" RCP																																				
2240995	7+00.490	732+20	CL	24" RCP																																				
2240996	7+00.742	745+49	CL	24" RCP																																				
2240997	7+00.873	752+07	CL	24" RCP	X																																			
2240998	8+00.029	760+22	CL	24" RCP																																				
2240999	8+00.273	773+12	CL	24" RCP																																				
2241000	8+00.574	789+00	CL	24" RCP																																				
2241001	8+00.741	797+78	CL	24" CMP																																				
2288788	9+00.000	811+48	CL	24" CMP																																				
2241002	9+00.085	816+02	CL	24" RCP																																				
2241003	9+00.412	833+26	CL	24" RCP	X																																			
2241004	9+00.736	850+32	CL	36" RCP	X																																			
2241005	9+00.738	850+42	CL	36" RCP	X																																			
2241006	10+00.076	868+20	CL	36" RCP	X																																			
2241007	10+00.684	900+30	CL	36" RCP	X																																			
2241008	11+00.000	917+03	CL	24" RCP	X																																			
2241009	11+00.548	945+99	CL	36" RCP	X																																			
2241010	11+00.801	959+34	CL	24" RCP																																				
2241011	12+00.040	972+00	CL	24" RCP	X																																			
2241012	12+00.267	984+00	CL	24" RCP	X																																			
2241013	12+00.532	998+00	CL	42" RCP-A	X																																			
CS 3705 (TH 212) TOTAL																																					5			
SHEET TOTAL																																					5			

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INPLACE DRAINAGE TABULATION																																	B																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
TAMS	RP	STATION	LOCATION	EXISTING PIPE CULVERT	LEAVE AS IS	SPEC 2104													SPEC 2106	SPEC 2411		SPEC 2501							SPEC 2507						SPEC 2519	SPEC 2554	NOTES																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
						REMOVE RC CATTLE PASS APRON	REMOVE BOX CULVERT END	REMOVE CONCRETE APRON	REMOVE METAL APRON	REMOVE FLAP GATE	REMOVE GUIDE POST	SALVAGE PIPE APRON	REMOVE PIPE CULVERTS	REMOVE CONCRETE CULVERT	REMOVE METAL CULVERT	REMOVE PIPE SEWERS	REMOVE BOX CULVERT	REMOVE RC CATTLE PASS	SALVAGE CONCRETE PIPE CULVERT	(1)	(2)	(3)	INSTALL PIPE APRON	INSTALL CONCRETE CULVERT	(4)	PIPE TIES - FLAT BAR	REPAIR CULVERT JOINT	CLEAN PIPE CULVERT	REPAIR CULVERT	LINING CULVERT PIPE SPECIAL (5)						CLSM HIGH DENSITY		GUIDE POST TYPE B																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										

NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON
SIGNATURE:
DATE 09/19/24 LICENSE # 54298

TABULATIONS

SP 8828-139
SHEET NO. 21 OF 212 SHEETS

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DRAINAGE TABULATION																							C	
STRUCTURE LOCATION									SPEC 2412		SPEC 2451		SPEC 2501										NOTES	
STRUCTURE NUMBER	CONTROL SECTION	TAMS ID	RP	STATION	LOCATION	COUNTY OF COORDINATES	COORDINATES (1)		6X5 PRECAST CONCRETE BOX CULV END SECT	6X5 PRECAST CONCRETE BOX CULVERT	(2) COARSE FILTER AGGREGATE (CV)	(3) FINE AGGREGATE BEDDING (CV)	APRON				SAFETY APRON		PIPE CULVERT					(4) PIPE TIES – FLAT BAR
							X	Y					36" CAS PIPE	24" RC PIPE	30" RC PIPE	42" RC PIPE	24" CAS	24" RC	24" CAS	24" RC DES 3006	30" RC DES 3006	42" RC DES 3006		
SP 8828-139									EACH	LIN FT	CU YD	CU YD	EACH				LIN FT				EACH			
5050	CS 1201 (TH 7)	2256871	62+00.885	650+02	CL	CHIPPEWA	501907.71	207436.29					1											
5060	CS 1201 (TH 7)	4056370	67+00.762	982+33	RT	CHIPPEWA	517944.34	187617.78				69					1		94			12	(5)	
5061	CS 1201 (TH 7)	4056370	67+00.762	982+33	RT	CHIPPEWA	518035.07	187541.26				3					1						(5)	
5070	CS 1201 (TH 7)	2208901	68+00.212	1004+98	CL	CHIPPEWA	519792.74	186197.78				10			1					10				
5080	CS 3708 (TH 40)	2240344	2+00.252	118+90	CL	LAC QUI PARLE	356171.44	193780.72				4		1										
5090	CS 3708 (TH 40)	2240359	10+00.492	552+90	CL	LAC QUI PARLE	399453.66	193775.35				13					1		4				(6)	
5140	CS 8708 (TH 68)	N/A	3+00.521	19+19	CL	YELLOW MEDICINE	375168.29	165295.17	1	142	163													
5141	CS 8708 (TH 68)	N/A	3+00.521	19+19	CL	YELLOW MEDICINE	375254.12	165155.35	1		11													
5110	CS 6407 (TH 68)	10515825	57+00.606	362+50	CL	REDWOOD	430273.40	174777.97				97				1					118	18	(7)	
5111	CS 6407 (TH 68)	10515825	57+00.606	362+50	CL	REDWOOD	430278.00	174643.60				5				1							(7)	
5120	CS 6407 (TH 68)	4056378	58+00.973	433+70	RT	REDWOOD	437349.78	174615.13				68					1		78			12	(5)	
5121	CS 6407 (TH 68)	4056378	58+00.973	433+70	RT	REDWOOD	437452.17	174613.99									1						(5)	
5130	CS 6407 (TH 68)	4056376	58+00.973	433+80	LT	REDWOOD	437466.16	174774.35									1		30					
DRAINAGE TABULATION TOTAL									2	142	174	269	1	1	1	2	1	5	30	176	10	118	42	

- NOTES:
- (1) COORDINATES FOR EACH POINT NUMBER ARE GIVEN AT THE CENTER OF GRATE OR APRON END.
- (2) SEE PLASTIC SOIL CAP AND BOX CULVERT TREATMENT DETAIL ON PAGE 35.
- (3) SEE APRON AND PIPE SECTION BEDDING DETAIL ON PAGE 33.
- (4) SEE PIPE TIE - FLAT BAR STYLE DETAIL ON PAGE 31.
- (5) SAFETY APRON MUST FIT A 1:6 SLOPE.
- (6) SAFETY APRON MUST FIT A 1:4 SLOPE.
- (7) SEE CULVERT TREATMENTS DETAIL ON SHEET 36

NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON
SIGNATURE:
DATE 09/19/24 LICENSE # 54298

TABULATIONS

SP 8828-139

SHEET NO. 22 OF 212 SHEETS

STORM SEWER TABULATION																																				D										
STRUCTURE LOCATION						TOP OF CAST. ELEV.	UPSTREAM ELEV.	SPEC 2104			SPEC 2451		SPEC 2503										SLOPE OF PIPE	DOWNSTREAM ELEV.	SPEC 2501			SPEC 2502		SPEC 2503		SPEC 2506			NOTES											
STRUCT. NO.		STATION	COUNTY OF COORDINATES	COORDINATES (1)				REMOVE SEWER PIPE (STORM)	(2) REMOVE DRAINAGE STRUCTURE SALVAGE CASTING	(3) (4) FINE AGGREGATE BEDDING	PIPE SEWER						24" RC PIPE APRON	(5) 18" RC SAFETY APRON	(5) 24" RC SAFETY APRON	(6) PIPE TIES - FLAT BAR	(7) CONNECT TO EXISTING PIPE DRAIN	18" PE INSPECTION TEES			PLUG FILL & ABANDON PIPE SEWER	INSTALL CASTING	CONNECT INTO EXISTING STORM SEWER	RECONSTRUCT DRAINAGE STRUCTURE																		
FROM	TO			X	Y						CASTING ASSEMBLY	DESIGN H SD-48 48-4020	STEPS REQ'D	12" TP	12" CAS	4" PVC													12" RC DES 3006 CLASS V	12" RC DES 3006 CLASS V-JACKED	18" CP (SMOOTH)	18" RC DES 3006	24" RC DES 3006	LIN FT		EACH	CU YD	TYPE	EACH	LIN FT	LIN FT	EACH	LIN FT	EACH	LIN FT	EACH
SP 8828-139																																														
CS 3401 (TH 7)																																														
5010	5011	528+20	KANDIYOHI	385592.55	116141.25	1096.8	1092.89				27	A-4D	1			4.0								40		0.83	1092.44								1		SUMP ELEVATION 1092.44									
5011	5012	528+40	KANDIYOHI	385634.81	116131.76	1095.3	1092.45	32			13	A-4D	1		3									8		0.50	1092.41																			
5012			KANDIYOHI	385629.93	116109.54																					1092.37		1																		
5020	5021	527+80	KANDIYOHI	385616.70	116107.30		1090.32			59														72	0.60	1091.81			1	6																
5021	5022	527+00	KANDIYOHI	385539.07	116124.44	1097.1	1091.74		1	65	A-4D	1		5.1	YES	4								92	0.60	1091.19					1					NO PIPE TIES REQUIRED										
5022	5023	525+10	KANDIYOHI	385447.72	116144.37	1094.7	1091.13			56	M-11	1		3				9						74	0.60	1090.69				6	1															
5023			KANDIYOHI	385371.57	116161.08																					1090.65	1																			
CS 6406 (TH 67)																																														
5039	5042	651+65						42															42								1	1														
5040	5042	651+43	REDWOOD	578150.53	181917.06	1032.00	1030.00		1																	2.46	1027.68						94			REMOVE DRAINAGE STRUCTURE LT										
5041	5042	651+57	REDWOOD	578175.74	181900.10	1032.00	1030.00			1	14	M-11	1	2.0					18	80					0.75	1029.34						1		1	CONST DRAINAGE STRUCT LT, RECONSTRUCT DRAINAGE STRUCTURE RT											
5042		651+57	REDWOOD	578129.76	181819.88	1034.34																																								
5043	5042	651+65	REDWOOD	578126.64	181815.27		1031.80	6									6									1031.68																				
CS 6407 (TH 68)																																														
5032	5031	381+75	REDWOOD	432199.82	174763.38		1085.89																			0.37	1085.42																			
5031	5030	381+75	REDWOOD	432201.97	174672.20	1089.6	1083.41			28	A-4D	1		6.4	YES									40	1	1083.06				6			1													
5030		381+75	REDWOOD	432202.84	174635.27		1083.06																												NO APRON ON OUTLET PIPE											
STORM SEWER TABULATION TOTAL								80	2	1	262		6	2.0	6	15.5		4	6	9	18	80	42	48	278				1	1	1	18	3	1	94	1	2	1								

NOTES:

- (1) COORDINATES FOR EACH POINT NUMBER ARE GIVEN AT THE CENTER OF GRATE, APRON END, OR COVER CASTING.
- (2) TH 7 - STA 527+00, 3.1' DEPTH. TH 67 - STA 651+43, 2.0' DEPTH.
- (3) SEE STANDARD PLAN SHEET 5-297.442 SHEET 1 OF 1 ON PLAN SHEET 50.
- (4) SEE APRON AND PIPE SECTION BEDDING DETAIL ON SHEET 33.
- (5) SAFETY APRON MUST FIT 1:6 SLOPE.
- (6) TIE FIRST THREE JOINTS LT/RT WITH PIPE TIE - FLAT BAR STYLE. SEE DETAIL ON SHEET 31. TIE ALL REMAINING JOINTS WITH STANDARD JOINT TIES AS SPECIFIED IN STANDARD PLATE 3145 (INCIDENTAL).

NOTES (CONTINUED):

- (7) SEE DRAINAGE DETAILS ON SHEET 30.

CASTING ASSEMBLY KEY AND SUMMARY				
ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING	STANDARD PLATE NO.	TOTALS
A-4D	700-4		4101	4
		715	4110	
M-11	ROUND CONC.		4143	2
		731	4143	

MISCELLANEOUS TABULATION														E		
CONTROL SECTION	TAMS ID	RP	STATION	TO	STATION	LOCATION	SPEC 2104				SPEC 2118	SPEC 2211	SPEC 2232		SPEC 2360	SPEC 2531
							SAWING BIT PAVEMENT (FULL DEPTH)	REMOVE CURB & GUTTER	(8)	REMOVE BITUMINOUS PAVEMENT	AGGREGATE SURFACING (CV) CLASS 1	AGGREGATE BASE (CV) CLASS 5	(9)	(9)	(10)	CONCRETE CURB & GUTTER DESIGN B618
														TYPE SP 12.5 WEARING COURSE MIX (3,B) (SPWEB340B)		
							LIN FT		SQ YD	CU YD	CU YD	LIN FT		TON	LIN FT	
SP 8828-139																
CS 1201 (TH 7)	2256882	62+00.809	645+21	TO	645+73	CL			52							
CS 1201 (TH 7)	2256871	62+00.885	649+73	TO	650+17	CL			44							
CS 1201 (TH 7)	2256872	62+00.962	653+71	TO	655+82	CL			211							
CS 1201 (TH 7)	4056370	67+00.762	981+80	TO	982+82	RT	129			199	17	76		80		
CS 3401 (TH 7)	N/A	100+00.055	526+01	TO	528+18	LT	197	48		197	4	58		81	27	
CS 8708 (TH 68)	N/A	3+00.521	18+14	TO	20+00	CL	56		207	579	10	345	374	234		
CS 6407 (TH 68)	10515825	57+00.606	358+50	TO	363+26	CL	56			1480	35	533	951	476	597	
CS 6407 (TH 68)	4056378	58+00.973	431+51	TO	431+99	RT	89			152	6	91		59		
MISCELLANEOUS TABULATION TOTAL							527	48	514	2607	72	1103	1325	476	1051	27

NOTES:

- (8) 4' HEIGHT.
- (9) SEE RUMBLE STRIP DETAIL ON SHEET 40.
- (10) QUANTITIES INCLUDE SAFETY EDGE.

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EROSION CONTROL AND TURF ESTABLISHMENT TABULATION																																	F		
TAMS	RP	STATION	LOCATION	SPEC 2101		SPEC 2104	SPEC 2106		SPEC 2511				SPEC 2572	SPEC 2573			SPEC 2574				SPEC 2575										NOTES				
				CLEARING	GRUBBING	REMOVE RIPRAP	(1) COMMON EMBANKMENT (CV)	(2) DITCH CLEANING	GEOTEXTILE FILTER TYPE 4	RANDOM RIPRAP			TEMPORARY FENCE	SILT FENCE, TYPE MS	SEDIMENT CONTROL LOG TYPE COMPOST	STORM DRAIN INLET PROTECTION	CULVERT END CONTROLS	(3) FERTILIZER TYPE 1	(4) FERTILIZER TYPE 3	(5) FERTILIZER TYPE 4	SOIL BED PREPARATION	ROLLED EROSION PREVENTION CATEGORY 20	ROLLED EROSION PREVENTION CATEGORY 25	ROLLED EROSION PREVENTION CATEGORY 35	SEEDING	MOWING	WEED SPRAYING	WEED SPRAY MIXTURE	SEED						
										CLASS II	CLASS III	CLASS IV																	GRANULAR FILTER	MESIC INSLOPE		TURFGRASS	WET DITCH	SOUTHERN TALLGRASS ROADSIDE	
																																			(6)
				ACRE	CU YD		LOCATION	LN FT	SQ YD	CU YD			LN FT		EACH		POUND		ACRE	SQ YD			ACRE		GALLON	POUND									
SP 8828-139																																			
CS 6503 (TH 4)																																			
2300677	101+00.772	399+32	CL								21			4			70		1		2	1	0.02	39	41		0.02	0.04	0.01	0.01	1		1		RIPRAP LT (10)
CS 6503 (TH 4) TOTAL											21			4			70		1		2	1	0.02	39	41		0.02	0.04	0.01	0.01	1		1		
CS 1201 (TH 7)																																			
2208943	57+00.792	368+00	CL					LT/RT	26						139		392				2	4	0.04	49	159		0.04	0.08	0.02	0.01	1		1		
2208944	59+00.125	439+00	CL					LT/RT	40						162		488				6	5	0.07	134	197		0.07	0.14	0.04	0.01	2		1		WETLAND LT/RT
2208945	59+00.642	466+20	CL																																
2256867	59+00.931	492+64	CL					RT	12								264				7		0.03	53	110		0.03	0.06	0.02	0.01	1			1	
2256868	60+00.664	532+00	CL					LT/RT	52						251		604		1		6	9	0.10	153	348		0.10	0.20	0.05	0.01	3		2		WETLAND LT/RT
2256869	60+00.799	539+14	CL					LT/RT	54						141		260		1		12	3	0.08	117	283		0.08	0.16	0.04	0.01	2		1	1	WETLAND LT
2256870	60+00.929	545+98	CL				3	LT	31						197		312				4	5	0.06	85	193		0.06	0.12	0.03	0.01	2		1		WETLAND LT
2256878	61+00.228	560+99	CL					RT	13						186		240				1	3	0.03	30	113		0.03	0.06	0.02	0.01	1		1		WETLAND LT/RT
2256881	62+00.683	639+27	CL	0.05								19	2	236		355		1		8	18	0.12	55	586		0.12	0.24	0.06	0.01	1		2	1	CLEARING LT/RT, RIPRAP LT (10)(12), OTHER AQUATIC RESOURCE LT/RT	
2256882	62+00.809	645+84	CL	0.05								53	2	224		255					13	0.10		475		0.10	0.20	0.05	0.01			2		CLEARING LT, RIPRAP LT (11)(12), OTHER AQUATIC RESOURCE LT	
2256871	62+00.885	650+02	CL	0.05								30	2	199		310		1		6	21	0.20	149	833		0.20	0.40	0.10	0.02	3		4		CLEARING LT/RT, RIPRAP LT (10)(12), OTHER AQUATIC RESOURCE LT/RT	
2256872	62+00.962	654+06	CL	0.20								173	6	358		420		1		5	20	0.19	108	812	26	0.19	0.38	0.10	0.02	2		4	1	CLEARING LT/RT, RIPRAP LT/RT (10)(11)(12), OTHER AQUATIC RESOURCE	
2256873	62+00.993	655+42	CL	0.10																11		0.06	97	180		0.06	0.12	0.03	0.01	2			1	CLEARING LT	
2256874	63+00.029	657+33	CL	0.10				RT	15		6				149		280				7	3	0.06	87	192		0.06	0.12	0.03	0.01	2		1	1	CLEARING LT, RIPRAP LT (10)
2256876	63+00.121	662+33	CL					LT	12						77		298				8		0.04	62	136		0.04	0.08	0.02	0.01	1			1	
2208981	63+00.486	680+85	CL					LT	12						86		204				4		0.02	53	54		0.02	0.04	0.01	0.01	1			1	
2208982	63+00.673	690+45	CL					LT	12						132		228				5		0.03	54	74		0.03	0.06	0.02	0.01	1			1	
2208983	63+00.895	701+99	CL																																
2208984	64+00.089	712+50	CL					RT	18								286				9		0.04	63	144		0.04	0.08	0.02	0.01	1			1	
2208985	64+00.217	719+30	CL					LT	14								278				8		0.04	57	128		0.04	0.08	0.02	0.01	1			1	
2208939	64+00.672	743+49	CL																																
2208931	64+00.941	757+44	CL																																
2208932	65+00.458	860+24	CL												87																				
2208933	66+00.005	889+28	CL					LT/RT	40								121		1	15			0.07	356			0.07	0.14	0.04	0.01		15			
2208934	66+00.151	897+02	CL				3	LT/RT	44								96		1	17			0.08	409			0.08	0.16	0.04	0.01		17			
2208935	66+00.852	933+99	CL				2										116		1		12		0.06	286			0.06	0.12	0.03	0.01	4				
2208936	67+00.219	953+00	CL																																
2208937	67+00.625	974+48	CL				1										96		1		2		0.01	57			0.01	0.02	0.01	0.01	1				
4056370	67+00.762	982+33	RT					LT	30								87		1		20		0.10	173	314		0.10	0.20	0.05	0.01	3			2	
2208901	68+00.212	1004+98	CL				1										63		1		9		0.05	122	101		0.05	0.10	0.03	0.01	2			1	
2208902	68+00.505	1020+48	CL														62				2		0.01	53			0.01	0.02	0.01	0.01	1				
2208903	69+00.335	1064+25	CL							51		16					88				2	4	0.04	43	146		0.04	0.08	0.02	0.01	1		1		RIPRAP RT (10)(13)
2208904	69+00.833	1090+50	CL					LT	12								274				7		0.04	53	121		0.04	0.08	0.02	0.01	1			1	
2208906	70+00.463	1124+00	CL																																
2208907	71+00.057	1156+95	CL	0.05	0.05			RT	63				105	7	40		255		1	27	10		0.18	886			0.21	0.42	0.11	0.02	4	33			CLEARING & GRUBBING LT, RIPRAP LT (11)(12), OTHER AQUATIC RESOURCE LT
SHEET TOTAL				0.60	0.05		10		500	51	27	16	380	23	2664		6802		13	59	175	109	1.97	3883	5740	26	2.00	4.00	1.05	0.32	45	65	22	15	

NOTES FOR SHEETS 24-27:

- (1) TO BE USED FOR INSLOPE REPAIR. SEE DETAIL ON SHEET 34.
- (2) SEE DRAINAGE DETAILS ON SHEET 30.
- (3) TURFGRASS SEED FERT TYPE 1, 20-10-20, AT 350 LBS/ACRE.
- (4) SOUTHERN TALLGRASS ROADSIDE SEED FERT TYPE 3, 25-5-10, AT 200 LBS/ACRE.
- (5) WET DITCH SEED FERT TYPE 4, 18-1-18, AT 120 LBS/ACRE.
- (6) SEED MESIC INSLOPE SHALL BE APPLIED AT A RATE OF 20 LB/ACRE.
- (7) SEED TURF GRASS SHALL BE APPLIED AT A RATE OF 200 LBS/ACRE.
- (8) SEED WET DITCH SHALL BE APPLIED AT A RATE OF 20 LBS/ACRE.
- (9) SEED SOUTHERN TALLGRASS ROADSIDE SHALL BE APPLIED AT A RATE OF 26 LBS/ACRE.

NOTES FOR SHEETS 24-27 (CONTINUED):

- (10) SEE STANDARD PLATE 3133.
- (11) SEE STANDARD PLATE 3134.
- (12) SEE SPECIAL SHAPE RIPRAP DETAILS.
- (13) GRANULAR FILTER IS REQUIRED (INCIDENTAL).

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EROSION CONTROL AND TURF ESTABLISHMENT TABULATION																														F																													
TAMS	RP	STATION	LOCATION	SPEC 2101		SPEC 2104	SPEC 2106		SPEC 2511				SPEC 2572	SPEC 2573				SPEC 2574				SPEC 2575								NOTES																													
				CLEARING	GRUBBING	REMOVE RIPRAP	(1) COMMON EMBANKMENT (CV)	(2) DITCH CLEANING	GEOTEXTILE FILTER TYPE 4	RANDOM RIPRAP				TEMPORARY FENCE	SILT FENCE, TYPE MS	SEDIMENT CONTROL LOG TYPE COMPOST	STORM DRAIN INLET PROTECTION	CULVERT END CONTROLS	(3) FERTILIZER TYPE 1	(4) FERTILIZER TYPE 3	(5) FERTILIZER TYPE 4	SOIL BED PREPARATION	ROLLED EROSION PREVENTION CATEGORY 20	ROLLED EROSION PREVENTION CATEGORY 25	ROLLED EROSION PREVENTION CATEGORY 35	SEEDING	MOWING	WEED SPRAYING	WEED SPRAY MIXTURE		SEED																												
										CLASS II	CLASS III	CLASS IV	GRANULAR FILTER																		(6) MESIC INSLOPE	(7) TURFGRASS	(8) WET DITCH	(9) SOUTHERN TALLGRASS ROADSIDE																									
ACRE	CU YD	LOCATION	LN FT	SQ YD	CU YD	LN FT	EACH	POUND	ACRE	SQ YD	ACRE	GALLON	POUND																																														
2208908	71+00.478	1177+57	CL			3	LT/RT	38						155	1	9		1	0.05	208	41		0.05	0.10	0.03	0.01		9	1																														
2208909	72+00.211	1217+59	CL				LT	17					169		285	1		8	0.04	61	140		0.04	0.08	0.02	0.01	1				1				WETLAND LT/RT																								
CS 1201 (TH 7) TOTAL				0.60	0.05	13		555	51	6	16	380	19	2833		7172	14	68	181	109	2.04	4113	5880	26	2.07	4.14	1.09	0.33	45	74	22	16																											
CS 3401 (TH 7)																																																											
N/A	100+00.055	527+03	LT											180	1	1	32			0.16	785			0.16	0.32	0.08	0.01		32																														
N/A	100+00.077	528+21	LT										32				23			0.12	567			0.12	0.24	0.06	0.01		23																														
CS 3401 (TH 7) TOTAL													32		180	1	1	55			0.28	1352			0.28	0.56	0.14	0.02		55																													
CS 3708 (TH 40)																																																											
2240333	0+00.504	126+66	CL			1	RT	12						104		1		1	2	0.03	29	100		0.03	0.06	0.02	0.01	1		1					WETLAND LT																								
2240334	0+00.844	144+72	CL				LT/RT	41						305		1		3	5	0.06	80	204		0.06	0.12	0.03	0.01	2		1					WETLAND LT																								
2240335	1+00.100	158+99	CL				RT	12						300		1		8		0.04	53	146		0.04	0.08	0.02	0.01	1				1																											
2240344	2+00.252	118+90	CL											115			2	2	0.03	53	92		0.03	0.06	0.02	0.01	1		1																														
2240345	2+00.879	151+90	CL				LT/RT	32					56	243		1		5	6	0.07	122	222		0.07	0.14	0.04	0.01	2		1																													
2240346	3+00.336	176+22	CL										77	189				5	3	0.05	114	108		0.05	0.10	0.03	0.01	2		1																													
2240347	4+00.145	219+19	CL				RT	14						302			2	4	0.04	57	151		0.04	0.08	0.02	0.01	1		1																														
2240349	5+00.561	292+15	CL											260																																													
2240350	5+00.821	306+02	CL																																																								
2240353	6+00.599	348+28	CL				RT	12						259				2	3	0.03	53	103		0.03	0.06	0.02	0.01	1		1					WETLAND LT/RT																								
2240356	8+00.104	427+11	CL			2	LT/RT	63						668		1		7	11	0.13	172	443		0.13	0.26	0.07	0.01	3		2					WETLAND LT/RT																								
2240357	9+00.076	478+06	CL			1			33		9			128			2	2	0.03	53	90		0.03	0.06	0.02	0.01	1		1						RIPRAP LT (10)(13)																								
2240359	10+00.492	552+90	CL				RT	12						108		1		10		0.05	107	144		0.05	0.10	0.03	0.01	2				1																											
2240360	10+00.848	571+84	CL						33		9			125			2	2	0.03	53	91		0.03	0.06	0.02	0.01	1		1						RIPRAP RT (10)(13)																								
2240361	11+00.077	583+93	CL											220		1		5	5	0.06	121	191		0.06	0.12	0.03	0.01	2		1																													
2240362	11+00.185	589+63	CL																																																								
2240363	11+00.402	600+21	CL			3	RT	12						164		1		2	3	0.04	53	140		0.04	0.08	0.02	0.01	1		1					WETLAND LT																								
2240364	11+00.696	616+38	CL			3	LT	18						210		1		5	4	0.06	117	169		0.06	0.12	0.03	0.01	2		1																													
CS 3708 (TH 40) TOTAL						10		228	66		18		133	3700		9		63	77	0.97	1290	3415		0.97	1.94	0.53	0.17	24		19	2																												
CS 3701 (TH 40)																																																											
2240382	18+00.683	317+70	CL				LT	22								1		9		0.04	70	145		0.04	0.08	0.02	0.01	1				1																											
2240383	19+00.393	357+66	CL																																																								
CS 3701 (TH 40) TOTAL								22								1		9		0.04	70	145		0.04	0.08	0.02	0.01	1				1																											
CS 6406 (TH 67)																																																											
N/A	82+00.550	651+43	CL				RT	26						215	2	1	44			0.22	1070			0.22	0.44	0.11	0.02		44																														
CS 6406 (TH 67) TOTAL								26						215	2	1	44			0.22	1070			0.22	0.44	0.11	0.02		44																														
CS 8708 (TH 68)																																																											
2240485	3+00.520	18+98	CL	0.30	0.30									308	260	718		1		67	3	0.36	366	1352		0.36	0.72	0.18	0.03	5		1	7	CLEARING & GRUBBING LT/RT, WETLAND LT/RT																									
N/A	3+00.521	19+19	CL									250	8			1		106	11	0.62	430	2555		0.62	1.24	0.31	0.04	6		2	12			RIPRAP LT/RT (10), WETLAND LT/RT																									
CS 8708 (TH 68) TOTAL				0.30	0.30							250	8	308	260	718		2		173	14	0.98	796	3907		0.98	1.96	0.49	0.07	11		3	19																										
CS 6407 (TH 68)																																																											
2251006	54+00.232	184+01	CL				LT/RT	35						133		1		65		0.33	125	1452		0.33	0.66	0.17	0.03	2				8																											
2251008	56+00.253	291+02	CL																																																								
2251009	56+00.623	310+51	CL																																																								
2251011	57+00.550	359+50	CL											822		1		14	5	0.11	200	335		0.11	0.22	0.06	0.01	3		1	1																												
10515825	57+00.606	362+50	CL				RT	30	53	5				742		1		21	5	0.15	200	536		0.15	0.30	0.08	0.01	3		1	2				RIPRAP RT (10)(13), OTHER AQUATIC RESOURCE LT/RT																								
SHEET TOTAL				0.30	0.30		13		396	119	5	18	250	8	642	260	6950	3	19	108	353	102	3.17	5372	9971		3.17	6.34	1.65	0.36	45	108	25	34																									
NOTES FOR SHEETS 24-27:																														NOTES FOR SHEETS 24-27 (CONTINUED):																													
(1) TO BE USED FOR INSLOPE REPAIR. SEE DETAIL ON SHEET 34.																														(10) SEE STANDARD PLATE 3133.																													
(2) SEE DRAINAGE DETAILS ON SHEET 30.																														(11) SEE STANDARD PLATE 3134.																													
(3) TURFGRASS SEED FERT TYPE 1, 20-10-20, AT 350 LBS/ACRE.																														(12) SEE SPECIAL SHAPE RIPRAP DETAILS.																													
(4) SOUTHERN TALLGRASS ROADSIDE SEED FERT TYPE 3, 25-5-10, AT 200 LBS/ACRE.																														(13) GRANULAR FILTER IS REQUIRED (INCIDENTAL).																													
(5) WET DITCH SEED FERT TYPE 4, 18-1-18, AT 120 LBS/ACRE.																																																											
(6) SEED MESIC INSLOPE SHALL BE APPLIED AT A RATE OF 20 LB/ACRE.																																																											
(7) SEED TURF GRASS SHALL BE APPLIED AT A RATE OF 200 LBS/ACRE.																																																											
(8) SEED WET DITCH SHALL BE APPLIED AT A RATE OF																																																											

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EROSION CONTROL AND TURF ESTABLISHMENT TABULATION																																	F		
TAMS	RP	STATION	LOCATION	SPEC 2101		SPEC 2104		SPEC 2106			SPEC 2511				SPEC 2572		SPEC 2573				SPEC 2574				SPEC 2575										NOTES
				CLEARING	GRUBBING	REMOVE RIPRAP	(1) COMMON EMBANKMENT (CV)	(2) DITCH CLEANING	GEOTEXTILE FILTER TYPE 4	RANDOM RIPRAP			TEMPORARY FENCE	SILT FENCE, TYPE MS	SEDIMENT CONTROL LOG TYPE COMPOST	STORM DRAIN INLET PROTECTION	CULVERT END CONTROLS	(3) FERTILIZER TYPE 1	(4) FERTILIZER TYPE 3	(5) FERTILIZER TYPE 4	SOIL BED PREPARATION	ROLLED EROSION PREVENTION CATEGORY 20	ROLLED EROSION PREVENTION CATEGORY 25	ROLLED EROSION PREVENTION CATEGORY 35	SEEDING	MOWING	WEED SPRAYING	WEED SPRAY MIXTURE	SEED						
										CLASS II	CLASS III	CLASS IV																	GRANULAR FILTER	MESIC INSLOPE	TURFGRASS	WET DITCH	SOUTHERN TALLGRASS ROADSIDE		
																																		(6)	
ACRE		CU YD		LOCATION	LN FT	SQ YD	CU YD			LN FT		EACH		POUND		ACRE	SQ YD			ACRE		GALLON		POUND											
2300682	57+00.970	381+75	CL					RT	14								390	1		15	2	0.09	107	344		0.09	0.18	0.05	0.01	2		1	2	OTHER AQUATIC RESOURCE RT	
2251013	58+00.622	414+93	CL				2	LT	12								116	1		2	2	0.03	53	97		0.03	0.06	0.02	0.01	1		1			
4056378	58+00.973	433+70	RT					LT/RT	60								160	1		24		0.12	89	497		0.12	0.24	0.06	0.01	2			3		
4056376	58+00.973	433+80	LT														66			18		0.06	350	273		0.06	0.12	0.03	0.01	3			2		
2251014	59+00.049	437+32	CL																																
2251015	59+00.225	446+61	CL				4										62	1		4		0.02	106			0.02	0.04	0.01	0.01	2					
2251018	60+00.498	514+39	CL					LT/RT	38								125	1		15		0.07	130	225		0.07	0.14	0.04	0.01	2			2		
2251019	61+00.016	541+32	CL					LT/RT	27								347	1		5	3	0.05	130	116		0.05	0.10	0.03	0.01	2		1			
2251020	61+00.039	542+52	CL				4	LT/RT	28								484	1		5	4	0.06	113	178		0.06	0.12	0.03	0.01	2		1			
2251022	62+00.046	595+25	CL					LT/RT	38								185	1		6	3	0.05	74	178		0.05	0.10	0.03	0.01	1		1	1		
2251023	62+00.097	597+94	CL					LT	13								110			38		0.19	55	862		0.19	0.38	0.10	0.02	1			5		
2251025	63+00.025	646+72	CL					LT/RT	38	42		13					120	1		9	2	0.06	69	235		0.06	0.12	0.03	0.01	1		1	1	RIPRAP RT (10) (13)	
2251028	63+00.446	669+11	CL																																
2251029	63+00.862	691+04	CL					RT	14								136			8		0.04	30	160		0.04	0.08	0.02	0.01	1			1		
2251030	64+00.274	712+40	CL																																
2251031	64+00.703	735+04	CL																																
2251032	65+00.081	754+71	CL																																
2251033	65+00.427	773+05	CL					LT/RT	29								112	1		12		0.06	61	217		0.06	0.12	0.03	0.01	1			2		
4056379	66+00.083	806+82	RT					LT/RT	47								530	1		17		0.08	110	294		0.08	0.16	0.04	0.01	2			2	WETLAND LT/RT	
2251034	66+00.102	807+43	CL																																
2251035	66+00.297	817+71	CL																																
2251037	67+00.088	860+70	CL					LT/RT	31								99	1		11		0.06	90	185		0.06	0.12	0.03	0.01	2			1		
2251039	67+00.821	899+31	CL																																
2251043	69+00.154	969+82	CL					LT/RT	41								135	1		17		0.08	135	265		0.08	0.16	0.04	0.01	2			2		
CS 6407 (TH 68) TOTAL							10		495	95	5	13					4874	16		306	26	1.71	2227	6449		1.71	3.42	0.90	0.22	35		8	35		
CS 3702 (TH 75)																																			
2211497	100+00.350	647+00	CL																																
2211498	100+00.874	659+00	CL					LT	16									1		6		0.03	32	110		0.03	0.06	0.02	0.01	1			1		
2211510	105+00.949	111+66	CL					LT/RT	48								468	1		6	4	0.07	147	181		0.07	0.14	0.04	0.01	2		1		WETLAND LT/RT	
CS 3702 (TH 75) TOTAL									64								468	2		12	4	0.10	179	291		0.10	0.20	0.06	0.02	3		1	1		
CS 3703 (TH 75)																																			
2211518	111+00.076	382+79	CL																																
2211521	113+00.185	497+00	CL			11				72			22				150			2	3	0.04	57	116		0.04	0.08	0.02	0.01	1		1		RIPRAP RT (10)(13)	
2211523	114+00.736	581+25	CL					LT/RT	30								482	1		5	4	0.06	117	180		0.06	0.12	0.03	0.01	2		1			
2211526	116+00.171	653+99	CL					LT	16								118			2	3	0.03	60	104		0.03	0.06	0.02	0.01	1		1			
2211528	117+00.093	704+25	CL							30	5						430	1		9	4	0.08	106	258		0.08	0.16	0.04	0.01	2		1	1	RIPRAP LT (10)(13), WETLAND RT	
2211535	119+00.196	768+20	CL					LT/RT	44										21			0.11	515			0.11	0.22	0.06	0.01		21				
2211541	122+00.053	617+38	CL				3										148			2		0.01	57			0.01	0.02	0.01	0.01	1				OTHER AQUATIC RESOURCE LT/RT	
2211548	125+00.002	461+12	CL				1	LT/RT	46	30	6			71			430	1		10	4	0.08	143	266		0.08	0.16	0.04	0.01	2		1	1	RIPRAP RT (10)(13), WETLAND RT	
2276482	125+00.135	454+01	CL			14						27		1	24			125			1	3	0.03	29	110		0.03	0.06	0.02	0.01	1		1		RIPRAP LT (10), WETLAND RT
2211550	125+00.749	421+34	CL				3	LT/RT	36					233			649	1		5	4	0.06	127	144		0.06	0.12	0.03	0.01	2		1		WETLAND LT/RT	
CS 3703 (TH 75) TOTAL							25	7	172	132	11	27	22	1	328	2532		4	21	36	25	0.50	1211	1178		0.50	1.00	0.27	0.09	12	21	7	2		
CS 3705 (TH 212)																																			
2240942	0+00.683	373+45	CL																																
SHEET TOTAL							25	17		666	174	11	40	22	1	328		6177		19	21	254	45	1.72	3092	5595		1.72	3.44	0.92	0.28	42	21	14	27

EROSION CONTROL AND TURF ESTABLISHMENT TABULATION																																F					
TAMS	RP	STATION	LOCATION	SPEC 2101		SPEC 2104	SPEC 2106		SPEC 2511					SPEC 2572	SPEC 2573			SPEC 2574				SPEC 2575												NOTES			
				CLEARING	GRUBBING	REMOVE RIPRAP	COMMON EMBANKMENT (CV)	(1)	(2)	GEOTEXTILE FILTER TYPE 4	RANDOM RIPRAP			TEMPORARY FENCE	SILT FENCE, TYPE MS	SEDIMENT CONTROL LOG TYPE COMPOST	STORM DRAIN INLET PROTECTION	CULVERT END CONTROLS	(3)	(4)	(5)	SOIL BED PREPARATION	ROLLED EROSION PREVENTION CATEGORY 20	ROLLED EROSION PREVENTION CATEGORY 25	ROLLED EROSION PREVENTION CATEGORY 35	SEEDING	MOWING	WEED SPRAYING	WEED SPRAY MIXTURE	SEED							
											CLASS II	CLASS III	CLASS IV																	GRANULAR FILTER	MESIC INSLOPE	TURFGRASS	WET DITCH		SOUTHERN TALLGRASS ROADSIDE		
																																				(6)	(7)
				ACRE	CU YD		LOCATION	LIN FT	SQ YD	CU YD			LIN FT		EACH		POUND		ACRE	SQ YD		ACRE		GALLON	POUND												
2240946	2+00.316	459+49	CL					LT/RT	36							304		1		17		0.08	127	275		0.08	0.16	0.04	0.01	2			2	WETLAND RT			
2240948	2+00.435	465+70	CL					LT/RT	42							188		1		26		0.13	136	489		0.13	0.26	0.07	0.01	2			3				
2240988	3+00.588	526+72	CL					LT/RT	35							311		1		21		0.11	125	385		0.11	0.22	0.06	0.01	2			3				
2240994	7+00.202	716+99	CL					LT/RT	50							313		1		6	10	0.12	150	408		0.12	0.24	0.06	0.01	3		2					
2240995	7+00.490	732+20	CL																																		
2240996	7+00.742	745+49	CL					LT	16					77				1		7		0.04	60	110		0.04	0.08	0.02	0.01	1			1				
2240998	8+00.029	760+22	CL					LT	18					77				1		7		0.03	41	117		0.03	0.06	0.02	0.01	1			1				
2240999	8+00.273	773+12	CL					LT/RT	39	33		9		115		566		1		5	6	0.08	132	253		0.08	0.16	0.04	0.01	2		2		RIPRAP RT (10)(13), WETLAND LT/RT			
2241000	8+00.574	789+00	CL					LT/RT	35							502		1		5	5	0.07	125	203		0.07	0.14	0.04	0.01	2		1		WETLAND LT/RT			
2241001	8+00.741	797+78	CL																																		
2288788	9+00.000	811+48	CL																																		
2241002	9+00.085	816+02	CL																																		
2241010	11+00.801	959+34	CL					LT	12																												
CS 3705 (TH 212) TOTAL									283	33		9			269		2184		8		94	21	0.66	896	2240		0.66	1.32	0.35	0.08	15		5	10			
CS 4110 (TH 271)																																					
2240505	0+00.249	113+33	CL							84	9					138				1	5	0.05	36	182		0.05	0.10	0.03	0.01	1		1		RIPRAP RT (10)(13)			
2240506	1+00.312	168+92	CL																																		
2240507	1+00.614	184+63	CL																																OTHER AQUATIC RESOURCE LT/RT		
2240508	1+00.981	204+16	CL					LT/RT	49							550		1		5	7	0.08	111	300		0.08	0.16	0.04	0.01	2		2		WETLAND LT/RT			
2240509	2+00.546	232+82	CL																																WETLAND LT/RT		
2240511	4+00.029	310+90	CL					RT	12							129				2	3	0.04	53	119		0.04	0.08	0.02	0.01	1		1		WETLAND LT			
2250512	4+00.255	321+94	CL																																		
2250805	4+00.564	336+70	CL																																		
2250806	4+00.932	360+23	CL					LT	22							360		1		7	3	0.06	91	196		0.06	0.12	0.03	0.01	2		1	1	WETLAND LT			
2250807	5+00.065	365+20	CL					LT	14							116				6		0.03	28	121		0.03	0.06	0.02	0.01	1			1				
2250808	5+00.364	383+20	CL					LT/RT	24									2																			
2250809	5+00.551	392+99	CL																																WETLAND LT/RT		
2250810	5+00.872	410+03	CL					RT	14							424		1		4	3	0.05	108	122		0.05	0.10	0.03	0.01	2		1		WETLAND LT/RT			
2250812	6+00.335	434+53	CL																																WETLAND RT		
2250813	6+00.542	445+49	CL											21																				WETLAND LT/RT, OTHER AQUATIC RESOURCE LT/RT			
2250814	6+00.938	466+36	CL											113																				WETLAND LT/RT			
2250815	7+00.168	478+50	CL					LT	12							96		1		9		0.05	81	145		0.05	0.10	0.03	0.01	2			1				
2250816	7+00.616	502+11	CL					LT/RT	38	33		9				514		1		5	5	0.07	130	203		0.07	0.14	0.04	0.01	2		1		WETLAND LT, RIPRAP RT (10)(13)			
2250817	7+00.774	510+48	CL					LT	34	67		18				622		1		6	8	0.10	143	335		0.10	0.20	0.05	0.01	2		2		WETLAND RT, RIPRAP LT/RT (10)(13)			
2250818	8+00.202	533+00	CL					LT/RT	40	33		9				310		1		6	9	0.10	134	362		0.10	0.20	0.05	0.01	2		2		RIPRAP RT (10)(13)			
2250819	8+00.212	533+48	CL																																		
CS 4110 (TH 271) TOTAL									259	217	9	36			134		3259	2	7		51	43	0.63	915	2085		0.63	1.26	0.34	0.10	17		11	3			
SHEET TOTAL									542	250	9	45			403		5443	2	15		145	64	1.29	1811	4325		1.29	2.58	0.69	0.18	32		16	13			
TABULATION TOTAL				0.90	0.40	25	40		2104	594	52	119	652	32	4037	260	25372	5	66	188	927	320	8.15	14158	25631	26	8.18	16.36	4.31	1.14	164	194	77	89			

- NOTES FOR SHEETS 24-27:
- (1)

TO BE USED FOR INSLOPE REPAIR. SEE DETAIL ON SHEET 34.
- (2)

SEE DRAINAGE DETAILS ON SHEET 30.
- (3)

TURFGRASS SEED FERT TYPE 1, 20-10-20, AT 350 LBS/ACRE.
- (4)

SOUTHERN TALLGRASS ROADSIDE SEED FERT TYPE 3, 25-5-10, AT 200 LBS/ACRE.
- (5)

WET DITCH SEED FERT TYPE 4, 18-1-18, AT 120 LBS/ACRE.
- (6)

SEED MESIC INSLOPE SHALL BE APPLIED AT A RATE OF 20 LB/ACRE.
- (7)

SEED TURF GRASS SHALL BE APPLIED AT A RATE OF 200 LBS/ACRE.
- (8)

SEED WET DITCH SHALL BE APPLIED AT A RATE OF 20 LBS/ACRE.
- (9)

SEED SOUTHERN TALLGRASS ROADSIDE SHALL BE APPLIED AT A RATE OF 26 LBS/ACRE.

- NOTES FOR SHEETS 24-27 (CONTINUED):
- (10)

SEE STANDARD PLATE 3133.
- (11)

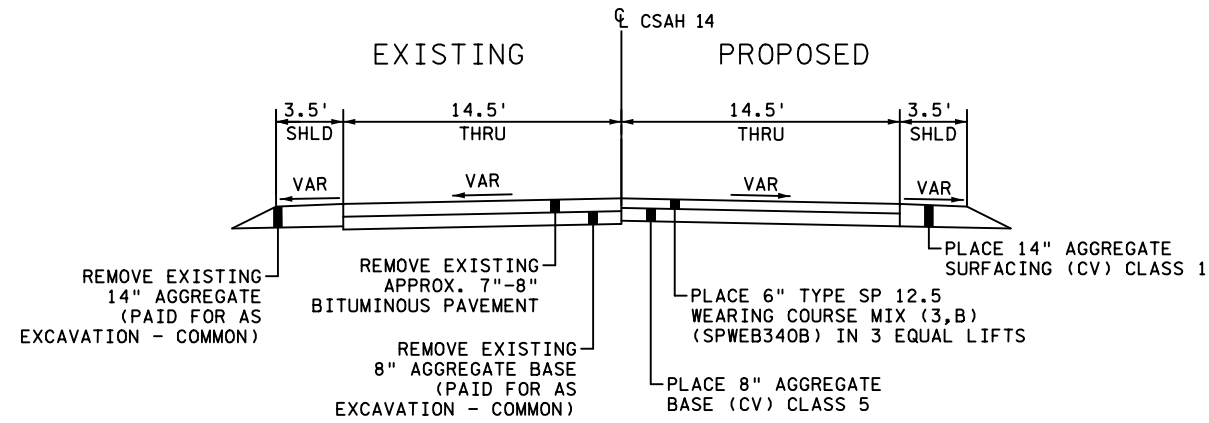
SEE STANDARD PLATE 3134.
- (12)

SEE SPECIAL SHAPE RIPRAP DETAILS.
- (13)

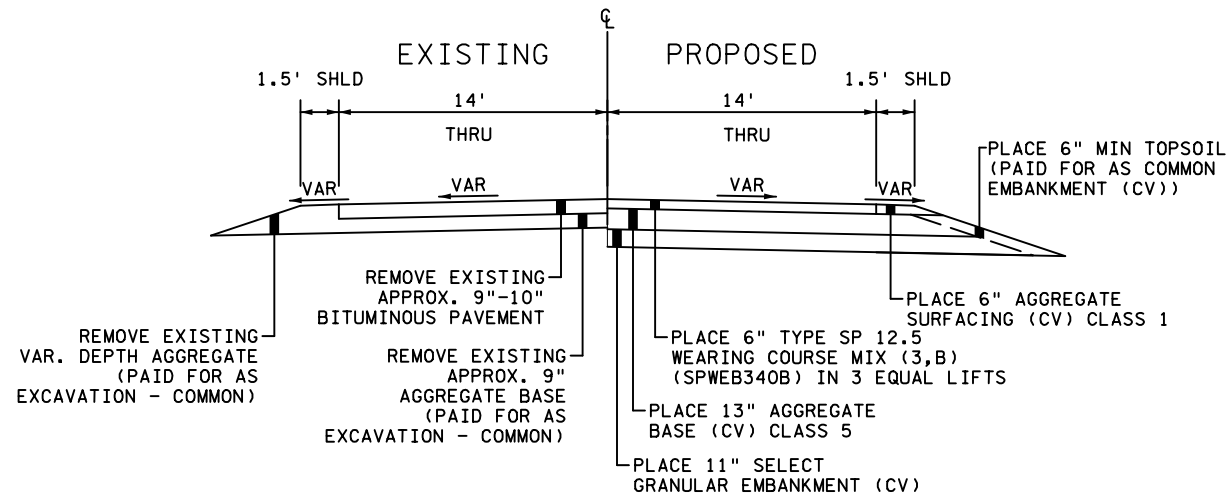
GRANULAR FILTER IS REQUIRED (INCIDENTAL).

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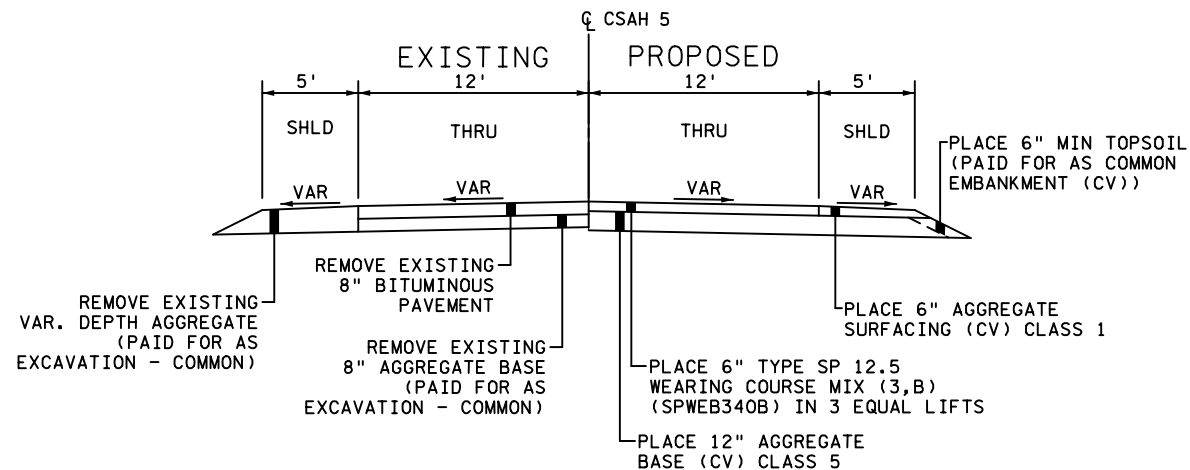
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TH 7 RP 67+00.762
STA 982+33 RT



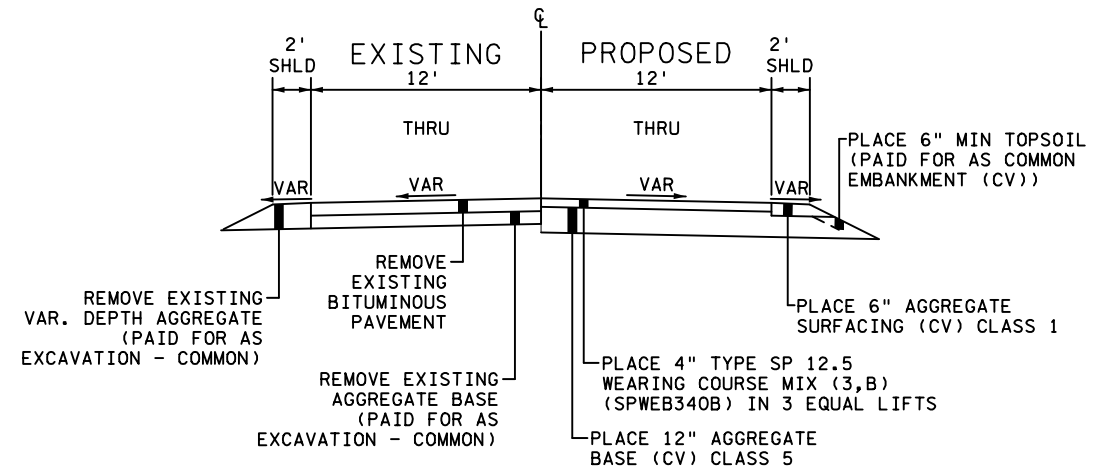
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TH 68 RP 57+00.530 TO 57+00.620
STA 358+75 TO 363+40



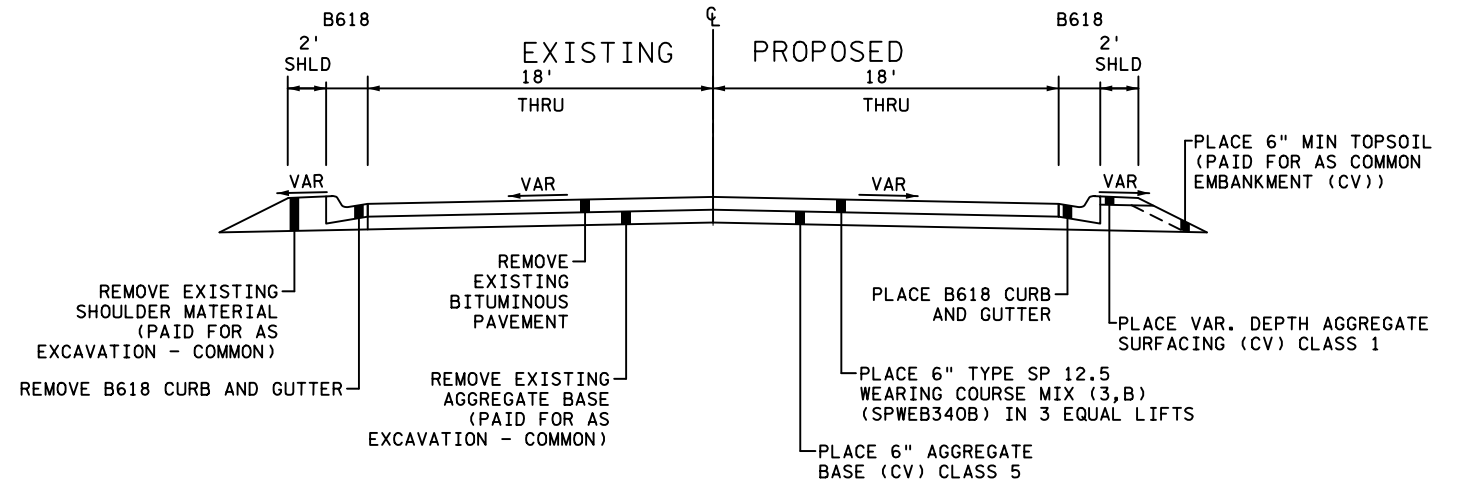
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STA 433+70 RT



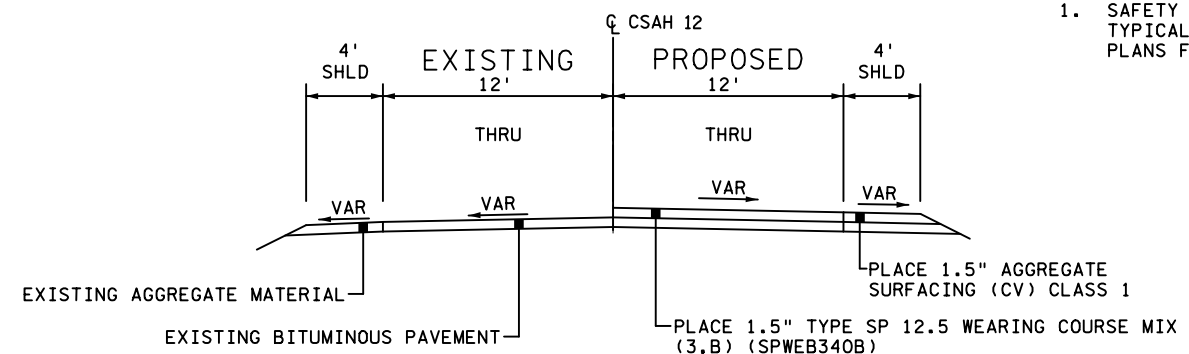
PRINSBURG CENEX ENTRANCE
TAMS ID N/A
TH 7 RP 100+00.050
STA 526+20 LT



PRINSBURG 3RD ST
TAMS ID N/A
TH 7 RP 100+00.070
STA 527+77 LT



TH 68
REDWOOD COUNTY DETOUR



GENERAL NOTE:

1. SAFETY EDGE IS NOT DEPICTED IN TYPICAL SECTION. SEE STANDARD PLANS FOR SAFETY EDGE DETAILS.

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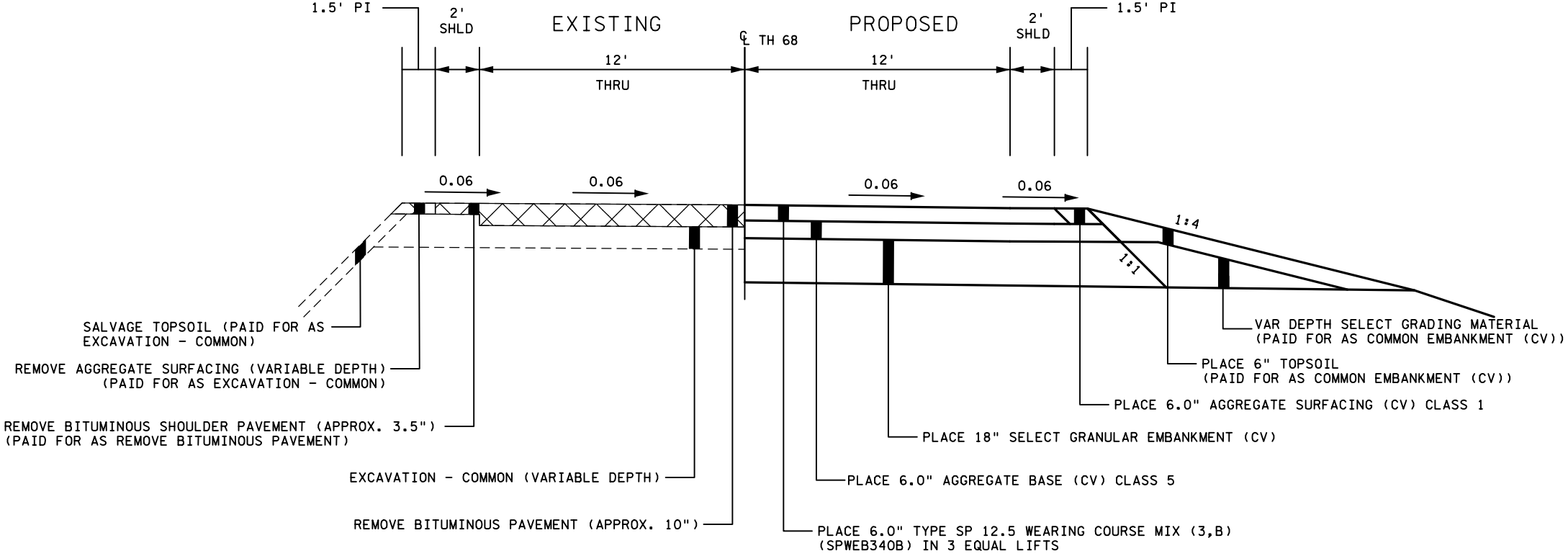
PRINT NAME: DAN SWANSON
SIGNATURE: *Dan Swanson*
DATE: 09/19/24 LICENSE #: 54298

TYPICAL SECTIONS

SP 8828-139

SHEET NO. 28 OF 212 SHEETS

TAMS ID 2240485
TH 68 RP 3+00.520
STA 18+98



- GENERAL NOTE:
1. SAFETY EDGE IS NOT DEPICTED IN TYPICAL SECTION. SEE STANDARD PLANS FOR SAFETY EDGE DETAILS.

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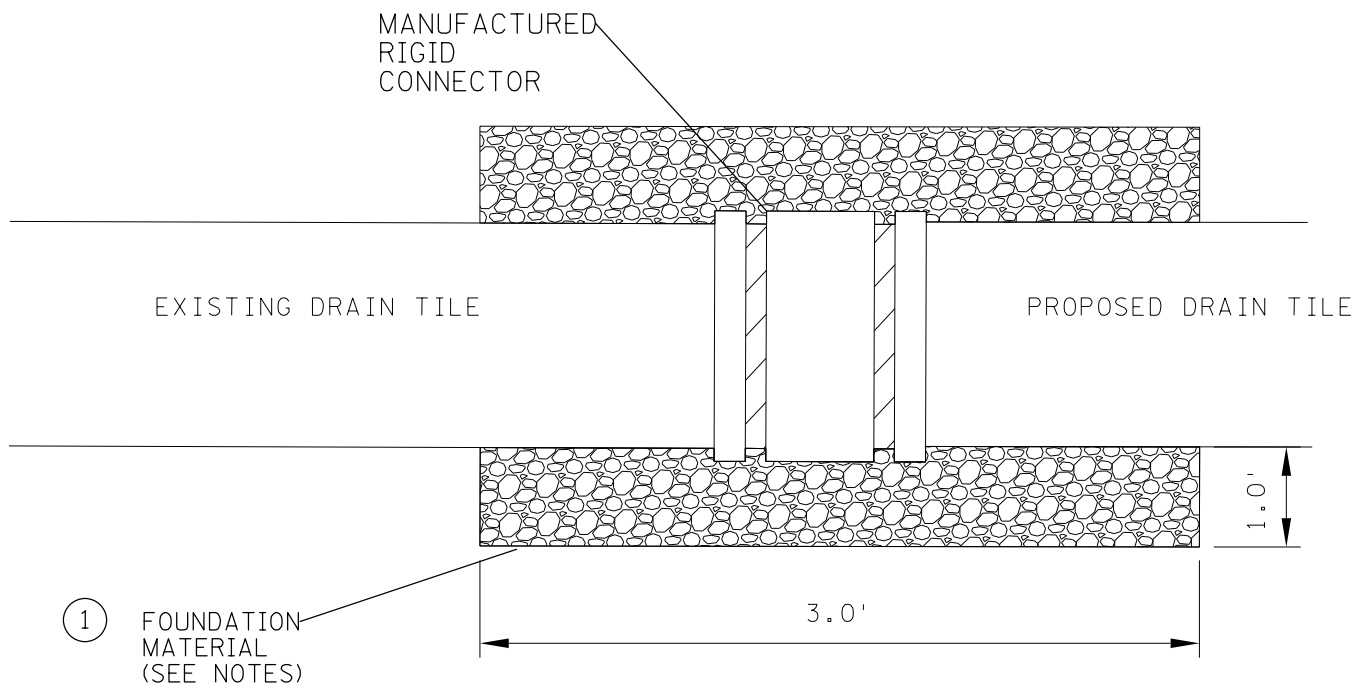
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PRINT NAME: DAN SWANSON
SIGNATURE: *[Signature]*
DATE: 09/19/24 LICENSE #: 54298

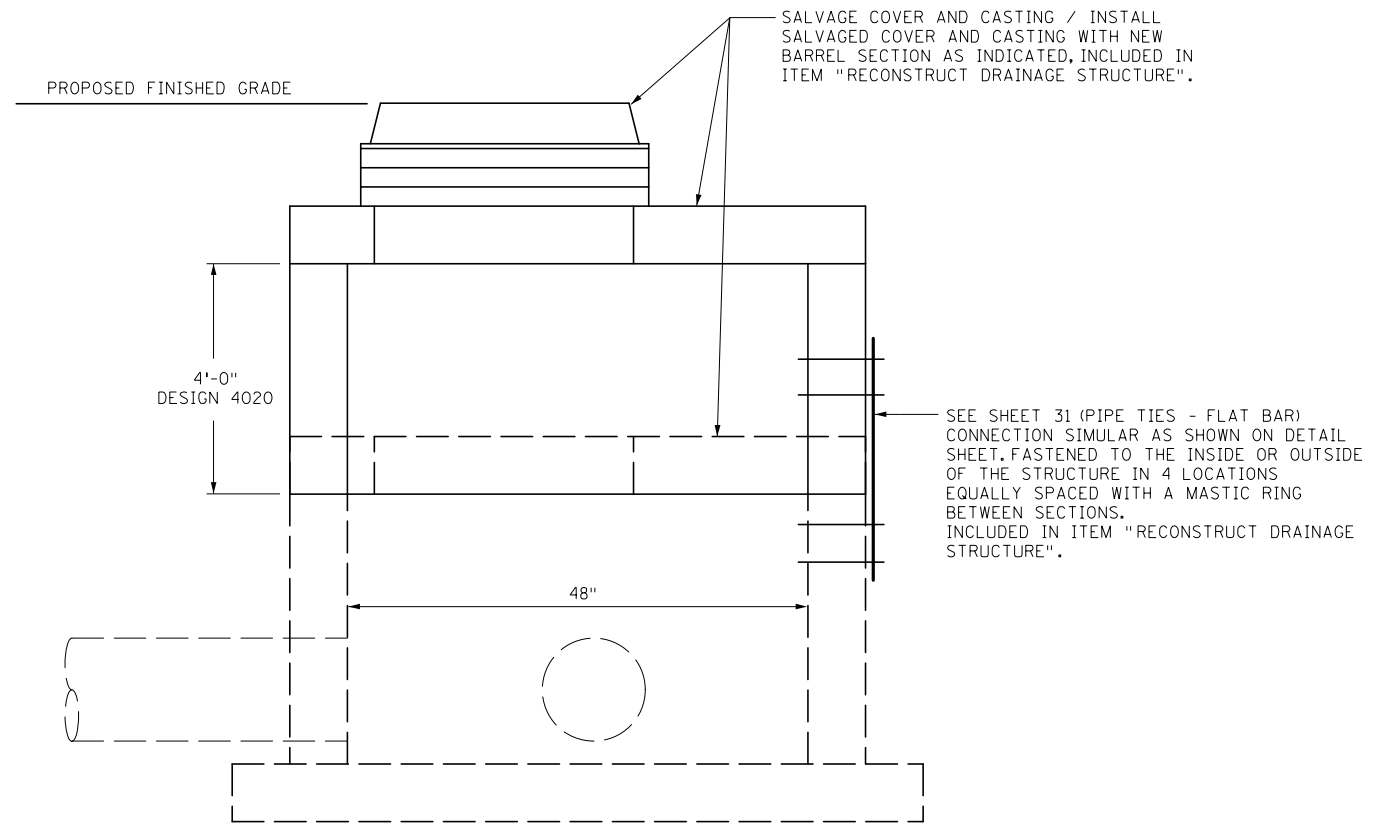
TYPICAL SECTIONS

SP 8828-139

SHEET NO. 29 OF 212 SHEETS

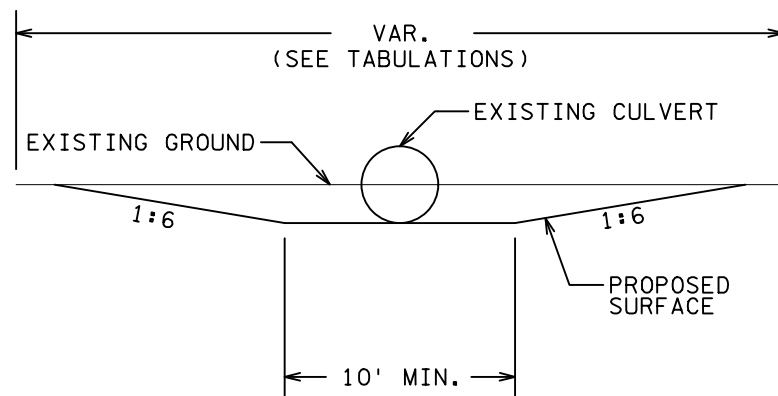


CONNECTION TO EXISTING DRAIN TILE

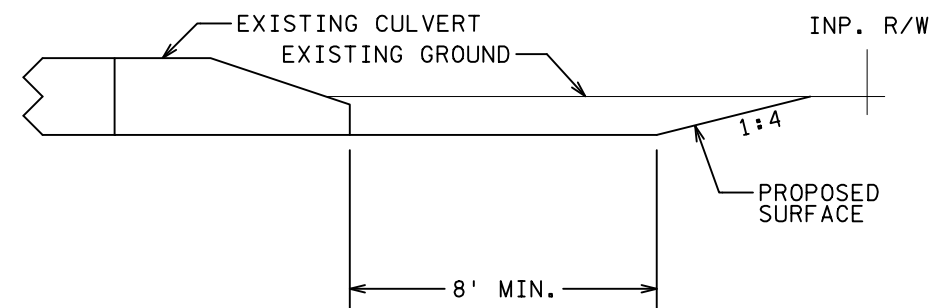


RECONSTRUCT DRAINAGE STRUCTURE (STA. 651+57 RT.)

DITCH CLEANING DETAIL



FRONT VIEW



SIDE VIEW

NOT TO SCALE

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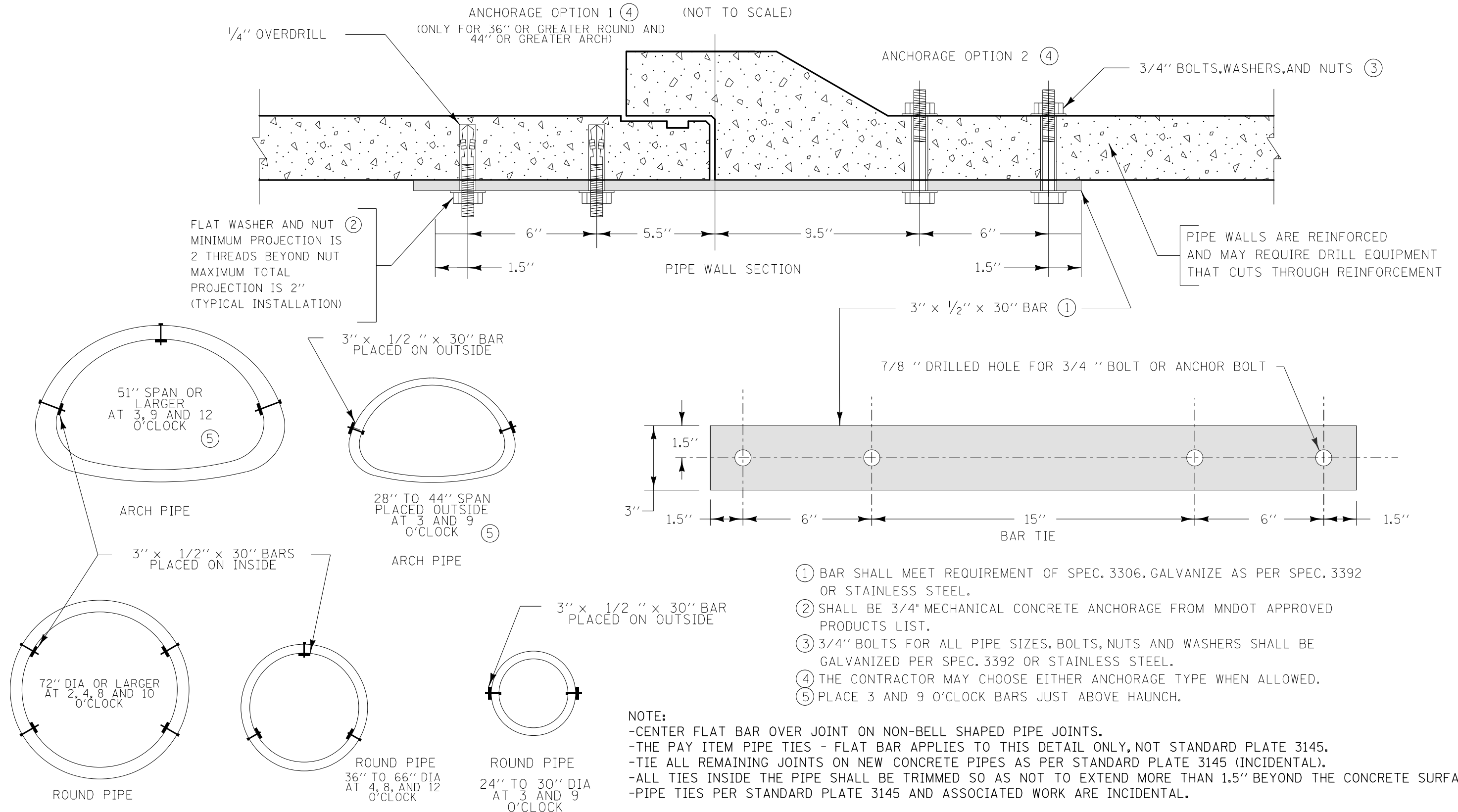
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SIGNATURE: *Dan Swanson*
DATE: 09/19/24 LICENSE #: 54298

CONSTRUCTION DETAILS
DRAINAGE DETAILS

SP 8828-139
SHEET NO. 30 OF 212 SHEETS

PIPE TIE - FLAT BAR STYLE

APPLIES TO THE FIRST THREE JOINTS FROM ANY CONCRETE PIPE APRON ON FULL PIPE REPLACEMENTS AND STORM SEWER.
ALSO APPLIES TO ALL JOINTS AT CULVERTS WITH JOINT REPAIRS AND AT PARTIAL PIPE AND APRON REPLACEMENT LOCATIONS.
(PAID FOR AS PIPE TIES - FLAT BAR) - SEE DRAINAGE TABULATIONS FOR LOCATIONS



- ① BAR SHALL MEET REQUIREMENT OF SPEC. 3306. GALVANIZE AS PER SPEC. 3392 OR STAINLESS STEEL.
- ② SHALL BE 3/4" MECHANICAL CONCRETE ANCHORAGE FROM MNDOT APPROVED PRODUCTS LIST.
- ③ 3/4" BOLTS FOR ALL PIPE SIZES. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED PER SPEC. 3392 OR STAINLESS STEEL.
- ④ THE CONTRACTOR MAY CHOOSE EITHER ANCHORAGE TYPE WHEN ALLOWED.
- ⑤ PLACE 3 AND 9 O'CLOCK BARS JUST ABOVE HAUNCH.

NOTE:

-CENTER FLAT BAR OVER JOINT ON NON-BELL SHAPED PIPE JOINTS.
-THE PAY ITEM PIPE TIES - FLAT BAR APPLIES TO THIS DETAIL ONLY, NOT STANDARD PLATE 3145.
-TIE ALL REMAINING JOINTS ON NEW CONCRETE PIPES AS PER STANDARD PLATE 3145 (INCIDENTAL).
-ALL TIES INSIDE THE PIPE SHALL BE TRIMMED SO AS NOT TO EXTEND MORE THAN 1.5" BEYOND THE CONCRETE SURFACE.
-PIPE TIES PER STANDARD PLATE 3145 AND ASSOCIATED WORK ARE INCIDENTAL.

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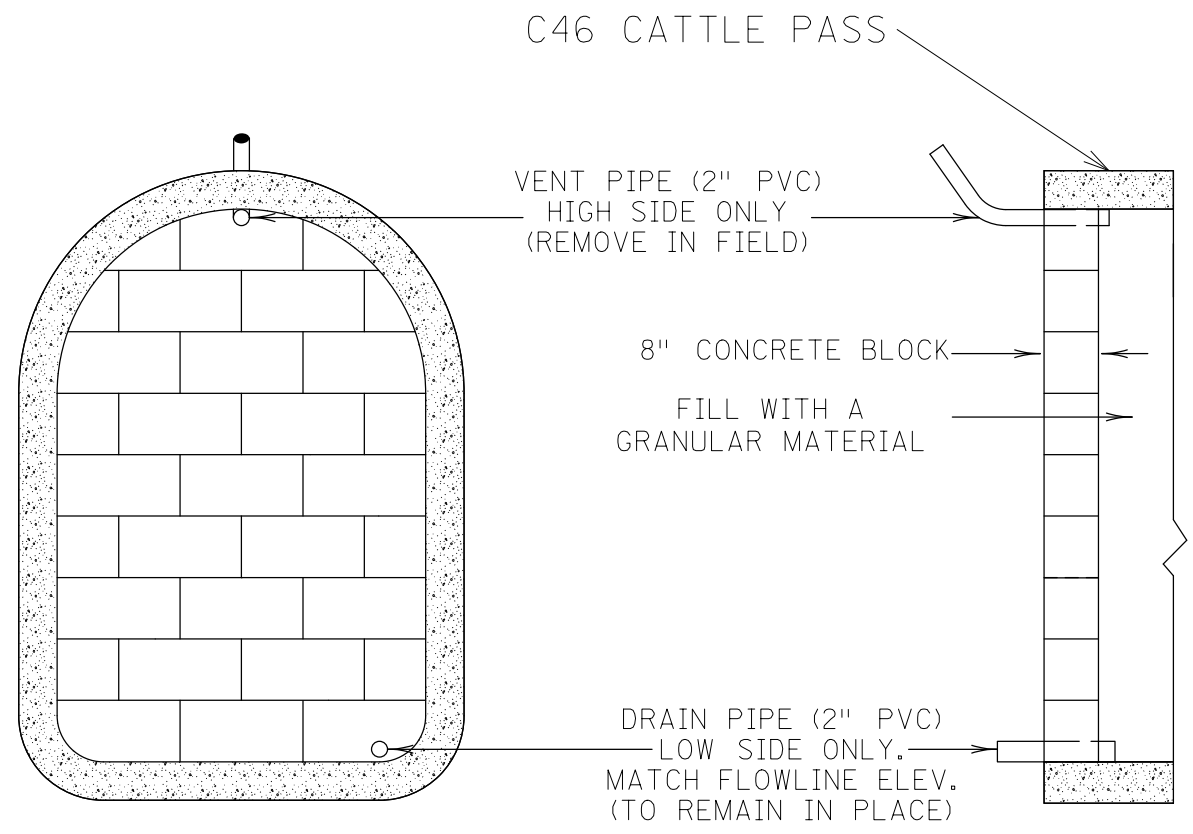
PRINT NAME: **DAN SWANSON**
SIGNATURE: *[Signature]*
DATE: **09/19/24** LICENSE #: **54298**

CONSTRUCTION DETAILS
PIPE TIE - FLAT BAR STYLE

SP 8828-139

SHEET NO. 31 OF 212 SHEETS

PLUG & ABANDON CATTLE PASS



NOTES:

THE APRON AND ONE PIPE SECTION WILL BE REMOVED FROM EACH END BEFORE THE C46 CATTLE PASS IS PLUGGED, FILLED & ABANDONED.

ALL MATERIAL INCLUDING VENT PIPE, CONCRETE BLOCK, MORTAR, AND GRANULAR MATERIAL SHALL BE PAID FOR AS PLUG & ABANDON CATTLE PASS (EACH).

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CONSTRUCTION DETAILS
PLUG AND ABANDON CATTLE PASS

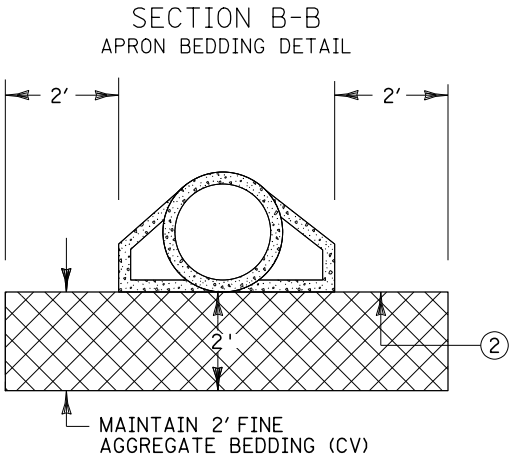
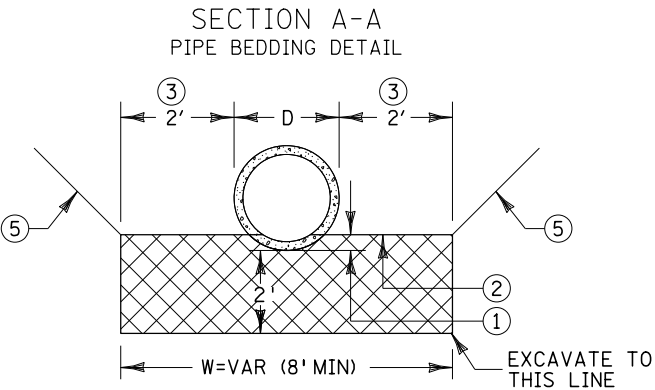
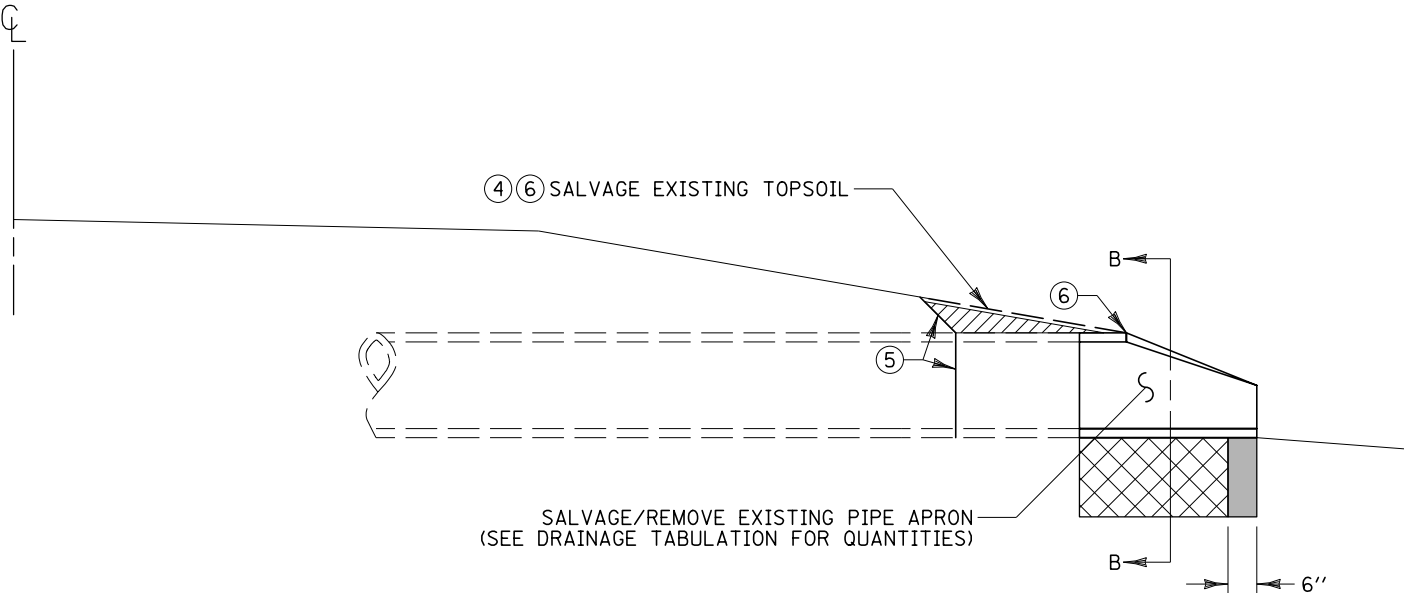
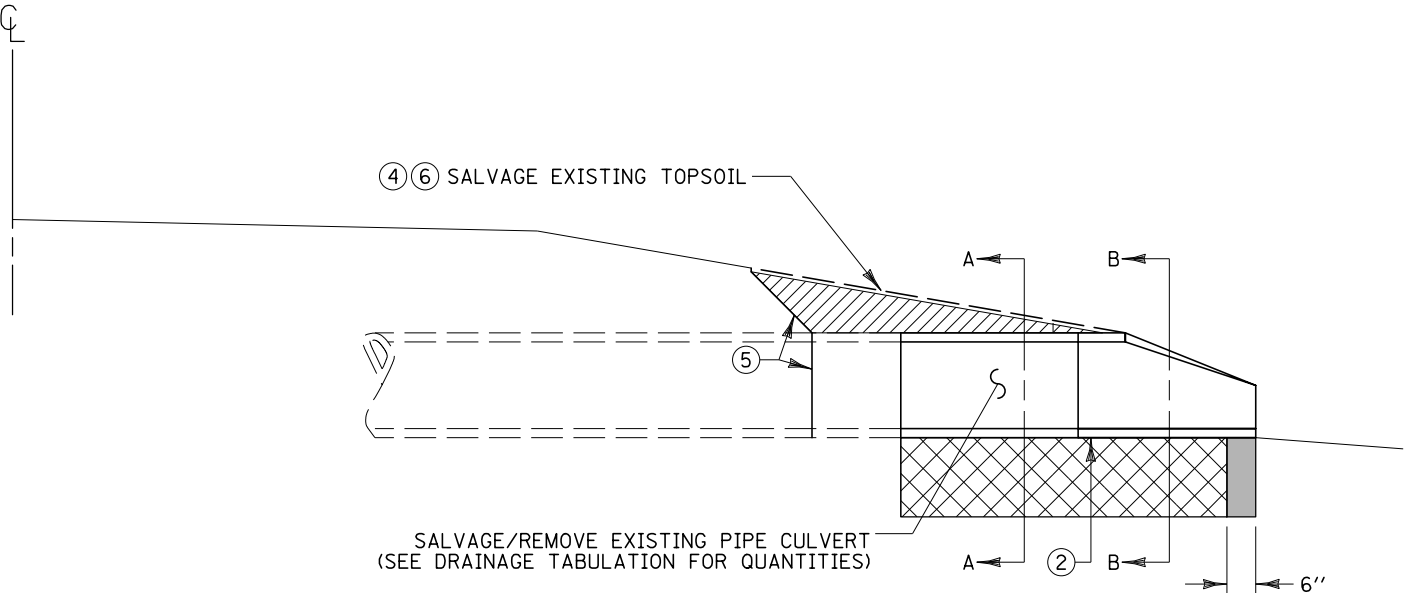
SP 8828-139				
SHEET NO.	32	OF	212	SHEETS

APRON AND PIPE SECTION BEDDING

(SEE TABULATIONS FOR LOCATIONS)

SALVAGE AND INSTALL / REMOVE AND PLACE
PIPE SECTIONS WITH APRON
(ALL EXCAVATION AND EMBANKMENT NEEDED IS INCIDENTAL)

SALVAGE AND INSTALL / REMOVE AND PLACE PIPE APRON
(ALL EXCAVATION AND EMBANKMENT NEEDED IS INCIDENTAL)



- ① DEPTH EQUAL TO 15% OF D
- ② CONSTRUCT FINE AGGREGATE BEDDING (CV) TO THIS LINE BEFORE PLACING CULVERT SECTION OR APRON
- ③ DISTANCE CAN BE INCREASED TO MAINTAIN THE MIN 8 FT FINE AGGREGATE BEDDING WIDTH
- ④ SALVAGE EXISTING TOPSOIL AND PLACE AS SLOPE DRESSING ON FINAL SLOPE (INCIDENTAL)
- ⑤ EXCAVATION LIMITS TO BE DETERMINED IN THE FIELD AND SHALL BE IN ACCORDANCE WITH OSHA GUIDELINES
- ⑥ FOR TURF ESTABLISHMENT SEE TABULATIONS.

- EXCAVATE AND BACKFILL WITH EXCAVATED MATERIAL (INCIDENTAL)
- EXCAVATE (INCIDENTAL) AND BACKFILL WITH FINE AGGREGATE BEDDING (CV)
- PLACE A 6" THICK LAYER OF NATIVE SOILS TO MATCH THE END DIMENSIONS OF THE FINE AGGREGATE BEDDING (INCIDENTAL)

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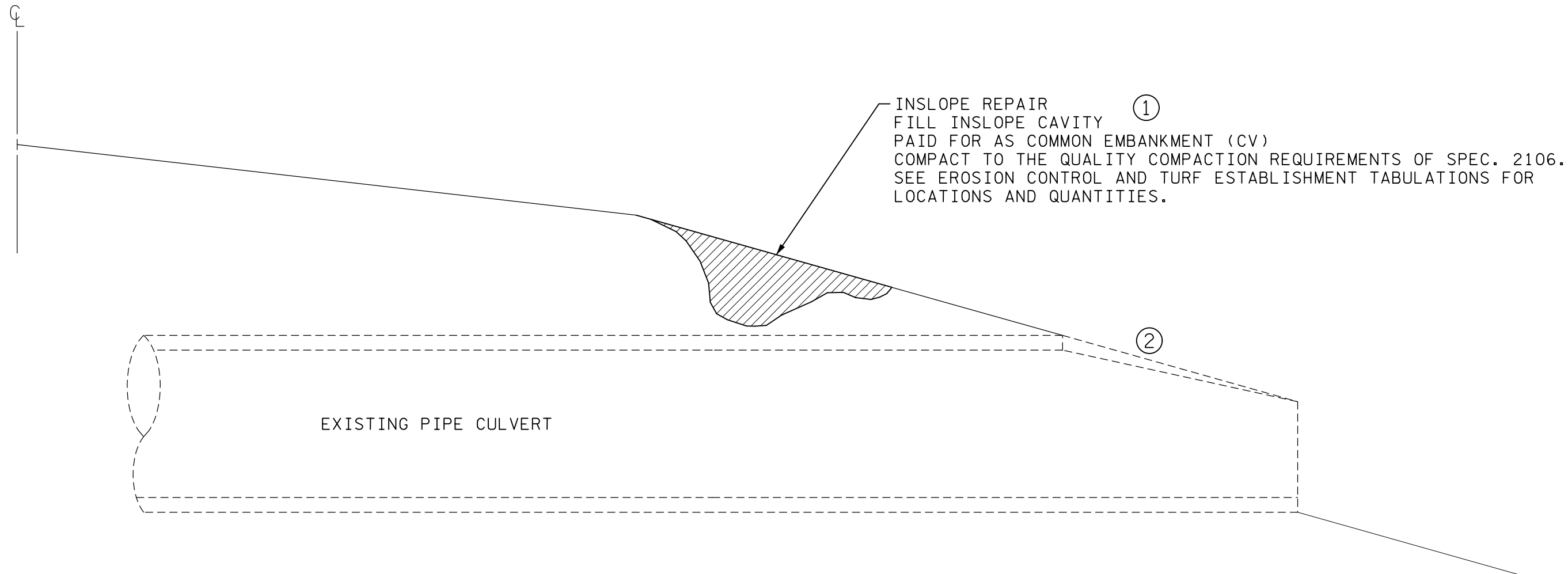
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SIGNATURE: *Dan Swanson*
DATE: 09/19/24 LICENSE #: 54298

CONSTRUCTION DETAILS
APRON AND PIPE SECTION BEDDING

SP 8828-139
SHEET NO. 33 OF 212 SHEETS

INSLOPE REPAIR DETAIL
(SEE SHEETS 24-27 FOR LOCATIONS)



- ① MATERIAL FROM CULVERT CLEANOUT AND DITCH CLEANING CAN BE USED AS COMMON EMBANKMENT (CV). TOP 6" MUST BE TOPSOIL. IF CULVERT WORK DOES NOT REQUIRE CULVERT CLEANOUT OR DITCH CLEANING, EXCESS EMBANKMENT MATERIAL MAY BE USED FROM ANOTHER PIPE LOCATION.
- ② CULVERT WORK SHALL BE COMPLETED PRIOR TO INSLOPE REPAIR.

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PRINT NAME: DAN SWANSON
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DATE: 09/19/24 LICENSE # 54298

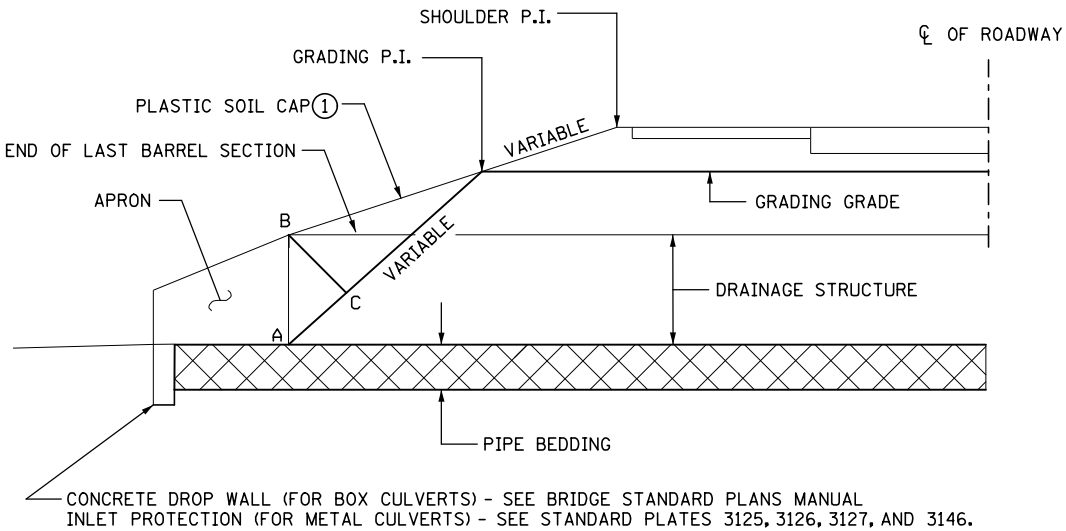
CONSTRUCTION DETAILS
INSLOPE REPAIR

SP 8828-139

SHEET NO. 34 OF 212 SHEETS

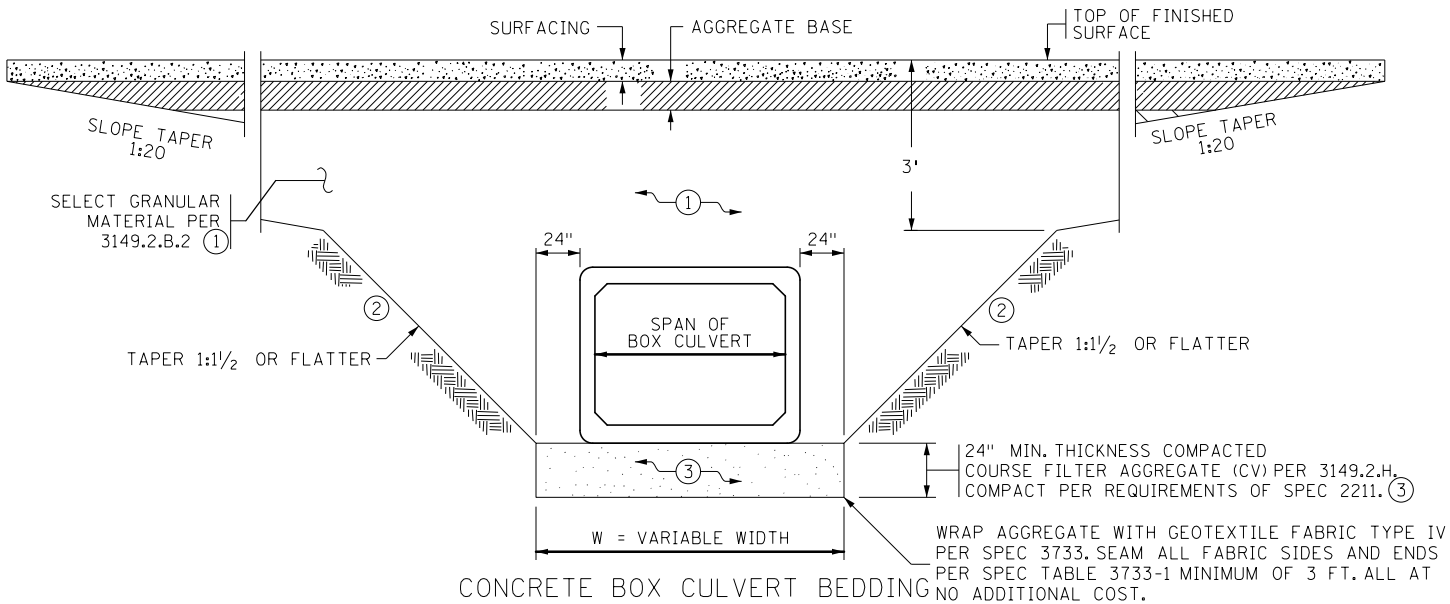
PLASTIC SOIL CAP

PLASTIC SOIL CAP IS ONLY REQUIRED ON THE INLET SIDE OF ALL APRON PLACEMENTS AND INSTALLS (INCIDENTAL).



- ① PLASTIC SOIL CAP CONSIST OF SOILS IDENTIFIED BY PRESSING A MOIST SAMPLE BETWEEN THE THUMB AND INDEX FINGER TO FORM A THIN RIBBON UNTIL IT BREAKS UNDER ITS OWN WEIGHT IN A HORIZONTAL POSITION. THE MINIMUM LENGTH OF RIBBON IS 1 INCH.
- NOTES
- WIDTH OF PLASTIC SOIL CAP:
- A) FOR PLASTIC SOIL EMBANKMENT - FULL WIDTH OF THE GRANULAR TREATMENT PLUS 2' ON EACH END.
 - B) FOR GRANULAR SOIL EMBANKMENT - A MINIMUM OF ONE DIAMETER OR WIDTH OF STRUCTURE ON EITHER SIDE OF THE STRUCTURE.
- THE THICKNESS OF THE PLASTIC SOILS CAP (B-C) IS 3' MINIMUM AND 6' MAXIMUM.
- A) FILL HEIGHTS LESS THAN 15'.
 - NORMALLY EXTEND THE LINE THRU (A-C) TO GRADING P.I. HOWEVER, IF THIS RESULTS IN A THICKNESS (B-C) GREATER THAN 6', REDUCE B-C TO 6' OR LESS AND INTERSECTION THE FILL SLOPE RATHER THAN THE P.I..
 - B) FILL HEIGHTS GREATER THAT 15'.
 - THE LINE THRU A-C NEED NOT INTERSECT THE GRADING P.I. INSTEAD INTERSECT THE FILL SLOPE AT A POINT NOT LESS THAN 5' ABOVE THE STRUCTURE MAINTAINING AT LEAST A MINIMUM THICKNESS (B-C) OF 3'.

BOX CULVERT TREATMENT



- NOTES
- EXCAVATE & CONSTRUCT ALL TRENCHES AND SLOPES PER OSHA REQUIREMENTS.
- ALL SLOPES SHOWN AS (V) : (H)
- ① MAXIMUM EMBANKMENT PARTICLE SIZE WITHIN 2 FT. OF CULVERT IS 3" PER SPEC. TABLE 2106-4. SELECT GRANULAR MATERIAL IS ONLY REQUIRED IN THE ROAD CORE.
 - ② OVER EXCAVATION BENEATH TAPERS IS NOT PERMITTED UNLESS REQUIRED BY OSHA. (TYP.)
 - ③ WRAP WITH GEOTEXTILE FABRIC TYPE 4 PER SPEC 3733. SEAM ALL FABRIC SIDES AND ENDS PER SPEC TABLE 3733-1 A MINIMUM OF 3 FT. ALL AT NO ADDITIONAL COST.

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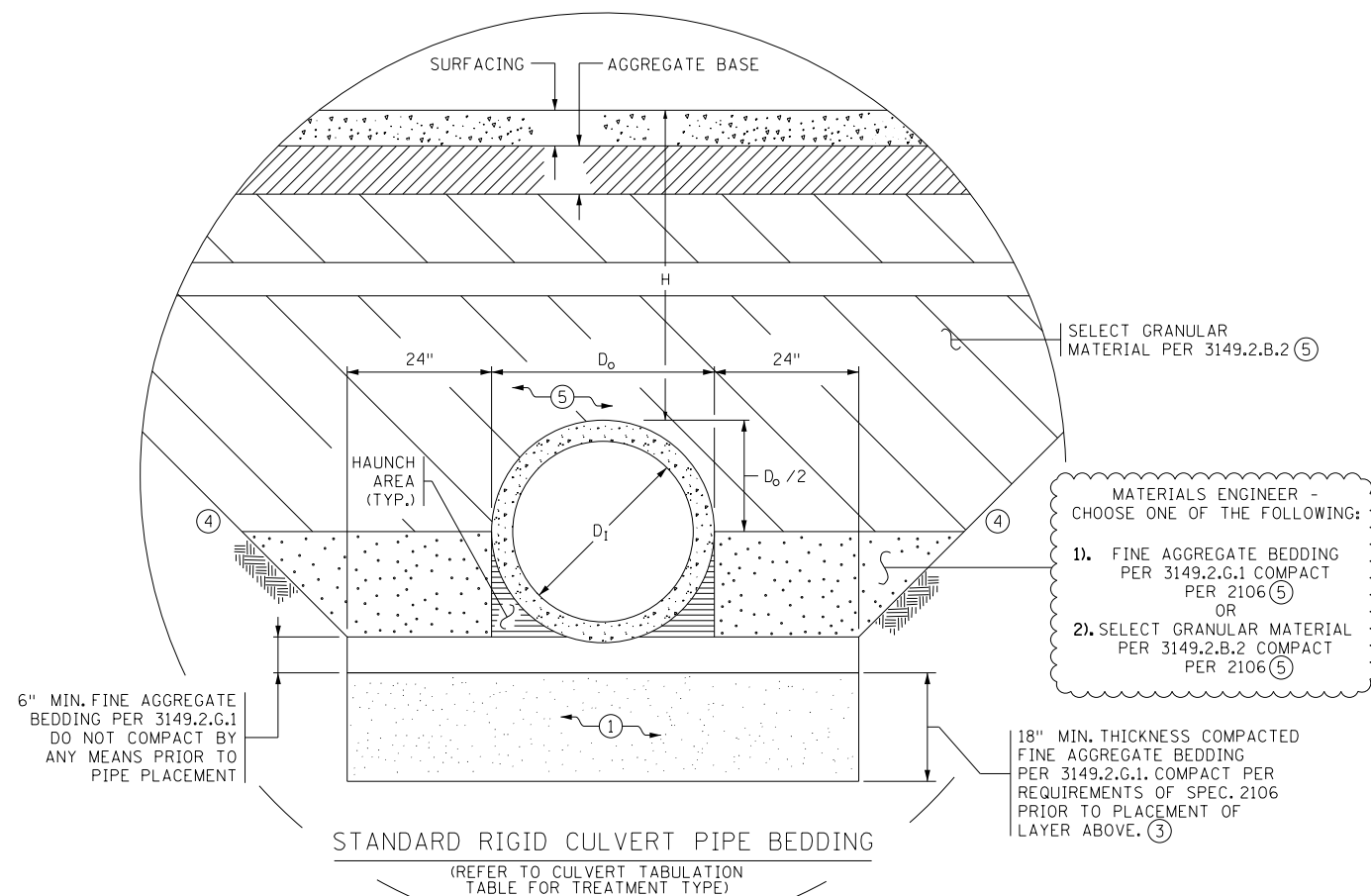
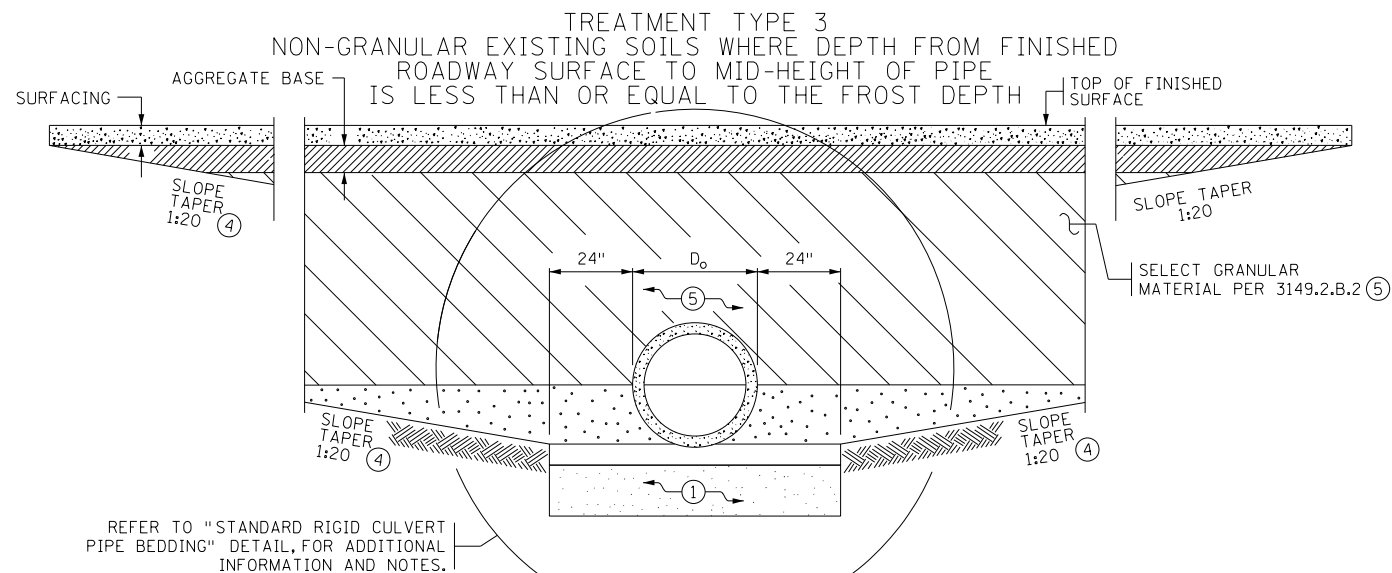
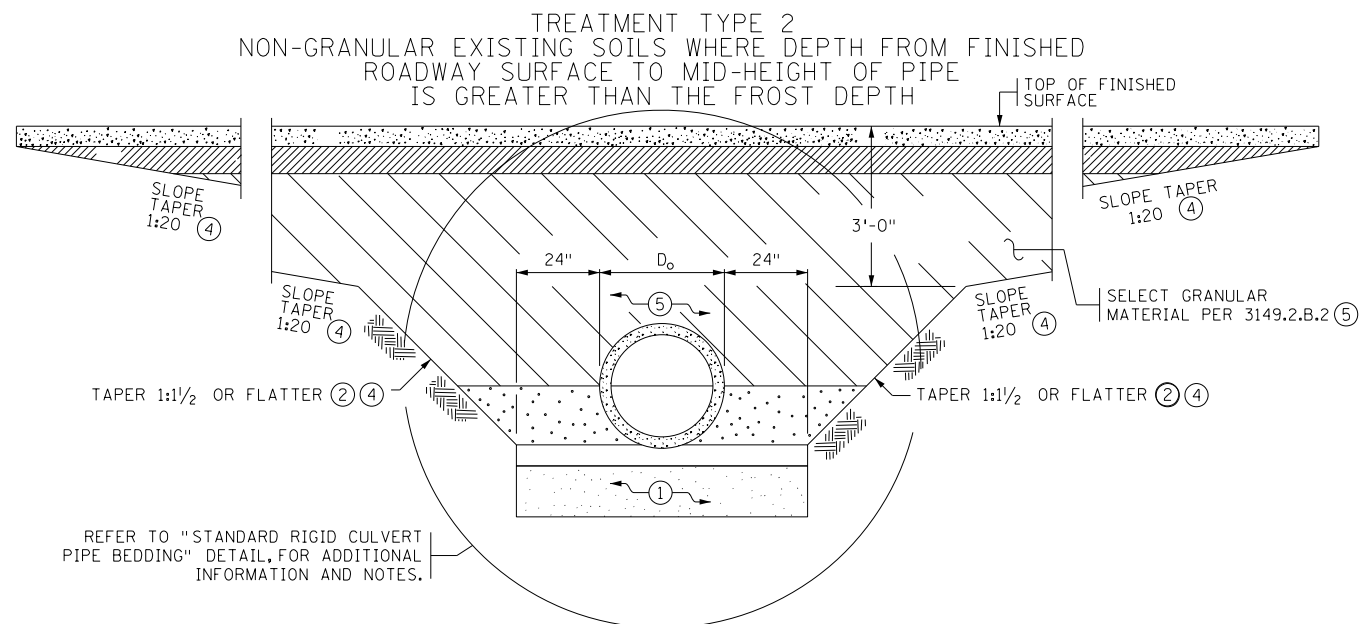
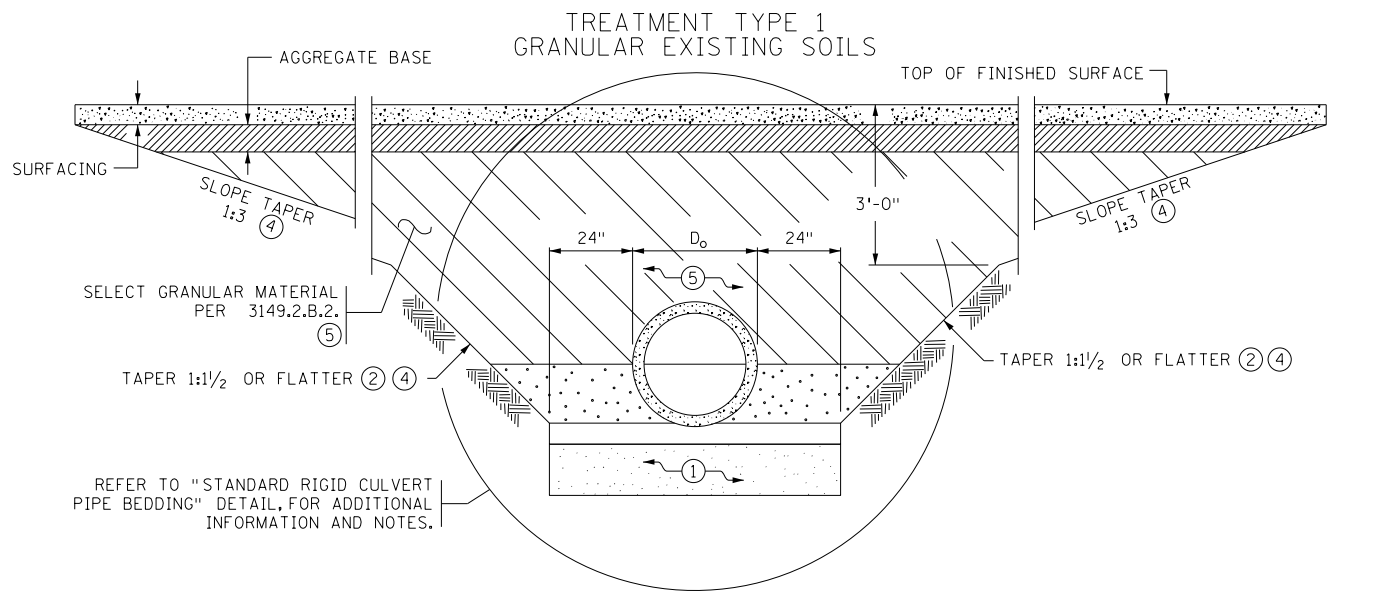


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CONSTRUCTION DETAILS
PLASTIC SOIL CAP AND BOX CULVERT TREATMENT

SP 8828-139
SHEET NO. 35 OF 212 SHEETS



CONSTRUCTION SEQUENCE

1. PLACE AND COMPACT 18" OF FINE AGGREGATE BEDDING TO THE REQUIREMENTS OF SPEC. 2106.
2. LOOSELY PLACE 6" OF FINE AGGREGATE BEDDING MATERIAL TO GRADE. DO NOT COMPACT PRIOR TO PIPE PLACEMENT.
3. FOR PIPES WITH BELL, REMOVE MATERIAL IN BELL AREA PRIOR TO PLACEMENT.
4. FURNISH AND INSTALL PIPE TO GRADE.
5. AFTER PLACEMENT OF THE PIPE, PLACE ADDITIONAL BEDDING AND COMPACT THE FULL LENGTH ON BOTH SIDES OF THE PIPE UNDERNEATH THE HAUNCH AREA BY FIRST SHOVEL SLICING (MANUALLY SHOVE THE BLADE END OF A SHOVEL AT AN ANGLE DOWN THE ENTIRE LENGTH OF THE HAUNCH UNDER THE PIPE) THEN COMPACT THE HAUNCH AT AN ANGLE USING A POWERED MECHANICAL OR PNEUMATIC DEVICE (I.E. POLE TAMPER, JUMPING JACK, OR SIMILAR). COMPACT THE REMAINING MATERIAL OUTSIDE THE HAUNCH AREA TO THE REQUIREMENTS OF THE APPLICABLE MATERIAL TYPE ENSURING THAT THE ENTIRE LENGTH OF PIPE IS SUPPORTED UNIFORMLY BY BEDDING.
6. PLACE AND COMPACT BACKFILL EVENLY AND SIMULTANEOUSLY IN 6" LIFTS ON EACH SIDE OF THE PIPE UP TO THE MID-HEIGHT WHEN COMPACTED.
7. COMPLETE REMAINING BACKFILL PER THE APPROPRIATE TREATMENT REQUIREMENTS.

NOTES

THIS CULVERT TREATMENT IS ONLY REQUIRED FOR THE CULVERT REPLACEMENTS ON TH 68 AT RP 57+00.550 AND RP 57+00.606. SEE STANDARD PLAN 5-297.441 FOR CULVERT TREATMENTS REQUIRED FOR SIDE ROAD ENTRANCE CULVERT REPLACEMENTS.

EXCAVATE & CONSTRUCT ALL TRENCHES AND SLOPES PER OSHA REQUIREMENTS.

ALL SLOPES SHOWN AS (V):(H)

PIPE SIZE IS BASED ON THE NOMINAL INSIDE DIAMETER.

- ① IF APPROVED BY THE ENGINEER IN WET CONDITIONS THE CONTRACTOR MAY SUBSTITUTE 18" OF COARSE FILTER AGGREGATE PER 3149.2.H COMPACTED TO THE QUALITY COMPACTION REQUIREMENTS OF SPEC. 2106. WRAP WITH GEOTEXTILE FABRIC TYPE IV PER SPEC 3733. SEAM ALL FABRIC SIDES AND ENDS PER SPEC TABLE 3733-1 INCLUDING FOOTNOTE (e) OR OVERLAP A MINIMUM OF 3 FT. ALL AT NO ADDITIONAL COST.
 - ② FOR FILL HEIGHTS (H) LESS THAN 3 FT., OMIT 1:1½ TAPER
 - ③ FOR INSTALLATIONS ON INTACT BEDROCK, OMIT THIS LAYER.
 - ④ OVER EXCAVATION BENEATH TAPERS IS NOT PERMITTED UNLESS REQUIRED BY OSHA. (TYP.)
 - ⑤ MAXIMUM EMBANKMENT PARTICLE SIZE WITHIN 2 FT. OF PIPE IS 3" PER SPEC. TABLE 2106-4. SELECT GRANULAR MATERIAL IS ONLY REQUIRED IN THE ROAD CORE.
- PROTECT ALL PIPE DURING CONSTRUCTION PER SPEC. 2501 OR 2503.
- PLACE MULTIPLE PIPE CULVERTS WITH A MIN. CLEARANCE OF 24 INCHES OR GREATER BETWEEN STRINGS OF PIPE.

-LEGEND-

D₁ = NOMINAL INSIDE DIAMETER OR SPAN OF PIPE
D₀ = OUTSIDE DIAMETER OF ROUND PIPE, OR OUTSIDE SPAN OF PIPE-ARCH.
H = FILL COVER HEIGHT OVER PIPE (FEET)

▨ = UNDISTURBED SOIL

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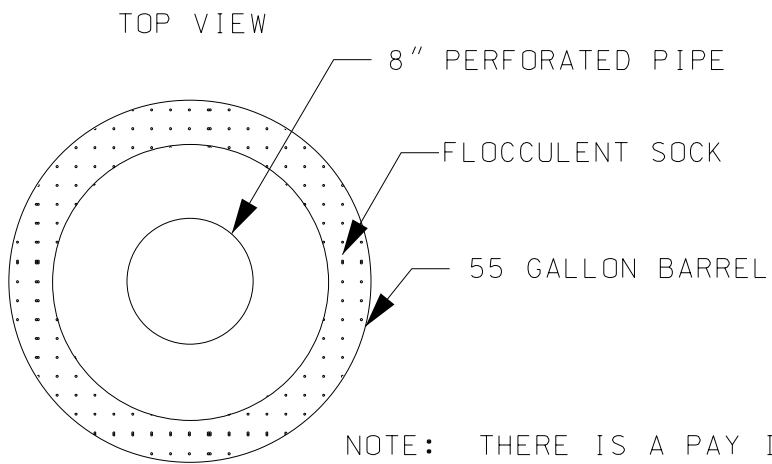
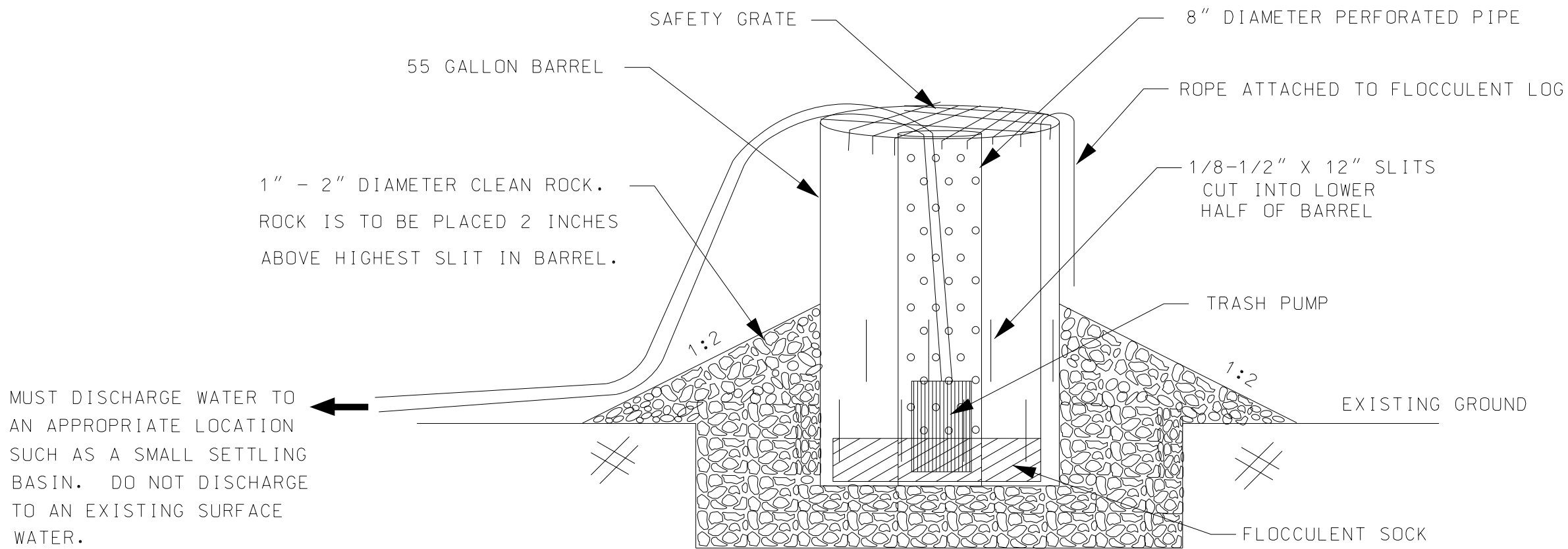
PRINT NAME: DAN SWANSON
SIGNATURE: *Dan Swanson*
DATE: 09/19/24 LICENSE #: 54298

CONSTRUCTION DETAILS
CULVERT TREATMENTS

SHEET NO. 36 OF 212 SHEETS

SP 8828-139

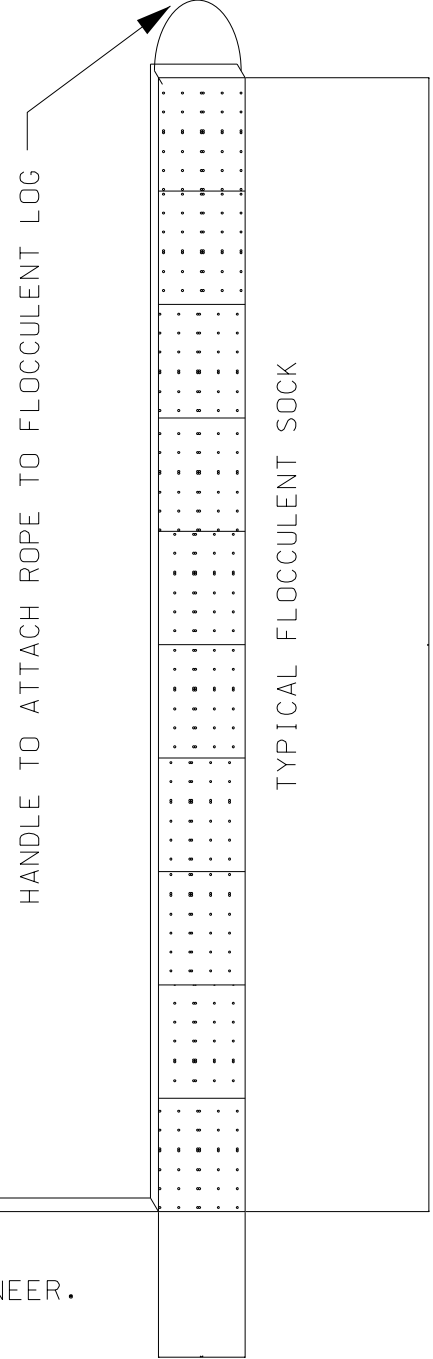
DEWATERING DETAIL



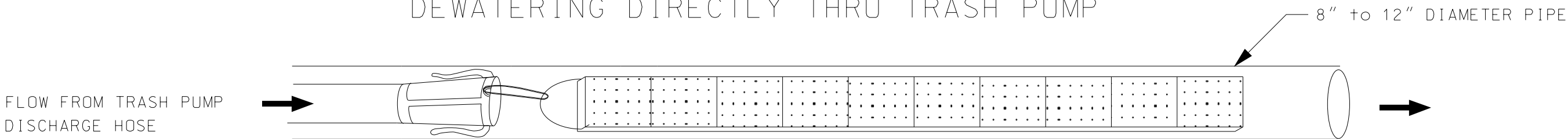
DEWATERING DEVICE SHOULD BE PLACED
AT THE LOW POINT OF THE AREA TO DRAIN

MUST DISCHARGE WATER TO A SEDIMENT
BASIN OR SEDIMENT TRAP. DO NOT
DISCHARGE DIRECTLY TO A WATER BODY.
SYSTEM SHALL BE CAPABLE OF HANDLING A 2 YEAR-24 HOUR EVENT.

NOTE: THERE IS A PAY ITEM FOR DEWATERING, CONTRACTOR'S PLAN MUST BE SUBMITTED AND APPROVED BY THE ENGINEER.
CONTRACTOR MAY USE AN ALTERNATE METHOD OF DEWATERING.



DEWATERING DIRECTLY THRU TRASH PUMP



SECURE FLOCCULENT SOCK TO
COUPLER CONNECT ON HOSE.

8/20/06 PM
10/16/2022
C:\Users\jswanson\Documents\2022\1220013\DESIGN\Plan Sheets\cd8828139_d08.dgn

NO	DATE	DWN	CKD	REVISIONS



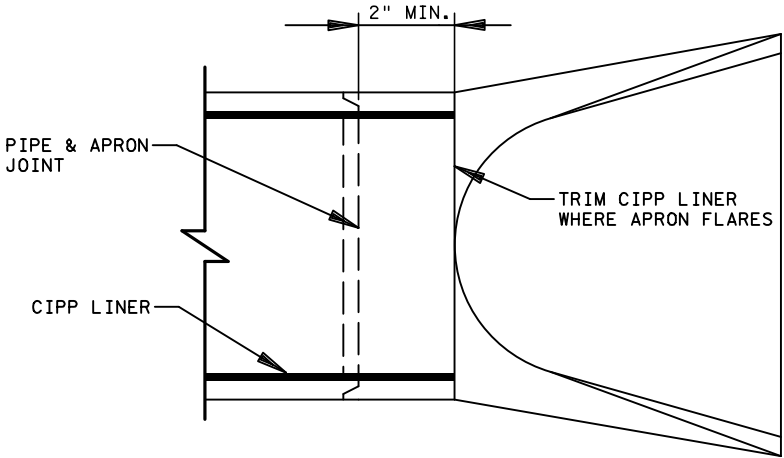
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED
BY ME OR UNDER MY DIRECT SUPERVISION AND THAT
I AM A DULY LICENSED PROFESSIONAL ENGINEER
UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON
SIGNATURE: [Signature]
DATE: 09/19/24 LICENSE # 54298

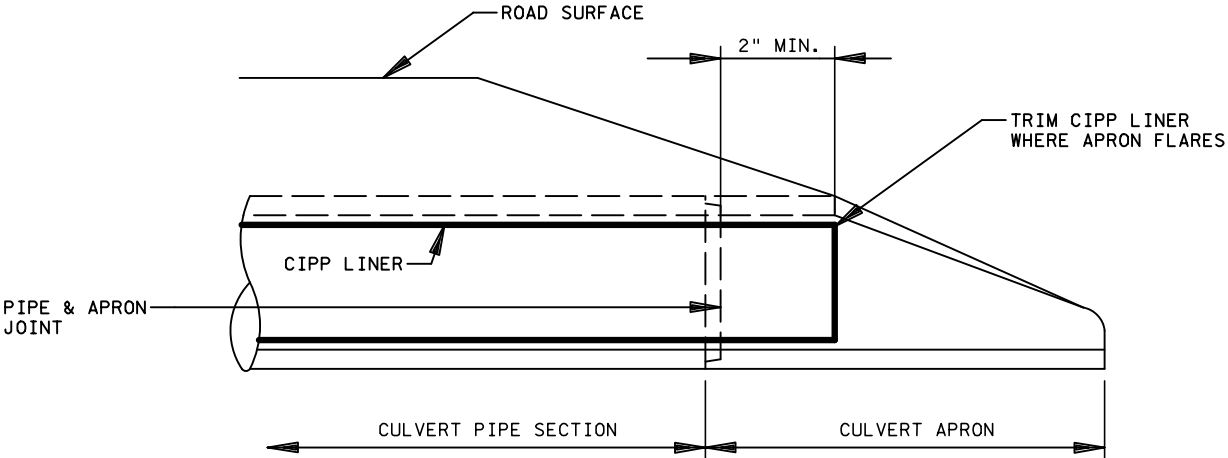
CONSTRUCTION DETAILS
DEWATERING

SP 8828-139
SHEET NO. 37 OF 212 SHEETS

CIPP AT RC PIPE APRON DETAIL



TOP VIEW



ELEVATION VIEW

GENERAL NOTES:

ON CULVERT EXTENSIONS, PLACE THE EXTENDED CULVERT SECTION(S), PLACE THE APRON, THEN PLACE CIPP LINER THE ENTIRE LENGTH OF EXTENDED CULVERT THROUGH EACH APRON TO THE FLARE OF THE APRON, OR WHERE APRON OPENS ON CS PIPE APRONS.

ALL CONCRETE CULVERT EXTENSIONS, REPLACEMENTS, AND APRON RESETS AND REPLACEMENTS SHALL BE TIED AS SHOWN IN MISCELLANEOUS DETAILS.

IF NO APRON IS PRESENT, LINE TO THE END OF THE LAST SECTION.

8/20/11 PM
10/6/2020
C:\Users\jswanson\Documents\2022\1220013\DESIGN\Plan Sheets\cd8828139_dd10.dgn

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PRINT NAME: DAN SWANSON
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DATE: 09/19/24 LICENSE #: 54298

CONSTRUCTION DETAILS
CIPP LENGTH REQUIREMENT

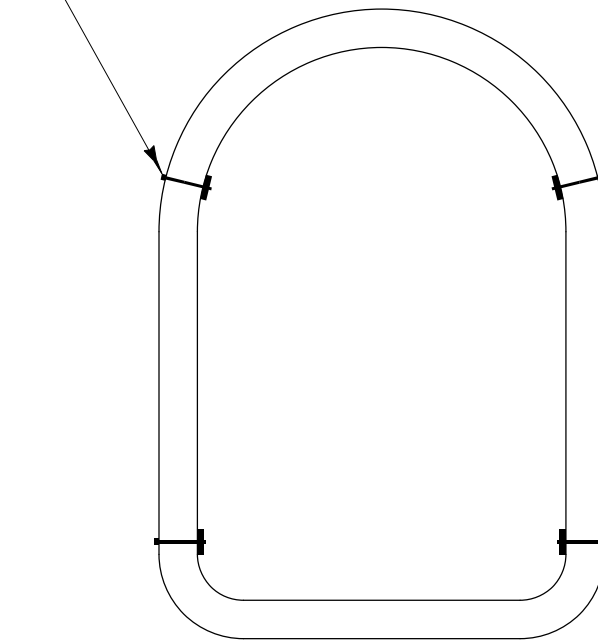
SP 8828-139				
SHEET NO.	38	OF	212	SHEETS

PIPE TIE - FLAT BAR STYLE

(PAID FOR AS PIPE TIES - FLAT BAR) - SEE DRAINAGE TABULATIONS FOR LOCATIONS

C46 CATTLE PASS

1-1/4" CAST HOLES PLACED AT 75°
FROM VERTICAL TO ACCOMMODATE CULVERT
TIES (SEE PIPE TIES - FLAT BAR DETAIL
ON SHEET 31)



8/20/16 PM
10/6/2022
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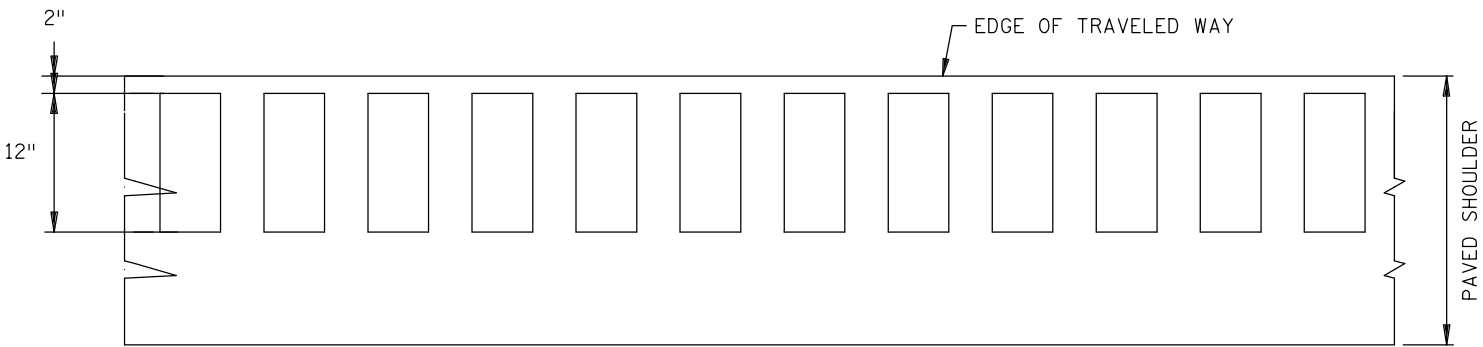
PRINT NAME: DAN SWANSON
SIGNATURE: *Dan Swanson*
DATE: 09/19/24 LICENSE # 54298

CONSTRUCTION DETAILS
PIPE TIE REPLACEMENT - CATTLEPASS

SP 8828-139				
SHEET NO.	39	OF	212	SHEETS

BITUMINOUS SHOULDER RUMBLE STRIP
- CONTINUOUS CYCLE

PLAN VIEW

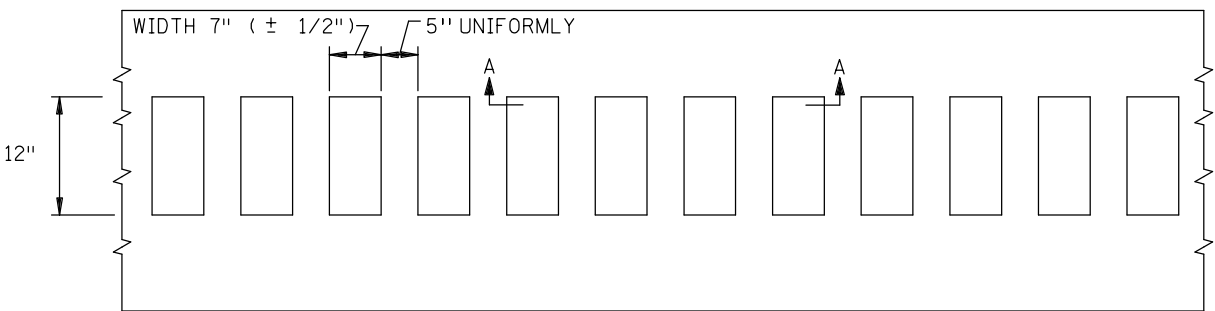


PUBLISHED BY OTE: 16 NOV 2021

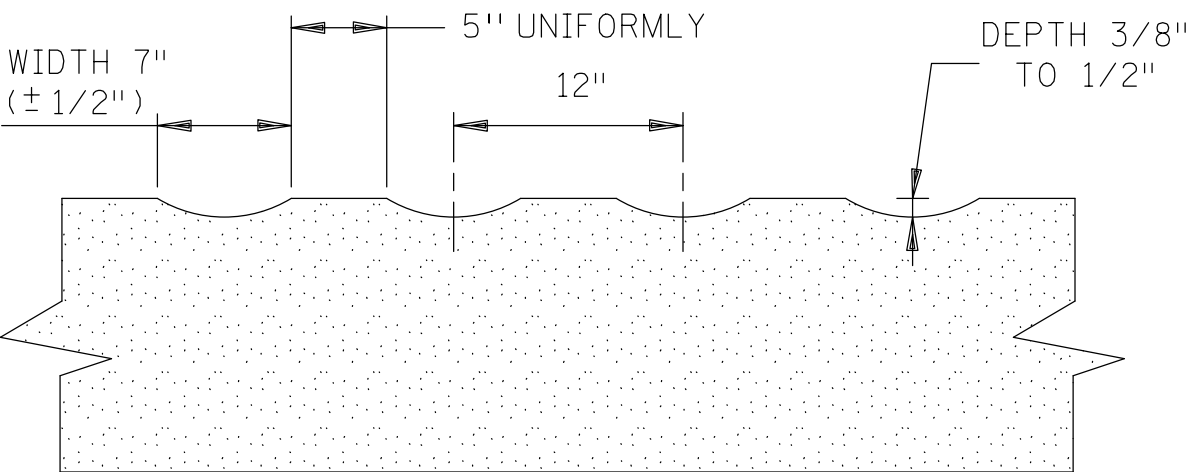
MODIFIED:

RECTANGULAR CORRUGATED RUMBLE STRIP PATTERN

PLAN VIEW



SECTION A-A

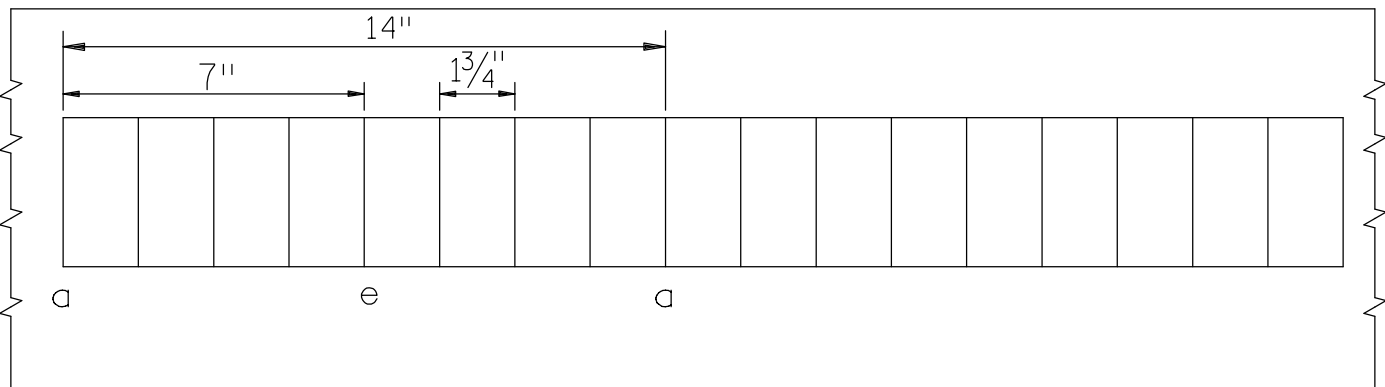


PUBLISHED BY OTE: 19 DEC 2022

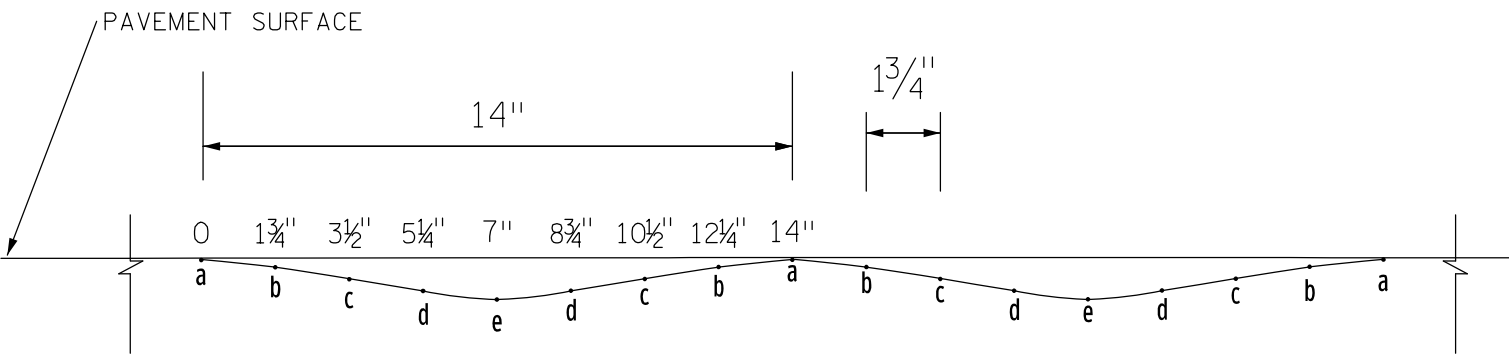
MODIFIED:

SINUSOIDAL RUMBLE STRIP PATTERN

PLAN VIEW



PROFILE VIEW



GENERAL NOTES:

DEPTH TOLERANCE IS ±1/16 IN ALONG THE SINUSOIDAL WAVE.

LOCATION	DEPTH	
	MIL	INCHES
a	62.5	1/16"
b	156	5/32"
c	281	9/32"
d	438	7/16"
e	500	1/2"

PUBLISHED BY OTE: 16 NOV 2021

MODIFIED:

9:33:04 PM 11/16/2022 C:\Users\jswanson\Documents\Projects\2022\1220013\DESIGN\Plan Sheets\cd828139_dd13.dgn

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PRINT NAME: DAN SWANSON
SIGNATURE: *Dan Swanson*
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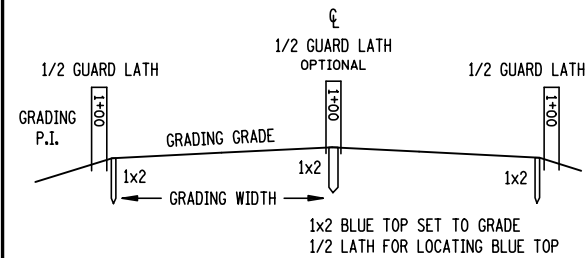
CONSTRUCTION DETAILS
RUMBLE STRIPS

SP 8828-139

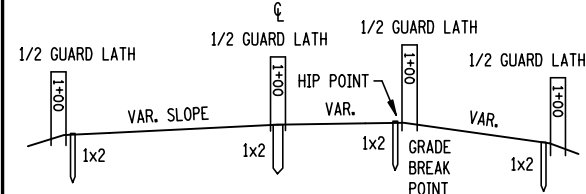
SHEET NO. 40 OF 212 SHEETS

BLUE TOPS

NORMAL SECTION

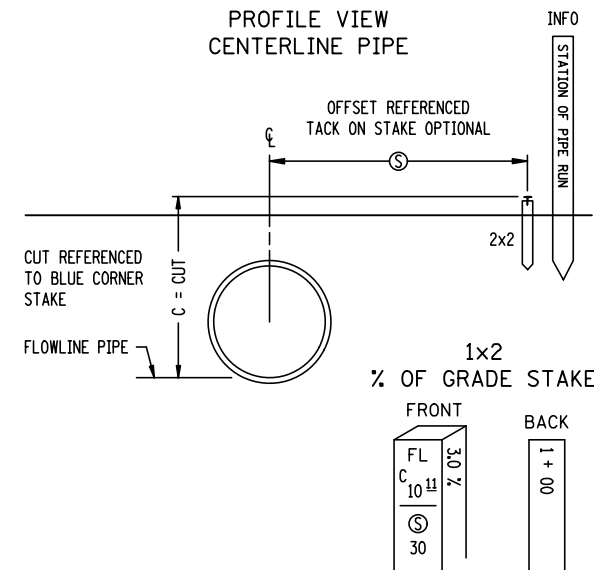


TRANSITION SECTION



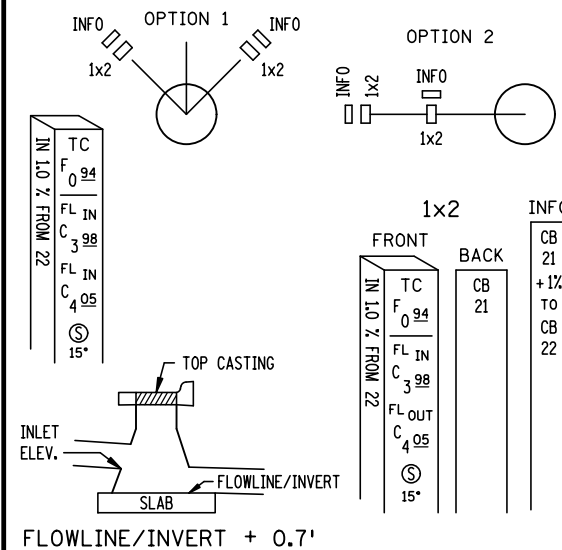
PIPE STAKING

PROFILE VIEW CENTERLINE PIPE



CATCH BASIN OR MANHOLE (CB/MH)

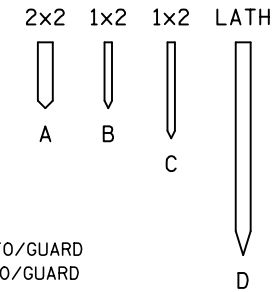
TOP VIEWS



STANDARD STAKES

TYPES:

REFERENCE (REF)
INFORMATIONAL (INFO)
VISIBILITY (VIS)
GUARD (GUARD)



SIZES:

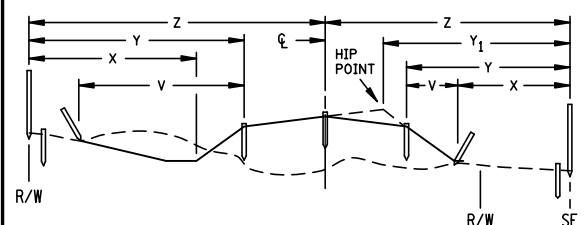
A = 2" X 2" X VAR. REF/INFO/GUARD
B = 1" X 2" X VAR. REF/INFO/GUARD
C = 1" X 2" X VAR. REF
D = LATH INFO/VIS/GUARD
1x2 OR LATH = INFO STAKES

ABBREVIATIONS

BBL = BARREL (PIPE)
B.C. = BACK CURB
C & G = CURB & GUTTER
C = CUT
CAP = CORR. ALUM. PIPE
CB = CATCH BASIN
CL = CENTERLINE
CL & GR = CLEAR & GRUB
CMP = CORR. METAL PIPE
COR = CORNER
CR = CROWN
CSP = CORR. STEEL PIPE
C = DITCH CUT
D.E. = DRAINAGE EASEMENT
DI = DROP INLET
EB = EASTBOUND
E.M. = EDGE BITUMINOUS MAT
E.S. = EDGE CONCRETE SLAB
F = FILL
FF = FRONT FACE
FL = FLOW LINE
FL IN = FLOWLINE INLET
FL OUT = FLOWLINE OUTLET
GR = GRADE
GW = GRADING WIDTH
HH = HANDHOLE
HP = HIP POINT
LT = LEFT
MH = MANHOLE
NB = NORTHBOUND
⊙ = OFFSET
PAR = PARCEL
% = PERCENT GRADE
P.E. = PERM. EASEMENT
RAD = RADIUS POINT
RCP = REINF. CONC. PIPE
RP = REFERENCE POINT
RSC = REINF. SECT. CONC.
RT = RIGHT
R/W = RIGHT OF WAY
SB = SOUTHBOUND
SCP = SECT. CONC. PIPE
SH = SHOULDER
TC = TOP CASTING
OR TOP CURB
T.E. = TEMP. EASEMENT
3:1 = SLOPE (EXAMPLE)
WB = WESTBOUND
WP = WORKING POINTS

SLOPE STAKES

SINGLE ROADWAY - EXAMPLE 'A'



STAKE 'A'

FULL LATH AND HUB-STATION
DIST. TO CL WITH CUT/FILL TO CL (Z)
DIST. TO SHLD. WITH CUT/FILL TO SHLD. (Y)(Y1)
DIST. TO TOE OF SLOPE, CUT/FILL FROM HUB (X)
OFFSET TO SAFETY SLOPE
OFFSET TO HIP POINT

STAKE 'B'

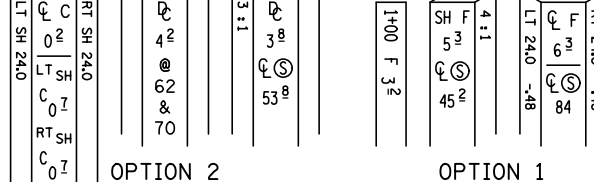
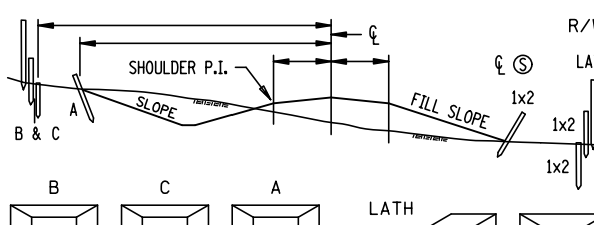
FULL LATH
DITCH CUT/SHLD. FILL
SLOPE RATED
DISTANCE TO INSLOPE
TOE (V1) OR SHOULDER
(AS APPLIES) (V)

NOTE:

BLUE TOPS REQUIRED ON CL AND BOTH SHOULDERS AT MINIMUM
ALL CULVERTS TO BE STAKED
MINIMUM DATA TO BE PROVIDED
STAKE TO BOTTOM OF TOPSOIL

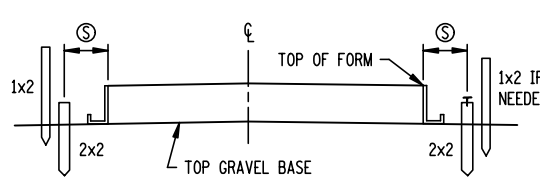
SLOPE STAKES

SINGLE ROADWAY - EXAMPLE 'B'

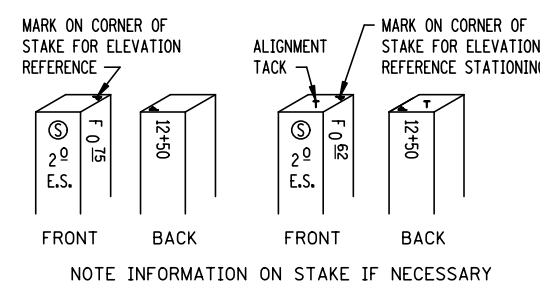


NOTES: ALL SLOPE STAKE REFERENCE DISTANCES GIVEN FROM CL.
STAKE TO BOTTOM OF TOP SOIL.
KEY STAKES: BLUE TOP SET AT R/W BOUNDARY LT. & RT.
MAY BE EXCEPTIONS TO SETTING STAKE ON R/W.

CONCRETE PAVING STATIONARY FORM



OFFSET TO CONTRACTOR'S OPTION



RECOMMENDED STAKING INTERVALS

FIGURE A

	SLOPE STAKES	SUB GRADE B.T.	CLASS MATERIAL B.T.	CONC PAVT	C & G	CL & GR LIMITS	MUCK EXC.	R/W	TEMP. EASE.
TANGENT	100	100	100	50	50	ALL CORNERS	100	ALL CORNERS	ALL CORNERS
HORIZ. CURVE									
0 - 3°	100	100	100	50	50	ALL CORNERS	100	ALL CORNERS	ALL CORNERS
OVER 3° -	100	50	50	25	25	ALL CORNERS	100	ALL CORNERS	ALL CORNERS
VERT. CURVE									
'M' 100' CHORD	100	100	100	50	50				
0 - .25									
'M' OVER .25	100	50	50	25	25				
TRAN.		50	50						

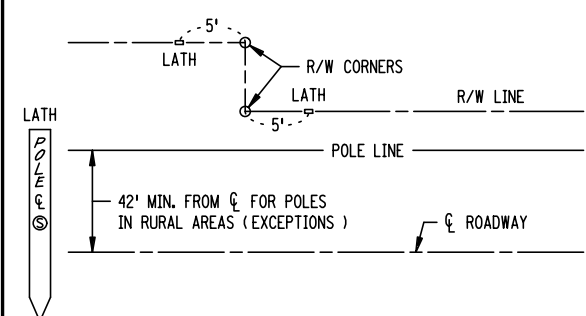
STAKING TOLERANCES (FEET)

	HORIZONTAL	VERTICAL
CONSTRUCTION LIMITS	± 1.5	
CLEARING & GRUBBING	2.0	
SLOPES STAKES	2.0	± 0.2
KEY STAKES	0.2	0.03
DRAINAGE STAKES	0.05	0.05
CURB & GUTTER	0.07	0.03
PAVING	0.05	0.03
ALIGNMENT	0.07	
UTILITY	0.10	0.05
STRUCTURAL	0.02	0.02
GUARD RAIL	0.5	
BUILDINGS	0.04	
O.H. SIGNS	0.05	0.05
MUCK EXCAVATION LIMITS	2.0	
R/W B-POINTS	0.10	
NOISE WALLS	1.0	0.5

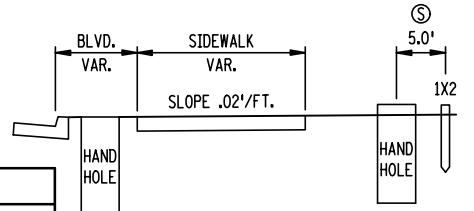
THE TOLERANCES ARE RELATIVE TO PROJECT DATUM

UTILITY (UTIL)

STAKE POLES MINIMUM OF 5 FT. FROM ANY R/W CORNER
EXAMPLE: POLE LINE = R/W LINE

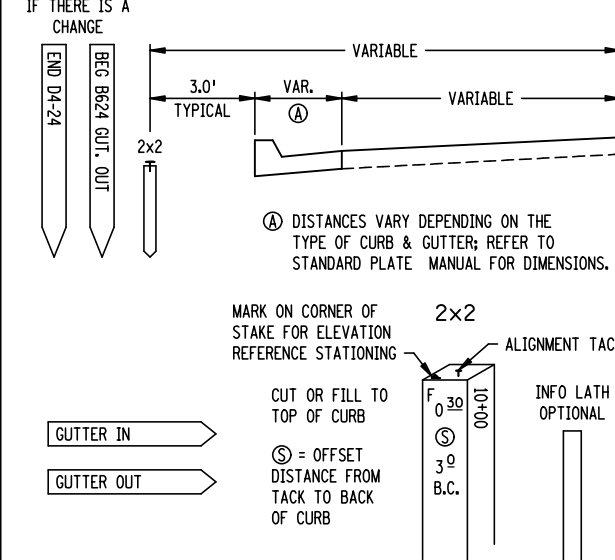


PULL BOX OR HAND HOLE



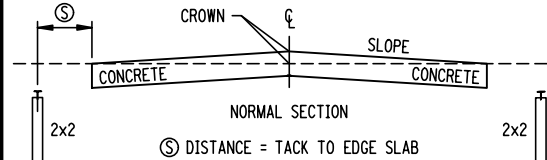
CURB & GUTTER (CURB)

OPTIONAL LATH WHEN NEEDED TO MARK TYPE OF CURB & GUTTER IF THERE IS A CHANGE

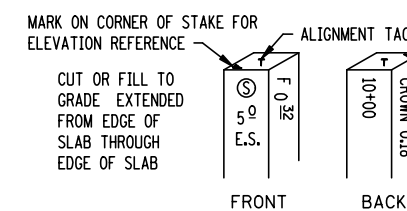
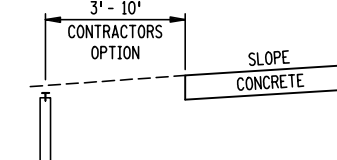


CONCRETE PAVING - SLIP FORM

OPTION A



OPTION B



DISCLAIMER

THESE STAKING INFORMATION SHEETS ARE FOR INFORMATION PURPOSES ONLY.
STAKING PROCEDURES VARY AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION BY CIRCUMSTANCES AND/OR AGREEMENTS BETWEEN SURVEY CREW AND CONTRACTOR.

REVISION:

APPROVED: 8-6-2014

DIRECTOR, OFFICE OF LAND MANAGEMENT

MINNESOTA
DEPARTMENT OF
TRANSPORTATION

STANDARD PLAN 5-297.115

1 OF 2

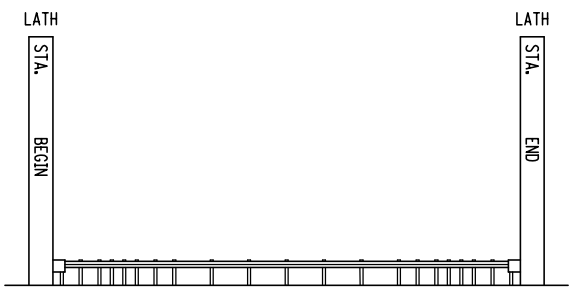
APPROVED: 8-6-2014
REVISED:

STATE PROJ. NO. 8828-139

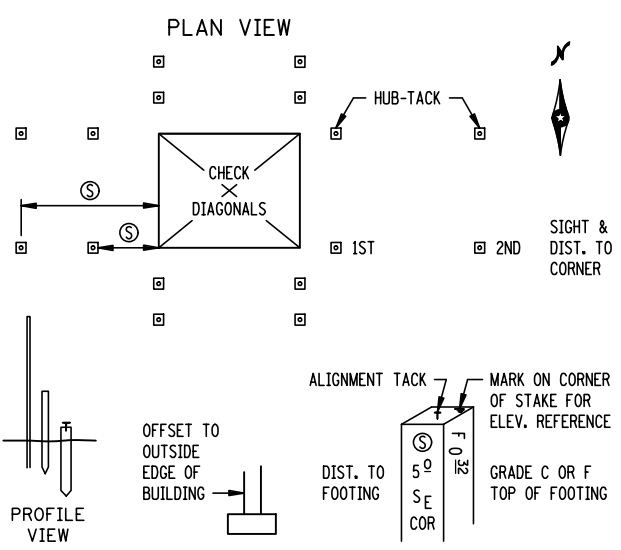
STAKING INFORMATION SHEET

SHEET NO. 41 OF 212 SHEETS

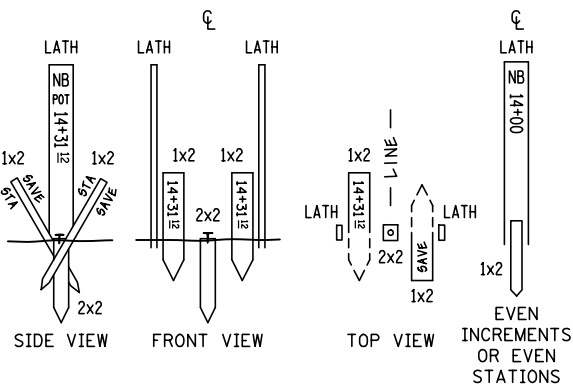
GUARDRAIL (GUARD)



BUILDING (BUILD)
FOUNDATION / FOOTING



ALIGNMENT POINTS (ALIGN)



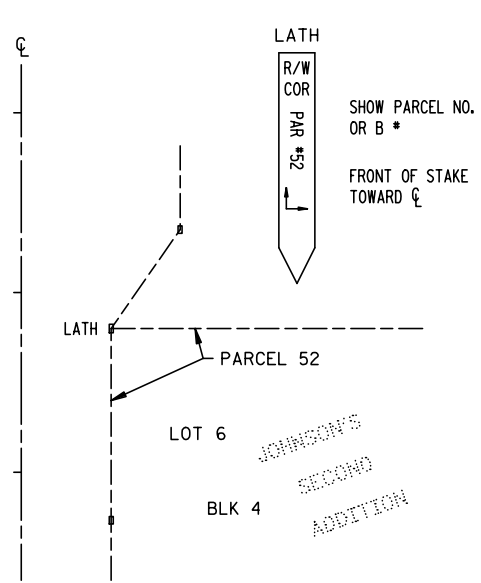
STAKE C = 2" X 2" HUB (LENGTH MAY VARY) SET AS TEMPORARY STAKE. MAY BE REPLACED BY MnDOT MARKER AFTER CONSTRUCTION IS COMPLETED.

SET AT GROUND LEVEL (TEMPORARY CONSTRUCTION STAKE).

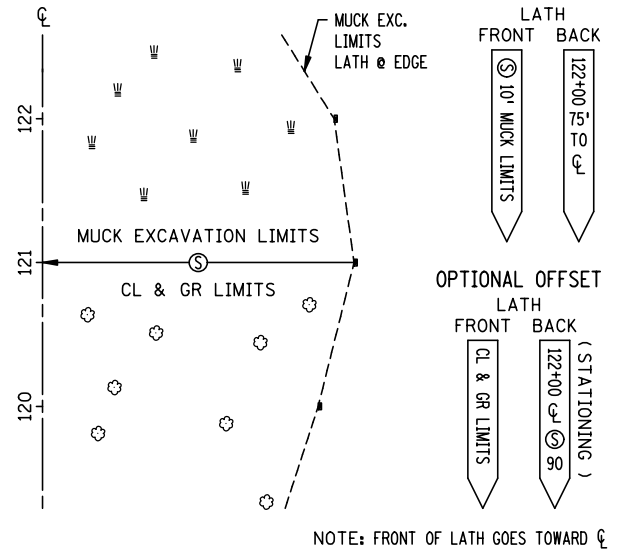
TACK SET AT ALIGNMENT POINTS.

STAKE A = GUARD STAKES SET AT ANGLE IN GROUND 6" EACH SIDE OF STAKE D, WITH STATIONING READ WHEN LOOKING UP STATION.

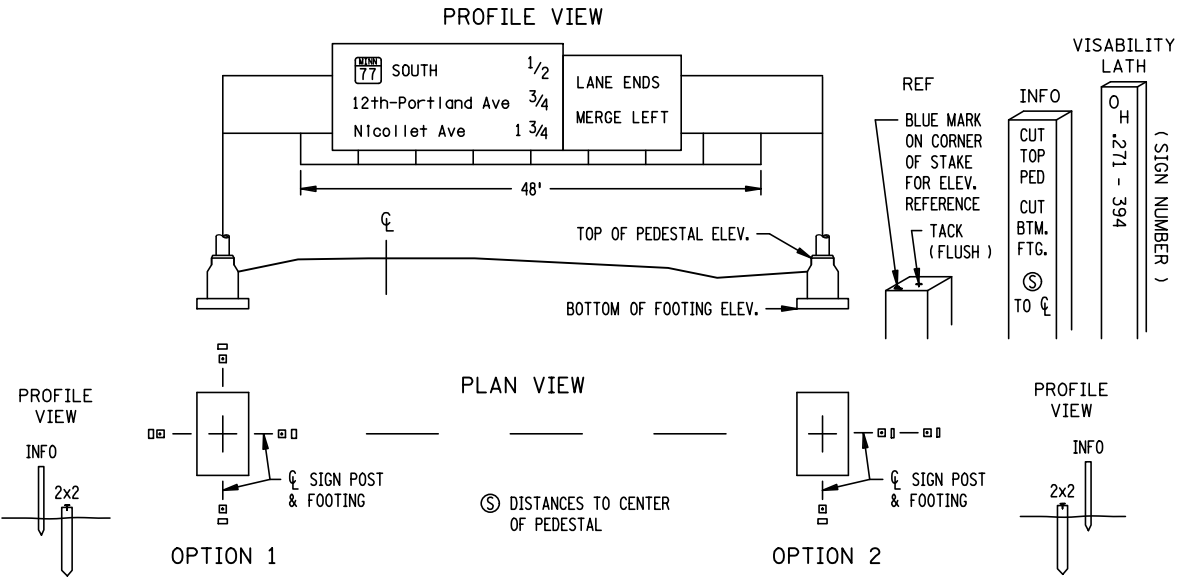
R/W & TEMP. EASEMENT (R/W)



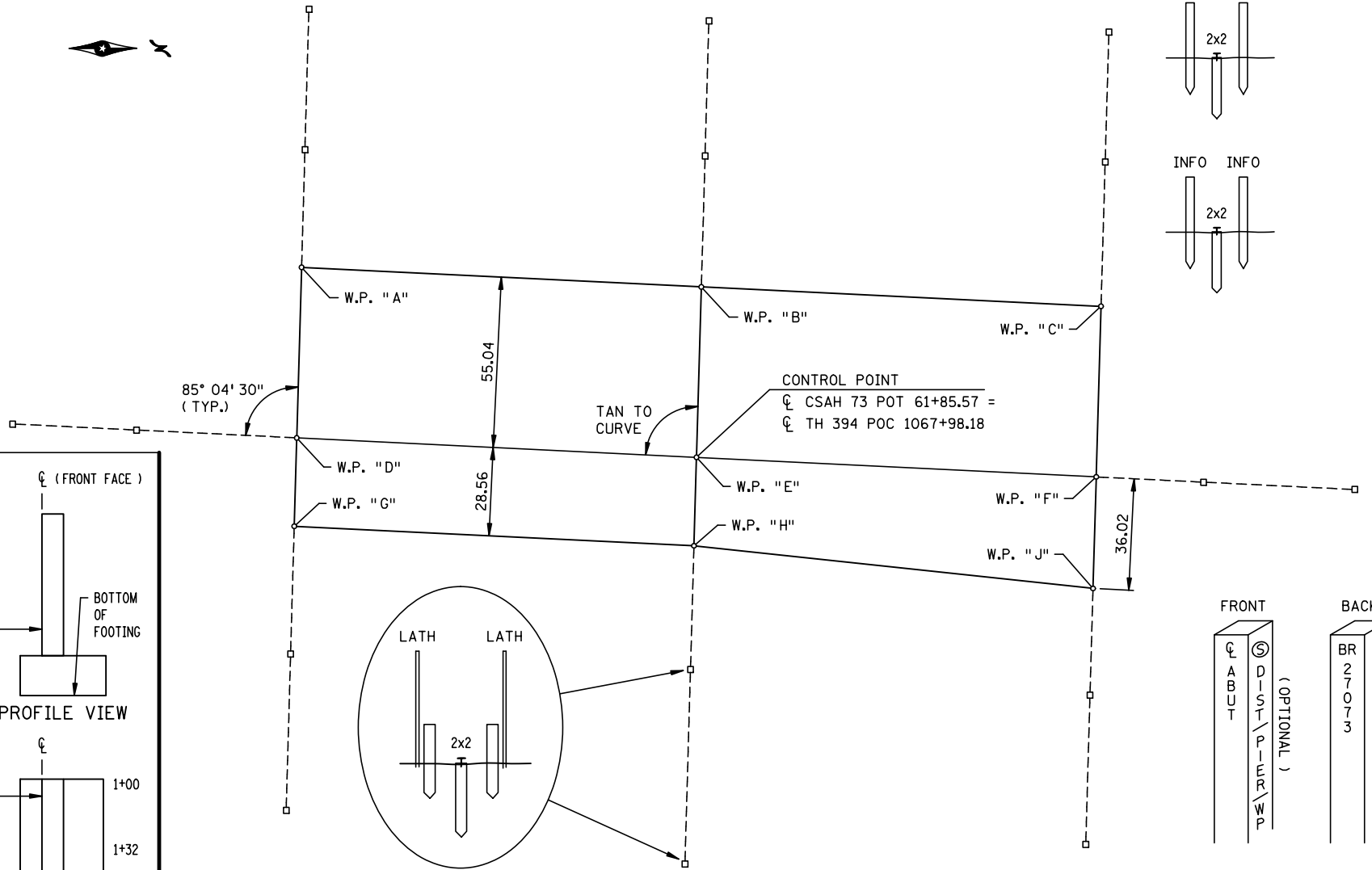
CLEAR & GRUBBING LIMITS (CLEAR)
OR MUCK EXCAVATION LIMITS (MUCK)



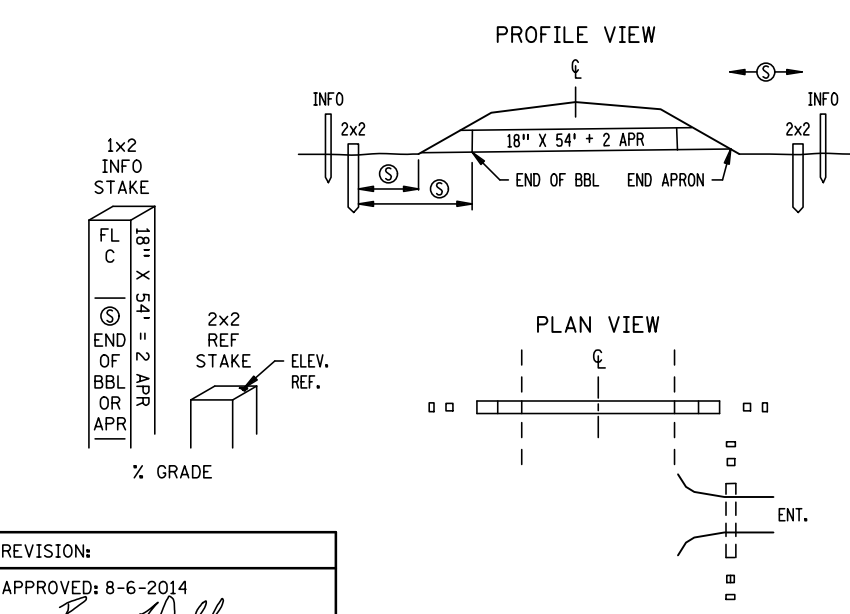
OVERHEAD SIGNS (SIGN)



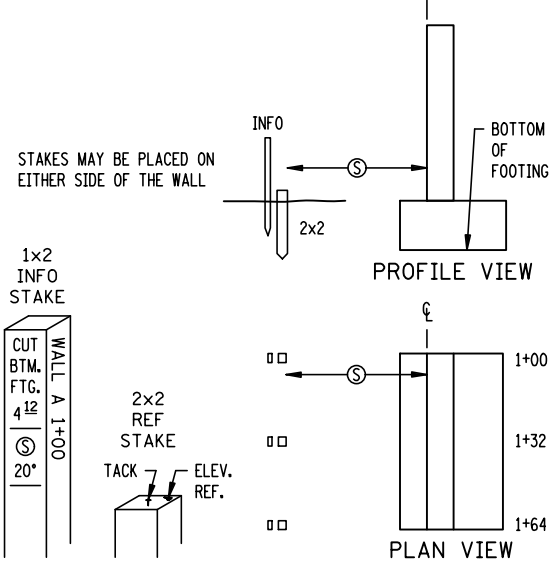
BRIDGESTAKING (BRIDGE)
WORKING POINTS LAYOUT

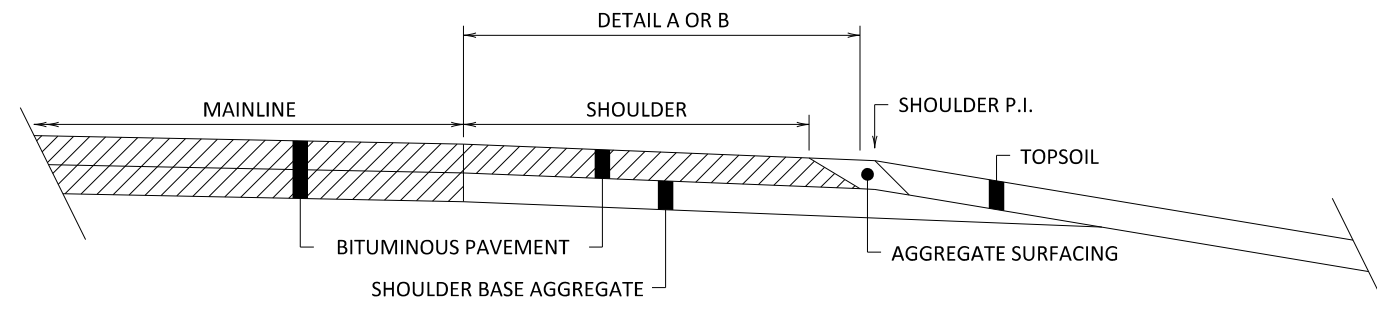


CULVERT

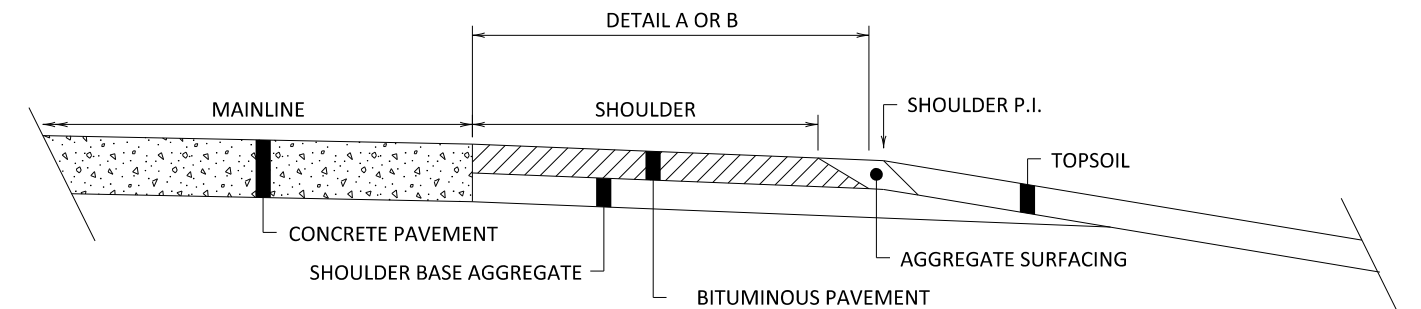


WALL

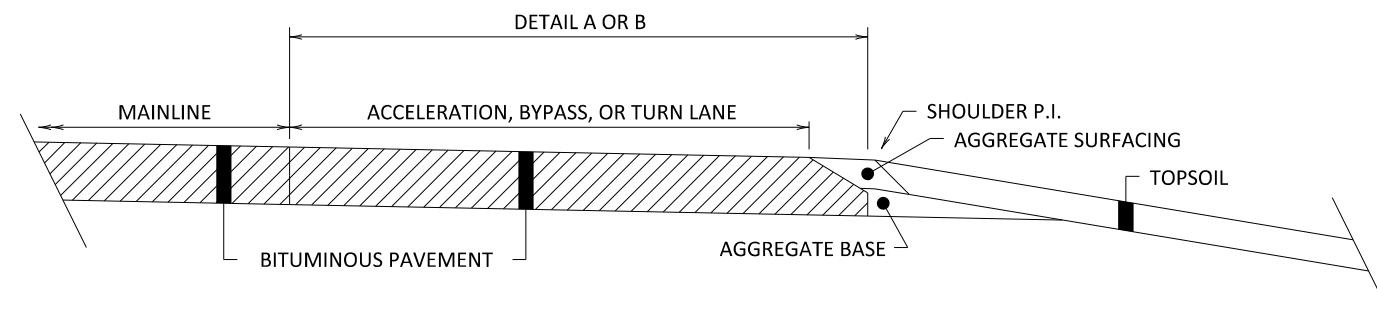




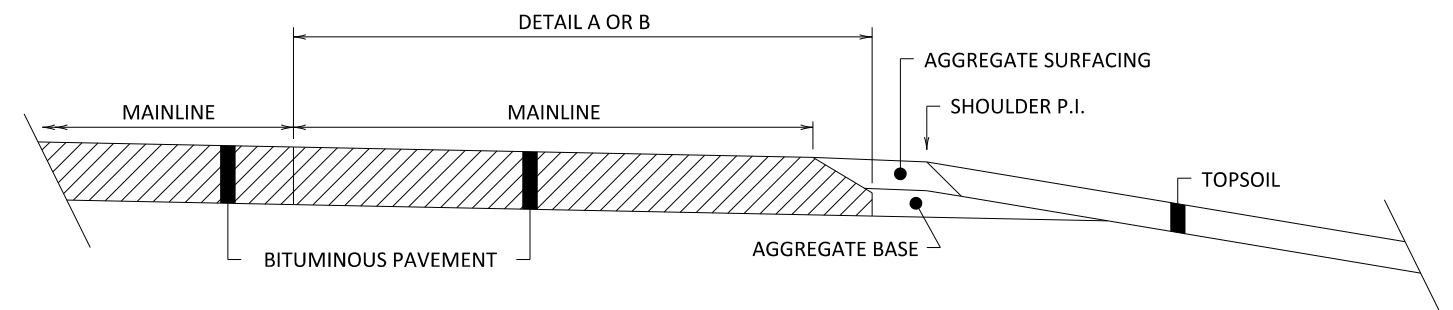
BITUMINOUS PAVEMENT WITH BITUMINOUS SHOULDERS (8' OR LESS)



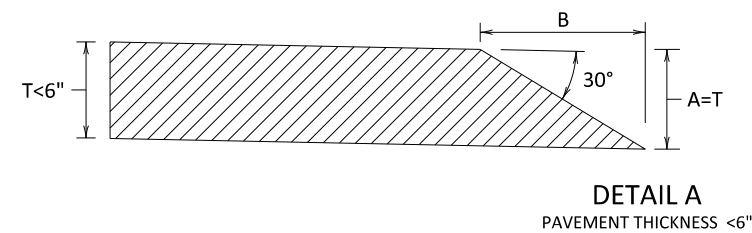
CONCRETE PAVEMENT WITH BITUMINOUS SHOULDERS (8' OR LESS)



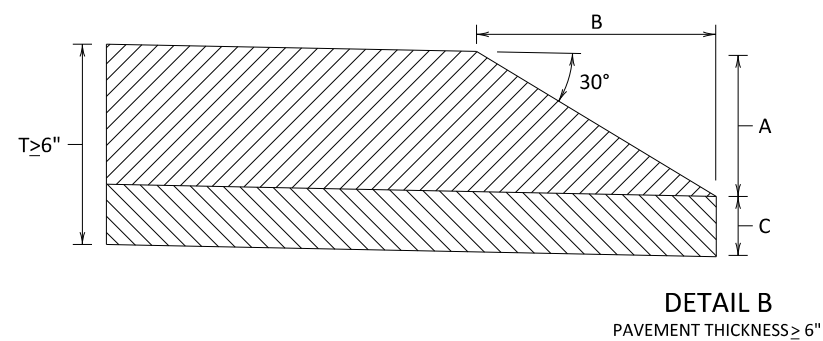
BITUMINOUS PAVEMENT WITH ACCELERATION LANES, BYPASS LANES OR TURN LANES



BITUMINOUS PAVEMENT WITH AGGREGATE SHOULDERING



FOR BITUMINOUS PAVEMENT THICKNESS < 6"	
PAVEMENT THICKNESS, T	B
2"	3.5"
3"	5.2"
4"	6.9"
5"	8.7"



FOR BITUMINOUS PAVEMENT THICKNESS ≥ 6"			
PAVEMENT THICKNESS, T	A	B	C
6"	5"	8.7"	1"
8"	5"	8.7"	3"
10"	5"	8.7"	5"
12"	5"	8.7"	7"

NOTES:

CONSTRUCT THE SAFETY EDGE ALONG ALL BITUMINOUS PAVEMENT EDGES ADJACENT TO AGGREGATE SURFACING.

THIS INCLUDES:

- MAINLINE ROADWAYS
- SHOULDERS 8' WIDE OR LESS
- RAMPS AND LOOPS
- ACCELERATION, BYPASS AND TURN TURN LANES

CONSTRUCT THE SAFETY EDGE USING A MANUFACTURED SHOE DEVICE ATTACHED TO THE PAVING MACHINE. A SINGLE-PLATE STRIKE-OFF METHOD IS NOT ALLOWED.

PROVIDE THE SAFETY EDGE ALONG THE ROADWAY THROUGH UNPAVED ENTRANCES SUCH AS FARM ACCESSES, UNPAVED DRIVEWAYS, AND GRAVEL ROAD ACCESSES. FOR PAVED PUBLIC ENTRANCES AND PAVED DRIVEWAYS, STOP THE SAFETY EDGE AND MATCH THE PROPOSED CONSTRUCTED PAVEMENT TO THE EXISTING CONDITIONS OR FOLLOW THE DESIGN PLANS. SHORT SECTIONS OF HANDWORK MAY BE NECESSARY FOR TRANSITIONS AND TURNOUTS.

SAFETY EDGE IS OPTIONAL FOR PAVED SHOULDER WIDTHS GREATER THAN 8'.

SEE TYPICAL SECTIONS FOR SAFETY EDGE PLACEMENT LOCATIONS.

THE SAFETY EDGE IS ADDED TO THE OUTSIDE OF THE REQUIRED BITUMINOUS TOP SURFACE WIDTH SHOWN IN THE PLANS.

8/20/24 PM 10:16:15
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CURT TURGEON
DIRECTOR
OFFICE OF MATERIALS
& ROAD RESEARCH



STANDARD PLAN 5-297.220

2 OF 2

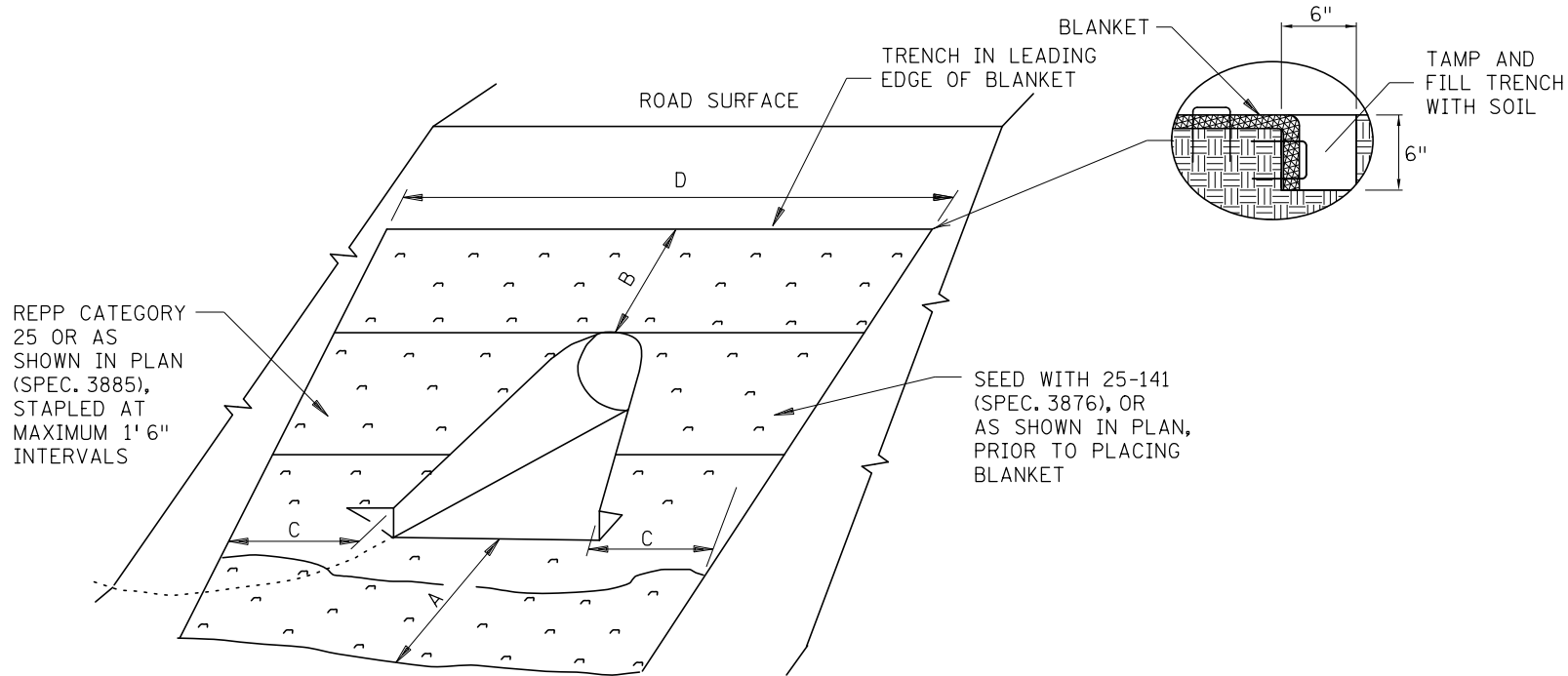
STATE DESIGN ENGINEER

APPROVED: 02-21-2024
REVISED:

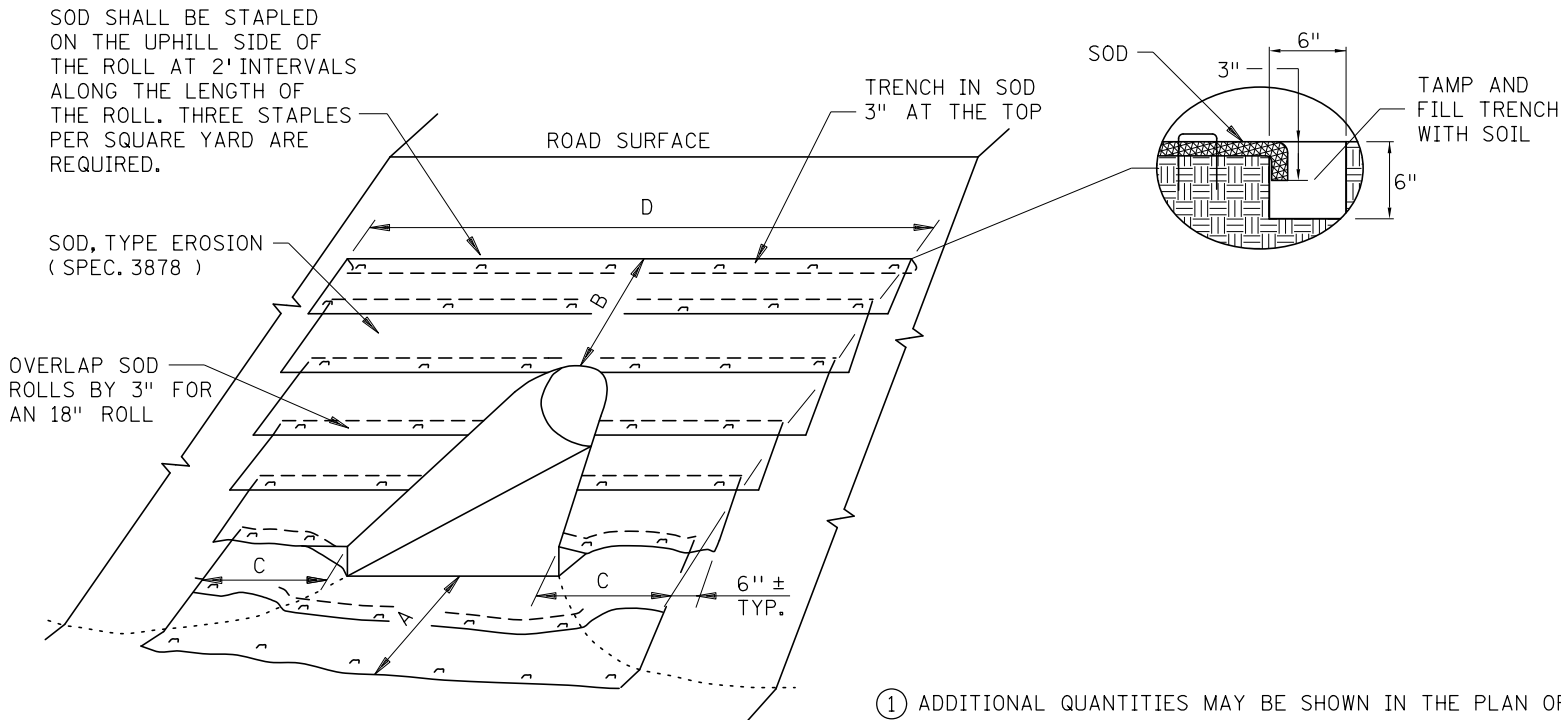
STATE PROJ. NO. 8828-139

SAFETY EDGE
BITUMINOUS PAVEMENT

SHEET NO. 43 OF 212 SHEETS



ROLLED EROSION PREVENTION PRODUCT (BLANKET) & SEED DETAIL



SODDING DETAIL

- ① ADDITIONAL QUANTITIES MAY BE SHOWN IN THE PLAN OR REQUIRED BY THE ENGINEER.
② FOR ARCH PIPE USE CLOSEST CIRCULAR PIPE DIAMETER AND APRON SLOPE. DIAMETERS LARGER THAN 72" REQUIRE SPECIAL DESIGNS.

CULVERT INLET APRON ①									
CULVERT DIAMETER ②	SOD OR REPP (SQ. YDS.)						"A"	"B"	"C"
	CIRCULAR AND ARCH PIPE METAL APRON (PLATE 3123, PLATE 3122)	CIRCULAR AND ARCH PIPE CONCRETE APRON (PLATE 3100, PLATE 3110)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:4 SLOPE (PLATE 3148)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:6 SLOPE (PLATE 3148)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:6 SLOPE (PLATE 3128)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:4 SLOPE (PLATE 3128)			
15"	9	9	8	8	N/A	N/A	3'	1.5'	3'
18"	13	12	12	14	16	N/A	3'	3'	16'
21"	14	14	14	16	18	14	3'	3'	17'
24"	16	15	16	19	21	17	3'	3'	18'
27"	N/A	20	N/A	N/A	N/A	N/A	3'	4.5'	3'
30"	23	22	25	30	32	N/A	3'	4.5'	22'
36"	34	34	39	48	51	37	4.5'	4.5'	27'
42"	43	40	51	64	N/A	N/A	4.5'	6'	30'
48"	54	50	66	82	N/A	N/A	4.5'	7.5'	34'
54"	65	58	81	102	N/A	N/A	4.5'	9'	37'
60"	69	59	91	115	N/A	N/A	4.5'	9'	39'
66"	69	63	N/A	N/A	N/A	N/A	4.5'	9'	39'
72"	78	72	99	122	N/A	N/A	4.5'	10.5'	41'

CULVERT OUTLET APRON ①									
CULVERT DIAMETER ②	SOD OR REPP (SQ. YDS.)						"A"	"B"	"C"
	CIRCULAR AND ARCH PIPE METAL APRON (PLATE 3123, PLATE 3122)	CIRCULAR AND ARCH PIPE CONCRETE APRON (PLATE 3100, PLATE 3110)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:4 SLOPE (PLATE 3148)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:6 SLOPE (PLATE 3148)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:6 SLOPE (PLATE 3128)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:4 SLOPE (PLATE 3128)			
15"	10	10	9	10	N/A	N/A	4.5'	1.5'	13'
18"	13	13	12	14	15	N/A	6'	1.5'	14'
21"	16	14	16	18	19	15	6'	1.5'	15'
24"	18	18	18	21	22	18	7.5'	1.5'	16'
27"	N/A	19	N/A	N/A	N/A	N/A	7.5'	1.5'	17'
30"	23	23	24	28	29	N/A	9'	1.5'	18'
36"	36	35	38	47	48	37	10.5'	1.5'	23'
42"	43	40	47	58	N/A	N/A	12'	1.5'	25'
48"	50	46	57	70	N/A	N/A	13.5'	1.5'	27'
54"	57	50	67	84	N/A	N/A	15'	1.5'	29'
60"	74	63	90	113	N/A	N/A	16.5'	1.5'	33'
66"	75	67	N/A	N/A	N/A	N/A	16.5'	1.5'	33'
72"	77	70	92	114	N/A	N/A	16.5'	1.5'	34'

NOTES:

REPP = ROLLED EROSION PREVENTION PRODUCT.

AREA SHOWN IN SQUARE YARDS IS FOR ONE CULVERT END.

QUANTITIES ARE CALCULATED TO INCLUDE SOD REQUIRED TO PROVIDE A 3" OVERLAP ON ALL 18" WIDE ROLLS. THIS ALLOWS FOR SHRINKAGE OF THE SOD.



FOR PIPE ARCHES USE EQUIVALENT PIPE DIAMETER TO APPROXIMATE AREA.

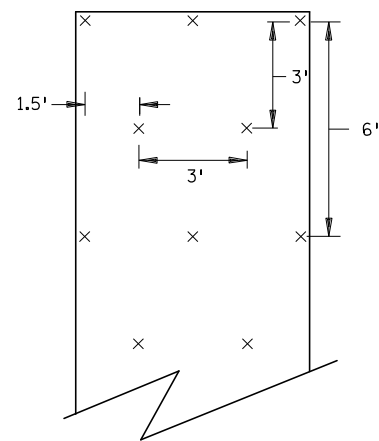
FOR CORRUGATED POLYETHYLENE PIPE METAL APRON (PLATE 3129), USE THE METAL APRON COLUMN (PLATE 3123).

AREAS AND DIMENSIONS ARE APPROXIMATE AND ARE BASED ON APRON SIDE SLOPES OF NO STEEPER THAN 1:2, UNLESS INDICATED AS FOR SAFETY APRONS.

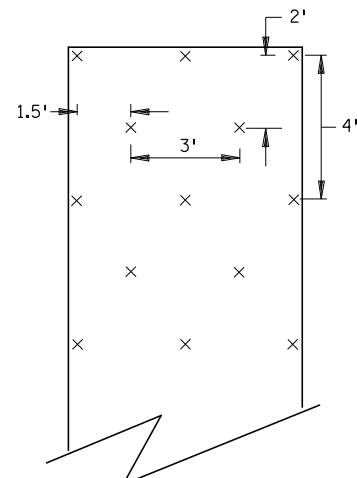
CARE SHOULD BE TAKEN IN SELECTING SOD TO STABILIZE THE APRON. RIP-RAP SHOULD BE USED FOR FLOW VELOCITIES GREATER THAN 6 FPS.

REVISION:
APPROVED: JANUARY 8, 2020 <i>Marni Karnowski</i> MARNI KARNOWSKI CHIEF ENVIRONMENTAL OFFICER

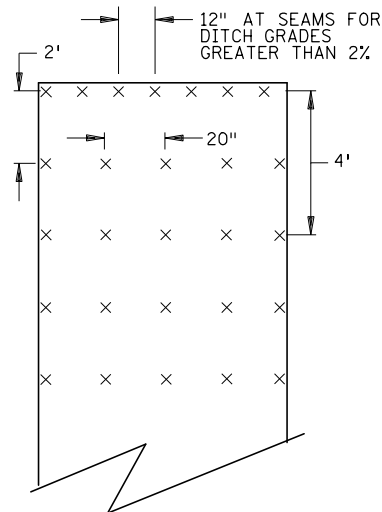
	STANDARD PLAN 5-297.404	2 OF 3	PERMANENT EROSION CONTROL TURF ESTABLISHMENT DETAIL AT CULVERT ENDS	
	 THOMAS STYRBICKI STATE DESIGN ENGINEER	APPROVED: 1-8-2020 REVISED:		
STATE PROJ. NO. 8828-139			SHEET NO. 44 OF 212 SHEETS	



SLOPES FLATTER THAN 1:2
120 STAPLES PER 100 SQ YD

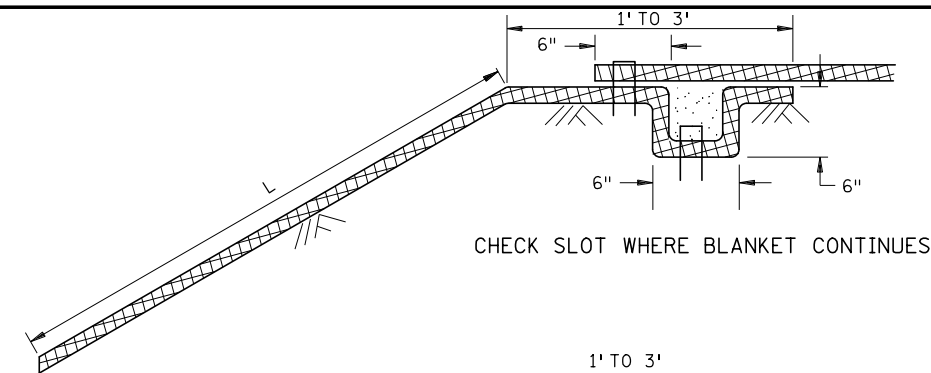


SLOPES 1:2 TO 1:1
170 STAPLES PER 100 SQ YD

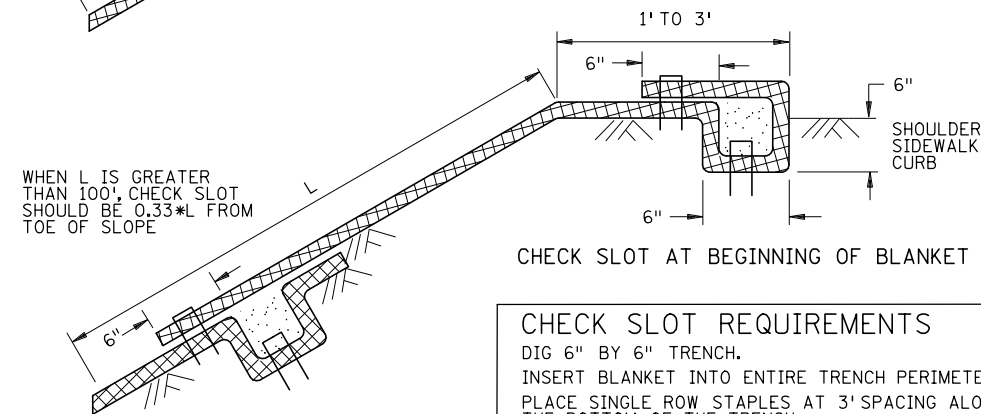


CHANNEL AND DITCH APPLICATIONS
350 STAPLES PER 100 SQ YD

BLANKET STAPLE PATTERN

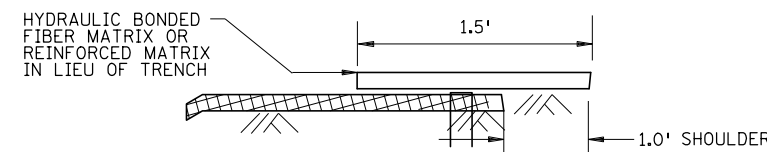


CHECK SLOT WHERE BLANKET CONTINUES



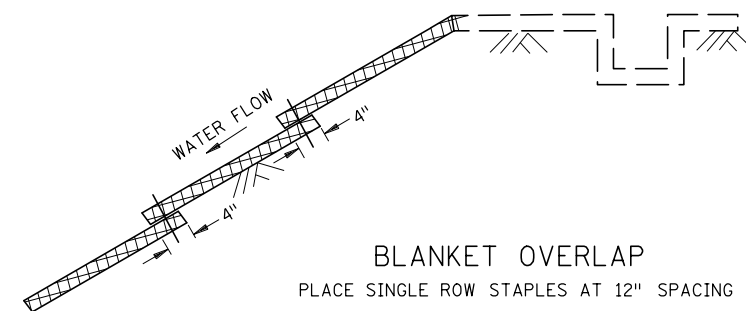
CHECK SLOT AT BEGINNING OF BLANKET

CHECK SLOT REQUIREMENTS
DIG 6" BY 6" TRENCH.
INSERT BLANKET INTO ENTIRE TRENCH PERIMETER.
PLACE SINGLE ROW STAPLES AT 3' SPACING ALONG THE BOTTOM OF THE TRENCH.
BACKFILL TRENCH WITH SOIL AND TAMP.
PLACE SINGLE ROW STAPLES AT 3' SPACING ON OVERLAP.



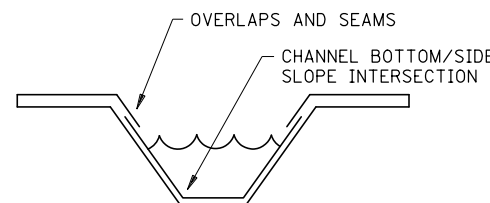
CHECK SLOT ALTERNATIVE
PLACE SINGLE ROW STAPLES AT 12" SPACING

CHECK SLOT DETAILS



BLANKET OVERLAP
PLACE SINGLE ROW STAPLES AT 12" SPACING

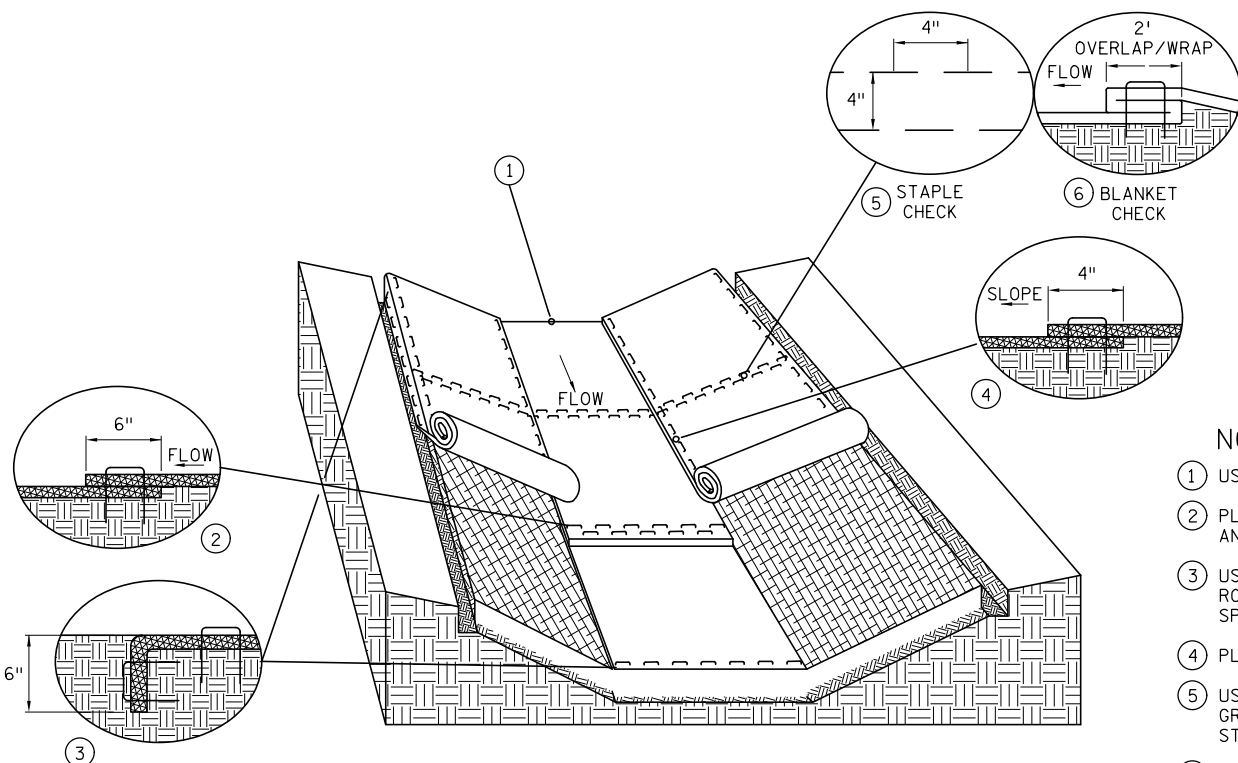
GENERAL BLANKET INSTALLATION REQUIREMENTS
REPP = ROLLED EROSION PREVENTION PRODUCT.
PREPARE SOIL AS PER SPECIFICATION 2574.
LAY PARALLEL OR PERPENDICULAR TO THE DIRECTION OF WATER FLOW.
OVERLAP ADJACENT STRIP EDGES A MINIMUM OF 4".
OVERLAP BLANKET 6" (MINIMUM) AT EACH END. OVERLAP BOTTOM END OF UPPER BLANKET OVER TOP END OF LOWER BLANKET. STAPLE ALONG OVERLAP EVERY 1.5'.
THE UPPERMOST BLANKET OF ALL SLOPE APPLICATIONS MUST START IN A CHECK SLOT. IF SLOPE LENGTH (L) IS 100' OR GREATER, INSERT BLANKET INTO A CHECK SLOT 1/2 FROM THE BOTTOM OF THE SLOPE.



DITCH BLANKET CRITICAL POINTS ⑦

NOTES:

- ① USE CHECK SLOT DETAIL (NO ALTERNATES).
- ② PLACE DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER.
- ③ USE 6" X 6" TRENCH TO PLACE BLANKET. PLACE SINGLE ROW OF STAPLES ON TOP AND TRENCH SIDES AT 12" SPACING. BACKFILL TRENCH WITH SOIL AND TAMP.
- ④ PLACE SINGLE ROW OF STAPLES AT 12" SPACING.
- ⑤ USE STAPLE CHECK FOR CHANNEL SLOPES LESS THAN 2.5%. GRADE AT 100' INTERVALS. PLACE DOUBLE ROW OF STAPLES STAGGERED 4" APART AND AT 4" SPACING.
- ⑥ USE BLANKET CHECKS FOR THE FOLLOWING SLOPES:
2.5%-3% 100' INTERVALS
3%-5% 50' INTERVALS
5%-7% 25' INTERVALS
- ⑦ CRITICAL POINTS SHALL BE SECURED WITH PROPER STAPLE PATTERNS.



DITCH BLANKET STAPLE DETAIL

REVISION:

APPROVED: JANUARY 8, 2020

Marni Karnowski
MARNI KARNOWSKI
CHIEF ENVIRONMENTAL OFFICER

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MINNESOTA
DEPARTMENT
OF
TRANSPORTATION

STANDARD PLAN 5-297.404

3 OF 3

APPROVED: 1-8-2020
REVISED:

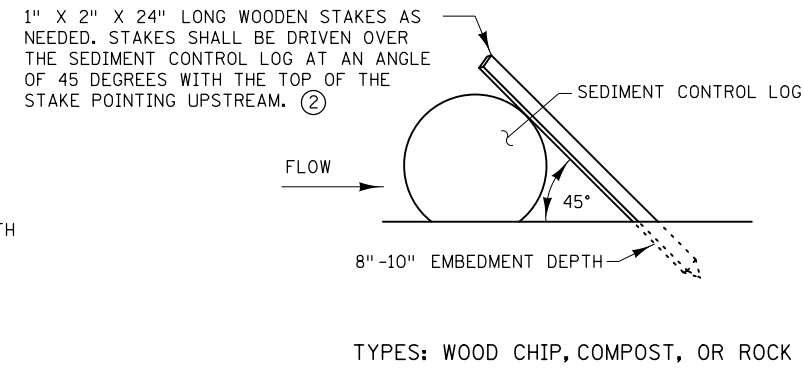
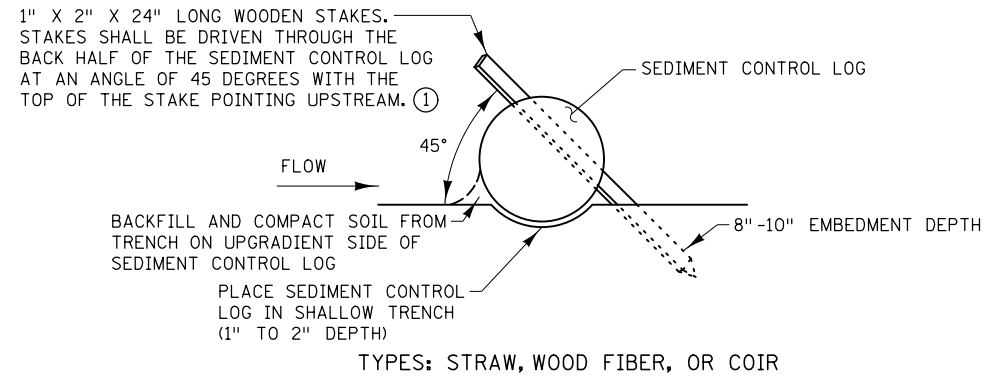
Thomas Styrbicki
THOMAS STYRBICKI
STATE DESIGN ENGINEER

STATE PROJ. NO. 8828-139

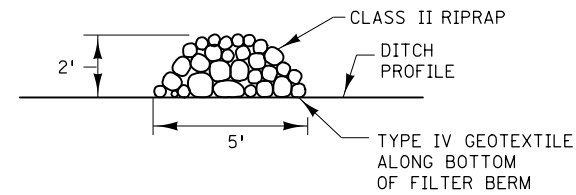
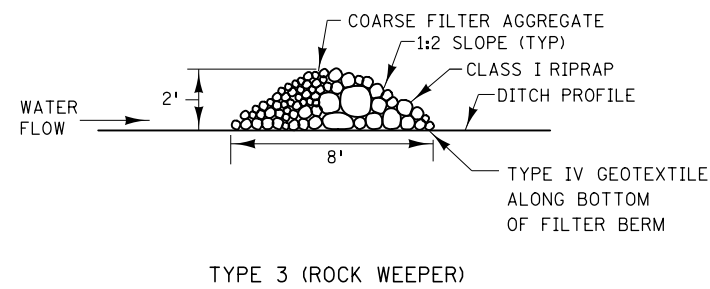
PERMANENT EROSION CONTROL
REPP (BLANKET) STAPLE PATTERN FOR SLOPES

SHEET NO. 45 OF 212 SHEETS

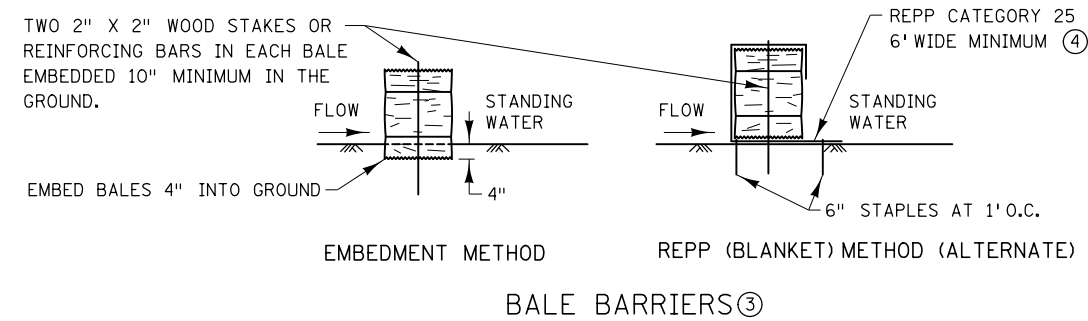
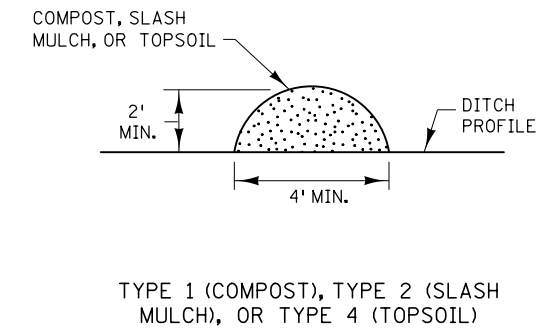
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SEDIMENT CONTROL LOGS



FILTER BERMS



NOTES:

REPP = ROLLED EROSION PREVENTION PRODUCT.

SEE SPECS. 2573, 3149, 3874, 3882, 3885, 3886, AND 3897.

- ① SPACE BETWEEN STAKES SHALL BE A MAXIMUM OF 1' FOR DITCH CHECKS OR 2' FOR OTHER APPLICATIONS.
- ② PLACE STAKES AS NEEDED TO PREVENT MOVEMENT OF SEDIMENT CONTROL LOGS PLACED ON SLOPES OR AS NEEDED DUE TO OTHER FACTORS. STAKES SHALL BE INCIDENTAL.
- ③ TO BE USED FOR CRITICAL PERIMETER CONTROL AREAS WHERE STANDING WATER OCCURS (6" MAXIMUM DEPTH). BALES SHALL CONSIST OF TYPE 1 MULCH OF APPROXIMATELY 14" X 18" X 36" LONG. BALES SHALL BE PLACED ON EDGE AND BUTTED TIGHT TO ADJACENT BALES.
- ④ INSTEAD OF TRENCHING, PLACE BALE ON THE REPP (BLANKET) AND WRAP BLANKET AROUND THE BALE. PLACE STAKE THROUGH BALE AND BLANKET.

REVISION:

APPROVED: JANUARY 8, 2020

Marni Karnowski

MARNI KARNOWSKI
CHIEF ENVIRONMENTAL OFFICER



STANDARD PLAN 5-297.405

2 OF 8

Tom Styrbicki
THOMAS STYRBICKI
STATE DESIGN ENGINEER

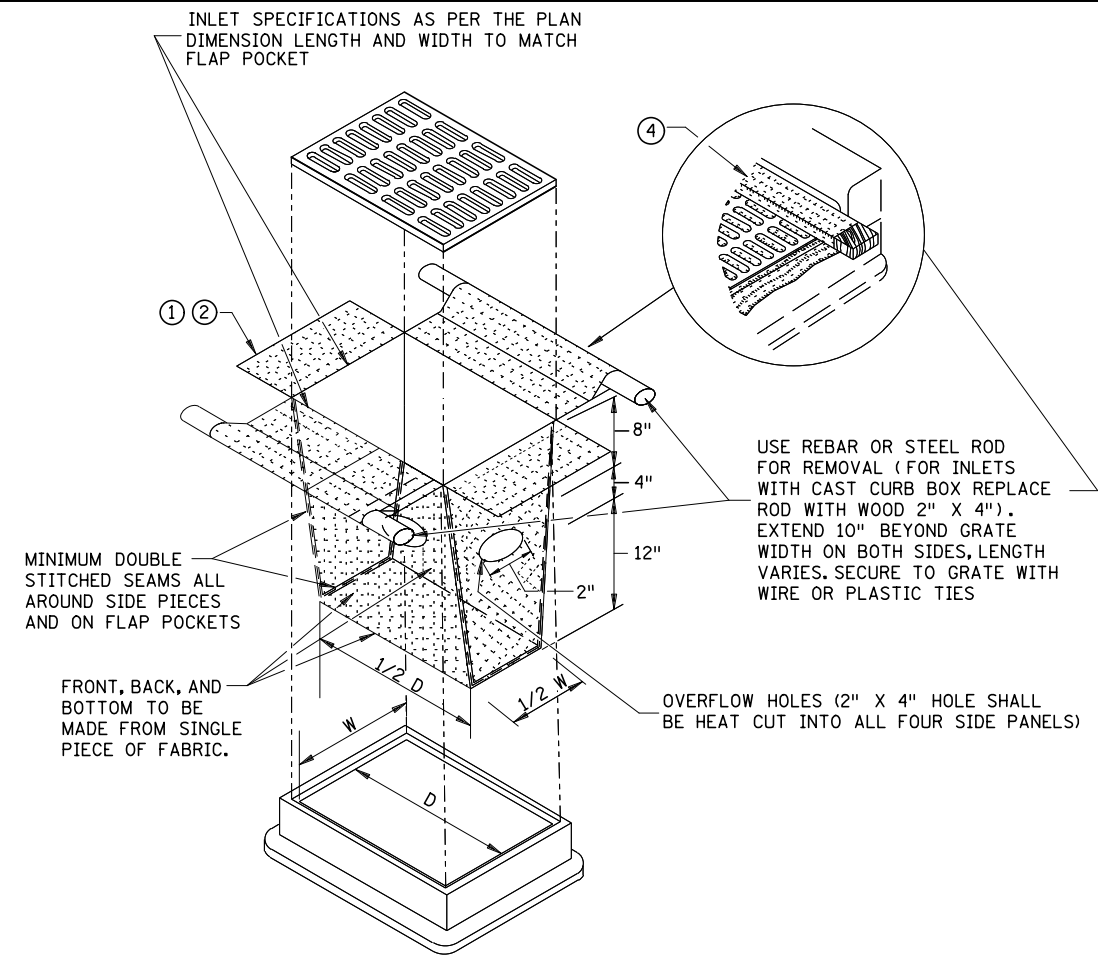
APPROVED: 1-8-2020
REVISED:

STATE PROJ. NO. 8828-139

TEMPORARY SEDIMENT CONTROL

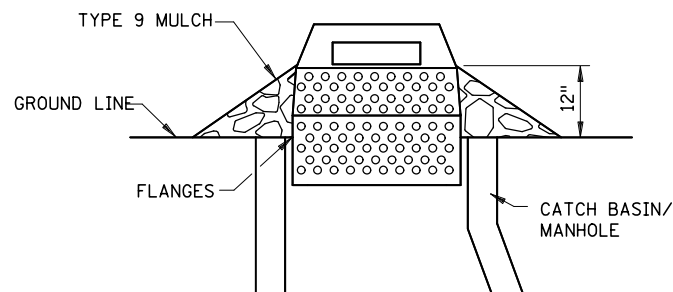
FILTER BERMS, SEDIMENT CONTROL LOGS, AND BALE BARRIERS

SHEET NO. 46 OF 212 SHEETS



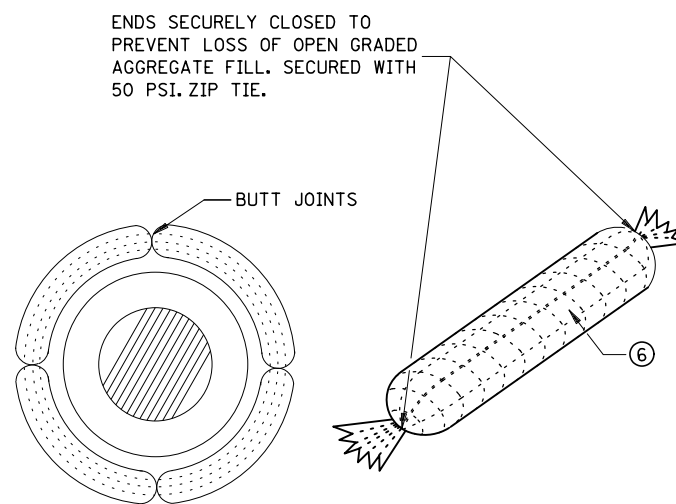
FILTER BAG INSERT ③

(CAN BE INSTALLED IN ANY INLET TYPE
WITH OR WITHOUT A CURB BOX)

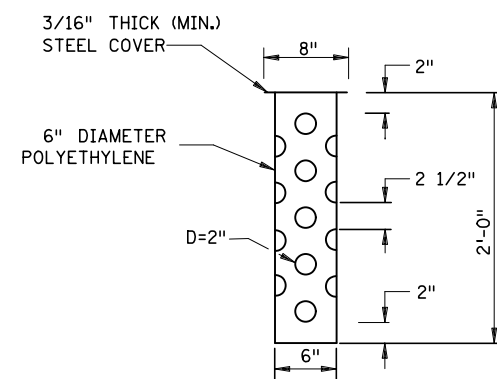


SEDIMENT CONTROL INLET HAT

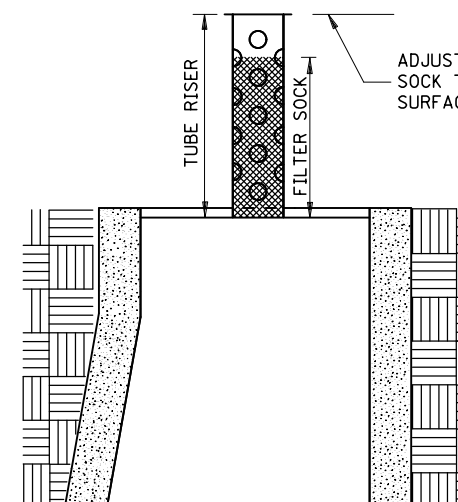
NOTE:
THE SEDIMENT CONTROL BARRIER SHALL BE A METAL
OR PLASTIC/POLYETHYLENE RISER SIZED TO FIT INSIDE
THE CATCH BASIN/MANHOLE; HAVE PERFORATIONS TO ALLOW
FOR WATER INFILTRATION; HAVE AN OVERFLOW OPENING,
FLANGES AND A LID/COVER.



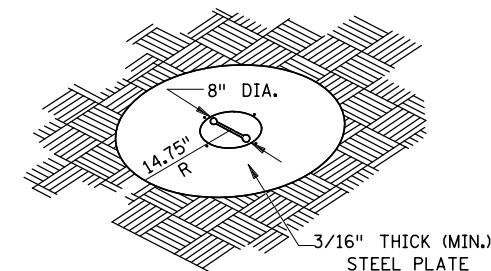
ROCK LOG/COMPOST LOG



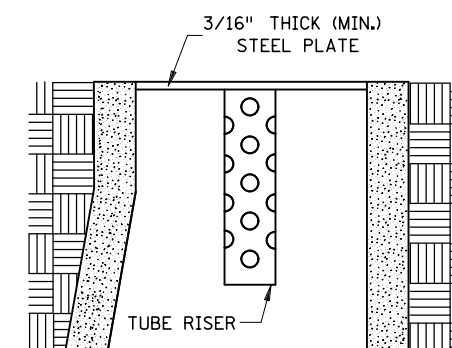
TUBE RISER



**SECTION
(UP POSITION)**

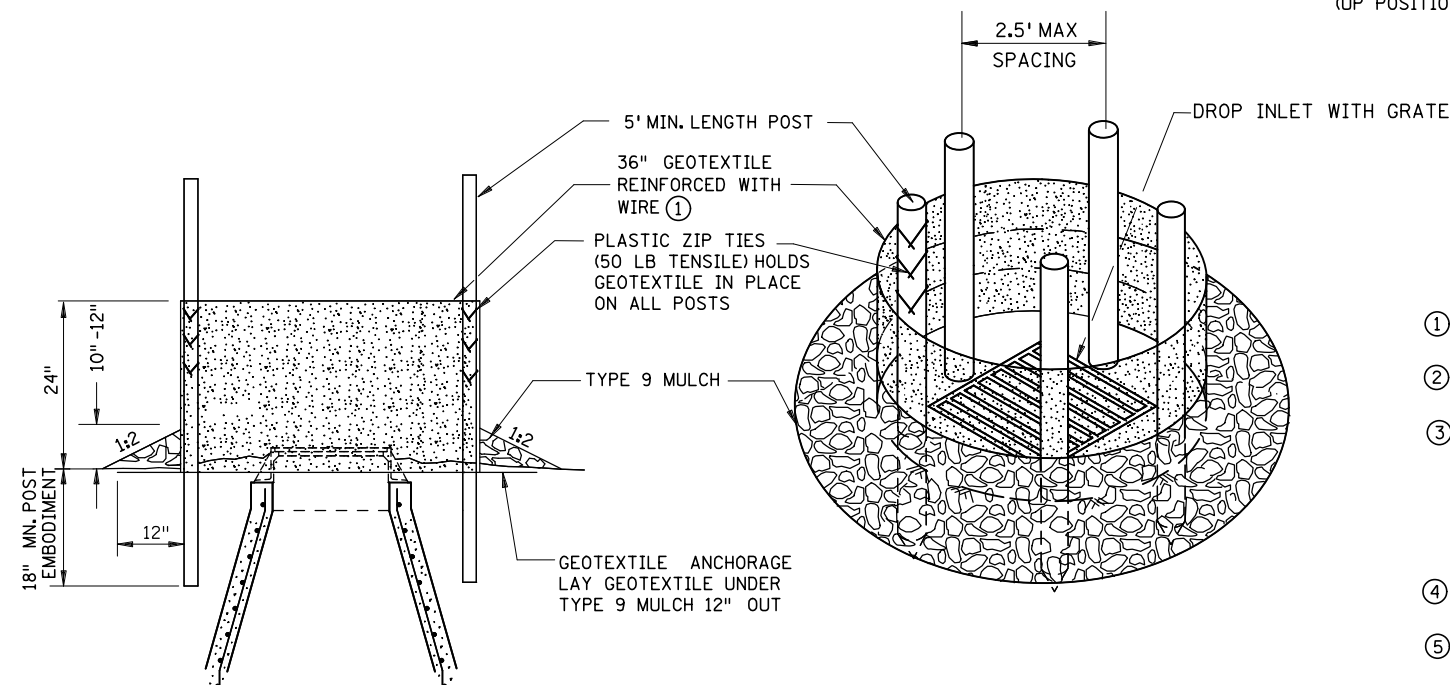


PERSPECTIVE VIEW



**SECTION
(DOWN POSITION)**

POP-UP HEAD



SILT FENCE RING AND ROCK FILTER BERM

USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 OR LESS

NOTES:

SEE SPECS. 2573, 3137, & 3886.

DEVICES MUST BE ADJUSTED ACCORDINGLY AS TO NOT CAUSE FLOODING ON ROADWAY
THAT WOULD IMPEDE TRAFFIC FLOW.

- ① ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.
- ② FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ③ INSTALLATION NOTES:
DO NOT PLACE FILTER BAG INSERT IN INLETS SHALLOWER THAN 30 INCHES, MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. THE PLACED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE OF 3 INCHES BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES. WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3 INCH SIDE CLEARANCE.
- ④ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2 INCH X 4 INCH OR USE A ROCK SOCK OR SAND BAGS IN PLACE OF THE FLAP POCKETS.
- ⑤ SOCK HEIGHT MUST NOT BE SO HIGH AS TO SLOW DOWN WATER FILTRATION TO CAUSE FLOODING OF THE ROADWAY.
- ⑥ GEOTEXTILE SOCK BETWEEN 4-10 FEET LONG AND 4-6 INCH DIAMETER. SEAM TO BE JOINED BY TWO ROWS OF STITCHING WITH A PLASTIC MESH BACKING OR PROVIDE A HEAT BONDED SEAM (OR APPROVED EQUIVALENT). FILL ROCK LOG WITH OPEN GRADED AGGREGATE CONSISTING OF SOUND DURABLE PARTICLES OF COARSE AGGREGATE CONFORMING TO SPEC. 3137 TABLE 3137-1; CA-3 GRADATION.

REVISION:

APPROVED: 2-28-2017

Dr. P. Elv
CHIEF ENVIRONMENTAL OFFICER



STANDARD PLAN 5-297.405

4 OF 8

Tom Sh
STATE DESIGN ENGINEER

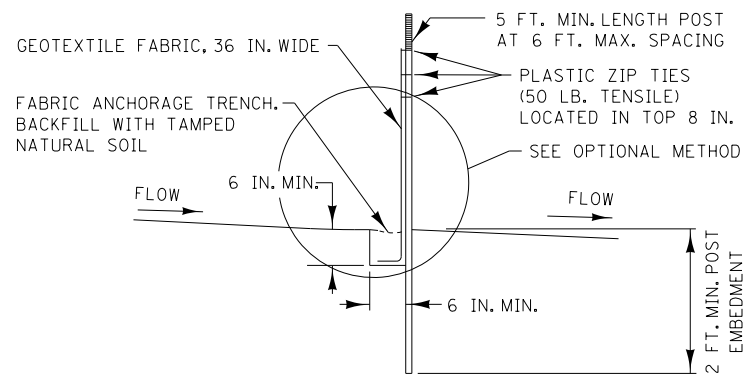
APPROVED: 2-28-2017
REVISED:

STATE PROJ. NO. 8828-139

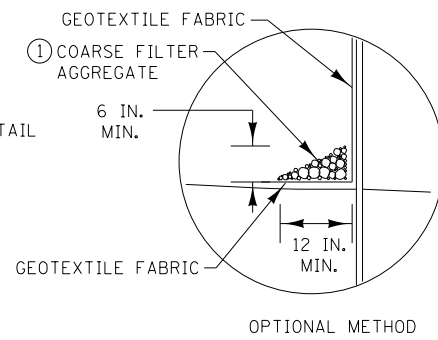
TEMPORARY SEDIMENT CONTROL

STORM DRAIN INLET PROTECTION

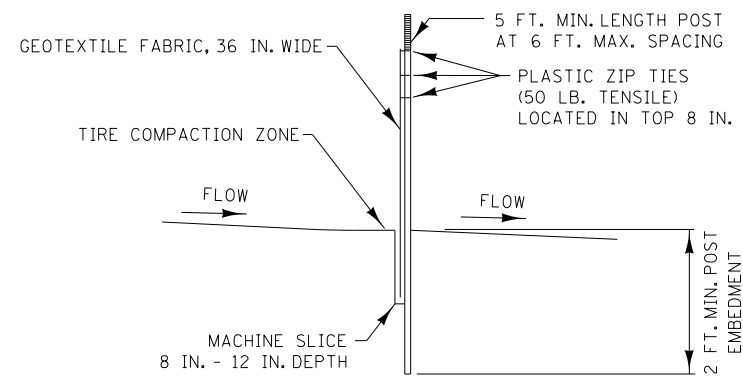
SHEET NO. 47 OF 212 SHEETS



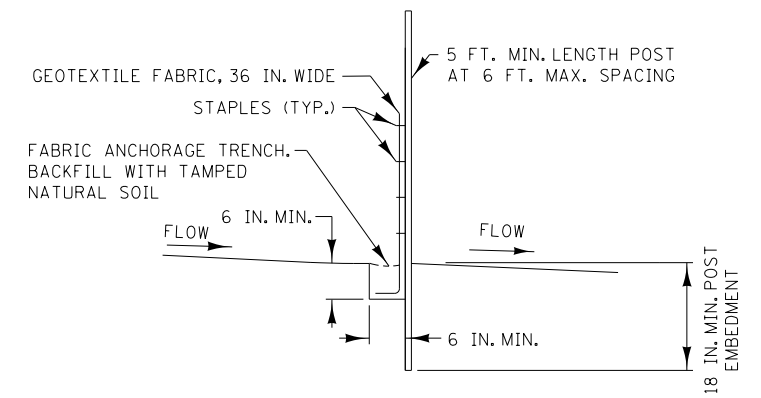
SILT FENCE TYPE HI ②
(HAND INSTALLED)



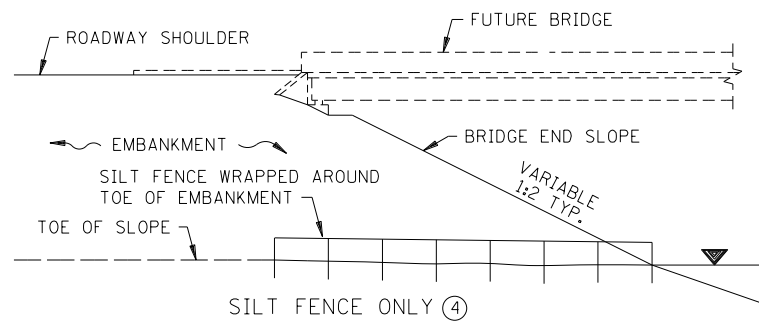
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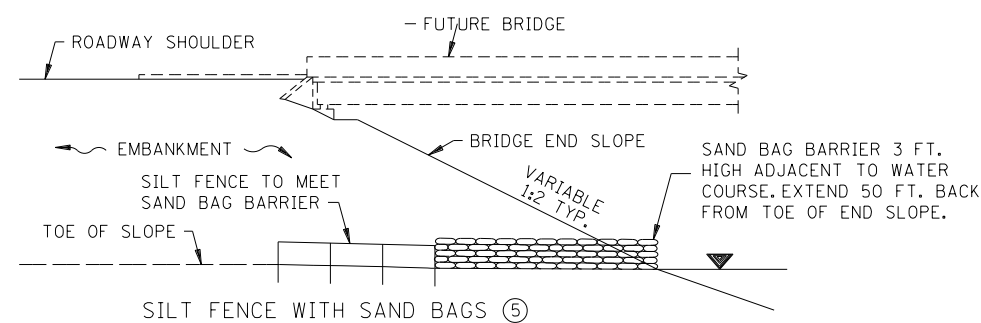
SILT FENCE TYPE MS ②
(MACHINE SLICED)



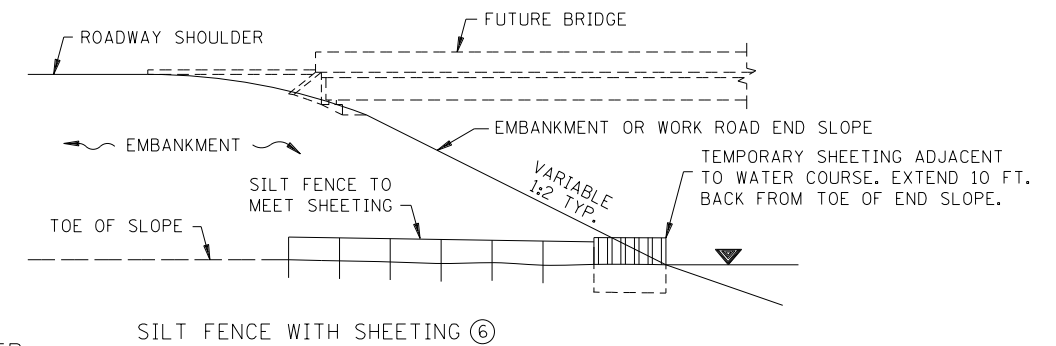
SILT FENCE TYPE PA ③
(PREASSEMBLED)



SILT FENCE ONLY ④

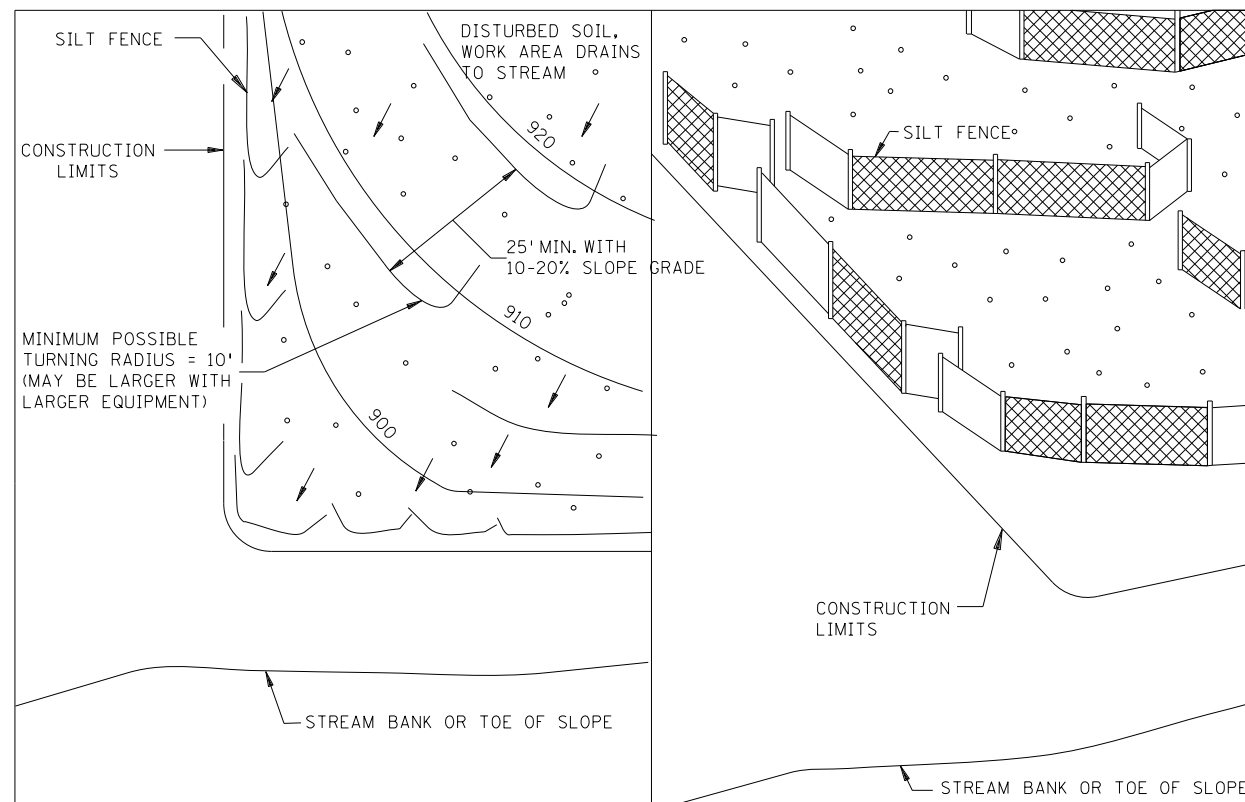


SILT FENCE WITH SAND BAGS ⑤



SILT FENCE WITH SHEETING ⑥

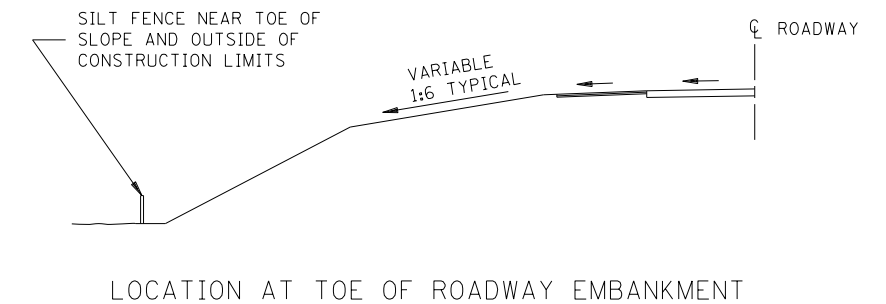
INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER



PLAN VIEW

J-HOOK INSTALLATION

PERSPECTIVE VIEW



LOCATION AT TOE OF ROADWAY EMBANKMENT

NOTES:

SEE SPECS. 2573, 3149 & 3886.

- ① COARSE FILTER AGGREGATE (SPEC. 3149) SHALL BE INCIDENTAL.
- ② TO PROTECT AREAS FROM SHEET FLOW, MAXIMUM CONTRIBUTING AREA: 1 ACRE.
- ③ TO PROTECT AREAS FROM SHEET FLOW, MAXIMUM CONTRIBUTING AREA: 0.25 ACRE.
- ④ WATER COURSE FLOW VELOCITY: STANDING.
CONTRIBUTING SLOPE AREA: 1/2 ACRE.
- ⑤ WATER COURSE FLOW VELOCITY: 1 TO 7 FT./SEC.
CONTRIBUTING SLOPE AREA: 1 ACRE.
- ⑥ WATER COURSE FLOW VELOCITY: 8 TO 15 FT./SEC.
CONTRIBUTING SLOPE AREA: 3 ACRES.

LEAD
EXPERT
OFFICE

LYNN CLARKOWSKI
CHIEF ENVIRONMENTAL OFFICER
OFFICE OF
ENVIRONMENTAL STEWARDSHIP

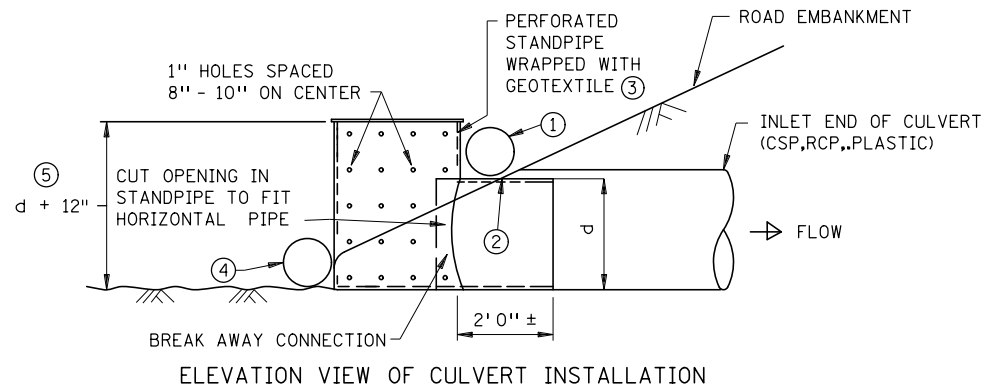
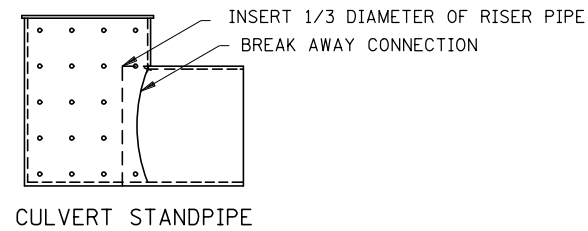
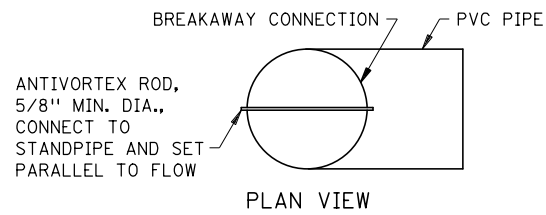
TEMPORARY SEDIMENT CONTROL
SILT FENCE

APPROVED: 02-28-2017
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

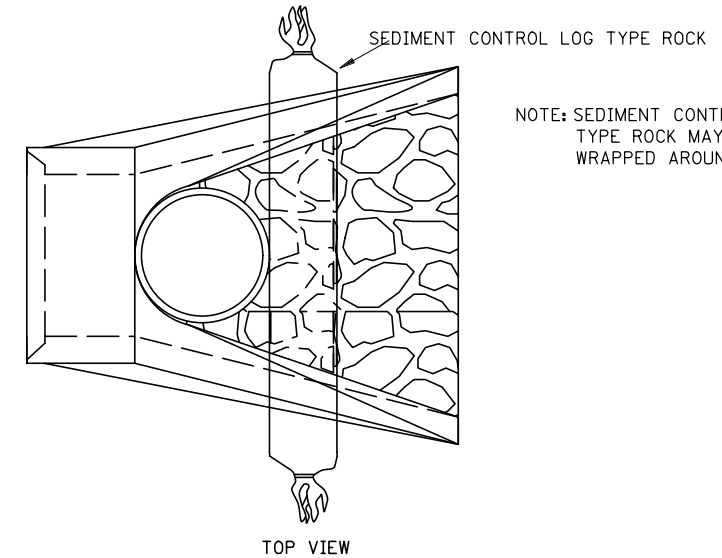
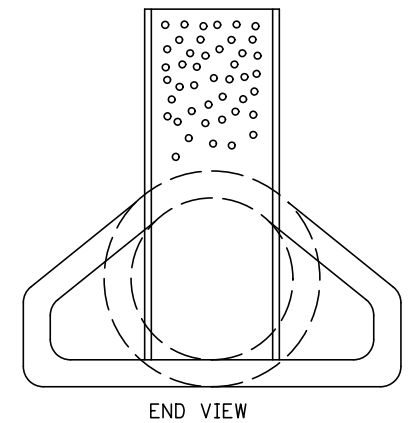
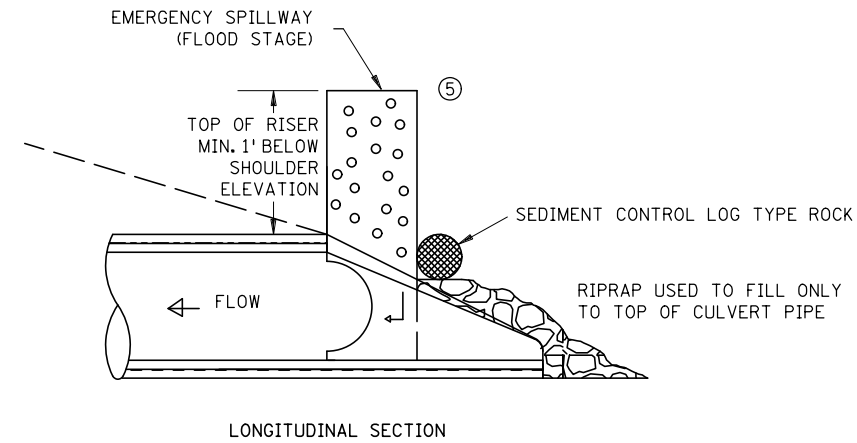
STANDARD
PLAN
5-297.405

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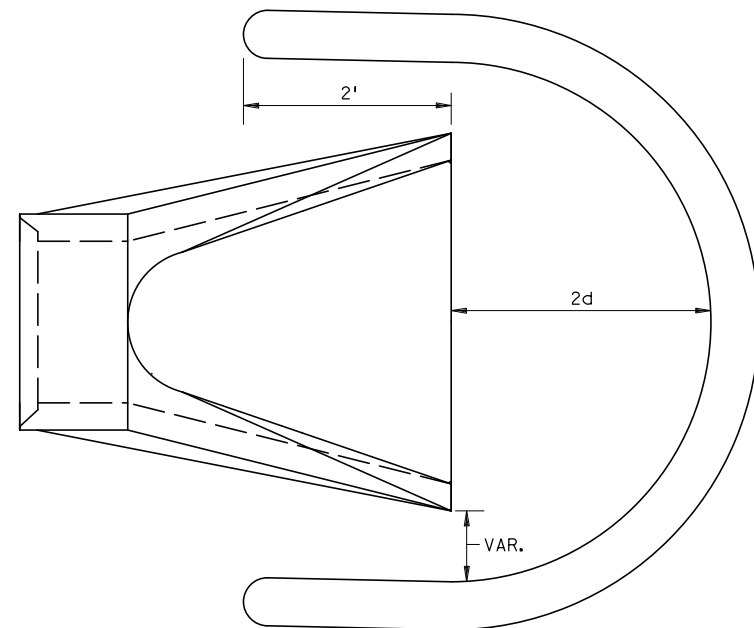
CULVERT STANDPIPE INSERT (D-RISER)

d = CULVERT SIZE: 12" - 36"



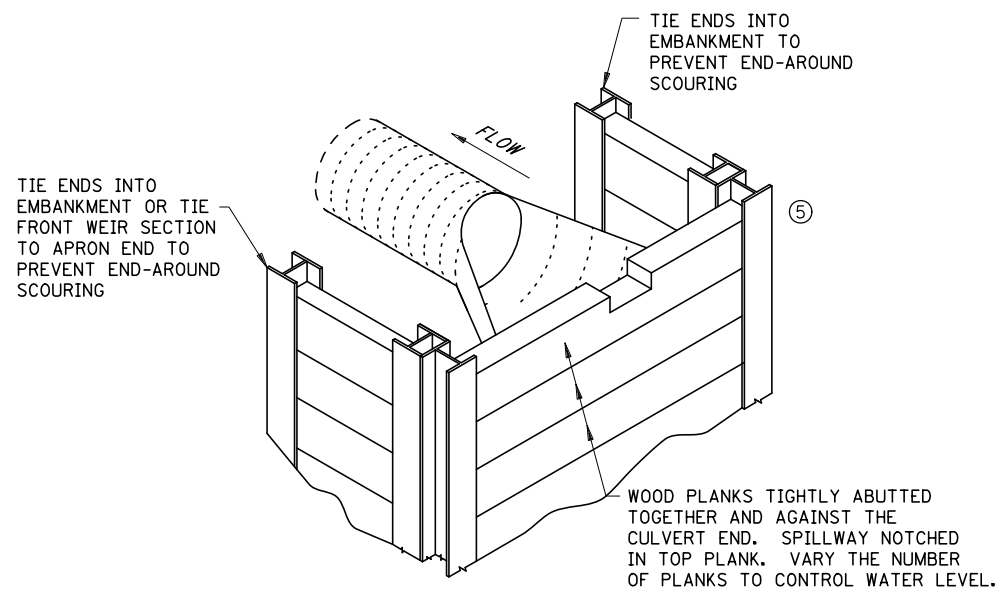
CULVERT STANDPIPE INSERT (D-RISER)

NOTE: SEDIMENT CONTROL LOG TYPE ROCK MAY BE WRAPPED AROUND RISER



SEDIMENT CONTROL LOG WEIR (COMPOST, WOOD CHIP, OR ROCK)

d = CULVERT SIZE: 12" - 36"



WOOD PLANK WEIR

NOTES:

- SEE SPECS. 2573, 3891 & 3893.
- FOR USE WHEN TEMPORARY PONDING IS NEEDED IN DITCH SECTIONS FOR SEDIMENT CONTROL.
- MANUFACTURED ALTERNATIVES LISTED ON MnDOT'S APPROVED PRODUCTS LIST MAY BE SUBSTITUTED AT NO ADDITIONAL COST.
- ① ROCK LOG OR SANDBAG TO HOLD STANDPIPE AND ACT AS A SEAL BETWEEN RISER PIPE AND CULVERT.
- ② PLACE CULVERT APRON AND SLIDE TEMPORARY STANDPIPE INTO CSP OR RCP CULVERT.
- ③ ALL GEOTEXTILE USED FOR CULVERT PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886 FOR MACHINE SLICED.
- ④ ROCK LOG OR RIP RAP TO HOLD STANDPIPE AND ACT AS A FILTER BETWEEN RISER PIPE AND CULVERT.
- ⑤ HEIGHT OVERFLOW NOT TO CAUSE FLOODING OF ROAD OR ADJACENT PROPERTIES.

REVISION:
APPROVED: 2-28-2017
<i>[Signature]</i> CHIEF ENVIRONMENTAL OFFICER



STANDARD PLAN 5-297.405

8 OF 8

[Signature]
STATE DESIGN ENGINEER

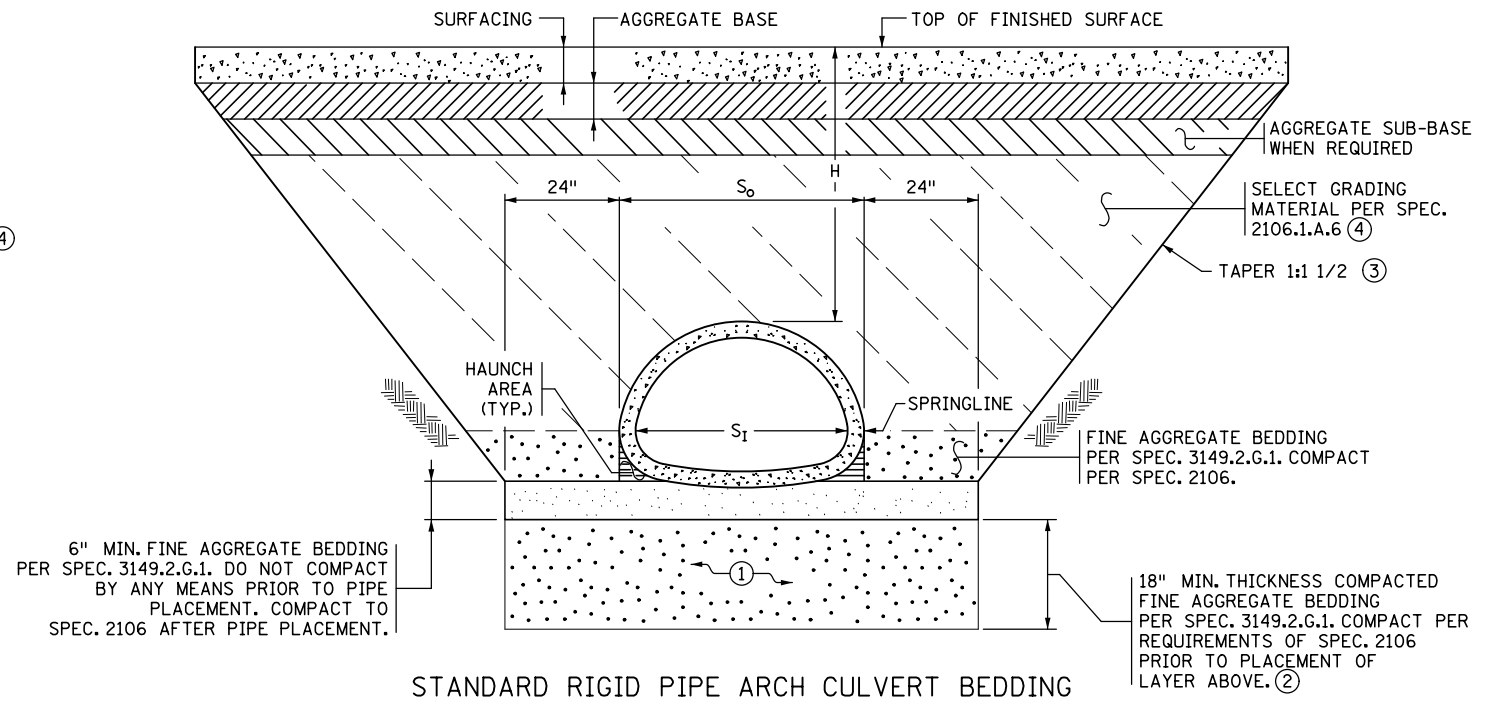
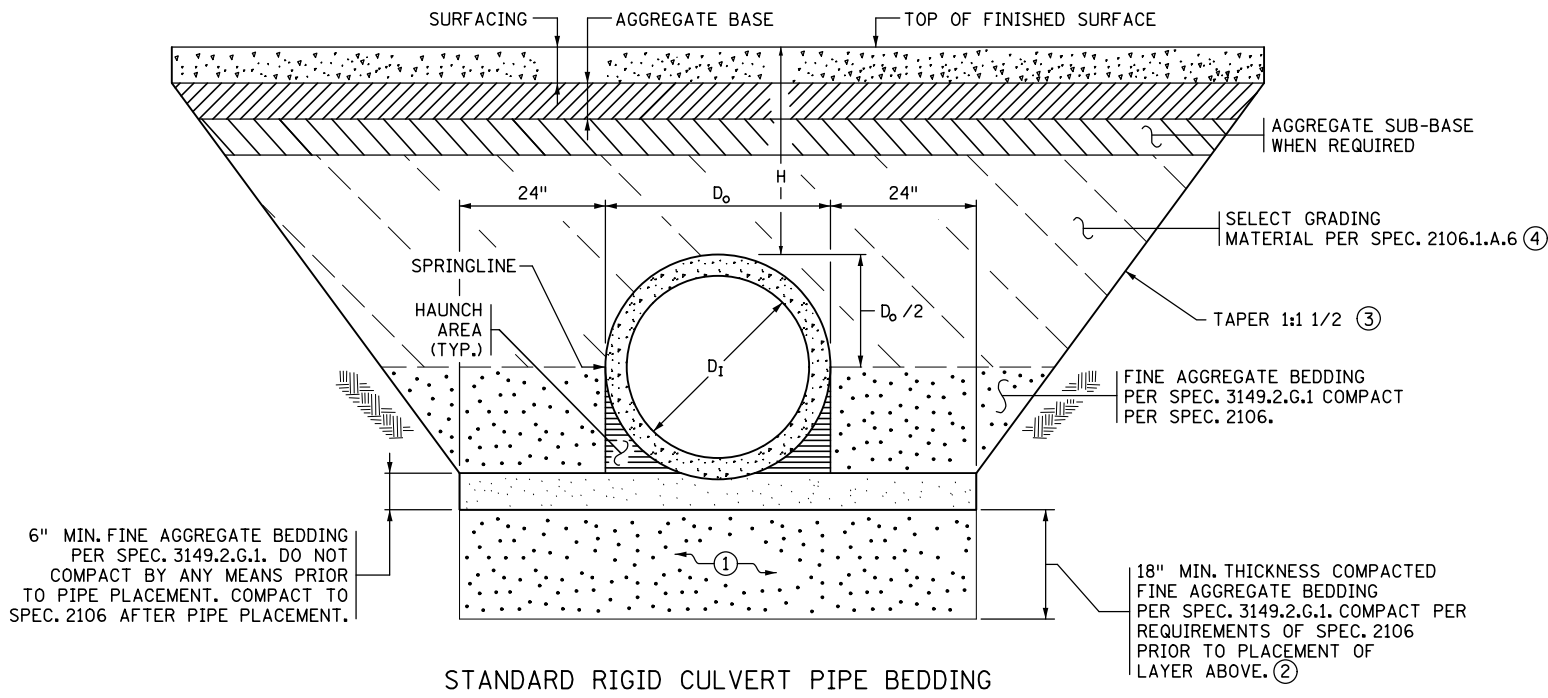
APPROVED: 2-28-2017
REVISED:

STATE PROJ. NO. 8828-139

TEMPORARY SEDIMENT CONTROL CULVERT END CONTROLS

SHEET NO. 48 OF 212 SHEETS

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-LEGEND-

- D_I = INSIDE DIAMETER OF ROUND PIPE (INCHES).
 D_O = OUTSIDE DIAMETER OF ROUND PIPE (INCHES).
 S_I = INSIDE SPAN OF PIPE-ARCH (INCHES).
 S_O = OUTSIDE SPAN OF PIPE-ARCH (INCHES).
 H = FILL COVER HEIGHT OVER PIPE (FEET).
 = UNDISTURBED SOIL
 = COMPACTED BEDDING
 = LOOSE BEDDING, COMPACTED AFTER PIPE PLACEMENT

CONSTRUCTION SEQUENCE

1. PLACE AND COMPACT 18" OF FINE AGGREGATE BEDDING TO THE REQUIREMENTS OF SPEC. 2106.
2. LOOSELY PLACE 6" OF FINE AGGREGATE BEDDING MATERIAL (SPEC. 3149.2.G.1) TO GRADE. DO NOT COMPACT PRIOR TO PIPE PLACEMENT.
3. FOR PIPES WITH BELL, REMOVE MATERIAL IN BELL AREA PRIOR TO PLACEMENT.
4. FURNISH AND INSTALL PIPE TO GRADE.
5. AFTER PLACEMENT OF THE PIPE, PLACE ADDITIONAL BEDDING AND COMPACT THE FULL LENGTH ON BOTH SIDES OF THE PIPE UNDERNEATH THE HAUNCH AREA BY FIRST SHOVEL SLICING (MANUALLY SHOVE THE BLADE END OF A SHOVEL AT AN ANGLE DOWN THE ENTIRE LENGTH OF THE PIPE IN THE HAUNCH AREA) THEN COMPACT THE HAUNCH AT AN ANGLE USING A POWERED MECHANICAL OR PNEUMATIC DEVICE (I.E. POLE TAMPER, JUMPING JACK, OR SIMILAR).
6. COMPACT THE REMAINING MATERIAL OUTSIDE THE HAUNCH AREA TO THE REQUIREMENTS OF SPEC. 2106 ENSURING THAT THE ENTIRE LENGTH OF PIPE IS SUPPORTED UNIFORMLY BY BEDDING.
7. PLACE AND COMPACT BACKFILL EVENLY AND SIMULTANEOUSLY IN 6" LIFTS ON EACH SIDE OF THE PIPE UP TO THE SPRINGLINE WHEN COMPACTED.
8. COMPLETE REMAINING BACKFILL.

NOTES

- STANDARD BEDDING FOR RIGID PIPE CULVERTS WITHOUT TREATMENTS.
- RIGID PIPE INCLUDES CONCRETE.
- ENTRANCE CULVERTS (FIELD AND DRIVEWAY CULVERTS) DO NOT NEED BEDDING UNLESS SPECIFIED IN THE PLANS OR SPECIAL PROVISIONS.
- UNLESS OTHERWISE NOTED IN THE PLAN, BEDDING QUANTITIES ARE COMPUTED FOR THE FULL LENGTH OF THE PIPE AND APRON, AND WILL NOT BE ADJUSTED FOR CHANGES TO MEET OSHA REQUIREMENTS.
- WHEN RIPRAP IS REQUIRED AT THE APRON END, SEE STANDARD PLATE OR PLAN FOR RIPRAP INSTALLATION AND QUANTITIES. FOR APRONS WITHOUT RIPRAP PLACE 6" MIN. FINE AGGREGATE BEDDING UNDER APRONS. USE A TRENCH WIDTH EQUAL TO THE PIPE TRENCH WIDTH.
- CONTRACT PAY ITEM FOR FINE AGGREGATE BEDDING INCLUDES THE COST OF EXCAVATION, PLACEMENT AND COMPACTION.
- EXCAVATION AND BACKFILL WITH SELECT GRADING MATERIAL ARE NOT TABULATED SEPARATELY BUT ARE INCLUDED IN THE CONTRACT UNIT PRICE OF THE RELEVANT CULVERT PAY ITEM.
- EXCAVATE & CONSTRUCT ALL TRENCHES AND SLOPES PER OSHA REQUIREMENTS.
- ALL SLOPES SHOWN AS (V) : (H).
- PIPE SIZE IS BASED ON THE NOMINAL INSIDE DIAMETER OR SPAN.
- PROTECT ALL PIPE DURING CONSTRUCTION PER SPEC. 2501.
- PLACE MULTIPLE PIPE CULVERTS WITH A CLEARANCE OF 24 INCHES OR GREATER BETWEEN STRINGS OF PIPE.
- ① IF APPROVED BY THE ENGINEER, IN WET CONDITIONS THE CONTRACTOR MAY SUBSTITUTE 18" OF COARSE FILTER AGGREGATE PER SPEC. 3149.2.H COMPACTED TO THE QUALITY COMPACTION REQUIREMENTS OF SPEC. 2106. WRAP WITH GEOTEXTILE FABRIC TYPE IV PER SPEC. 3733. SEAM ALL FABRIC SIDES AND ENDS PER SPEC. TABLE 3733-1 INCLUDING FOOTNOTE (a) OR OVERLAP A MINIMUM OF 3 FT., ALL AT NO ADDITIONAL COST.
- ② FOR INSTALLATIONS ON INTACT BEDROCK, OMIT THIS LAYER.
- ③ OVER-EXCAVATION BENEATH TAPERS IS NOT PERMITTED UNLESS REQUIRED BY OSHA. (TYP.)
- ④ MAXIMUM EMBANKMENT PARTICLE SIZE WITHIN 2 FT. OF RIGID PIPE IS 3".

REVISION: 02-24-2022

APPROVED: JANUARY 18, 2019

Kevin Weston
STATE BRIDGE ENGINEER



STANDARD PLAN 5-297.441

1 OF 1

APPROVED: 01-18-2019
REVISED:

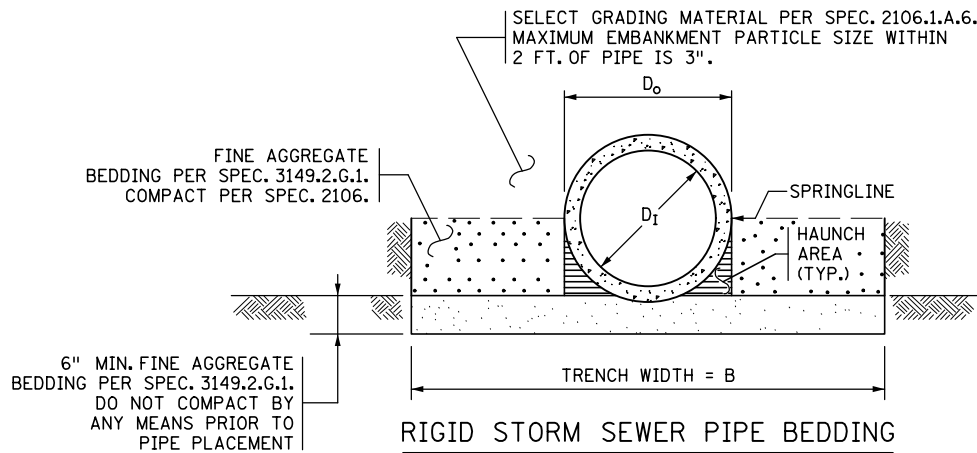
STATE DESIGN ENGINEER

STATE PROJ. NO. 8828-139

STANDARD CULVERT BEDDING FOR RIGID PIPE
(WITHOUT TREATMENTS)

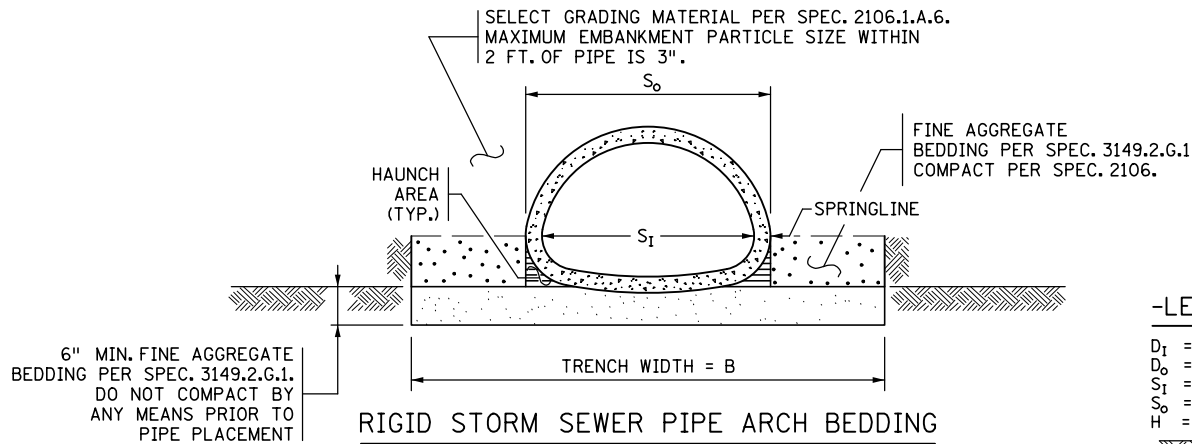
SHEET NO. 49 OF 212 SHEETS

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TRENCH BASE WIDTH ①②	
PIPE DIA. D_1 OR S_1	TRENCH WIDTH B
< 42"	$D_o + 24"$
42" TO 54"	$1.5 \times D_o$
> 54"	$D_o + 36"$

PLASTIC PIPE WITH H > 10 FT. ①②	
PIPE DIA.	TRENCH WIDTH (FEET)
12"	5'-2"
15"	5'-6"
18"	5'-9"
24"	6'-6"
30"	8'-0"
36"	9'-6"
42"	11'-0"
48"	12'-6"

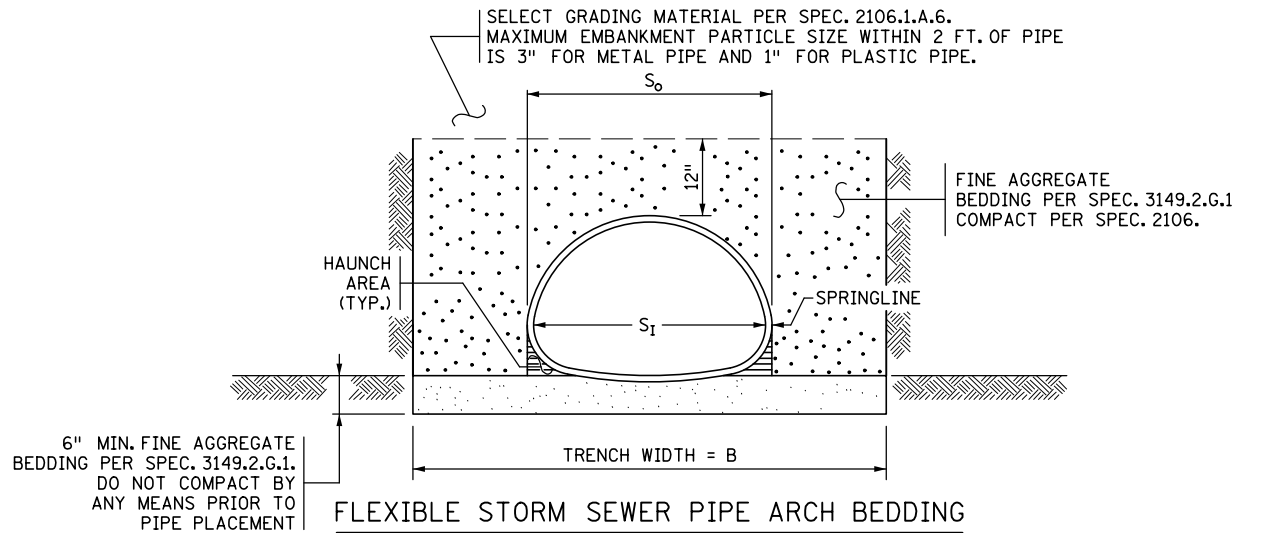
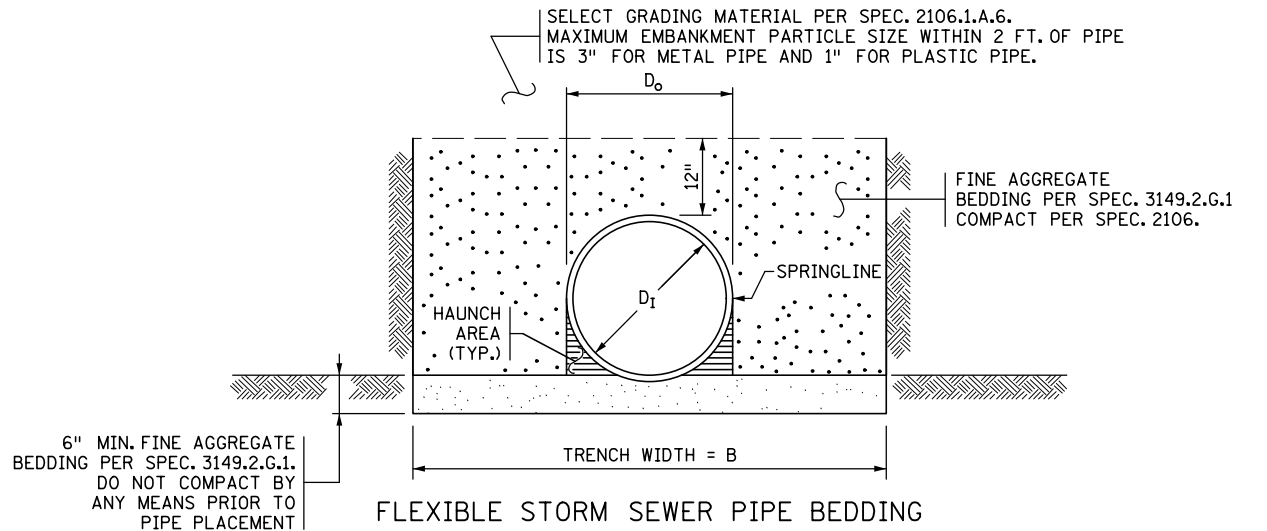


-LEGEND-

- D_1 = INSIDE DIAMETER OF ROUND PIPE (INCHES).
 D_o = OUTSIDE DIAMETER OF ROUND PIPE (INCHES).
 S_1 = INSIDE SPAN OF PIPE-ARCH (INCHES).
 S_o = OUTSIDE SPAN OF PIPE-ARCH (INCHES).
H = FILL COVER HEIGHT OVER PIPE (FEET).
- = UNDISTURBED SOIL
- = COMPACTED BEDDING
- = LOOSE BEDDING, COMPACTED
AFTER PIPE PLACEMENT

CONSTRUCTION SEQUENCE

1. LOOSELY PLACE 6" OF FINE AGGREGATE BEDDING MATERIAL TO GRADE. DO NOT COMPACT PRIOR TO PIPE PLACEMENT.
2. FOR PIPES WITH BELL, REMOVE MATERIAL IN BELL AREA PRIOR TO PLACEMENT.
3. FURNISH AND INSTALL PIPE TO GRADE.
4. AFTER PLACEMENT OF THE PIPE, PLACE ADDITIONAL FINE AGGREGATE BEDDING AND COMPACT THE FULL LENGTH ON BOTH SIDES OF THE PIPE UNDERNEATH THE HAUNCH AREA BY FIRST SHOVEL SLICING (MANUALLY SHOVE THE BLADE END OF SHOVEL AT AN ANGLE DOWN THE ENTIRE LENGTH OF HAUNCH UNDER THE PIPE). THEN COMPACT THE HAUNCH AT AN ANGLE USING A POWERED MECHANICAL OR PNEUMATIC DEVICE (I.E. POLE TAMPER, JUMPING JACK, OR SIMILAR).
5. COMPACT THE REMAINING MATERIAL OUTSIDE THE HAUNCH AREA TO THE REQUIREMENTS OF SPEC. 2106 ENSURING THAT THE ENTIRE LENGTH OF PIPE IS SUPPORTED UNIFORMLY BY BEDDING.
6. PLACE AND COMPACT BACKFILL EVENLY AND SIMULTANEOUSLY IN 6" LIFTS ON EACH SIDE OF THE PIPE UP TO THE SPRINGLINE FOR RIGID PIPE AND 12" ABOVE THE TOP OF THE PIPE FOR FLEXIBLE PIPE WHEN COMPACTED.
7. COMPLETE REMAINING BACKFILL.



NOTES

EXCAVATE & CONSTRUCT ALL TRENCHES AND SLOPES PER OSHA REQUIREMENTS.

PIPE SIZE IS BASED ON THE NOMINAL INSIDE DIAMETER OR SPAN.

PROTECT ALL PIPE DURING CONSTRUCTION PER SPEC. 2503.

WHEN RIPRAP IS REQUIRED AT THE APRON END, SEE STANDARD PLATE OR PLAN FOR RIPRAP INSTALLATION AND QUANTITIES. FOR APRONS WITHOUT RIPRAP PLACE 6" MIN. FINE AGGREGATE BEDDING UNDER APRONS. USE A TRENCH WIDTH EQUAL TO THE PIPE TRENCH WIDTH.

FINE AGGREGATE BEDDING INCLUDING THE COST OF EXCAVATION, PLACEMENT AND COMPACTION IS INCLUDED IN THE CONTRACT UNIT PRICE OF THE RELEVANT STORM SEWER PAY ITEM.

EXCAVATION AND BACKFILL WITH SELECT GRADING MATERIAL ARE NOT TABULATED SEPARATELY BUT ARE INCLUDED IN THE CONTRACT UNIT PRICE OF THE RELEVANT STORM SEWER PAY ITEM.

RIGID PIPE INCLUDES CONCRETE, FLEXIBLE PIPE INCLUDES METAL, AND PLASTIC MATERIALS SUCH AS CORRUGATED POLYPROPYLENE (PP), CORRUGATED POLYETHYLENE (CP) AND POLYVINYL CHLORIDE (PVC).

① MODIFY TRENCH WIDTH & SLOPE AS NECESSARY TO COMPLY WITH OSHA REQUIREMENTS.

② USE PLASTIC PIPE TABLE FOR TRENCH WIDTHS WHEN FILL HEIGHT IS GREATER THAN 10 FT.

REVISION:

APPROVED: JANUARY 18, 2019



STANDARD PLAN 5-297.442

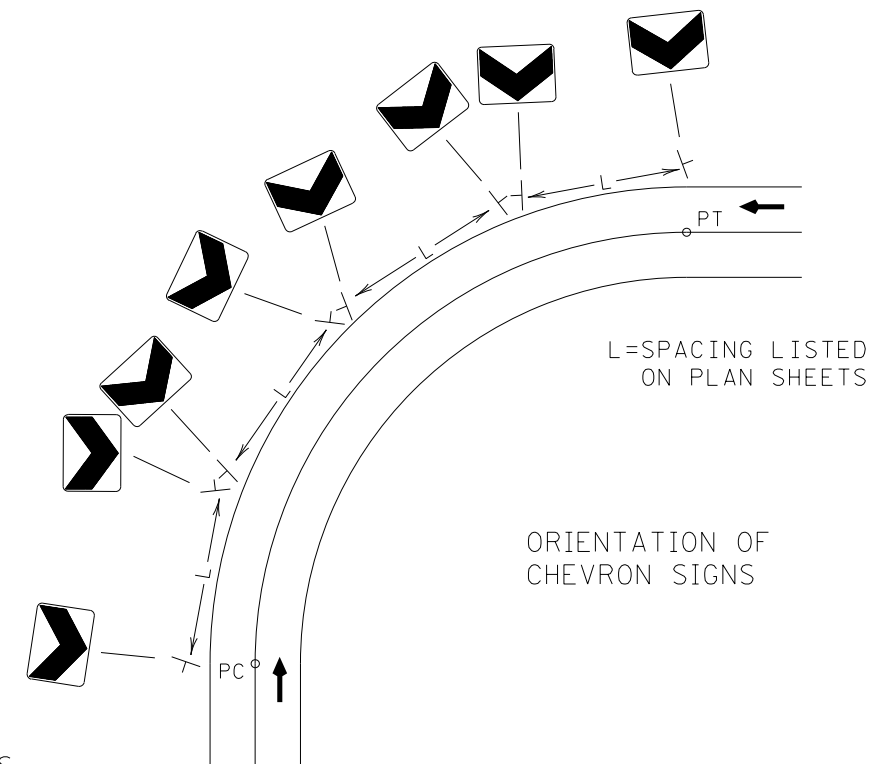
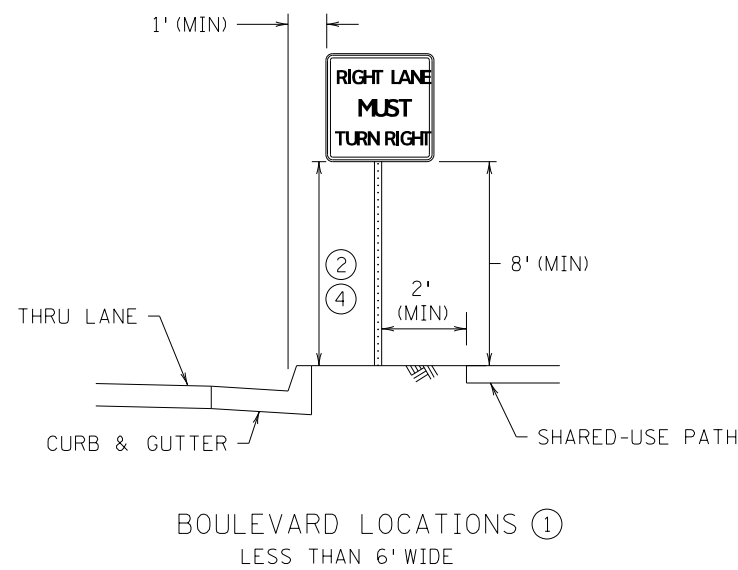
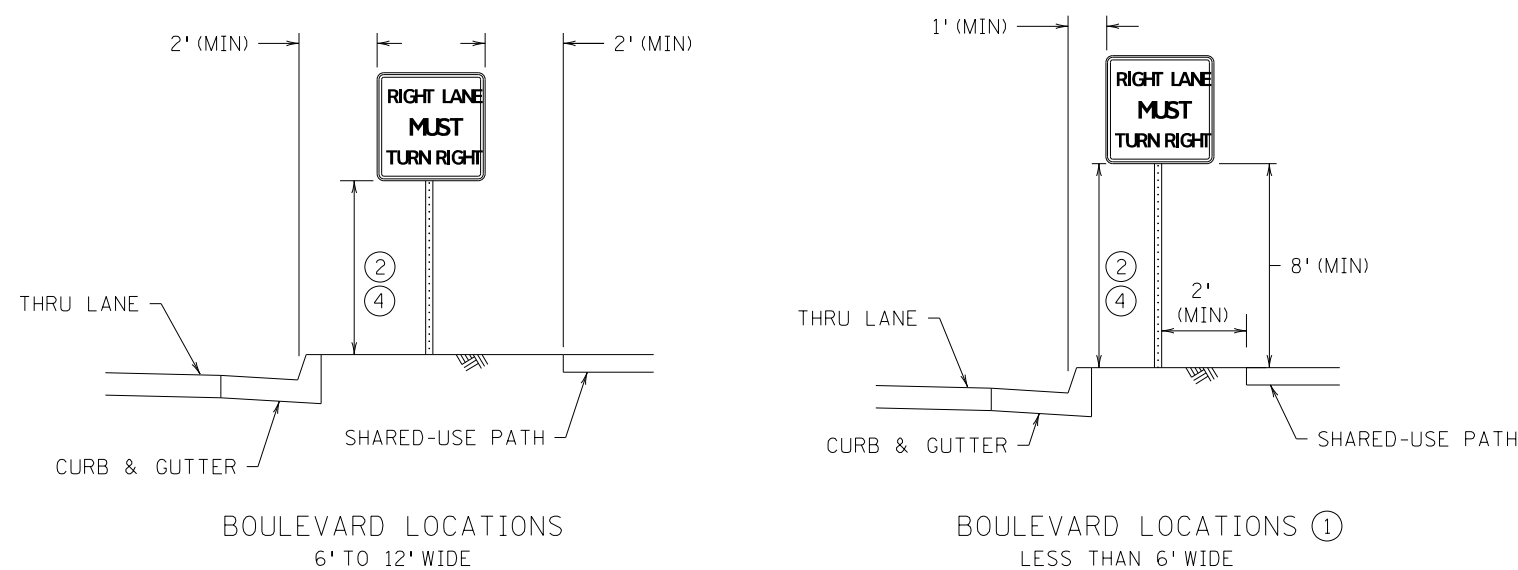
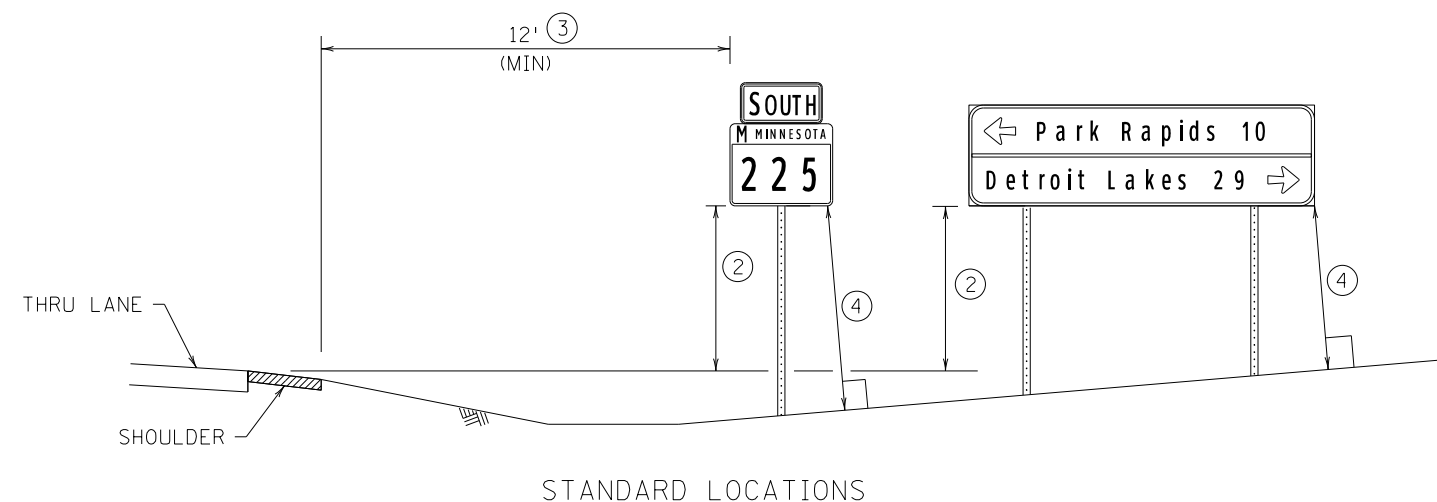
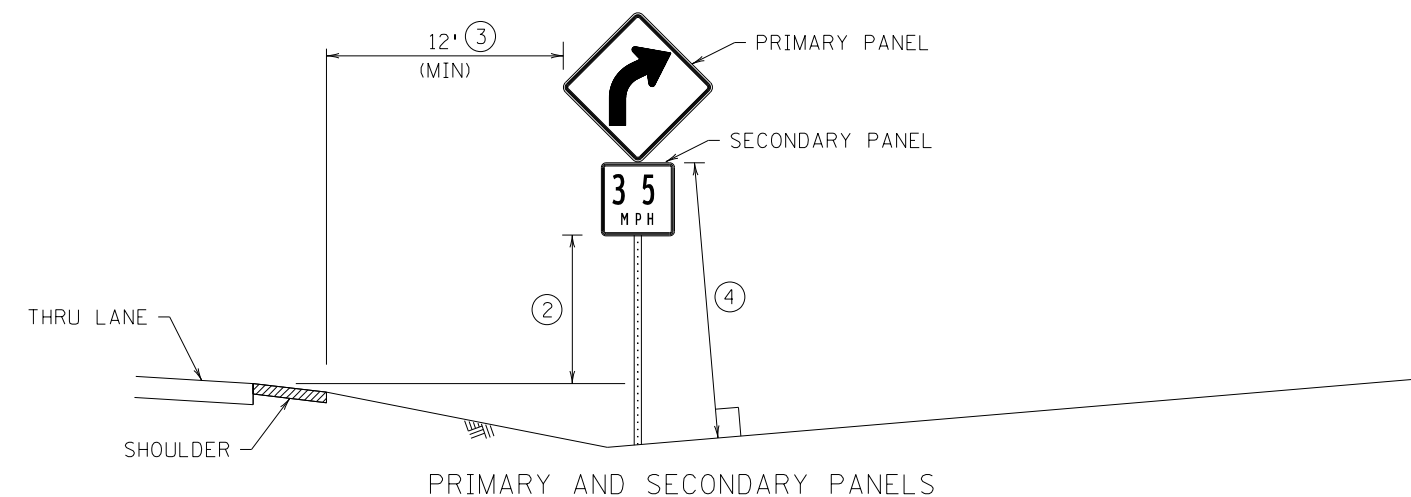
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APPROVED: 01-18-2019
REVISED:

STANDARD STORM SEWER BEDDING
FOR RIGID AND FLEXIBLE PIPE

STATE PROJ. NO. 8828-139

SHEET NO. 50 OF 212 SHEETS



NOTES:

PLACE SIGNS AND ORIENT THEM APPROXIMATELY AS SHOWN IN THE PLAN, AT RIGHT ANGLES TO THE DIRECTION OF, AND FACING THE TRAFFIC THEY ARE INTENDED TO SERVE, UNLESS OTHERWISE SPECIFIED. TO AVOID SPECULAR GLARE, TURN SIGNS APPROXIMATELY THREE DEGREES AWAY FROM APPROACHING TRAFFIC.

IF A SIGN NEEDS TO BE REPOSITIONED FROM THE PROPOSED PLAN LOCATION IN ORDER TO AVOID
CONFLICTS WITH UTILITIES OR OBSTACLES, CONTACT THE PROJECT ENGINEER.

MOUNT SIGN FACES PLUMB.

LATERAL CLEARANCES GIVEN APPLY TO RIGHT AND/OR LEFT SIDE INSTALLATION.

ERECT OR CONSTRUCT SIGN SUPPORT SO THAT NO PORTION OF THE SIGN PANEL IS WITHIN 15' OF THE RAIL OF A RAILROAD TRACK.

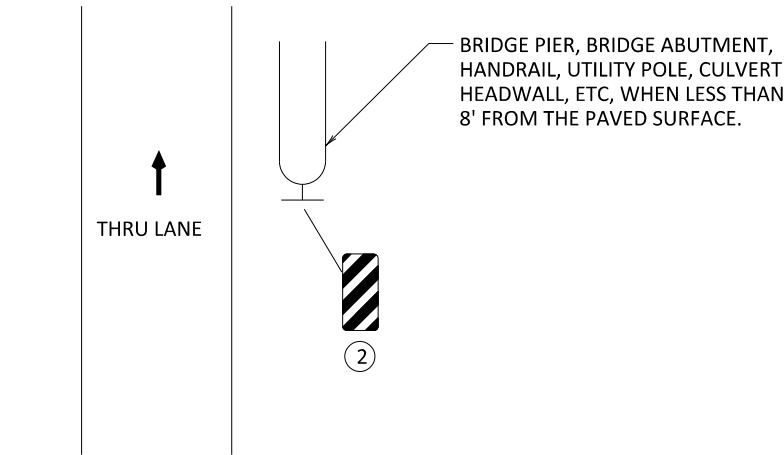
PLACE SIGNS SUCH THAT OBSTACLES DO NOT BLOCK THEM FROM BEING VIEWED BY THE APPROACHING TRAFFIC.

PLACE SIGNS A MINIMUM OF 10' FROM THE NEAREST OBSTACLE. OBSTACLES MAY INCLUDE, BUT ARE NOT LIMITED TO, LIGHT POLES, TREES, SIGNS, AND BUILDINGS. SIGNS MAY BE PLACED CLOSER TO SIGNS IN TIGHT AREAS, BUT NO MORE THAN TWO POSTS IN A 7' DIAMETER CIRCLE.

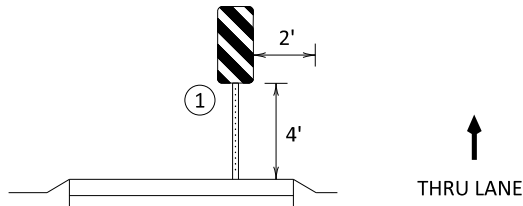
AVOID PLACING SIGNS IN DITCH BOTTOMS.

- ① ONLY USE WHEN BOULEVARD IS TOO NARROW TO OBTAIN ADEQUATE CURBED LOCATION SIGN OFFSETS.
- ② ALL SIGN MOUNTING HEIGHTS ARE MEASURED VERTICALLY FROM THE BOTTOM OF THE LOWEST SIGN PANEL TO THE TOP OF THE CURB, OR IN ABSENCE OF CURB, TO THE NEAR EDGE OF THE THRU-LANE PAVEMENT. SEE SIGN TABULATIONS.
- ③ MINIMUM OFFSET MAY BE REDUCED TO AT LEAST 6' FROM SHOULDER AND AT LEAST 12' FROM THRU LANE IF SITE CONDITIONS PROHIBIT A 12' OFFSET FROM SHOULDER.
- ④ CRASHWORTHY HEIGHT IS AT LEAST 7' FOR BREAKAWAY STRUCTURES AND AT LEAST 4' FOR BENDABLE STRUCTURES. SEE SPECIFIC SQUARE TUBE BASE STRUCTURE PLAN FOR CRASH RESPONSE TYPE. THE CRASHWORTHY HEIGHT IS MEASURED TO THE BOTTOM OF THE PRIMARY SIGN PANEL EXCLUDING ANY SECONDARY SIGN PANELS, MARKERS, DELINEATORS, AND REFERENCE LOCATION SIGN PANELS. ANY SECONDARY SIGN PANELS MOUNTED TO MORE THAN ONE POST ARE CONSIDERED PRIMARY SIGN PANELS FOR CRASHWORTHY PURPOSES.

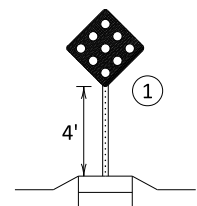
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OBSTRUCTION
TYPE 3 OBJECT MARKER

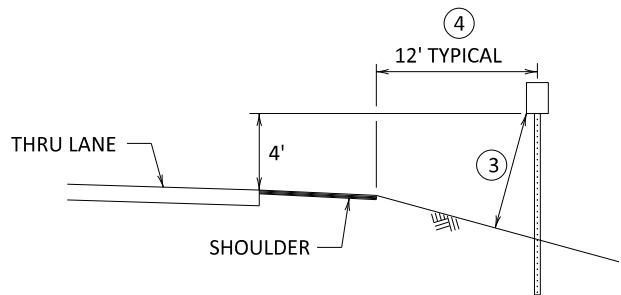


RAISED ISLAND
TYPE 3 OBJECT MARKER

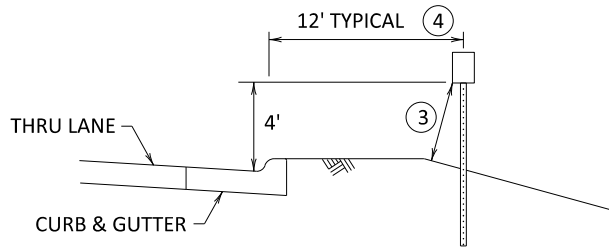


RAISED ISLAND
TYPE 1 OBJECT MARKER

MARKER TYPICAL PLACEMENT

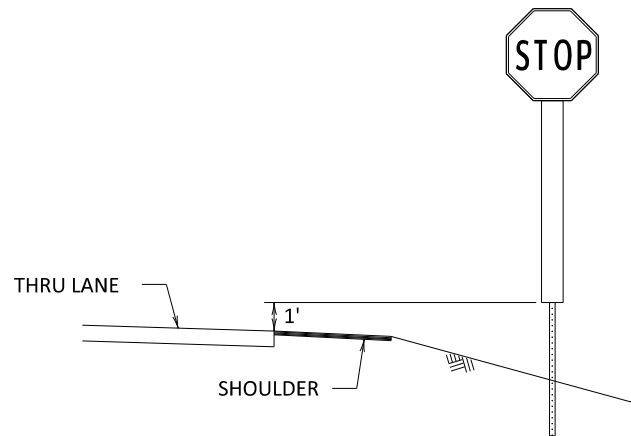


LOCATIONS WITHOUT CURB



LOCATIONS WITH CURB

DELINEATOR TYPICAL PLACEMENT



POST STRIP

NOTES:

FOR DELINEATOR OFFSETS AT RAMP GORES, SEE STANDARD PLAN 5-297.703.

- ① PLACE MARKER AS CLOSE TO THE BEGINNING OF MEDIAN AS POSSIBLE.
- ② PLACE THE EDGE OF THE OBJECT MARKER THAT IS CLOSEST TO THE ROAD USER IN LINE WITH THE CLOSEST EDGE OF THE OBSTRUCTION. ANGLE THE STRIPES DOWNWARD TOWARDS THE SIDE TRAFFIC IS TO PASS THE OBSTRUCTION.
- ③ THE CRASHWORTHY HEIGHT FROM THE GROUND TO ANY PORTION OF THE SIGN PANEL IS AT LEAST 7' FOR BREAKAWAY STRUCTURES AND AT LEAST 4' FOR BENDABLE STRUCTURES. SEE SPECIFIC SQUARE TUBE BASE STRUCTURE PLAN FOR CRASH RESPONSE TYPE.
- ④ ADJUST OFFSET TO MATCH OTHER SIGN OFFSETS ALONG ROADWAY CORRIDOR, BUT NOT MORE THAN 12' NOR LESS THAN 2'.

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OFFICE OF TRAFFIC ENGINEERING

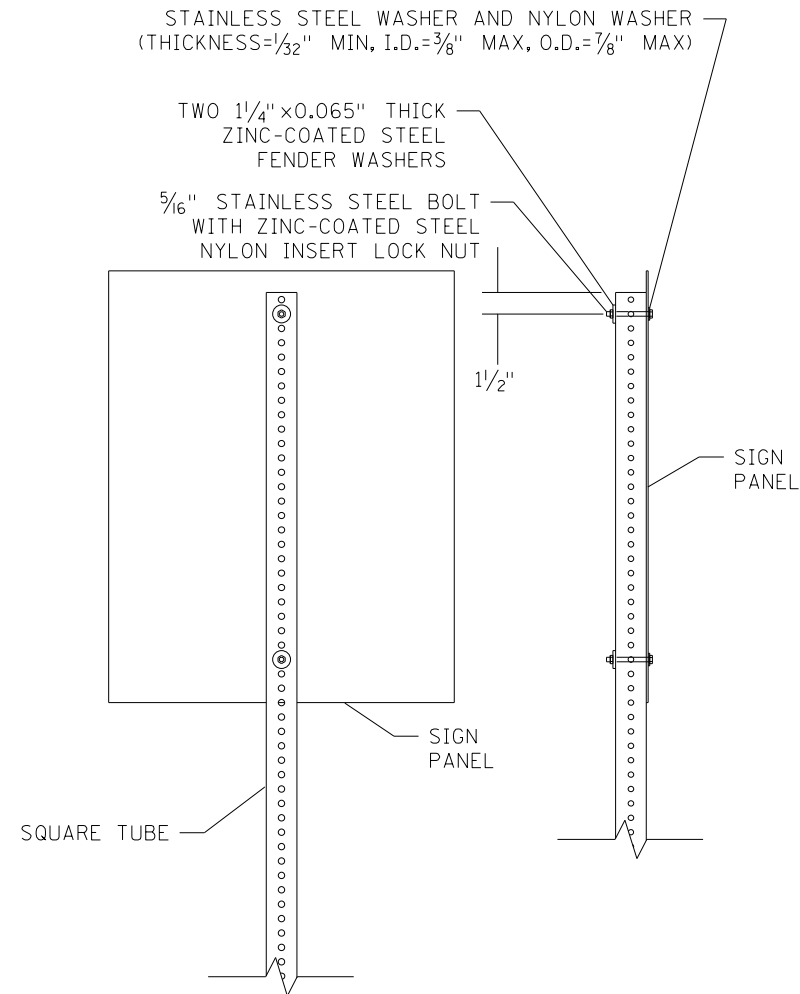
DELINEATOR AND MARKER PLACEMENT

APPROVED: 06-04-2024
REVISED:

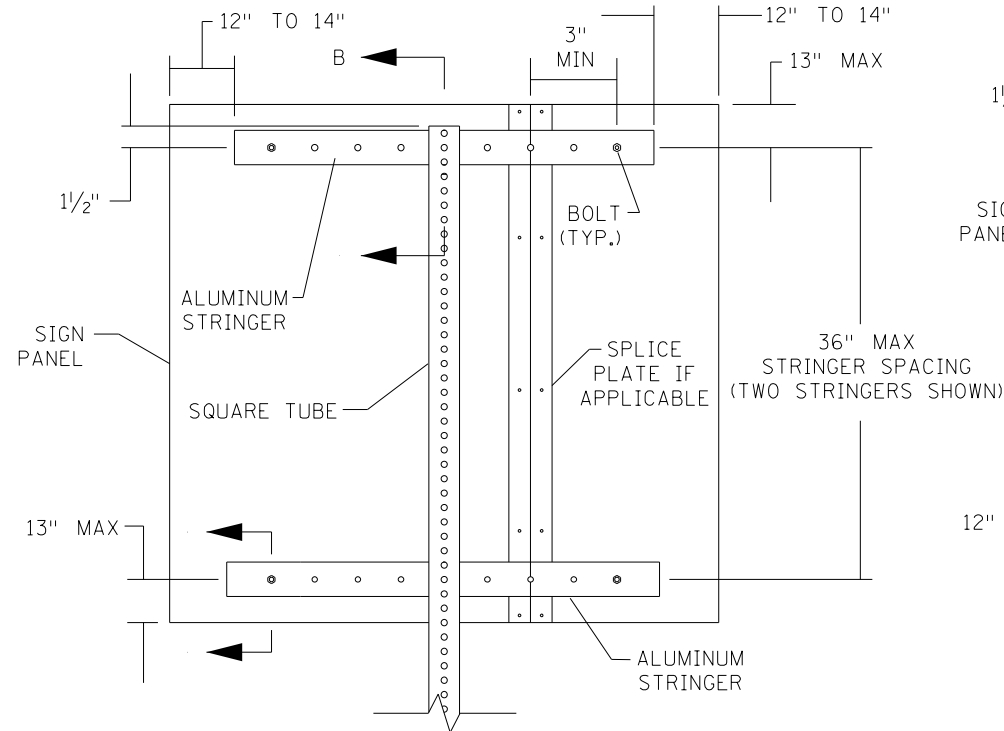
THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD
PLAN
5-297.702

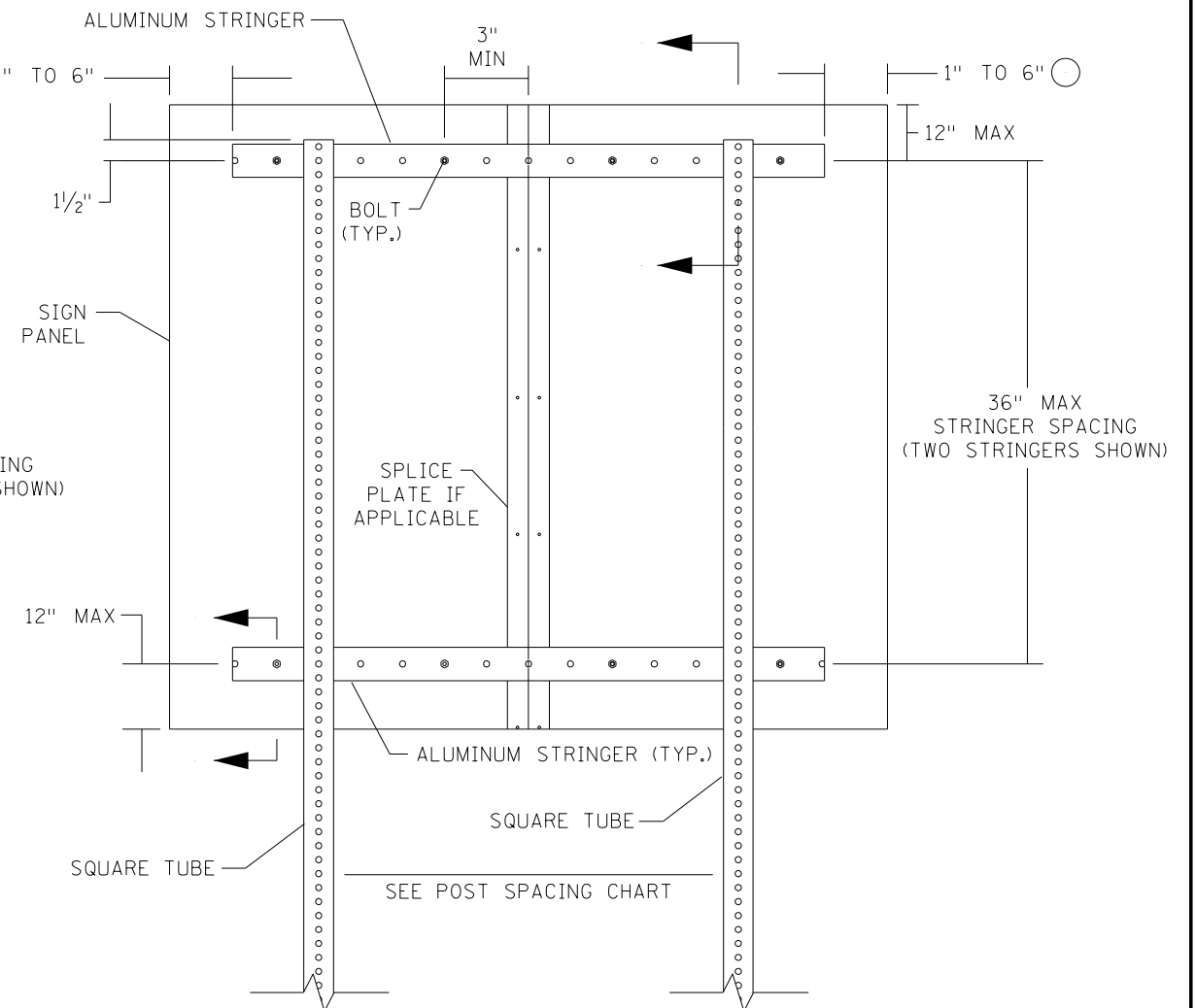
1 OF 1



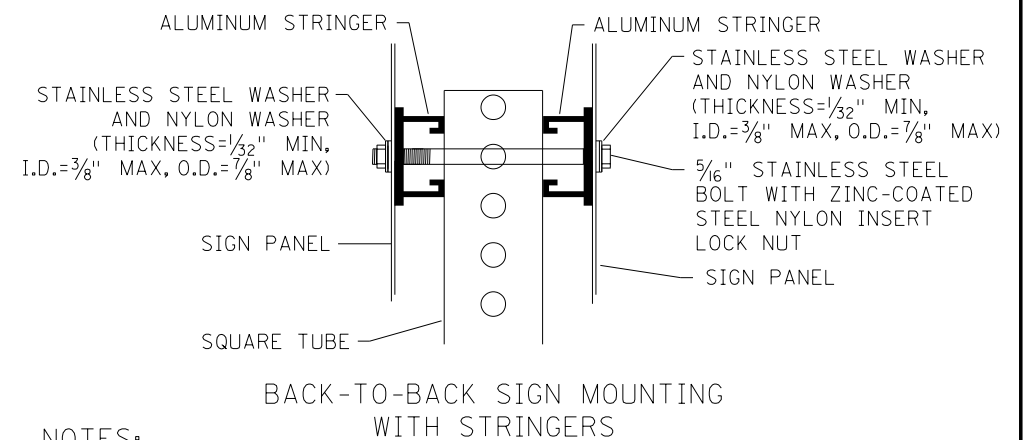
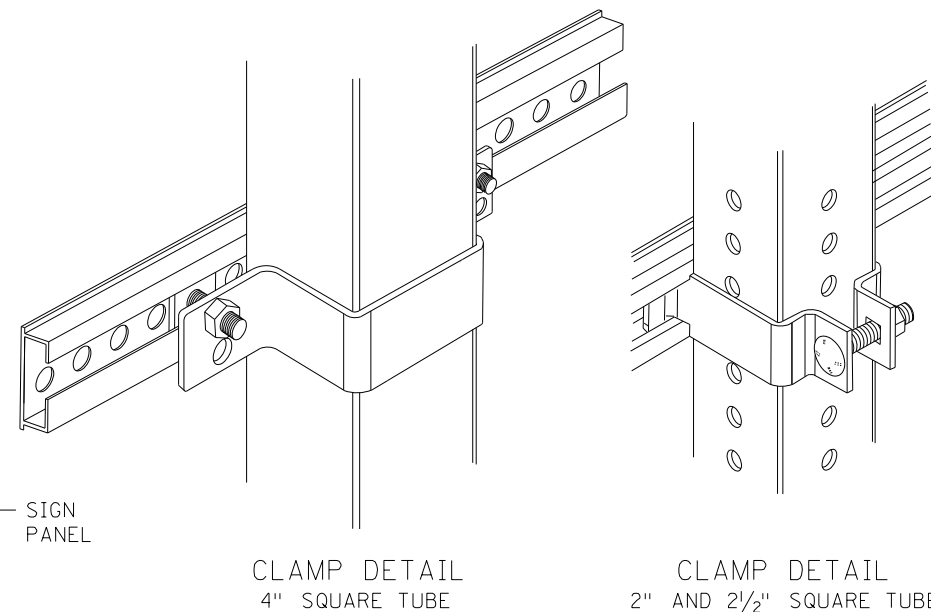
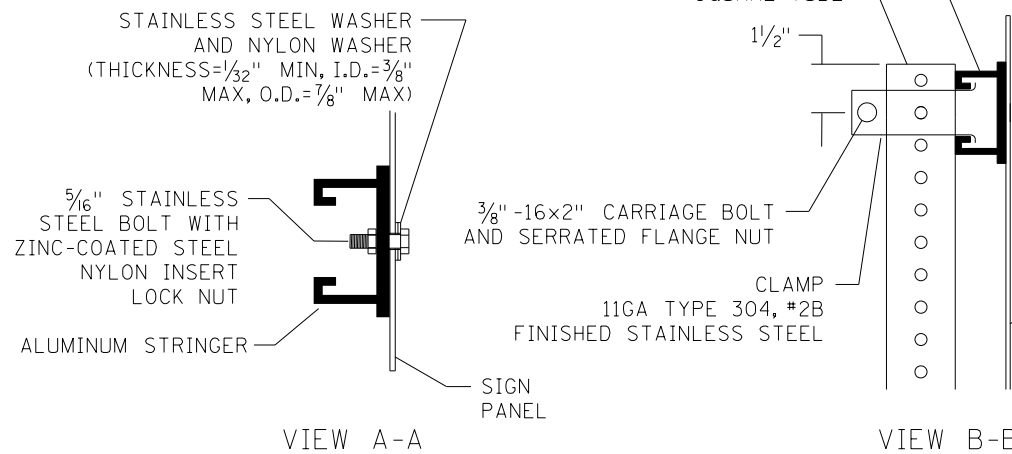
FOR SIGN PANELS UP TO 30" WIDE



FOR SIGN PANELS 36" WIDE
OR GREATER ON ONE POST



FOR SIGN PANELS ON TWO OR MORE POSTS



NOTES:
BOLT SIGN PANELS TO STRINGERS OR RISER POSTS AT NO GREATER THAN 24" SPACING OR ACCORDING TO THE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR MOUNTING HOLES (PUNCH CODES) INFORMATION.

CENTER STRINGERS ON SIGN PANEL.

IF POST SPACING REQUIRES PLACEMENT OF A POST WITHIN THIS AREA, EXTEND STRINGERS AS NEEDED TO ACCOMMODATE THE STRINGER TO POST CLAMP.

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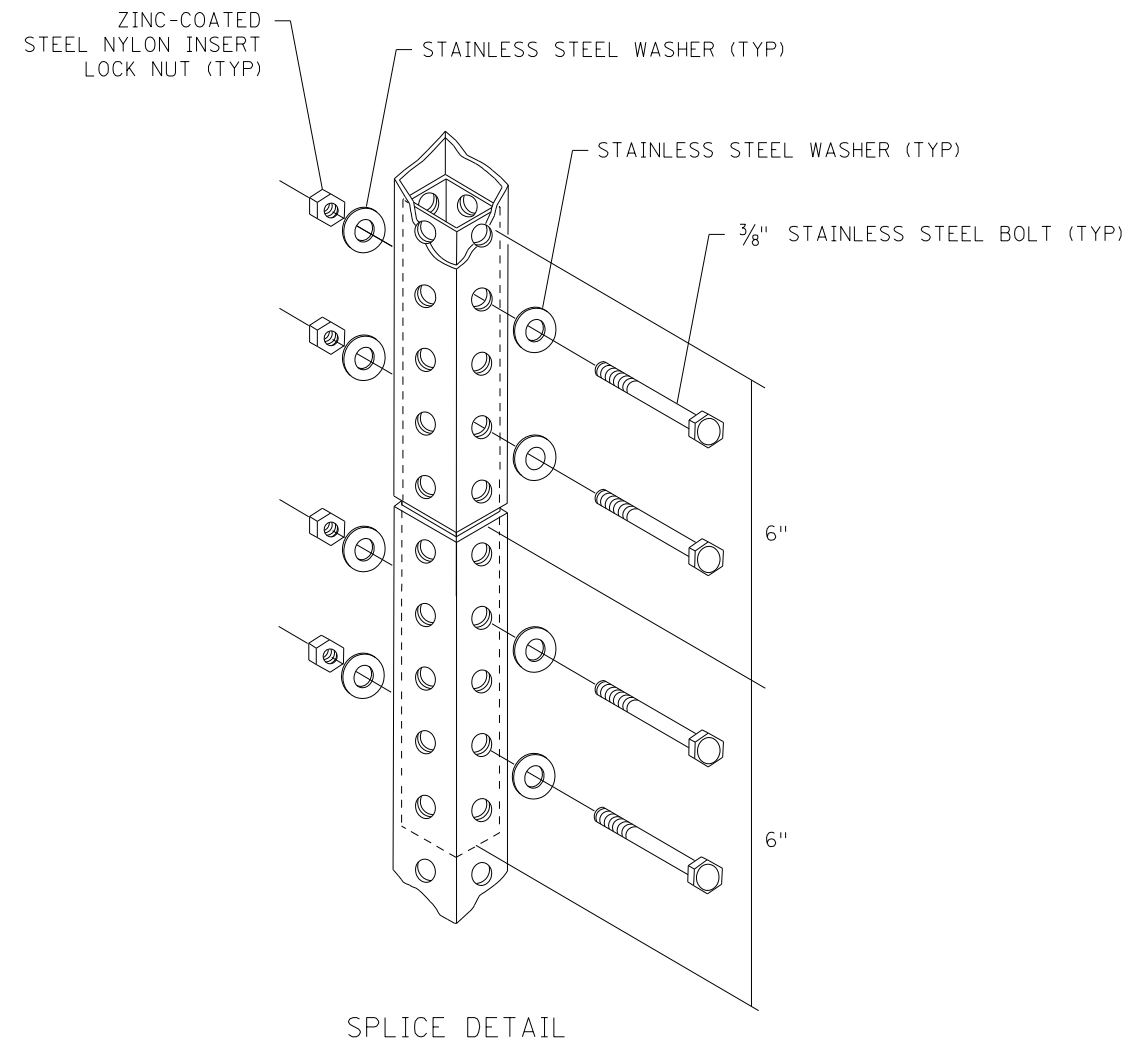
SQUARE-TUBE SIGN MOUNTING DETAILS

APPROVED: 08-09-2023
REVISED:

THOMAS STYBICKI
STATE DESIGN ENGINEER

STANDARD
PLAN
5-297.718

1 OF 3



PANEL WIDTH	SQUARE TUBE POST SPACING						
	2 POSTS	3 POSTS	4 POSTS	5 POSTS	6 POSTS	7 POSTS	8 POSTS
(IN)	(IN)	(IN)	(IN)	(IN)	(IN)	(IN)	(IN)
42	15						
48	21						
54	30						
60	36						
66	36						
72	42						
78	42						
84	48						
90	48	42					
96	48	42					
102	54	42					
108	54	42					
114	60	42					
120	60	48					
126	66	48					
132	66	48	42				
138	72	48	42				
144	72	48	42				
150	78	54	42				
156	78	54	42				
162	84	54	42				
168	84	60	48				
174	90	60	48	42			
180	90	60	48	42			
186	96	66	48	42			
192	96	66	48	42			
198	102	66	54	42			
204	102	72	54	42			
210	108	72	54	42			
216	108	72	54	48	42		
222	114	78	60	48	42		
228	114	78	60	48	42		
234	120	78	60	48	42		
240	120	84	60	48	42		
246		84	66	54	42		
252		84	66	54	42		
258		90	66	54	42	42	
264		90	66	54	48	42	
270		90	72	54	48	42	
276		96	72	60	48	42	
282		96	72	60	48	42	
288		96	72	60	48	42	
294		102	78	60	54	42	
300		102	78	60	54	42	42
306		102	78	66	54	42	42
312		108	78	66	54	48	42
318		108	84	66	54	48	42
324		108	84	66	54	48	42
330		114	84	66	60	48	42
336		114	84	72	60	48	42

DISTANCES ARE CENTER-TO-CENTER OF POSTS

NOTES:

NO MORE THAN ONE SPLICE PER POST.

WHEN USED, THE SPLICE MUST BE PLACED AT LEAST 8' ABOVE GROUND. THE PREFERRED PLACEMENT LOCATION IS BEHIND THE SIGN PANEL.

INTERIOR POST STUD SHALL BE ONE SIZE SMALLER FOR TIGHT FIT. IF RISER POST IS 2½", INTERIOR POST IS 2¾". IF RISER POST IS 2", INTERIOR POST IS 1¾".

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STATE TRAFFIC ENGINEER
OFFICE OF TRAFFIC ENGINEERING

SQUARE-TUBE SIGN MOUNTING DETAILS

APPROVED: 08-09-2023
REVISED:


THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD
PLAN
5-297.718

2 OF 3

[illegible]

PANEL HEIGHT (INCHES)

[illegible]

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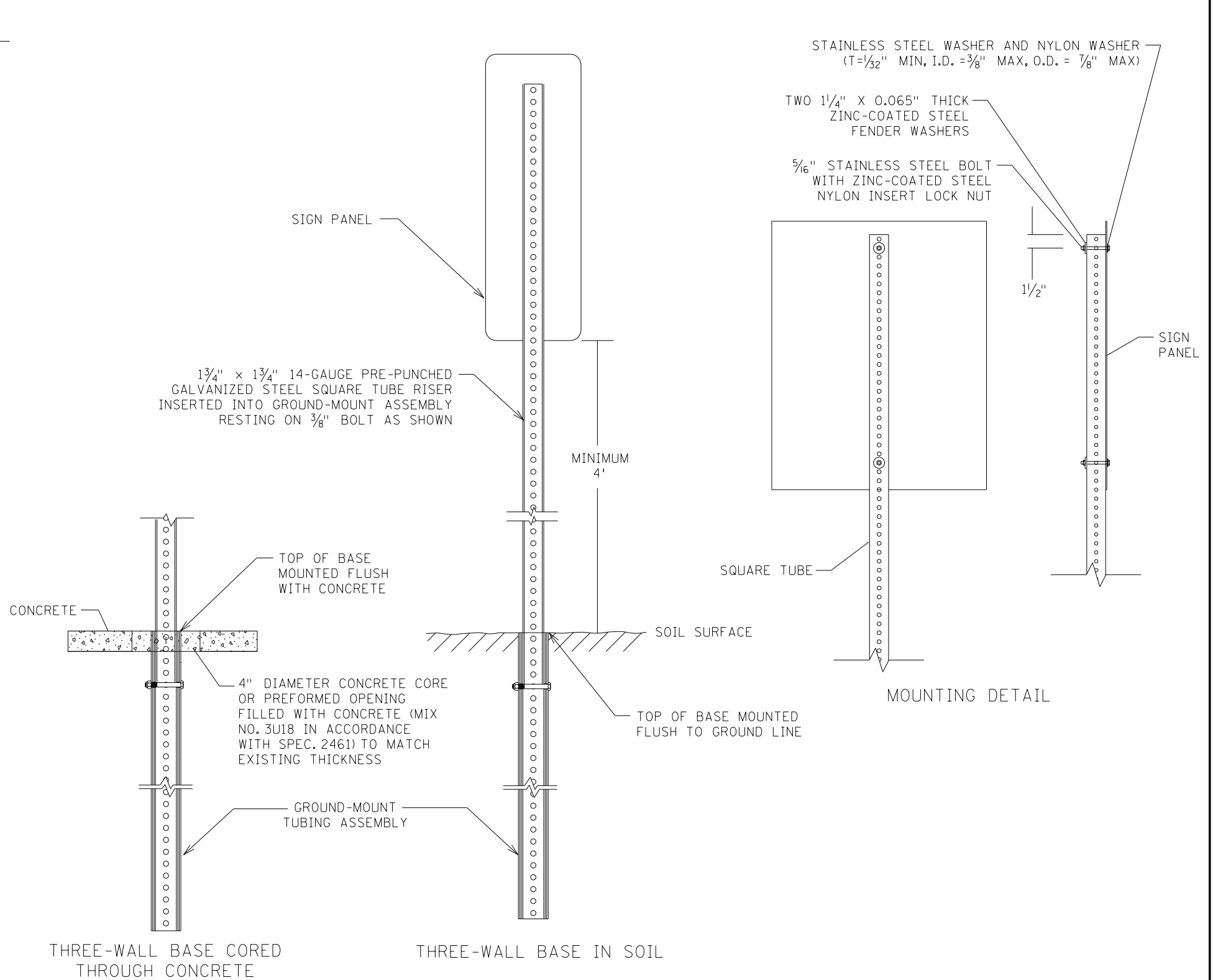
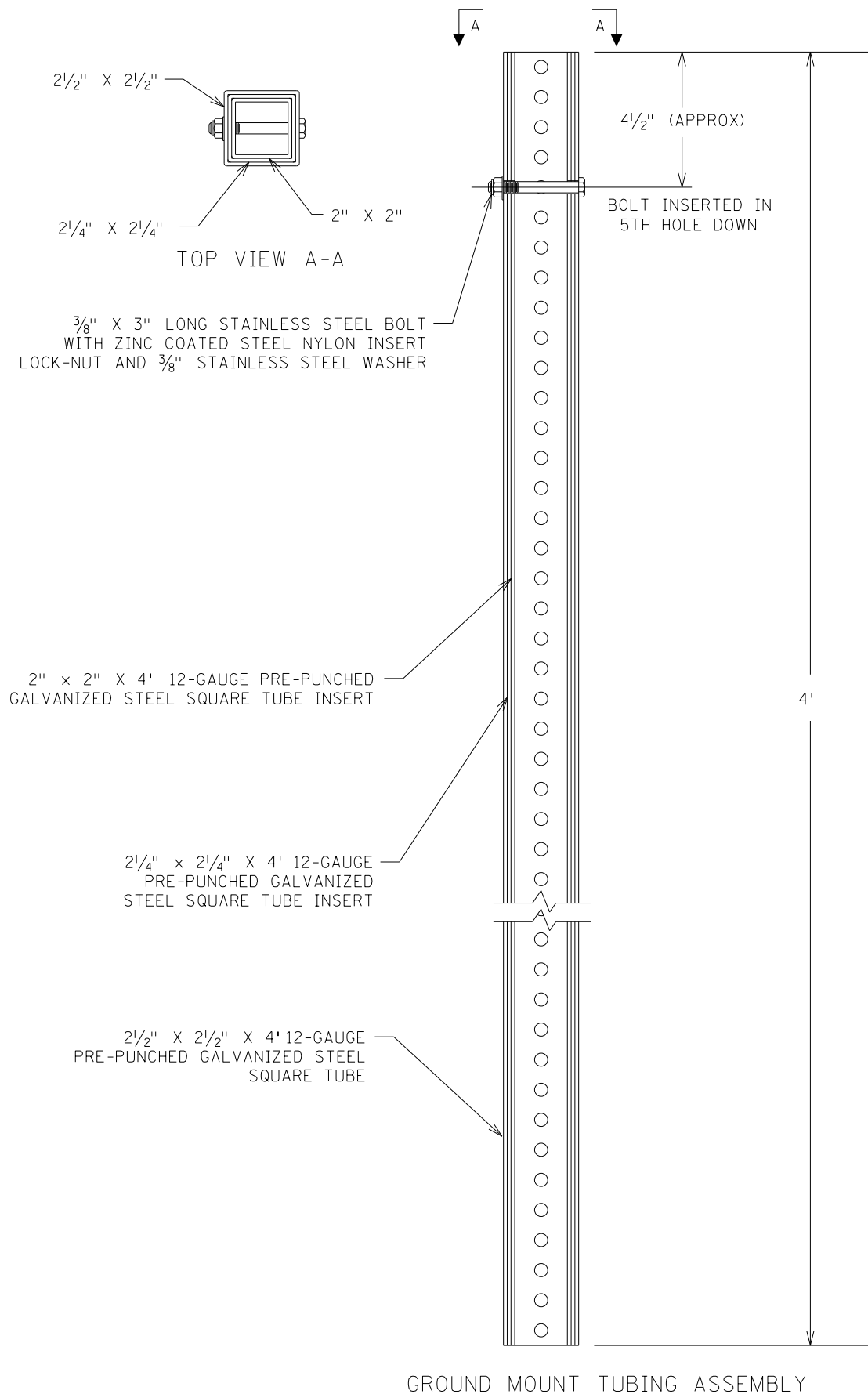
BRIAN SORENSON
STATE TRAFFIC ENGINEER
OFFICE OF TRAFFIC ENGINEERING

APPROVED: 08-09-2023
REVISED:


THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD
PLAN
5-297.718

3 OF 3



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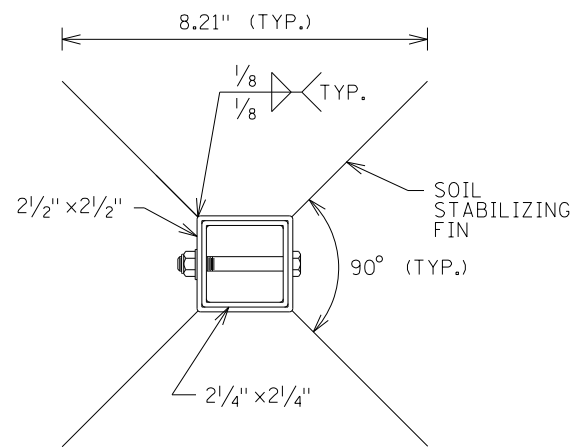
THREE-WALL BASE
FOR 1 3/4" SQUARE-TUBE RISER POST

APPROVED: 11-29-2022
REVISED:

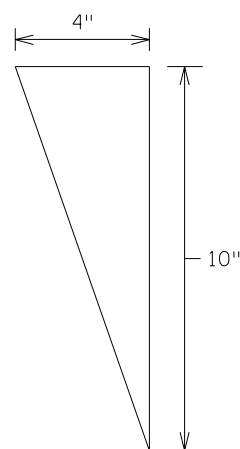
THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD
PLAN
5-297.721

1 OF 1



VIEW A-A



SOIL STABILIZING FIN
FOUR REQUIRED

12-GAUGE PRE-GALVANIZED ASTM A569 STEEL.
WELD THE 10" EDGE OF EACH FIN TO EACH
CORNER OF THE 2 1/2" SQUARE TUBE. SEE VIEW
A-A FOR WELDING DETAILS. WELDS MUST BE
ZINC-COATED.

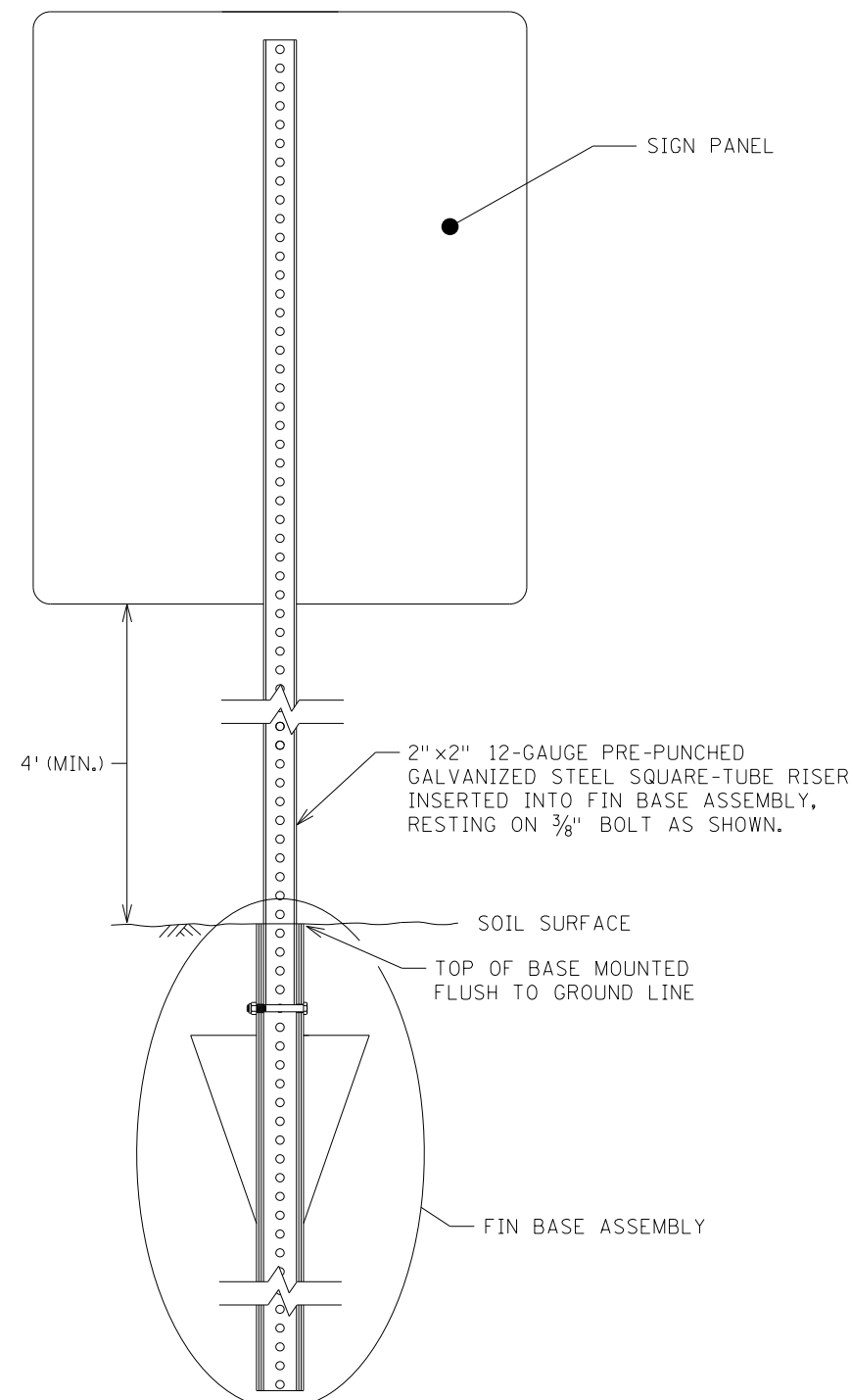
3/8" x 3" LONG STAINLESS STEEL
BOLT WITH ZINC-COATED STEEL
NYLON INSERT LOCK-NUT AND
3/8" STAINLESS STEEL WASHER

SOIL
STABILIZING
FIN

2 1/4" x 2 1/4" x 4' 12-GAUGE
PRE-PUNCHED GALVANIZED
STEEL SQUARE-TUBE INSERT

2 1/2" x 2 1/2" x 4' 12-GAUGE
PRE-PUNCHED GALVANIZED
STEEL SQUARE TUBE

FIN BASE ASSEMBLY



FIN BASE IN SOIL

NOTES:

THE CRASH RESPONSE TYPE FOR THIS STRUCTURE IS BENDABLE.

TO MEET CRASHWORTHY REQUIREMENTS, THE DISTANCE BETWEEN THE BOTTOM OF THE SIGN PANEL
AND THE GROUND SURFACE BELOW ANY PORTION OF THE SIGN PANEL MUST BE A MINIMUM OF 4'.
SEE TABULATIONS FOR MOUNTING HEIGHT.

SEE STANDARD PLAN 5-297.718 FOR ADDITIONAL MOUNTING DETAILS.

SQUARE-TUBE SIGN POSTS IN ACCORDANCE WITH SPEC. 3402.

① INSERT BOLT IN 5TH HOLE DOWN.

LEAD
EXPERT
OFFICE

BRIAN SORENSON
STATE TRAFFIC ENGINEER
OFFICE OF TRAFFIC ENGINEERING

FIN BASE
FOR 2" SQUARE-TUBE RISER POST IN SOIL

APPROVED: 08-09-2023
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD
PLAN
5-297.722

1 OF 1



50
SCALE IN FEET

CITY OF PRINSBURG

KANDIYOHI AVE

PLEASANT AVE

TAMS ID N/A
TH 7 RP 100+00.055
STA 527+03
INP. 18" X 238' CSP + 2 METAL APRONS
REMOVE METAL CULVERT - 238 LF
REMOVE METAL APRON LT/RT

REMOVE DRAINAGE
STRUCTURE
REMOVE PIPE SEWER (4" PVC - 6 LF)

REMOVE CURB &
GUTTER (12 LF)

SAWING BITUMINOUS PAVEMENT (FULL DEPTH) - 72 LF

TAMS ID N/A
TH 7 RP 100+00.077
STA 528+21
INP. 18" X 94' CSP
REMOVE SEWER PIPE (STORM) (APPROX 32')

REMOVE CURB & GUTTER
(36 LF)

SAWING BITUMINOUS
PAVEMENT (FULL DEPTH)
- 64 LF

BEGIN CS 3401 (TH 7)
REF PT 100+00.025

END CS 3401 (TH 7)
REF PT 100+00.096

PT. 527+66.04
STA 527+66.04 BK =
EQUATION: STA 527+66.51 AH

UTILITY LEGEND

CONFLICT	OWNER	DESCRIPTION	ACTION	REMARKS
AR7-51	ARVIG	COMM	LEAVE AS IS	
CE7-51	CENEX	STORM	LEAVE AS IS	(1)
DO7-51	DOOLEY'S NATURAL GAS	GAS	ADJUST	LOWER (4)
DO7-52	DOOLEY'S NATURAL GAS	GAS	ADJUST	LOWER (4)
FR7-51	FRONTIER COMMUNICATIONS	COMM	RELOCATE	
FR7-52	FRONTIER COMMUNICATIONS	COMM	RELOCATE	
FR7-53	FRONTIER COMMUNICATIONS	COMM	RELOCATE	
FR7-54	FRONTIER COMMUNICATIONS	COMM	RELOCATE	
PR7-51	CITY OF PRINSBURG	SAN	LEAVE AS IS	
PR7-52	CITY OF PRINSBURG	SAN	LEAVE AS IS	
PR7-53	CITY OF PRINSBURG	STORM	LEAVE AS IS	(2)
PR7-54	CITY OF PRINSBURG	STORM	LEAVE AS IS	(3)
PR7-55	CITY OF PRINSBURG	WATER	LEAVE AS IS	
XL7-51	XCEL ENERGY	ELEC	LEAVE AS IS	

LEGEND

--- EXISTING R/W	== PROPOSED CULVERT LINING	→ FLOW ARROW	--- TREE LINE
--- ACCESS CONTROL	--- PROPOSED CULVERT / STORM SEWER	--- EXISTING GUARDRAIL	--- TREE
--- CONSTRUCTION LIMITS	--- EXISTING APRON	--- POWER - OVERHEAD	--- POWER POLE
--- LIMITS OF DISTURBANCE	--- SALVAGE AND INSTALL APRON	--- POWER - BURIED	--- MAILBOX
--- WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)	--- PROPOSED APRON	--- GAS	--- UTILITY PEDESTAL
--- WET DITCH	--- EXISTING / PROPOSED MANHOLE	--- COMMUNICATION LINE	--- EXISTING FENCE
--- OTHER AQUATIC RESOURCES	--- EXISTING / PROPOSED DROP INLET	--- FIBER OPTIC - BURIED	--- PAVEMENT RECONSTRUCTION
--- INPLACE CULVERT / STORM SEWER		--- INPLACE WATER MAIN	--- RANDOM RIPRAP
		--- INPLACE WATER VALVE	

GENERAL NOTES:

- ONLY ONE ENTRANCE CAN BE CLOSED AT A TIME.
- SEE CONSTRUCTION AND DRAINAGE PLANS ON SHEET 69.

UTILITY LEGEND NOTES:

- CONNECT EXISTING 4" PVC PIPE SEWER TO PROPOSED STRUCTURE 5022. WORK TO BE DONE BY CONTRACTOR.
- CONNECT EXISTING 12" CP PIPE SEWER TO PROPOSED STRUCTURE 5021. WORK TO BE DONE BY CONTRACTOR.
- CONNECT EXISTING PIPE INTO PROPOSED STRUCTURE 5010. WORK TO BE DONE BY CONTRACTOR.
- CONTRACTOR TO PROVIDE 1-WEEK MINIMUM NOTIFICATION TO DOOLEY'S NATURAL GAS TO GET THE GAS SERVICE SHUT OFF FOR CULVERT INSTALLATION



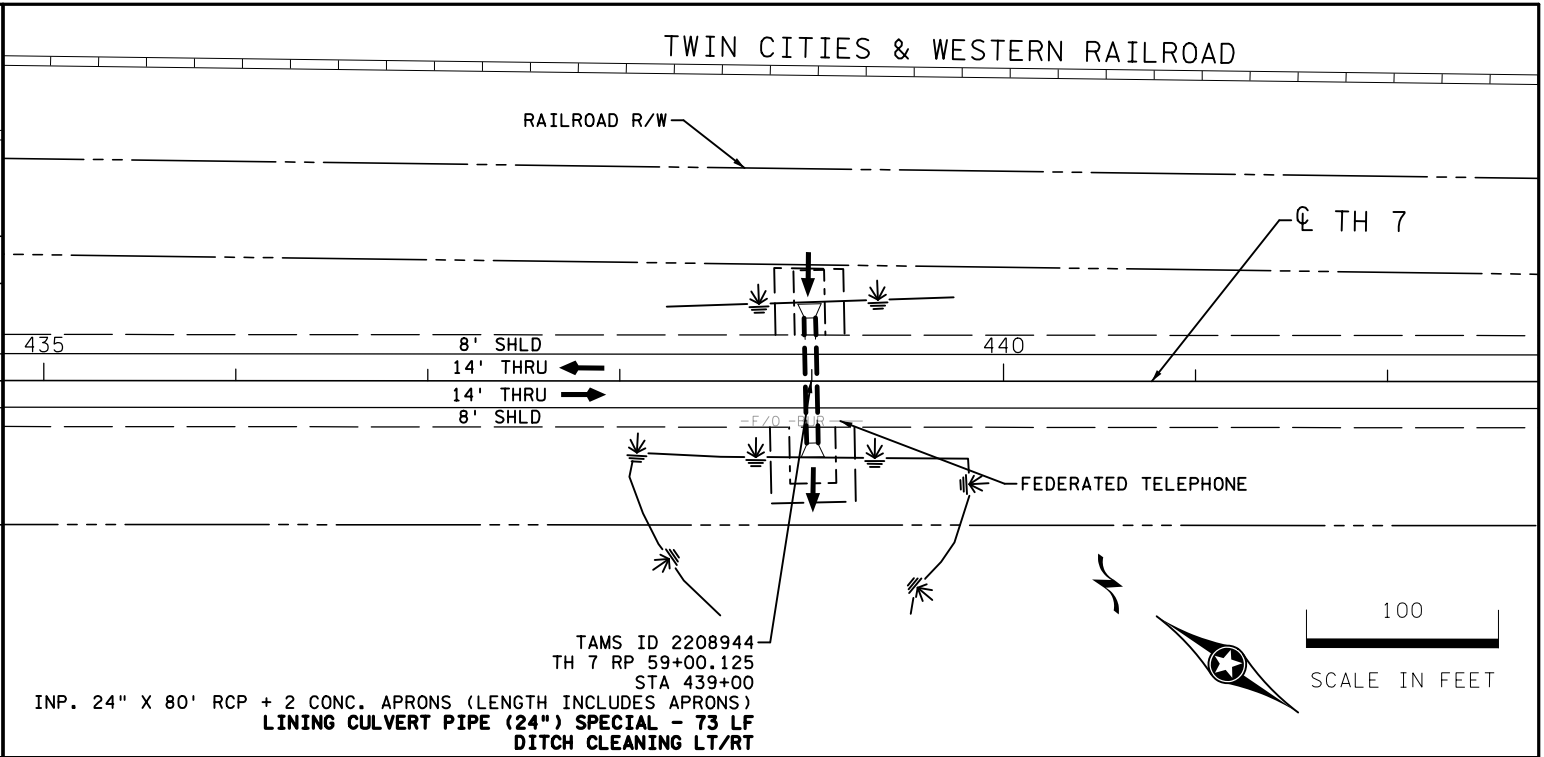
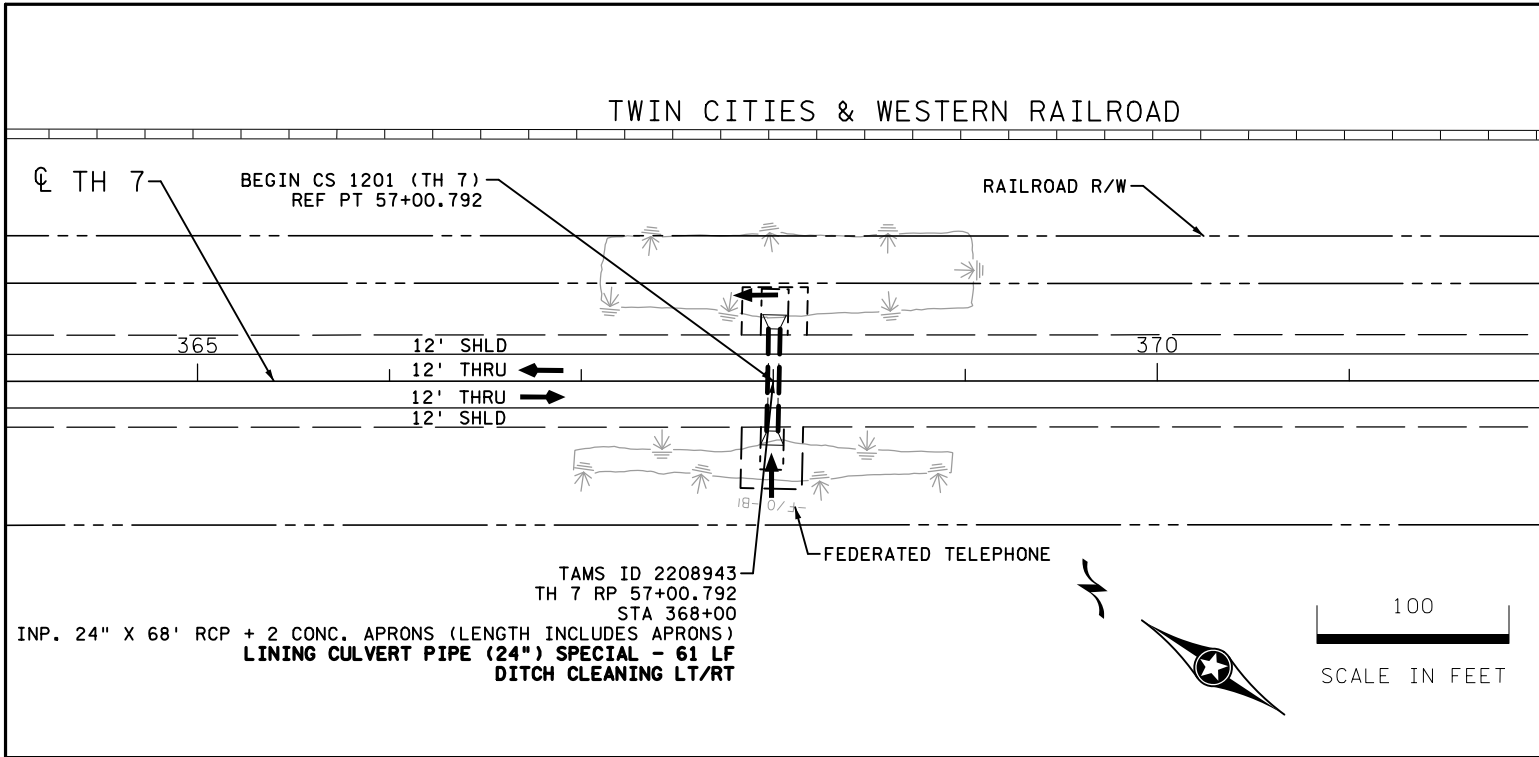
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON
SIGNATURE: *Dan Swanson*
DATE: 09/19/24 LICENSE #: 54298

INPLACE UTILITY, TOPO, AND REMOVAL PLANS
TH 7 PRINSBURG

SP 8828-139
SHEET NO. 58 OF 212 SHEETS

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11/6/2024
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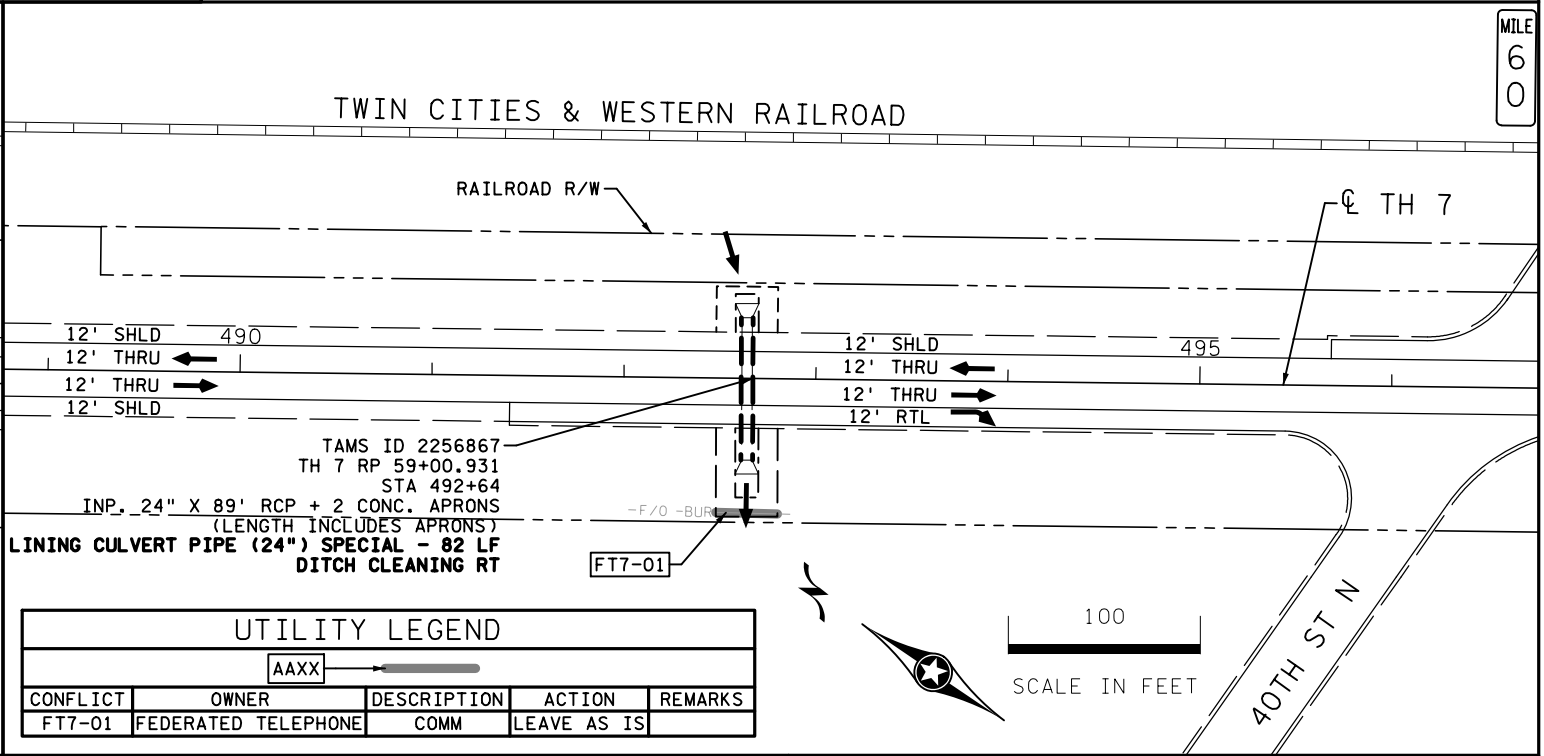
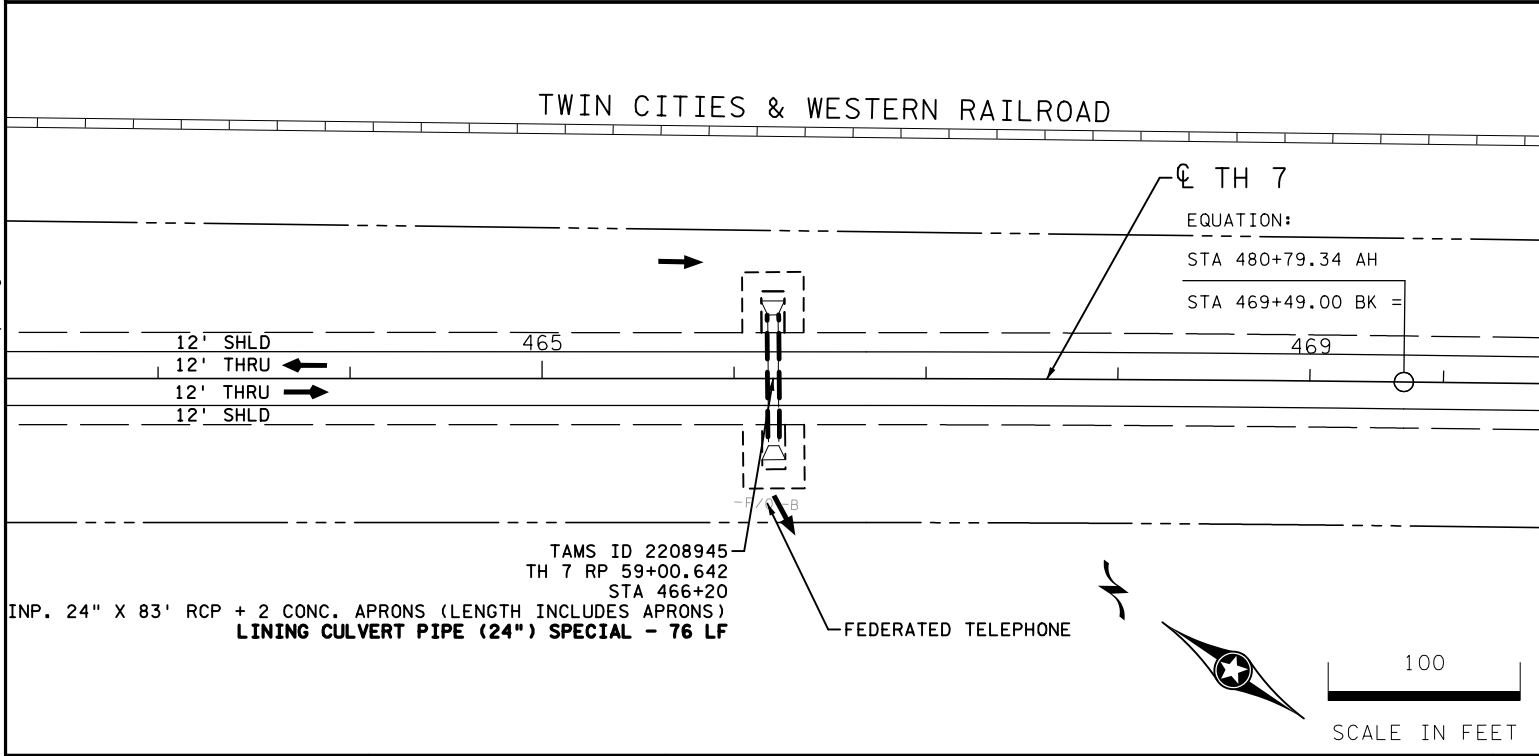


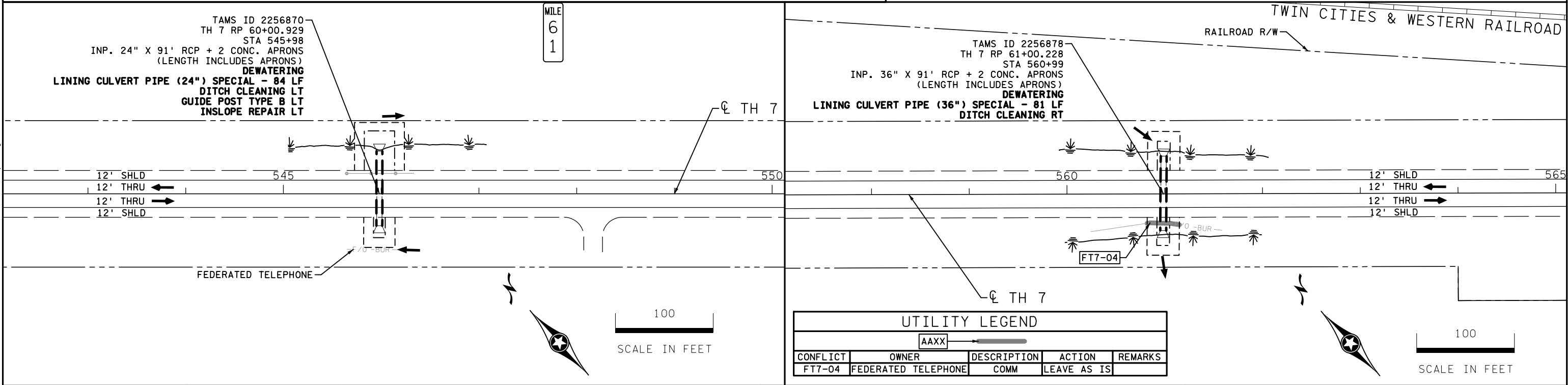
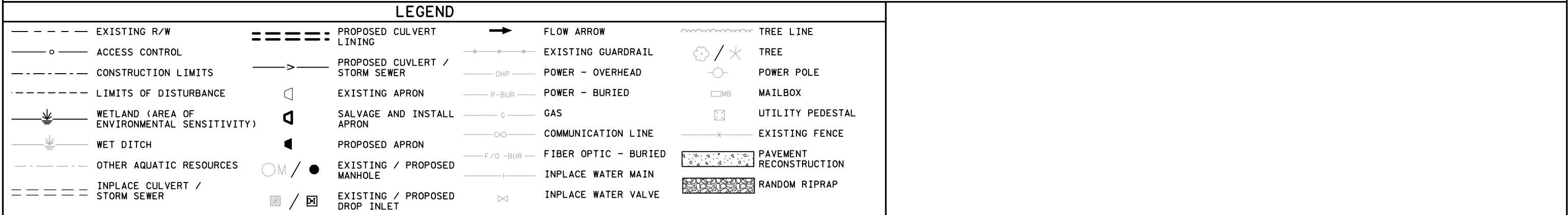
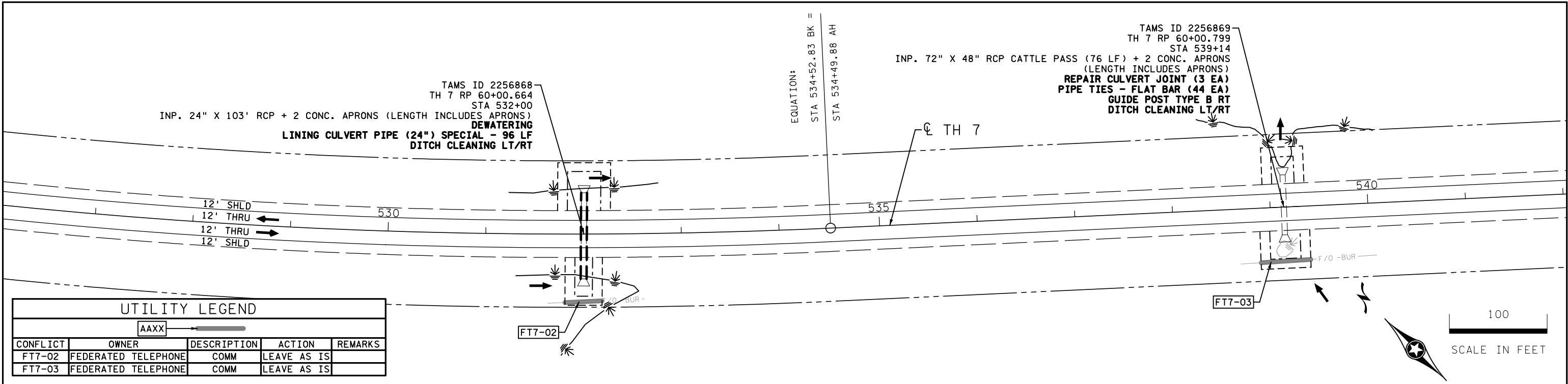
LEGEND

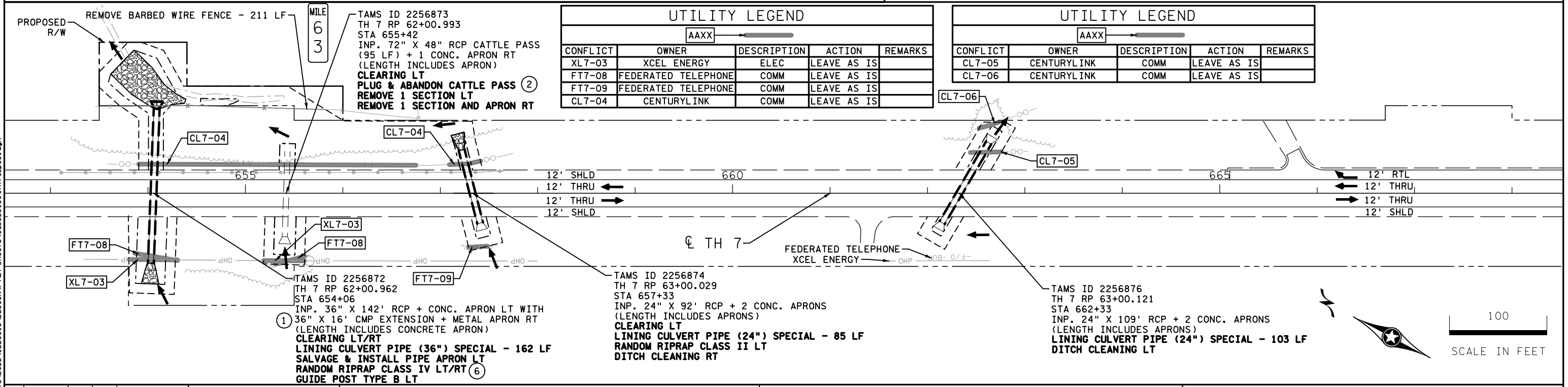
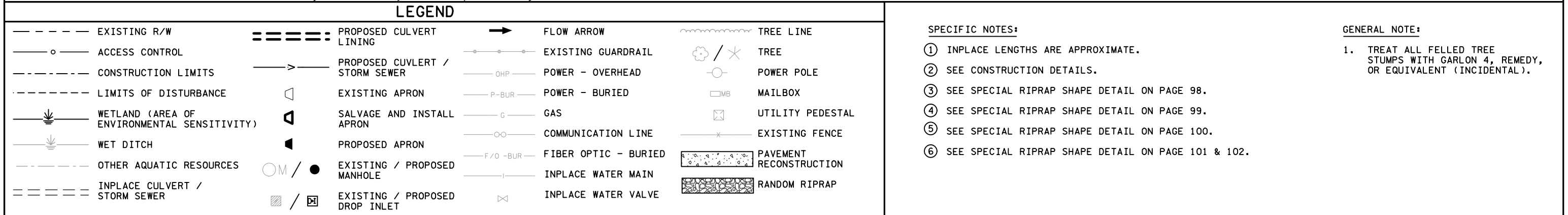
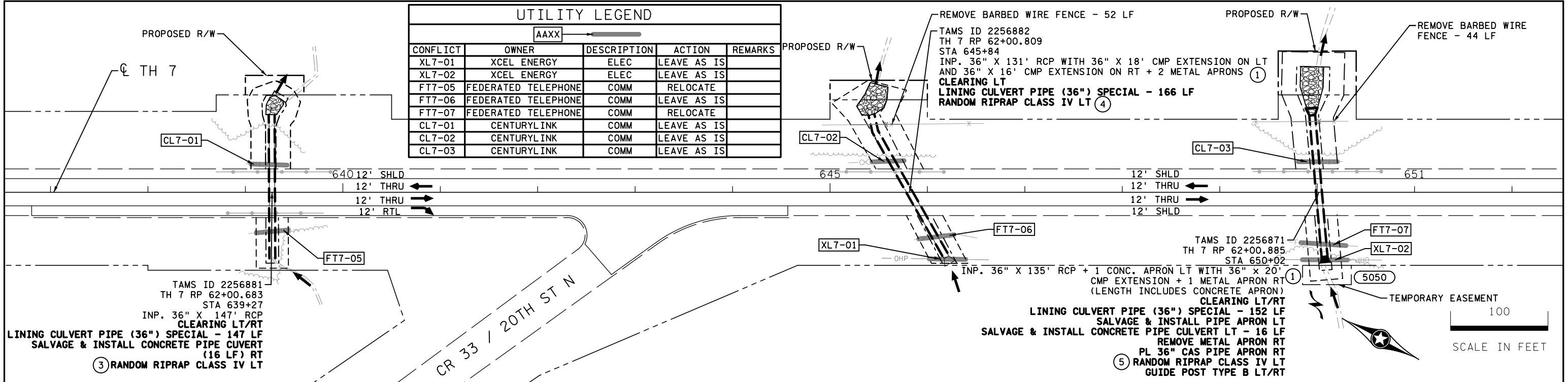
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○	ACCESS CONTROL	→	PROPOSED CULVERT / STORM SEWER	---	EXISTING GUARDRAIL	✱	TREE
---	CONSTRUCTION LIMITS	→	EXISTING APRON	---	POWER - OVERHEAD	○	POWER POLE
---	LIMITS OF DISTURBANCE	→	SALVAGE AND INSTALL APRON	---	POWER - BURIED	□	MAILBOX
✱	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)	→	PROPOSED APRON	---	GAS	□	UTILITY PEDESTAL
✱	WET DITCH	→	EXISTING / PROPOSED MANHOLE	---	COMMUNICATION LINE	✱	EXISTING FENCE
---	OTHER AQUATIC RESOURCES	→	EXISTING / PROPOSED DROP INLET	---	FIBER OPTIC - BURIED	▨	PAVEMENT RECONSTRUCTION
---	INPLACE CULVERT / STORM SEWER	→		---	INPLACE WATER MAIN	▨	RANDOM RIPRAP

UTILITY LEGEND

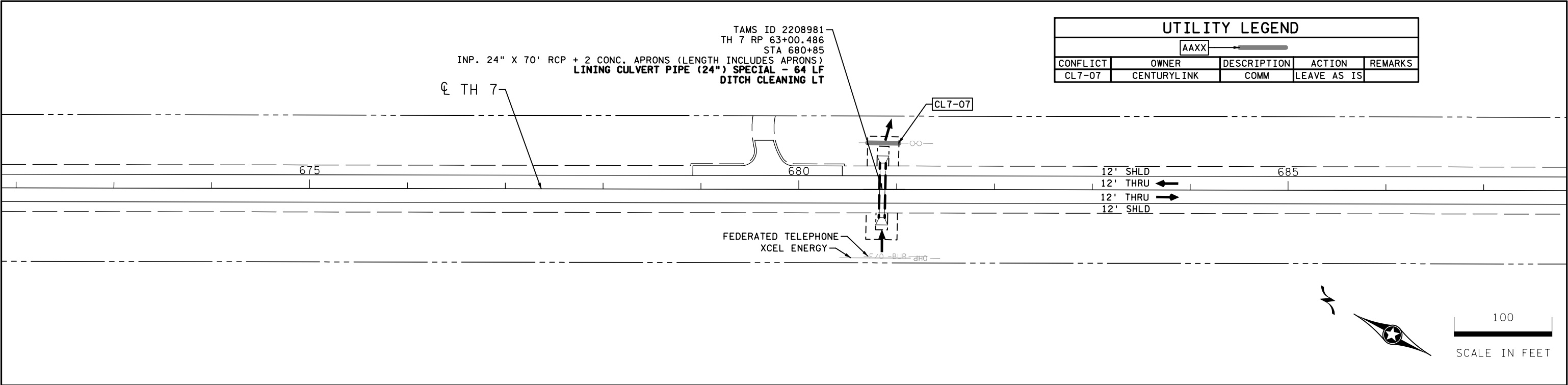
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○	ACCESS CONTROL	→	PROPOSED CULVERT / STORM SEWER	---	EXISTING GUARDRAIL	✱	TREE
---	CONSTRUCTION LIMITS	→	EXISTING APRON	---	POWER - OVERHEAD	○	POWER POLE
---	LIMITS OF DISTURBANCE	→	SALVAGE AND INSTALL APRON	---	POWER - BURIED	□	MAILBOX
✱	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)	→	PROPOSED APRON	---	GAS	□	UTILITY PEDESTAL
✱	WET DITCH	→	EXISTING / PROPOSED MANHOLE	---	COMMUNICATION LINE	✱	EXISTING FENCE
---	OTHER AQUATIC RESOURCES	→	EXISTING / PROPOSED DROP INLET	---	FIBER OPTIC - BURIED	▨	PAVEMENT RECONSTRUCTION
---	INPLACE CULVERT / STORM SEWER	→		---	INPLACE WATER MAIN	▨	RANDOM RIPRAP



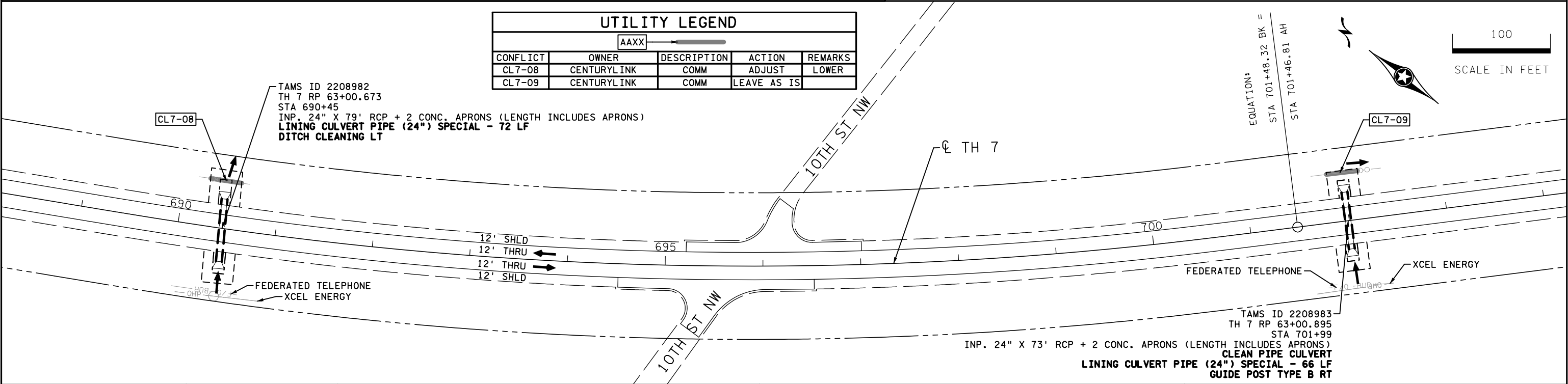


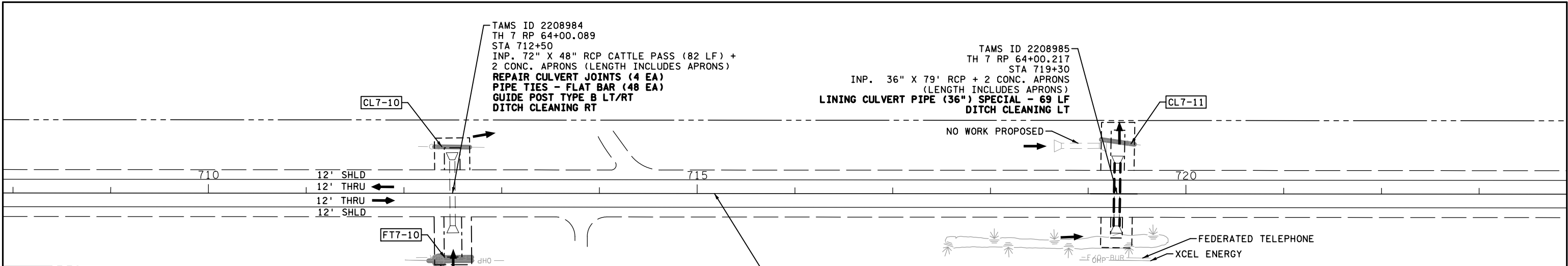


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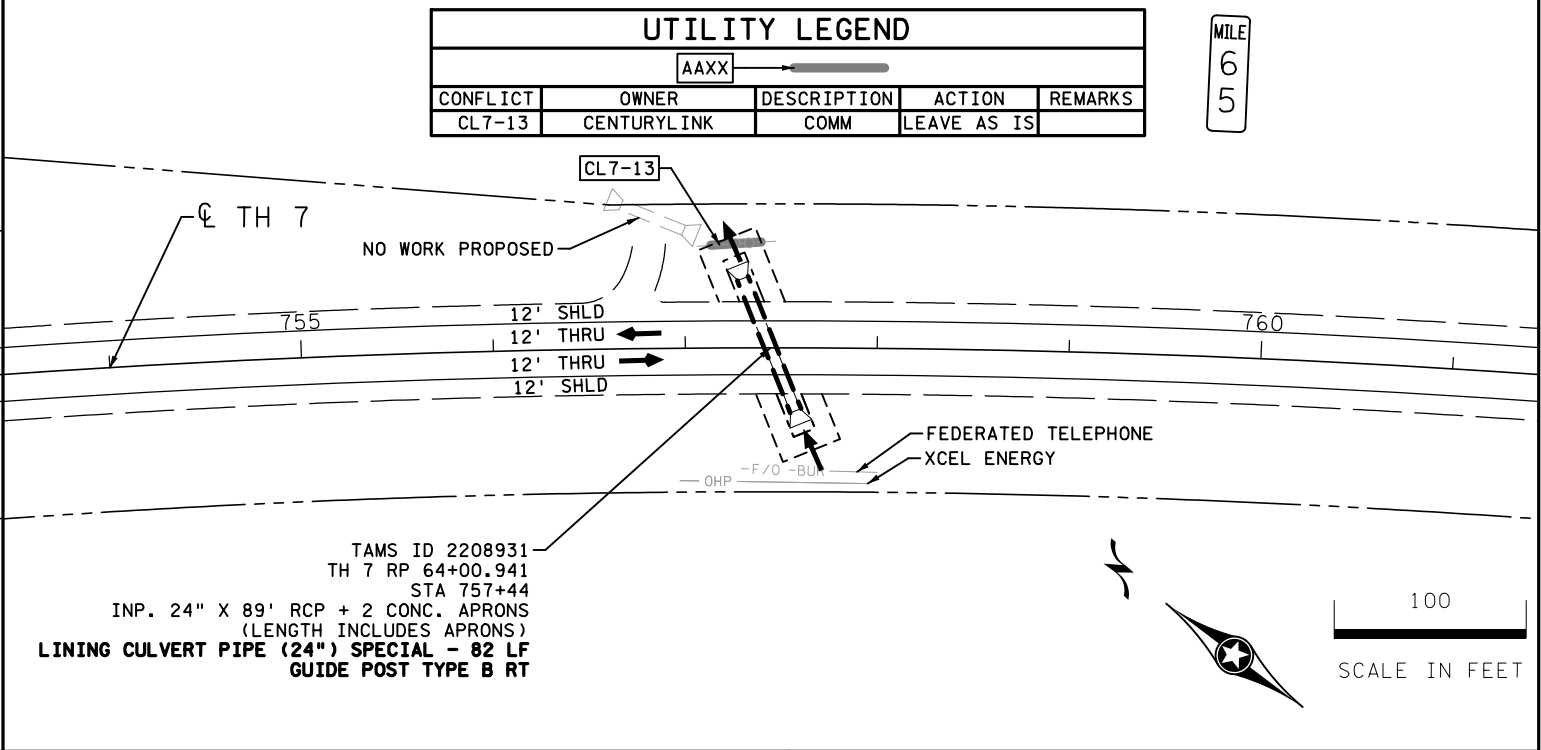
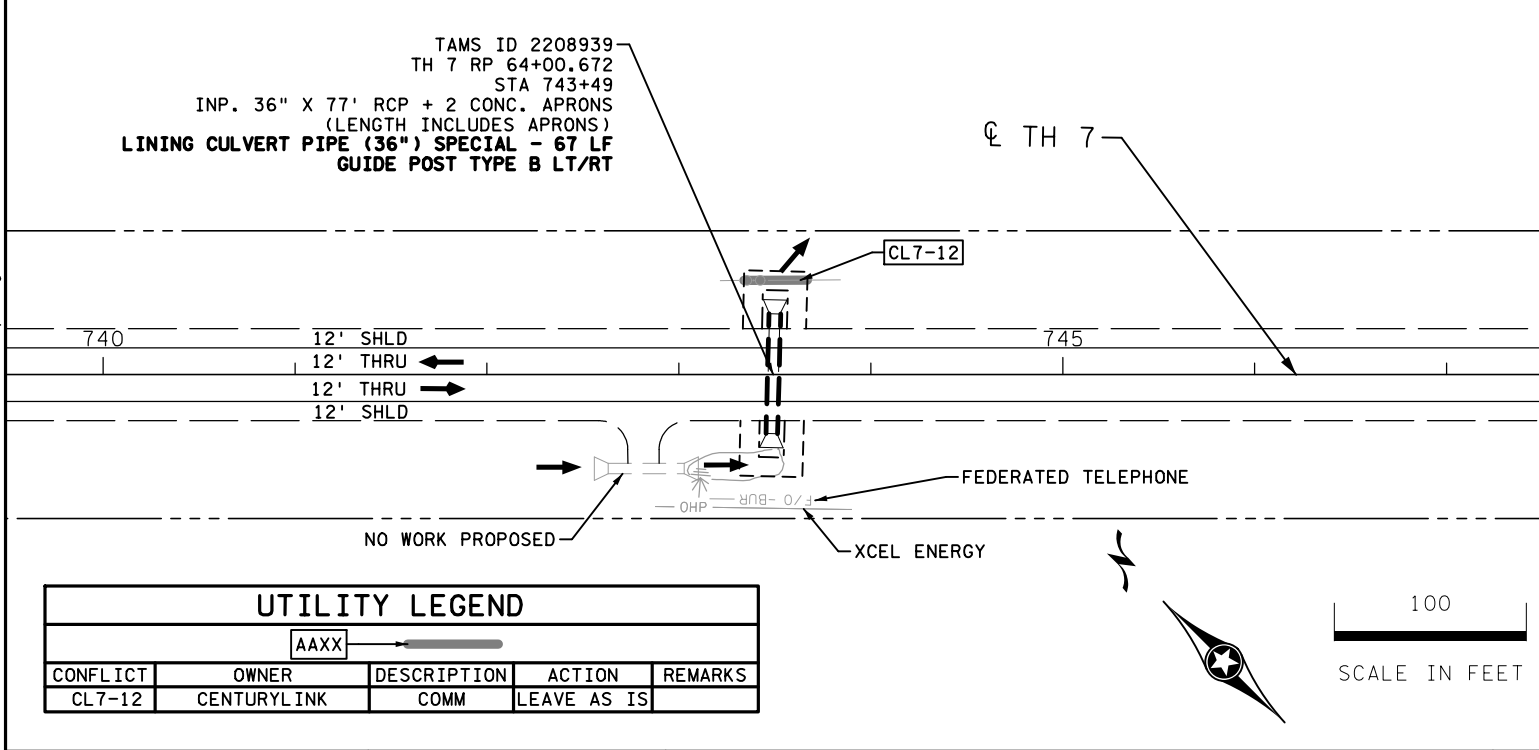
LEGEND					
---	EXISTING R/W	==	PROPOSED CULVERT LINING	→	FLOW ARROW
○	ACCESS CONTROL	→	PROPOSED CULVERT / STORM SEWER	---	EXISTING GUARDRAIL
---	CONSTRUCTION LIMITS	→	EXISTING APRON	---	POWER - OVERHEAD
---	LIMITS OF DISTURBANCE	→	SALVAGE AND INSTALL APRON	---	POWER - BURIED
---	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)	→	PROPOSED APRON	---	GAS
---	WET DITCH	→	EXISTING / PROPOSED MANHOLE	---	COMMUNICATION LINE
---	OTHER AQUATIC RESOURCES	→	EXISTING / PROPOSED DROP INLET	---	FIBER OPTIC - BURIED
---	INPLACE CULVERT / STORM SEWER	→		---	INPLACE WATER MAIN
		→		---	INPLACE WATER VALVE
		→		---	TREE LINE
		→		---	TREE
		→		---	POWER POLE
		→		---	MAILBOX
		→		---	UTILITY PEDESTAL
		→		---	EXISTING FENCE
		→		---	PAVEMENT RECONSTRUCTION
		→		---	RANDOM RIPRAP

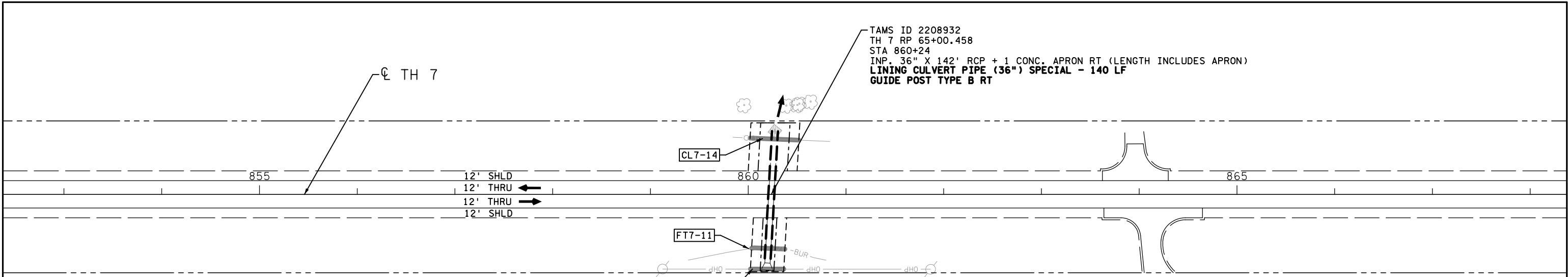




UTILITY LEGEND				
AAXX				
CONFLICT	OWNER	DESCRIPTION	ACTION	REMARKS
CL7-10	CENTURYLINK	COMM	LEAVE AS IS	
CL7-11	CENTURYLINK	COMM	ADJUST	LOWER
FT7-10	FEDERATED TELEPHONE	COMM	LEAVE AS IS	
XL7-04	XCEL ENERGY	POWER POLE	LEAVE AS IS	

LEGEND									
---	EXISTING R/W	==	PROPOSED CULVERT LINING	→	FLOW ARROW	~~~~~	TREE LINE	⊗	TREE
○	ACCESS CONTROL	→	PROPOSED CULVERT / STORM SEWER	—OHP—	POWER - OVERHEAD	—O—	POWER POLE	□MB	MAILBOX
---	CONSTRUCTION LIMITS	▽	EXISTING APRON	—P-BUR—	POWER - BURIED	□	UTILITY PEDESTAL	×	EXISTING FENCE
---	LIMITS OF DISTURBANCE	◀	SALVAGE AND INSTALL APRON	—G—	GAS	□	UTILITY PEDESTAL	×	EXISTING FENCE
⊗	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)	▶	PROPOSED APRON	—F/O -BUR—	FIBER OPTIC - BURIED	□	UTILITY PEDESTAL	×	EXISTING FENCE
⊗	WET DITCH	○M / ●	EXISTING / PROPOSED MANHOLE	—	INPLACE WATER MAIN	□	UTILITY PEDESTAL	×	EXISTING FENCE
---	OTHER AQUATIC RESOURCES	▨ / ▩	EXISTING / PROPOSED DROP INLET	⊗	INPLACE WATER VALVE	□	UTILITY PEDESTAL	×	EXISTING FENCE
---	INPLACE CULVERT / STORM SEWER								

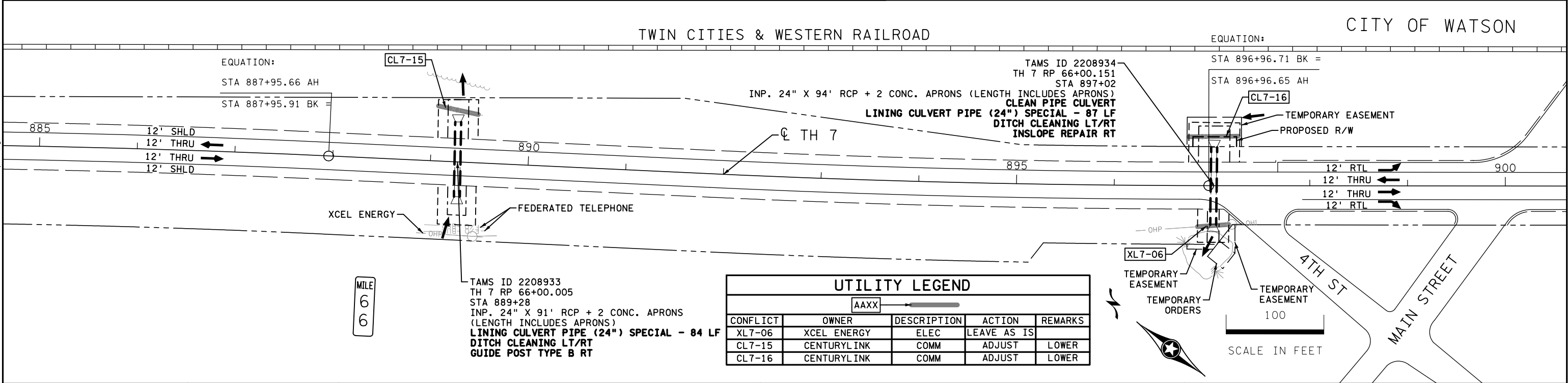




TAMS ID 2208932
TH 7 RP 65+00.458
STA 860+24
INP. 36" X 142' RCP + 1 CONC. APRON RT (LENGTH INCLUDES APRON)
LINING CULVERT PIPE (36") SPECIAL - 140 LF
GUIDE POST TYPE B RT

UTILITY LEGEND				
	AAXX			
CONFLICT	OWNER	DESCRIPTION	ACTION	REMARKS
XL7-05	XCEL ENERGY	ELEC	LEAVE AS IS	
FT7-11	FEDERATED TELEPHONE	COMM	LEAVE AS IS	
CL7-14	CENTURYLINK	COMM	LEAVE AS IS	

LEGEND				
--- EXISTING R/W	=== PROPOSED CULVERT LINING	→ FLOW ARROW	--- TREE LINE	
--- ACCESS CONTROL	--- PROPOSED CULVERT / STORM SEWER	--- EXISTING GUARDRAIL	--- TREE	
--- CONSTRUCTION LIMITS	--- EXISTING APRON	--- POWER - OVERHEAD	--- POWER POLE	
--- LIMITS OF DISTURBANCE	--- SALVAGE AND INSTALL APRON	--- POWER - BURIED	--- MAILBOX	
--- WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)	--- PROPOSED APRON	--- GAS	--- UTILITY PEDESTAL	
--- WET DITCH	--- EXISTING / PROPOSED MANHOLE	--- COMMUNICATION LINE	--- EXISTING FENCE	
--- OTHER AQUATIC RESOURCES	--- EXISTING / PROPOSED DROP INLET	--- FIBER OPTIC - BURIED	--- PAVEMENT RECONSTRUCTION	
--- INPLACE CULVERT / STORM SEWER		--- INPLACE WATER MAIN	--- RANDOM RIPRAP	
		--- INPLACE WATER VALVE		

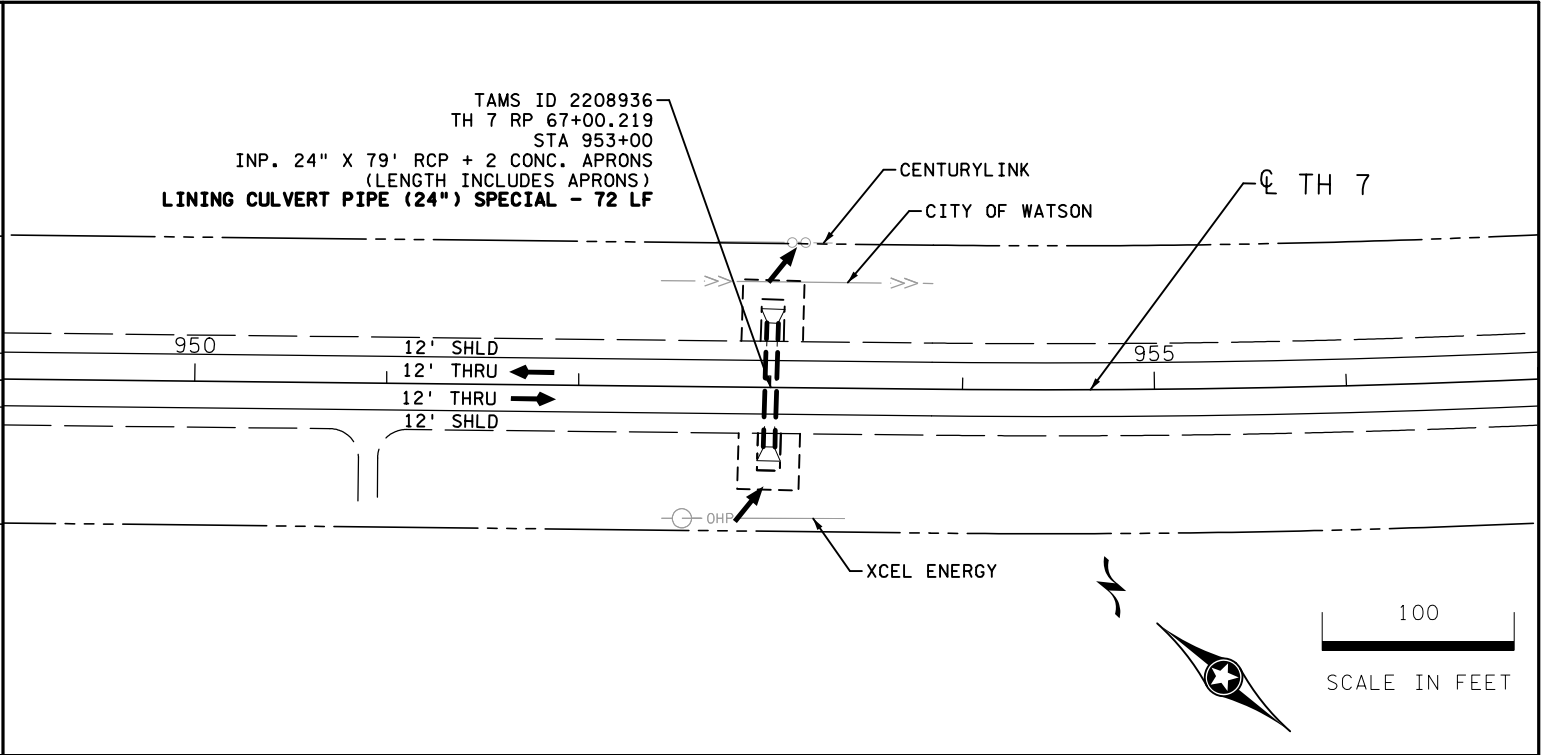
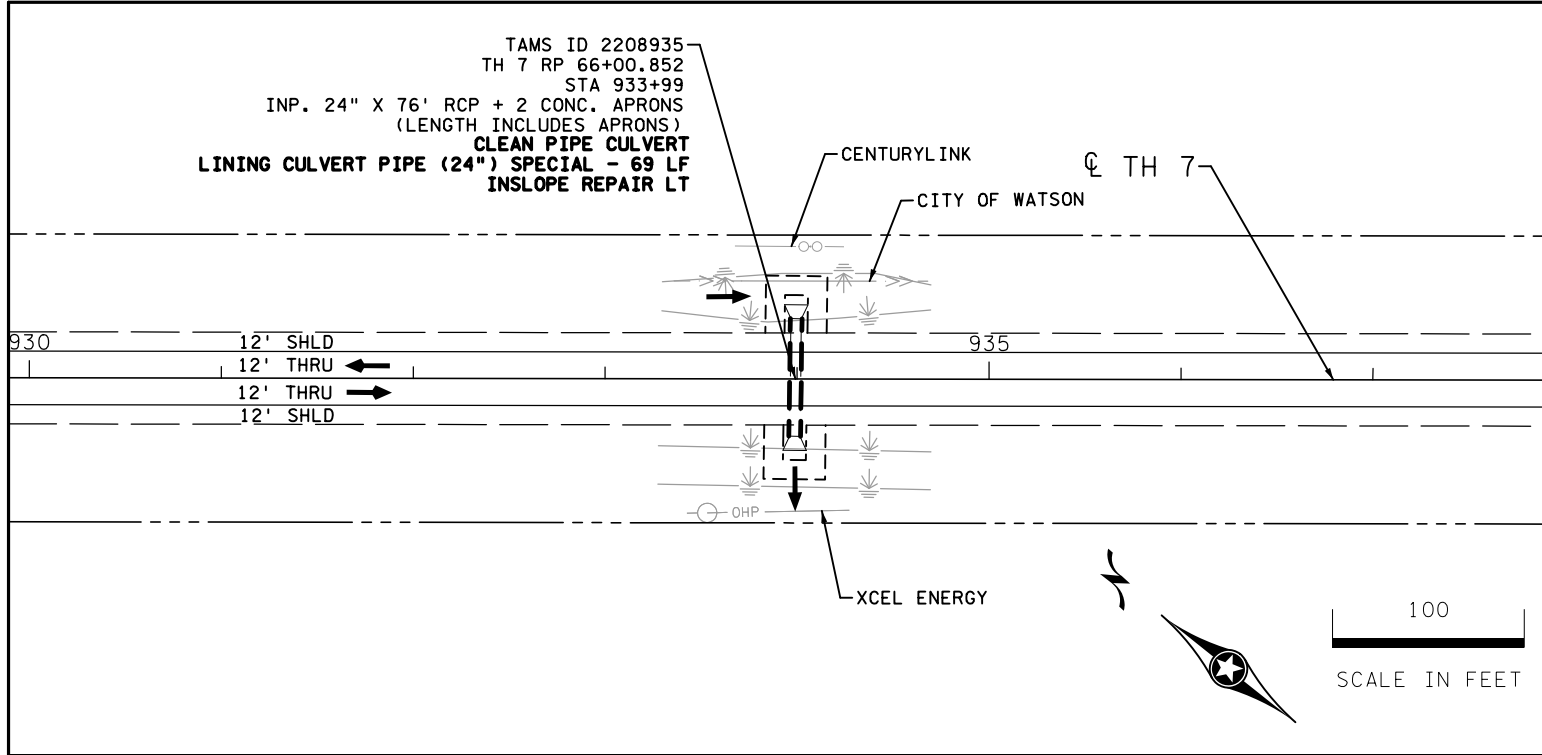




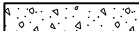

TAMS ID 2208934
TH 7 RP 66+00.151
STA 897+02
INP. 24" X 94' RCP + 2 CONC. APRONS (LENGTH INCLUDES APRONS)
CLEAN PIPE CULVERT
LINING CULVERT PIPE (24") SPECIAL - 87 LF
DITCH CLEANING LT/RT
INSLOPE REPAIR RT

EQUATION:
STA 896+96.71 BK =
STA 896+96.65 AH

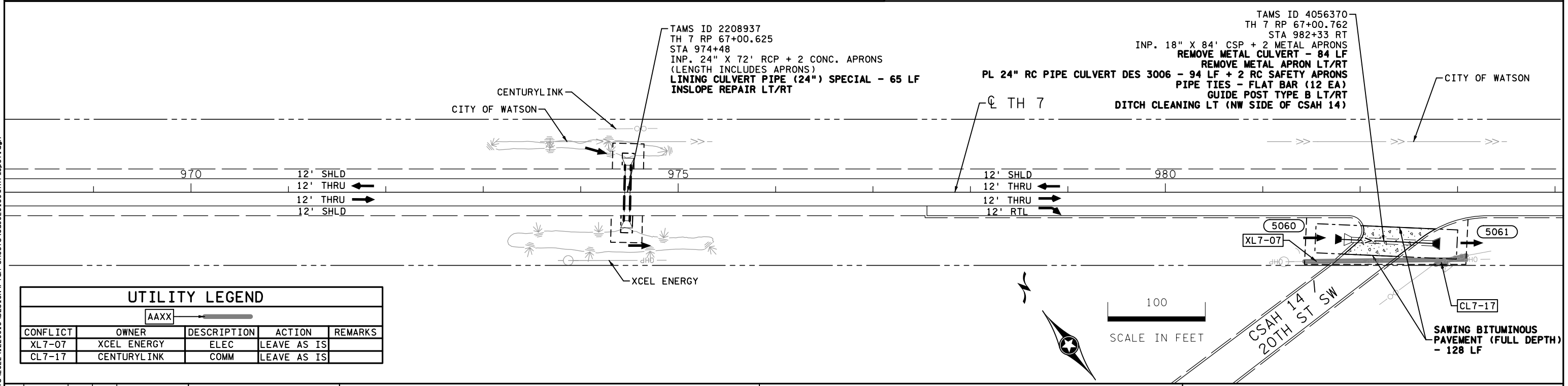
UTILITY LEGEND				
	AAXX			
CONFLICT	OWNER	DESCRIPTION	ACTION	REMARKS
XL7-06	XCEL ENERGY	ELEC	LEAVE AS IS	
CL7-15	CENTURYLINK	COMM	ADJUST	LOWER
CL7-16	CENTURYLINK	COMM	ADJUST	LOWER

TAMS ID 2208933
TH 7 RP 66+00.005
STA 889+28
INP. 24" X 91' RCP + 2 CONC. APRONS (LENGTH INCLUDES APRONS)
LINING CULVERT PIPE (24") SPECIAL - 84 LF
DITCH CLEANING LT/RT
GUIDE POST TYPE B RT

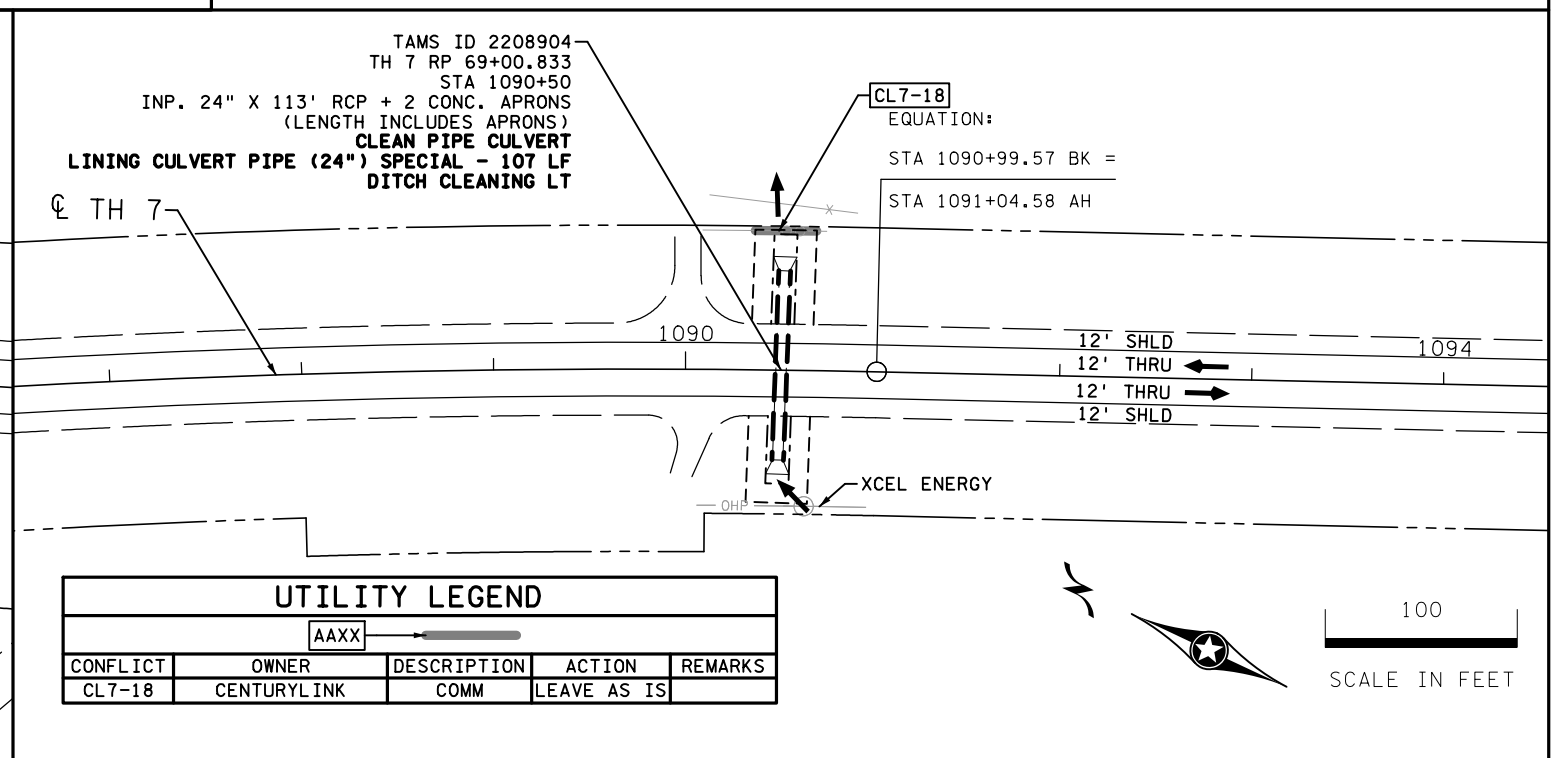
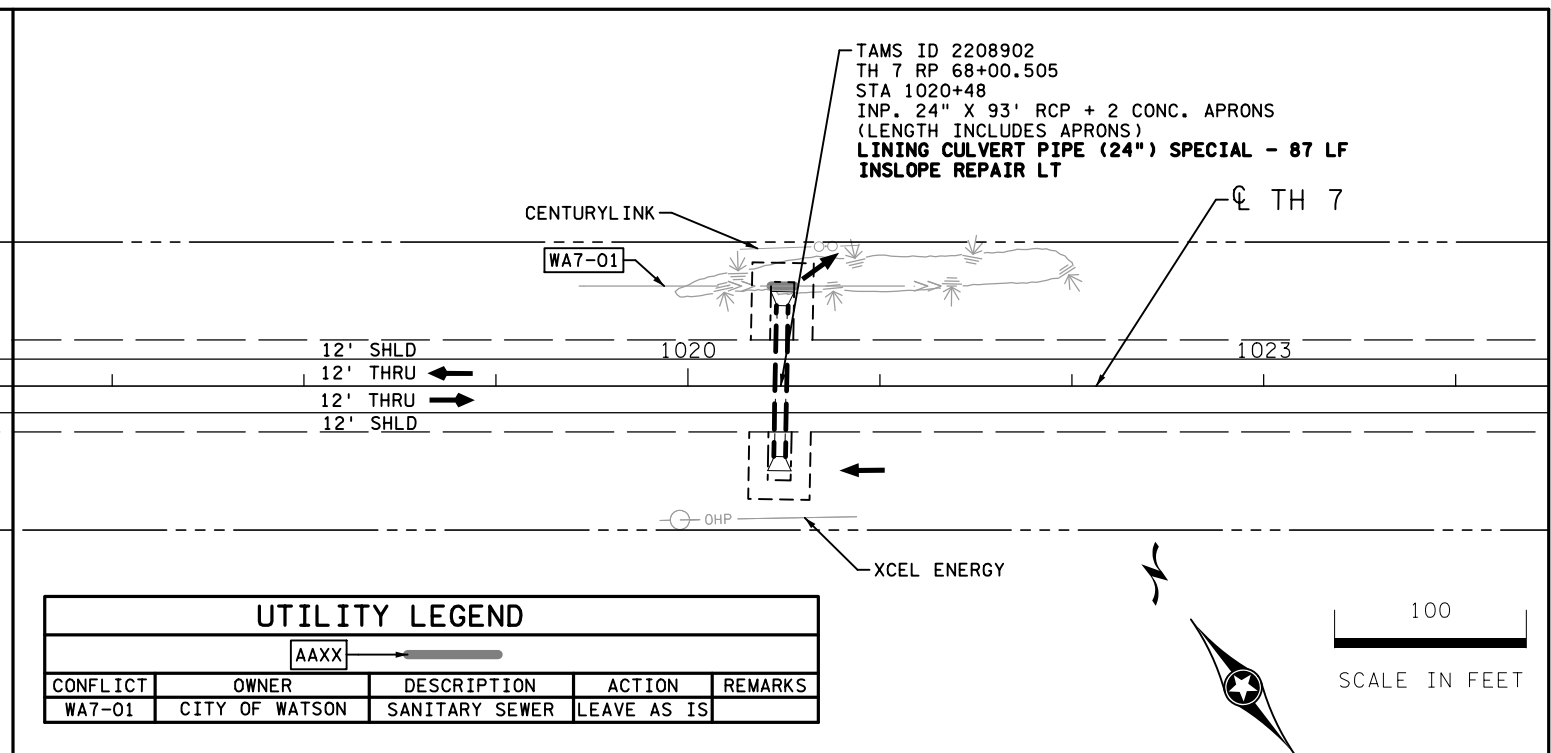


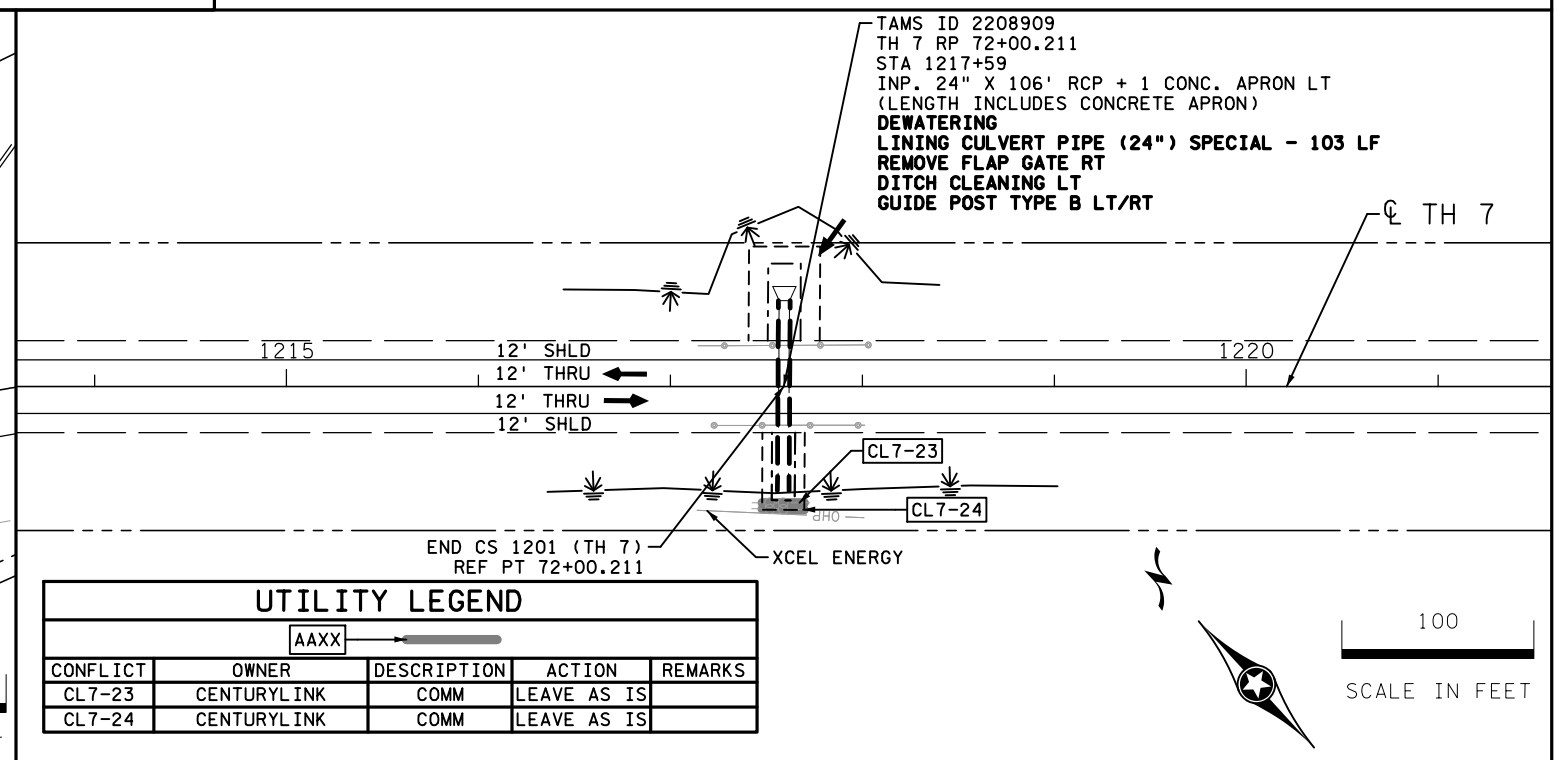
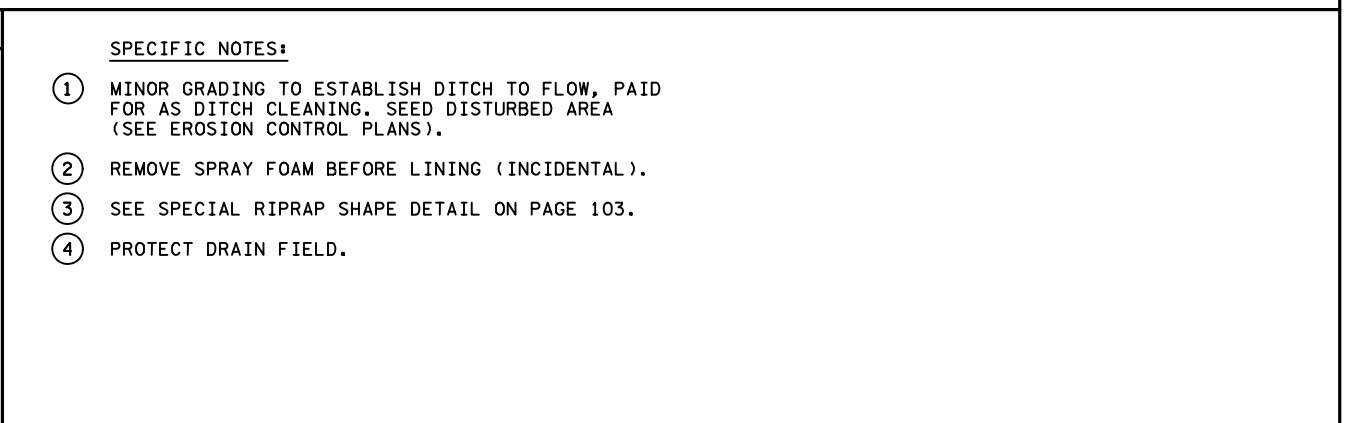
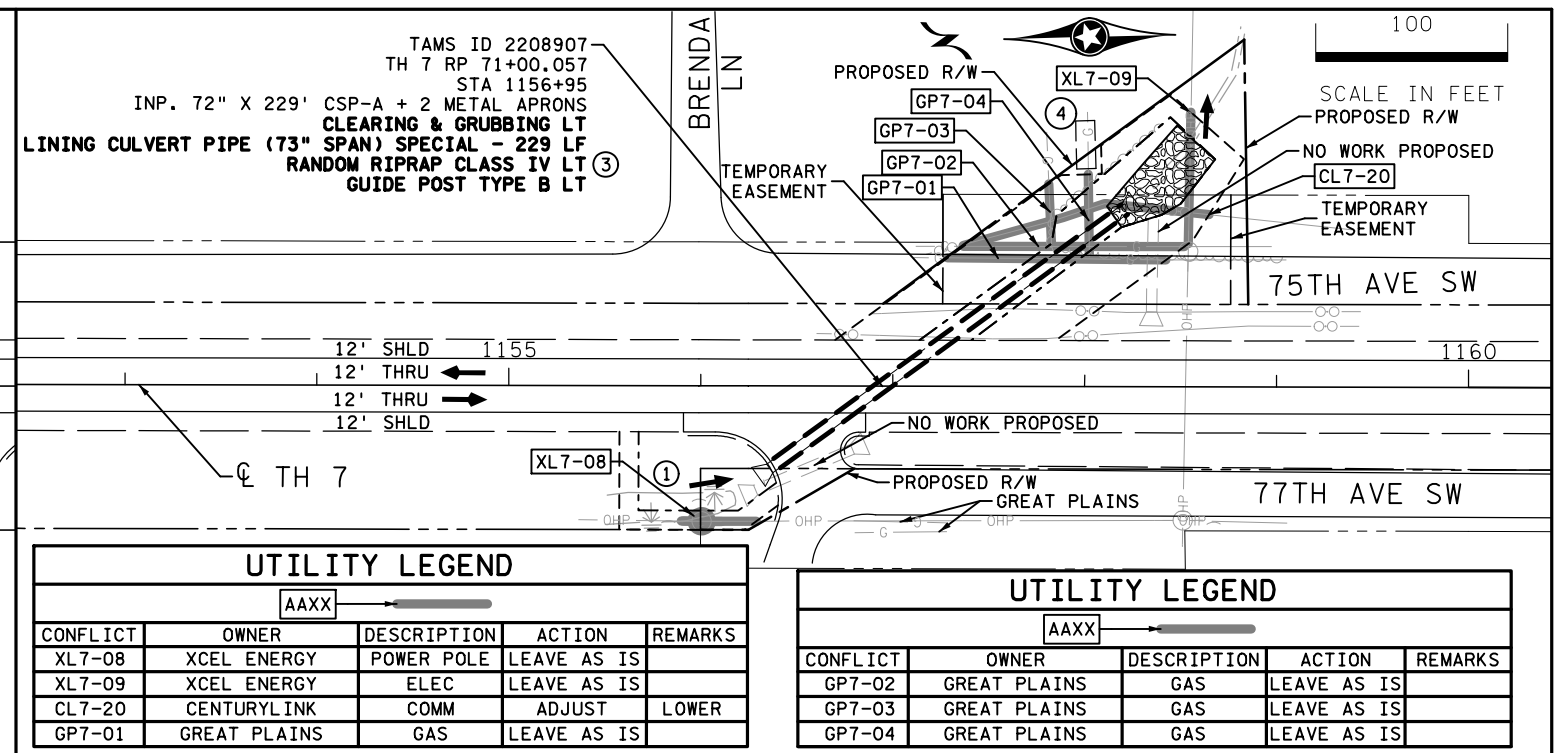
LEGEND							
---	EXISTING R/W	===	PROPOSED CULVERT LINING	➔	FLOW ARROW	~~~~~	TREE LINE
—○—	ACCESS CONTROL	—>—	PROPOSED CULVERT / STORM SEWER	—●—●—●—	EXISTING GUARDRAIL	☁ / ✖	TREE
----	CONSTRUCTION LIMITS	—>	PROPOSED CULVERT / STORM SEWER	—OHP—	POWER - OVERHEAD	—○—	POWER POLE
-----	LIMITS OF DISTURBANCE	◁	EXISTING APRON	—P-BUR—	POWER - BURIED	◻MB	MAILBOX
—  —	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)	◻	SALVAGE AND INSTALL APRON	—G—	GAS	◻	UTILITY PEDESTAL
—  —	WET DITCH	◼	PROPOSED APRON	—○—○—	COMMUNICATION LINE	—x—	EXISTING FENCE
-----	OTHER AQUATIC RESOURCES	○M / ●	EXISTING / PROPOSED MANHOLE	—F/O -BUR—	FIBER OPTIC - BURIED		PAVEMENT RECONSTRUCTION
===	INPLACE CULVERT / STORM SEWER	◻ / ◻	EXISTING / PROPOSED DROP INLET	— —	INPLACE WATER MAIN		RANDOM RIPRAP

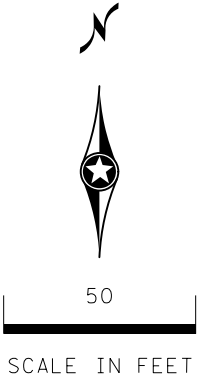
---	TREE LINE	○	MAILBOX
○	TREE	○	UTILITY PEDESTAL
○	POWER POLE	○	EXISTING FENCE
○	PAVEMENT RECONSTRUCTION	○	RANDOM RIPRAP



UTILITY LEGEND				
AAXX	OWNER	DESCRIPTION	ACTION	REMARKS
XL7-07	XCEL ENERGY	ELEC	LEAVE AS IS	
CL7-17	CENTURYLINK	COMM	LEAVE AS IS	







CITY OF PRINSBURG

CL 3RD ST

PL 24" RC PIPE SEWER DES 3006 - 72 LF
+ 24" RC SAFETY APRON
PIPE TIES - FLAT BAR (6 EA)

CONCRETE CURB AND GUTTER DESIGN B618 (15 LF)

KANDIYOHI AVE

PL 18" RC PIPE SEWER DES 3006 - 40 LF

CONNECT INTO EXISTING
STORM SEWER

PL 18" RC PIPE SEWER DES 3006 - 8 LF
+ 18" RC SAFETY APRON

END CS 3401 (TH 7)
REF PT 100+00.096

CL TH 7

PLEASANT AVE

PT. 527+66.04
STA 527+66.04 BK =
STA 527+66.51 AH

EQUATION:

TH 7 RP 100+00.055
STA 527+03
INP. 18" X 238" CSP + 2 METAL APRONS
PL 24" RC PIPE SEWER DES 3006 - 92 LF

CONCRETE CURB AND GUTTER
DESIGN B618
(12 LF)

PL 12" TP PIPE SEWER
- 4 LF

PL 4" PVC PIPE SEWER - 9 LF

BEGIN CS 3401 (TH 7)
REF PT 100+00.025

PL 24" RC PIPE SEWER DES 3006 - 74 LF
+ 24" RC PIPE APRON
PIPE TIES - FLAT BAR (6 EA)

CONNECT TO EXISTING
PIPE DRAIN

LEGEND

---	EXISTING R/W	==	PROPOSED CULVERT LINING	→	FLOW ARROW	~~~~~	TREE LINE
○	ACCESS CONTROL	==	PROPOSED CULVERT / STORM SEWER	---	EXISTING GUARDRAIL	✱	TREE
---	CONSTRUCTION LIMITS	---	PROPOSED CULVERT / STORM SEWER	---OHP---	POWER - OVERHEAD	○	POWER POLE
---	LIMITS OF DISTURBANCE	---	EXISTING APRON	---P-BUR---	POWER - BURIED	□MB	MAILBOX
✱	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)	---	SALVAGE AND INSTALL APRON	---G---	GAS	□	UTILITY PEDESTAL
✱	WET DITCH	---	PROPOSED APRON	---F/O -BUR---	FIBER OPTIC - BURIED	✱	EXISTING FENCE
---	OTHER AQUATIC RESOURCES	○M / ●	EXISTING / PROPOSED MANHOLE	---	INPLACE WATER MAIN	□	PAVEMENT RECONSTRUCTION
---	INPLACE CULVERT / STORM SEWER	□ / □	EXISTING / PROPOSED DROP INLET	---	INPLACE WATER VALVE	□	RANDOM RIPRAP

GENERAL NOTES:

- ONLY ONE ENTRANCE CAN BE CLOSED AT A TIME.
- SEE CROSS SECTION FOR STORM SEWER ON SHEET 188.
- SEE UTILITY, TOPO, AND REMOVAL PLANS ON SHEET 58.

SPECIFIC NOTE:

- ① 1:6 SLOPE.

8:17:23 AM
11/16/2023
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I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED
BY ME OR UNDER MY DIRECT SUPERVISION AND THAT
I AM A DULY LICENSED PROFESSIONAL ENGINEER
UNDER THE LAWS OF THE STATE OF MINNESOTA.

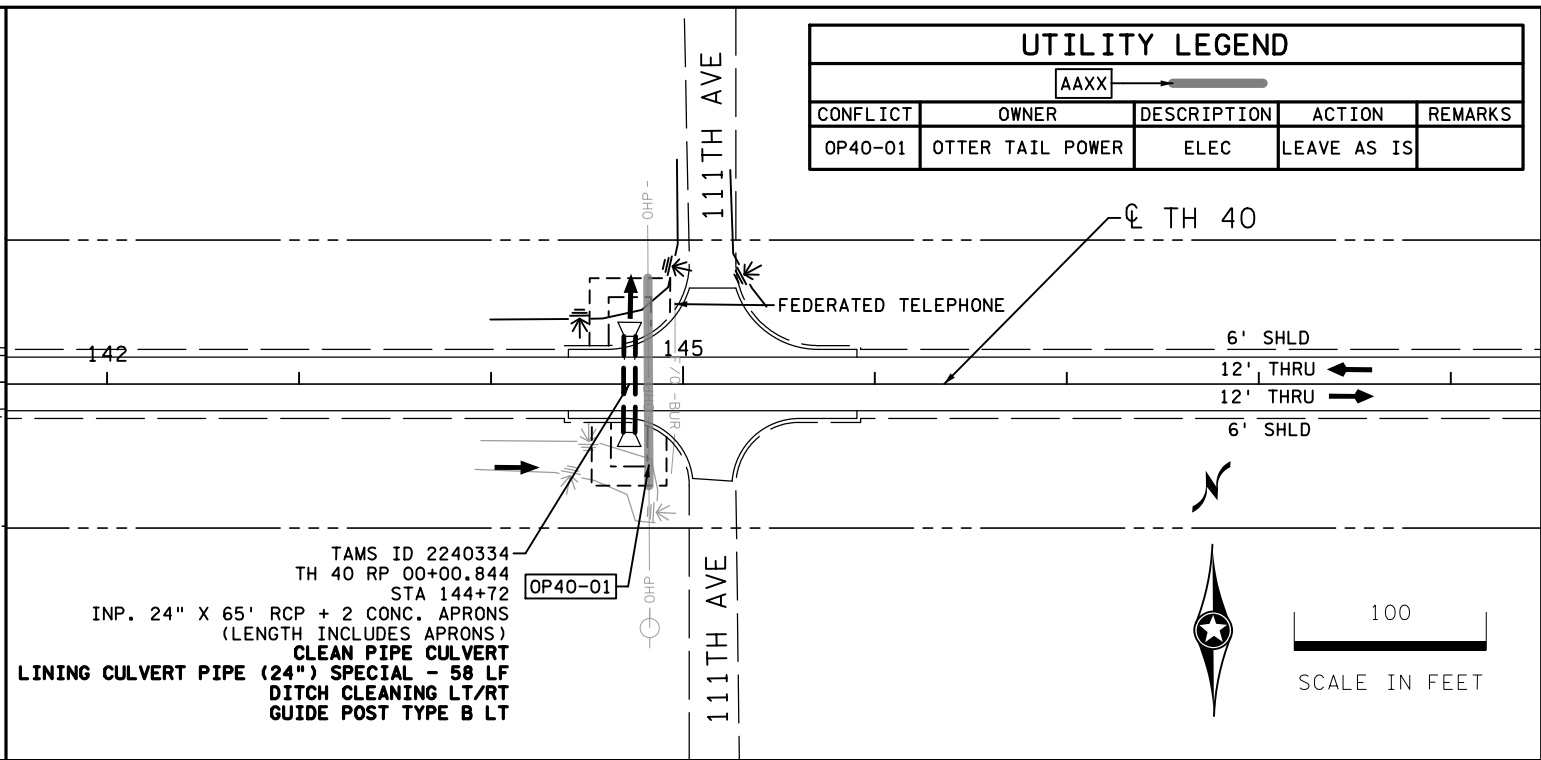
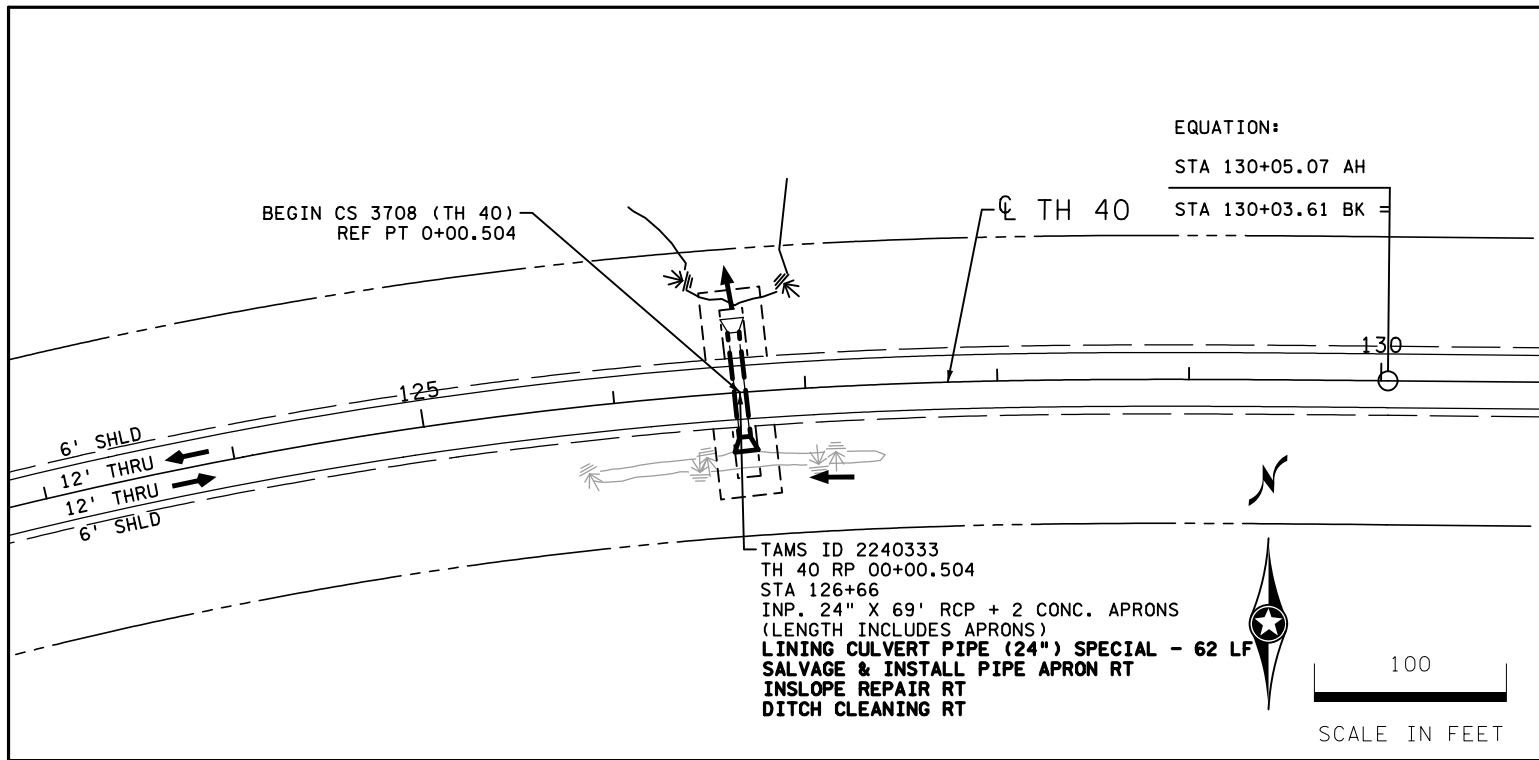
PRINT NAME: DAN SWANSON
SIGNATURE: *Dan Swanson*
DATE: 09/19/24 LICENSE #: 54298

CONSTRUCTION AND DRAINAGE PLANS
TH 7 PRINSBURG

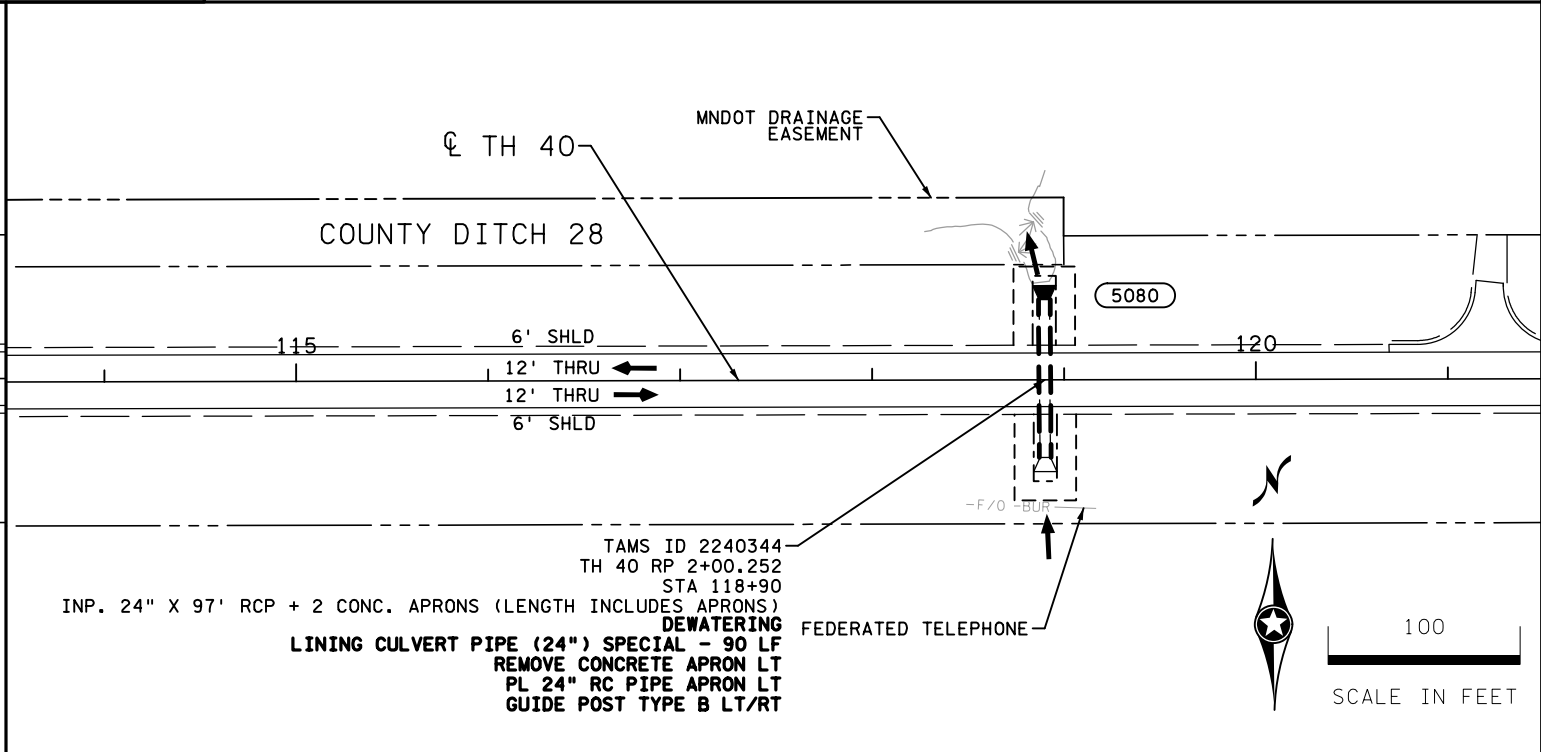
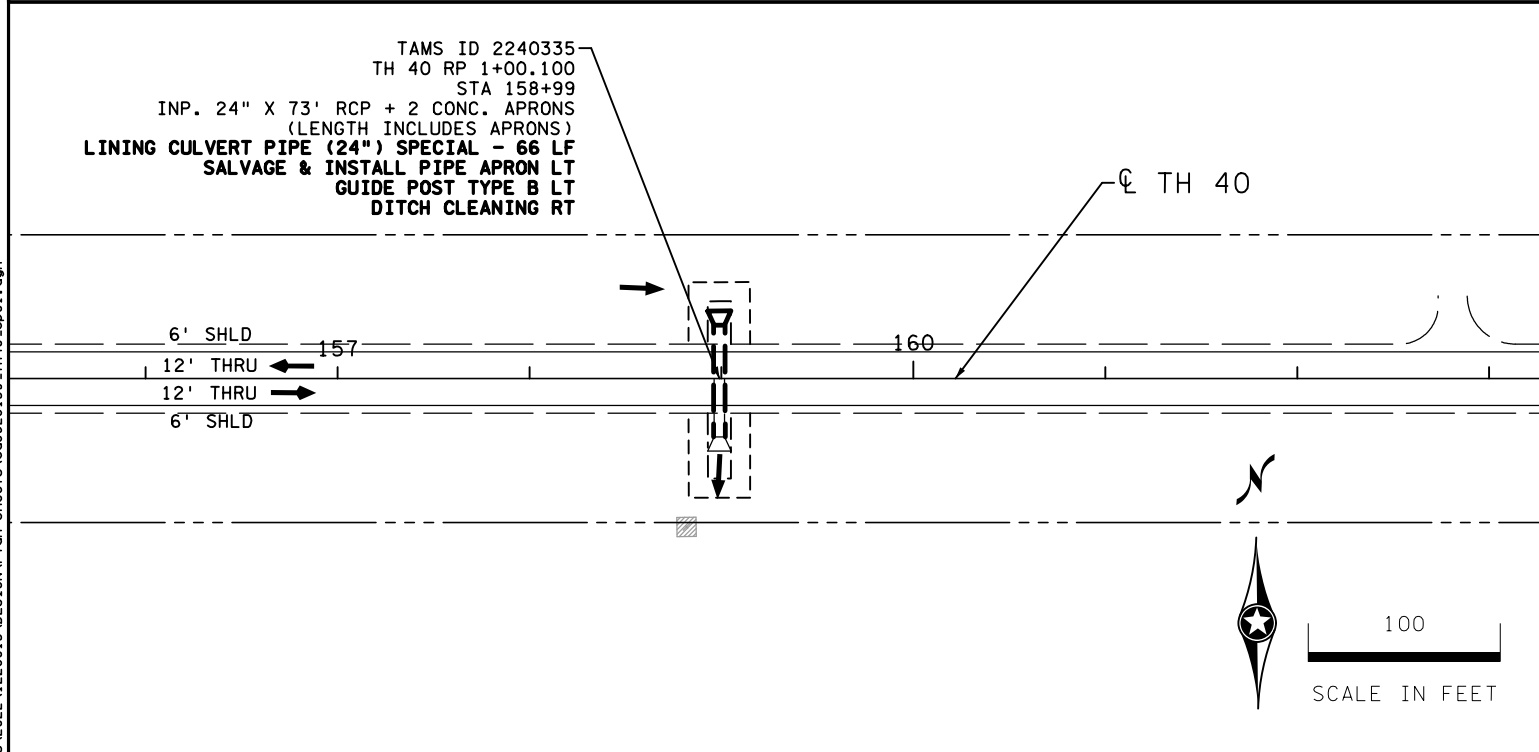
SP 8828-139

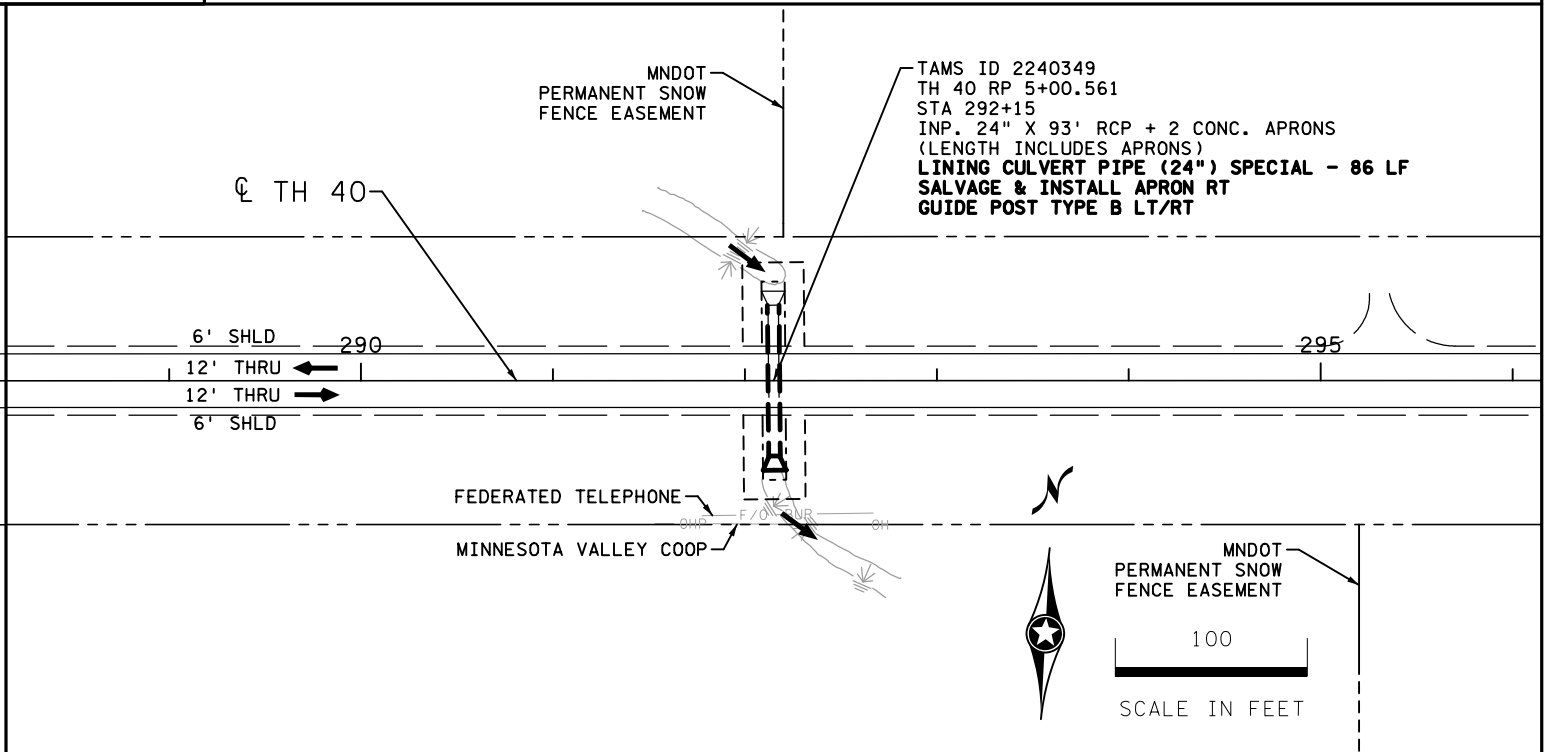
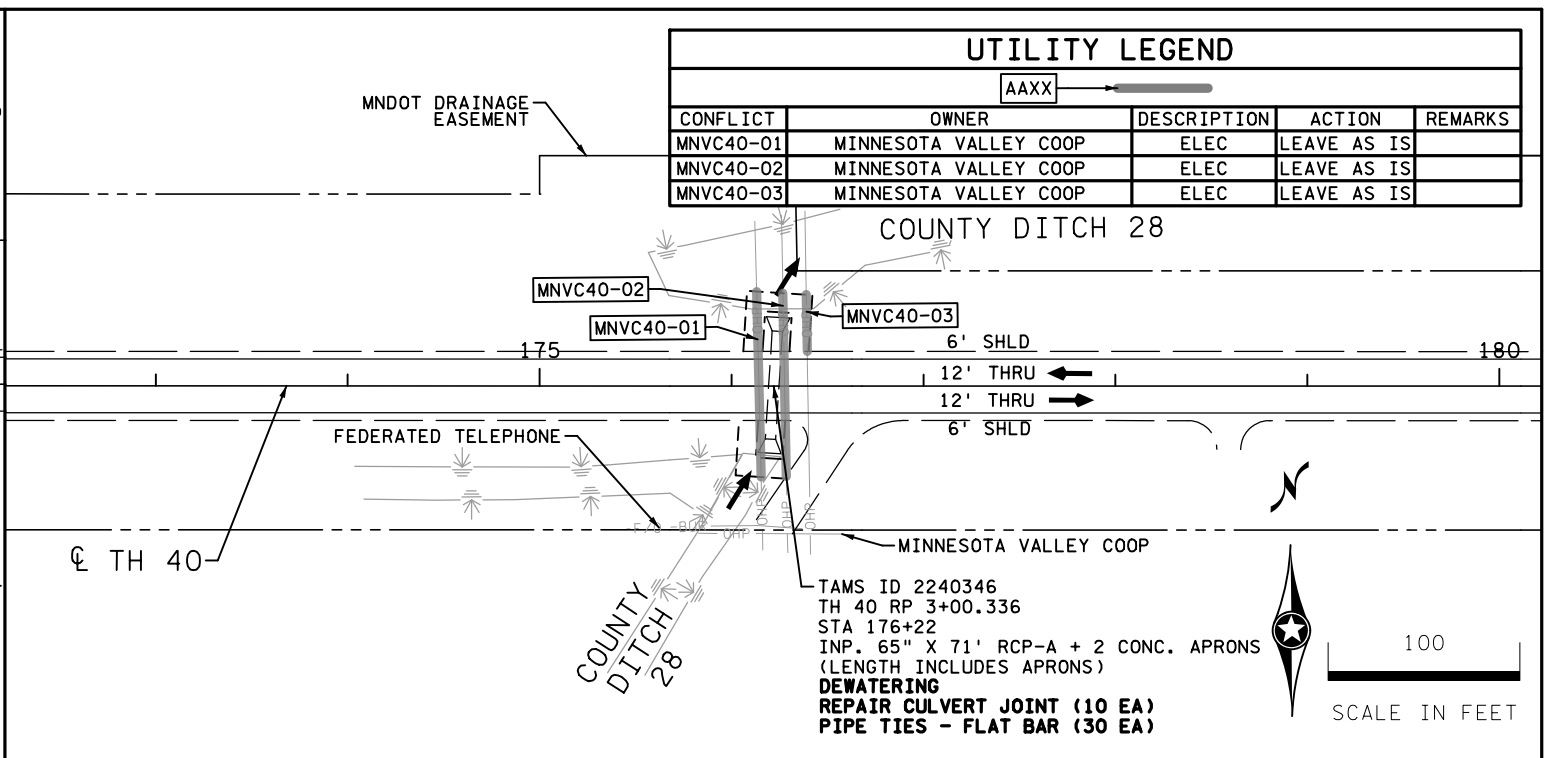
SHEET NO. 69 OF 212 SHEETS

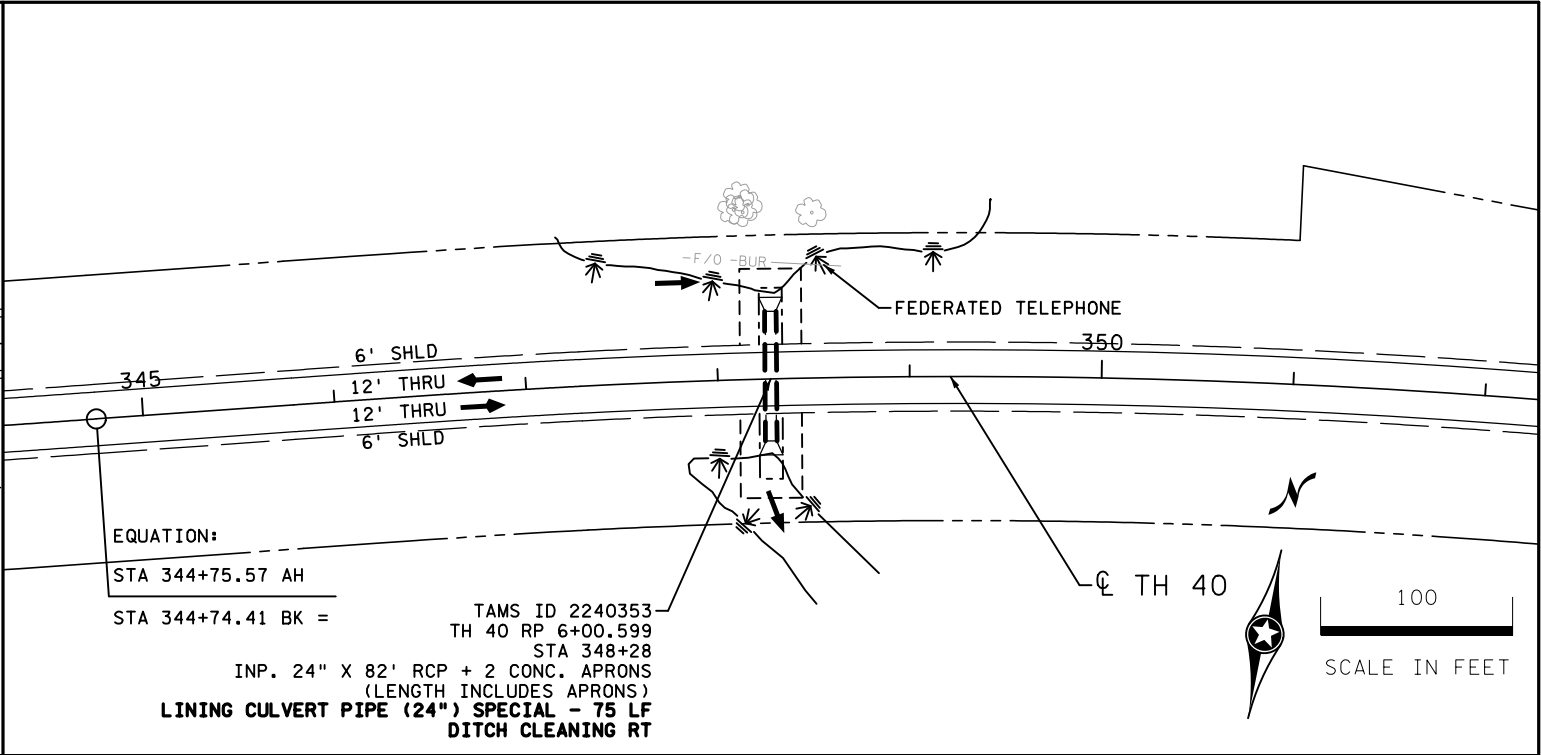
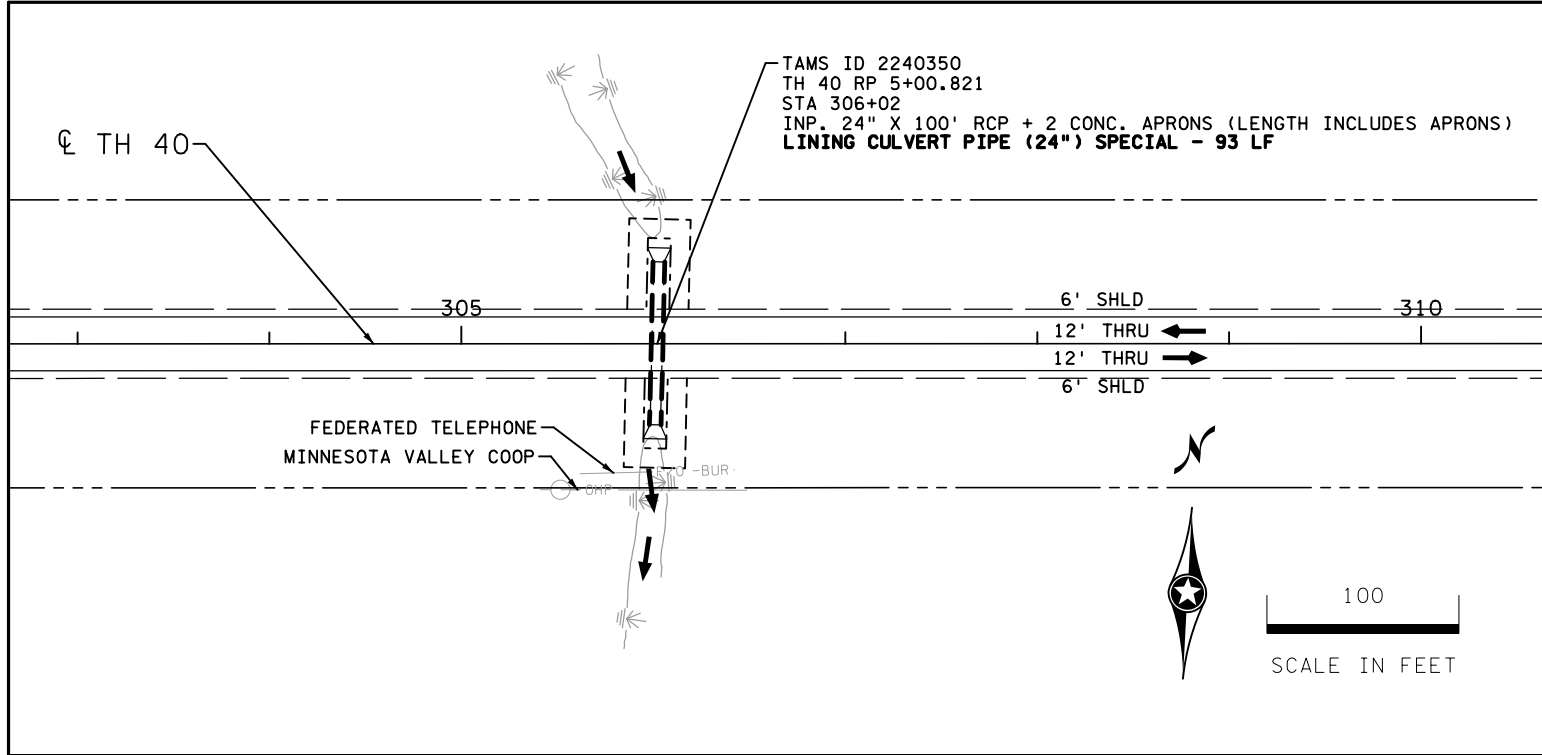
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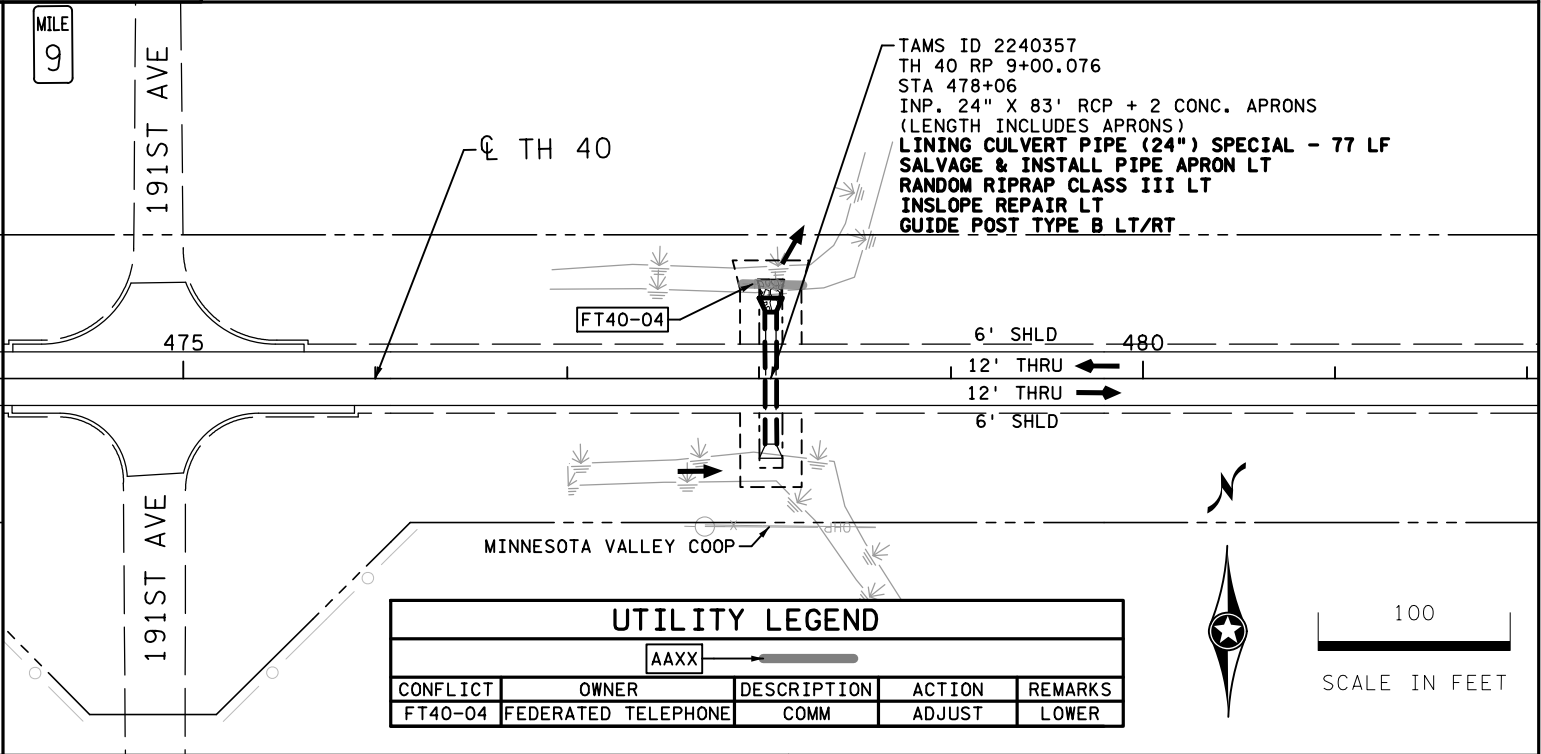
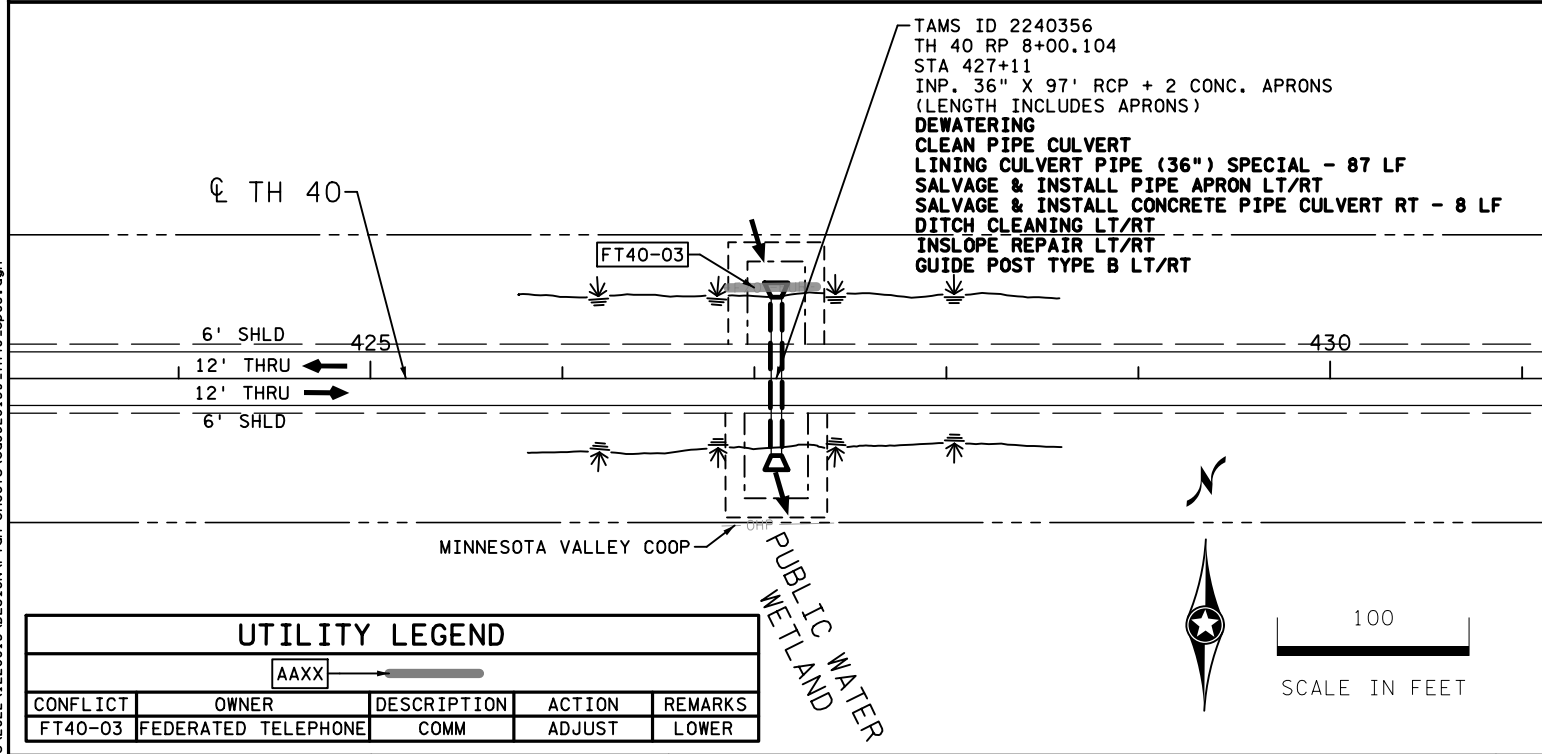
LEGEND					
---	EXISTING R/W	==	PROPOSED CULVERT LINING	→	FLOW ARROW
○	ACCESS CONTROL	→	PROPOSED CULVERT / STORM SEWER	---	EXISTING GUARDRAIL
---	CONSTRUCTION LIMITS	▽	EXISTING APRON	---	POWER - OVERHEAD
---	LIMITS OF DISTURBANCE	▽	SALVAGE AND INSTALL APRON	---	POWER - BURIED
W	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)	▽	PROPOSED APRON	---	GAS
W	WET DITCH	OM / ●	EXISTING / PROPOSED MANHOLE	---	COMMUNICATION LINE
---	OTHER AQUATIC RESOURCES	□ / ▢	EXISTING / PROPOSED DROP INLET	---	FIBER OPTIC - BURIED
---	INPLACE CULVERT / STORM SEWER			---	INPLACE WATER MAIN
				---	INPLACE WATER VALVE
				---	TREE LINE
				---	TREE
				---	POWER POLE
				---	MAILBOX
				---	UTILITY PEDESTAL
				---	EXISTING FENCE
				---	PAVEMENT RECONSTRUCTION
				---	RANDOM RIPRAP







LEGEND					
---	EXISTING R/W	==	PROPOSED CULVERT LINING	→	FLOW ARROW
○	ACCESS CONTROL	→	PROPOSED CULVERT / STORM SEWER	---	EXISTING GUARDRAIL
---	CONSTRUCTION LIMITS	→	EXISTING APRON	OHP	POWER - OVERHEAD
---	LIMITS OF DISTURBANCE	□	SALVAGE AND INSTALL APRON	P-BUR	POWER - BURIED
W	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)	▲	PROPOSED APRON	G	GAS
W	WET DITCH	OM / ●	EXISTING / PROPOSED MANHOLE	OO	COMMUNICATION LINE
---	OTHER AQUATIC RESOURCES	■ / □	EXISTING / PROPOSED DROP INLET	F/O - BUR	FIBER OPTIC - BURIED
---	INPLACE CULVERT / STORM SEWER			---	INPLACE WATER MAIN
				×	INPLACE WATER VALVE
				---	TREE LINE
				✱	TREE
				○	POWER POLE
				□	MAILBOX
				□	UTILITY PEDESTAL
				---	EXISTING FENCE
				---	PAVEMENT RECONSTRUCTION
				---	RANDOM RIPRAP



UTILITY LEGEND				
CONFLICT	OWNER	DESCRIPTION	ACTION	REMARKS
FT40-03	FEDERATED TELEPHONE	COMM	ADJUST	LOWER

UTILITY LEGEND				
CONFLICT	OWNER	DESCRIPTION	ACTION	REMARKS
FT40-04	FEDERATED TELEPHONE	COMM	ADJUST	LOWER

NO	DATE	DWN	CKD	REVISIONS

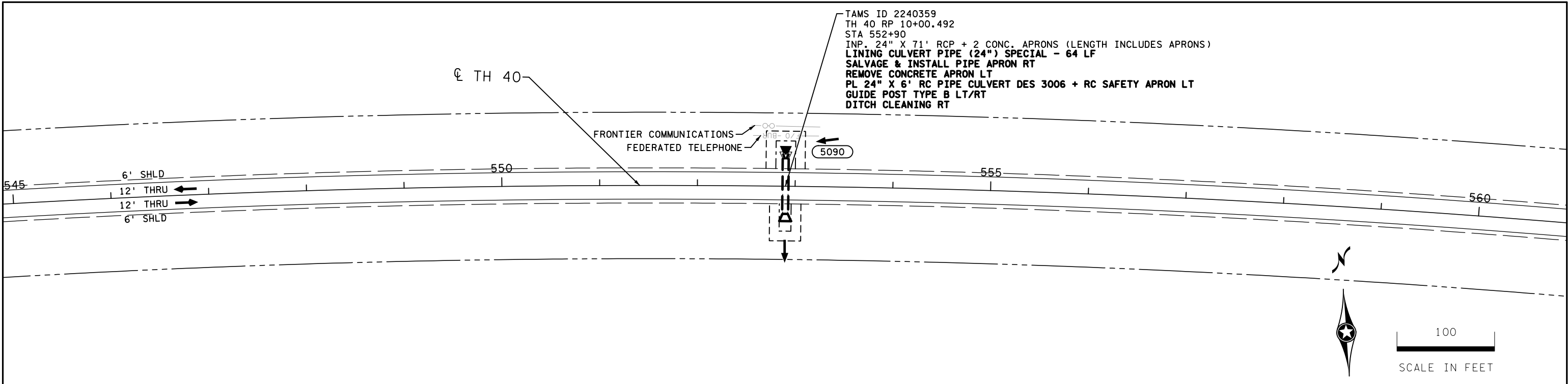


I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON
SIGNATURE: *Dan Swanson*
DATE: 09/19/24 LICENSE #: 54298

CONSTRUCTION, DRAINAGE, AND UTILITIES PLANS
TH 40

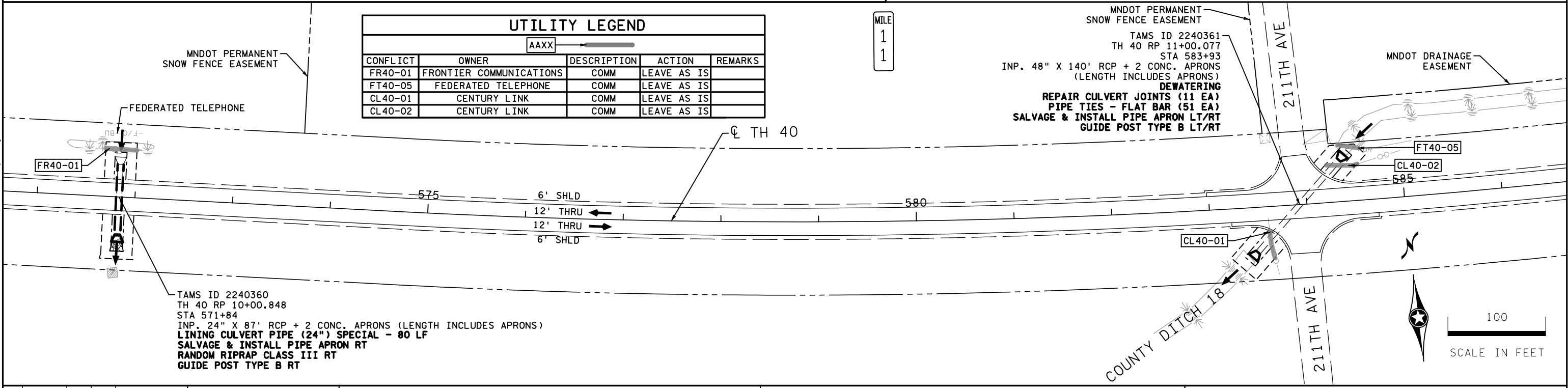
SP 8828-139
SHEET NO. 72 OF 212 SHEETS



TAMS ID 2240359
TH 40 RP 10+00.492
STA 552+90
INP. 24" X 71' RCP + 2 CONC. APRONS (LENGTH INCLUDES APRONS)
LINING CULVERT PIPE (24") SPECIAL - 64 LF
SALVAGE & INSTALL PIPE APRON RT
REMOVE CONCRETE APRON LT
PL 24" X 6' RC PIPE CULVERT DES 3006 + RC SAFETY APRON LT
GUIDE POST TYPE B LT/RT
DITCH CLEANING RT

LEGEND					
---	EXISTING R/W	==	PROPOSED CULVERT LINING	→	FLOW ARROW
○	ACCESS CONTROL	→	PROPOSED CULVERT / STORM SEWER	—○—	EXISTING GUARDRAIL
---	CONSTRUCTION LIMITS	▽	EXISTING APRON	—OHP—	POWER - OVERHEAD
---	LIMITS OF DISTURBANCE	◻	SALVAGE AND INSTALL APRON	—P-BUR—	POWER - BURIED
🌿	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)	◼	PROPOSED APRON	—G—	GAS
🌿	WET DITCH	◼	EXISTING / PROPOSED MANHOLE	—OO—	COMMUNICATION LINE
---	OTHER AQUATIC RESOURCES	OM / ●	EXISTING / PROPOSED DROP INLET	—F/O-BUR—	FIBER OPTIC - BURIED
---	INPLACE CULVERT / STORM SEWER	▨ / ▩		— —	INPLACE WATER MAIN
				⋈	INPLACE WATER VALVE
				🌳 / *	TREE
				○	POWER POLE
				◻MB	MAILBOX
				◻	UTILITY PEDESTAL
				×	EXISTING FENCE
				▨	PAVEMENT RECONSTRUCTION
				▩	RANDOM RIPRAP

UTILITY LEGEND				
AAXX				
CONFLICT	OWNER	DESCRIPTION	ACTION	REMARKS
FR40-01	FRONTIER COMMUNICATIONS	COMM	LEAVE AS IS	
FT40-05	FEDERATED TELEPHONE	COMM	LEAVE AS IS	
CL40-01	CENTURY LINK	COMM	LEAVE AS IS	
CL40-02	CENTURY LINK	COMM	LEAVE AS IS	



MNDOT PERMANENT SNOW FENCE EASEMENT
TAMS ID 2240361
TH 40 RP 11+00.077
STA 583+93
INP. 48" X 140' RCP + 2 CONC. APRONS (LENGTH INCLUDES APRONS)
DEWATERING
REPAIR CULVERT JOINTS (11 EA)
PIPE TIES - FLAT BAR (51 EA)
SALVAGE & INSTALL PIPE APRON LT/RT
GUIDE POST TYPE B LT/RT

TAMS ID 2240360
TH 40 RP 10+00.848
STA 571+84
INP. 24" X 87' RCP + 2 CONC. APRONS (LENGTH INCLUDES APRONS)
LINING CULVERT PIPE (24") SPECIAL - 80 LF
SALVAGE & INSTALL PIPE APRON RT
RANDOM RIPRAP CLASS III RT
GUIDE POST TYPE B RT

NO	DATE	DWN	CKD	REVISIONS

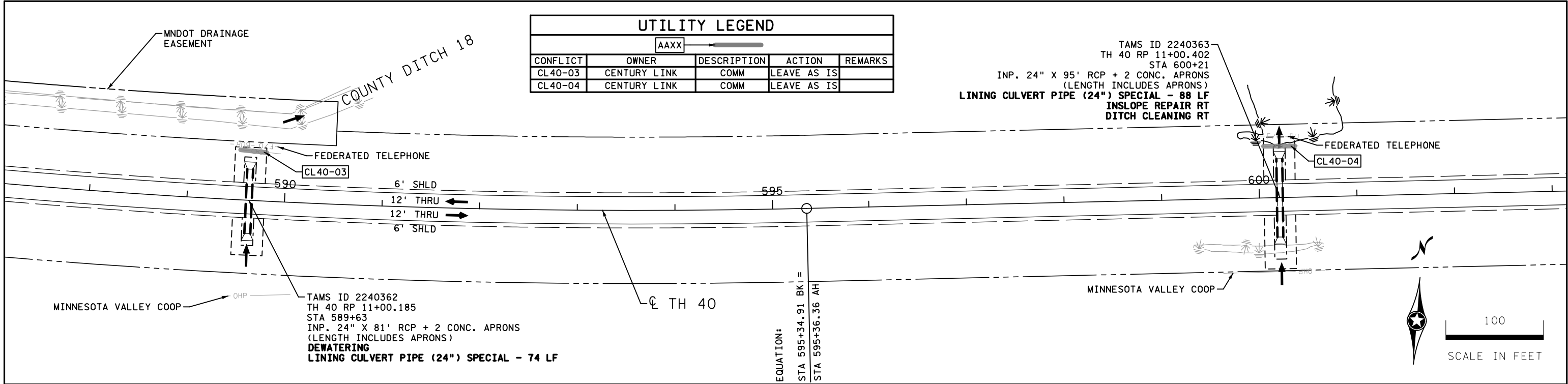


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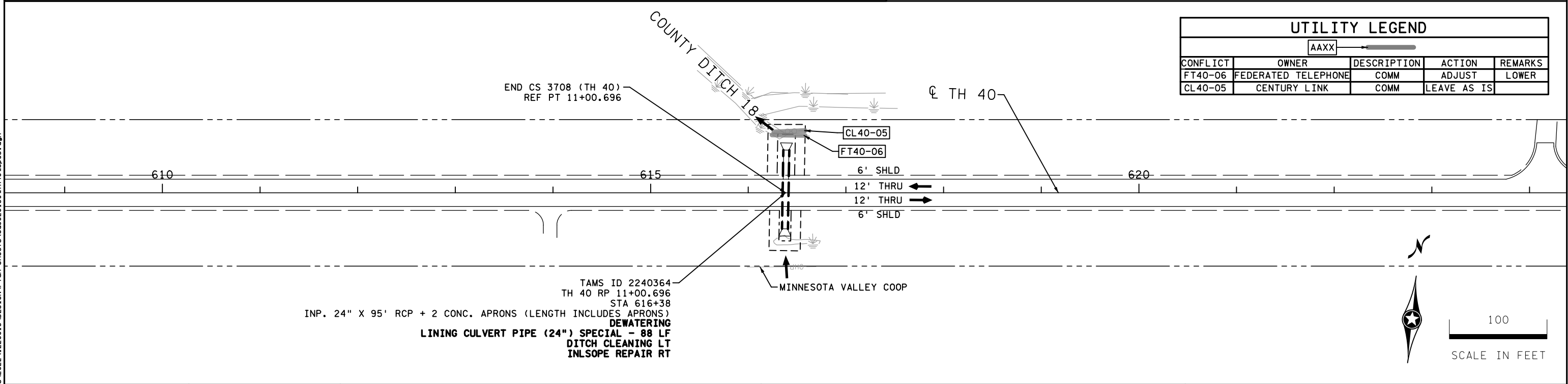
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SIGNATURE: *Dan Swanson*
DATE: 09/19/24 LICENSE #: 54298

CONSTRUCTION, DRAINAGE, AND UTILITIES PLANS
TH 40

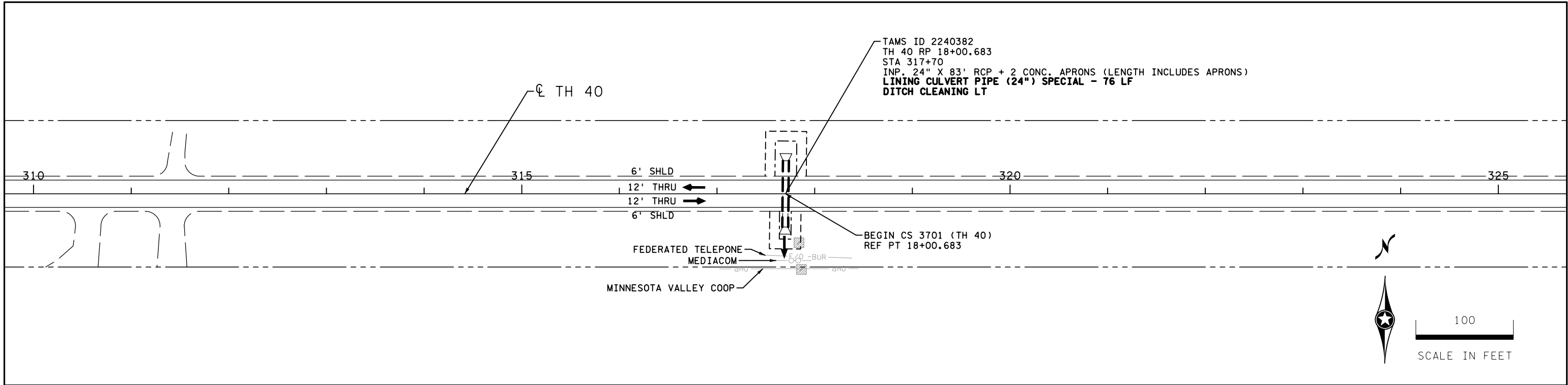
SP 8828-139
SHEET NO. 73 OF 212 SHEETS



LEGEND					
---	EXISTING R/W	==	PROPOSED CULVERT LINING	→	FLOW ARROW
○	ACCESS CONTROL	→	PROPOSED CULVERT / STORM SEWER	---	EXISTING GUARDRAIL
---	CONSTRUCTION LIMITS	▽	EXISTING APRON	OHP	POWER - OVERHEAD
---	LIMITS OF DISTURBANCE	▽	SALVAGE AND INSTALL APRON	P-BUR	POWER - BURIED
WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		▽	PROPOSED APRON	G	GAS
WET DITCH		OM / ●	EXISTING / PROPOSED MANHOLE	F/O -BUR	FIBER OPTIC - BURIED
OTHER AQUATIC RESOURCES		▨ / ▩	EXISTING / PROPOSED DROP INLET	---	INPLACE WATER MAIN
INPLACE CULVERT / STORM SEWER				▽	INPLACE WATER VALVE
				---	TREE LINE
				✱ / ✱	TREE
				○	POWER POLE
				MB	MAILBOX
				□	UTILITY PEDESTAL
				---	EXISTING FENCE
				---	PAVEMENT RECONSTRUCTION
				---	RANDOM RIPRAP

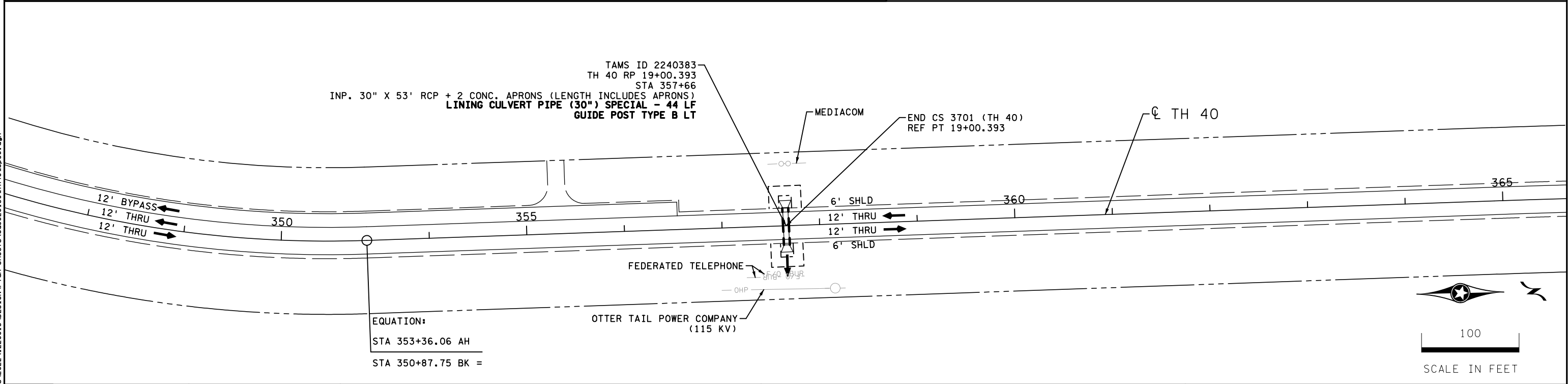


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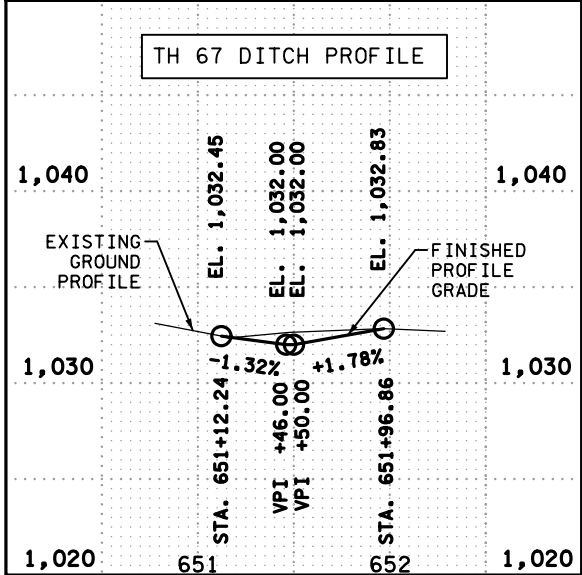
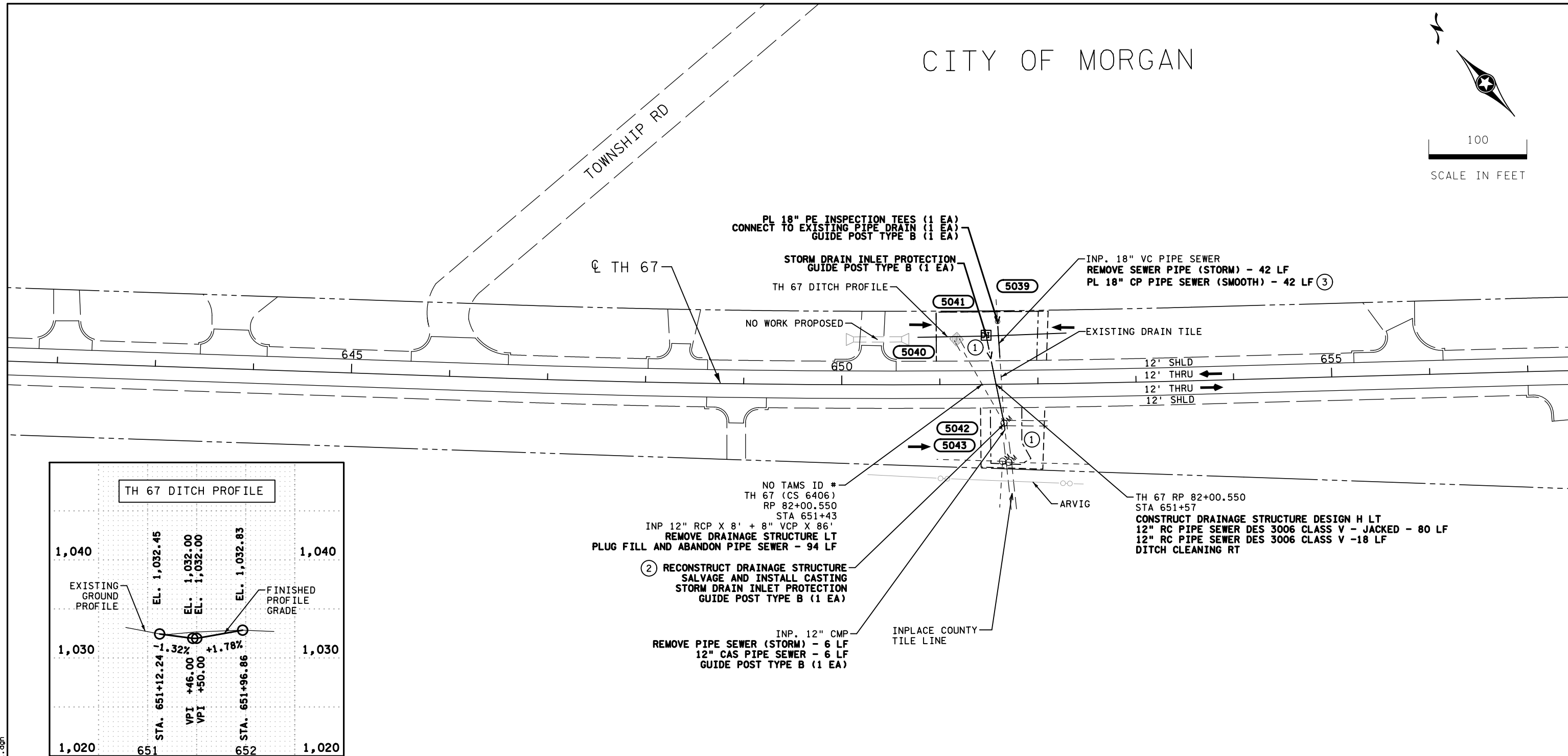
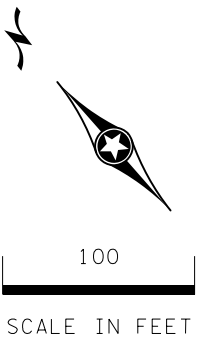


LEGEND					
---	EXISTING R/W	==	PROPOSED CULVERT LINING	→	FLOW ARROW
○	ACCESS CONTROL	→	PROPOSED CULVERT / STORM SEWER	—○—	EXISTING GUARDRAIL
---	CONSTRUCTION LIMITS	□	EXISTING APRON	—P-BUR—	POWER - BURIED
---	LIMITS OF DISTURBANCE	▲	SALVAGE AND INSTALL APRON	—G—	GAS
—	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)	▲	PROPOSED APRON	—F/O-BUR—	FIBER OPTIC - BURIED
—	WET DITCH	○M / ●	EXISTING / PROPOSED MANHOLE	—	INPLACE WATER MAIN
---	OTHER AQUATIC RESOURCES	■ / □	EXISTING / PROPOSED DROP INLET	⋈	INPLACE WATER VALVE
---	INPLACE CULVERT / STORM SEWER				

—	TREE LINE
—○—	POWER POLE
□	MAILBOX
□	UTILITY PEDESTAL
—x—	EXISTING FENCE
—	PAVEMENT RECONSTRUCTION
—	RANDOM RIPRAP



CITY OF MORGAN



- PL 18" PE INSPECTION TEES (1 EA)
CONNECT TO EXISTING PIPE DRAIN (1 EA)
GUIDE POST TYPE B (1 EA)
- STORM DRAIN INLET PROTECTION
GUIDE POST TYPE B (1 EA)
- TH 67 DITCH PROFILE
- NO WORK PROPOSED
- 5041
- 5040
- 5039
- INP. 18" VC PIPE SEWER
REMOVE SEWER PIPE (STORM) - 42 LF
PL 18" CP PIPE SEWER (SMOOTH) - 42 LF (3)
- EXISTING DRAIN TILE
- 12' SHLD
12' THRU
12' THRU
12' SHLD
- 5042
- 5043
- NO TAMS ID #
TH 67 (CS 6406)
RP 82+00.550
STA 651+43
INP 12" RCP X 8' + 8" VCP X 86'
REMOVE DRAINAGE STRUCTURE LT
PLUG FILL AND ABANDON PIPE SEWER - 94 LF
- (2) RECONSTRUCT DRAINAGE STRUCTURE
SALVAGE AND INSTALL CASTING
STORM DRAIN INLET PROTECTION
GUIDE POST TYPE B (1 EA)
- INP. 12" CMP
REMOVE PIPE SEWER (STORM) - 6 LF
12" CAS PIPE SEWER - 6 LF
GUIDE POST TYPE B (1 EA)
- INPLACE COUNTY
TILE LINE
- ARVIG
- TH 67 RP 82+00.550
STA 651+57
CONSTRUCT DRAINAGE STRUCTURE DESIGN H LT
12" RC PIPE SEWER DES 3006 CLASS V - JACKED - 80 LF
12" RC PIPE SEWER DES 3006 CLASS V -18 LF
DITCH CLEANING RT

LEGEND

---	EXISTING R/W	==	PROPOSED CULVERT Lining	→	FLOW ARROW	~~~~~	TREE LINE
○	ACCESS CONTROL	---	PROPOSED CULVERT / STORM SEWER	---	EXISTING GUARDRAIL	✱ / ✱	TREE
---	CONSTRUCTION LIMITS	---	EXISTING APRON	---	POWER - OVERHEAD	○	POWER POLE
---	LIMITS OF DISTURBANCE	---	SALVAGE AND INSTALL APRON	---	POWER - BURIED	□	MAILBOX
---	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)	---	PROPOSED APRON	---	GAS	□	UTILITY PEDESTAL
---	WET DITCH	---	EXISTING / PROPOSED MANHOLE	---	COMMUNICATION LINE	✱	EXISTING FENCE
---	OTHER AQUATIC RESOURCES	---	EXISTING / PROPOSED DROP INLET	---	FIBER OPTIC - BURIED	---	PAVEMENT RECONSTRUCTION
---	INPLACE CULVERT / STORM SEWER	---		---	INPLACE WATER MAIN	---	RANDOM RIPRAP
		---		---	INPLACE WATER VALVE		

SPECIFIC NOTES:

- (1) ALL EXCAVATION AND EMBANKMENT, INCLUDING THAT WHICH IS NECESSARY FOR A JACKING PIT SHALL BE INCLUDED IN THE PIPE SEWER PAY ITEMS.
- (2) BOTTOM PORTION OF STRUCTURE TO REMAIN PLACE. SEE DETAIL ON SHEET 30.
- (3) PLACE PIPE SEWER AFTER PIPE JACKING OPERATIONS.

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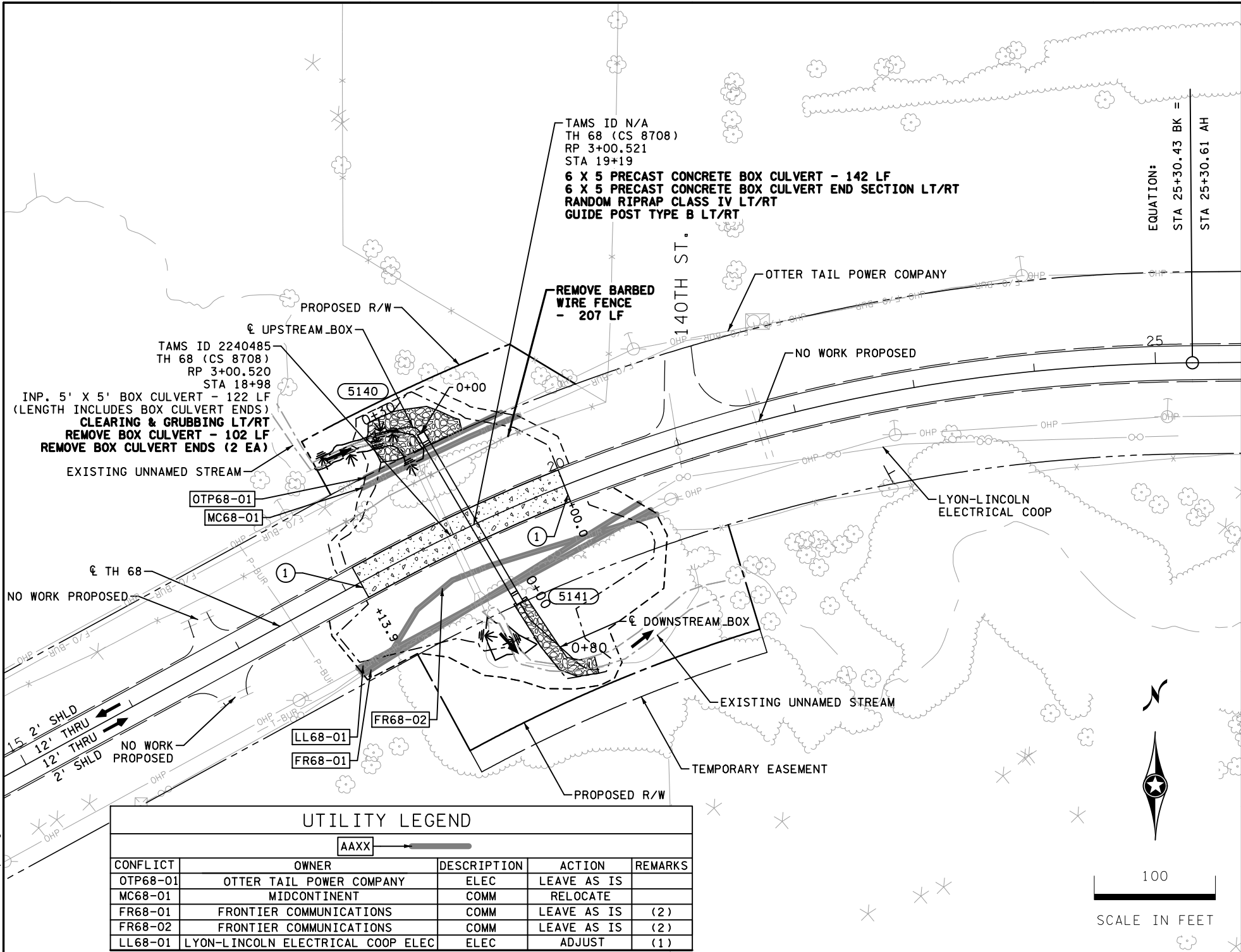


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PRINT NAME: DAN SWANSON
SIGNATURE: *Dan Swanson*
DATE: 09/19/24 LICENSE #: 54298

CONSTRUCTION, DRAINAGE, AND UTILITIES PLANS
TH 67

SP 8828-139
SHEET NO. 76 OF 212 SHEETS



ALIGNMENT TABULATION				
POINT NUMBER	POINT	STATION	COORDINATES	
			X	Y
TH 68 BOX US STREAM <UPSTREAM_BOX>				
1000	POT	0+00.000	375,168.2924	165,295.1727
1001	POT	0+02.286	375,167.1377	165,297.1457
1002	POT	0+05.975	375,164.3779	165,299.5933
1003	POT	0+06.290	375,164.1421	165,299.8023
1004	POT	0+06.446	375,164.0251	165,299.9061
1005	POT	0+06.867	375,163.6067	165,299.9461
1006	POT	0+12.986	375,157.5157	165,300.5284
1007	POT	0+16.290	375,154.2834	165,299.8415
1008	POT	0+22.565	375,148.1454	165,298.5372
1009	POT	0+26.290	375,144.7181	165,297.0780
1010	POT	0+29.599	375,141.6738	165,295.7819
1011	POT	0+36.290	375,135.6909	165,292.7855
1012	POT	0+37.975	375,134.1841	165,292.0309
1013	POT	0+38.112	375,134.0615	165,291.9695
1014	POT	0+38.237	375,133.9616	165,291.8952
1015	POT	0+46.290	375,127.4977	165,287.0919
TH 68 BOX DS STREAM <DOWNSTREAM_BOX>				
1100	POT	0+00.000	375,250.1205	165,155.3541
1101	POT	0+10.000	375,255.1715	165,146.7235
1102	POT	0+15.398	375,257.8979	165,142.0649
1103	POT	0+20.000	375,261.3068	165,138.9729
1104	POT	0+30.000	375,268.7137	165,132.2545
1105	POT	0+40.000	375,276.1207	165,125.5361
1106	POT	0+50.000	375,283.5276	165,118.8177
1107	POT	0+60.000	375,290.9346	165,112.0993
1108	POT	0+70.000	375,298.3416	165,105.3809
1109	POT	0+72.031	375,299.8458	165,104.0165
1110	POT	0+75.000	375,302.5117	165,102.7092
1111	POT	0+79.349	375,306.4166	165,100.7942
1112	POT	0+79.636	375,306.6742	165,100.6679
1113	POT	0+80.000	375,307.0381	165,100.6662
1114	POT	0+80.105	375,307.1431	165,100.6657
1115	POT	0+87.937	375,314.9752	165,100.6295

EXISTING R/W

ACCESS CONTROL

CONSTRUCTION LIMITS

LIMITS OF DISTURBANCE

WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)

WET DITCH

OTHER AQUATIC RESOURCES

INPLACE CULVERT / STORM SEWER

PROPOSED CULVERT LINING

PROPOSED CULVERT / STORM SEWER

EXISTING APRON

SALVAGE AND INSTALL APRON

PROPOSED APRON

EXISTING / PROPOSED MANHOLE

EXISTING / PROPOSED DROP INLET

FLOW ARROW

EXISTING GUARDRAIL

POWER - OVERHEAD

POWER - BURIED

GAS

COMMUNICATION LINE

FIBER OPTIC - BURIED

INPLACE WATER MAIN

INPLACE WATER VALVE

TREE LINE

TREE

POWER POLE

MAILBOX

UTILITY PEDESTAL

EXISTING FENCE

PAVEMENT RECONSTRUCTION

RANDOM RIPRAP

GENERAL NOTE:

1. CONTRACTOR SHALL USE EXISTING BOX CULVERT FOR STREAM DIVERSION DURING CONSTRUCTION. CONTRACTOR TO PROVIDE SITE MANAGEMENT PLAN FOR TEMPORARY STREAM DIVERSION SYSTEM (INCIDENTAL).

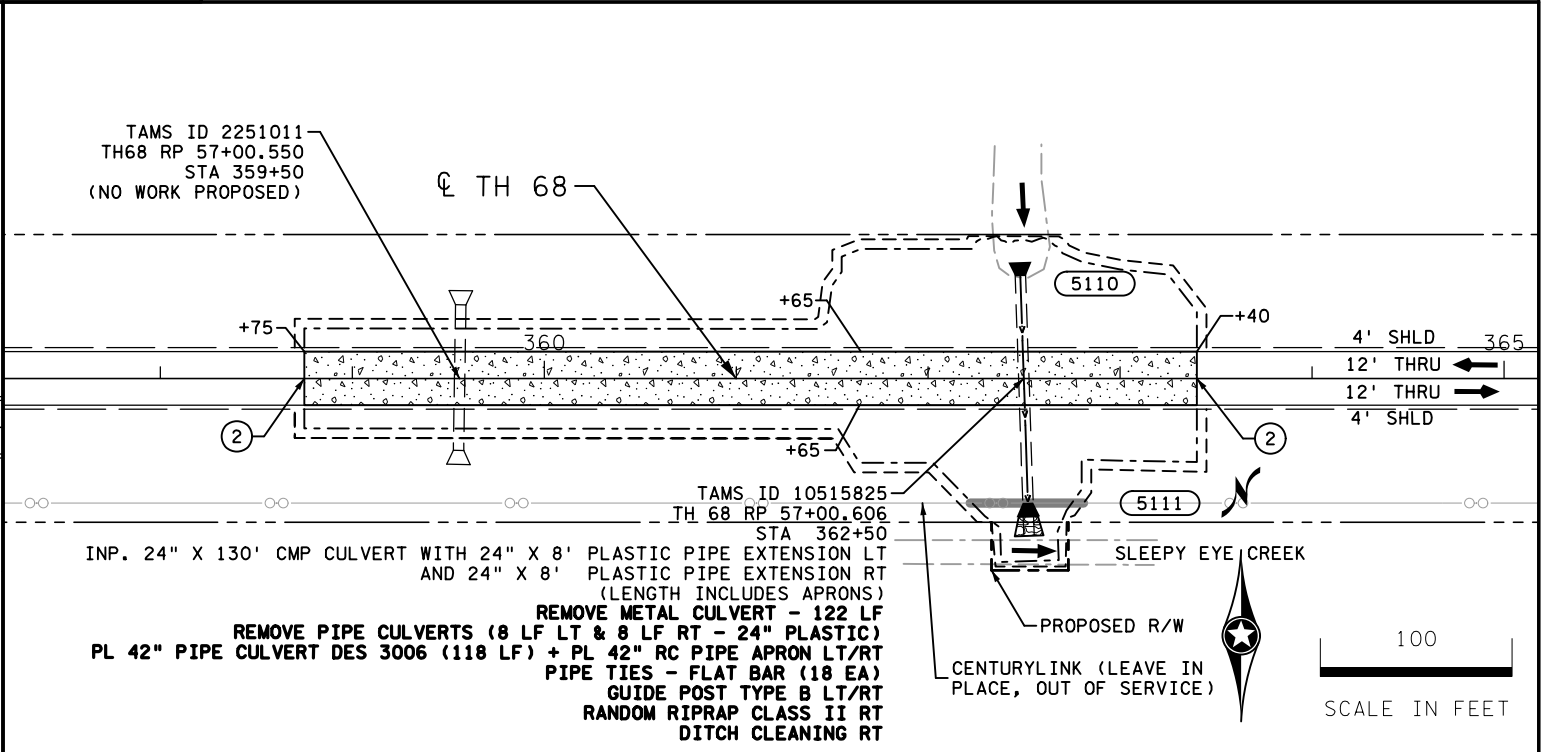
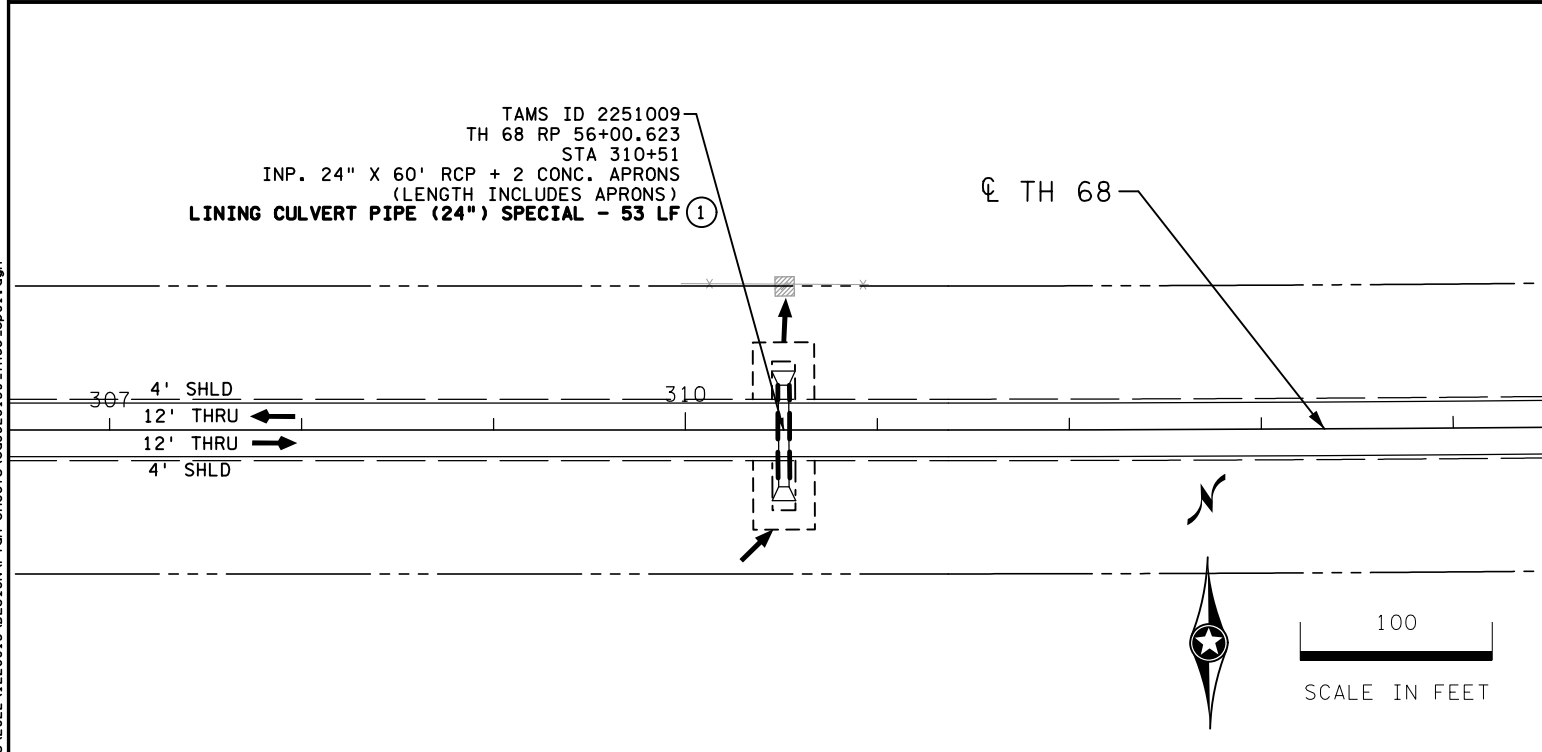
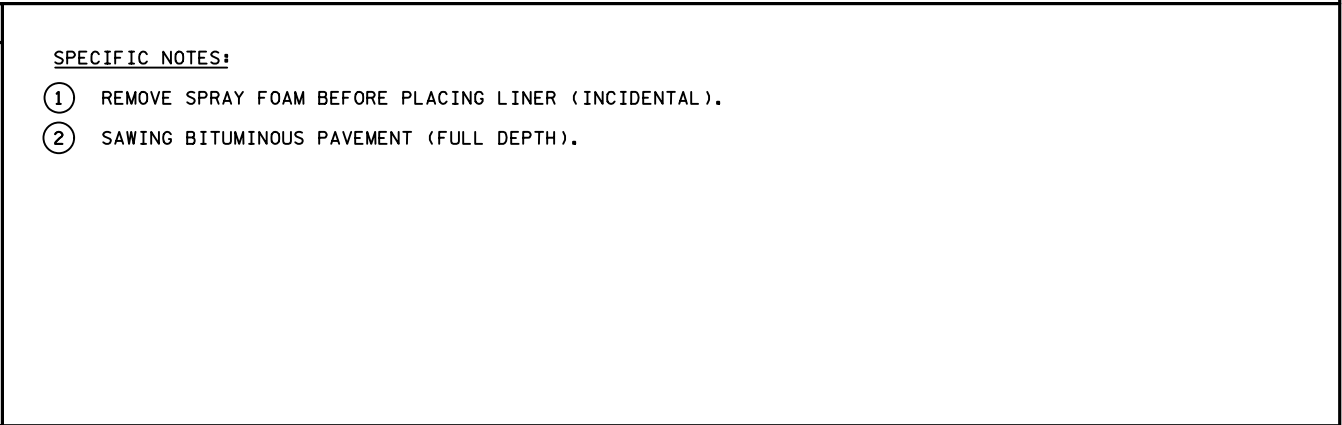
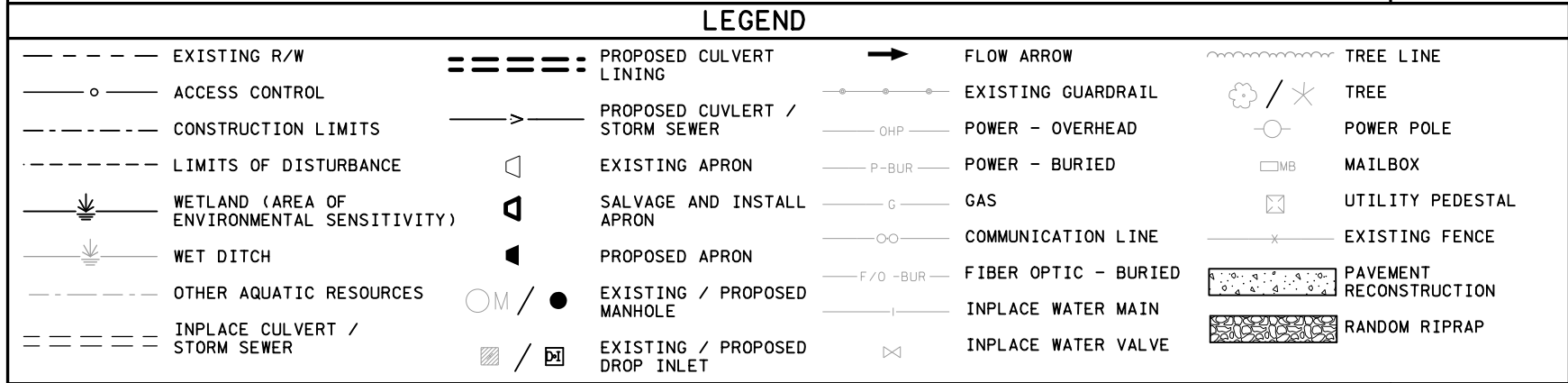
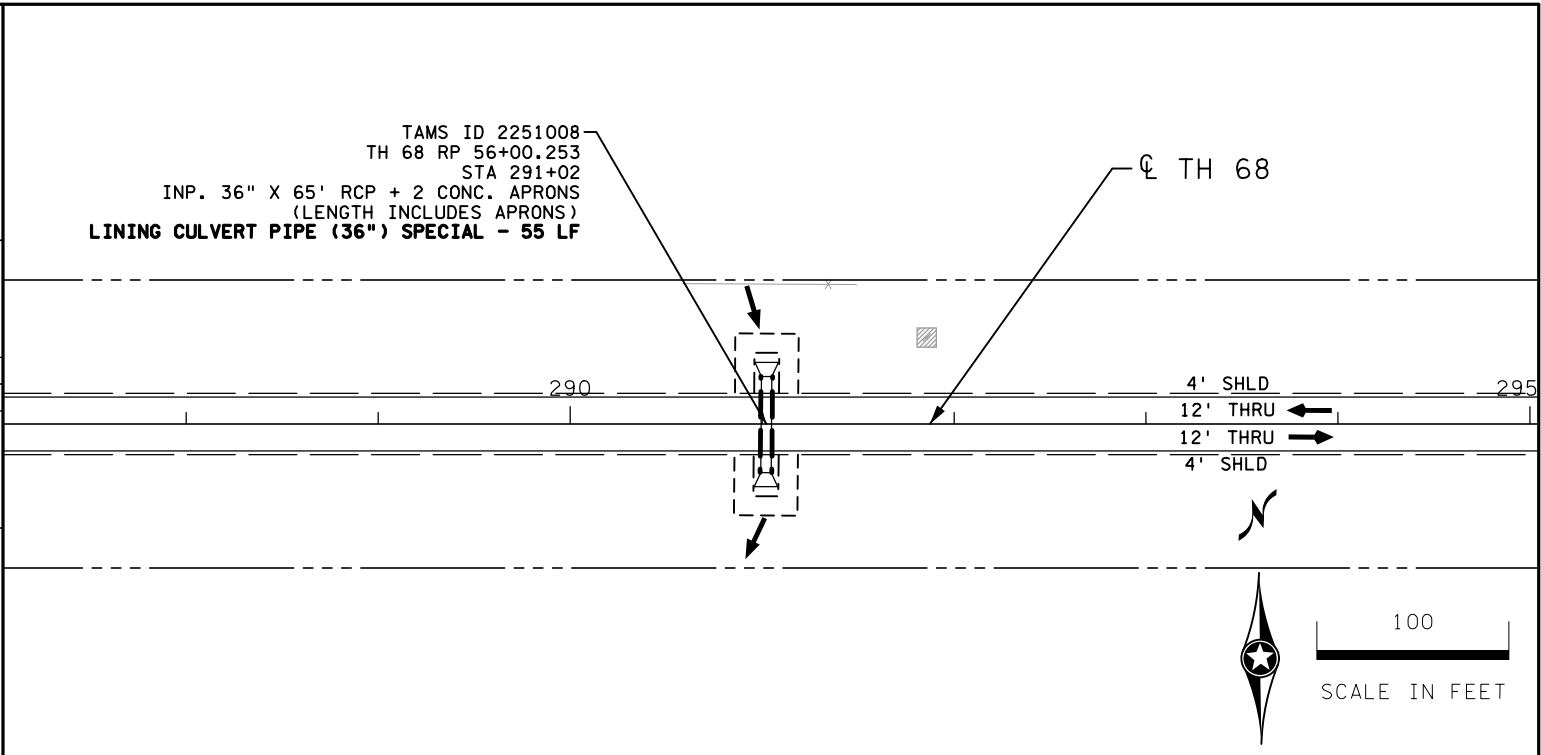
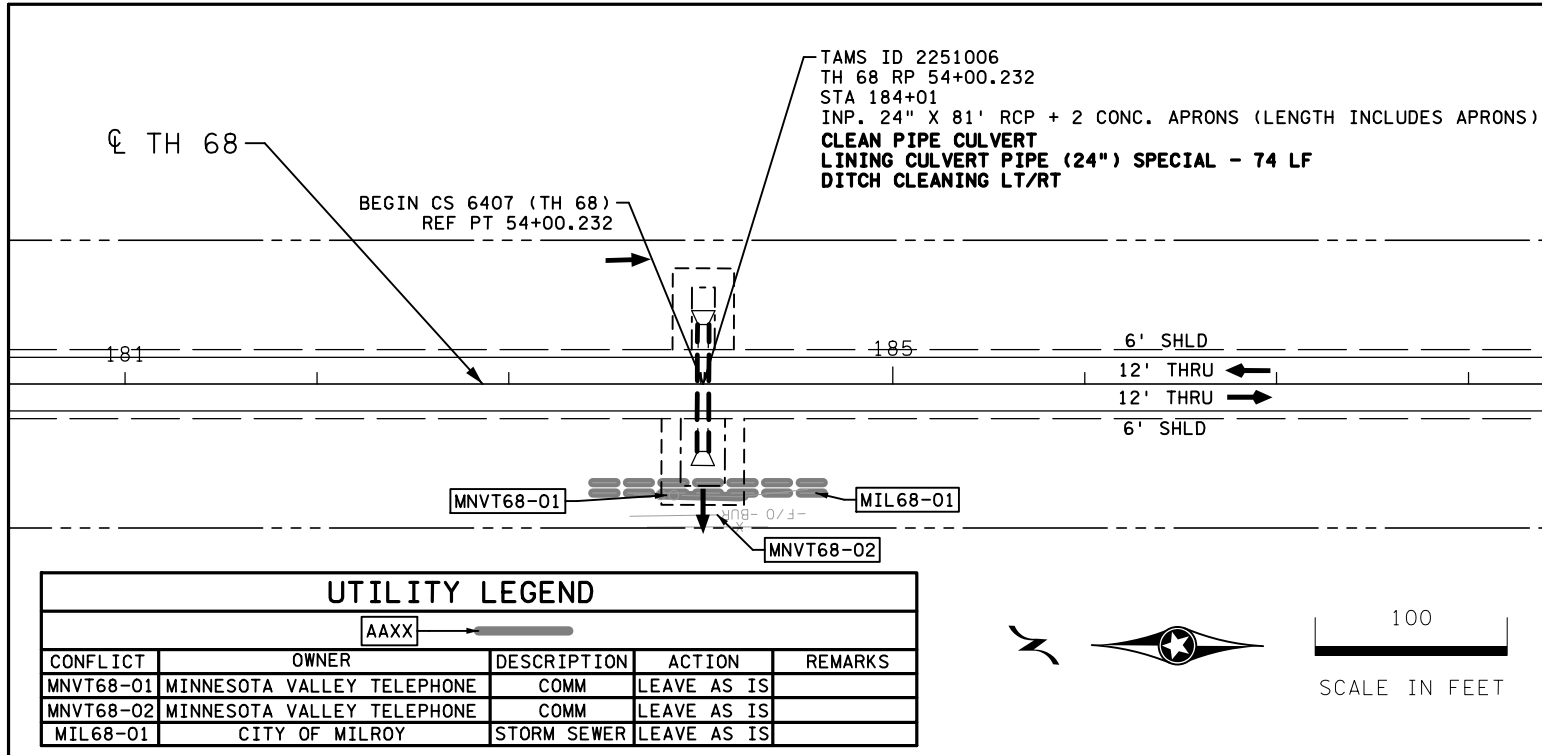
UTILITY LEGEND NOTES:

(1) CONTRACTOR TO PROVIDE 1-WEEK MINIMUM NOTIFICATION TO LYON-LINCOLN ELECTRIC TO GET THE POWER SERVICE SHUT OFF FOR CULVERT INSTALLATION.

(2) LEAVE IN PLACE. OUT OF SERVICE.

SPECIFIC NOTE:

(1) SAWING BITUMINOUS PAVEMENT (FULL DEPTH).



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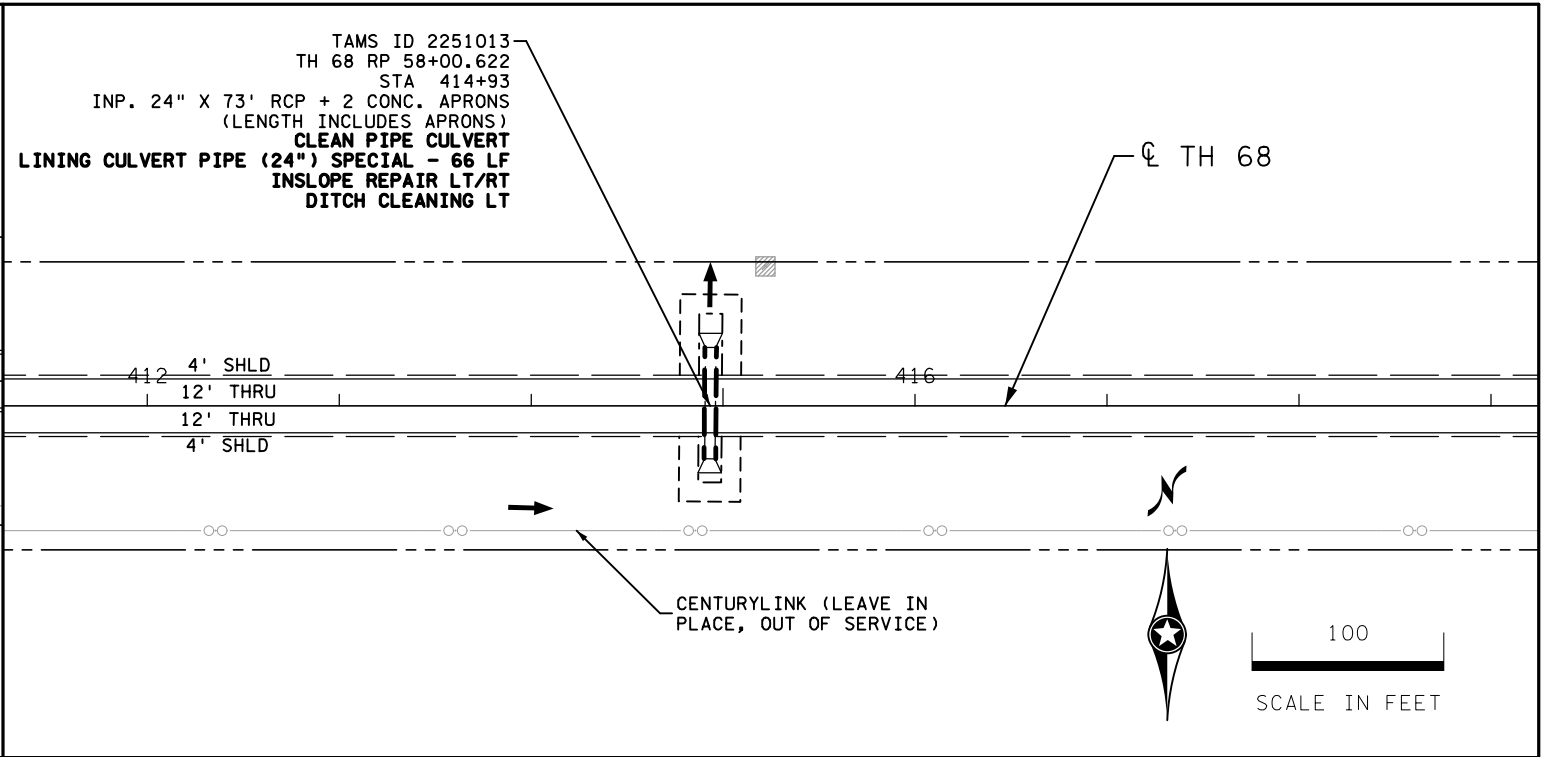
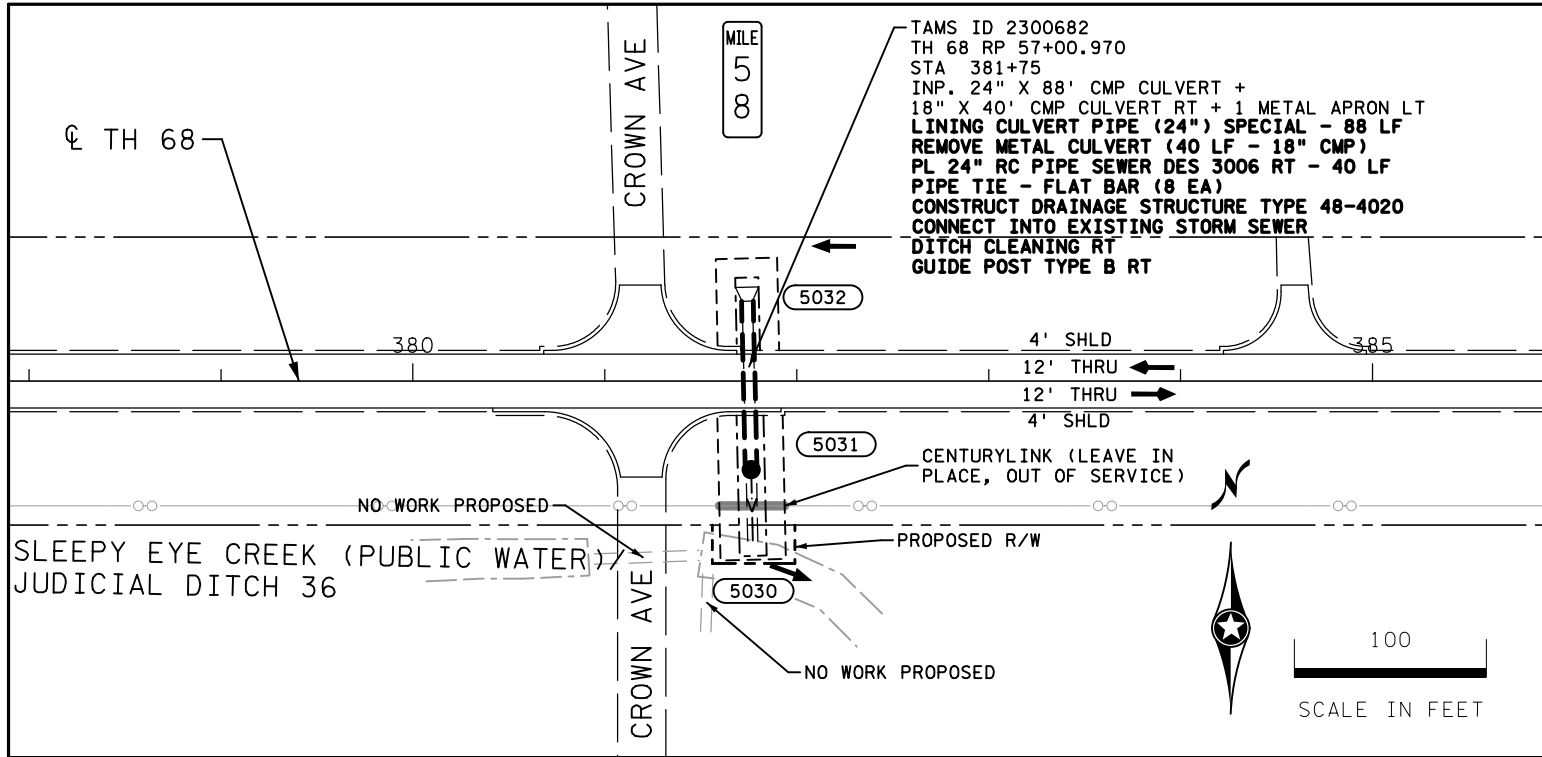


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PRINT NAME: DAN SWANSON
SIGNATURE: *Dan Swanson*
DATE: 12/11/24 LICENSE #: 54298

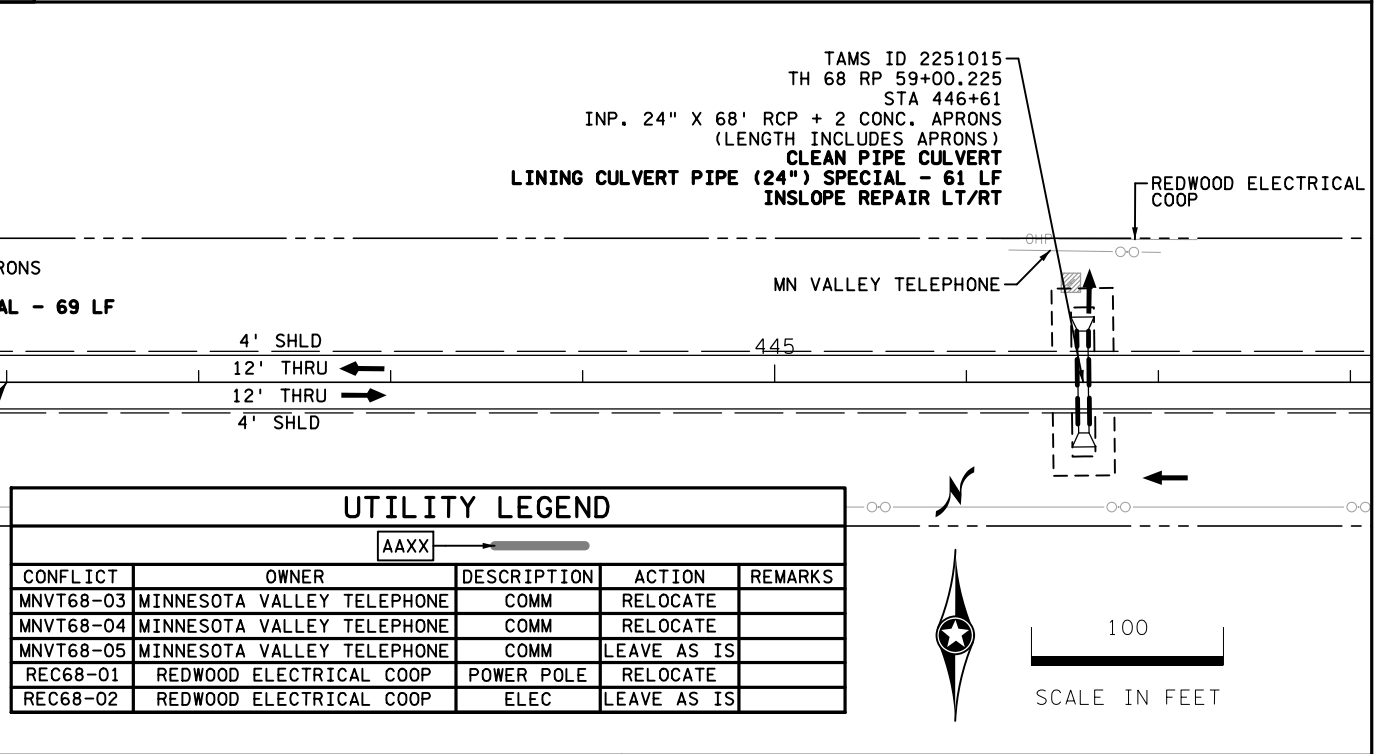
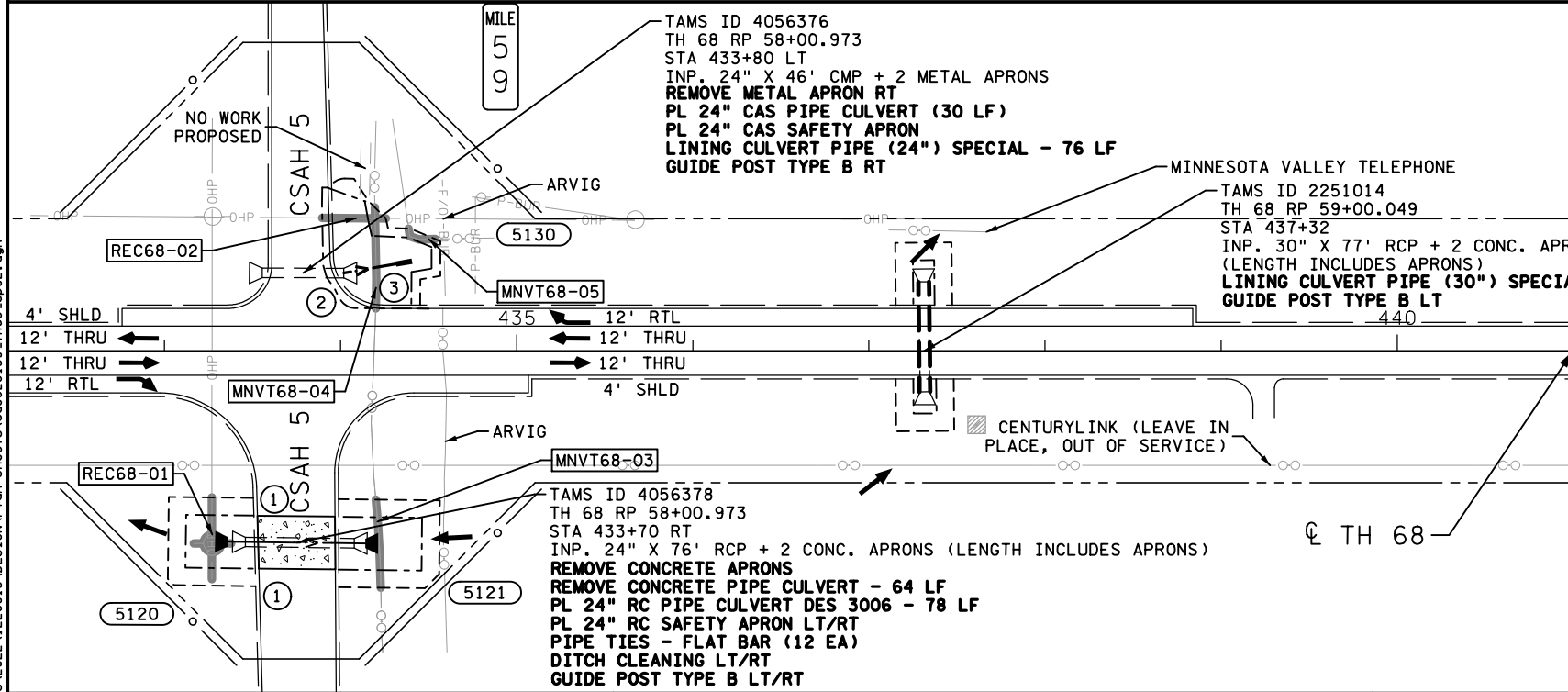
CONSTRUCTION, DRAINAGE, AND UTILITIES PLANS
TH 68

SP 8828-139
SHEET NO. 78 OF 212 SHEETS

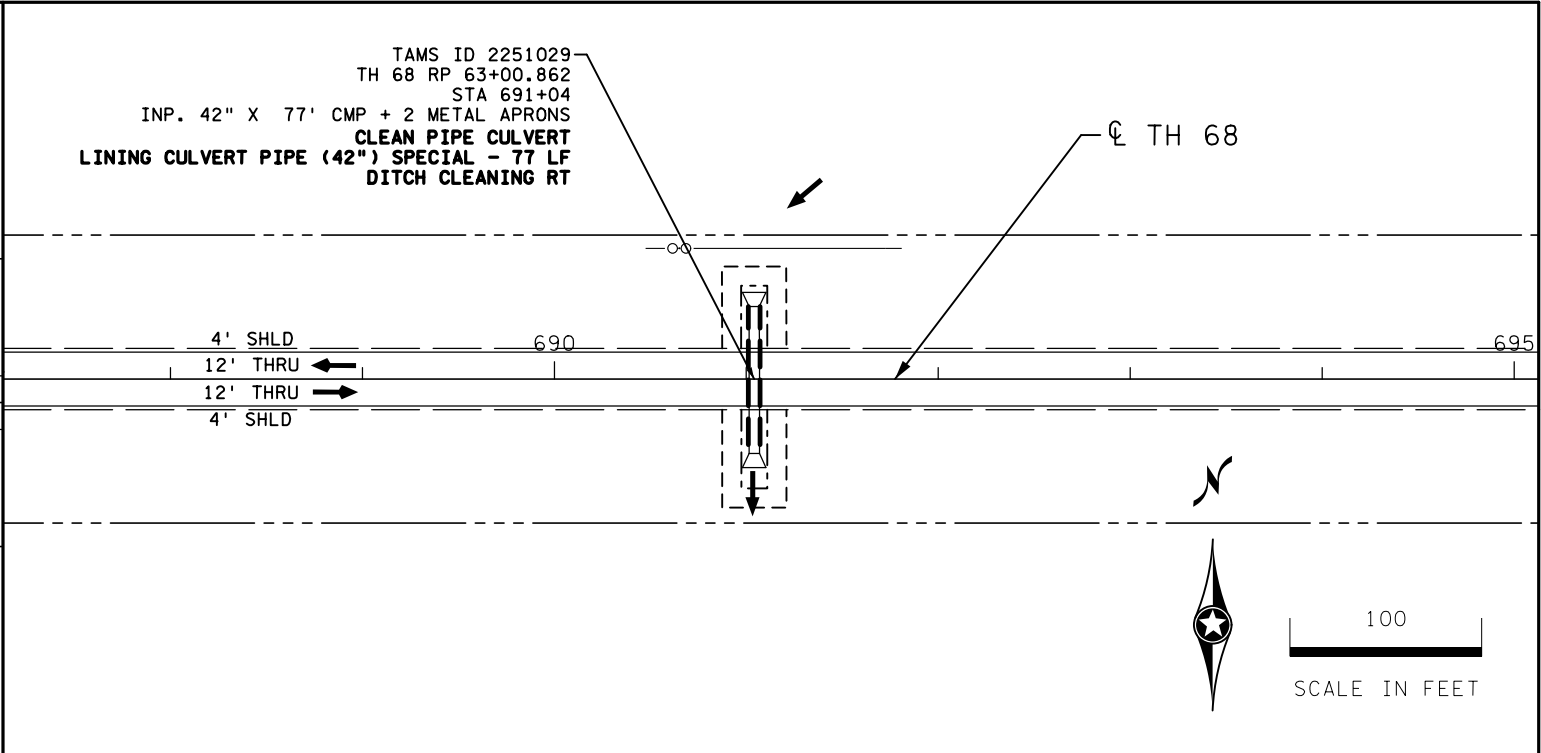
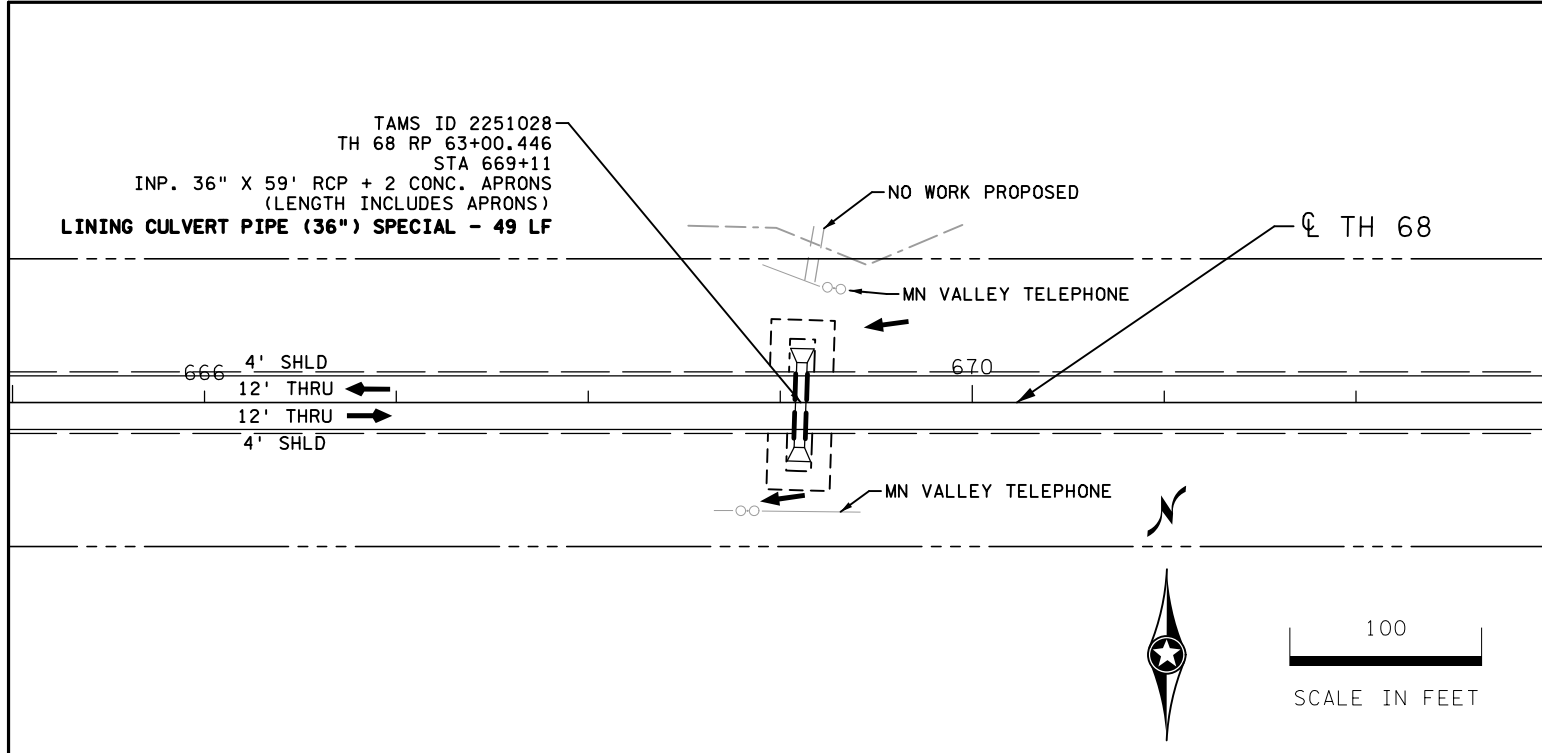


LEGEND			
---	EXISTING R/W	==	PROPOSED CULVERT LINING
o	ACCESS CONTROL	---	PROPOSED CULVERT / STORM SEWER
---	CONSTRUCTION LIMITS	---	EXISTING APRON
---	LIMITS OF DISTURBANCE	---	SALVAGE AND INSTALL APRON
W	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)	---	PROPOSED APRON
W	WET DITCH	OM /	EXISTING / PROPOSED MANHOLE
---	OTHER AQUATIC RESOURCES	---	EXISTING / PROPOSED DROP INLET
---	INPLACE CULVERT / STORM SEWER	---	FLOW ARROW
---		---	EXISTING GUARDRAIL
---		---	POWER - OVERHEAD
---		---	POWER - BURIED
---		---	GAS
---		---	COMMUNICATION LINE
---		---	FIBER OPTIC - BURIED
---		---	INPLACE WATER MAIN
---		---	INPLACE WATER VALVE
---		---	TREE LINE
---		---	TREE
---		---	POWER POLE
---		---	MAILBOX
---		---	UTILITY PEDESTAL
---		---	EXISTING FENCE
---		---	PAVEMENT RECONSTRUCTION
---		---	RANDOM RIPRAP

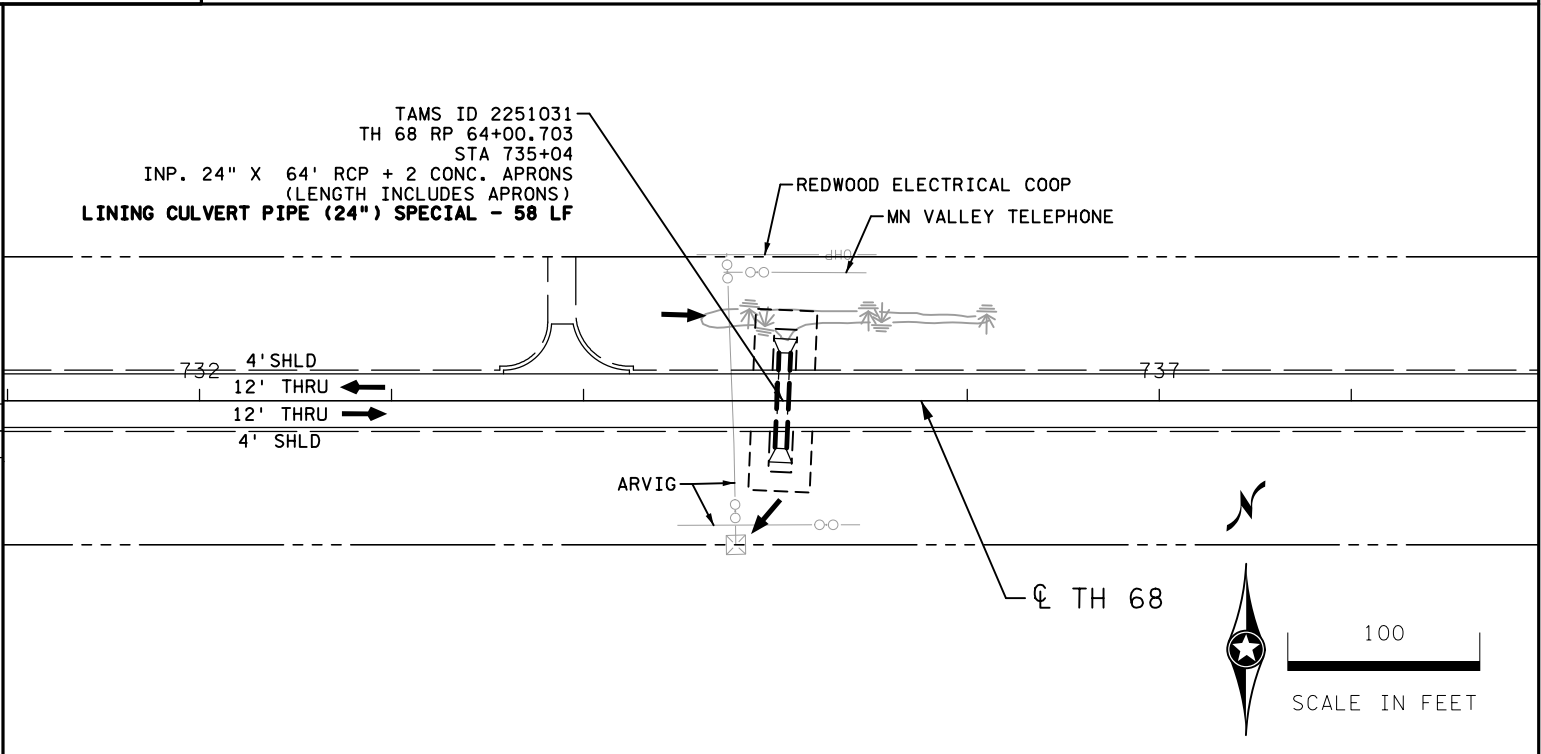
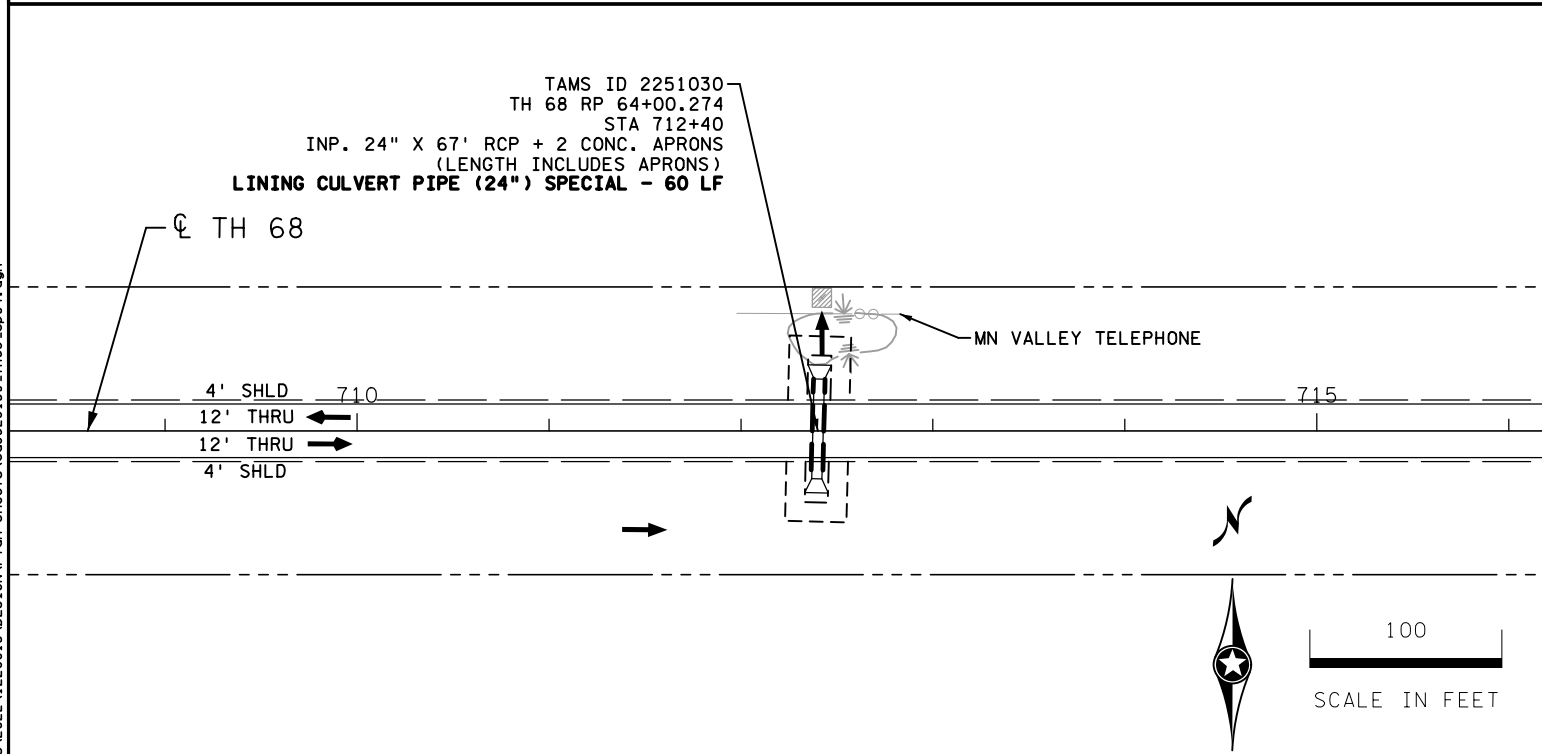
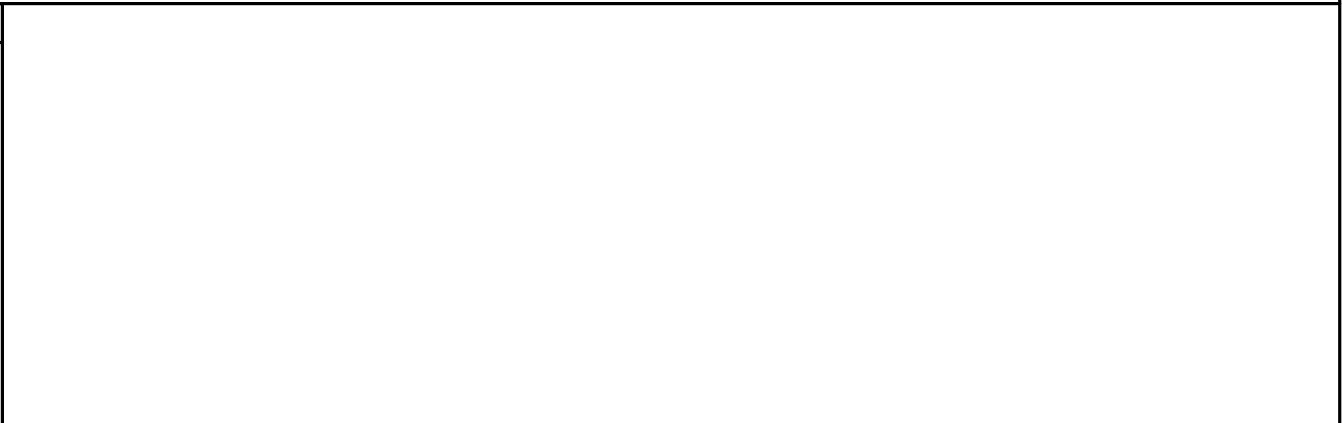
- SPECIFIC NOTES:**
- SAWING BITUMINOUS PAVEMENT (FULL DEPTH).
 - SEE TRAFFIC CONTROL PLAN FOR RADIUS WIDENING AND CROSS SECTIONS.
 - CONNECT TO PIPE (INCIDENTAL). LENGTH OF PIPE INCLUDING A 10° BEND. SEE TRAFFIC CONTROL PLAN FOR CULVERT PROFILE AND CROSS SECTIONS. SEE DETAIL FOR PIPE EXTENSION AND LINING REQUIREMENTS.



UTILITY LEGEND				
CONFLICT	OWNER	DESCRIPTION	ACTION	REMARKS
MNVT68-03	MINNESOTA VALLEY TELEPHONE	COMM	RELOCATE	
MNVT68-04	MINNESOTA VALLEY TELEPHONE	COMM	RELOCATE	
MNVT68-05	MINNESOTA VALLEY TELEPHONE	COMM	LEAVE AS IS	
REC68-01	REDWOOD ELECTRICAL COOP	POWER POLE	RELOCATE	
REC68-02	REDWOOD ELECTRICAL COOP	ELEC	LEAVE AS IS	



LEGEND					
---	EXISTING R/W	==	PROPOSED CULVERT LINING	→	FLOW ARROW
○	ACCESS CONTROL	→	PROPOSED CULVERT / STORM SEWER	---	EXISTING GUARDRAIL
---	CONSTRUCTION LIMITS	▽	EXISTING APRON	OHP	POWER - OVERHEAD
---	LIMITS OF DISTURBANCE	◻	SALVAGE AND INSTALL APRON	P-BUR	POWER - BURIED
WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		◻	PROPOSED APRON	G	GAS
WET DITCH		OM / ●	EXISTING / PROPOSED MANHOLE	OO	COMMUNICATION LINE
OTHER AQUATIC RESOURCES		▨ / ▩	EXISTING / PROPOSED DROP INLET	F/O - BUR	FIBER OPTIC - BURIED
INPLACE CULVERT / STORM SEWER				---	INPLACE WATER MAIN
				▽	INPLACE WATER VALVE
				---	TREE LINE
				✱	TREE
				○	POWER POLE
				MB	MAILBOX
				□	UTILITY PEDESTAL
				---	EXISTING FENCE
				---	PAVEMENT RECONSTRUCTION
				---	RANDOM RIPRAP



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NO	DATE	DWN	CKD	REVISIONS

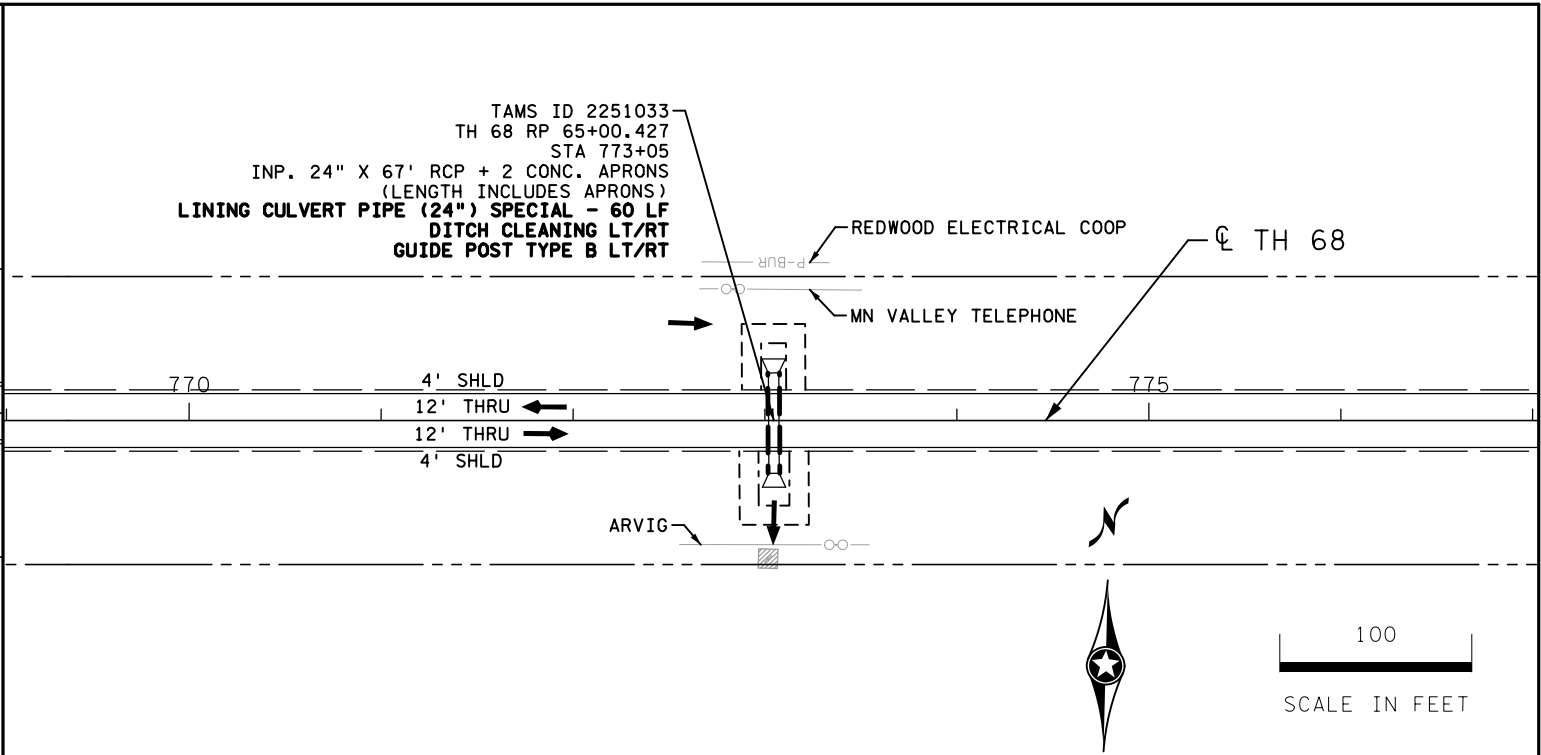
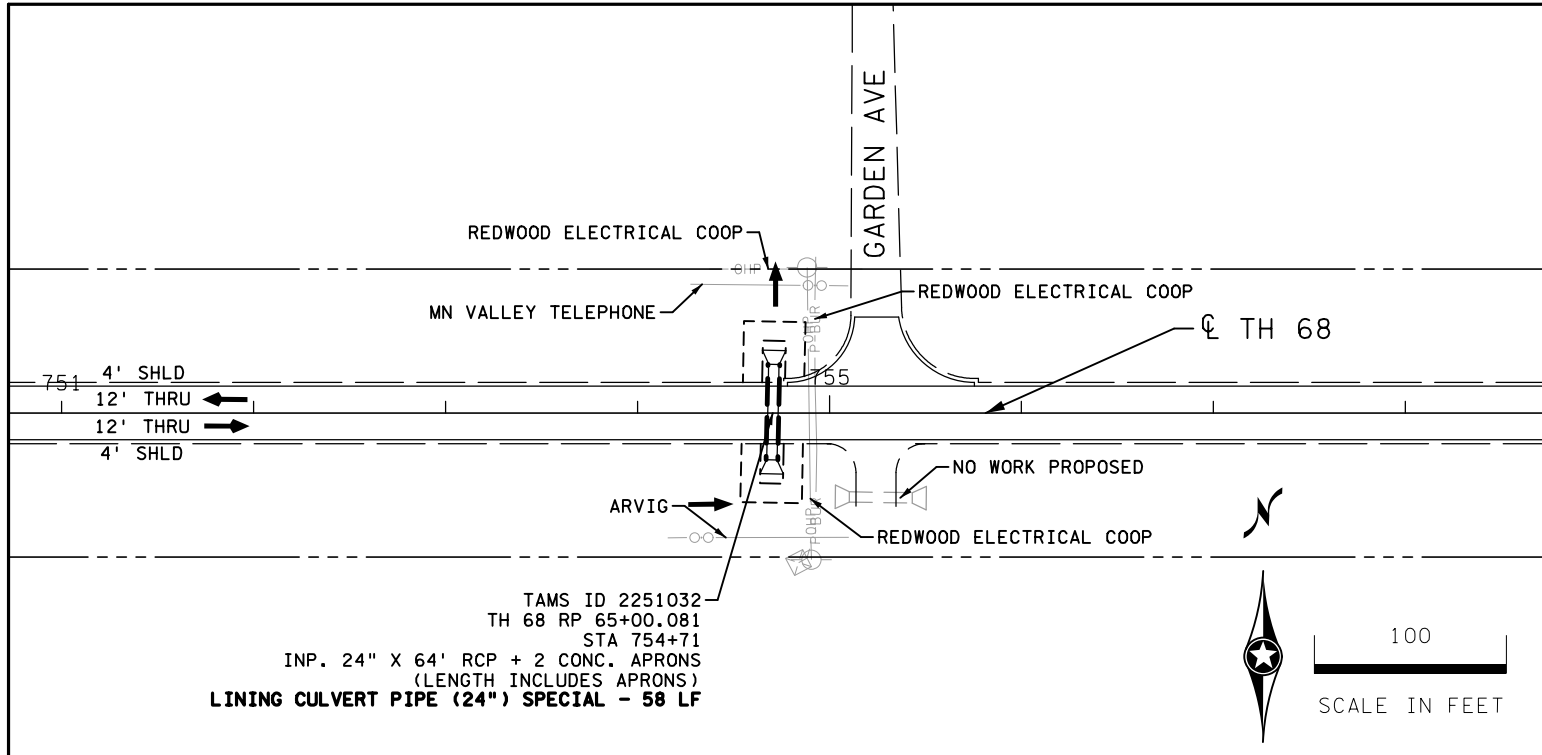


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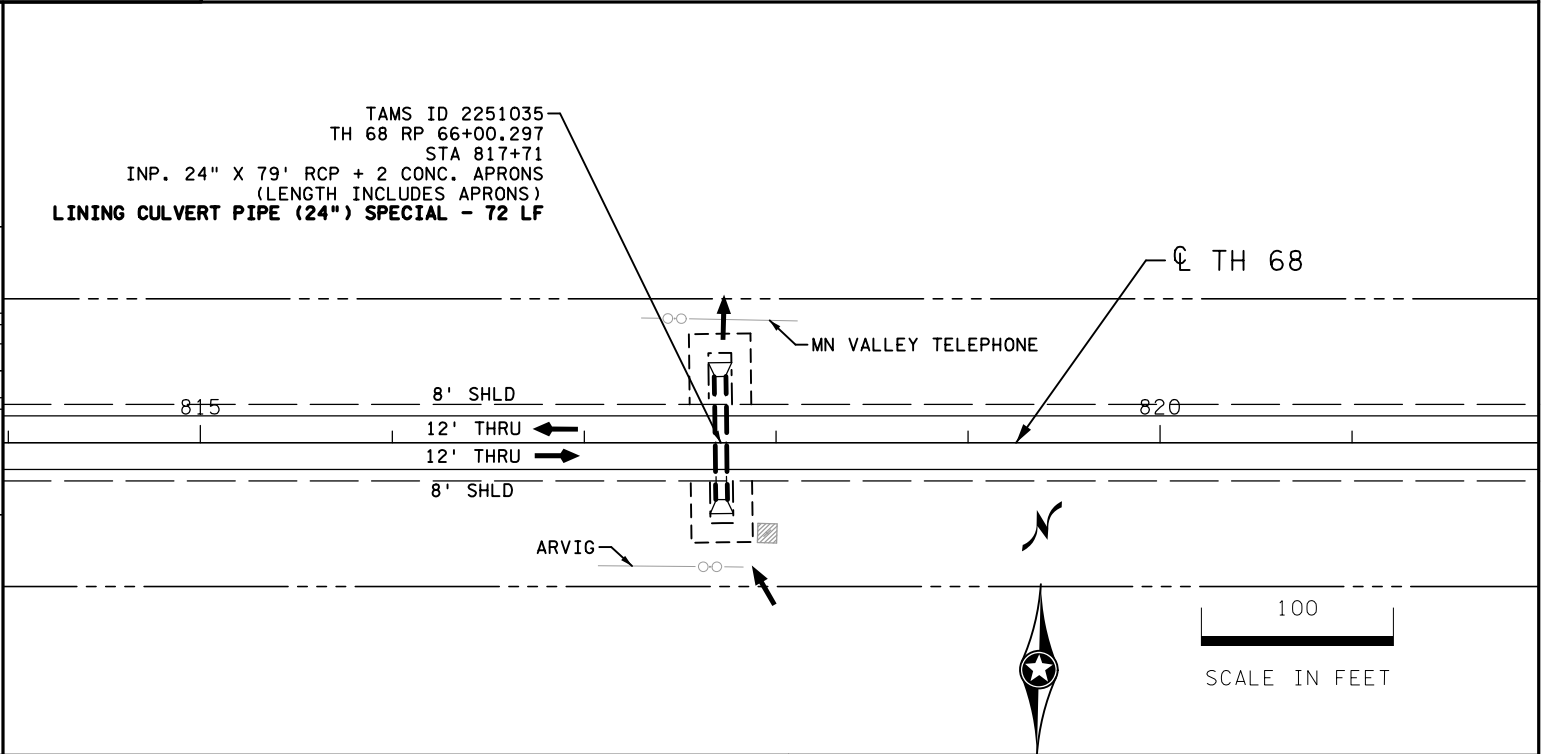
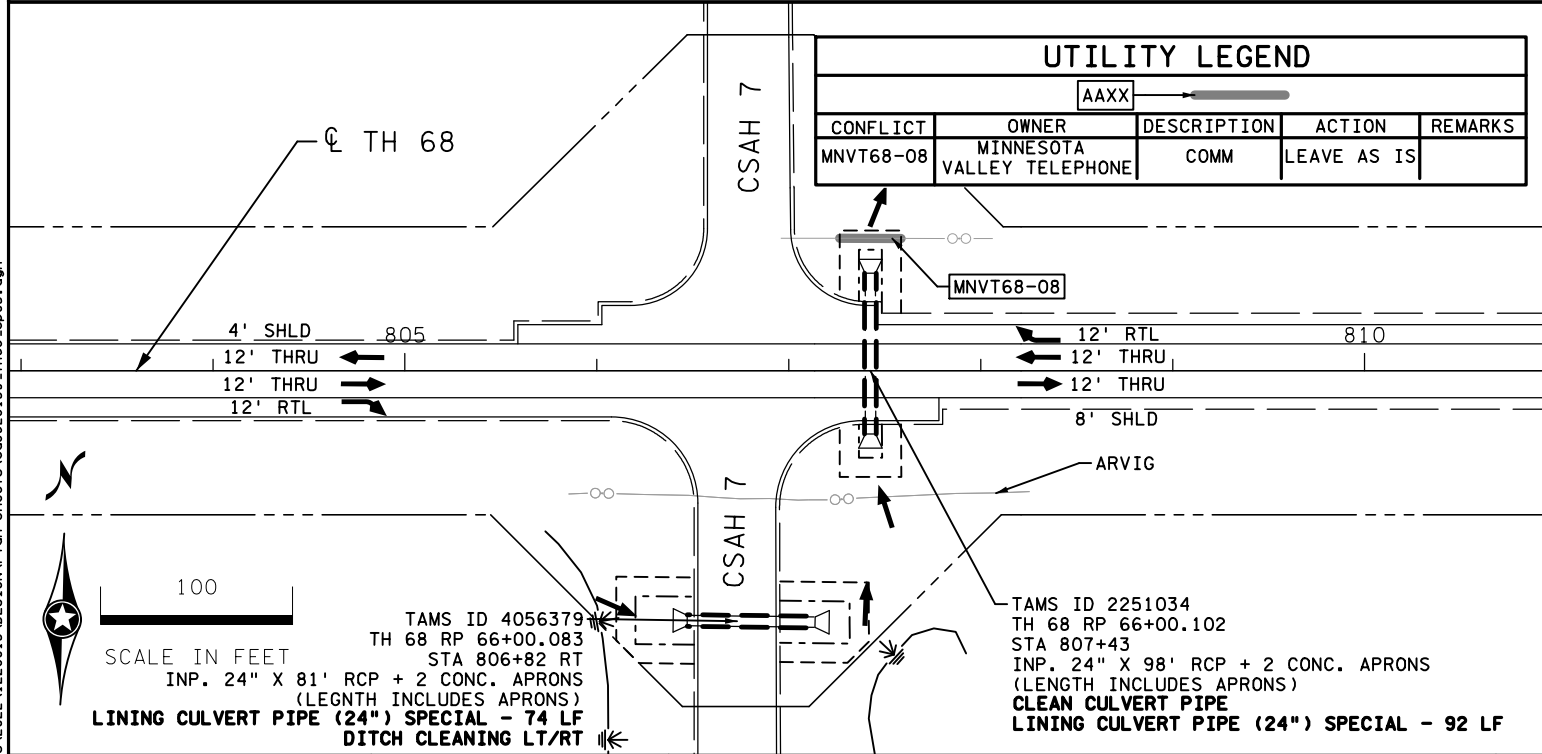
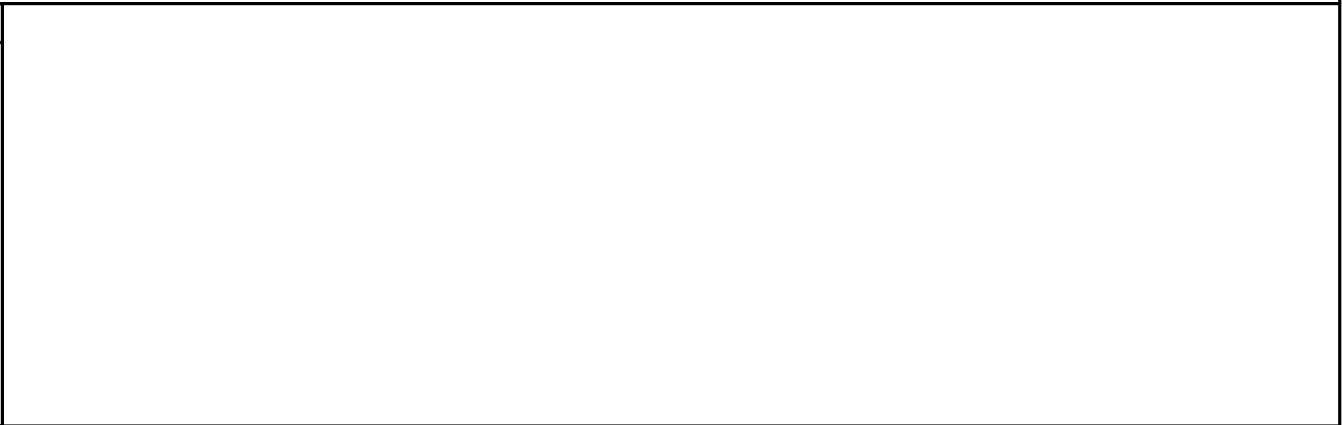
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SIGNATURE: *Dan Swanson*
DATE: 09/19/24 LICENSE #: 54298

CONSTRUCTION, DRAINAGE, AND UTILITIES PLANS
TH 68

SP 8828-139
SHEET NO. 81 OF 212 SHEETS



LEGEND					
---	EXISTING R/W	==	PROPOSED CULVERT LINING	→	FLOW ARROW
○	ACCESS CONTROL	→	PROPOSED CULVERT / STORM SEWER	—○—	EXISTING GUARDRAIL
---	CONSTRUCTION LIMITS	▽	EXISTING APRON	—OHP—	POWER - OVERHEAD
---	LIMITS OF DISTURBANCE	◁	SALVAGE AND INSTALL APRON	—P-BUR—	POWER - BURIED
—	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)	◼	PROPOSED APRON	—G—	GAS
—	WET DITCH	◼	EXISTING / PROPOSED MANHOLE	—OO—	COMMUNICATION LINE
---	OTHER AQUATIC RESOURCES	OM / ●	EXISTING / PROPOSED DROP INLET	—F/O-BUR—	FIBER OPTIC - BURIED
---	INPLACE CULVERT / STORM SEWER	▨ / ▩		— —	INPLACE WATER MAIN
				⋈	INPLACE WATER VALVE
				~~~~~	TREE LINE
				☼ / ✱	TREE
				—○—	POWER POLE
				◻MB	MAILBOX
				◻	UTILITY PEDESTAL
				—x—	EXISTING FENCE
				▨	PAVEMENT RECONSTRUCTION
				▨	RANDOM RIPRAP



UTILITY LEGEND				
AAXX				
CONFLICT	OWNER	DESCRIPTION	ACTION	REMARKS
MNVT68-08	MINNESOTA VALLEY TELEPHONE	COMM	LEAVE AS IS	

NO	DATE	DWN	CKD	REVISIONS

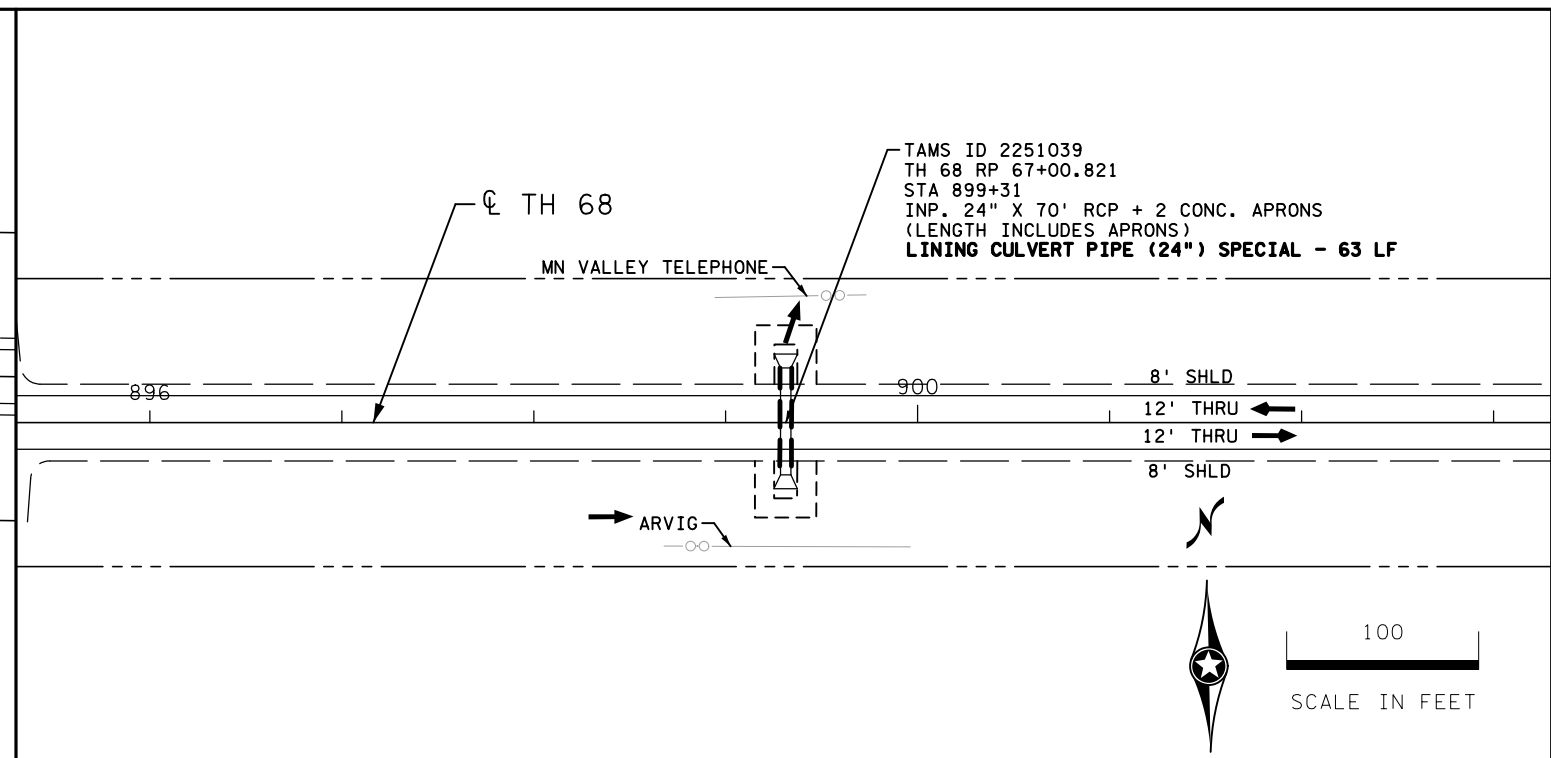


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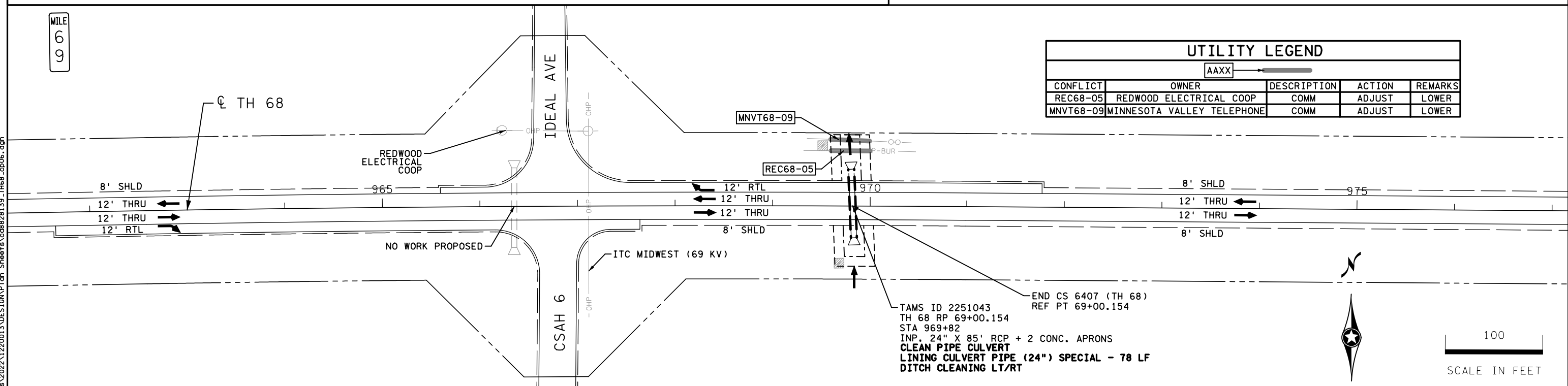
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DATE: 09/19/24 LICENSE #: 54298

CONSTRUCTION, DRAINAGE, AND UTILITIES PLANS  
TH 68

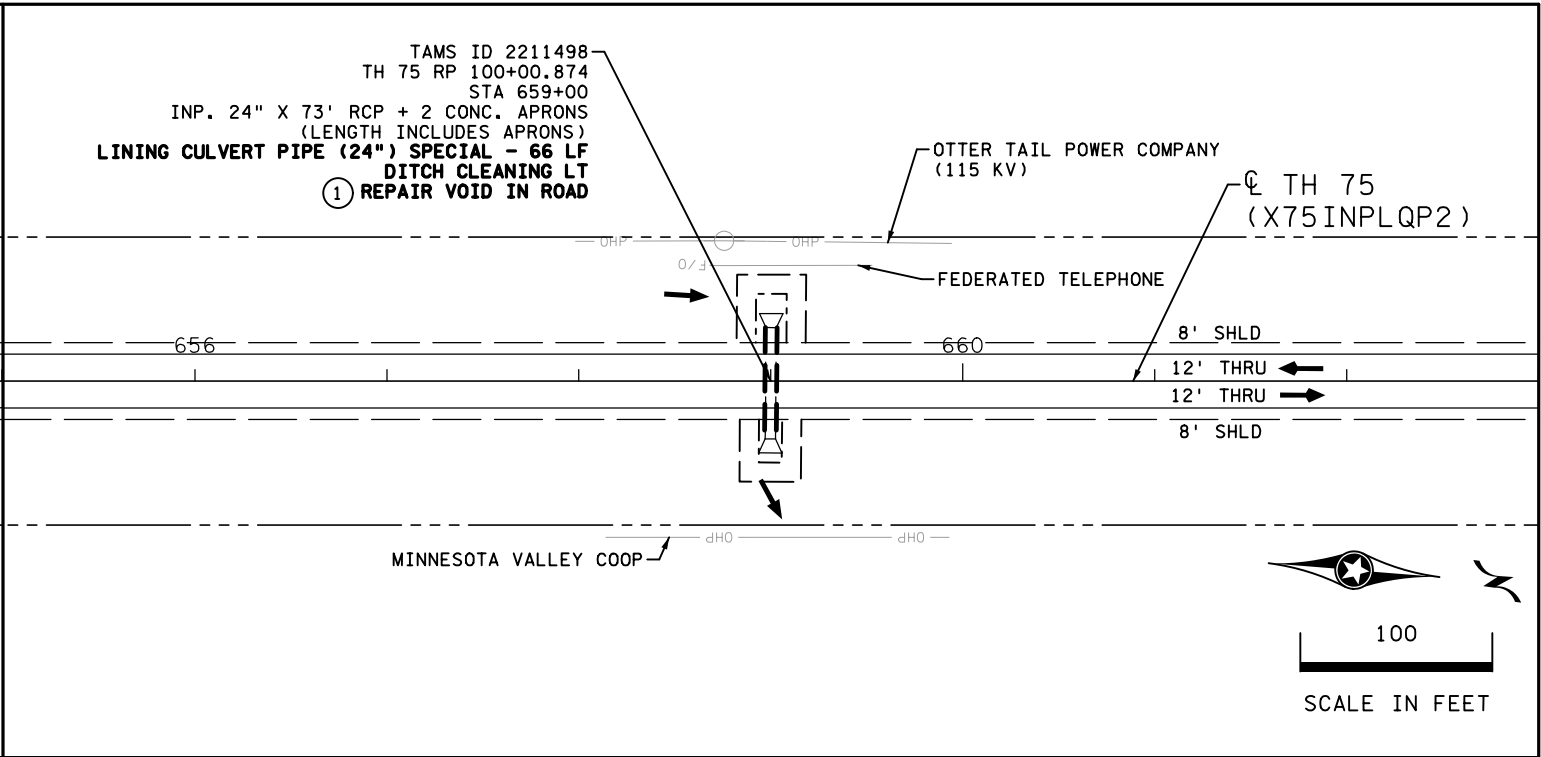
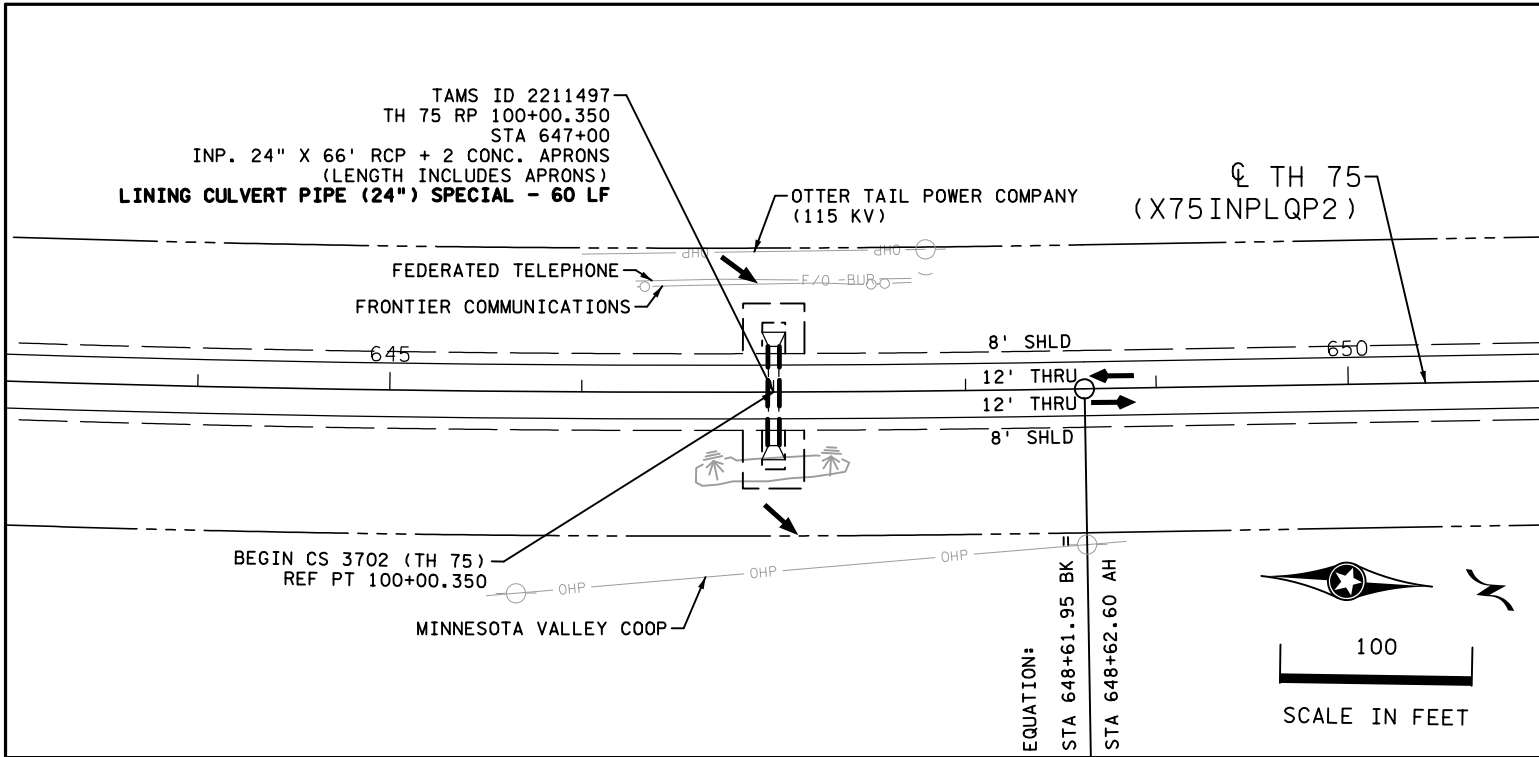
SP 8828-139  
SHEET NO. 82 OF 212 SHEETS



---	EXISTING R/W	=====	PROPOSED CULVERT LINING	→	FLOW ARROW	~~~~~	TREE LINE
○	ACCESS CONTROL			●—●—●	EXISTING GUARDRAIL	☁ / ✕	TREE
---	CONSTRUCTION LIMITS	— V —	PROPOSED CULVERT / STORM SEWER	— OHP —	POWER - OVERHEAD	○	POWER POLE
---	LIMITS OF DISTURBANCE	◁	EXISTING APRON	— P-BUR —	POWER - BURIED	□ MB	MAILBOX
⬆	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)	◼	SALVAGE AND INSTALL APRON	— G —	GAS	☒	UTILITY PEDESTAL
⬆	WET DITCH	◼	PROPOSED APRON	— ○○ —	COMMUNICATION LINE	— X —	EXISTING FENCE
---	OTHER AQUATIC RESOURCES	○ M / ●	EXISTING / PROPOSED MANHOLE	— F/O -BUR —	FIBER OPTIC - BURIED	[Pattern]	PAVEMENT RECONSTRUCTION
=====	INPLACE CULVERT / STORM SEWER	▨ / ▩	EXISTING / PROPOSED DROP INLET	— I —	INPLACE WATER MAIN	[Pattern]	RANDOM RIPRAP
				✕	INPLACE WATER VALVE		



UTILITY LEGEND				
<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 2px 5px; margin-right: 5px;">AAXX</div> <div style="flex-grow: 1; border-bottom: 1px solid black; position: relative;"> <div style="position: absolute; left: 0; top: -5px; right: 0; height: 10px; background: linear-gradient(to right, black 49%, black 49% 49.99%, white 49.99% 50%, white 50% 50.01%, black 50.01%);"></div> </div> </div>				
CONFLICT	OWNER	DESCRIPTION	ACTION	REMARKS
REC68-05	REDWOOD ELECTRICAL COOP	COMM	ADJUST	LOWER
MNVT68-09	MINNESOTA VALLEY TELEPHONE	COMM	ADJUST	LOWER



LEGEND					
---	EXISTING R/W	==	PROPOSED CULVERT LINING	→	FLOW ARROW
○	ACCESS CONTROL	→	PROPOSED CULVERT / STORM SEWER	—OHP—	EXISTING GUARDRAIL
---	CONSTRUCTION LIMITS	□	EXISTING APRON	—P-BUR—	POWER - OVERHEAD
---	LIMITS OF DISTURBANCE	◁	SALVAGE AND INSTALL APRON	—G—	POWER - BURIED
—	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)	◁	PROPOSED APRON	—C—	GAS
—	WET DITCH	OM / ●	EXISTING / PROPOSED MANHOLE	—F/O -BUR—	COMMUNICATION LINE
---	OTHER AQUATIC RESOURCES	▨ / ▩	EXISTING / PROPOSED DROP INLET	—	FIBER OPTIC - BURIED
---	INPLACE CULVERT / STORM SEWER			—	INPLACE WATER MAIN
				—	INPLACE WATER VALVE
				—	PAVEMENT RECONSTRUCTION
				—	RANDOM RIPRAP
				—	MAILBOX
				—	UTILITY PEDESTAL
				—	EXISTING FENCE
				—	TREE
				—	POWER POLE
				—	MAILBOX
				—	UTILITY PEDESTAL
				—	EXISTING FENCE
				—	TREE
				—	POWER POLE

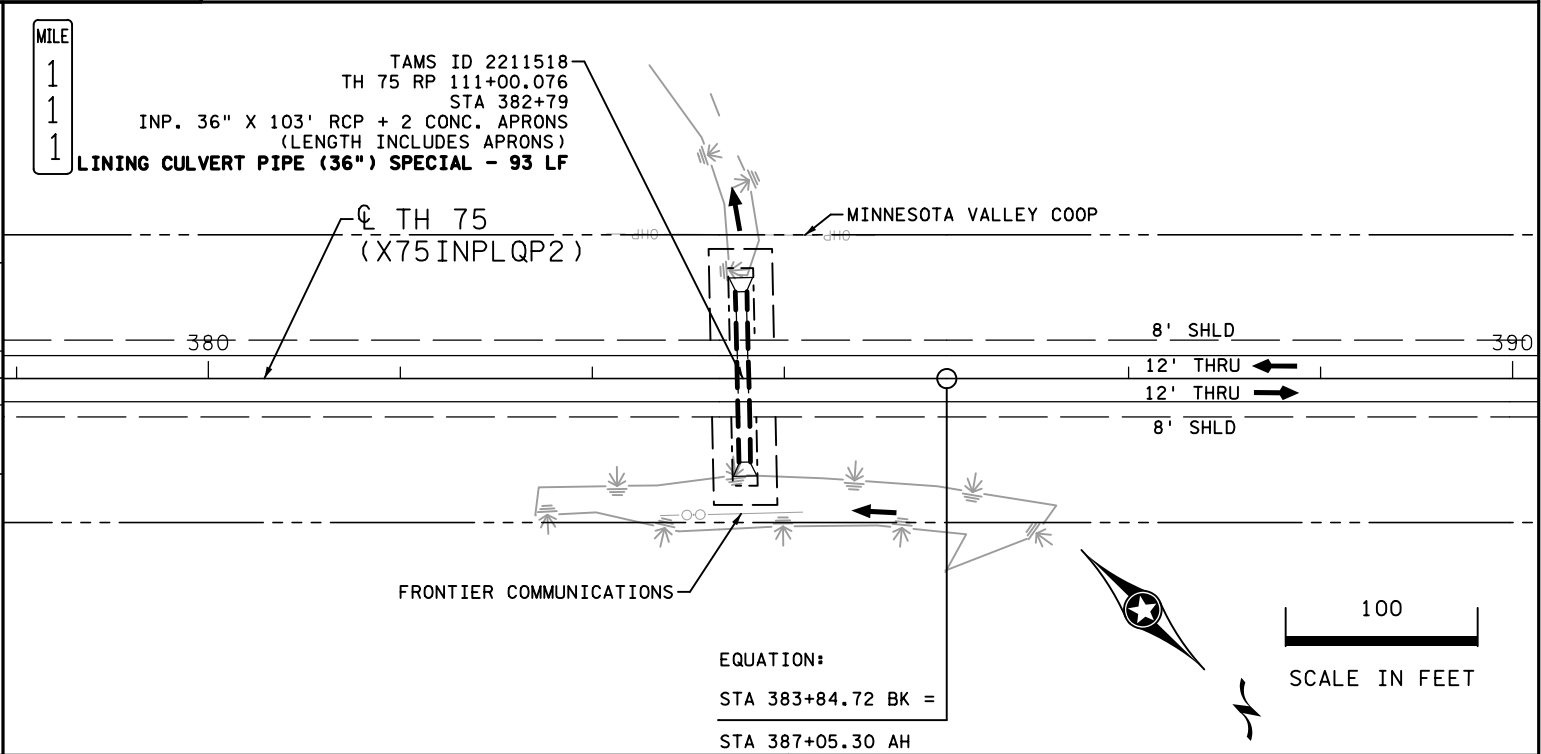
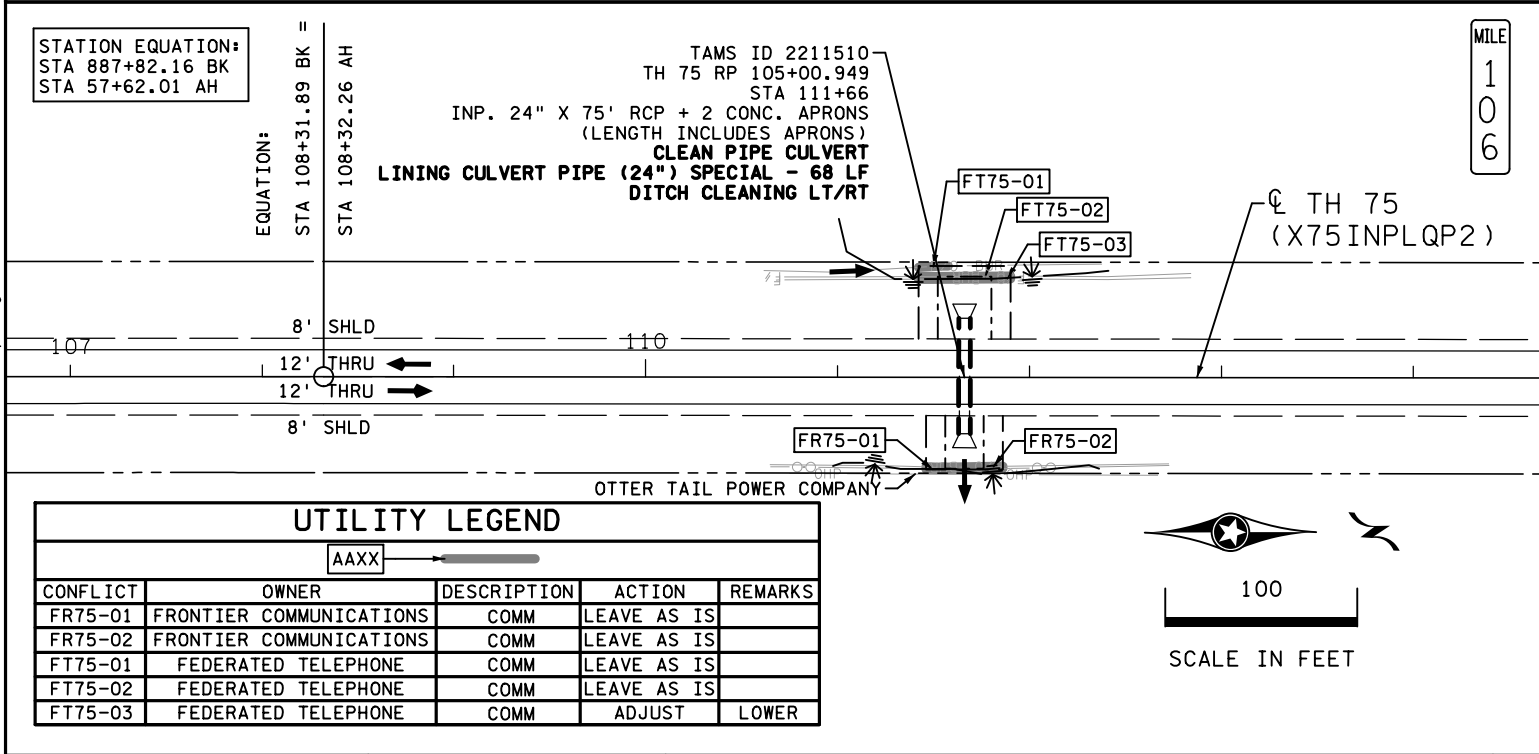
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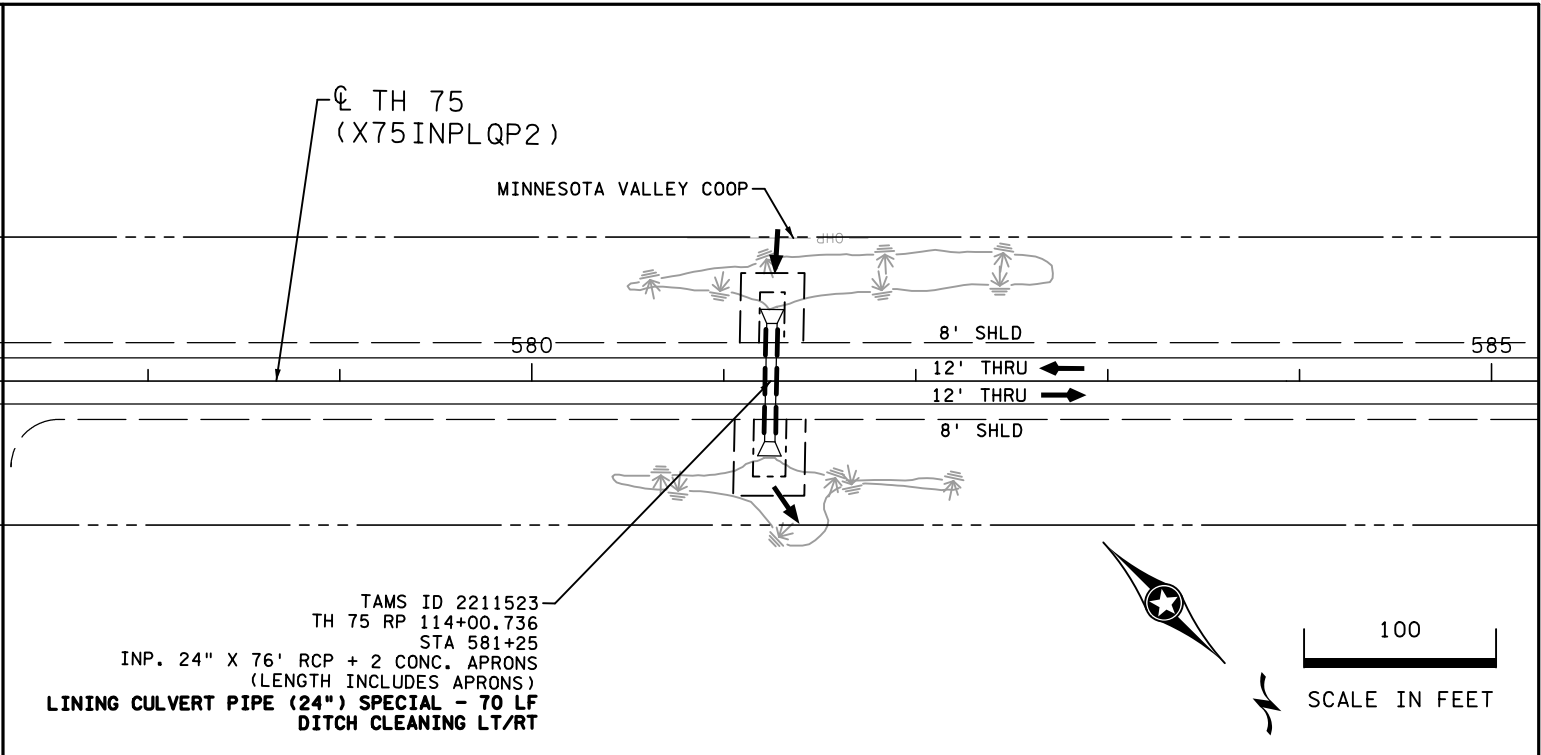
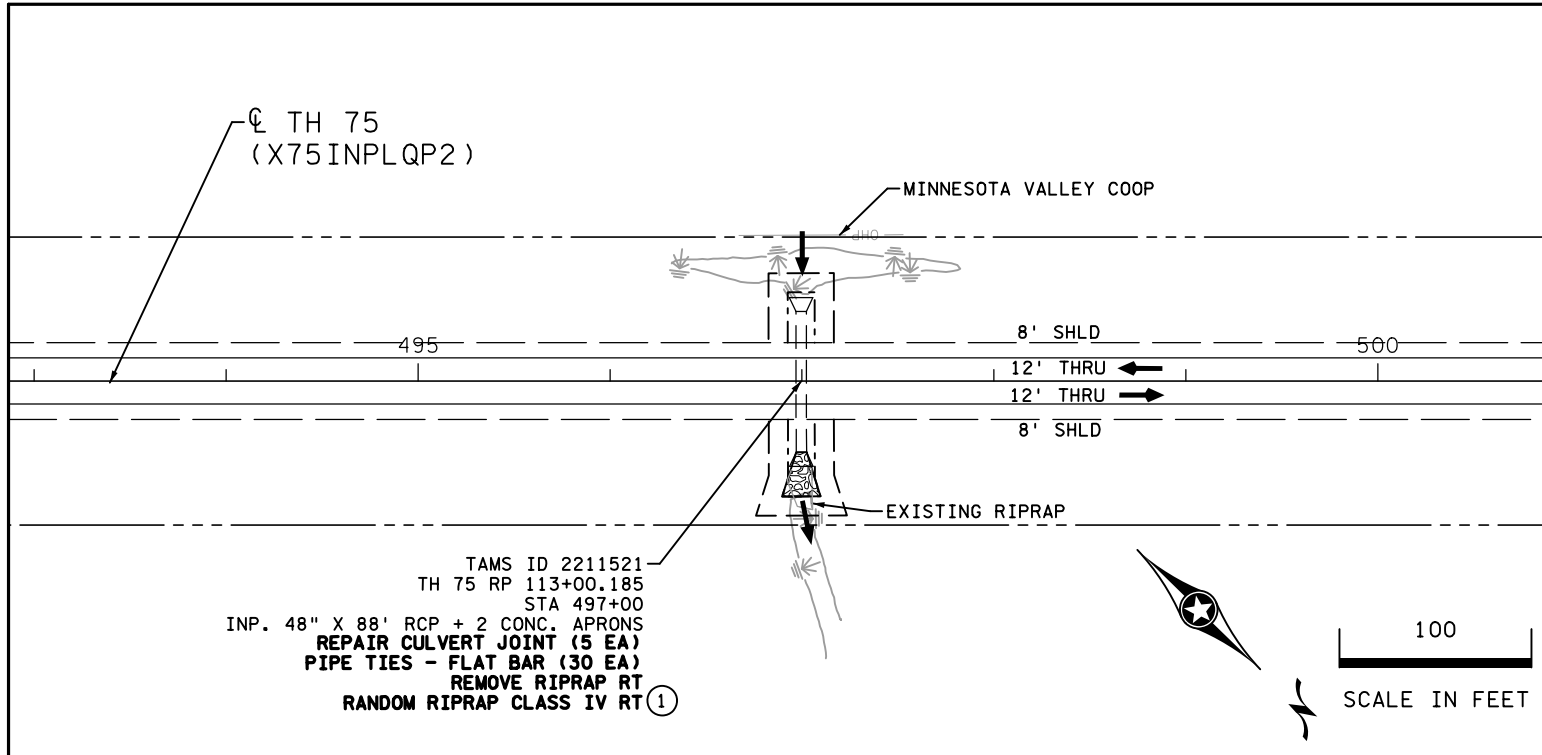
① FILL VOID IN ROAD WITH HIGH DENSITY CLSM. WHEN FULL, PATCH ROAD WITH COLD MIX ASPHALT (INCIDENTAL), AS APPROVED BY THE ENGINEER.

**GENERAL NOTES:**

1. ALIGNMENT X75INPLQP2 RUNNING SOUTH TO NORTH. BEGIN STA 413+88.67, END STA 802+81.91.

2. ALIGNMENT INPE2 RUNNING NORTH TO SOUTH. BEGIN STA 304+36.69, END STA 781+71.63.





LEGEND					
---	EXISTING R/W	==	PROPOSED CULVERT LINING	→	FLOW ARROW
○	ACCESS CONTROL	→	PROPOSED CULVERT / STORM SEWER	—○—	EXISTING GUARDRAIL
---	CONSTRUCTION LIMITS	→	EXISTING APRON	—OHP—	POWER - OVERHEAD
---	LIMITS OF DISTURBANCE	◁	SALVAGE AND INSTALL APRON	—P-BUR—	POWER - BURIED
—	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)	◁	PROPOSED APRON	—G—	GAS
—	WET DITCH	◁	EXISTING / PROPOSED MANHOLE	—OO—	COMMUNICATION LINE
---	OTHER AQUATIC RESOURCES	OM / ●	EXISTING / PROPOSED DROP INLET	—F/O-BUR—	FIBER OPTIC - BURIED
---	INPLACE CULVERT / STORM SEWER	▨ / ▩		— —	INPLACE WATER MAIN
				⋈	INPLACE WATER VALVE
				~~~~~	TREE LINE
				☼ / ✱	TREE
				—○—	POWER POLE
				—MB—	MAILBOX
				—	UTILITY PEDESTAL
				—x—	EXISTING FENCE
				▨	PAVEMENT RECONSTRUCTION
				▩	RANDOM RIPRAP

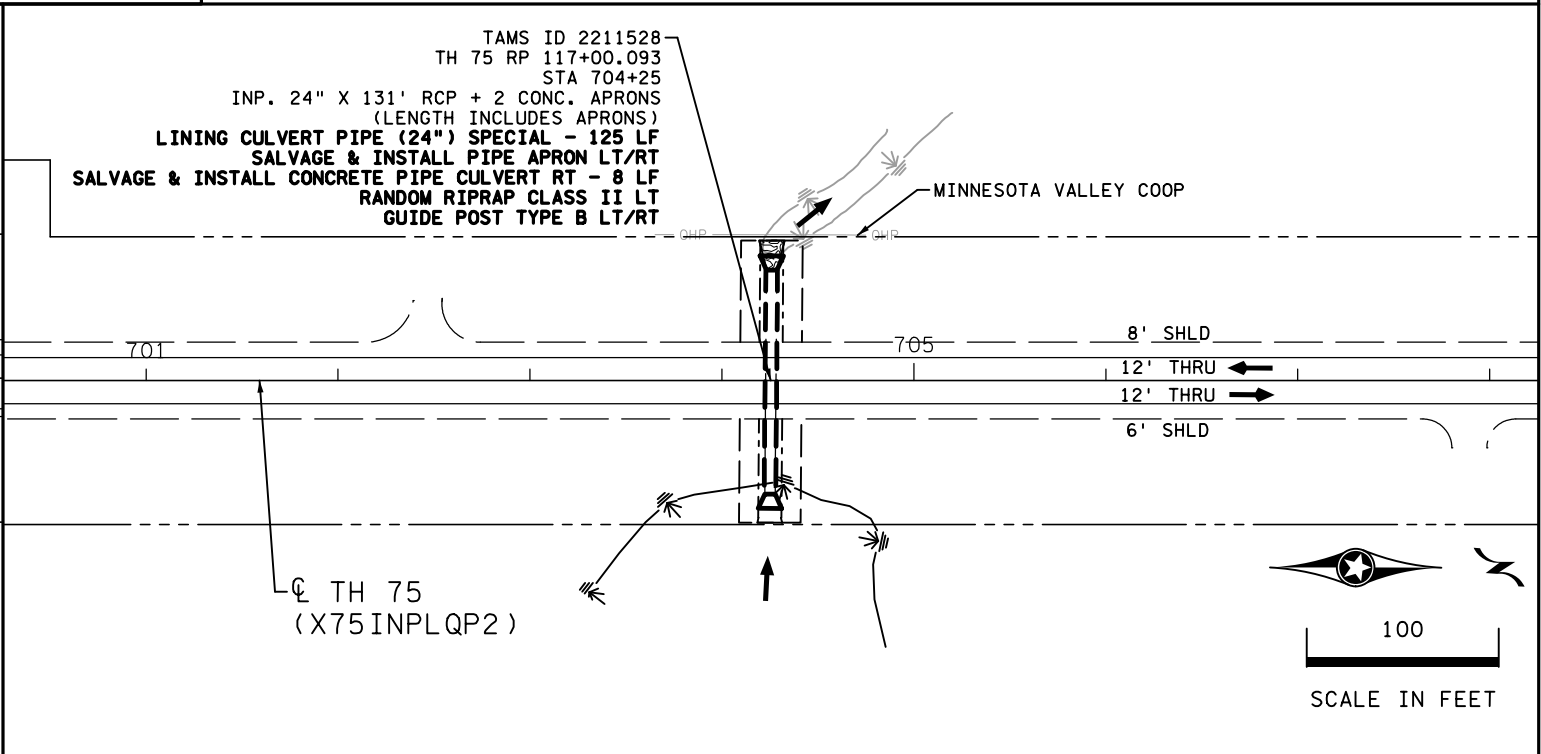
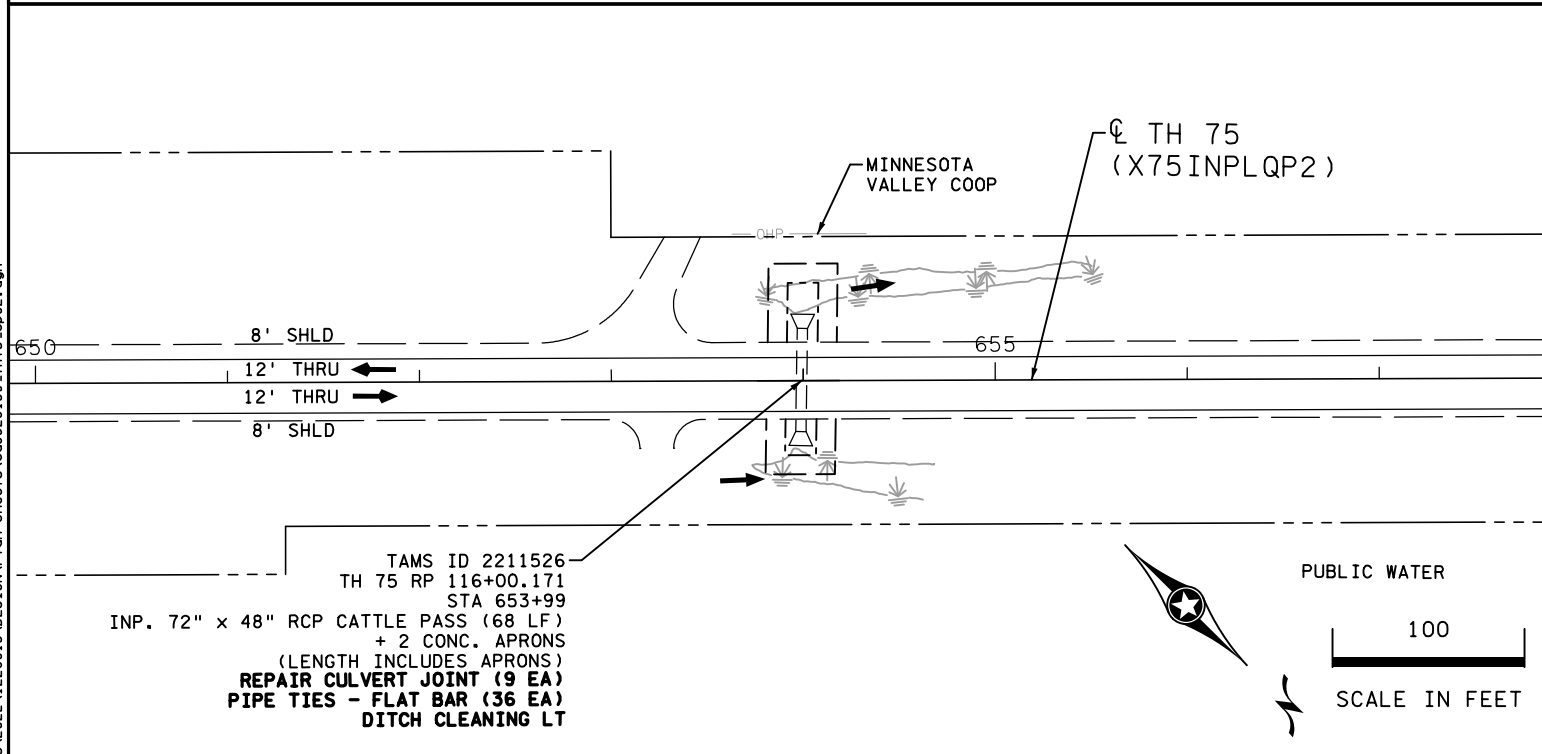
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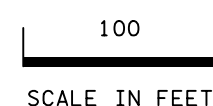
① PRIOR TO RIPRAP PLACEMENT, CONTRACTOR MAY MOVE EXISTING RIPRAP OUTSIDE PROPOSED RIPRAP LIMITS IN LIEU OF REMOVAL (INCIDENTAL). EXISTING RIPRAP MAY BE USED FOR PROPOSED RIPRAP PROVIDED IT MEETS THE SPECIFICATIONS FOR RANDOM RIPRAP CLASS IV.

GENERAL NOTES:

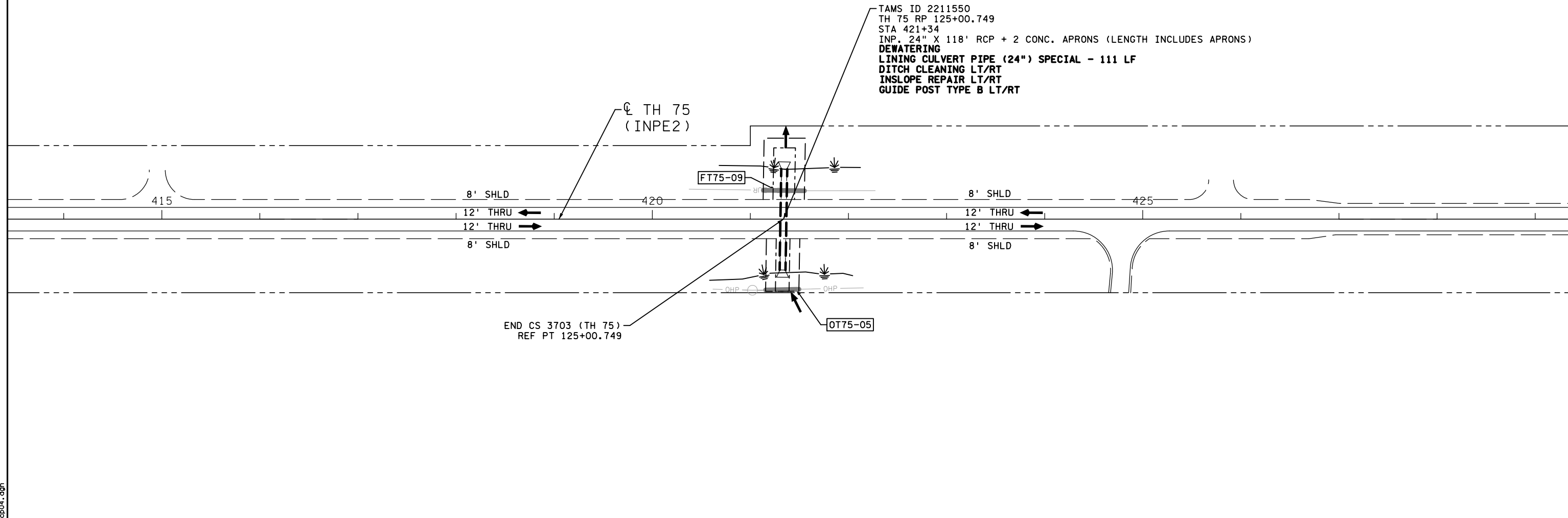
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2. ALIGNMENT INPE2 RUNNING NORTH TO SOUTH. BEGIN STA 304+36.69, END STA 781+71.63.





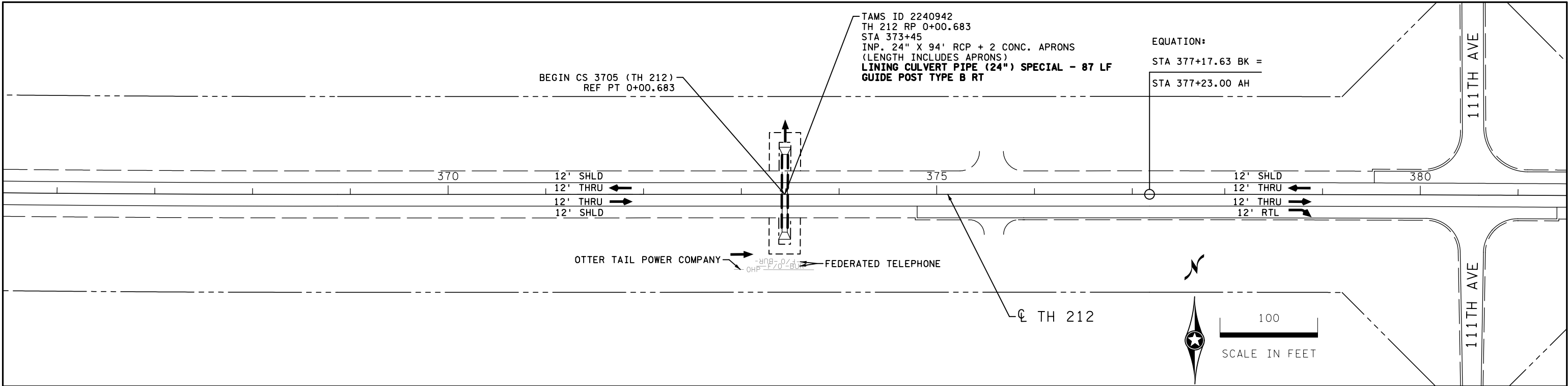
UTILITY LEGEND				
AAXX				
CONFLICT	OWNER	DESCRIPTION	ACTION	REMARKS
OT75-05	OTTER TAIL POWER CO	ELEC	LEAVE AS IS	
FT75-09	FEDERATED TELEPHONE	COMM	LEAVE AS IS	



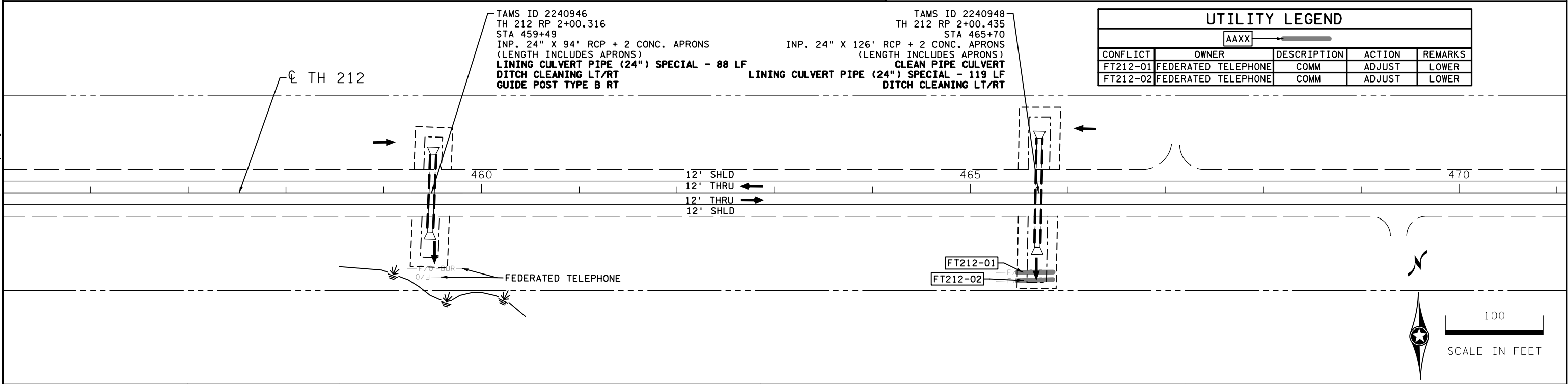
LEGEND					
---	EXISTING R/W	==	PROPOSED CULVERT LINING	→	FLOW ARROW
—○—	ACCESS CONTROL	—>—	PROPOSED CULVERT / STORM SEWER	—○—	EXISTING GUARDRAIL
----	CONSTRUCTION LIMITS	—□—	EXISTING APRON	—OHP—	POWER - OVERHEAD
- - - - -	LIMITS OF DISTURBANCE	—▲—	SALVAGE AND INSTALL APRON	—P-BUR—	POWER - BURIED
—	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)	—▲—	PROPOSED APRON	—G—	GAS
—	WET DITCH	—▲—	EXISTING / PROPOSED MANHOLE	—○—	COMMUNICATION LINE
----	OTHER AQUATIC RESOURCES	—▲—	EXISTING / PROPOSED DROP INLET	—F/O -BUR—	FIBER OPTIC - BURIED
==	INPLACE CULVERT / STORM SEWER	—▲—		—	INPLACE WATER MAIN
		—▲—		—	INPLACE WATER VALVE

GENERAL NOTES:	
1.	ALIGNMENT X75INPLQP2 RUNNING SOUTH TO NORTH. BEGIN STA 413+88.67, END 802+81.91.
2.	ALIGNMENT INPE2 RUNNING NORTH TO SOUTH. BEGIN STA 304+36.69, END STA 781+71.63.

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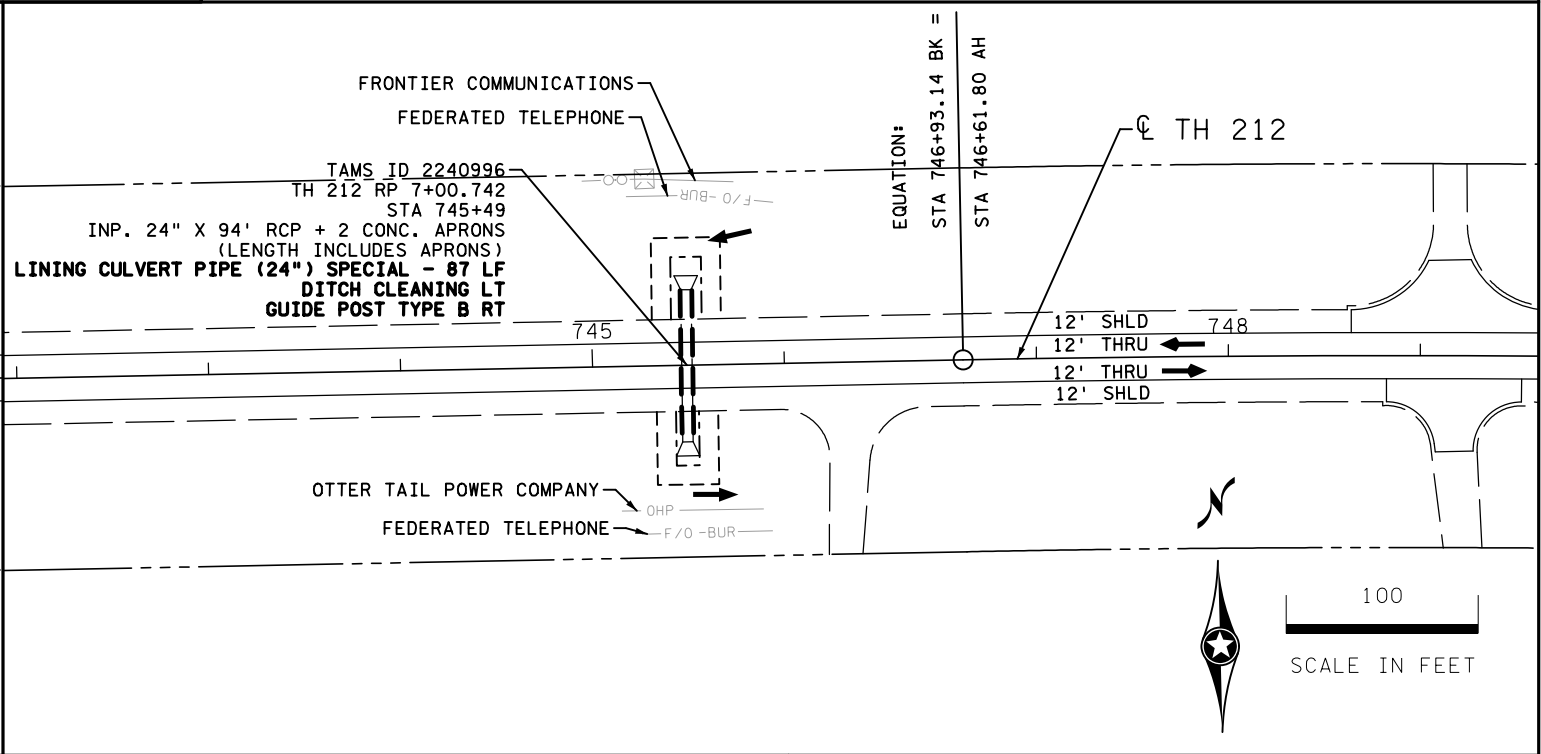
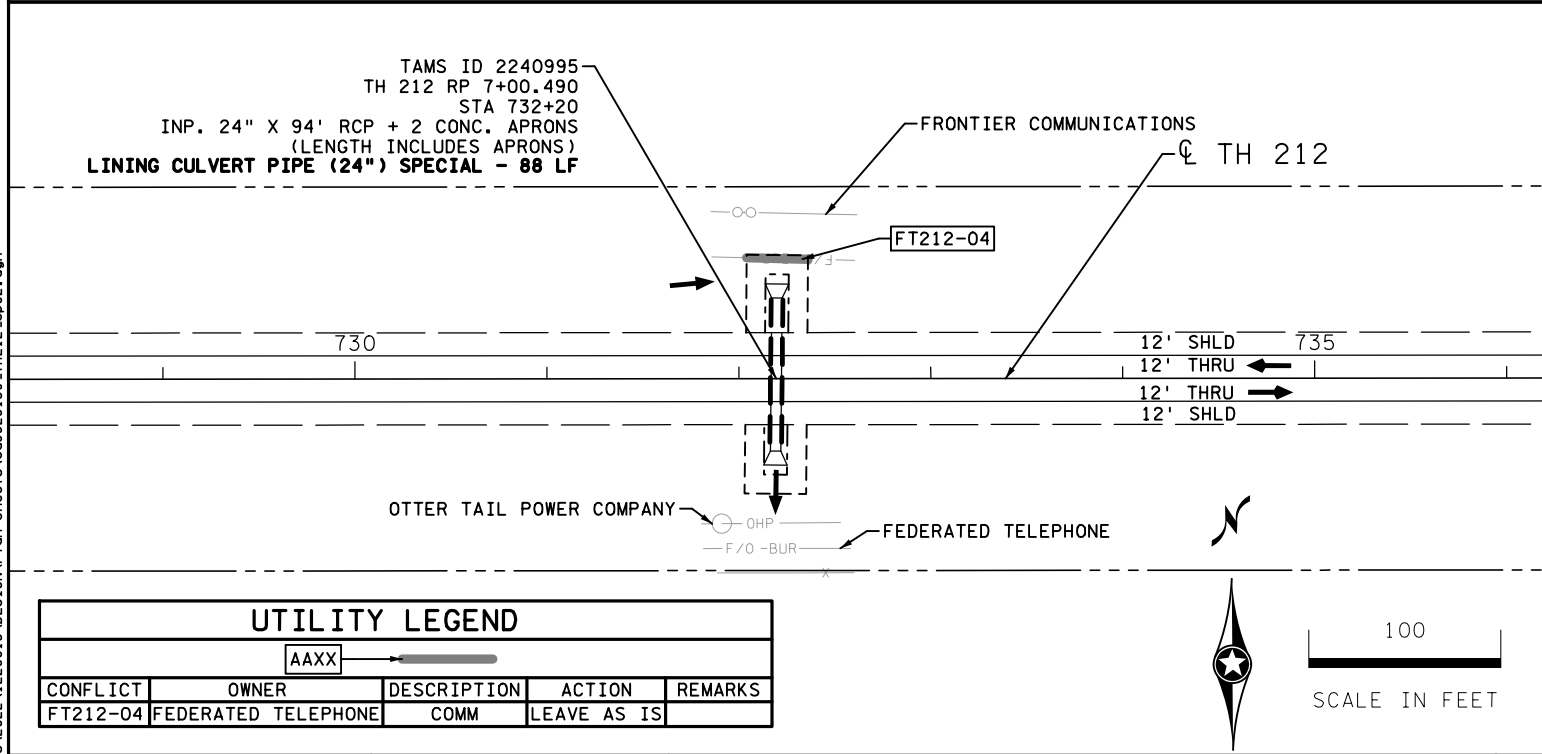
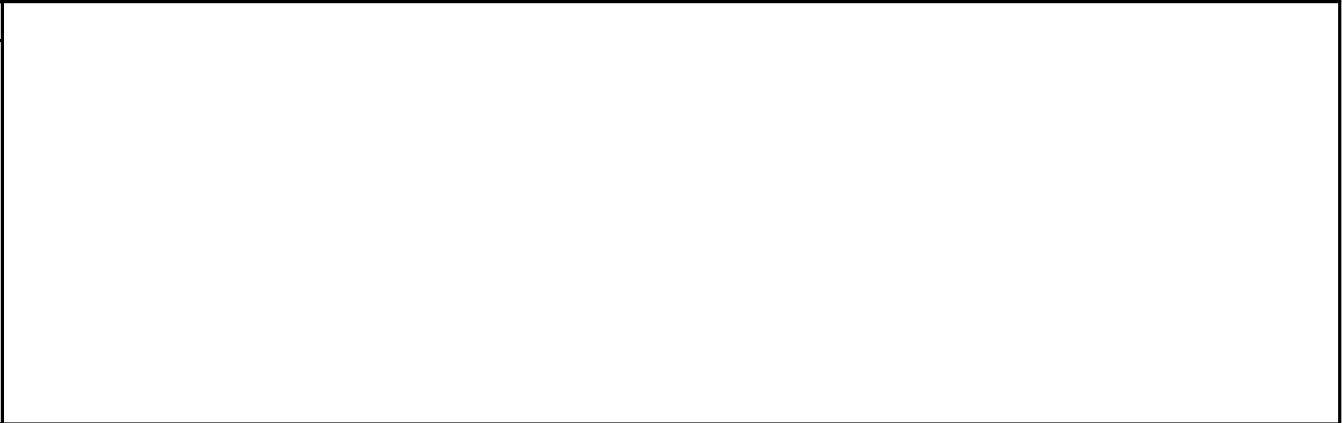
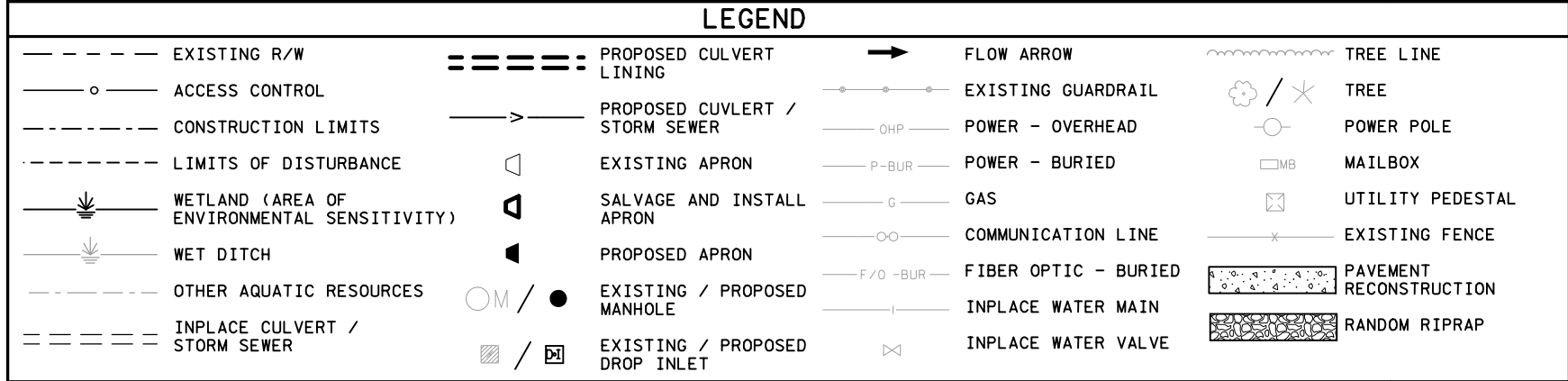
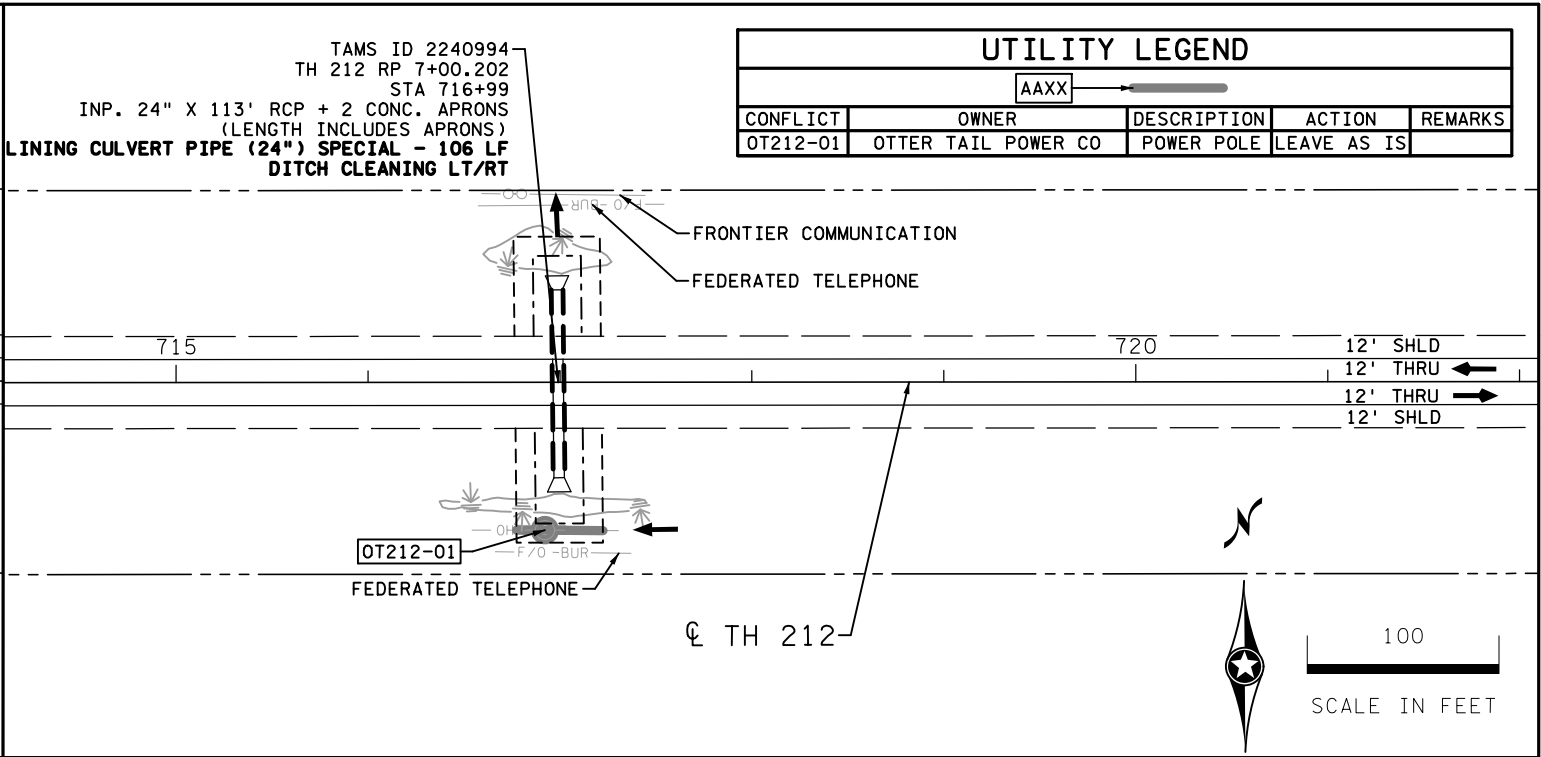
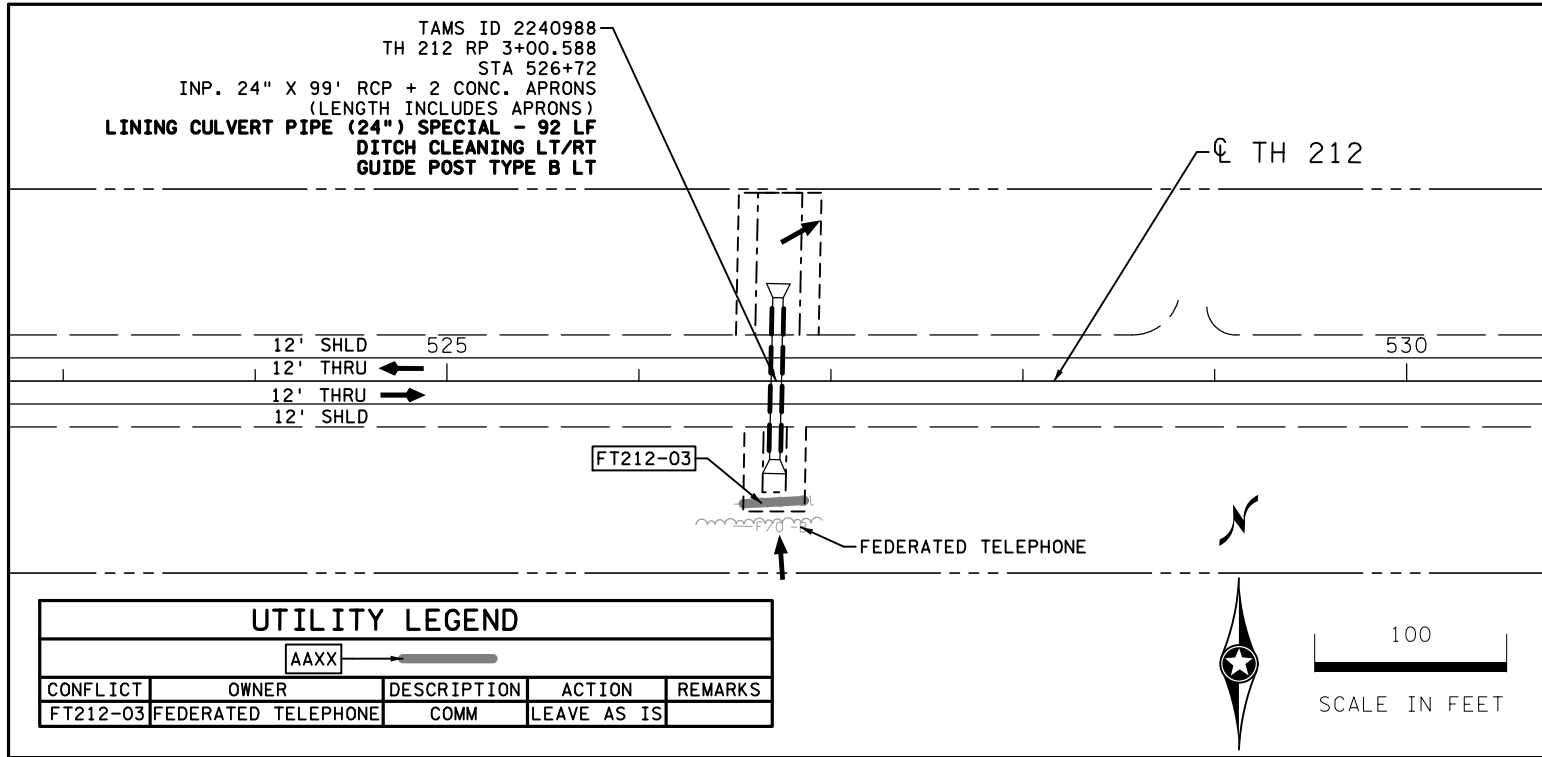


LEGEND					
---	EXISTING R/W	==	PROPOSED CULVERT LINING	→	FLOW ARROW
○	ACCESS CONTROL	→	PROPOSED CULVERT / STORM SEWER	---	EXISTING GUARDRAIL
---	CONSTRUCTION LIMITS	▽	EXISTING APRON	OHP	POWER - OVERHEAD
---	LIMITS OF DISTURBANCE	◻	SALVAGE AND INSTALL APRON	P-BUR	POWER - BURIED
🌿	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)	▲	PROPOSED APRON	G	GAS
🌿	WET DITCH	OM / ●	EXISTING / PROPOSED MANHOLE	F/O-BUR	FIBER OPTIC - BURIED
---	OTHER AQUATIC RESOURCES	▨ / ▩	EXISTING / PROPOSED DROP INLET	---	COMMUNICATION LINE
---	INPLACE CULVERT / STORM SEWER			---	INPLACE WATER MAIN
				---	INPLACE WATER VALVE
				---	TREE LINE
				🌳 / *	TREE
				○	POWER POLE
				MB	MAILBOX
				⊠	UTILITY PEDESTAL
				---	EXISTING FENCE
				---	PAVEMENT RECONSTRUCTION
				---	RANDOM RIPRAP



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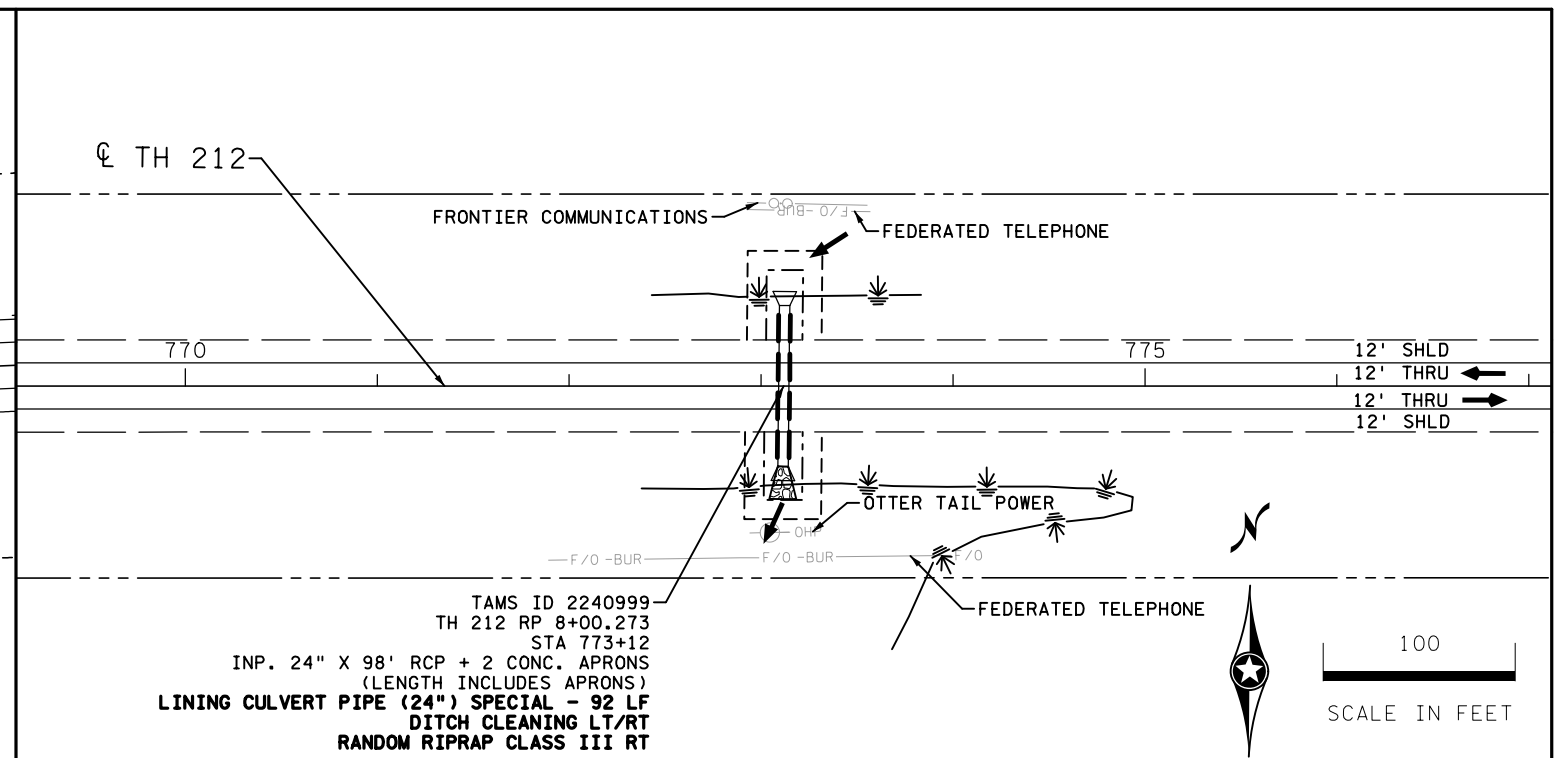


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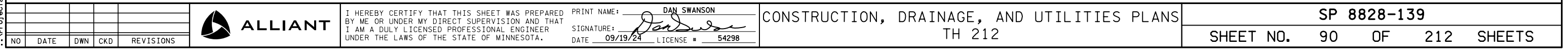
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SIGNATURE: *Dan Swanson*
DATE: 09/19/24 LICENSE #: 54298

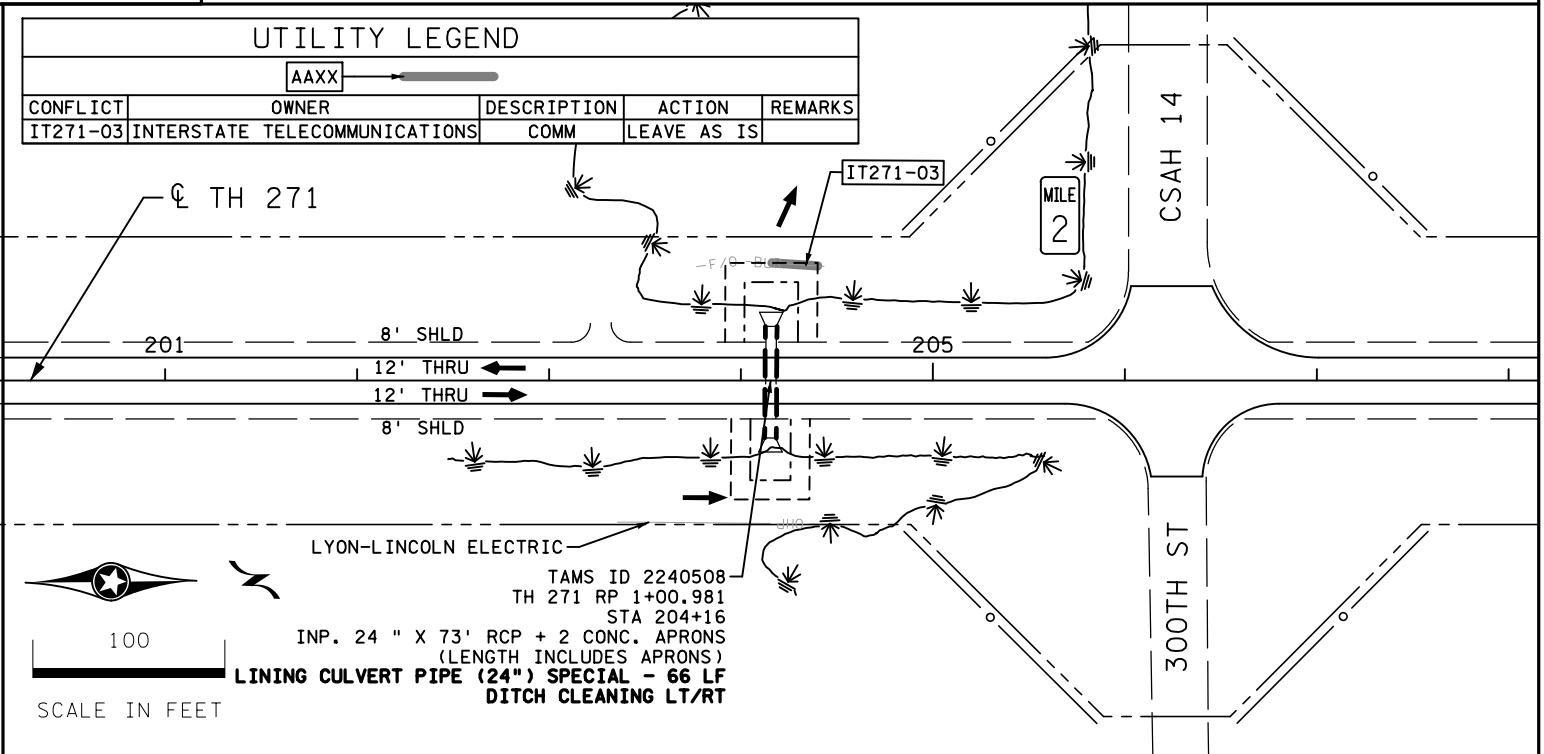
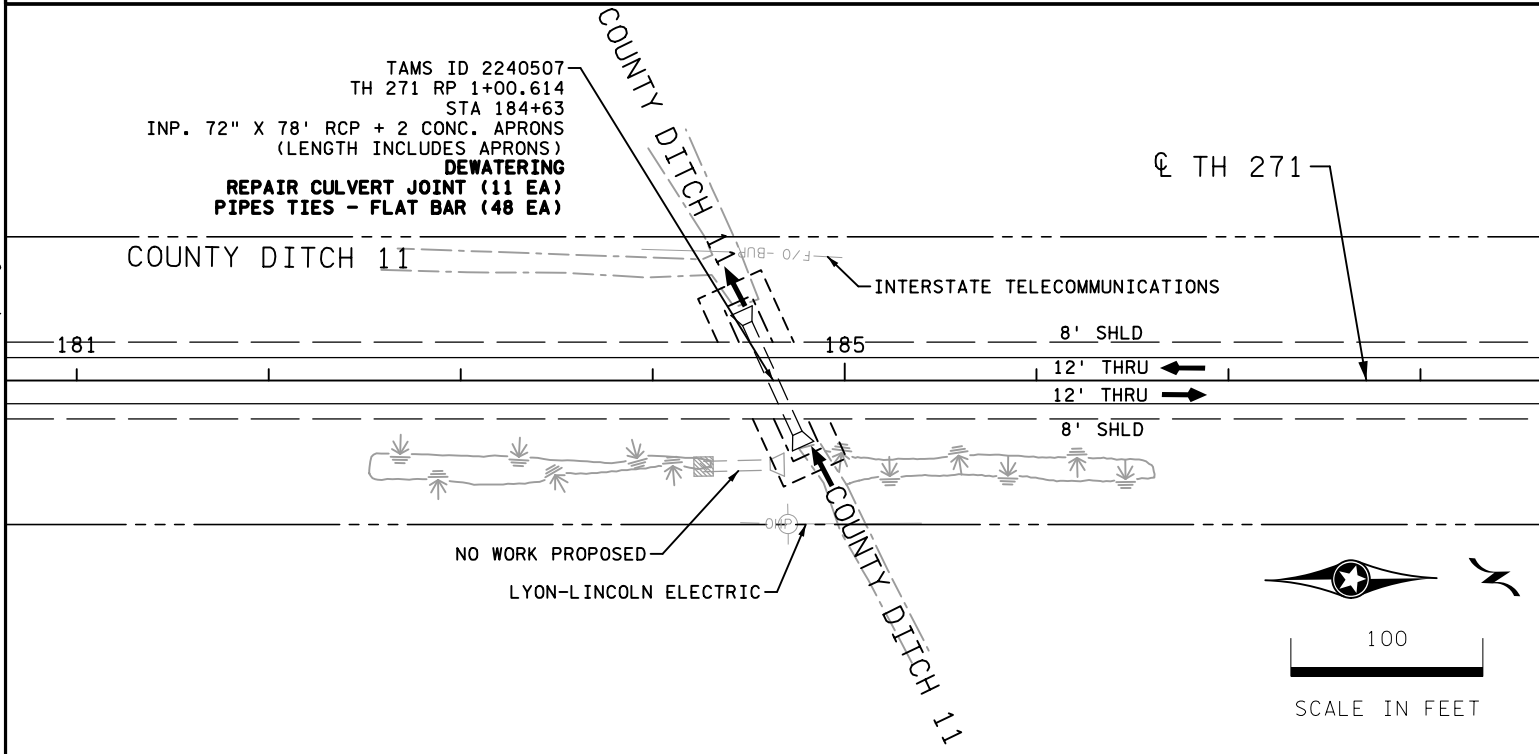
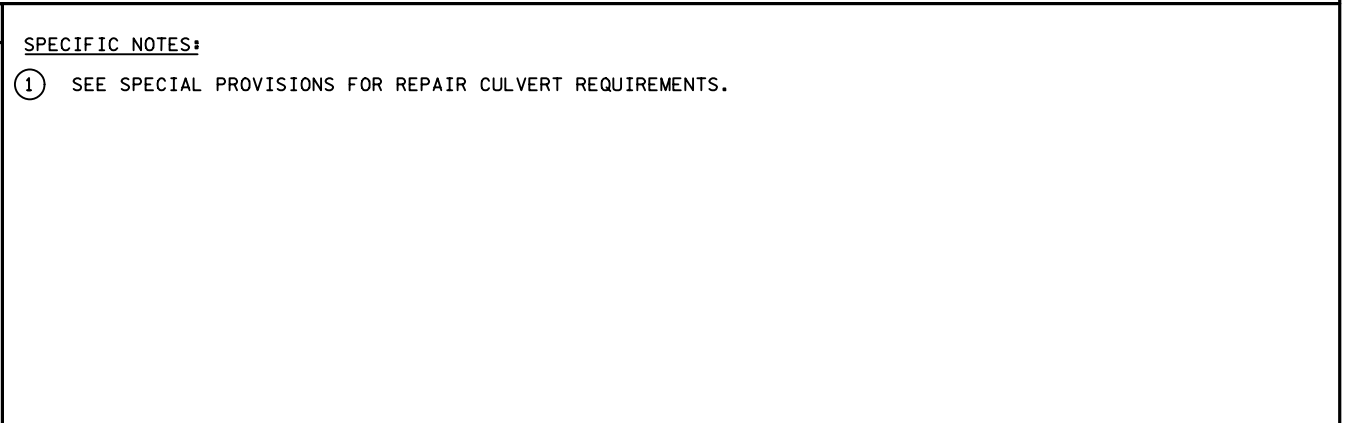
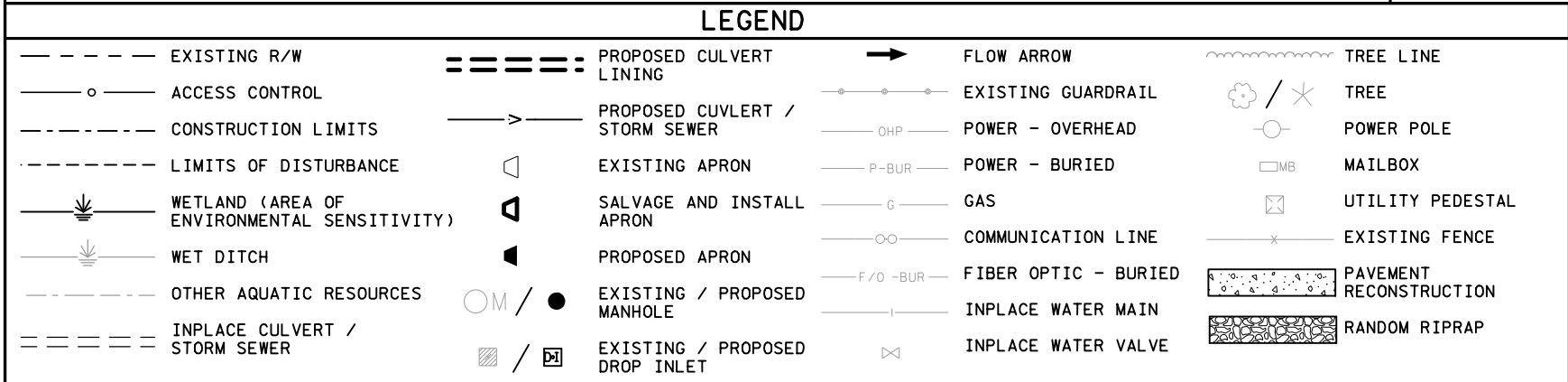
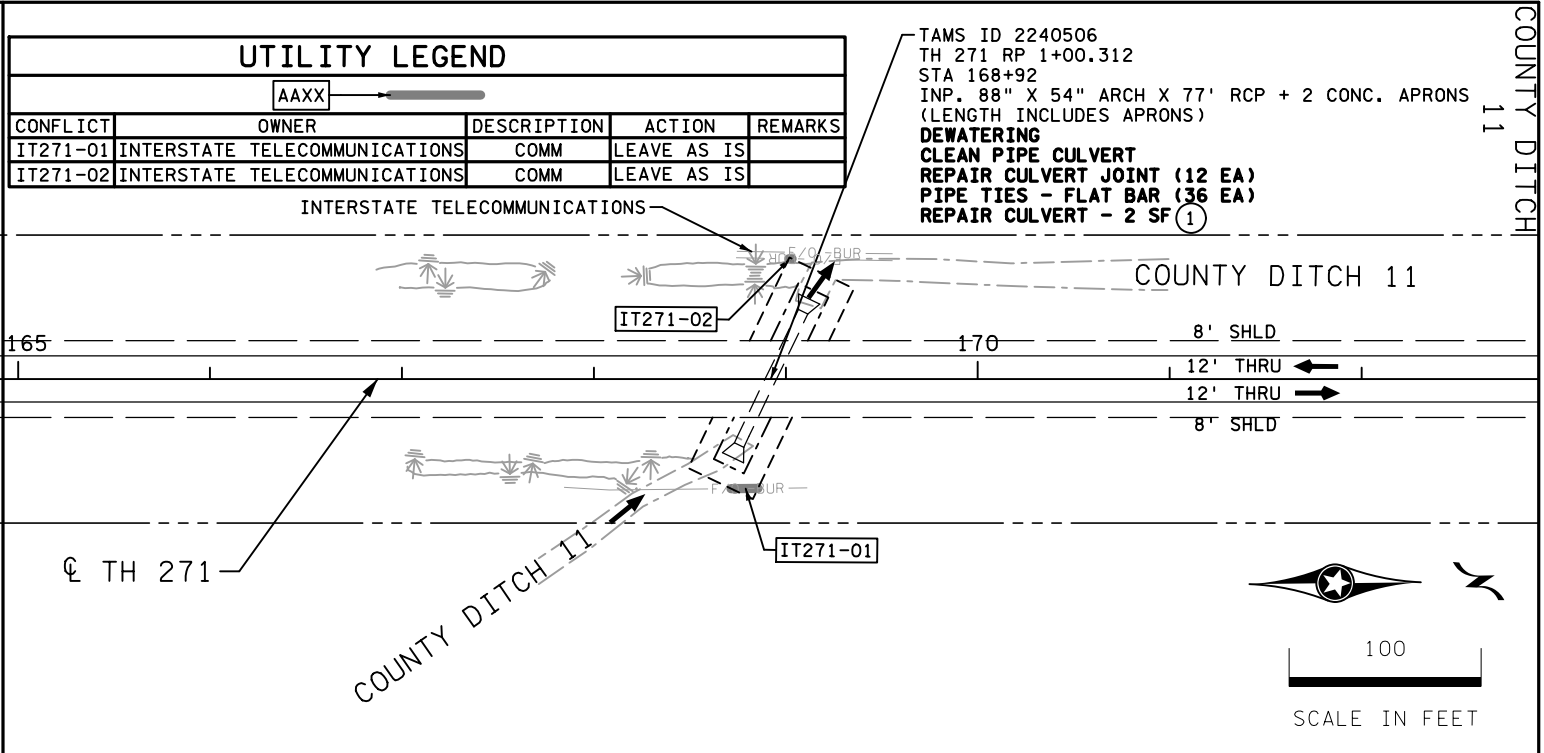
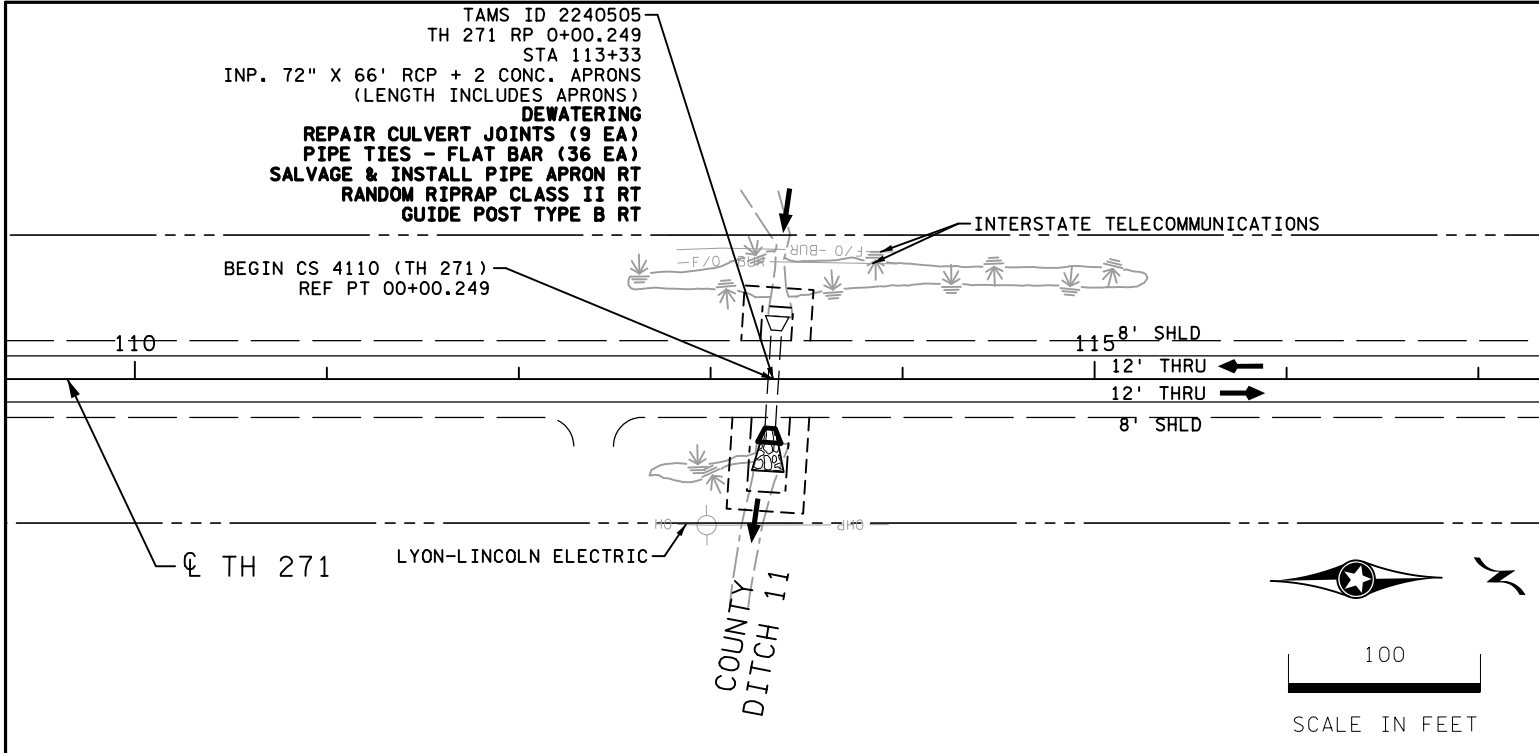
CONSTRUCTION, DRAINAGE, AND UTILITIES PLANS
TH 212

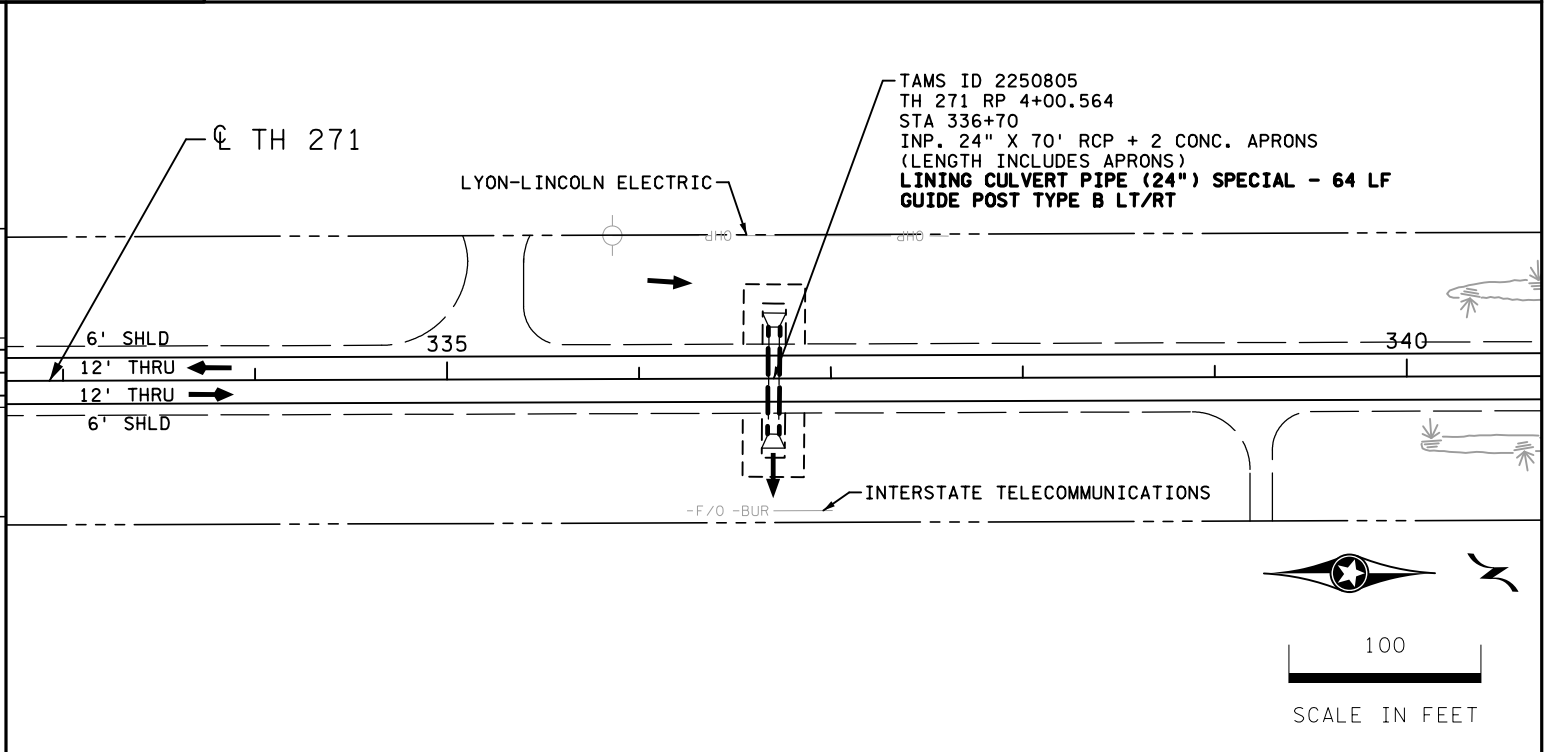
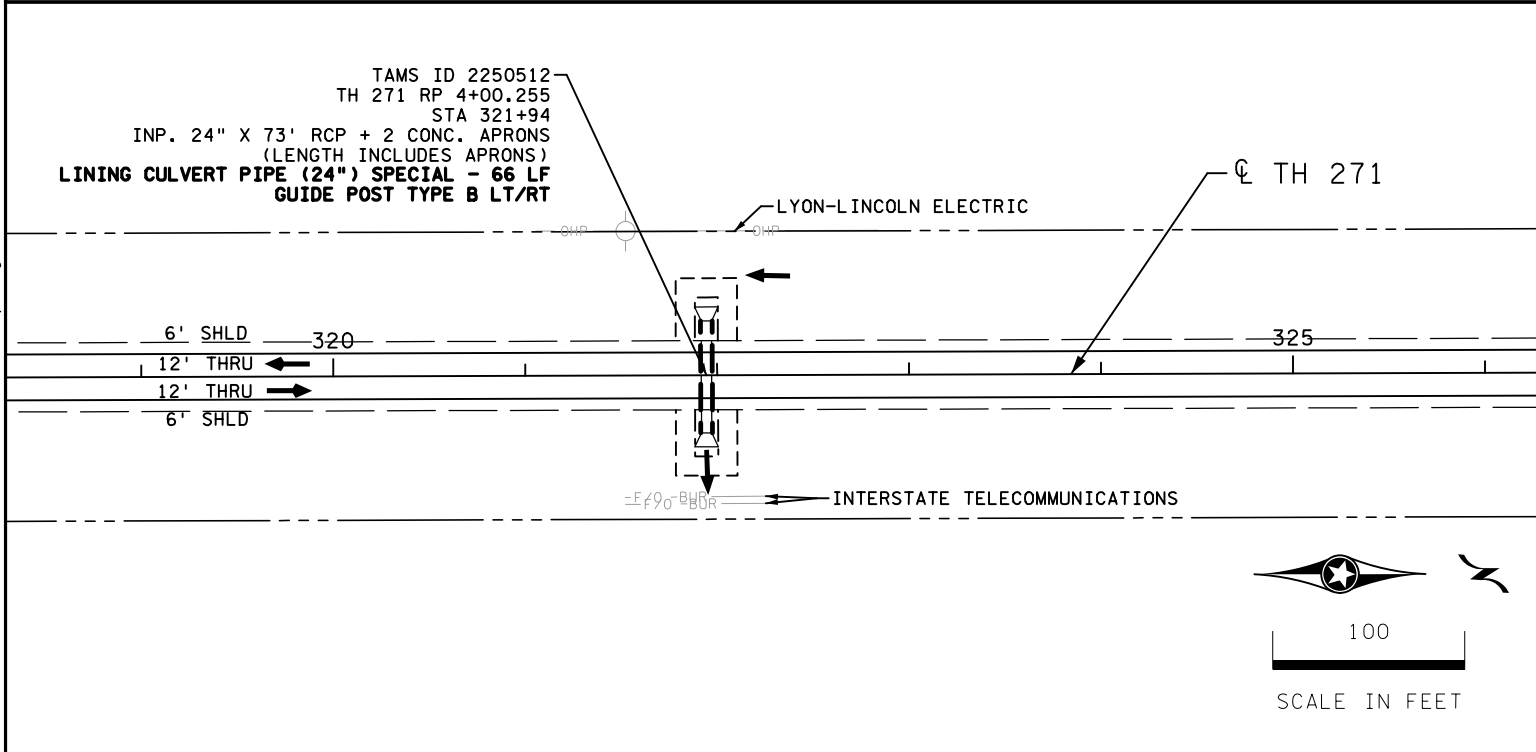
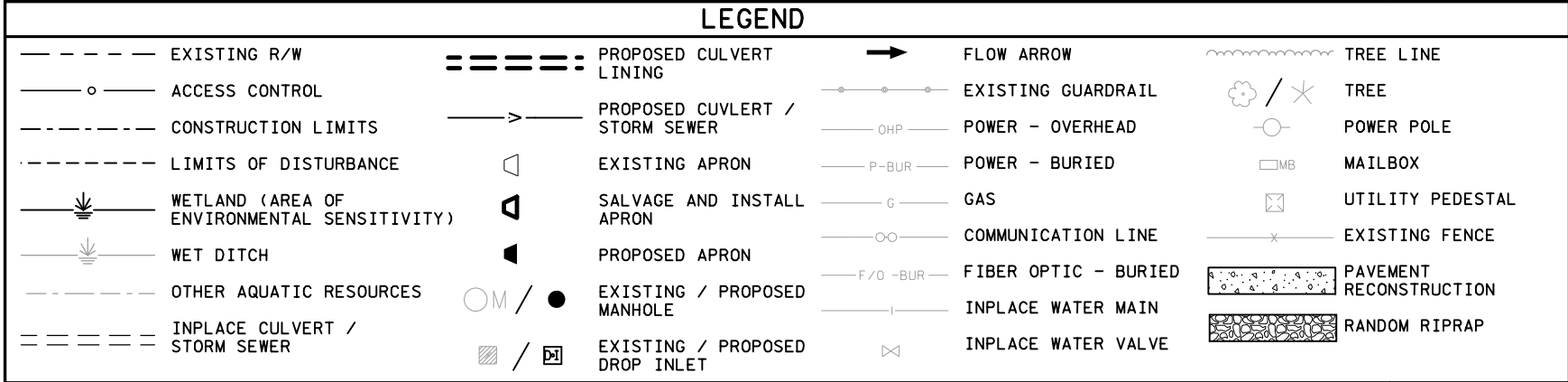
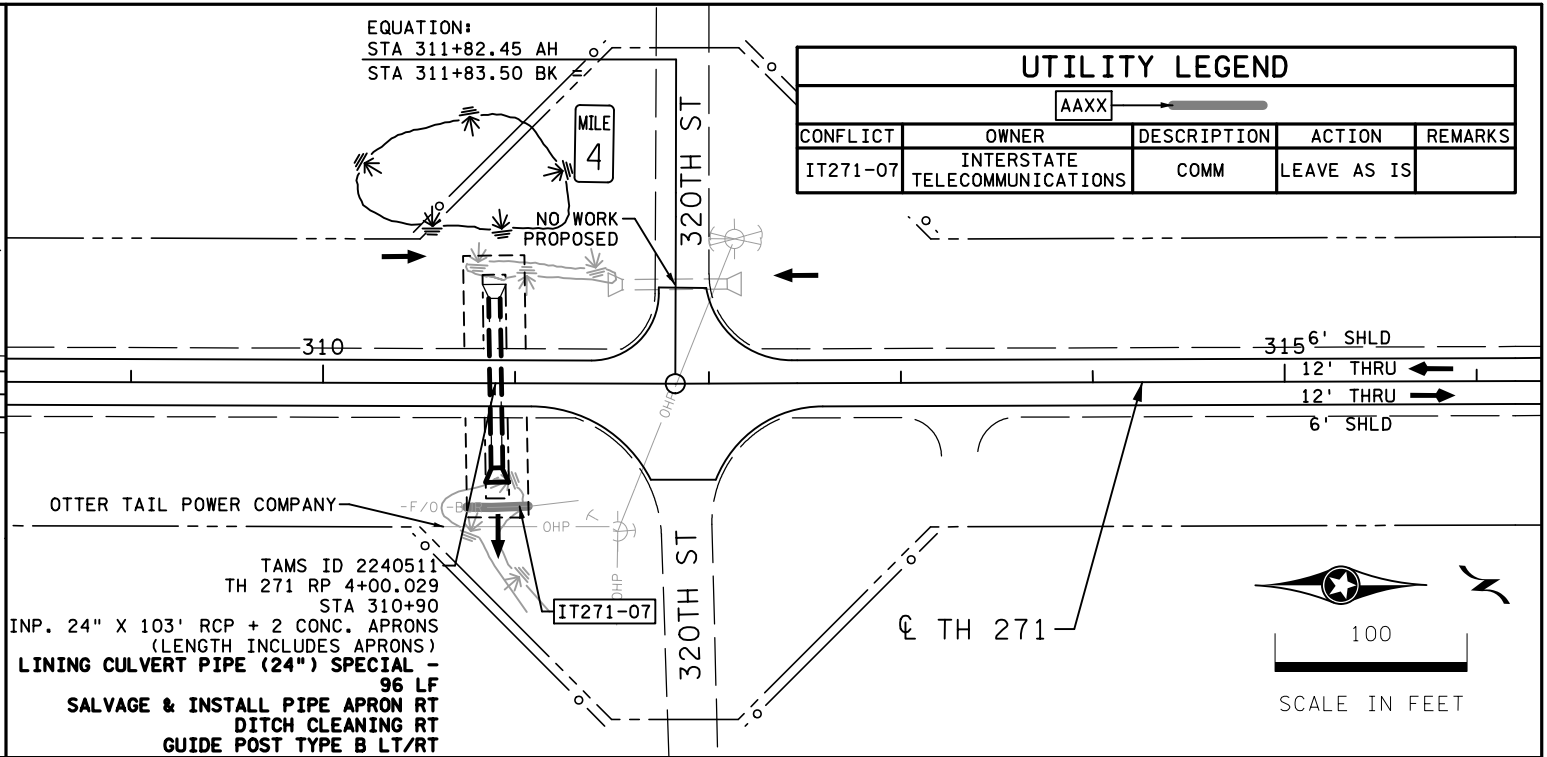
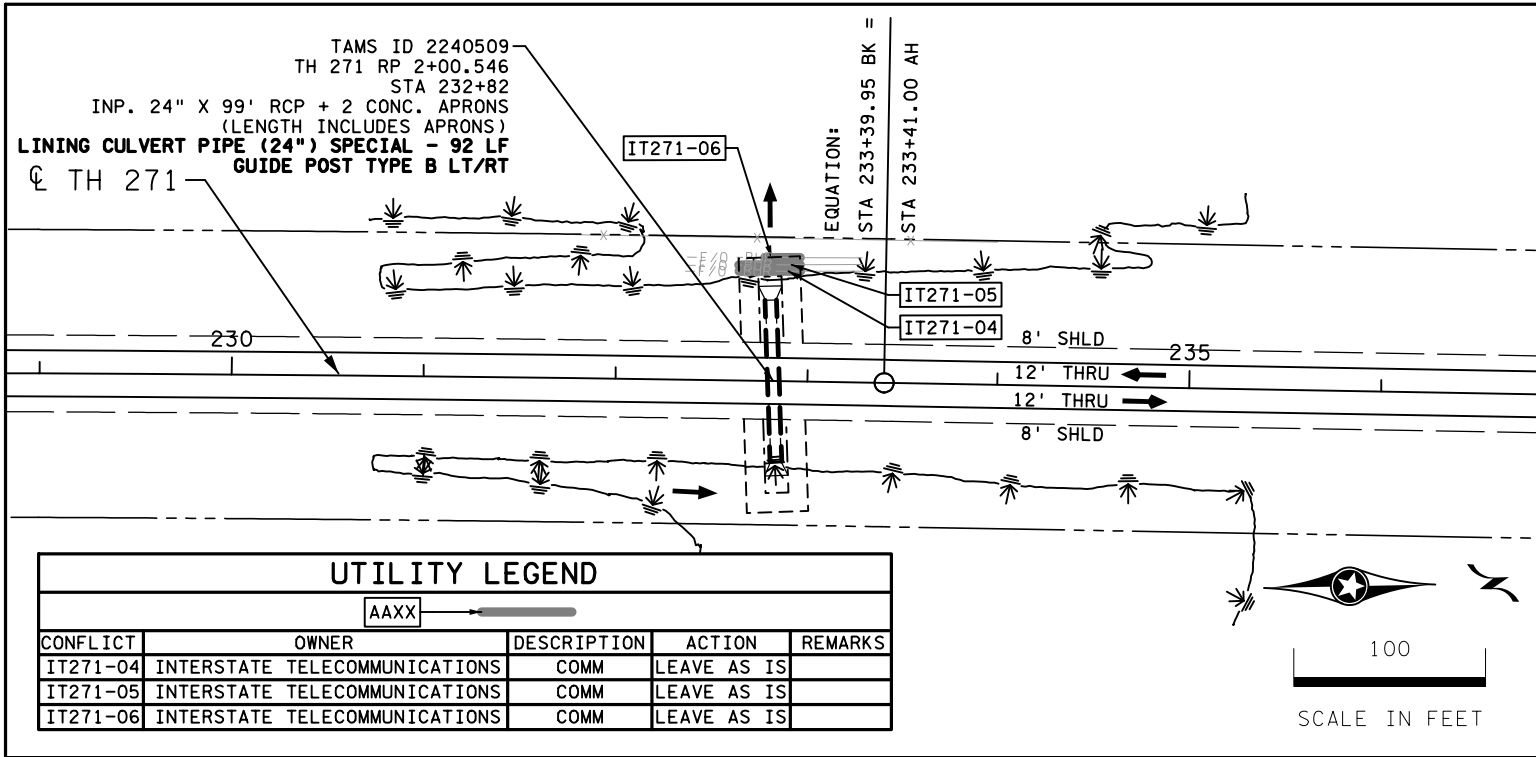
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SHEET NO. 89 OF 212 SHEETS

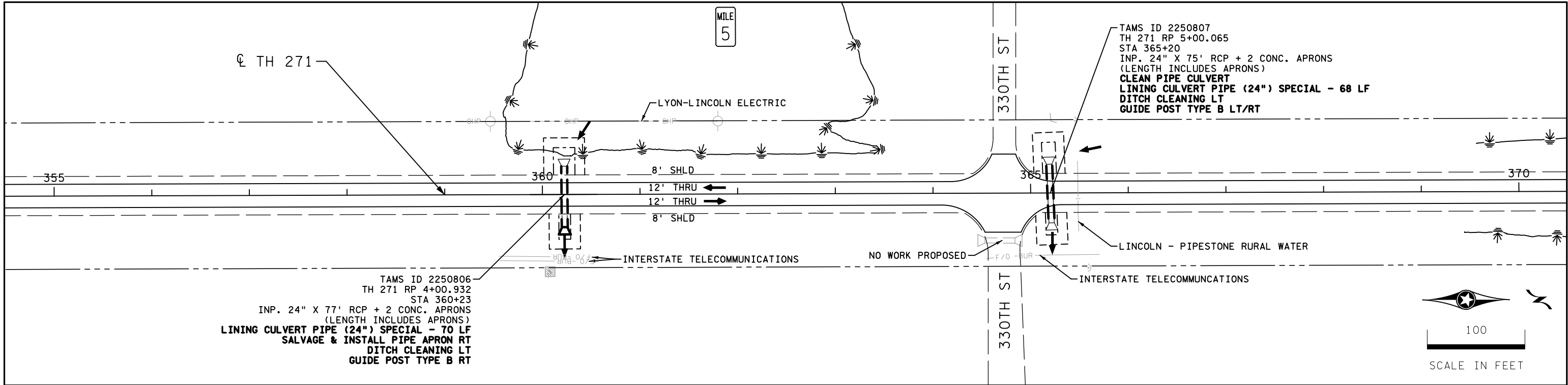


---	EXISTING R/W	=====	PROPOSED CULVERT LINING	→	FLOW ARROW	~~~~~	TREE LINE
—○—	ACCESS CONTROL			—●—●—●—	EXISTING GUARDRAIL	☼ / ✕	TREE
-----	CONSTRUCTION LIMITS	—>—	PROPOSED CULVERT / STORM SEWER	—OHP—	POWER - OVERHEAD	—○—	POWER POLE
-----	LIMITS OF DISTURBANCE	◁	EXISTING APRON	—P-BUR—	POWER - BURIED	◻MB	MAILBOX
—☼—	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)	◼	SALVAGE AND INSTALL APRON	—G—	GAS	◻	UTILITY PEDESTAL
—☼—	WET DITCH	◼	PROPOSED APRON	—○○—	COMMUNICATION LINE	—x—	EXISTING FENCE
-----	OTHER AQUATIC RESOURCES	○M / ●	EXISTING / PROPOSED MANHOLE	—F/O -BUR—	FIBER OPTIC - BURIED	▨	PAVEMENT RECONSTRUCTION
=====	INPLACE CULVERT / STORM SEWER	▨ / ▨	EXISTING / PROPOSED DROP INLET	— —	INPLACE WATER MAIN	▨	RANDOM RIPRAP
				✕	INPLACE WATER VALVE		

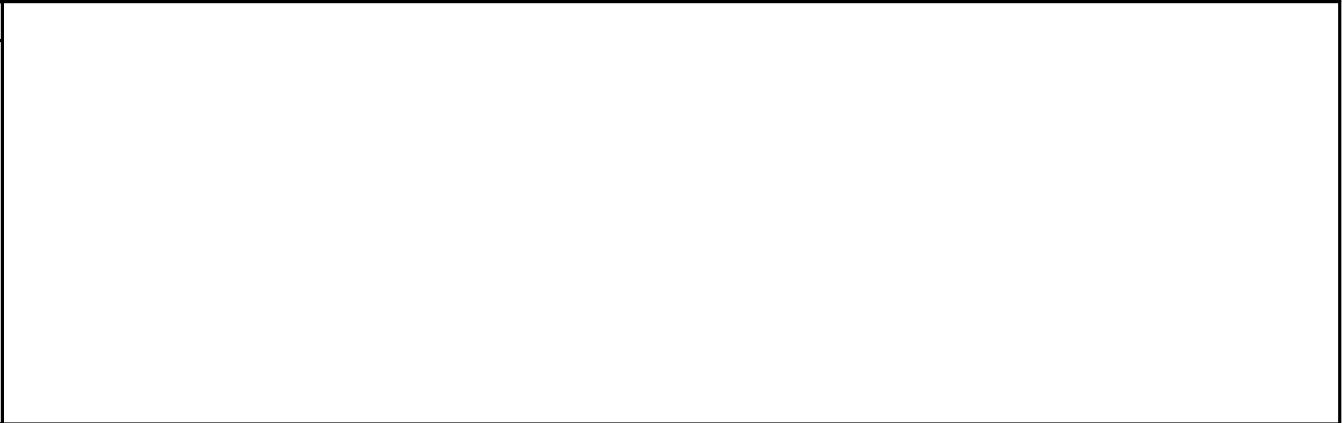




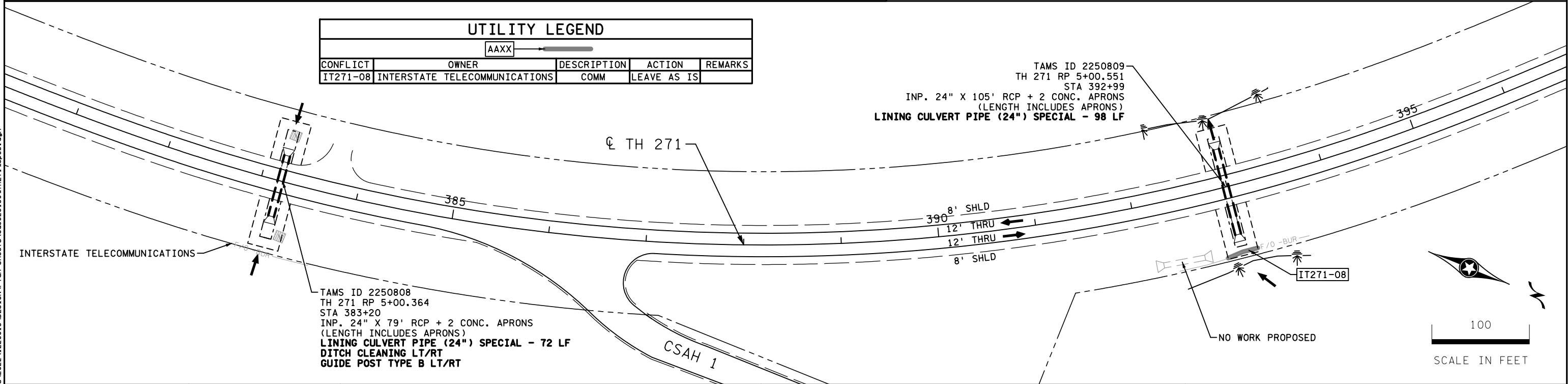


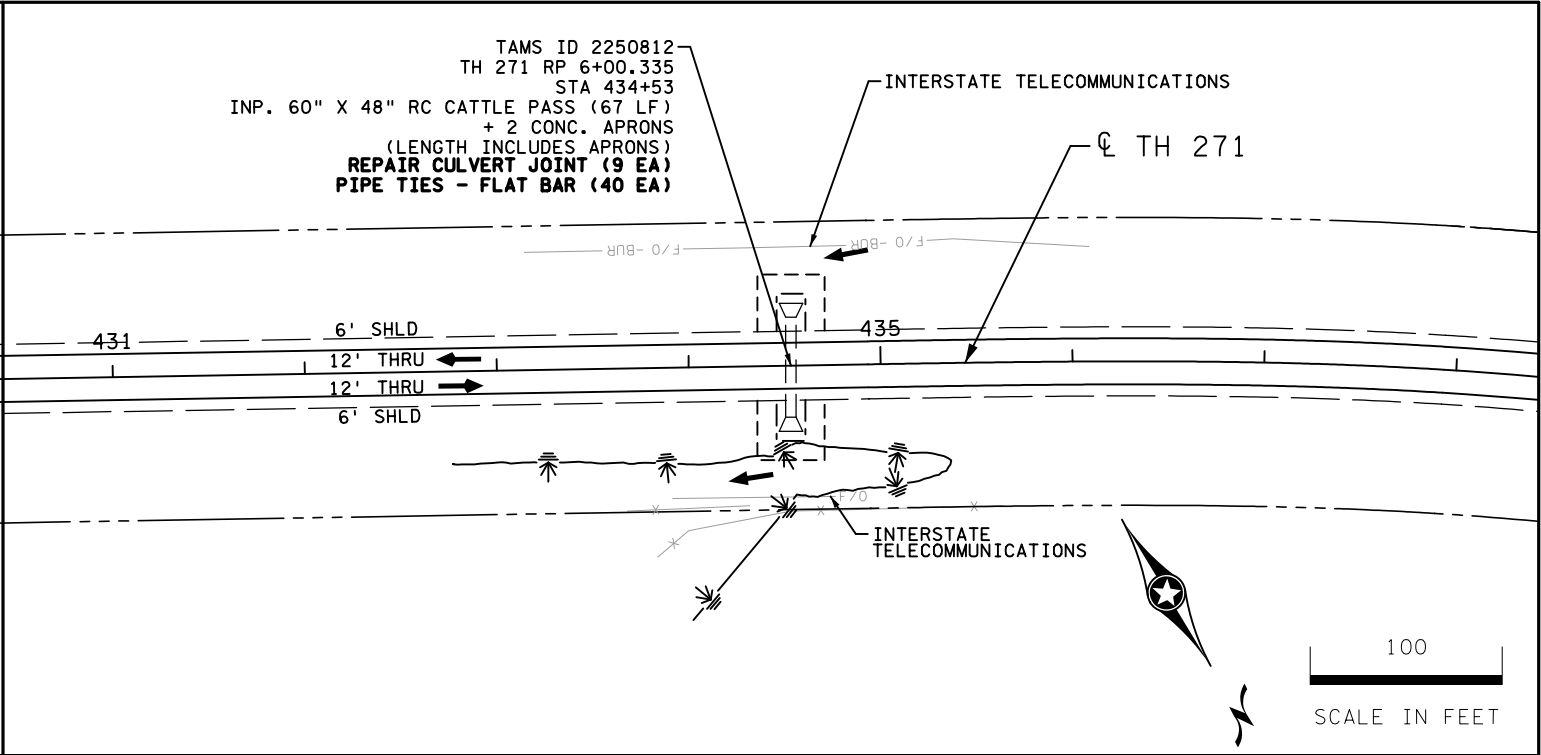
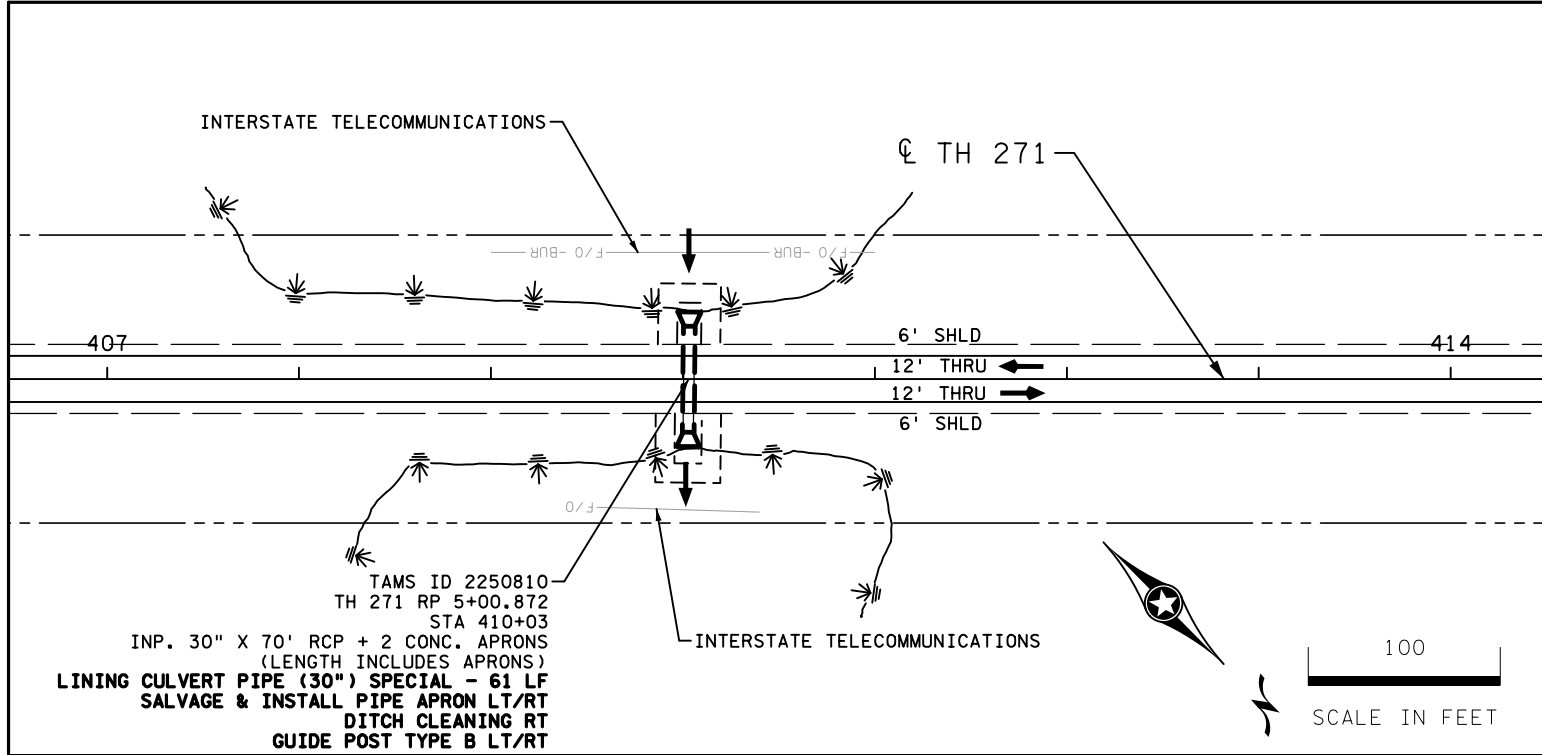


LEGEND					
---	EXISTING R/W	==	PROPOSED CULVERT LINING	→	FLOW ARROW
○	ACCESS CONTROL	→	PROPOSED CULVERT / STORM SEWER	---	EXISTING GUARDRAIL
---	CONSTRUCTION LIMITS	▽	EXISTING APRON	OHP	POWER - OVERHEAD
---	LIMITS OF DISTURBANCE	▽	SALVAGE AND INSTALL APRON	P-BUR	POWER - BURIED
W	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)	▽	PROPOSED APRON	G	GAS
W	WET DITCH	OM / ●	EXISTING / PROPOSED MANHOLE	---○---	COMMUNICATION LINE
---	OTHER AQUATIC RESOURCES	▽	EXISTING / PROPOSED DROP INLET	F/O - BUR	FIBER OPTIC - BURIED
---	INPLACE CULVERT / STORM SEWER	▽		---	INPLACE WATER MAIN
		▽		▽	INPLACE WATER VALVE
				---	TREE LINE
				---	TREE
				---	POWER POLE
				---	MAILBOX
				---	UTILITY PEDESTAL
				---	EXISTING FENCE
				---	PAVEMENT RECONSTRUCTION
				---	RANDOM RIPRAP

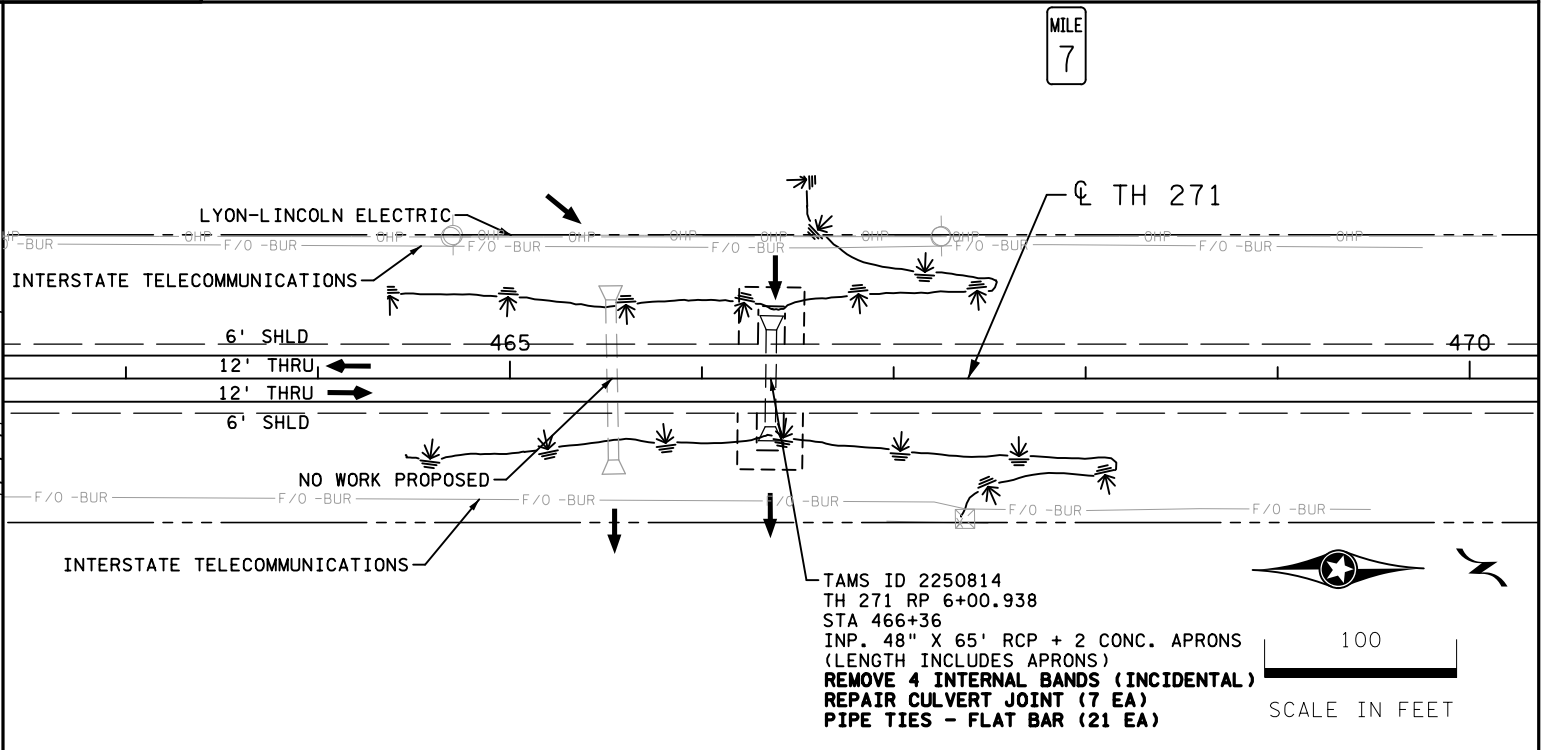
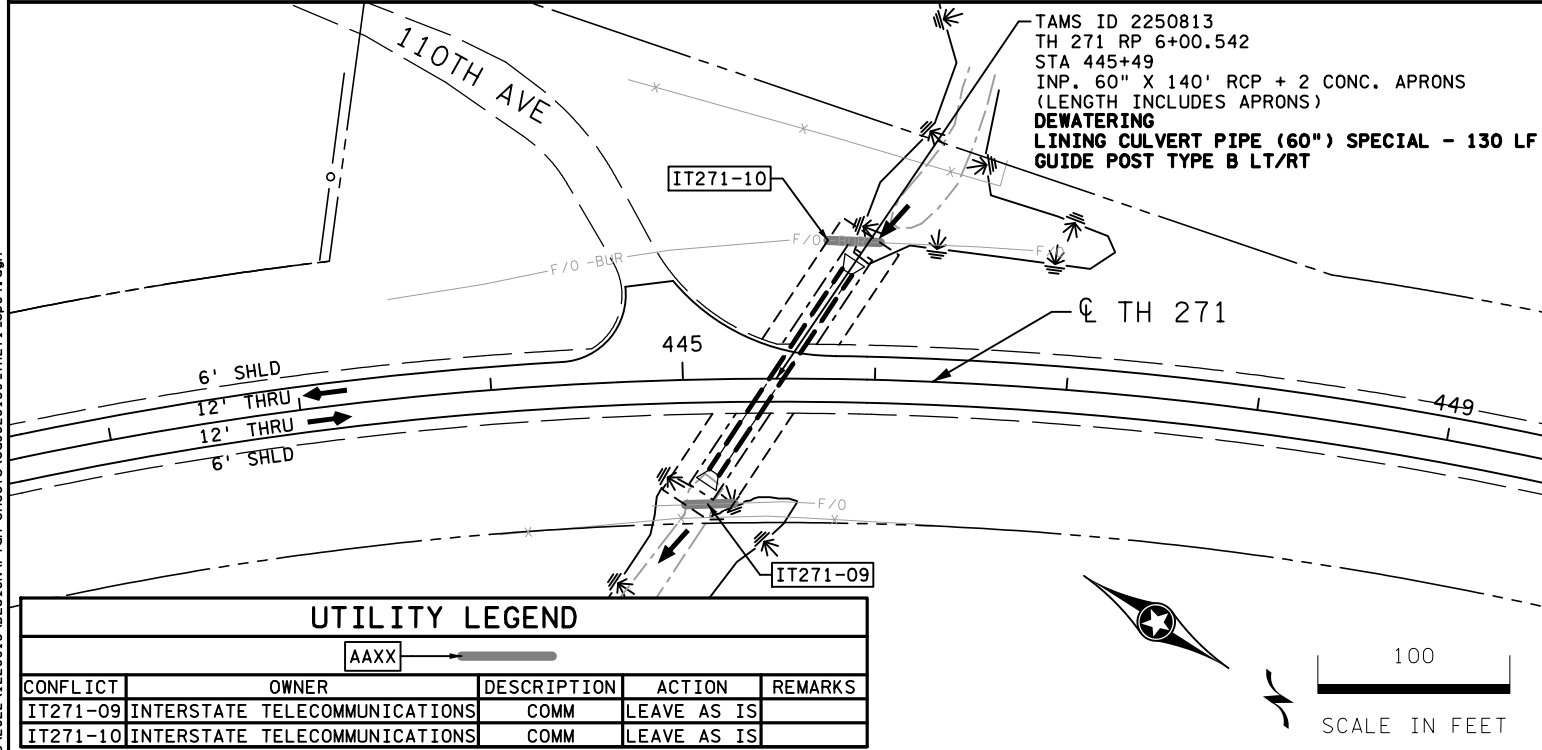


UTILITY LEGEND				
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CONFLICT	OWNER	DESCRIPTION	ACTION	REMARKS
IT271-08	INTERSTATE TELECOMMUNICATIONS	COMM	LEAVE AS IS	

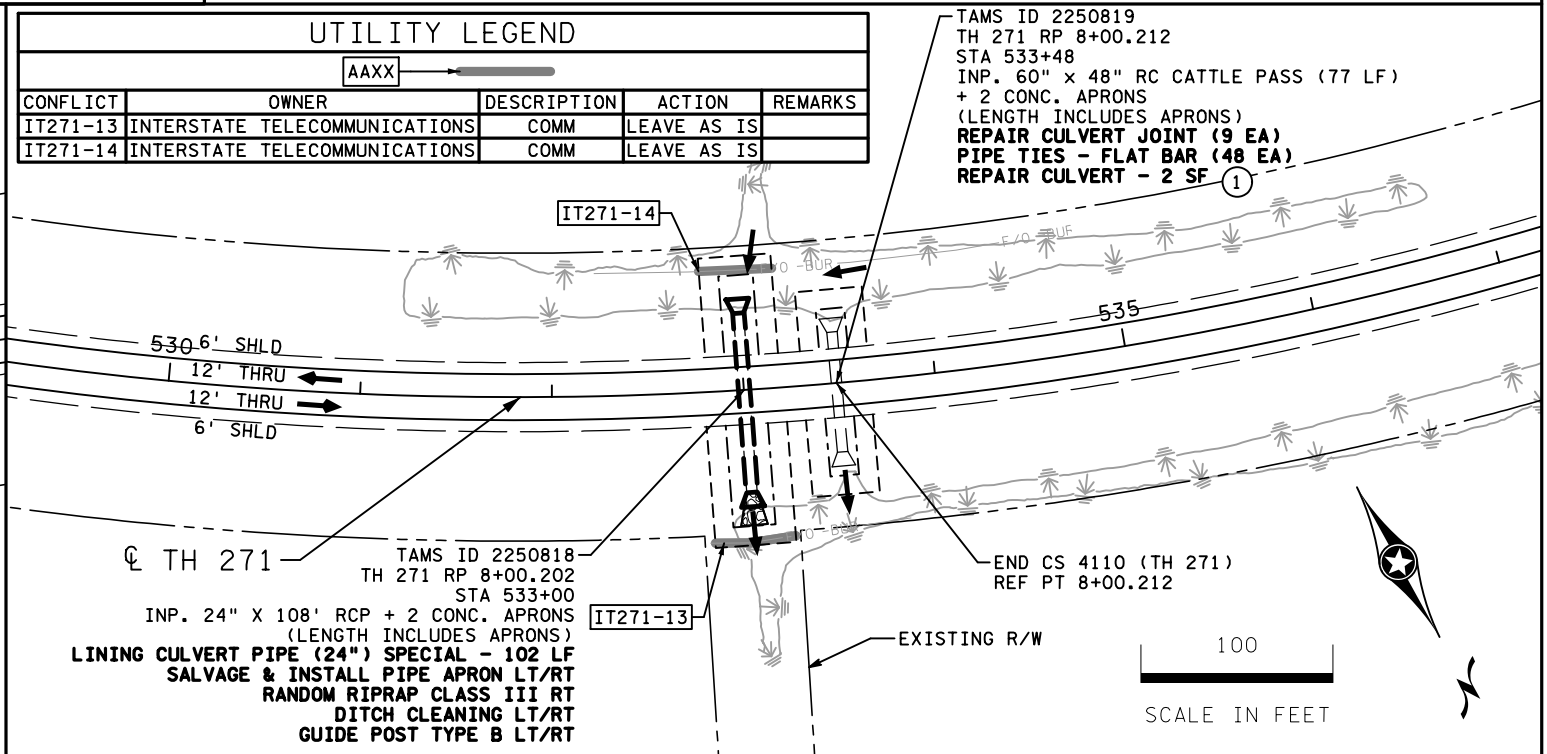
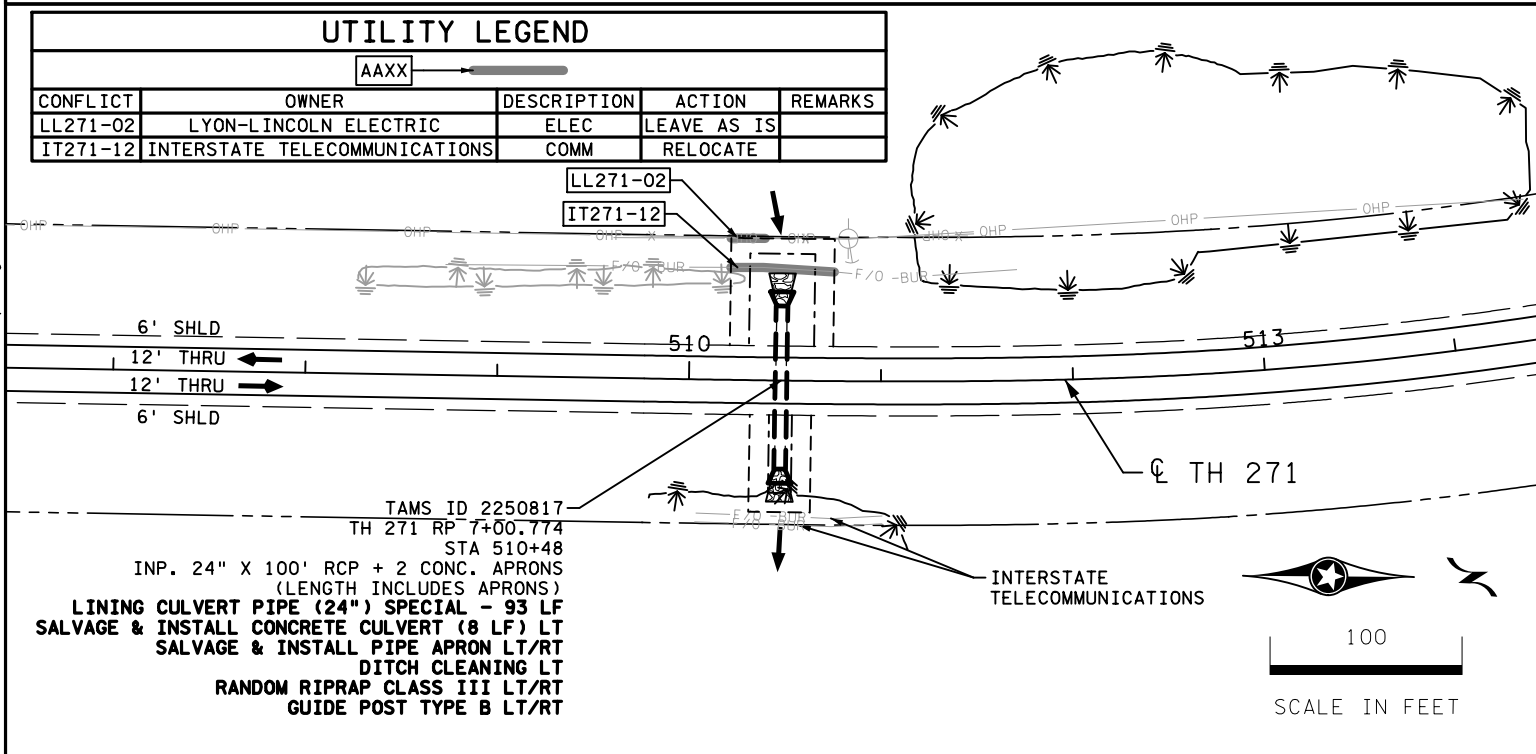
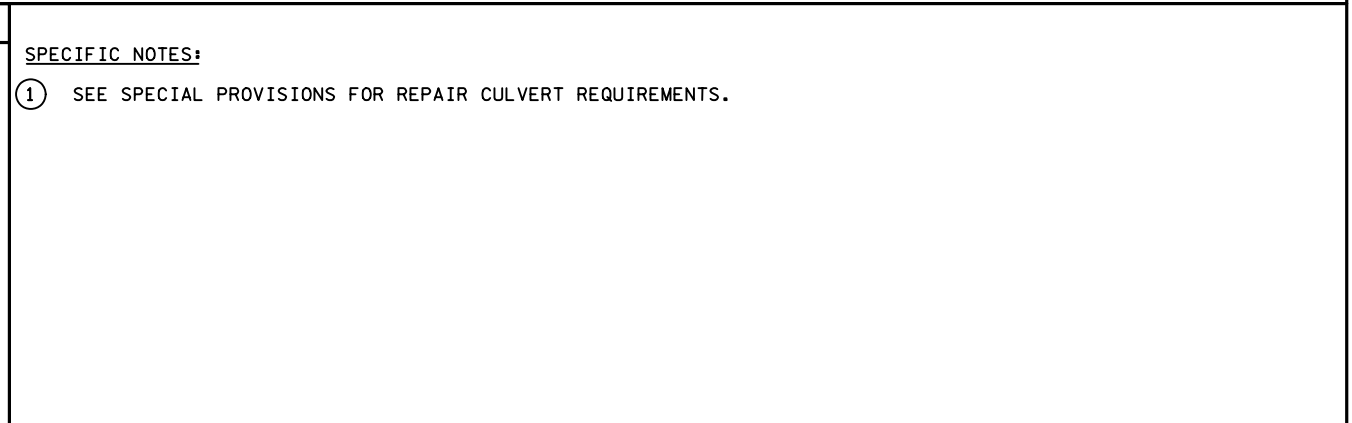
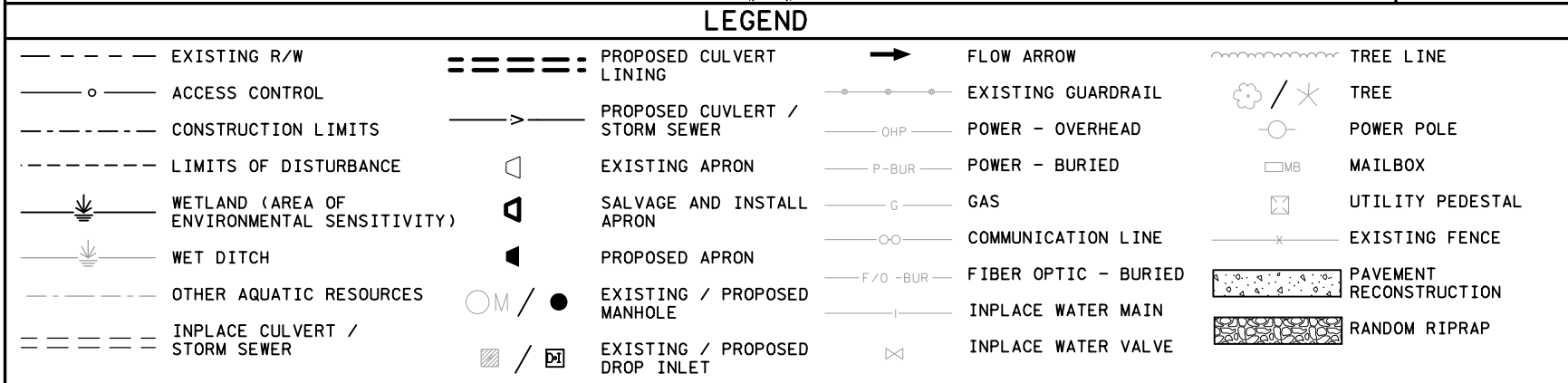
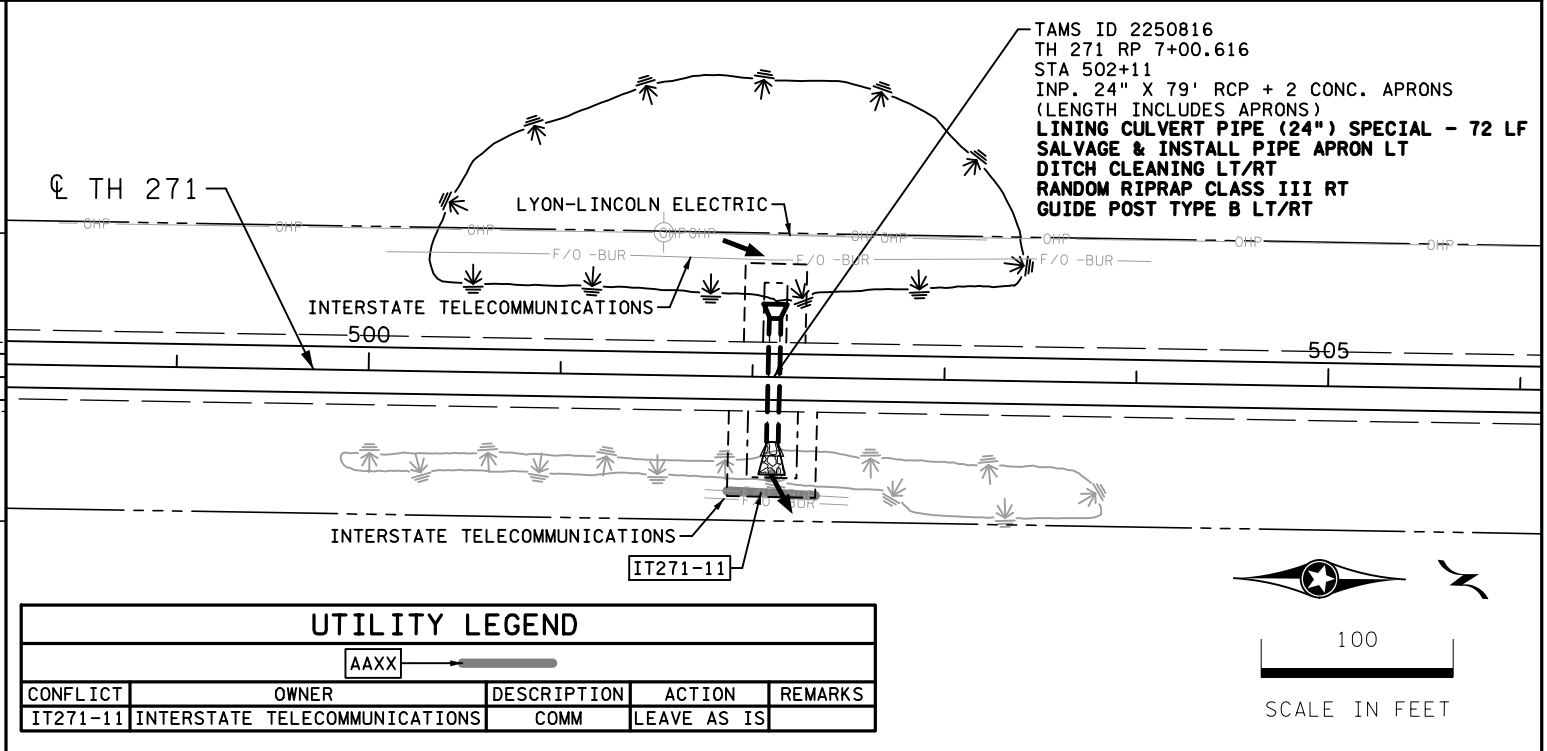
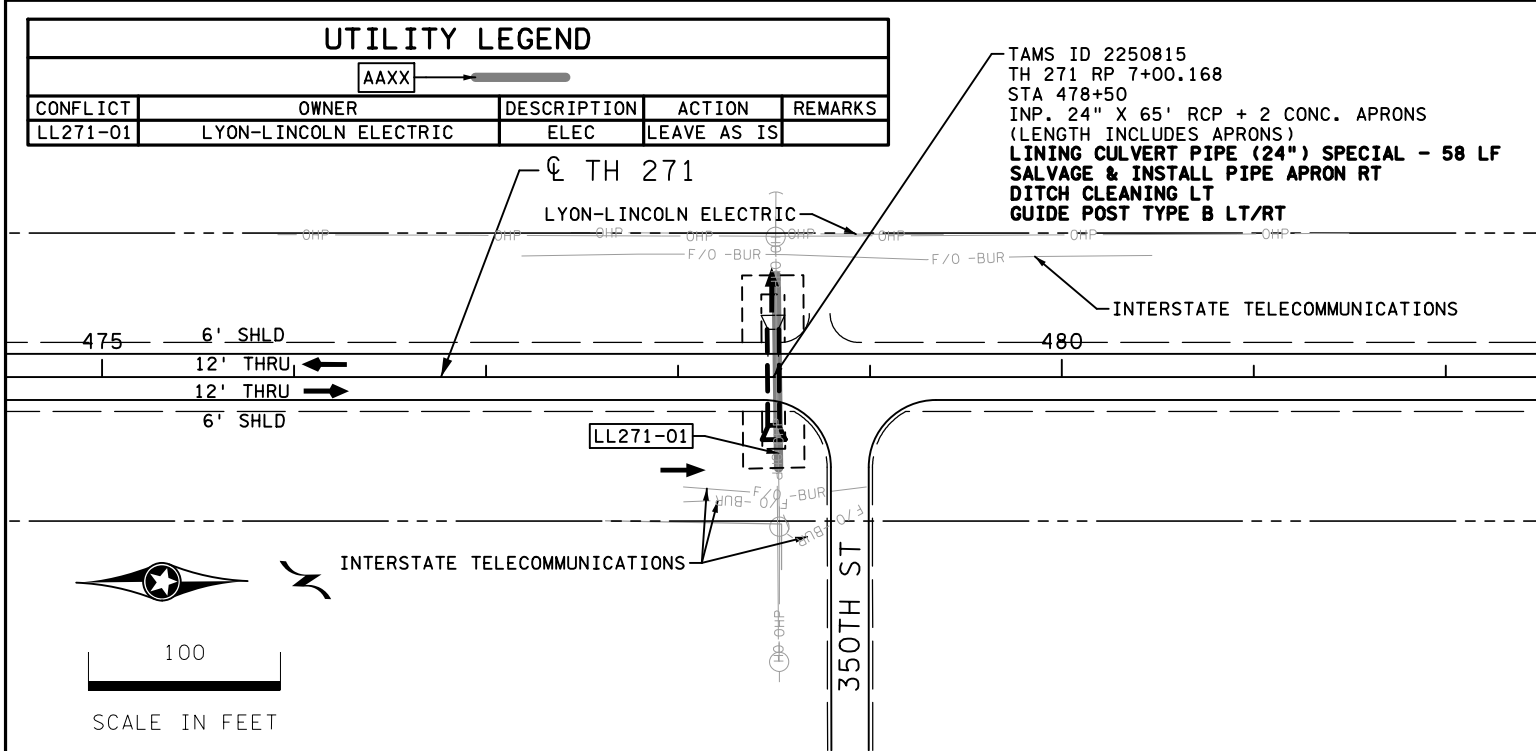




LEGEND					
---	EXISTING R/W	==	PROPOSED CULVERT LINING	→	FLOW ARROW
○	ACCESS CONTROL	→	PROPOSED CULVERT / STORM SEWER	—○—	EXISTING GUARDRAIL
---	CONSTRUCTION LIMITS	▽	EXISTING APRON	—P-BUR—	POWER - BURIED
---	LIMITS OF DISTURBANCE	◻	SALVAGE AND INSTALL APRON	—G—	GAS
—	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)	◼	PROPOSED APRON	—○○—	COMMUNICATION LINE
—	WET DITCH	○M / ●	EXISTING / PROPOSED MANHOLE	—F/O -BUR—	FIBER OPTIC - BURIED
---	OTHER AQUATIC RESOURCES	■ / ▣	EXISTING / PROPOSED DROP INLET	—	INPLACE WATER MAIN
---	INPLACE CULVERT / STORM SEWER			⋈	INPLACE WATER VALVE
				~~~~~	TREE LINE
				✱ / ✱	TREE
				—○—	POWER POLE
				◻MB	MAILBOX
				◻	UTILITY PEDESTAL
				—x—	EXISTING FENCE
				▨	PAVEMENT RECONSTRUCTION
				▨	RANDOM RIPRAP



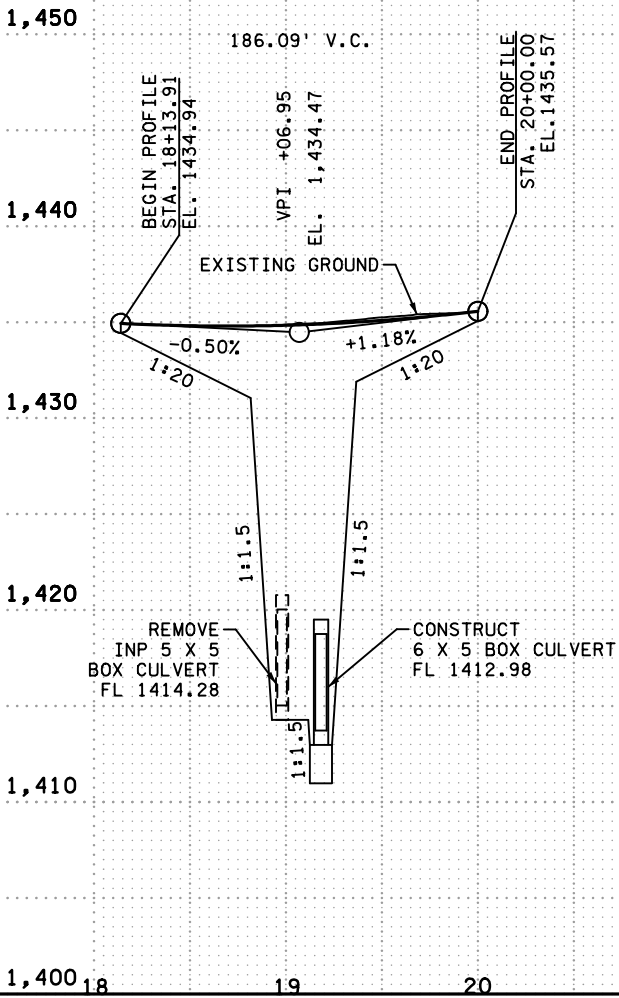
UTILITY LEGEND				
AAXX				
CONFLICT	OWNER	DESCRIPTION	ACTION	REMARKS
IT271-09	INTERSTATE TELECOMMUNICATIONS	COMM	LEAVE AS IS	
IT271-10	INTERSTATE TELECOMMUNICATIONS	COMM	LEAVE AS IS	



TH 68 YELLOW MEDICINE PROFILE

PROFILE NOTES

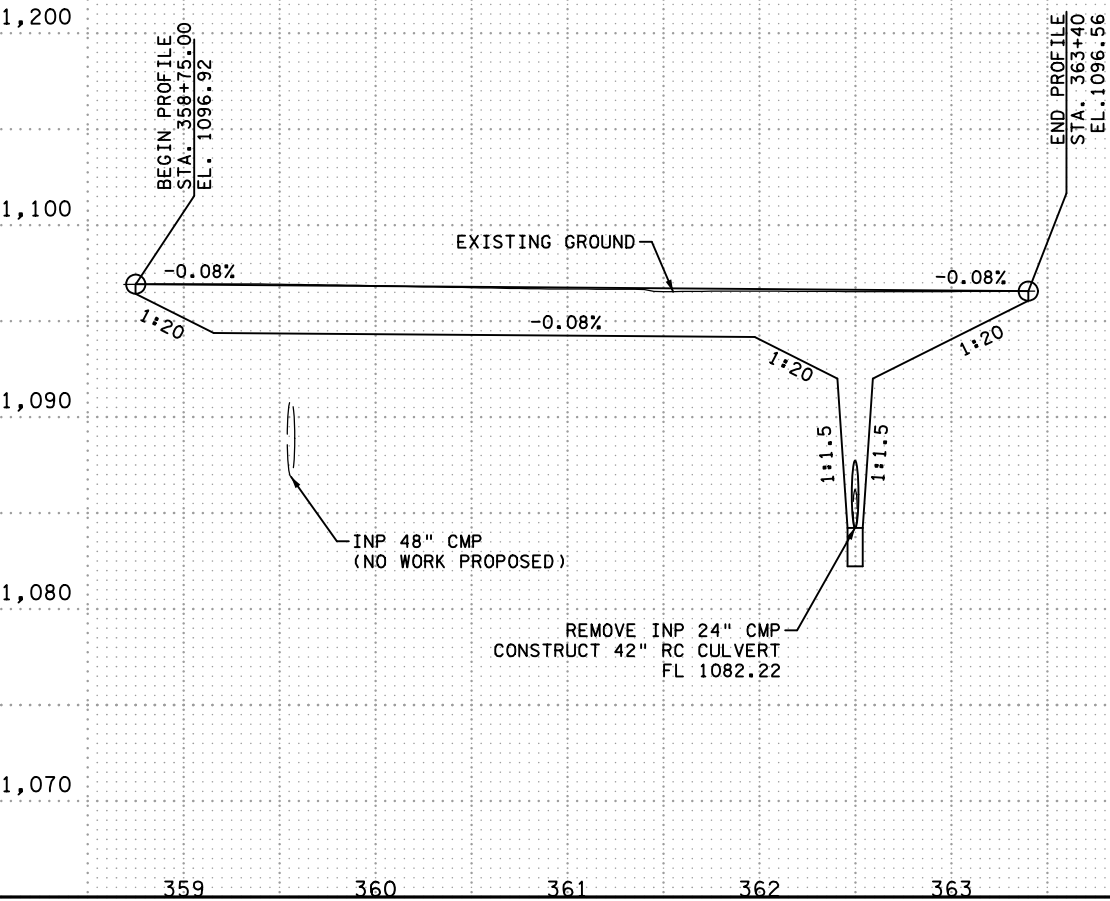
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TH 68 REDWOOD PROFILE

PROFILE NOTES

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DESIGN SPEED = 60 MPH



VERTICAL CONTROL

ELEVATIONS FOR THIS PLAN  
ARE NAVD88 ADJUSTED.  
FOR INFORMATION ON VERTICAL  
CONTROL POINTS, CONTACT  
MNDOT'S OFFICE OF LAND  
MANAGEMENT.

9:52:14 AM  
12/11/2024  
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NO	DATE	DWN	CKD	REVISIONS



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I AM A DULY LICENSED PROFESSIONAL ENGINEER  
UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE 12/11/24 LICENSE # 54298

PROFILES

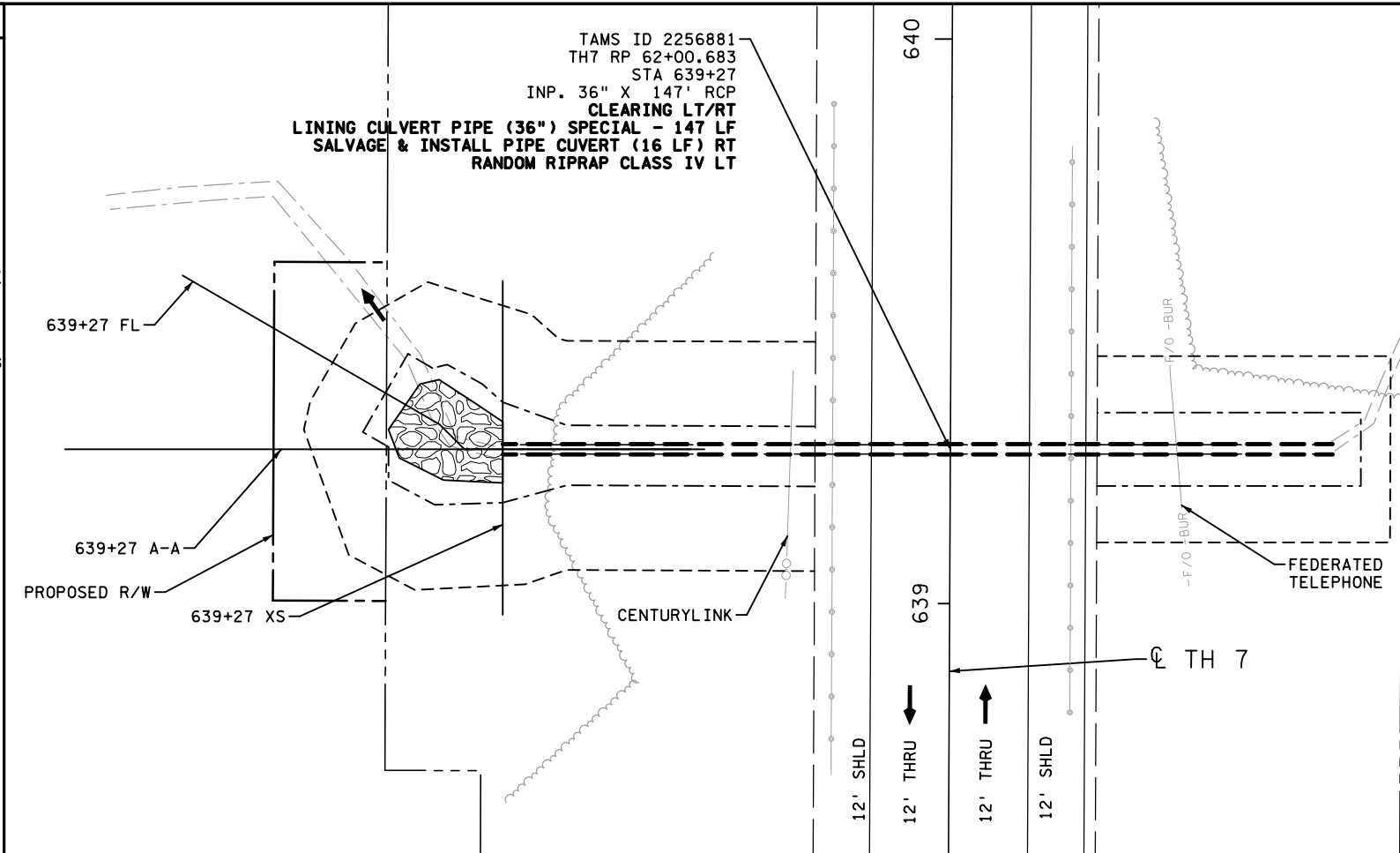
SP 8828-139

SHEET NO. 97 OF 212 SHEETS



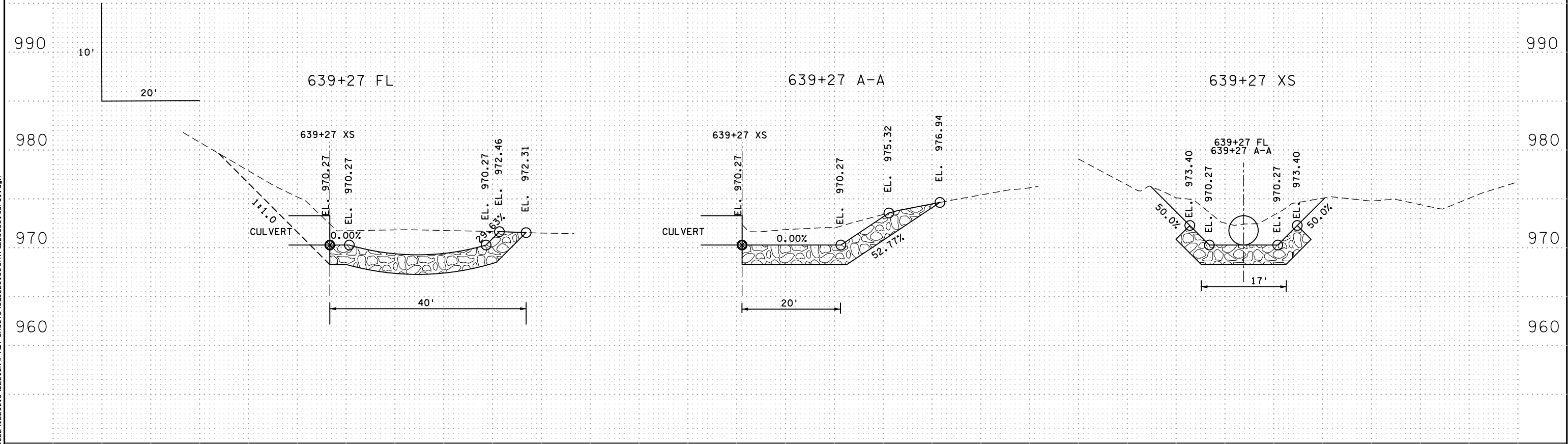
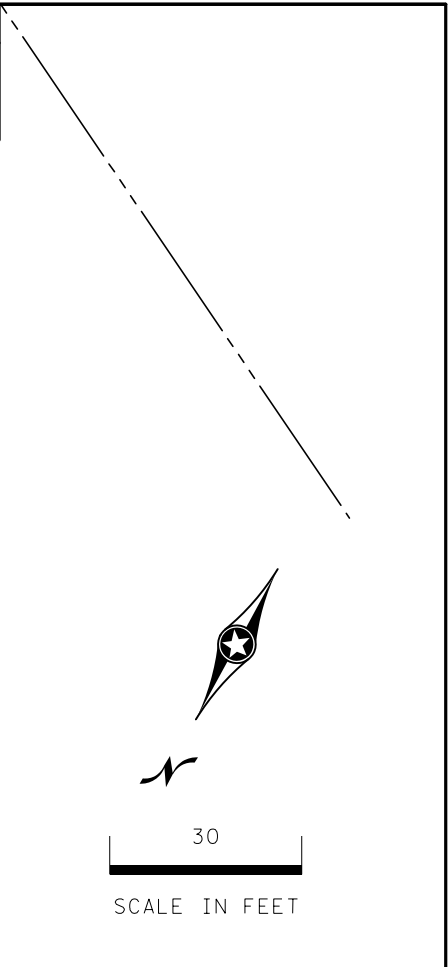
**LEGEND**

- EXISTING R/W
- CONSTRUCTION LIMITS
- LIMITS OF DISTURBANCE
- WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)
- WET DITCH
- OTHER AQUATICE RESOURCE
- INPLACE CULVERT / STORM SEWER
- PROPOSED CULVERT LINING
- PROPOSED CULVERT / STORM SEWER
- EXISTING APRON
- SALVAGE AND INSTALL APRON
- PROPOSED APRON
- EXISTING / PROPOSED MANHOLE
- EXISTING / PROPOSED DROP INLET
- FLOW ARROW
- TREELINE
- TREE
- EXISTING FENCE
- MAILBOX
- UTILITY PEDESTAL



**LEGEND**

- EXISTING GUARDRAIL
- RANDOM RIPRAP



8/28/09 PM  
10/6/2022  
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DATE 09/19/24 LICENSE # 54298

SPECIAL SHAPE RIPRAP DETAILS  
TH 7

SP 8828-139  
SHEET NO. 98 OF 212 SHEETS

LEGEND

---

EXISTING R/W

---

CONSTRUCTION LIMITS

---

LIMITS OF DISTURBANCE

WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)

WET DITCH

---

OTHER AQUATICE RESOURCE

---

INPLACE CULVERT / STORM SEWER

---

PROPOSED CULVERT LINING

PROPOSED CULVERT / STORM SEWER

EXISTING APRON

SALVAGE AND INSTALL APRON

PROPOSED APRON

OM / ●

EXISTING / PROPOSED MANHOLE

EXISTING / PROPOSED DROP INLET

FLOW ARROW

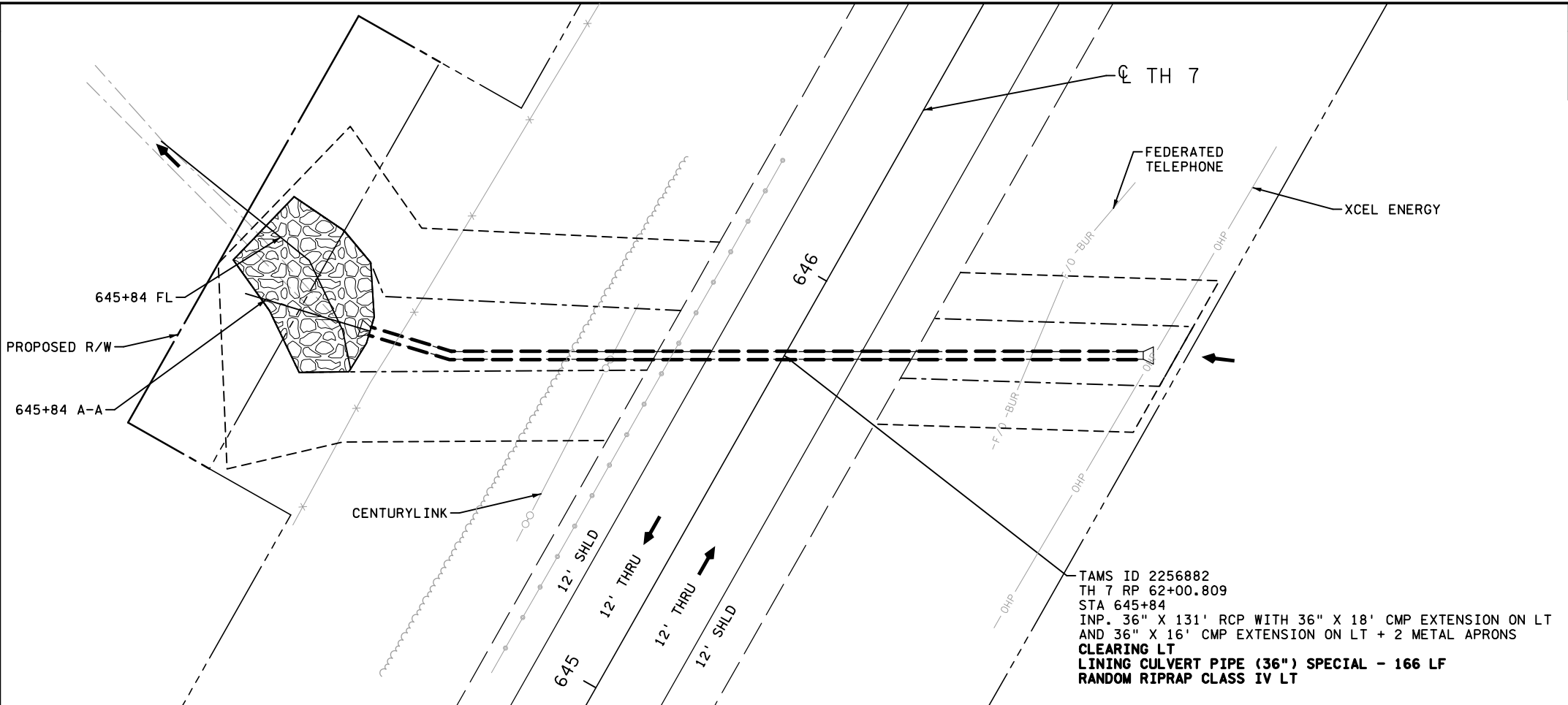
TREELINE

TREE

EXISTING FENCE

MAILBOX

UTILITY PEDESTAL



LEGEND

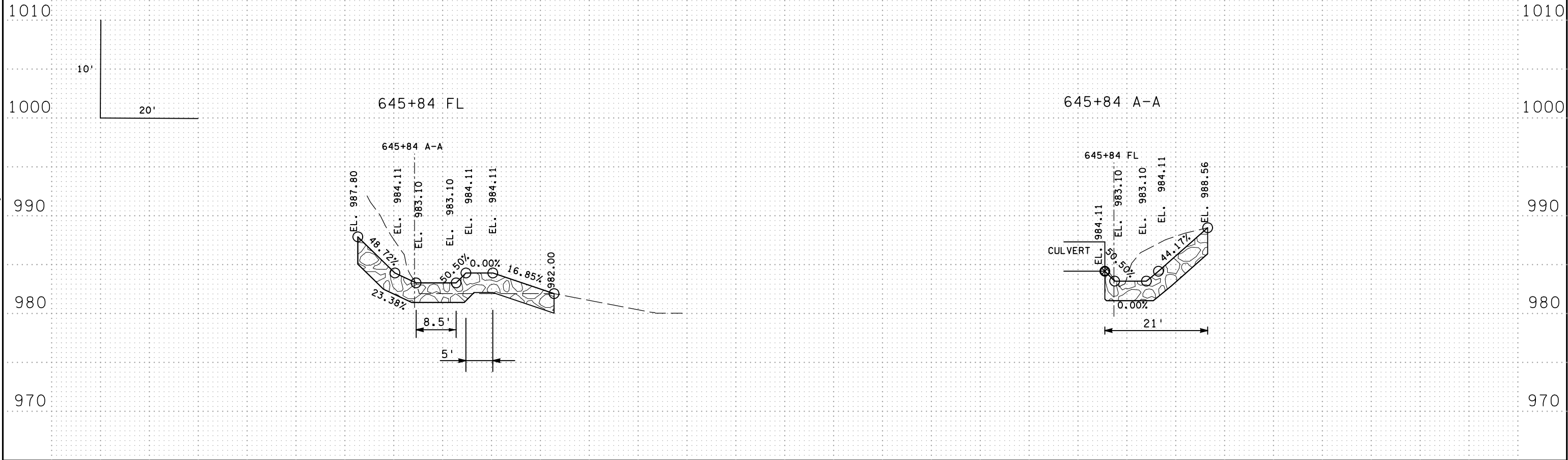
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EXISTING GUARDRAIL

RANDOM RIPRAP

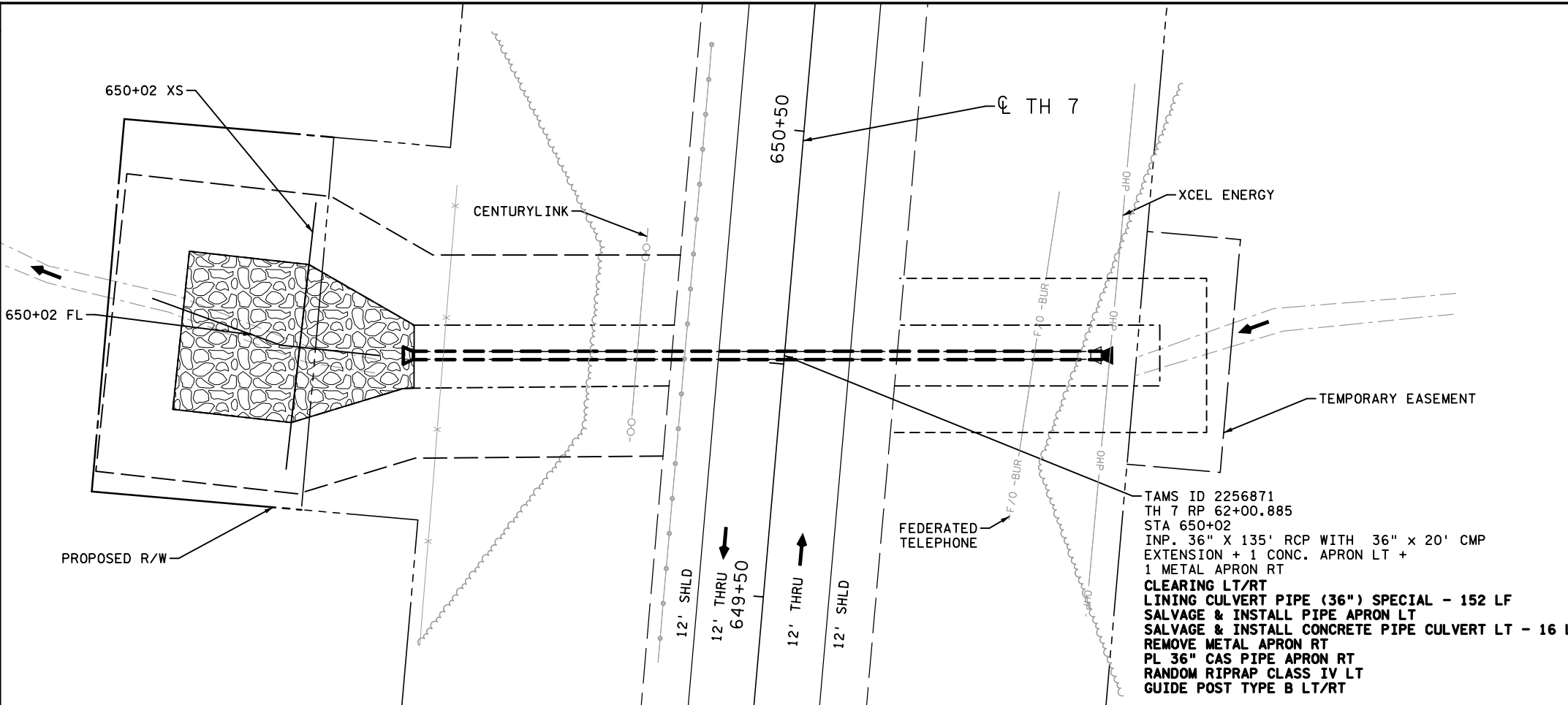
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SCALE IN FEET



**LEGEND**

- EXISTING R/W
- CONSTRUCTION LIMITS
- LIMITS OF DISTURBANCE
- WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)
- WET DITCH
- OTHER AQUATICE RESOURCE
- INPLACE CULVERT / STORM SEWER
- PROPOSED CULVERT LINING
- PROPOSED CULVERT / STORM SEWER
- EXISTING APRON
- SALVAGE AND INSTALL APRON
- PROPOSED APRON
- EXISTING / PROPOSED MANHOLE
- EXISTING / PROPOSED DROP INLET
- FLOW ARROW
- TREELINE
- TREE
- EXISTING FENCE
- MAILBOX
- UTILITY PEDESTAL

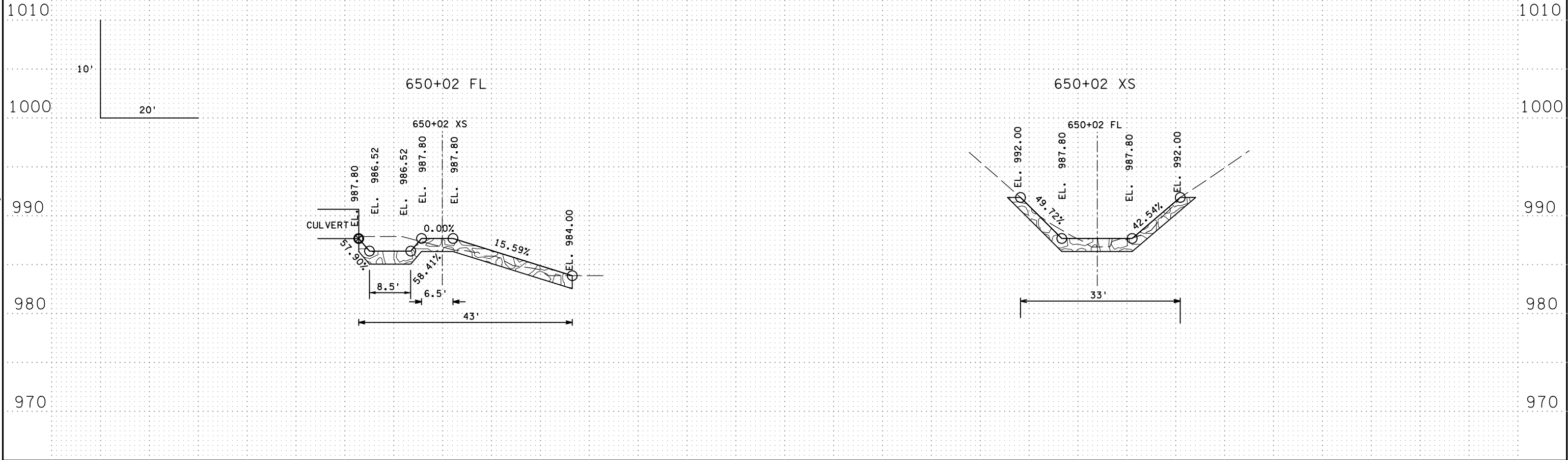


**LEGEND**

- EXISTING GUARDRAIL
- RANDOM RIPRAP

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SCALE IN FEET



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NO	DATE	DWN	CKD	REVISIONS



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PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

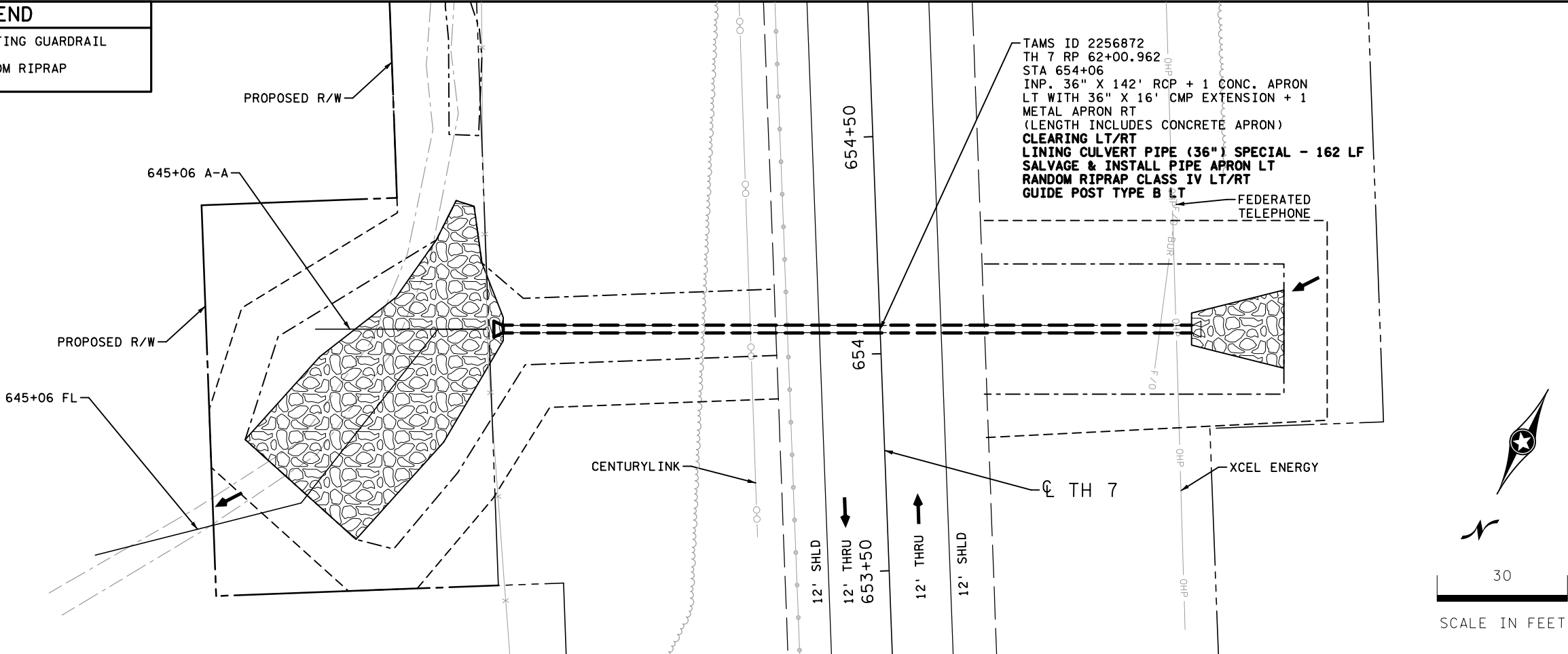
SPECIAL SHAPE RIPRAP DETAILS  
TH 7

SP 8828-139  
SHEET NO. 100 OF 212 SHEETS

LEGEND

EXISTING GUARDRAIL

RANDOM RIPRAP



LEGEND

EXISTING R/W

CONSTRUCTION LIMITS

LIMITS OF DISTURBANCE

WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)

WET DITCH

OTHER AQUATIC RESOURCE

INPLACE CULVERT / STORM SEWER

PROPOSED CULVERT LINING

PROPOSED CULVERT / STORM SEWER

EXISTING APRON

SALVAGE AND INSTALL APRON

PROPOSED APRON

EXISTING / PROPOSED MANHOLE

EXISTING / PROPOSED DROP INLET

FLOW ARROW

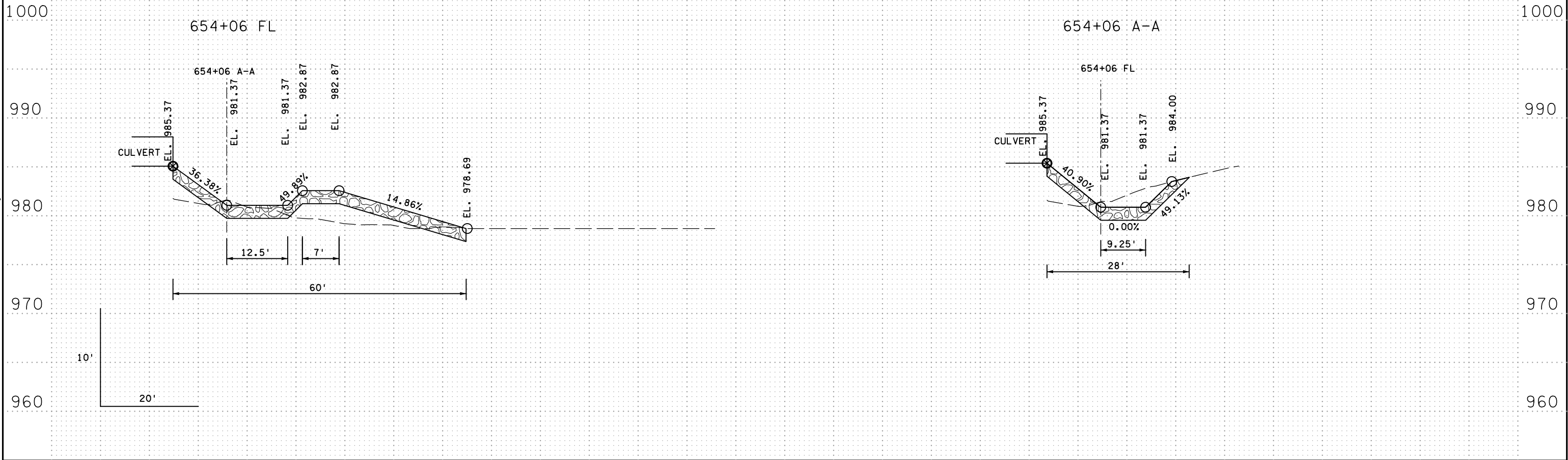
TREELINE

TREE

EXISTING FENCE

MAILBOX

UTILITY PEDESTAL





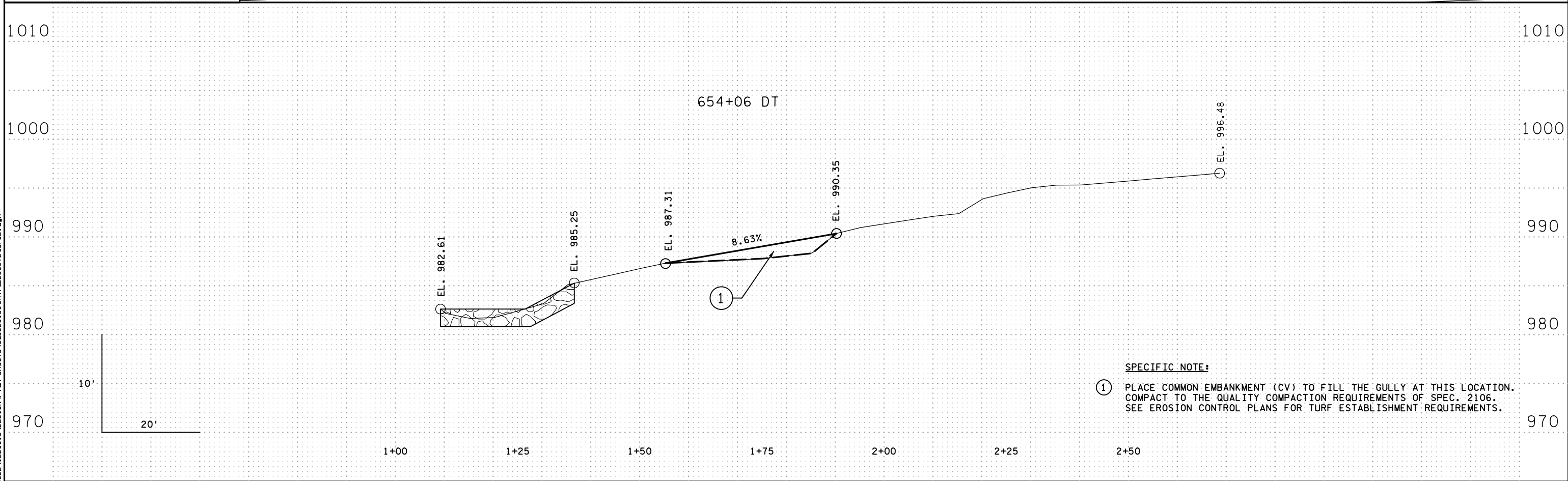
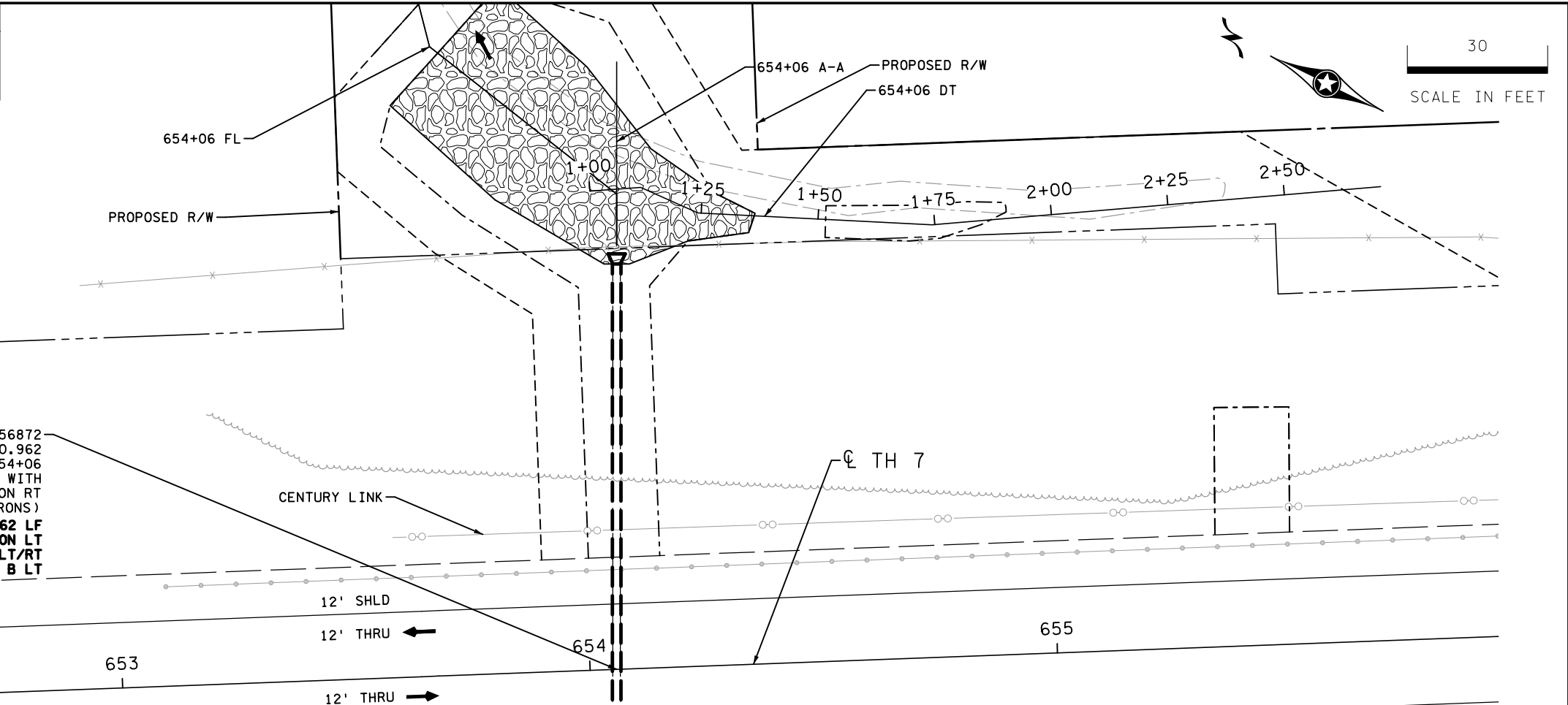
**LEGEND**

- EXISTING R/W
- CONSTRUCTION LIMITS
- LIMITS OF DISTURBANCE
- WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)
- WET DITCH
- OTHER AQUATICE RESOURCE
- INPLACE CULVERT / STORM SEWER
- PROPOSED CULVERT LINING
- PROPOSED CULVERT / STORM SEWER
- EXISTING APRON
- SALVAGE AND INSTALL APRON
- PROPOSED APRON
- EXISTING / PROPOSED MANHOLE
- EXISTING / PROPOSED DROP INLET
- FLOW ARROW
- TREELINE
- TREE
- EXISTING FENCE
- MAILBOX
- UTILITY PEDESTAL

**LEGEND**

- EXISTING GUARDRAIL
- RANDOM RIPRAP

TAMS ID 2256872  
TH 7 RP 62+00.962  
STA 654+06  
INP. 36" X 142' RCP + CONC. APRON LT WITH  
36" X 16' CMP EXTENSION + METAL APRON RT  
(LENGTH INCLUDES APRONS)  
**LINING CULVERT PIPE (36") SPECIAL - 162 LF**  
**SALVAGE & INSTALL PIPE APRON LT**  
**RANDOM RIPRAP CLASS IV LT/RT**  
**GUIDE POST TYPE B LT**



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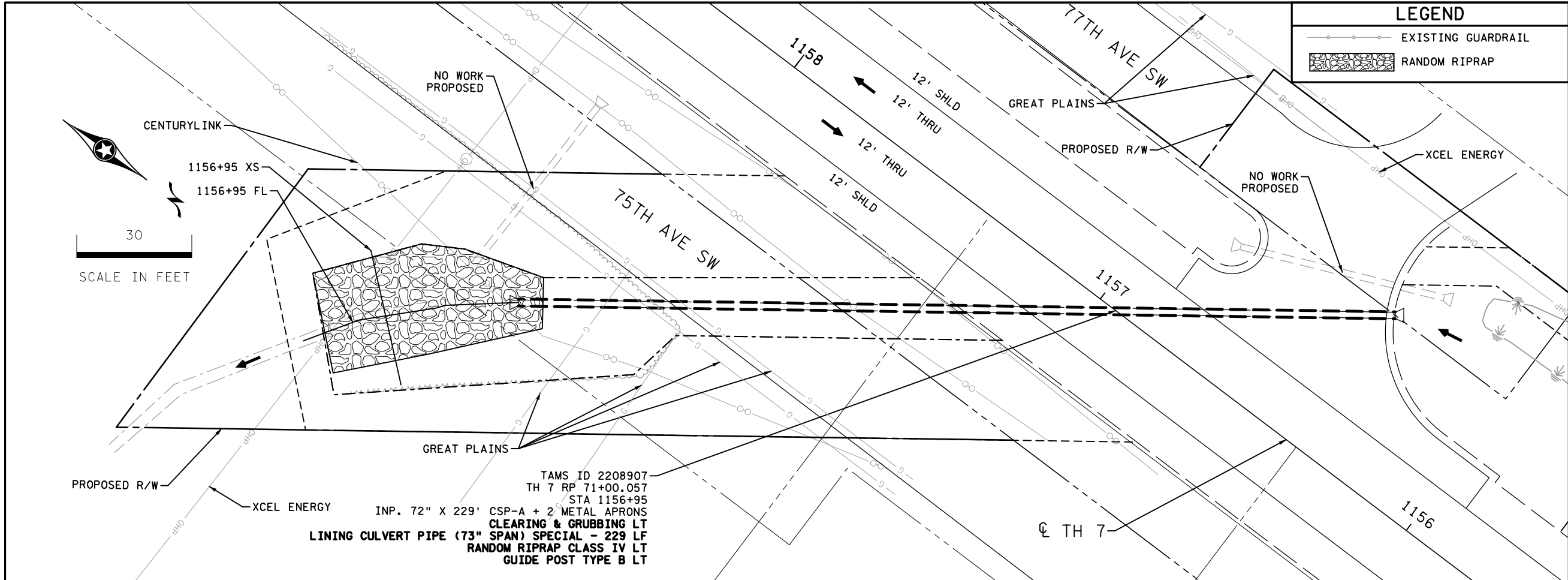


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DATE: 09/19/24 LICENSE #: 54298

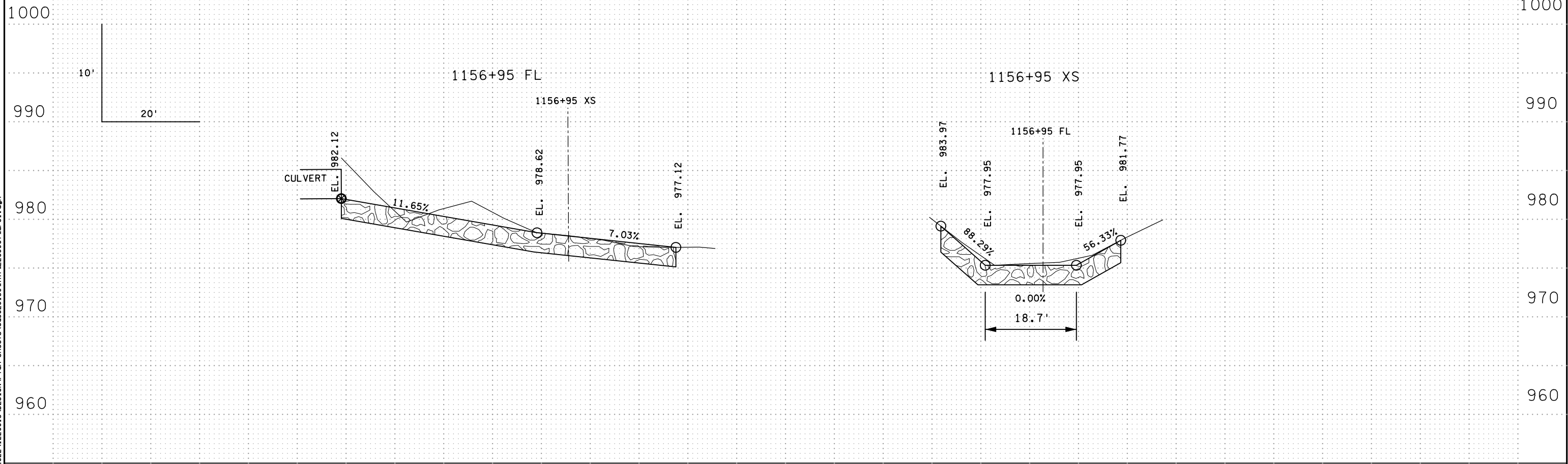
SPECIAL SHAPE RIPRAP DETAILS  
TH 7

SP 8828-139  
SHEET NO. 102 OF 212 SHEETS



LEGEND	
	EXISTING GUARDRAIL
	RANDOM RIPRAP

LEGEND	
	EXISTING R/W
	CONSTRUCTION LIMITS
	LIMITS OF DISTURBANCE
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)
	WET DITCH
	OTHER AQUATIC RESOURCE
	INPLACE CULVERT / STORM SEWER
	PROPOSED CULVERT LINING
	PROPOSED CULVERT / STORM SEWER
	EXISTING APRON
	SALVAGE AND INSTALL APRON
	PROPOSED APRON
	EXISTING / PROPOSED MANHOLE
	EXISTING / PROPOSED DROP INLET
	FLOW ARROW
	TREELINE
	TREE
	EXISTING FENCE
	MAILBOX
	UTILITY PEDESTAL



NO	DATE	DWN	CKD	REVISIONS

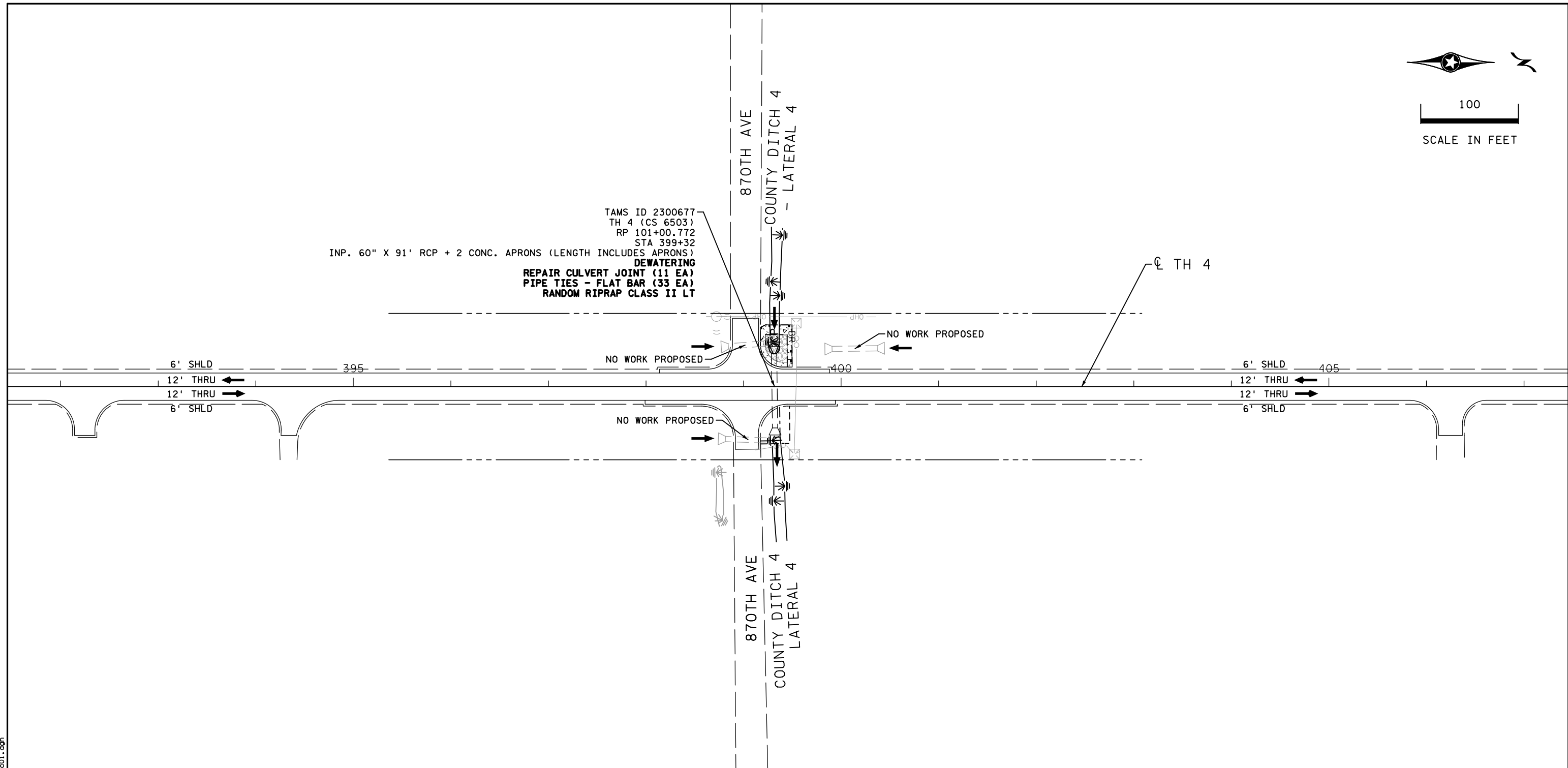
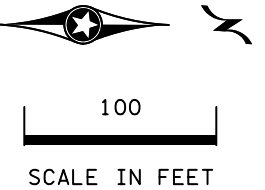


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DATE: 09/19/24 LICENSE #: 54298

SPECIAL SHAPE RIPRAP DETAILS  
TH 7

SP 8828-139  
SHEET NO. 103 OF 212 SHEETS



LEGEND

---	EXISTING R/W		RANDOM RIPRAP		SEED MESIC INSLOPE
---	CONSTRUCTION LIMITS		TREE		ROLLED EROSION PREVENTION CAT 20
---	LIMITS OF DISTURBANCE		TREELINE		FERTILIZER TYPE 3 (22-5-10)
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE		SEED TURFGRASS
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)		ROLLED EROSION PREVENTION CAT 20
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE		FERTILIZER TYPE 1 (20-10-20)
==	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)		SEED SOUTHERN TALLGRASS ROADSIDE
	MAILBOX		PAVEMENT RECONSTRUCTION		ROLLED EROSION PREVENTION CAT 25
	FLOW ARROW		CLEARING		FERTILIZER TYPE 3 (22-5-10)
	CULVERT END CONTROL				SEED WET DITCH

GENERAL NOTES:

- A. SPRAY PERENNIAL NOXIOUS WEEDS GROWING IN STOCKPILES AND STAGING AREAS BEFORE FLOWERING.
- B. SPOT-SPRAY PERENNIAL NOXIOUS WEEDS IN AREAS OF PERMANENT SEEDING TWO OR MORE WEEKS AFTER MOWING BUT BEFORE FLOWERING.
- C. MOW PERMANENTLY SEEDED AREAS IN EARLY JUNE, MID-JULY, AND LATE AUGUST UNLESS OTHERWISE APPROVED BY ENGINEER.

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NO	DATE	DWN	CKD	REVISIONS

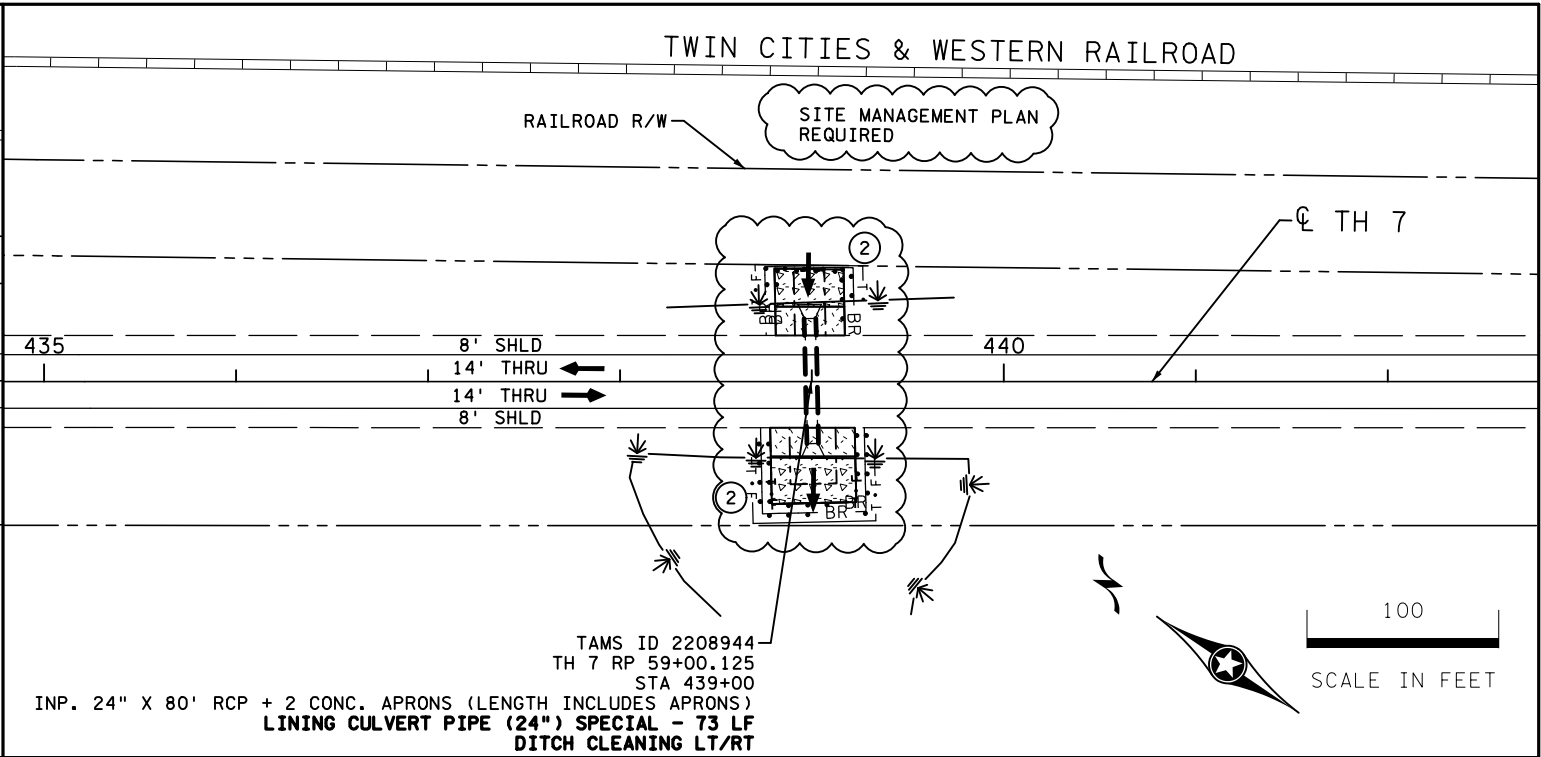
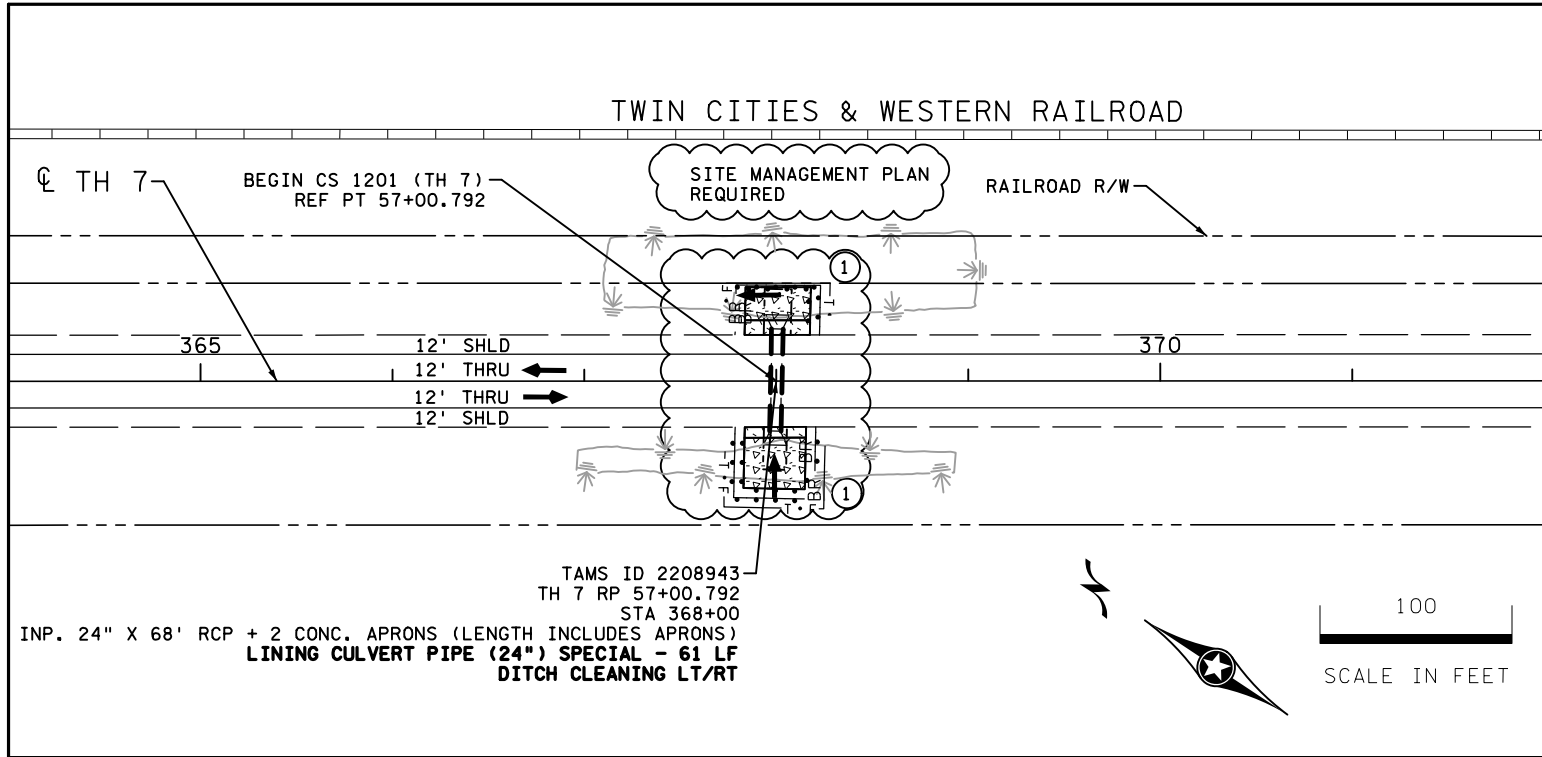


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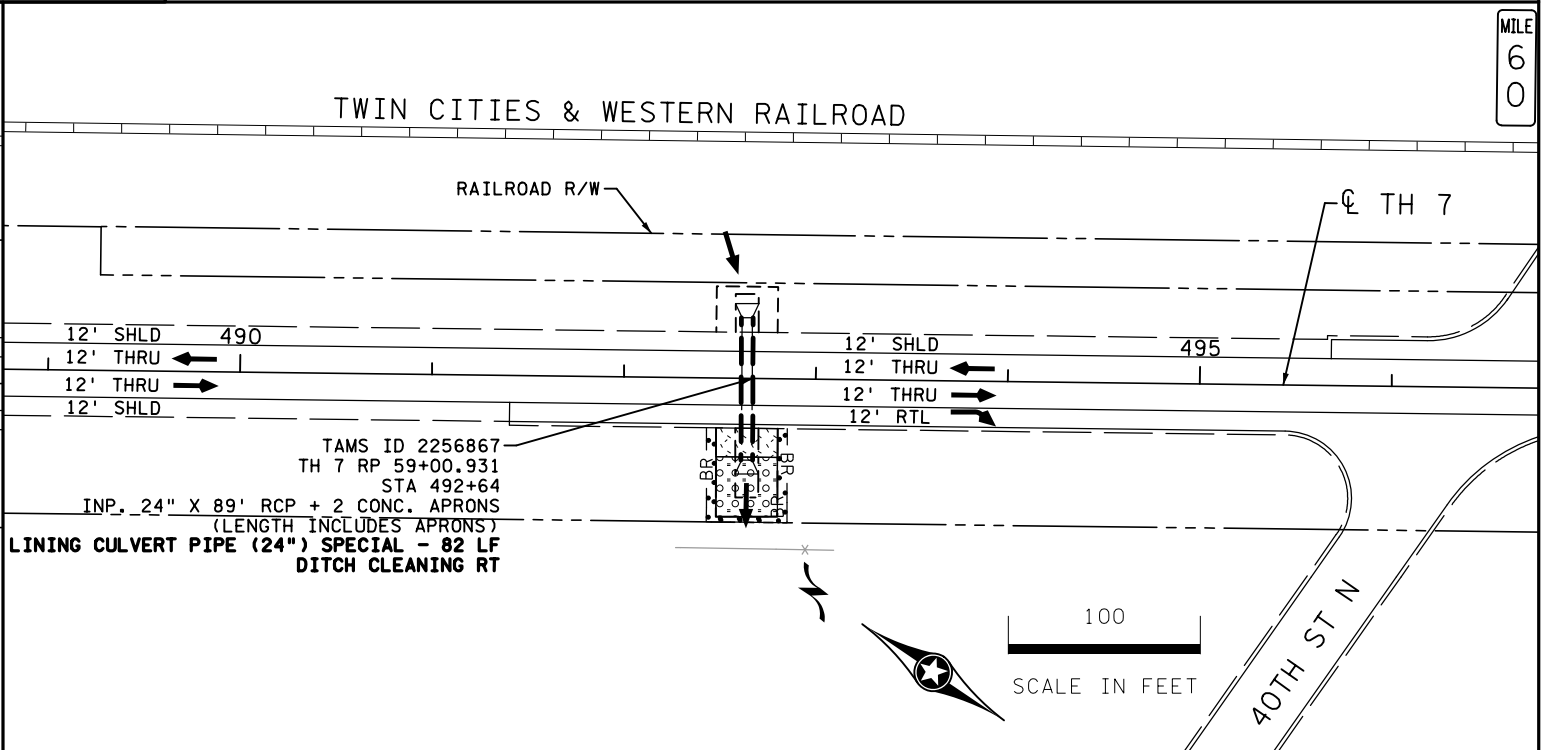
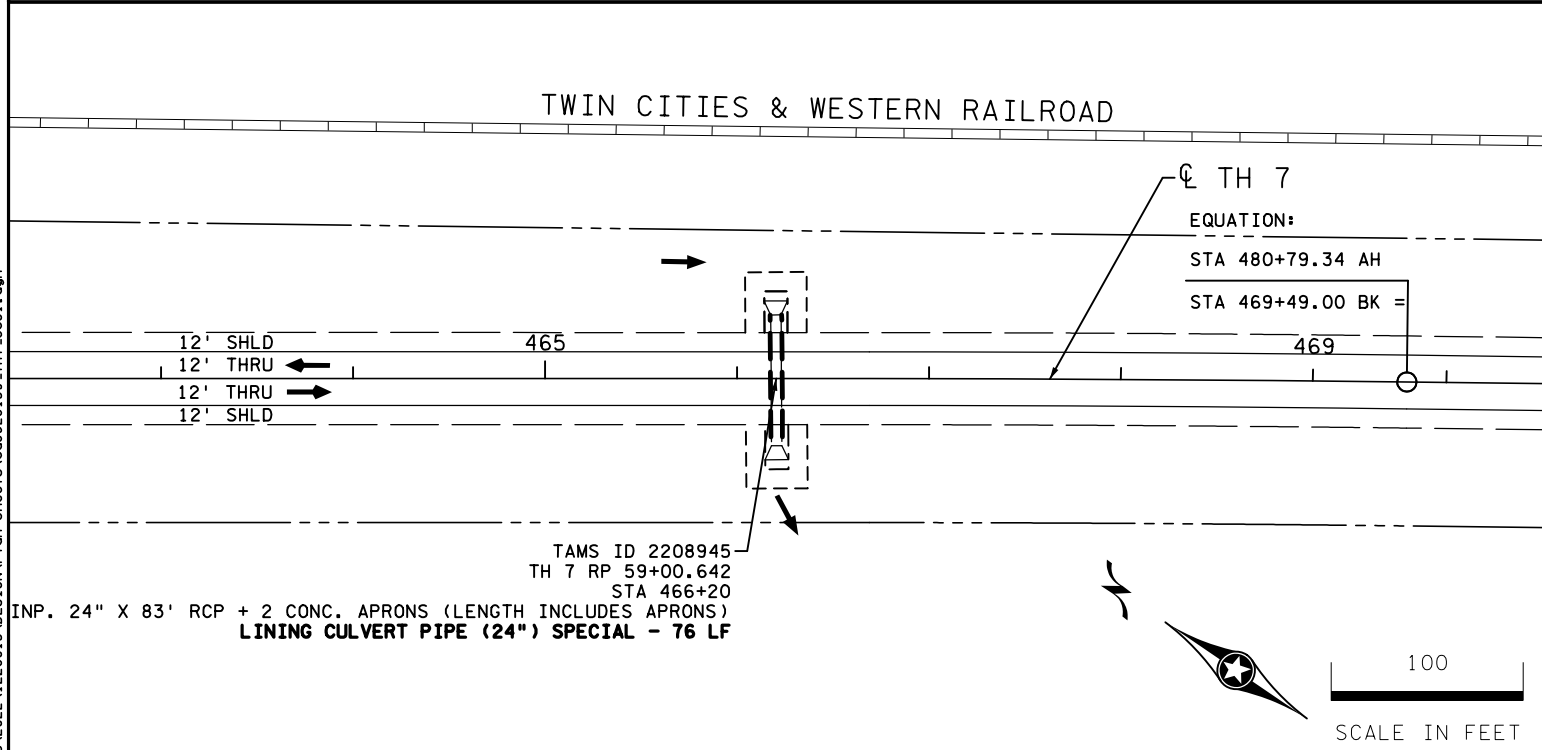
EROSION CONTROL & TURF ESTABLISHMENT PLANS  
TH 4

SP 8828-139  
SHEET NO. 104 OF 212 SHEETS

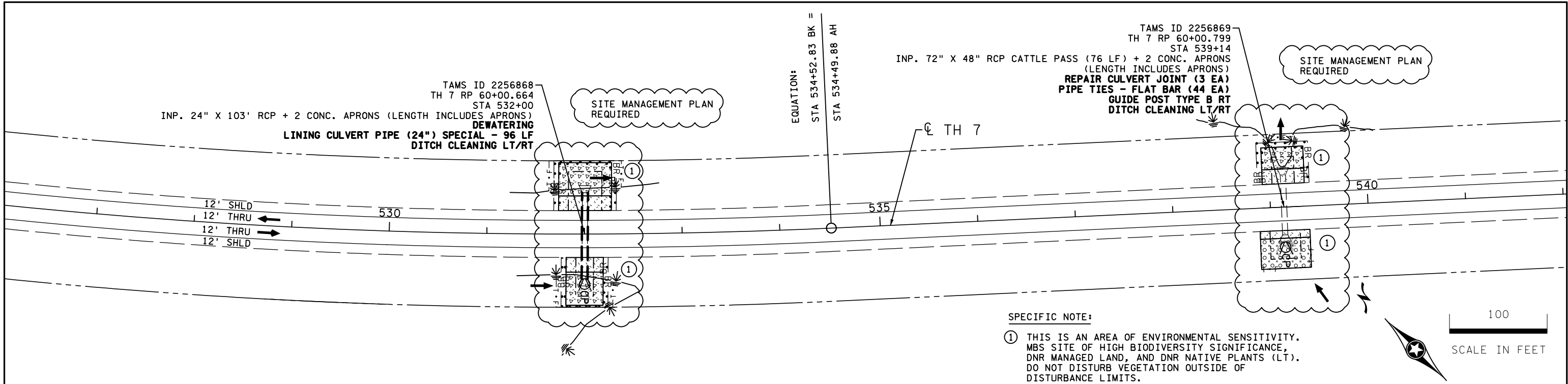


LEGEND			
---	EXISTING R/W		RANDOM RIPRAP
---	CONSTRUCTION LIMITS		TREE
---	LIMITS OF DISTURBANCE		TREELINE
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE
---	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)
	MAILBOX		PAVEMENT RECONSTRUCTION
	FLOW ARROW		CLEARING
	CULVERT END CONTROL		SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
			SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
			SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)

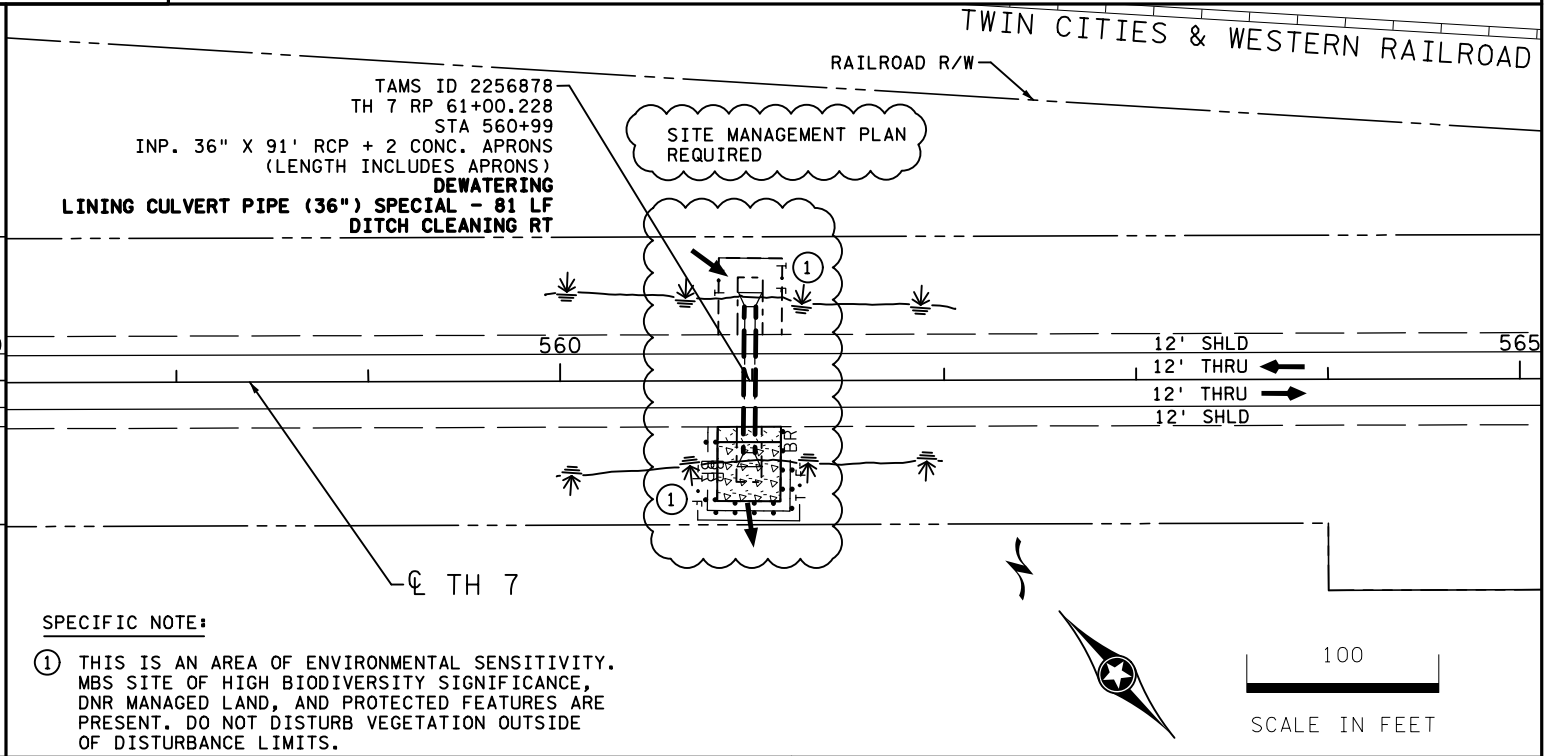
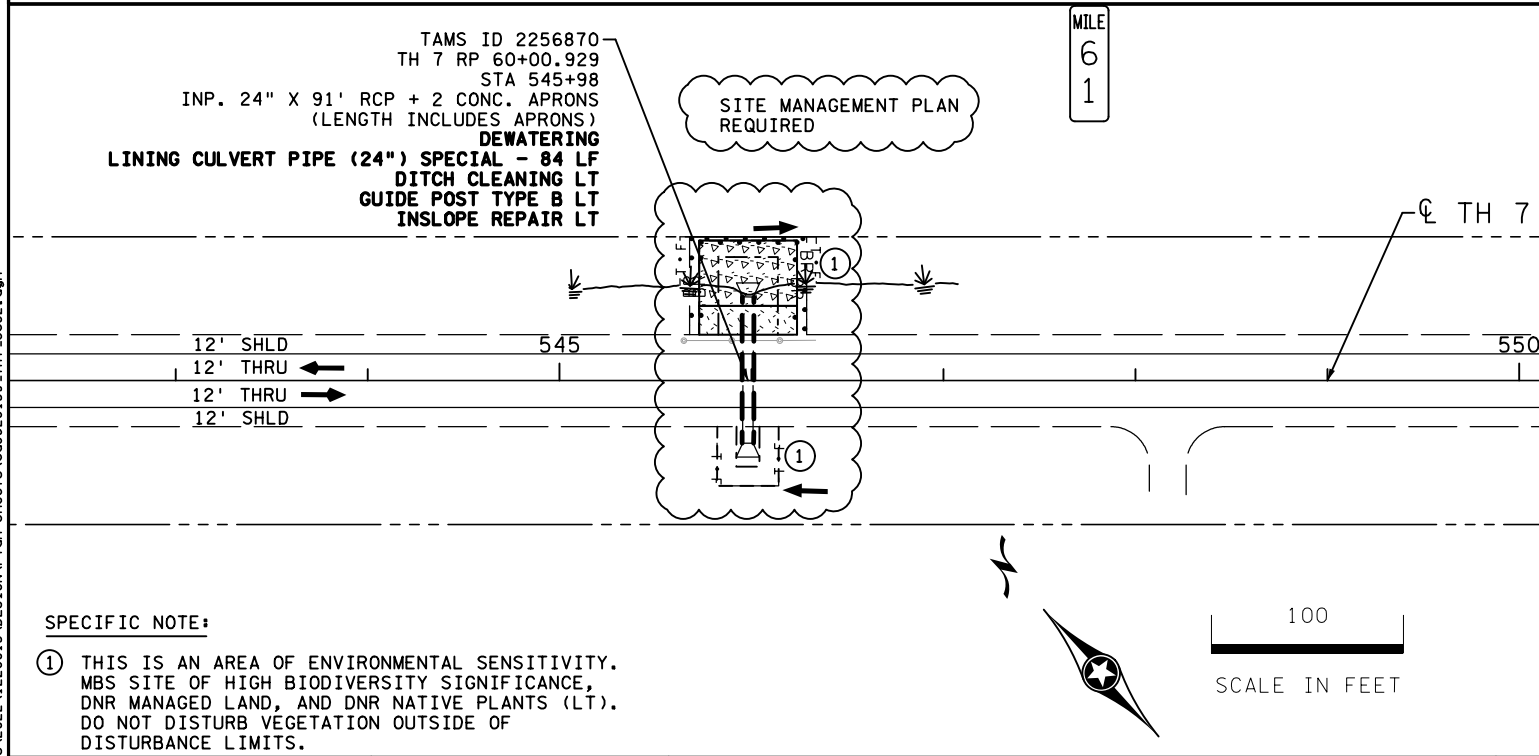
- SPECIFIC NOTES:
- THIS IS AN AREA OF ENVIRONMENTAL SENSITIVITY. PROTECTED FEATURES ARE PRESENT. DO NOT DISTURB VEGETATION OUTSIDE OF DISTURBANCE LIMITS.
  - THIS IS AN AREA OF ENVIRONMENTAL SENSITIVITY. MBS SITE OF HIGH BIODIVERSITY SIGNIFICANCE AND DNR NATIVE PLANTS. DO NOT DISTURB VEGETATION OUTSIDE OF DISTURBANCE LIMITS.

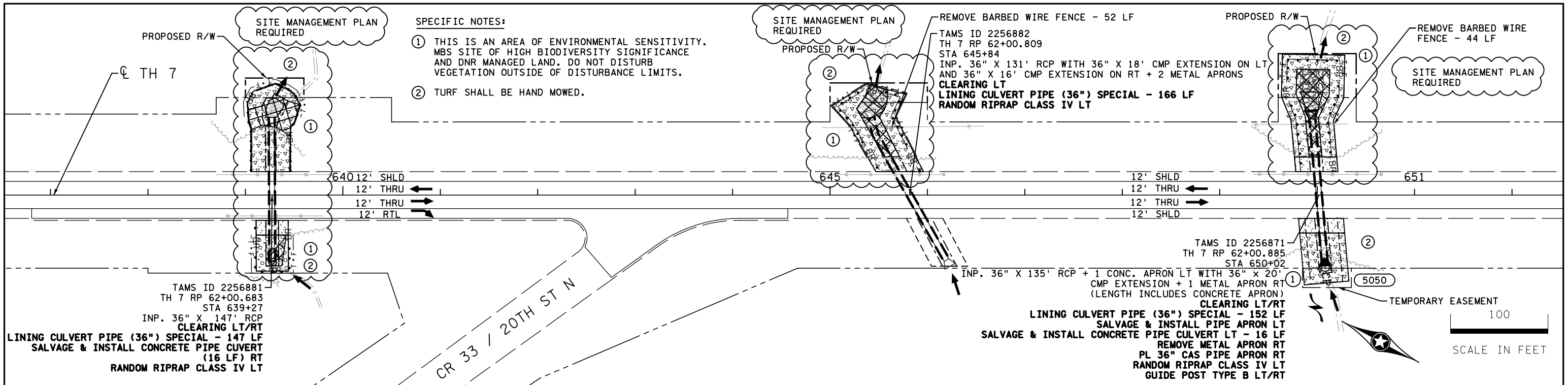




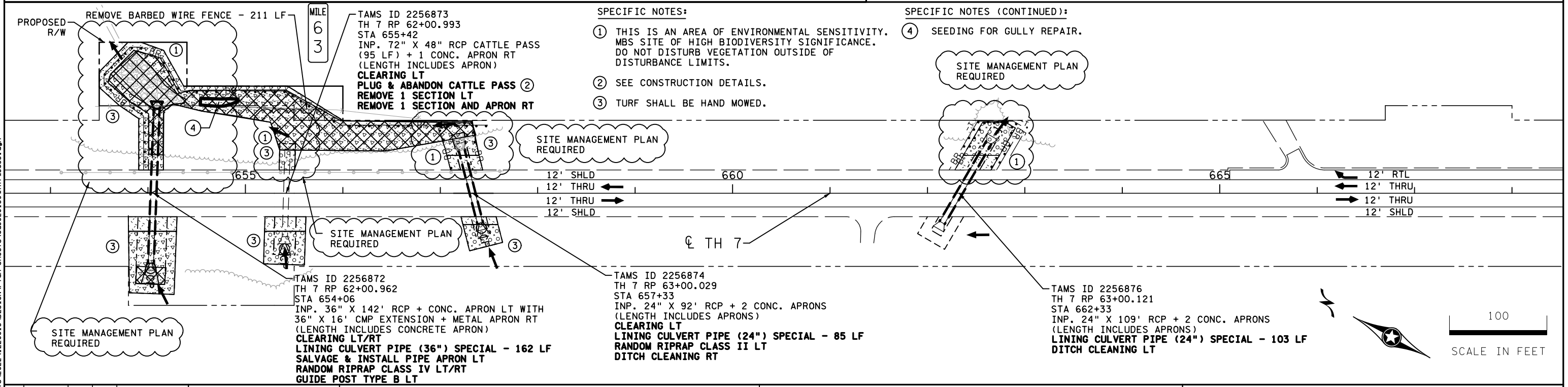


LEGEND			
---	EXISTING R/W		RANDOM RIPRAP
---	CONSTRUCTION LIMITS		TREE
---	LIMITS OF DISTURBANCE		TREELINE
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE
---	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)
	MAILBOX		PAVEMENT RECONSTRUCTION
	FLOW ARROW		CLEARING
	CULVERT END CONTROL		SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
			SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
			SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)





LEGEND			
---	EXISTING R/W		RANDOM RIPRAP
---	CONSTRUCTION LIMITS		TREE
---	LIMITS OF DISTURBANCE		TREELINE
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE
---	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)
	MAILBOX		PAVEMENT RECONSTRUCTION
	FLOW ARROW		CLEARING
	CULVERT END CONTROL		SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
			SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
			SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)



TAMS ID 2208981  
TH 7 RP 63+00.486  
STA 680+85  
INP. 24" X 70' RCP + 2 CONC. APRONS (LENGTH INCLUDES APRONS)  
LINING CULVERT PIPE (24") SPECIAL - 64 LF  
DITCH CLEANING LT

SITE MANAGEMENT PLAN  
REQUIRED

12' SHLD  
12' THRU  
12' THRU  
12' SHLD

SPECIFIC NOTE:

- ① THIS IS AN AREA OF ENVIRONMENTAL SENSITIVITY.  
MBS SITE OF HIGH BIODIVERSITY SIGNIFICANCE.  
DO NOT DISTURB VEGETATION OUTSIDE OF  
DISTURBANCE LIMITS.

100  
SCALE IN FEET

LEGEND

EXISTING R/W	RANDOM RIPRAP	SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
CONSTRUCTION LIMITS	TREE	SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
LIMITS OF DISTURBANCE	TREELINE	SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)	EXISTING FENCE	SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
WET DITCH	SEDIMENT CONTROL LOG (TYPE COMPOST)	SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)
OTHER AQUATIC RESOURCE	TEMPORARY FENCE	
INPLACE CULVERT / STORM SEWER	SILT FENCE (TYPE MS)	
MAILBOX	PAVEMENT RECONSTRUCTION	
FLOW ARROW	CLEARING	
CULVERT END CONTROL		

100  
SCALE IN FEET

SITE MANAGEMENT PLAN  
REQUIRED

TAMS ID 2208982  
TH 7 RP 63+00.673  
STA 690+45  
INP. 24" X 79' RCP + 2 CONC. APRONS (LENGTH INCLUDES APRONS)  
LINING CULVERT PIPE (24") SPECIAL - 72 LF  
DITCH CLEANING LT

EQUATION:  
STA 701+48.32 BK =  
STA 701+46.81 AH

SPECIFIC NOTE:

- ① THIS IS AN AREA OF ENVIRONMENTAL SENSITIVITY.  
MBS SITE OF HIGH BIODIVERSITY SIGNIFICANCE.  
DO NOT DISTURB VEGETATION OUTSIDE OF  
DISTURBANCE LIMITS.

TAMS ID 2208983  
TH 7 RP 63+00.895  
STA 701+99  
INP. 24" X 73' RCP + 2 CONC. APRONS (LENGTH INCLUDES APRONS)  
CLEAN PIPE CULVERT  
LINING CULVERT PIPE (24") SPECIAL - 66 LF  
GUIDE POST TYPE B RT



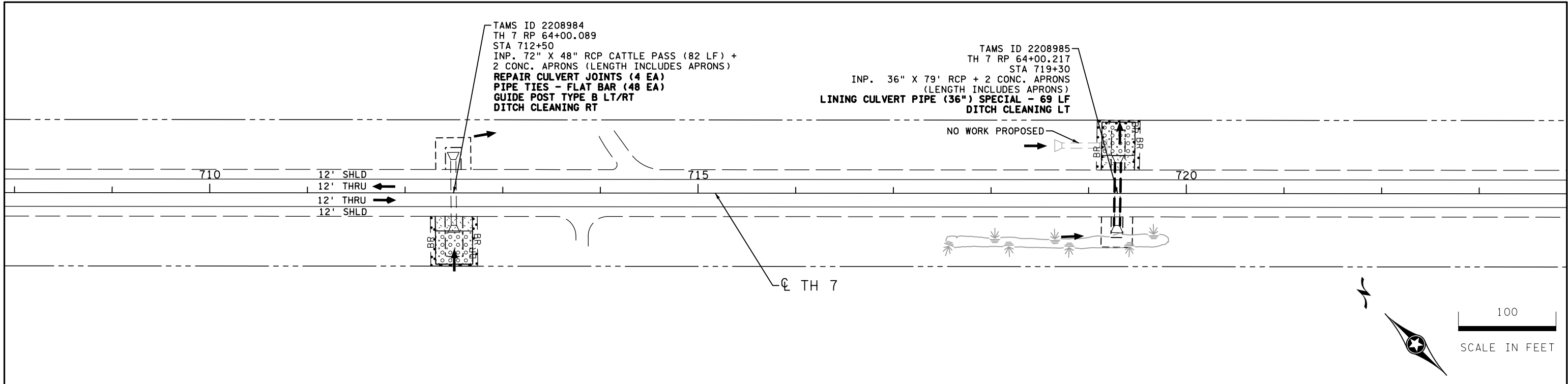
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BY ME OR UNDER MY DIRECT SUPERVISION AND THAT  
I AM A DULY LICENSED PROFESSIONAL ENGINEER  
UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

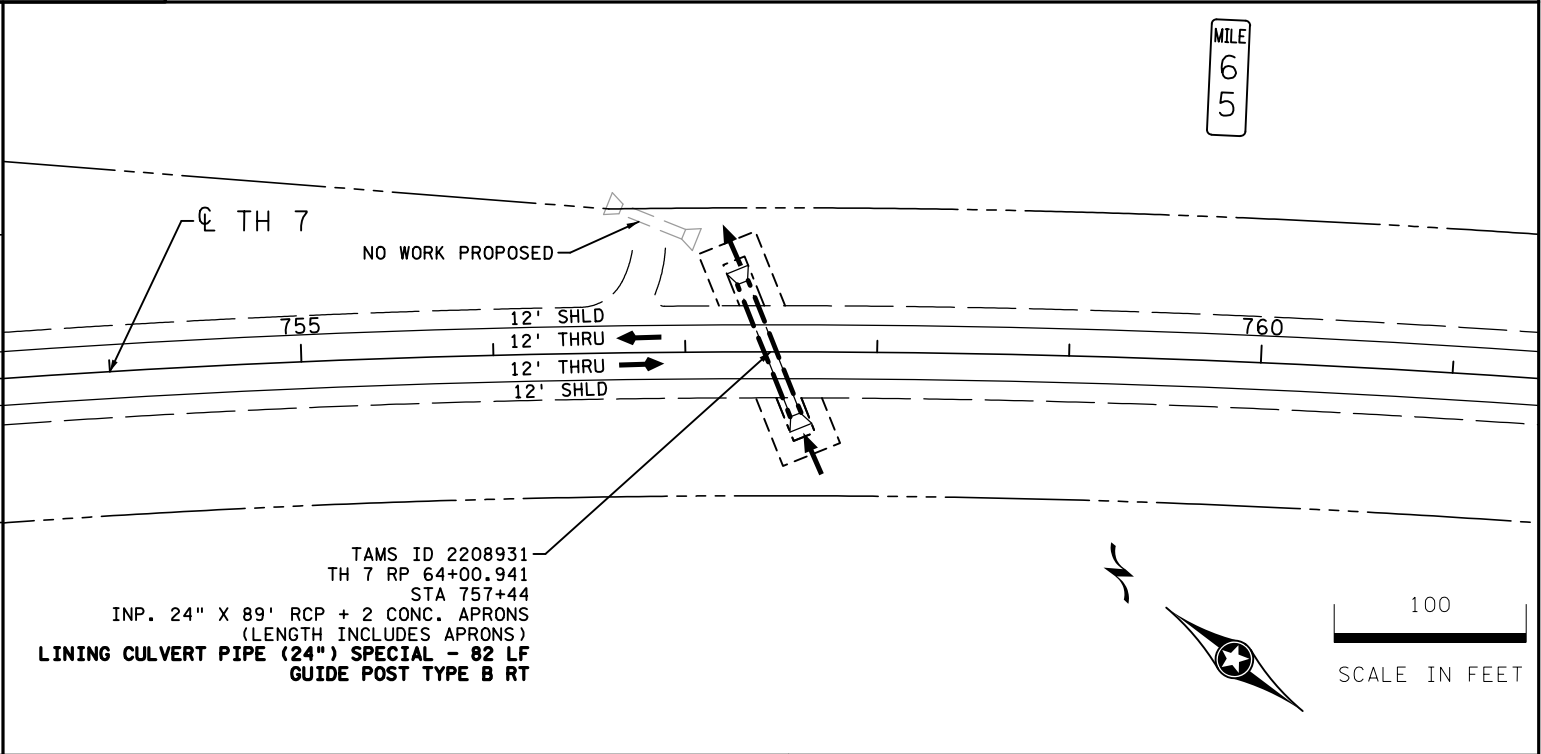
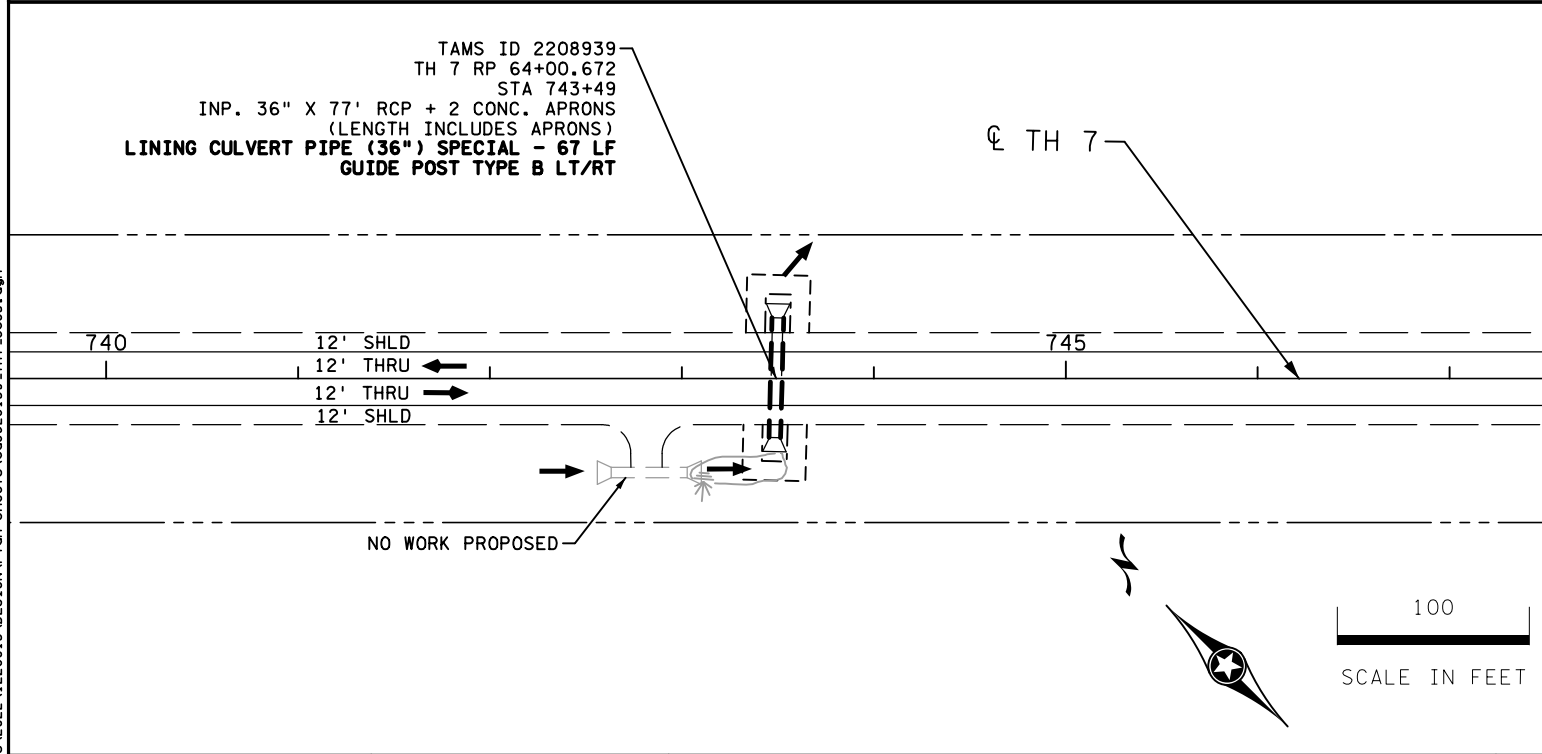
EROSION CONTROL & TURF ESTABLISHMENT PLANS  
TH 7

SP 8828-139

SHEET NO. 108 OF 212 SHEETS



LEGEND			
---	EXISTING R/W		RANDOM RIPRAP
---	CONSTRUCTION LIMITS		TREE
---	LIMITS OF DISTURBANCE		TREELINE
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE
==	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)
	MAILBOX		PAVEMENT RECONSTRUCTION
	FLOW ARROW		CLEARING
	CULVERT END CONTROL		SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
			SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
			SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)



NO	DATE	DWN	CKD	REVISIONS



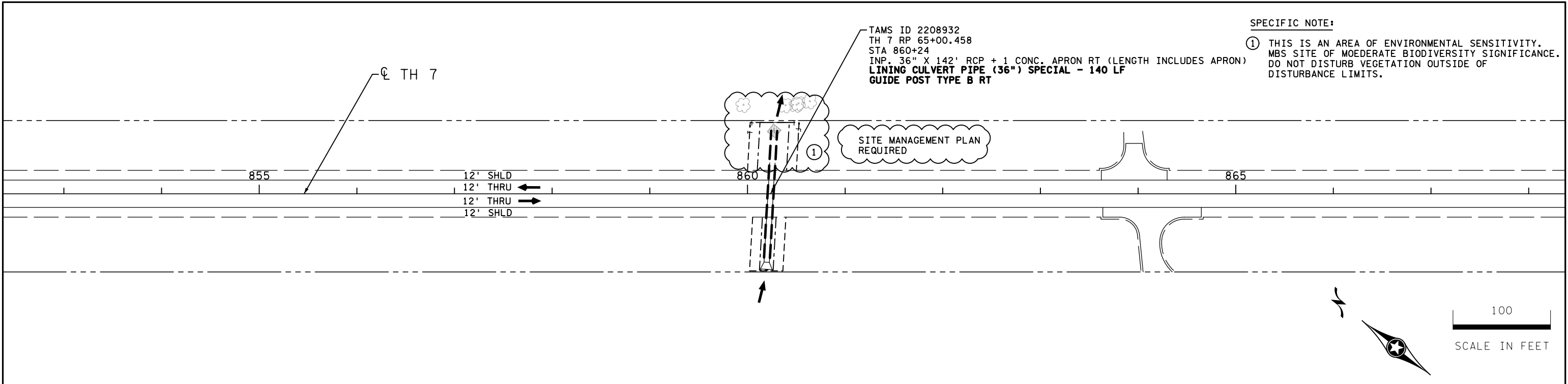
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EROSION CONTROL & TURF ESTABLISHMENT PLANS  
TH 7

SP 8828-139  
SHEET NO. 109 OF 212 SHEETS



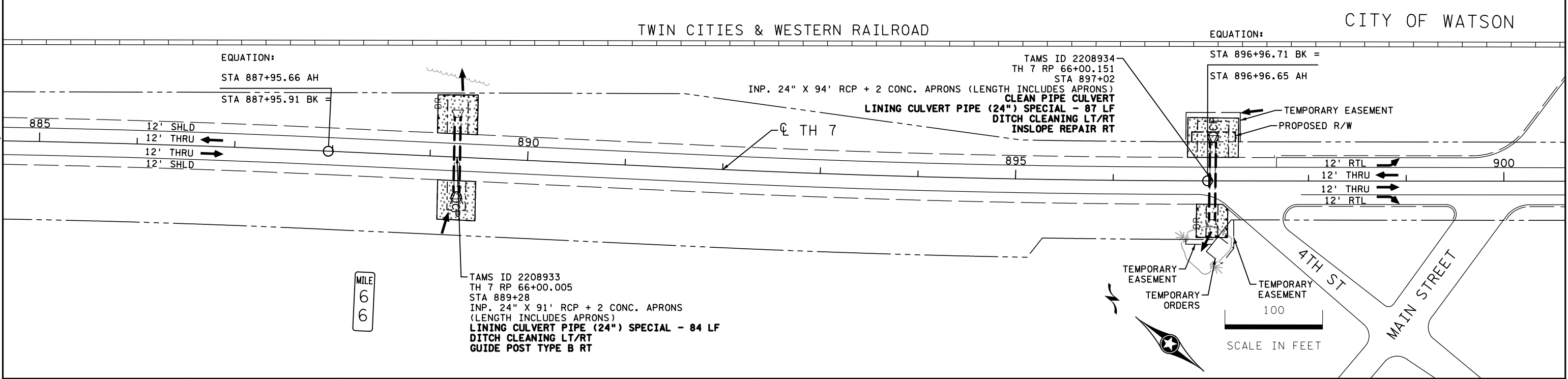


SPECIFIC NOTE:

- ① THIS IS AN AREA OF ENVIRONMENTAL SENSITIVITY. MBS SITE OF MOEDERATE BIODIVERSITY SIGNIFICANCE. DO NOT DISTURB VEGETATION OUTSIDE OF DISTURBANCE LIMITS.

LEGEND

EXISTING R/W	RANDOM RIPRAP	SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
CONSTRUCTION LIMITS	TREE	SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
LIMITS OF DISTURBANCE	TREELINE	SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)	EXISTING FENCE	SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
WET DITCH	SEDIMENT CONTROL LOG (TYPE COMPOST)	SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)
OTHER AQUATIC RESOURCE	BR TEMPORARY FENCE	
INPLACE CULVERT / STORM SEWER	T·F TEMPORARY FENCE	
MAILBOX	MS SILT FENCE (TYPE MS)	
FLOW ARROW	PAVEMENT RECONSTRUCTION	
CULVERT END CONTROL	CLEARING	



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NO	DATE	DWN	CKD	REVISIONS



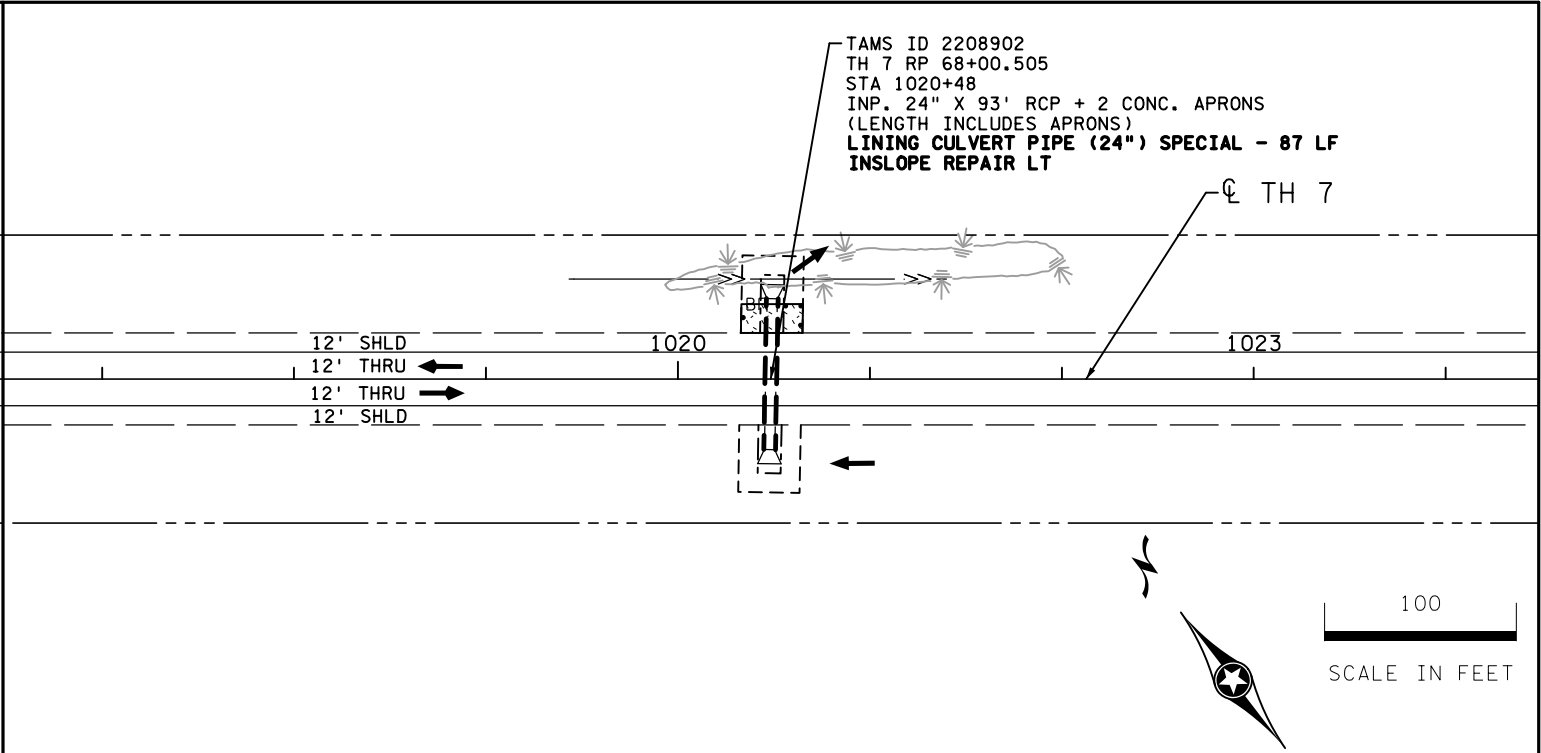
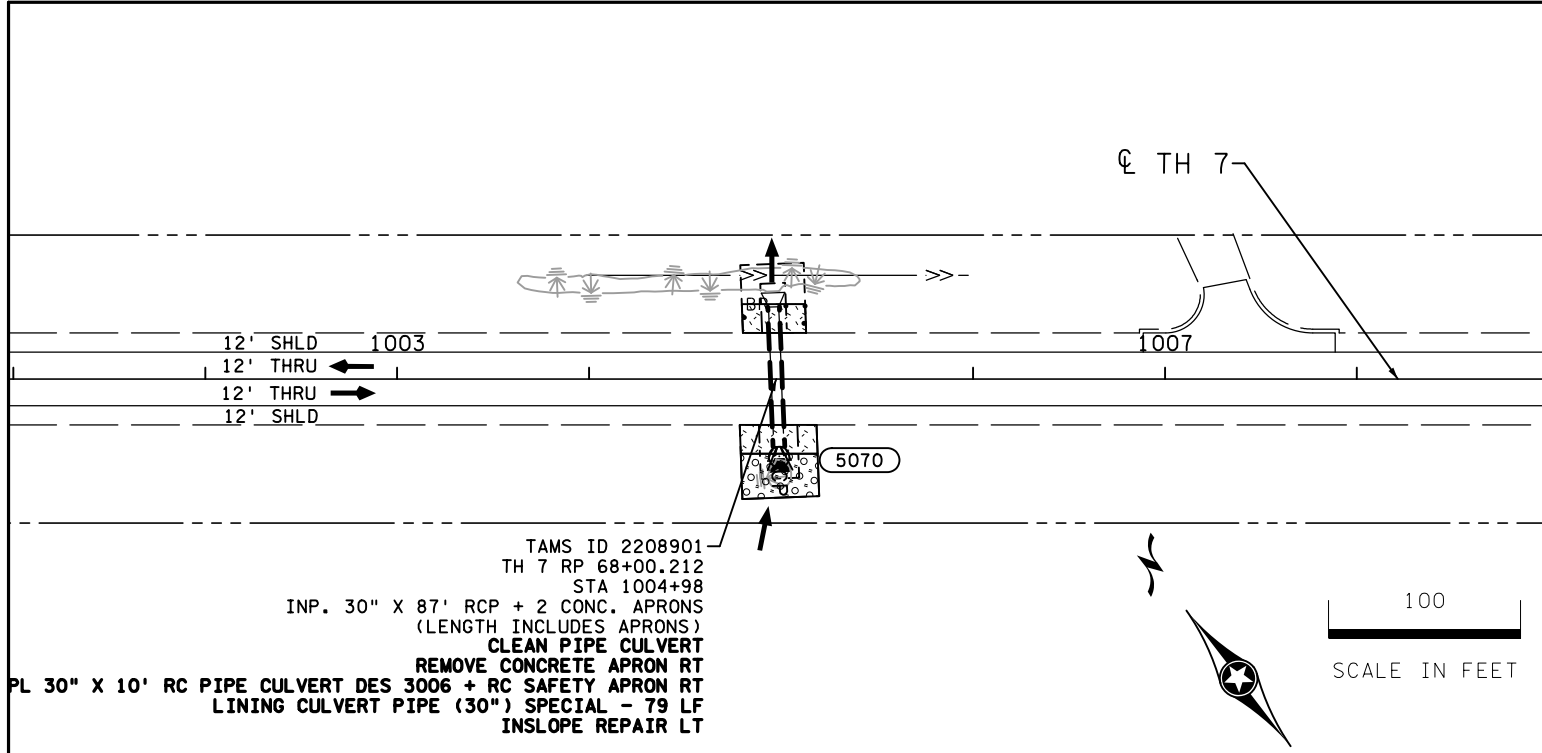
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PRINT NAME: DAN SWANSON  
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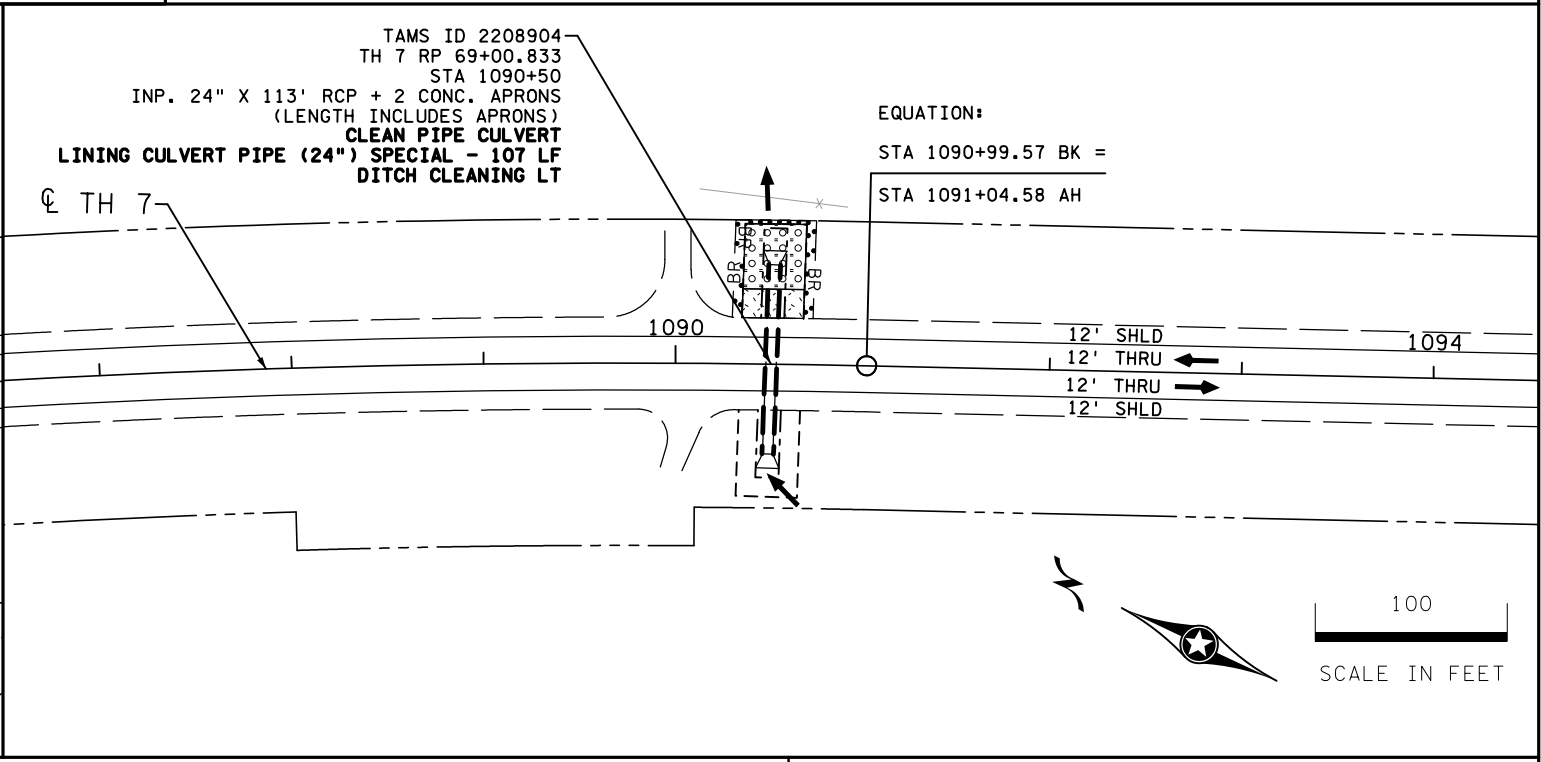
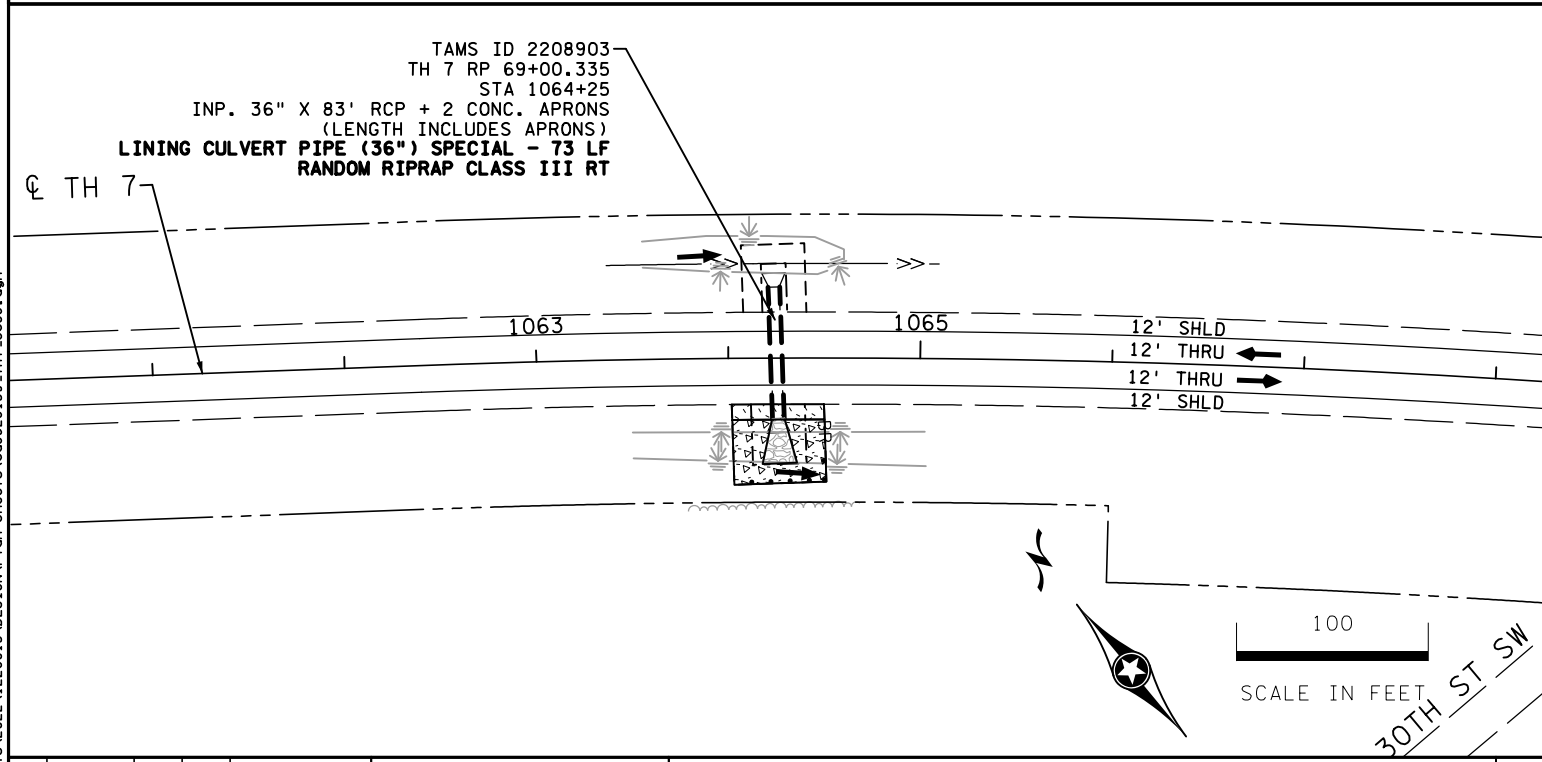
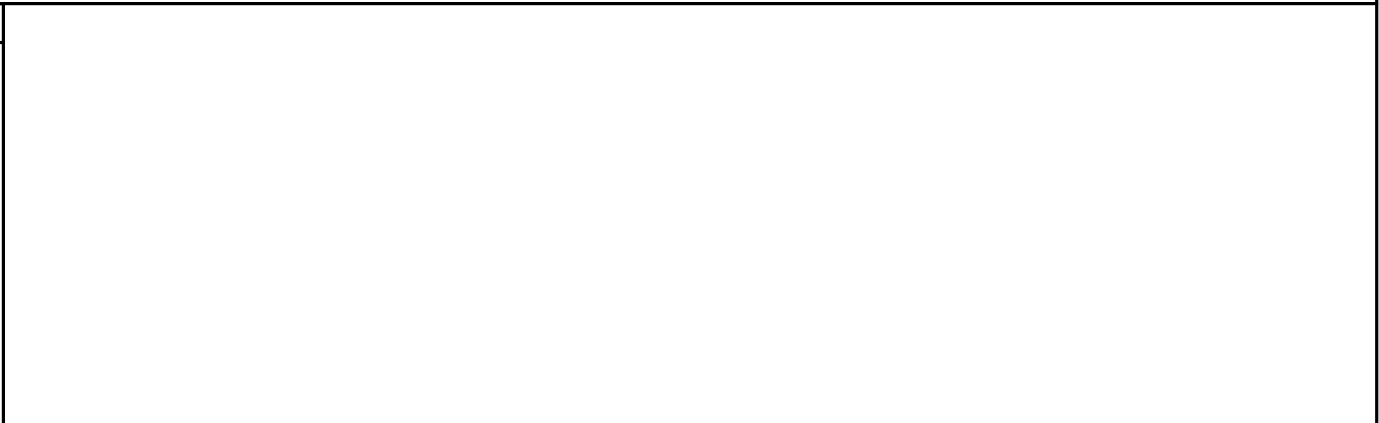
EROSION CONTROL & TURF ESTABLISHMENT PLANS  
TH 7

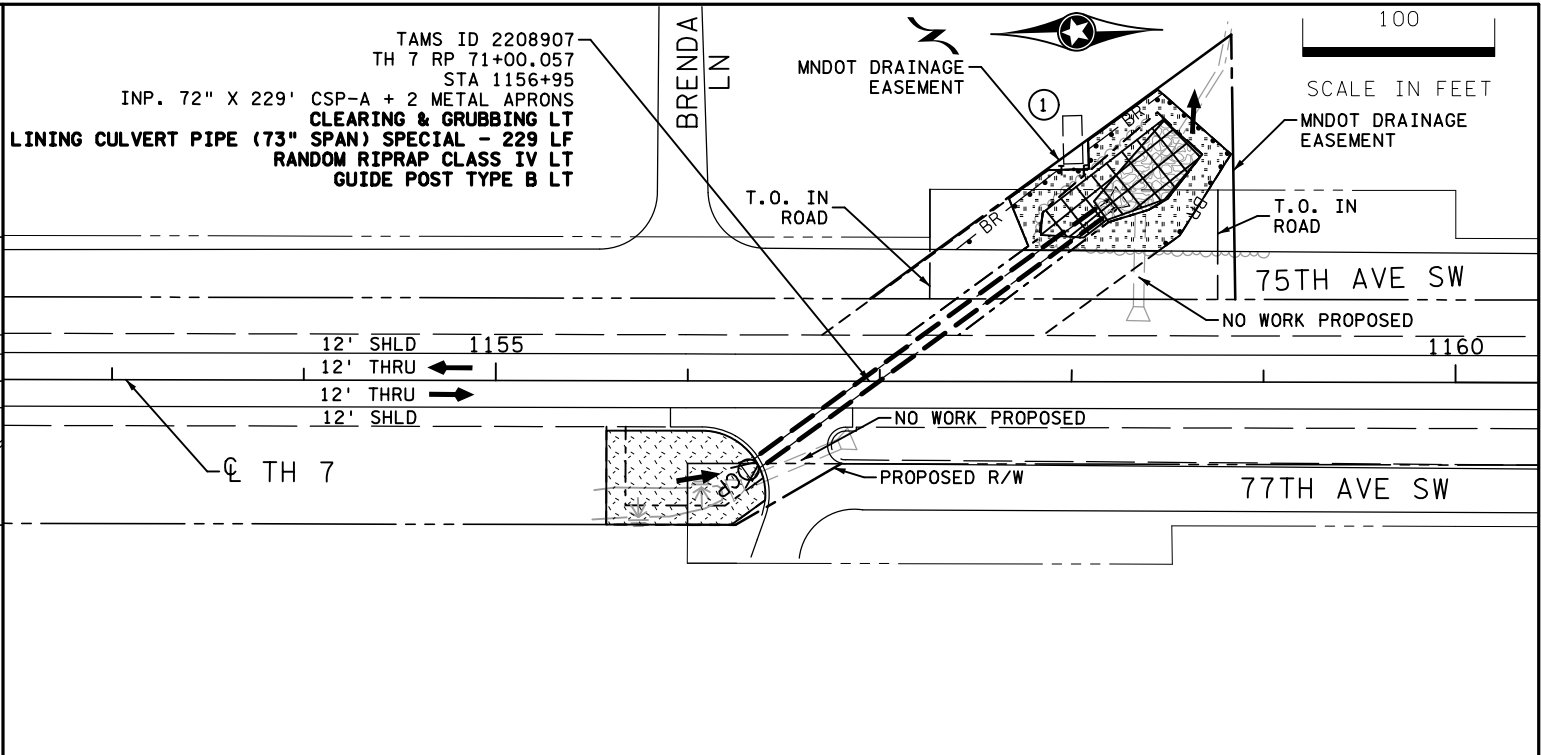
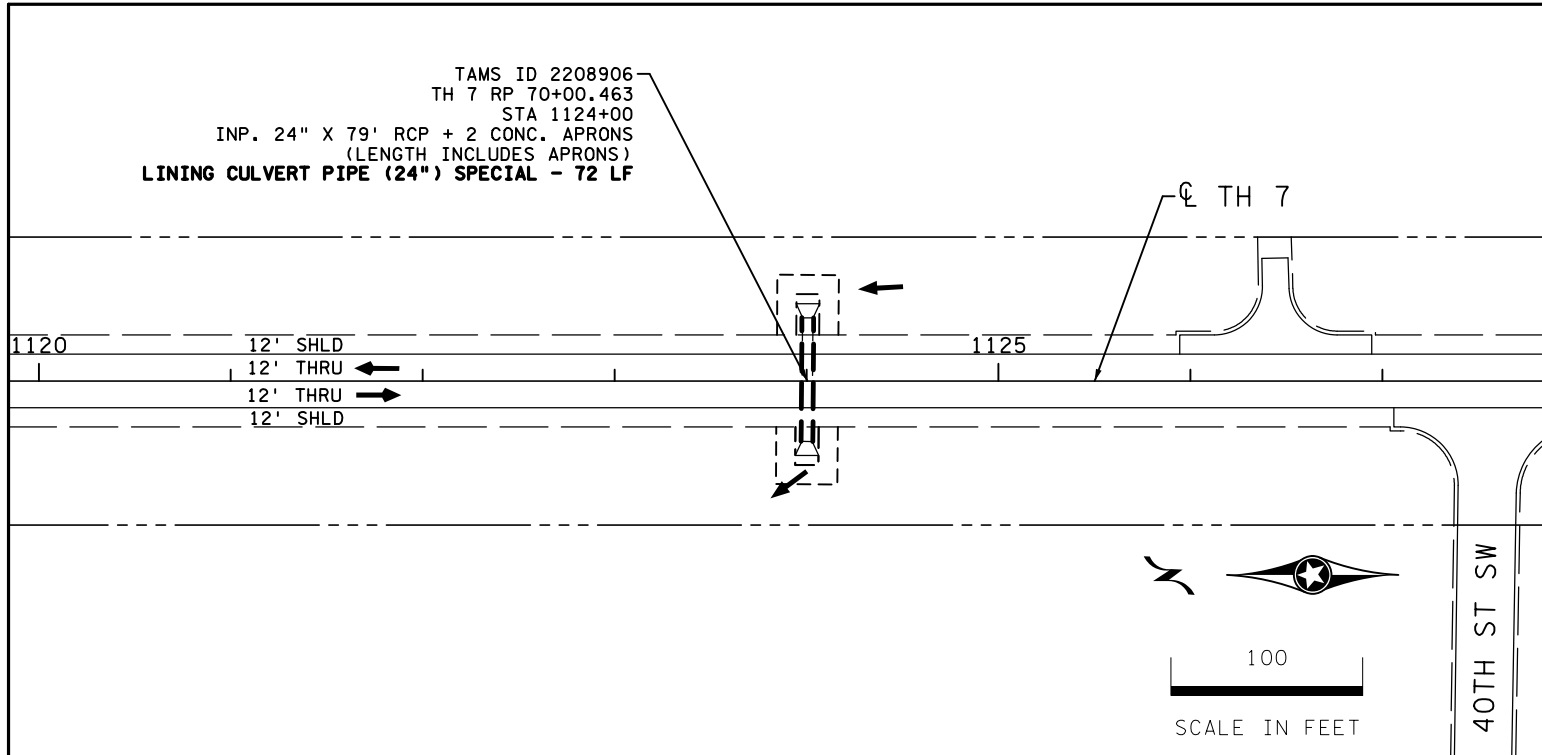
SP 8828-139  
SHEET NO. 110 OF 212 SHEETS





LEGEND			
---	EXISTING R/W		RANDOM RIPRAP
---	CONSTRUCTION LIMITS		TREE
---	LIMITS OF DISTURBANCE		TREELINE
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE
==	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)
	MAILBOX		PAVEMENT RECONSTRUCTION
	FLOW ARROW		CLEARING
	CULVERT END CONTROL		SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
			SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
			SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)

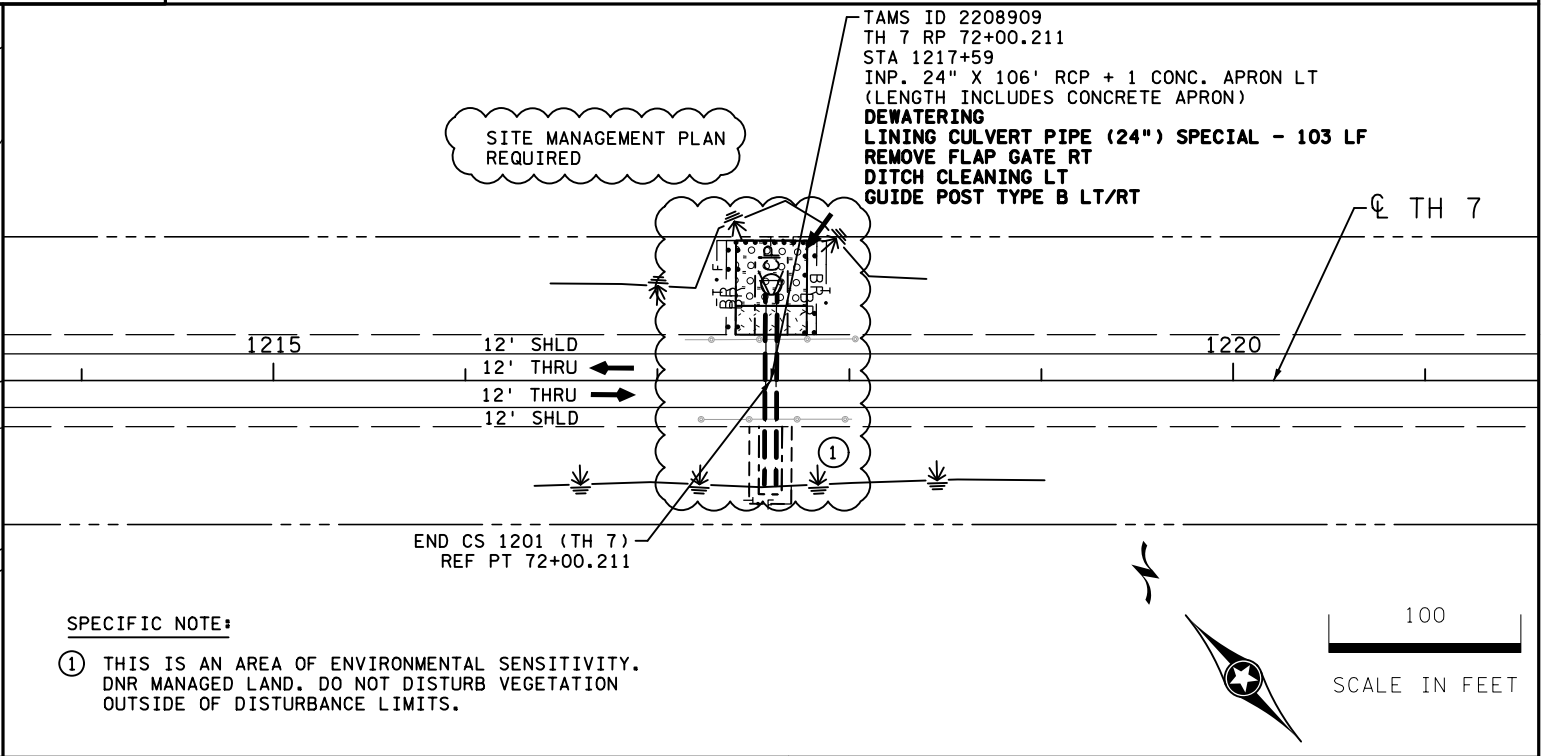
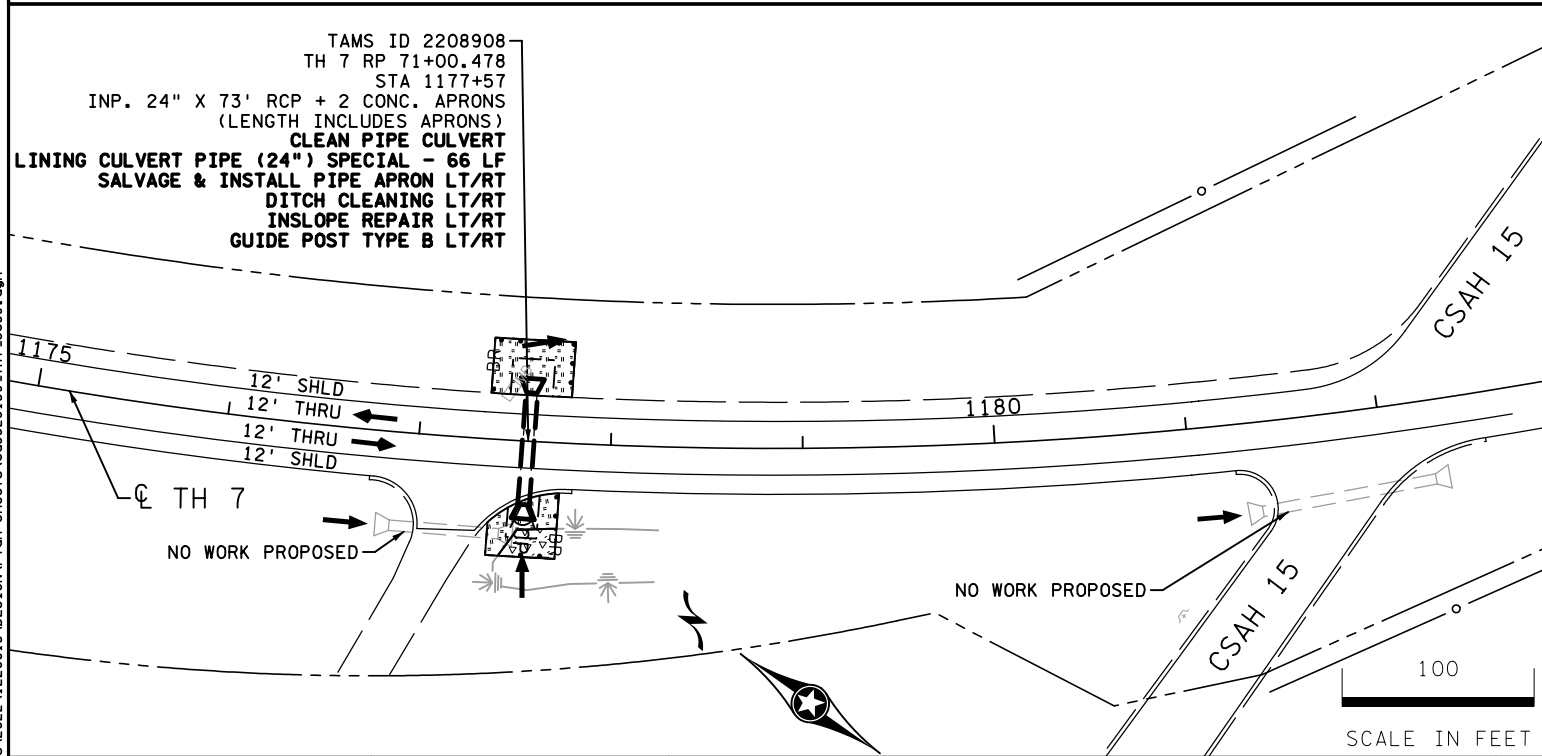




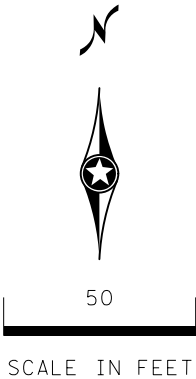
LEGEND			
---	EXISTING R/W		RANDOM RIPRAP
---	CONSTRUCTION LIMITS		TREE
---	LIMITS OF DISTURBANCE		TREELINE
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE
---	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)
	MAILBOX		PAVEMENT RECONSTRUCTION
	FLOW ARROW		CLEARING
	CULVERT END CONTROL		SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
			SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
			SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)

**SPECIFIC NOTES:**

① PROTECT DRAIN FIELD.







KANDIYOHI AVE

CL 3RD ST

TAMS ID N/A  
TH 7 RP 100+00.077  
STA 528+21

TAMS ID N/A  
TH 7 RP 100+00.055  
STA 527+03  
INP. 18" X 238' CSP + 2 METAL APRONS

BEGIN CS 3401 (TH 7)  
REF PT 100+00.025

525

STORM DRAIN INLET PROTECTION

END CS 3401 (TH 7)  
REF PT 100+00.096

530

CL TH 7

PT. 527+66.04  
STA 527+66.04 BK =  
EQUATION: STA 527+66.51 AH

LEGEND

---	EXISTING R/W		RANDOM RIPRAP		SEED MESIC INSLOPE
---	CONSTRUCTION LIMITS		TREE		ROLLED EROSION PREVENTION CAT 20
---	LIMITS OF DISTURBANCE		TREELINE		FERTILIZER TYPE 3 (22-5-10)
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE		SEED TURFGRASS
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)		ROLLED EROSION PREVENTION CAT 20
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE		FERTILIZER TYPE 1 (20-10-20)
---	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)		SEED SOUTHERN TALLGRASS ROADSIDE
	MAILBOX		PAVEMENT RECONSTRUCTION		ROLLED EROSION PREVENTION CAT 25
	FLOW ARROW		CLEARING		FERTILIZER TYPE 3 (22-5-10)
	CULVERT END CONTROL				SEED WET DITCH
					ROLLED EROSION PREVENTION CAT 25
					FERTILIZER TYPE 4 (18-1-8)
					SEED SOUTHERN TALLGRASS ROADSIDE
					ROLLED EROSION PREVENTION CAT 35
					FERTILIZER TYPE 3 (22-5-10)

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11/16/2024  
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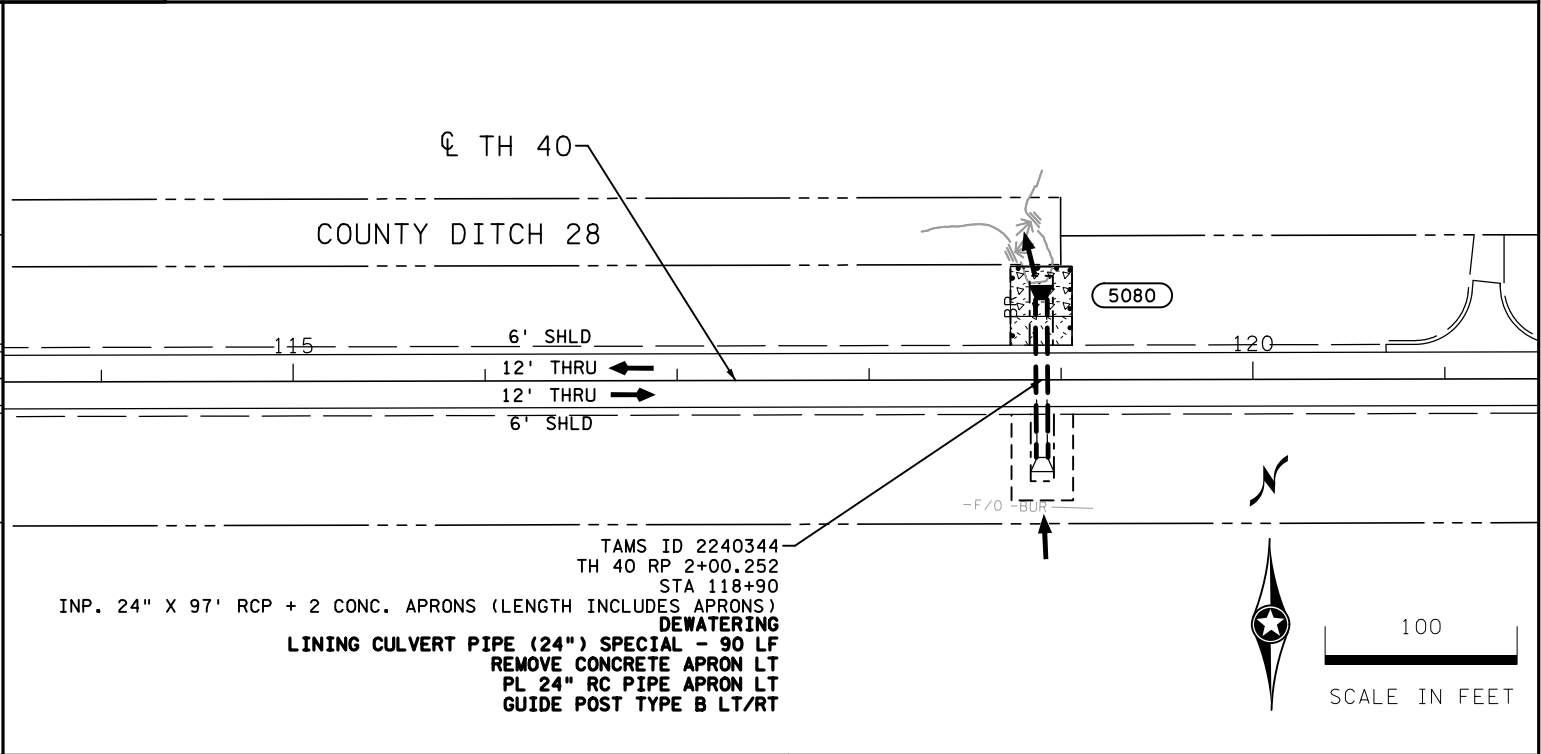
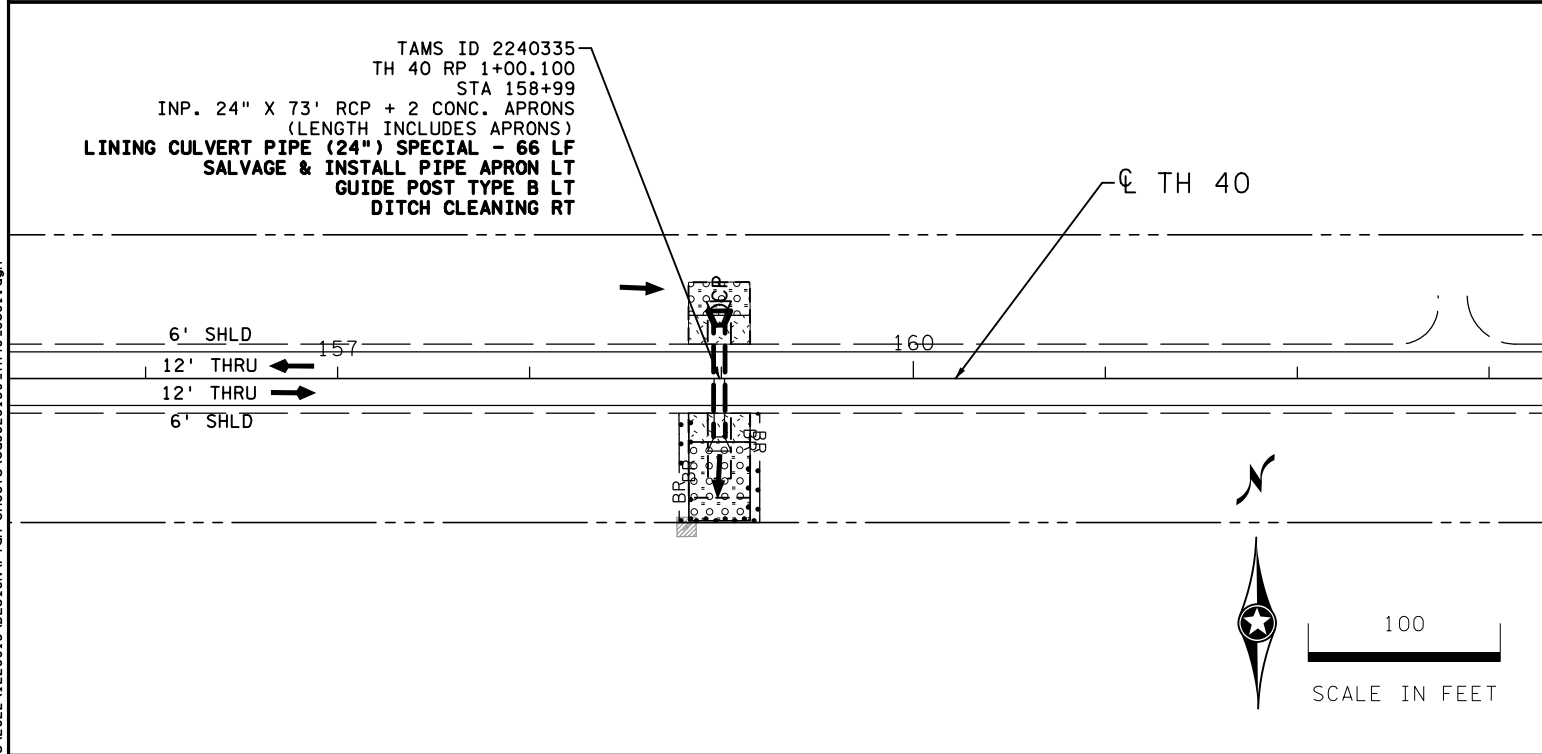
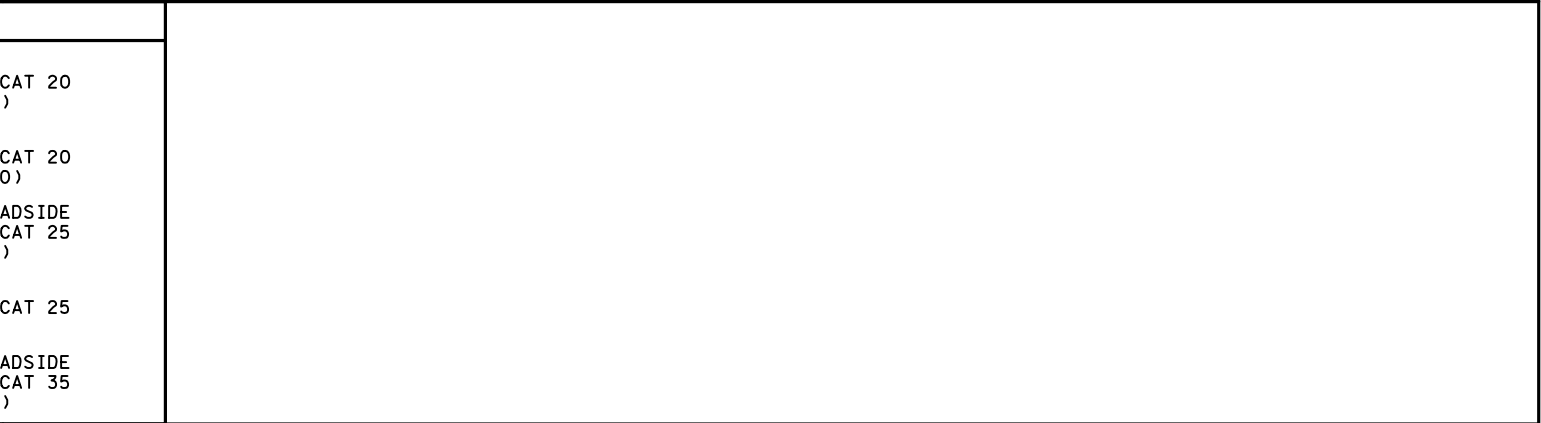
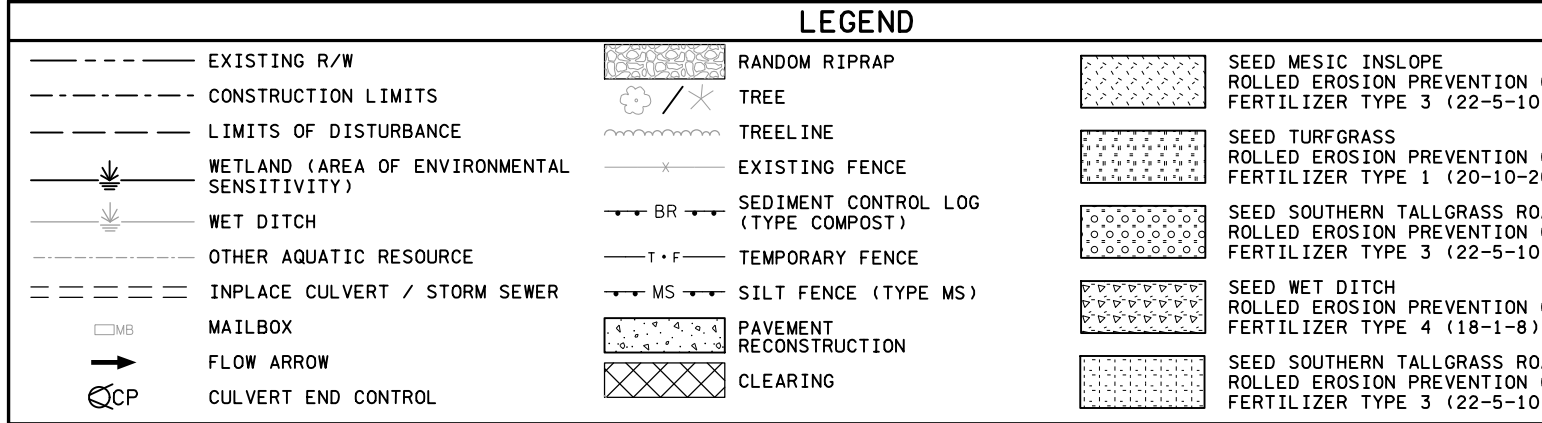
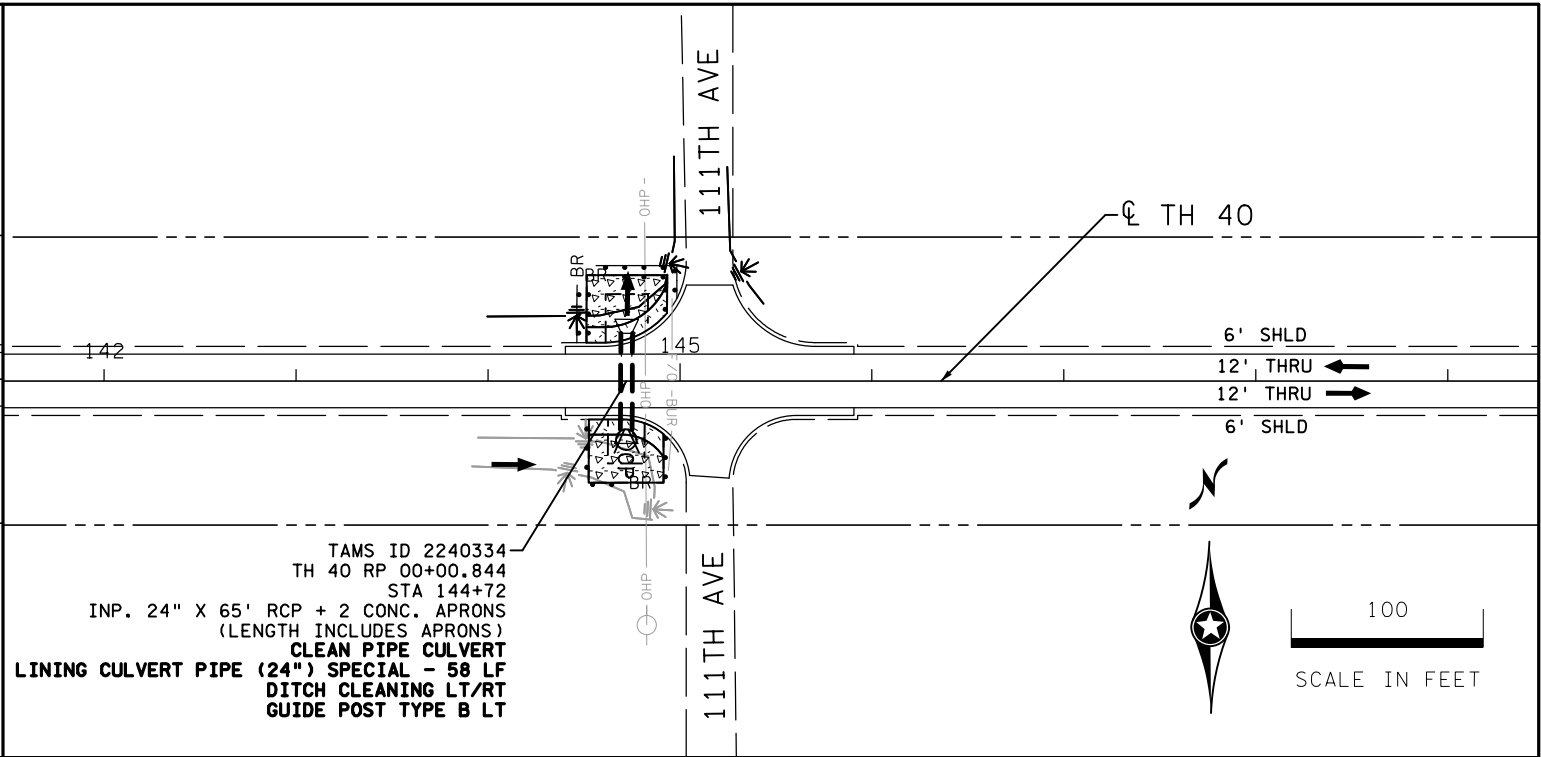
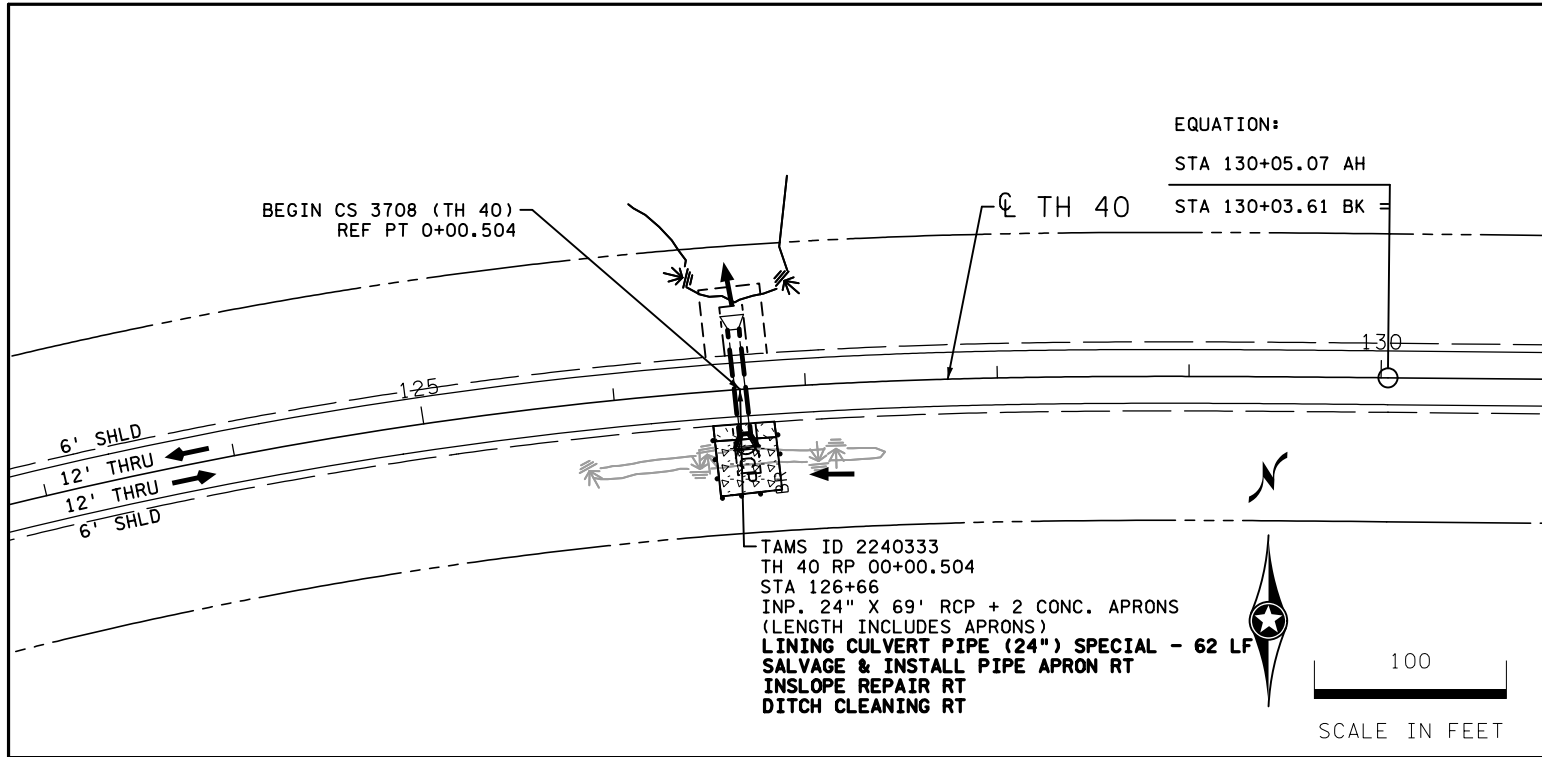
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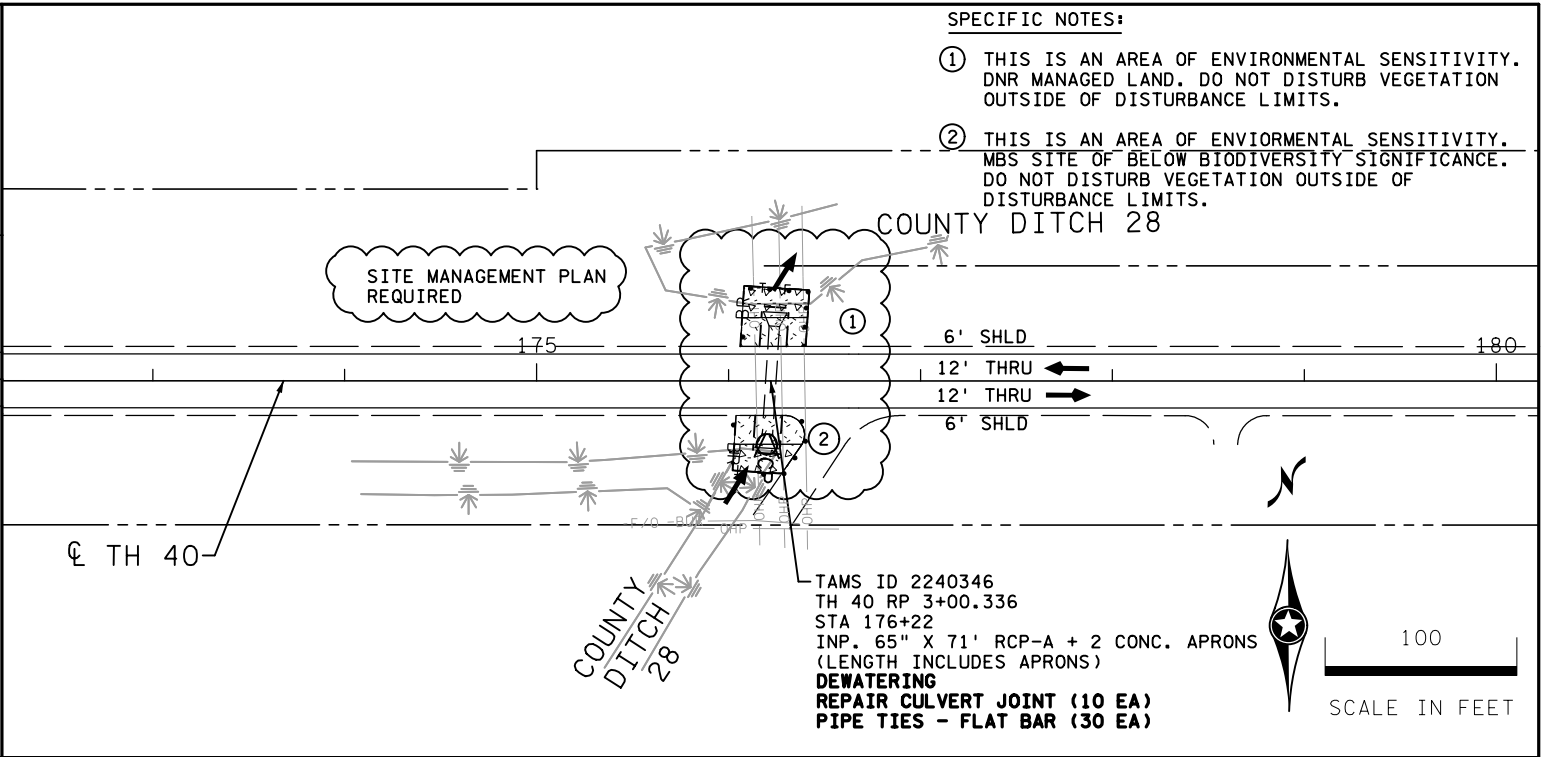
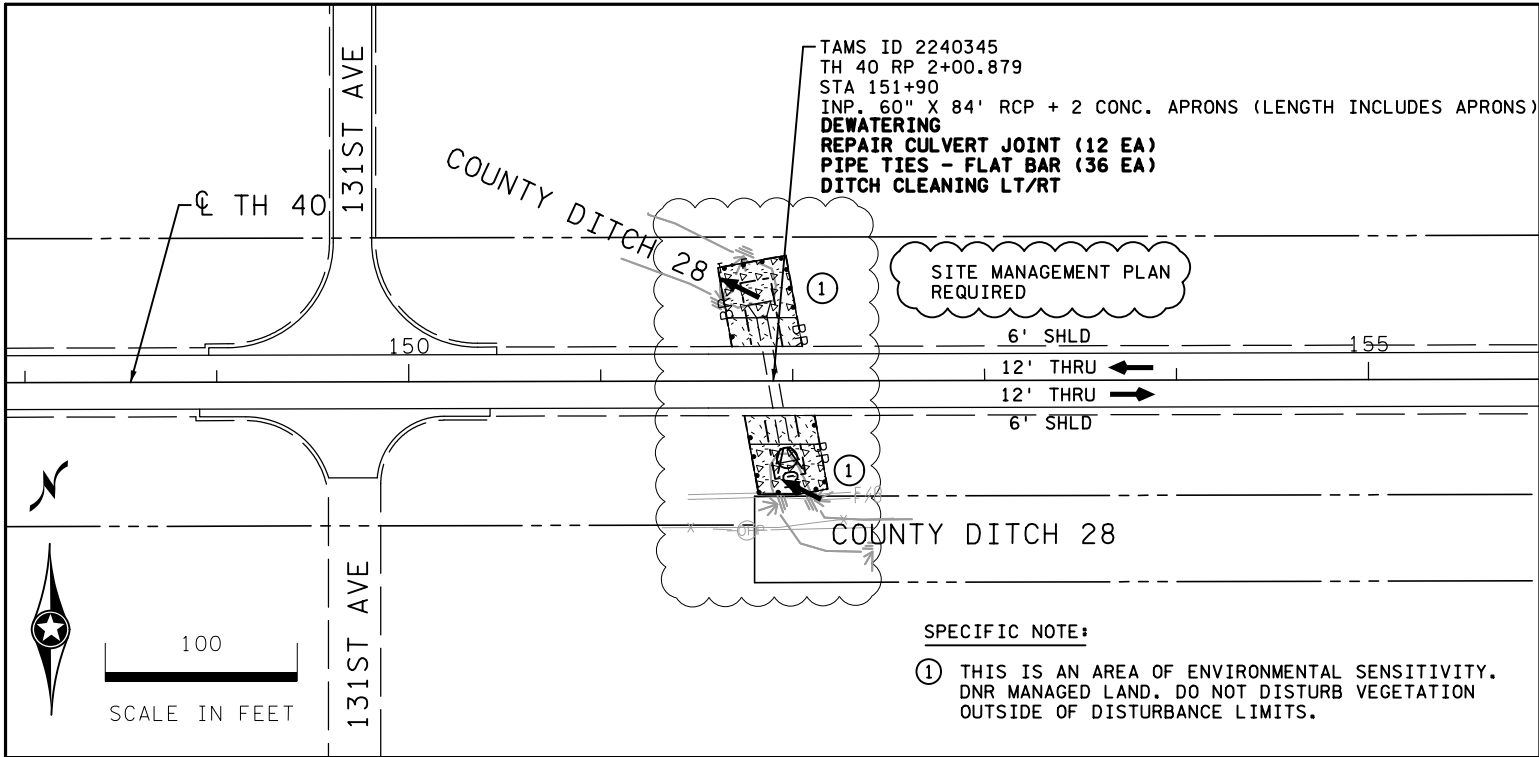
PRINT NAME: DAN SWANSON  
SIGNATURE:   
DATE: 09/19/24 LICENSE #: 54298

EROSION CONTROL & TURF ESTABLISHMENT PLANS  
TH 7 PRINSBURG

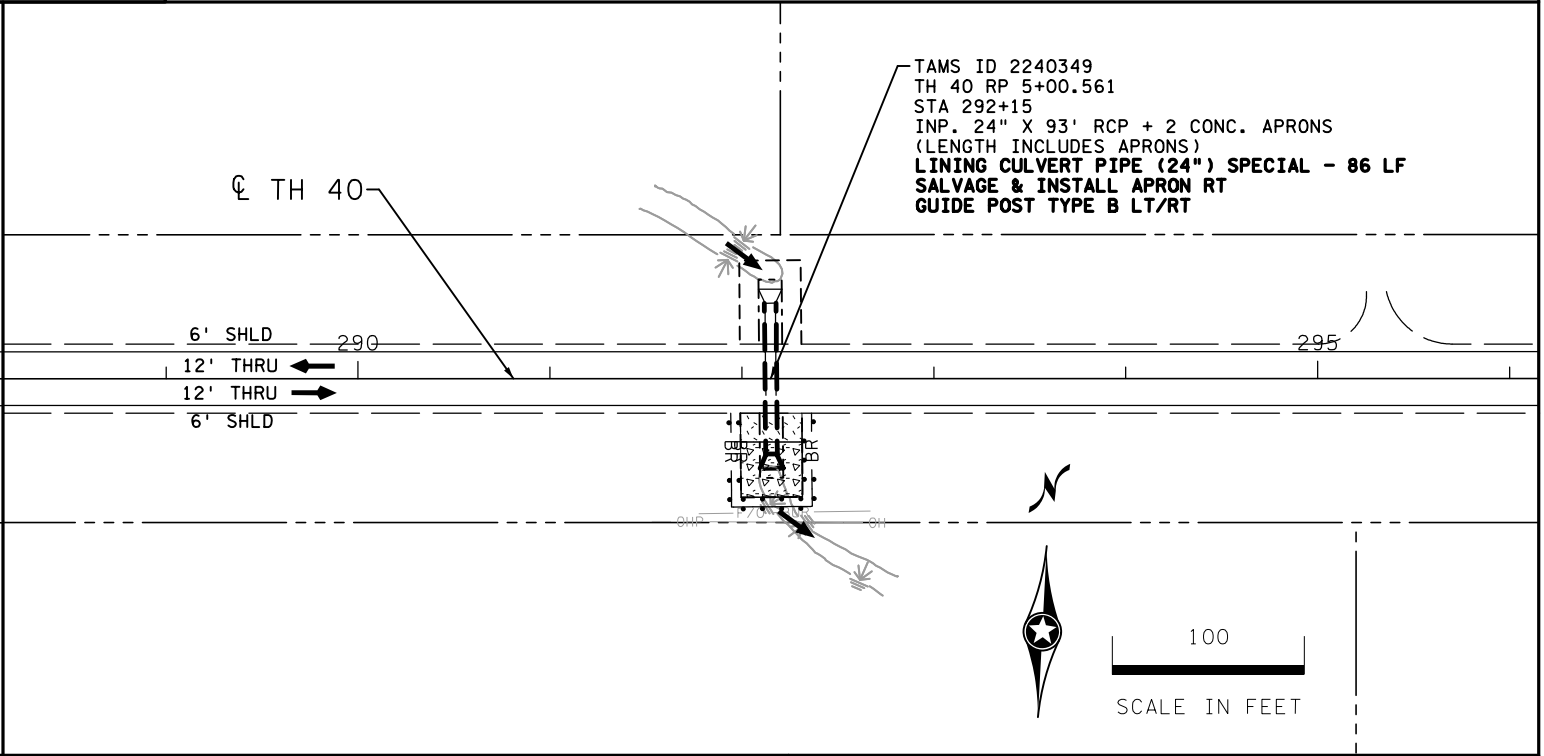
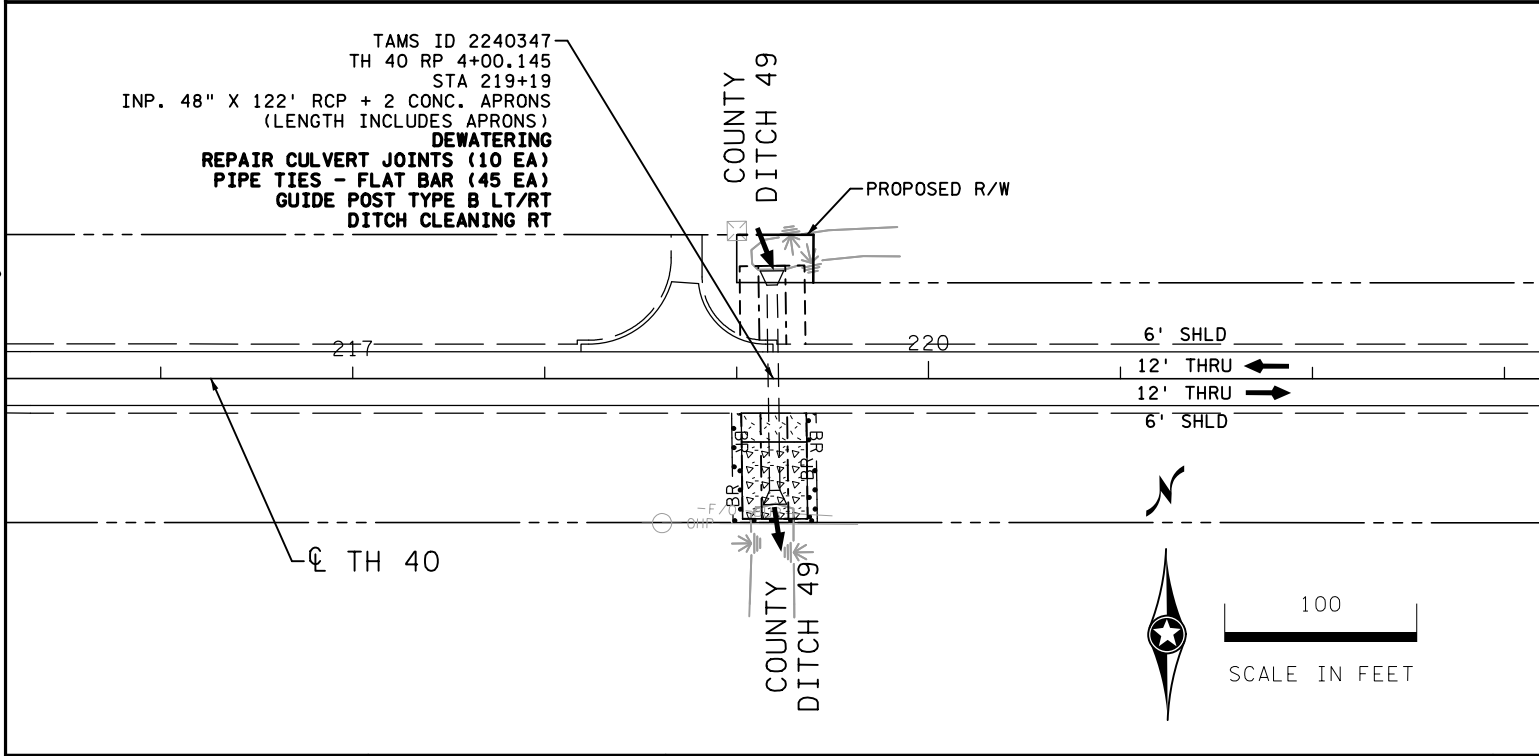
SP 8828-139

SHEET NO. 114 OF 212 SHEETS





LEGEND			
---	EXISTING R/W		RANDOM RIPRAP
---	CONSTRUCTION LIMITS		TREE
---	LIMITS OF DISTURBANCE		TREELINE
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE
---	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)
	MAILBOX		PAVEMENT RECONSTRUCTION
	FLOW ARROW		CLEARING
	CULVERT END CONTROL		SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
			SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
			SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)



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NO	DATE	DWN	CKD	REVISIONS

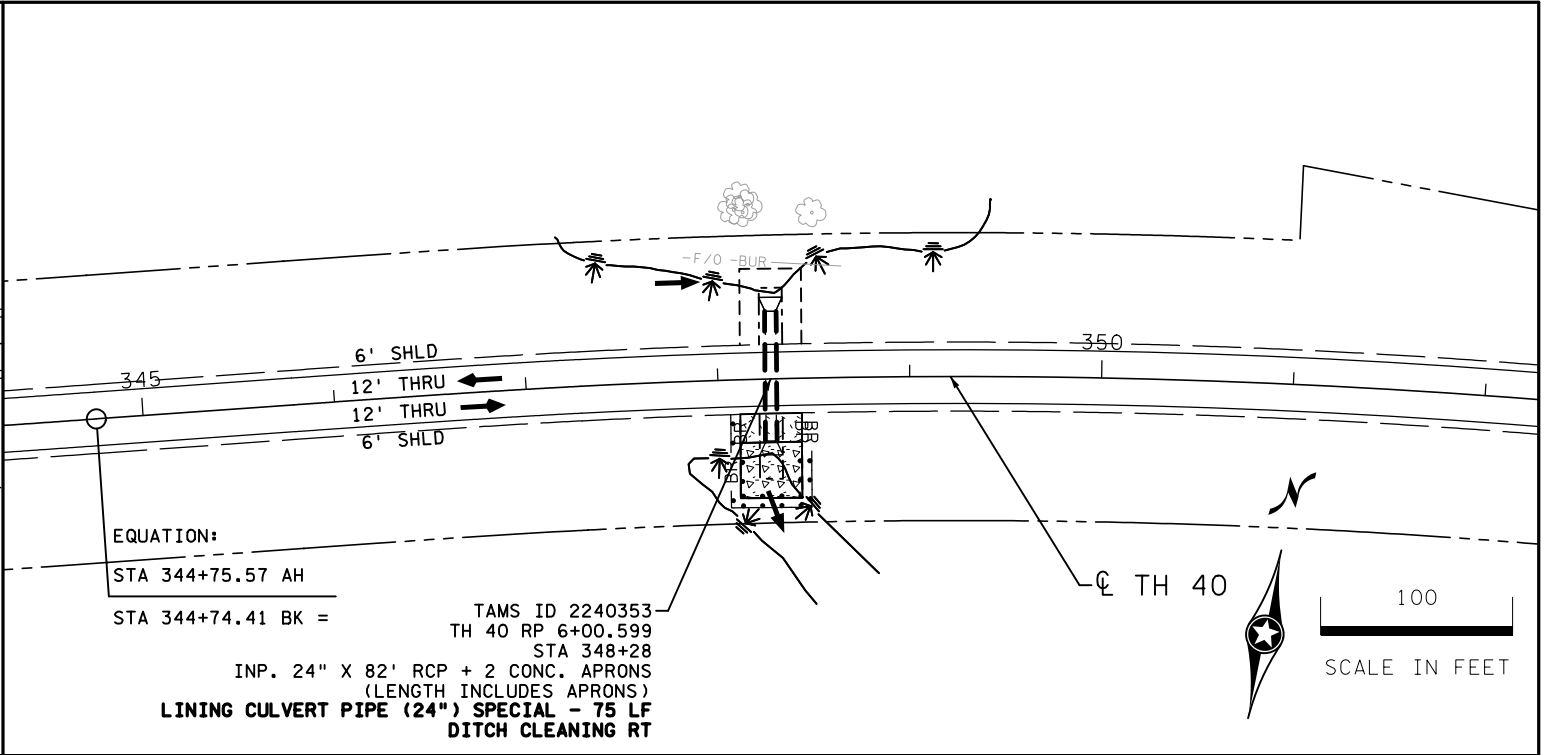
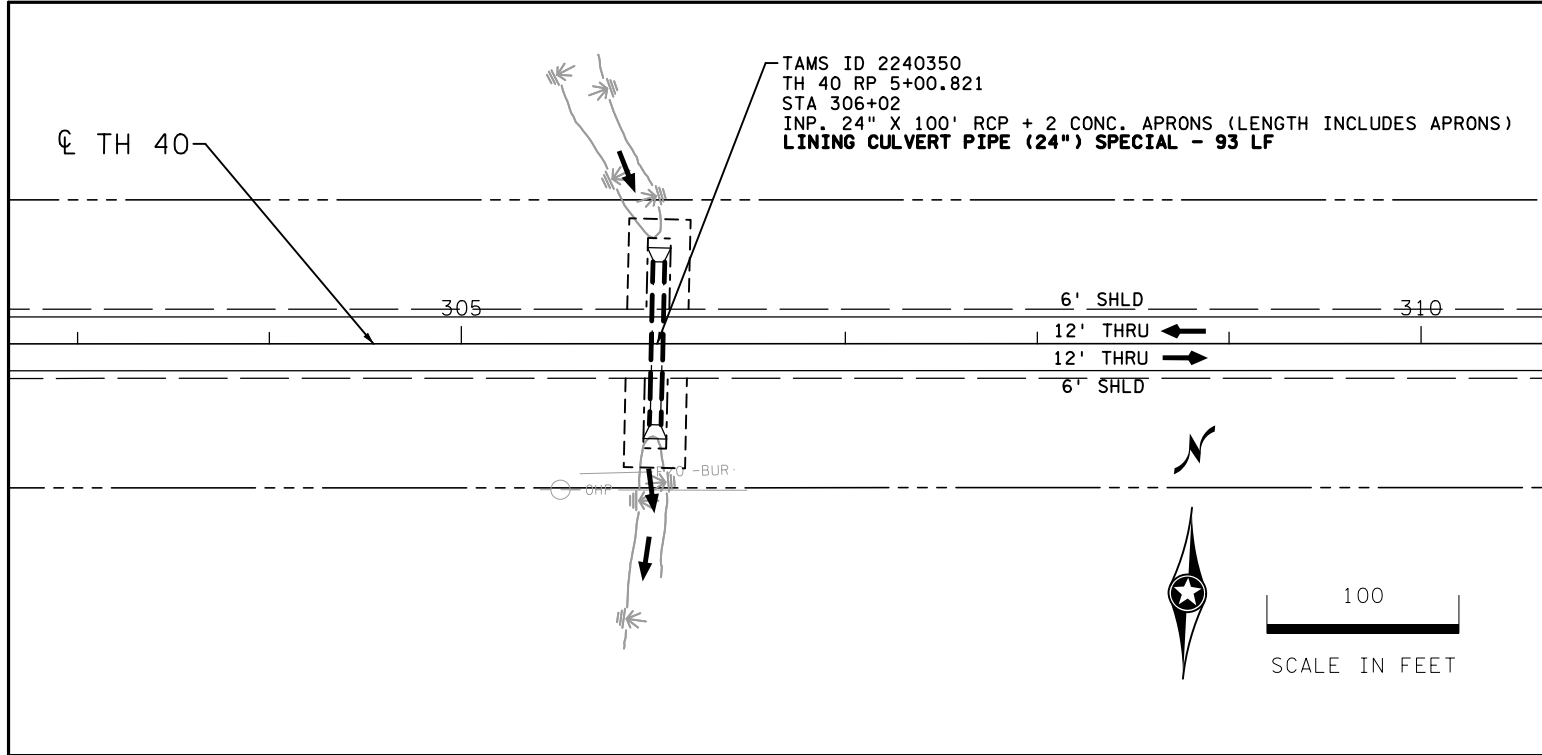


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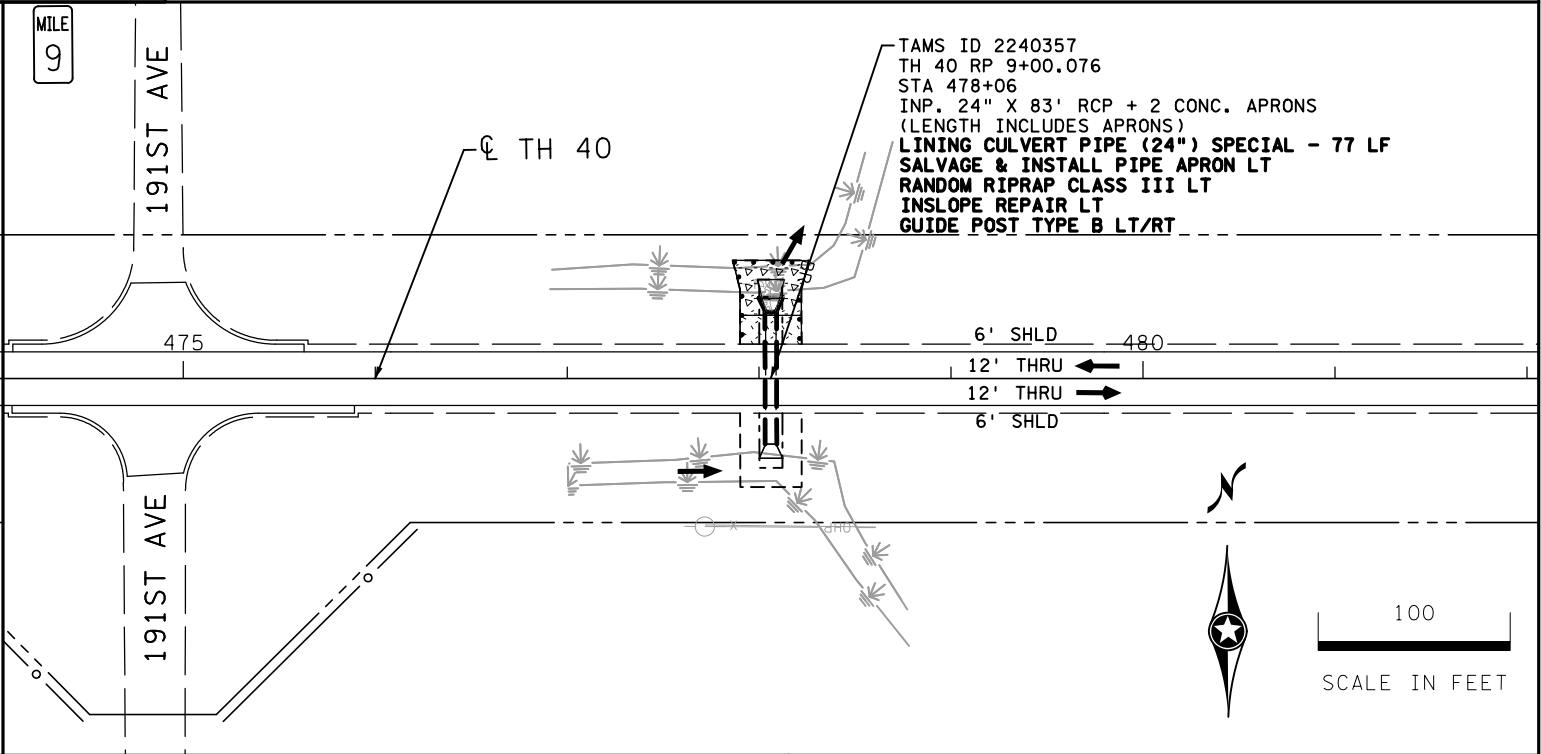
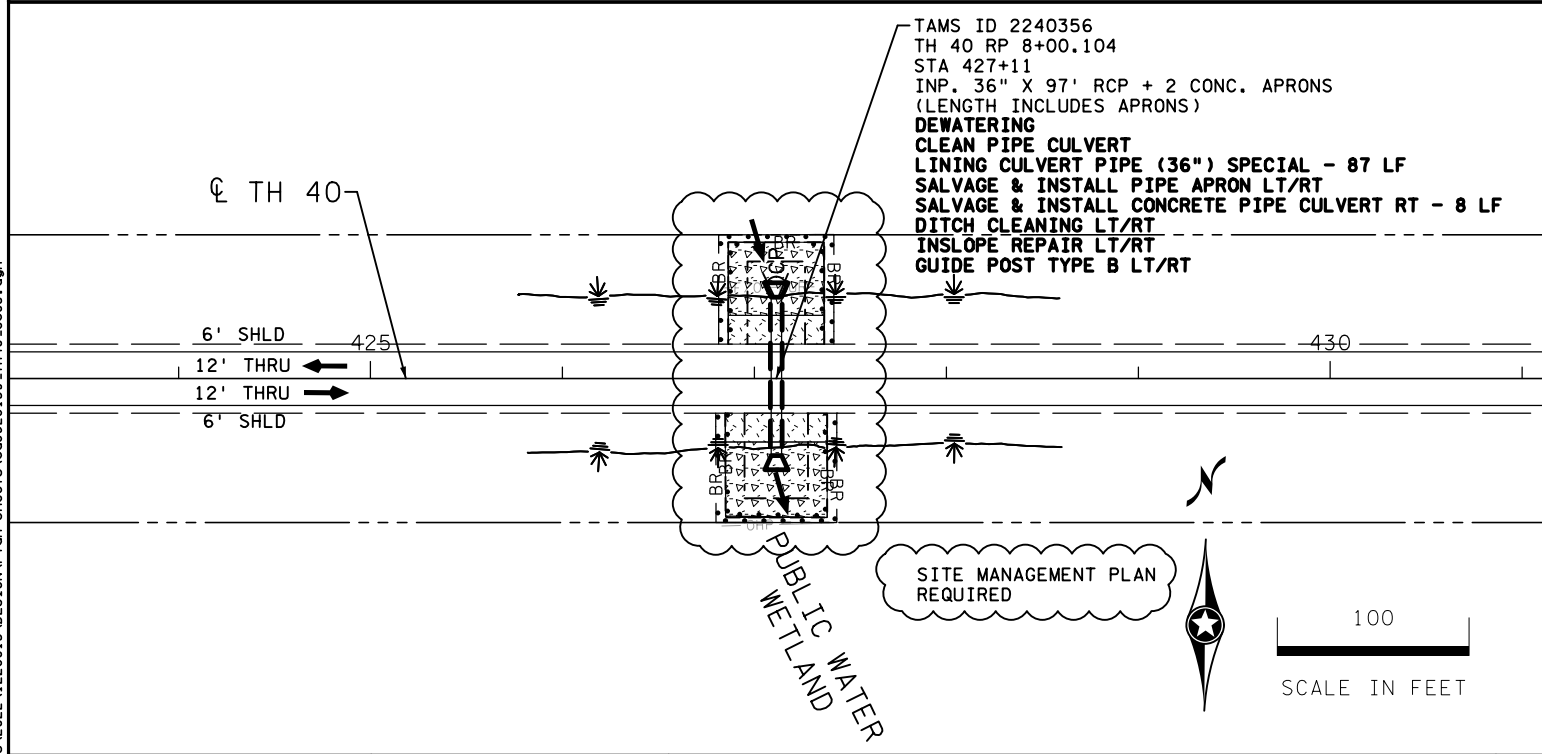
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SIGNATURE:   
DATE: 09/19/24 LICENSE #: 54298

EROSION CONTROL & TURF ESTABLISHMENT PLANS  
TH 40

SP 8828-139  
SHEET NO. 116 OF 212 SHEETS



LEGEND			
---	EXISTING R/W		RANDOM RIPRAP
---	CONSTRUCTION LIMITS		TREE
---	LIMITS OF DISTURBANCE		TREELINE
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE
==	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)
	MAILBOX		PAVEMENT RECONSTRUCTION
	FLOW ARROW		CLEARING
	CULVERT END CONTROL		SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
			SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
			SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)



NO	DATE	DWN	CKD	REVISIONS

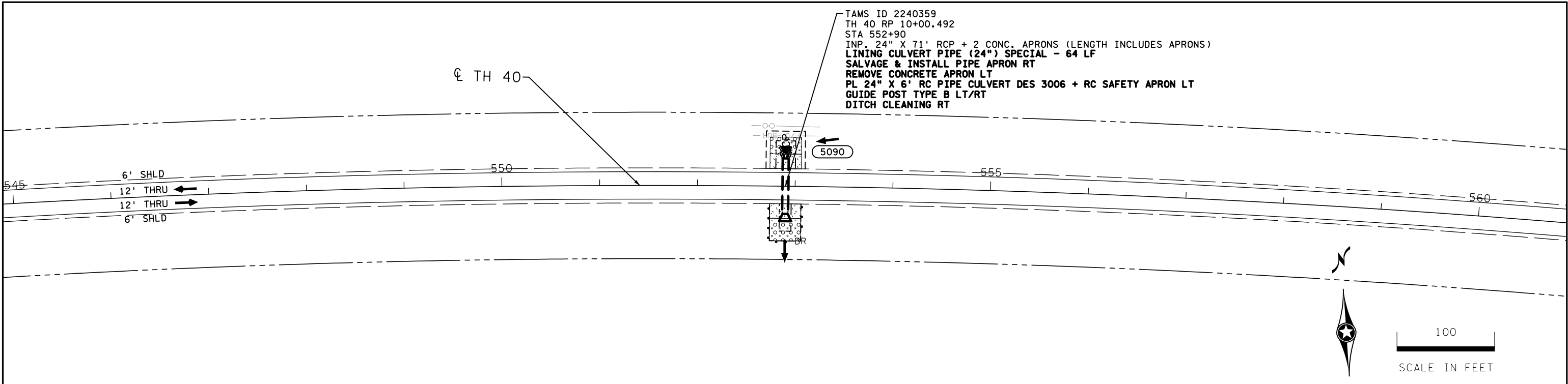


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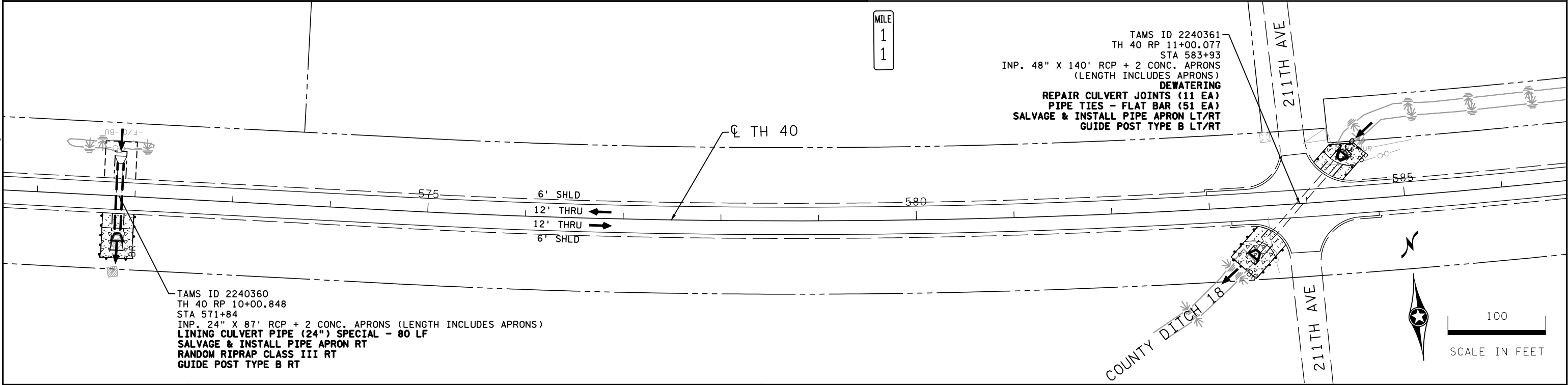
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SIGNATURE:   
DATE: 09/19/24 LICENSE #: 54298

EROSION CONTROL & TURF ESTABLISHMENT PLANS  
TH 40

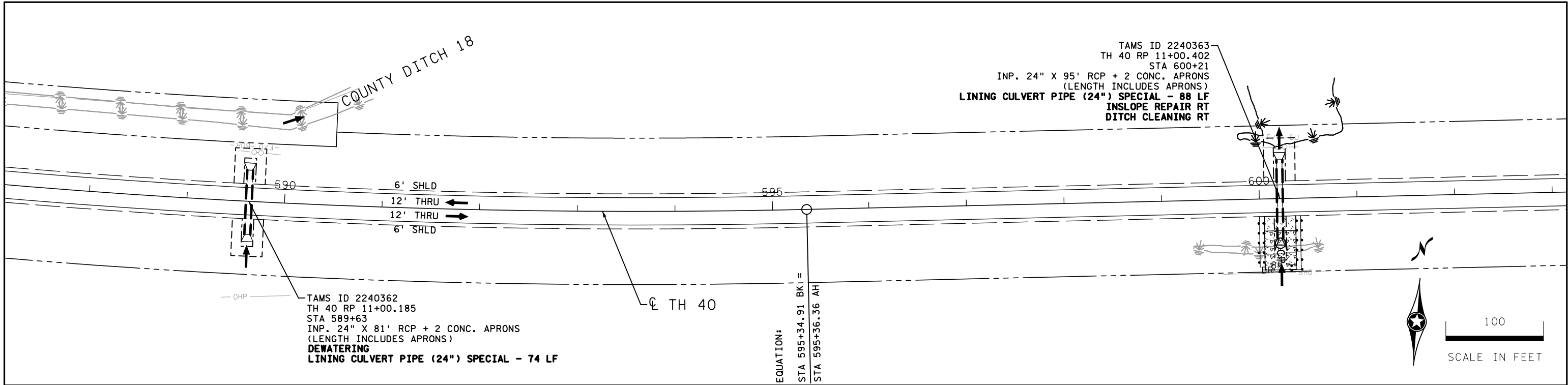
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SHEET NO. 117 OF 212 SHEETS



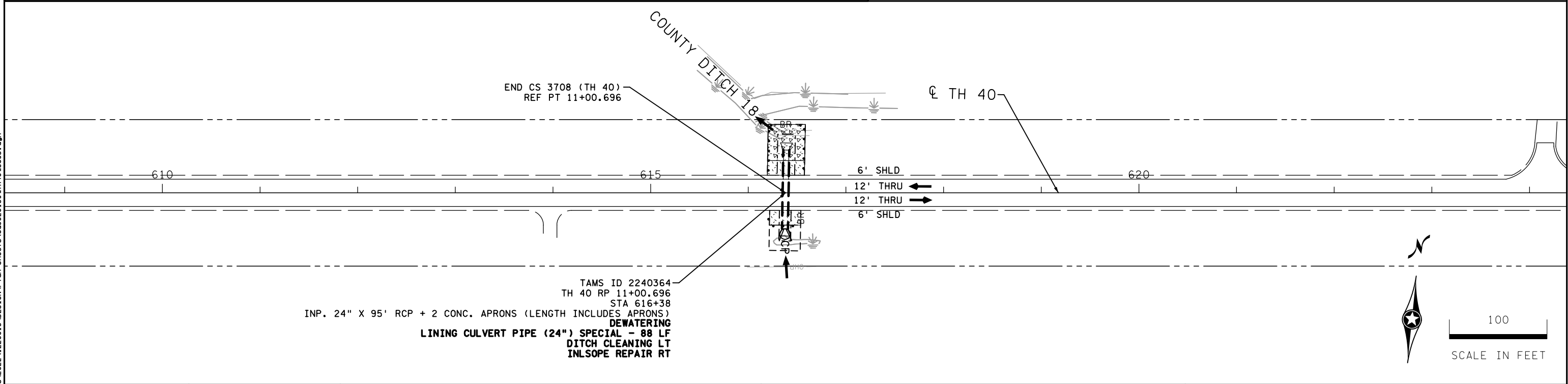
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---	EXISTING R/W		RANDOM RIPRAP
---	CONSTRUCTION LIMITS		TREE
---	LIMITS OF DISTURBANCE		TREELINE
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE
---	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)
	MAILBOX		PAVEMENT RECONSTRUCTION
	FLOW ARROW		CLEARING
	CULVERT END CONTROL		SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
			SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
			SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)







LEGEND			
---	EXISTING R/W		RANDOM RIPRAP
---	CONSTRUCTION LIMITS		TREE
---	LIMITS OF DISTURBANCE		TREELINE
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE
---	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)
	MAILBOX		PAVEMENT RECONSTRUCTION
	FLOW ARROW		CLEARING
	CULVERT END CONTROL		SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
			SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
			SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)



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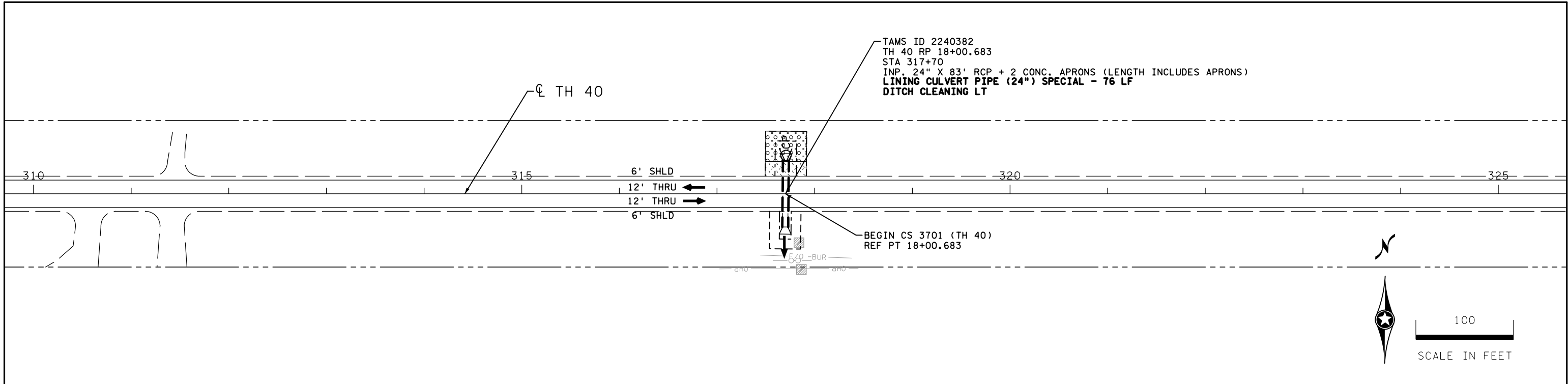


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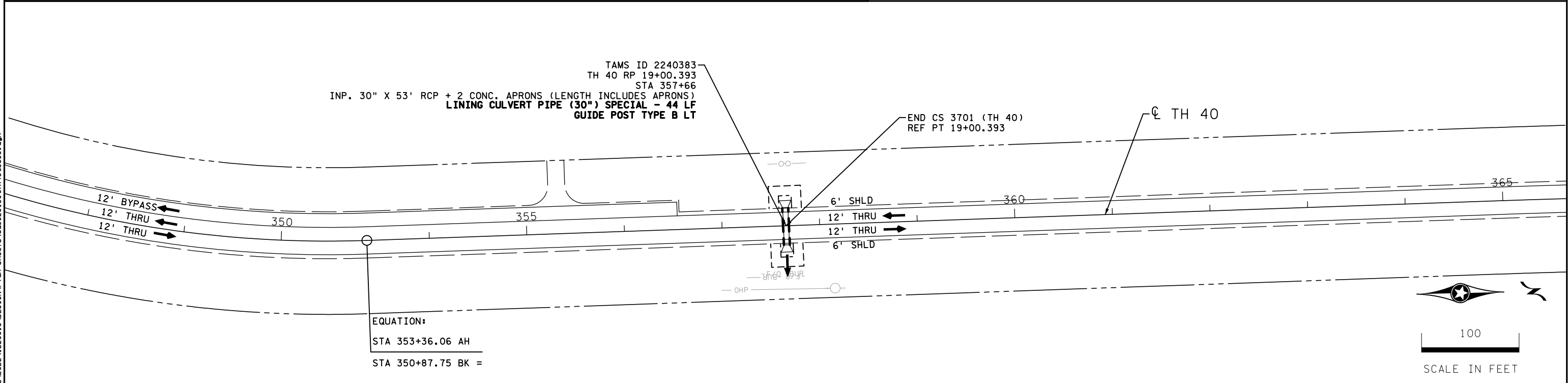
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DATE 09/19/24 LICENSE # 54298

EROSION CONTROL & TURF ESTABLISHMENT PLANS  
TH 40

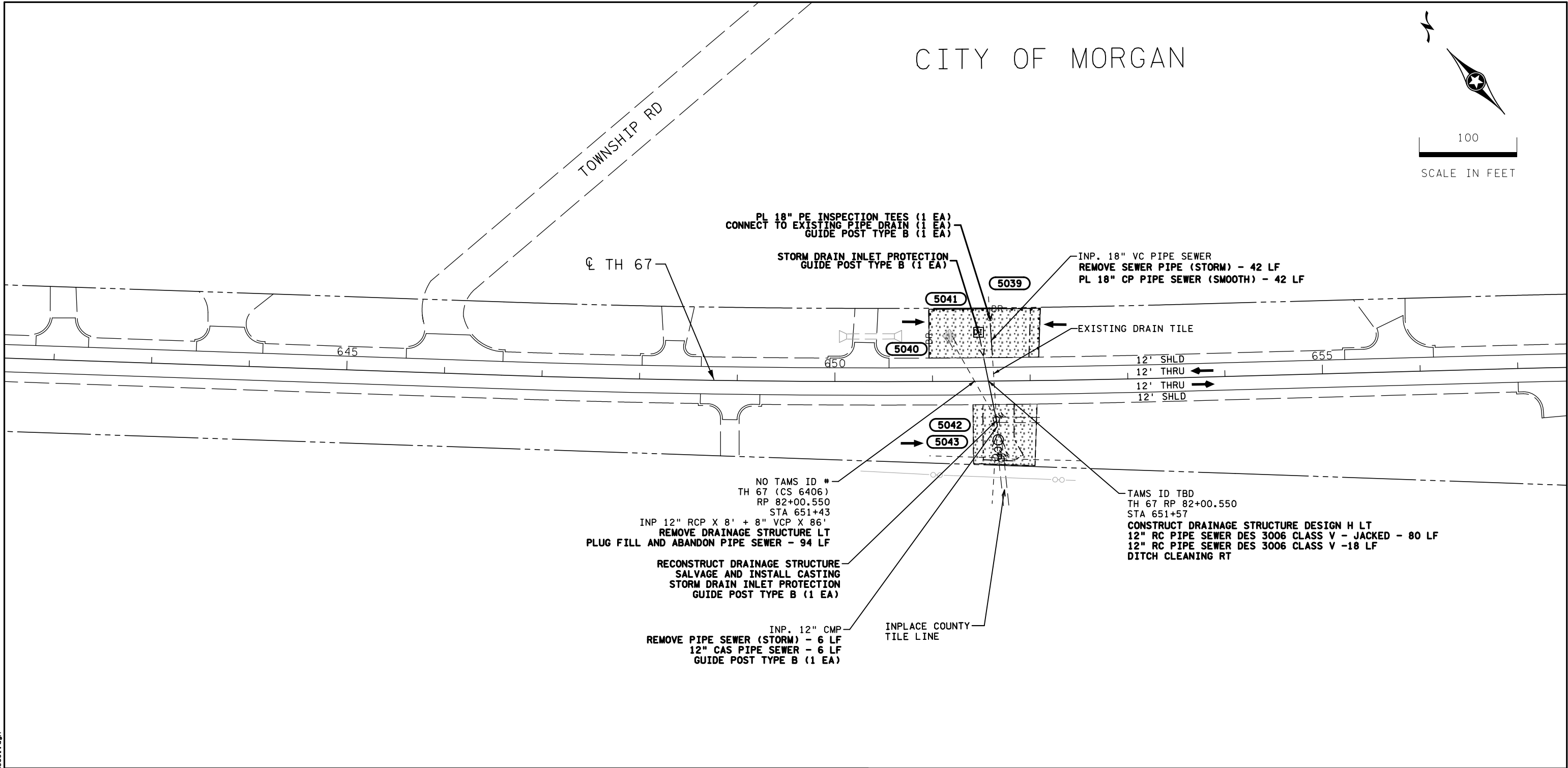
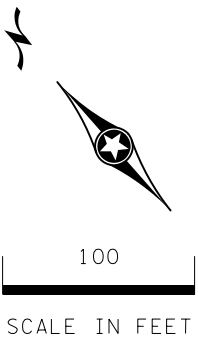
SP 8828-139  
SHEET NO. 119 OF 212 SHEETS



LEGEND			
---	EXISTING R/W		RANDOM RIPRAP
---	CONSTRUCTION LIMITS		TREE
---	LIMITS OF DISTURBANCE		TREELINE
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE
==	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)
	MAILBOX		PAVEMENT RECONSTRUCTION
	FLOW ARROW		CLEARING
	CULVERT END CONTROL		SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
			SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
			SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)



CITY OF MORGAN



LEGEND

---	EXISTING R/W		RANDOM RIPRAP		SEED MESIC INSLOPE
---	CONSTRUCTION LIMITS		TREE		ROLLED EROSION PREVENTION CAT 20
---	LIMITS OF DISTURBANCE		TREELINE		FERTILIZER TYPE 3 (22-5-10)
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE		SEED TURFGRASS
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)		ROLLED EROSION PREVENTION CAT 20
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE		FERTILIZER TYPE 1 (20-10-20)
==	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)		SEED SOUTHERN TALLGRASS ROADSIDE
	MAILBOX		PAVEMENT RECONSTRUCTION		ROLLED EROSION PREVENTION CAT 25
	FLOW ARROW		CLEARING		FERTILIZER TYPE 3 (22-5-10)
	CULVERT END CONTROL				SEED WET DITCH

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PRINT NAME: DAN SWANSON  
SIGNATURE:   
DATE: 09/19/24 LICENSE #: 54298

EROSION CONTROL & TURF ESTABLISHMENT PLANS  
TH 67

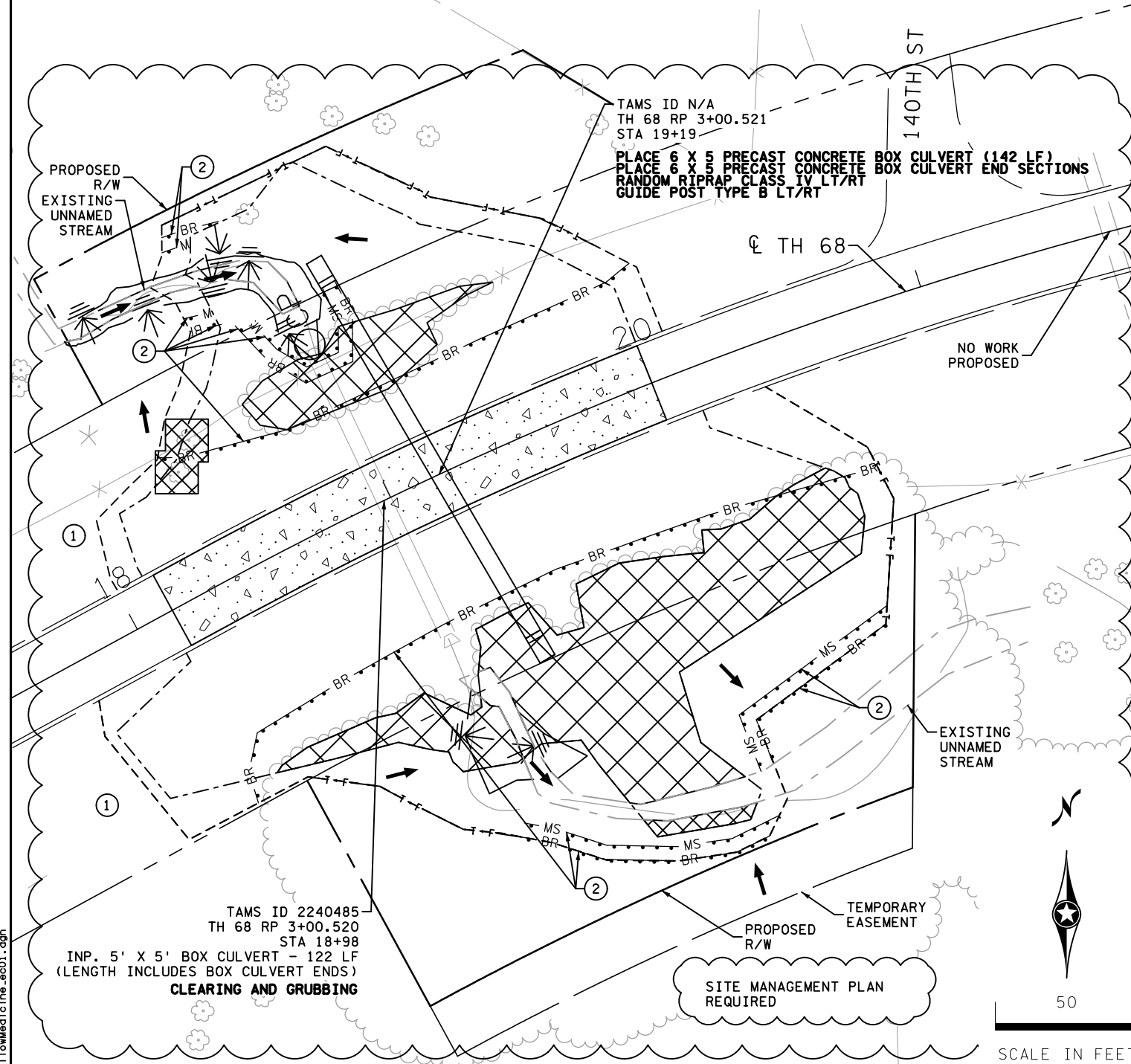
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SHEET NO. 121 OF 212 SHEETS

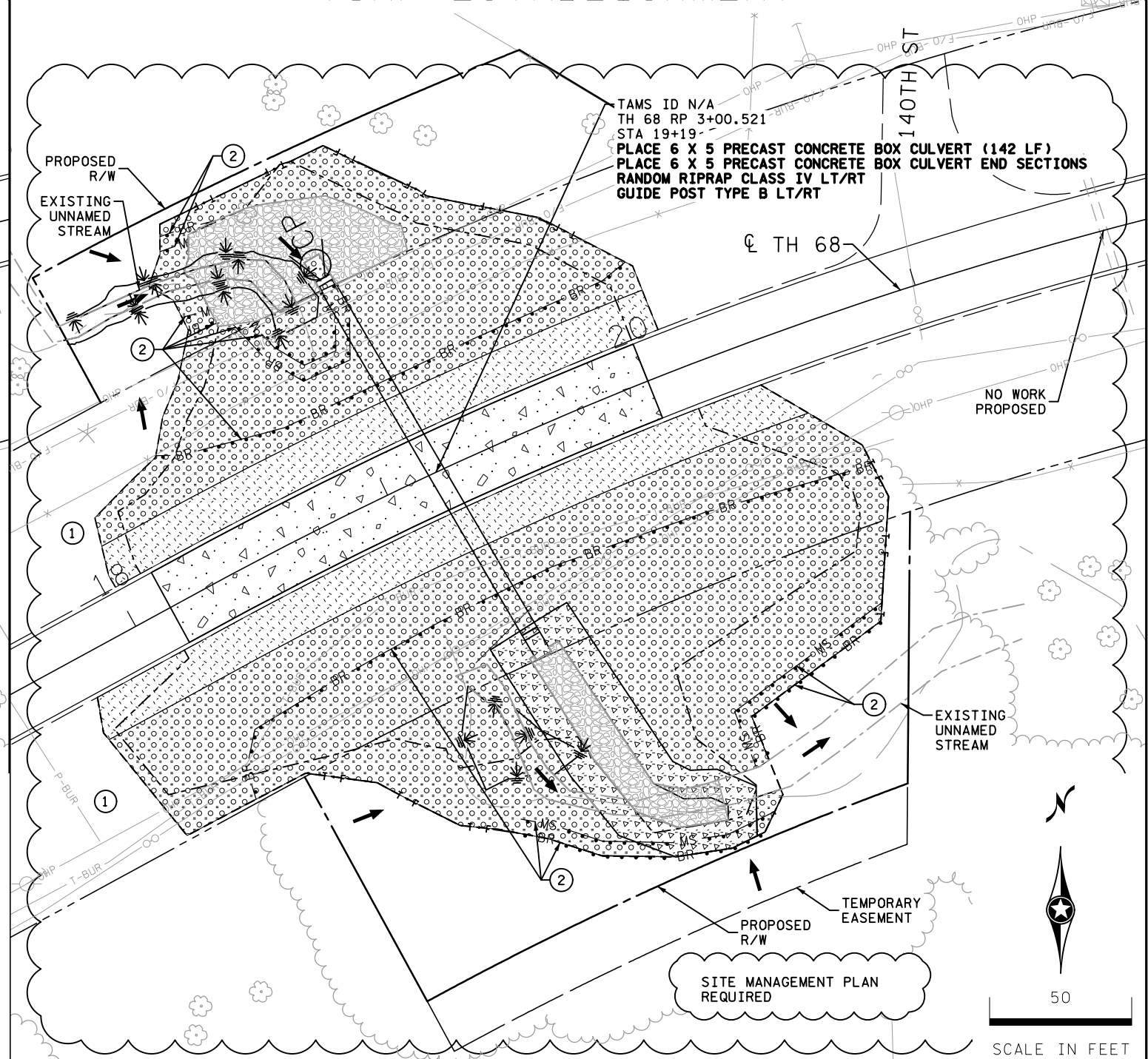
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# EROSION CONTROL



# TURF ESTABLISHMENT



## LEGEND

EXISTING R/W	RANDOM RIPRAP	SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
CONSTRUCTION LIMITS	TREE	SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
LIMITS OF DISTURBANCE	TREELINE	SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)	EXISTING FENCE	SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
WET DITCH	SEDIMENT CONTROL LOG (TYPE COMPOST)	SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)
OTHER AQUATIC RESOURCE	TEMPORARY FENCE	
INPLACE CULVERT / STORM SEWER	SILT FENCE (TYPE MS)	
MAILBOX	PAVEMENT RECONSTRUCTION	
FLOW ARROW	CLEARING	
CULVERT END CONTROL		

## SPECIFIC NOTES:

- THIS IS AN AREA OF ENVIRONMENTAL SENSITIVITY. PROTECTED FEATURES, MBS SITE OF MODERATE BIODIVERSITY SIGNIFICANCE, AND DNR NATIVE PLANTS ARE PRESENT. DO NOT DISTURB VEGETATION OUTSIDE OF DISTURBANCE LIMITS.
- REMOVE AFTER CULVERT REPLACEMENTS PRIOR TO GRADING.

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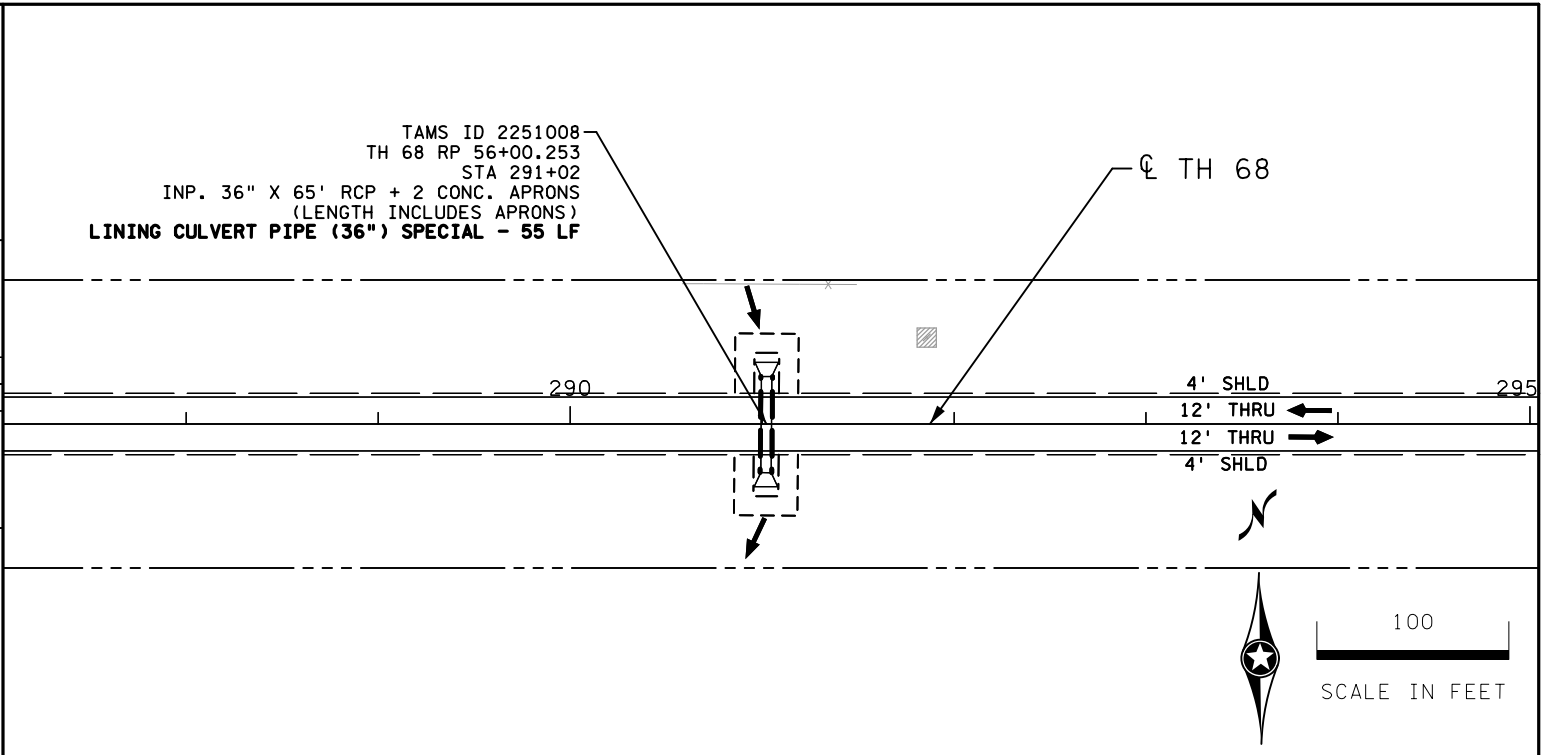
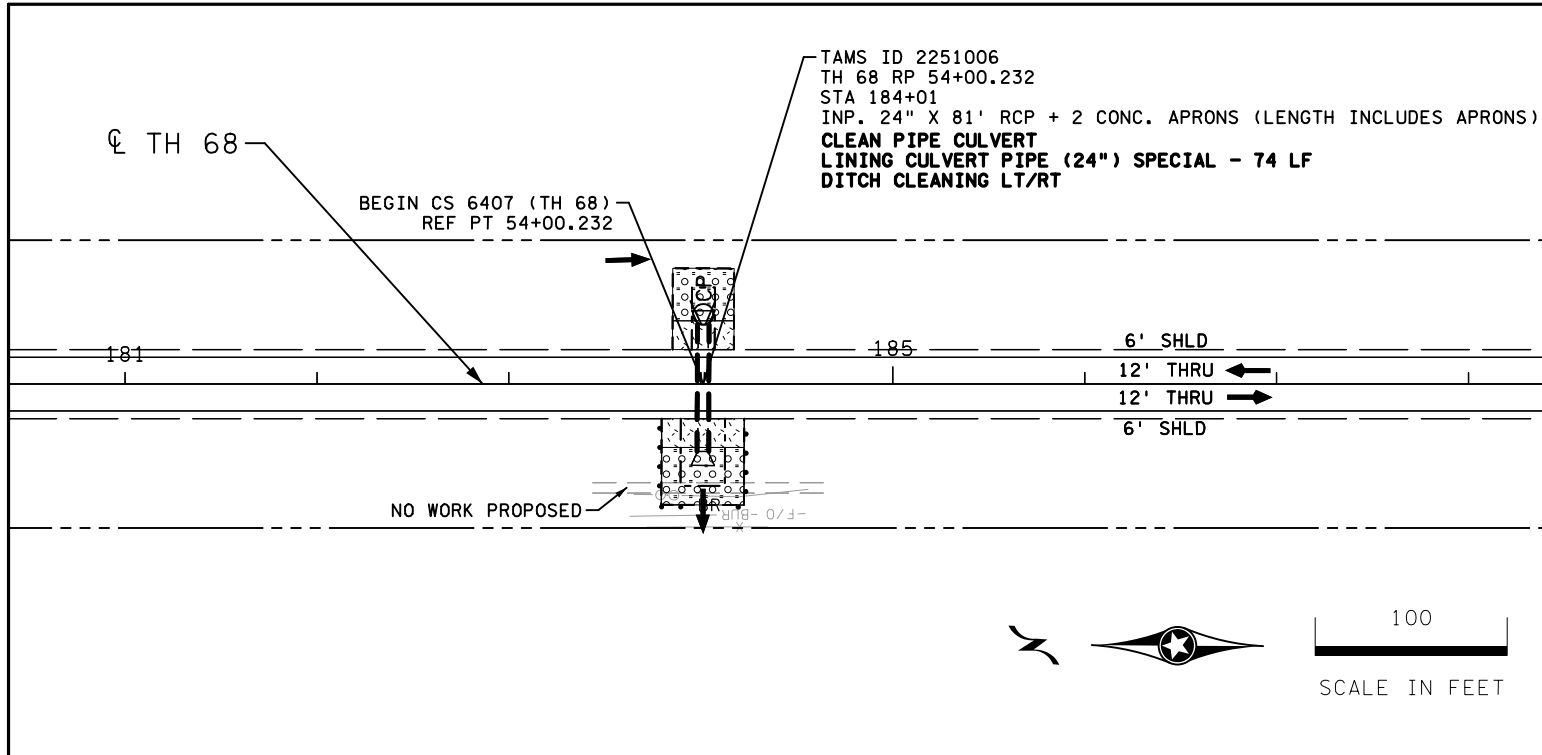
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

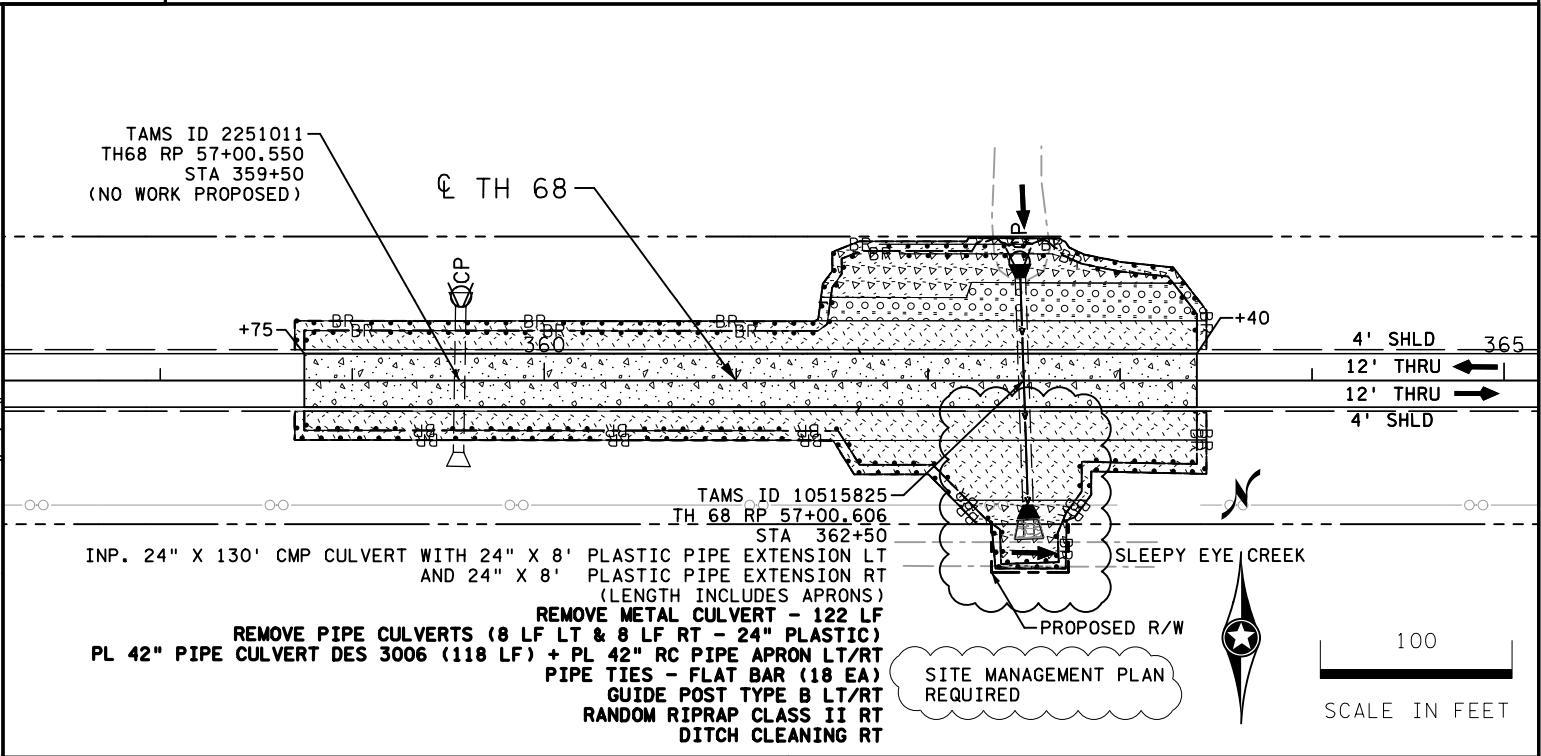
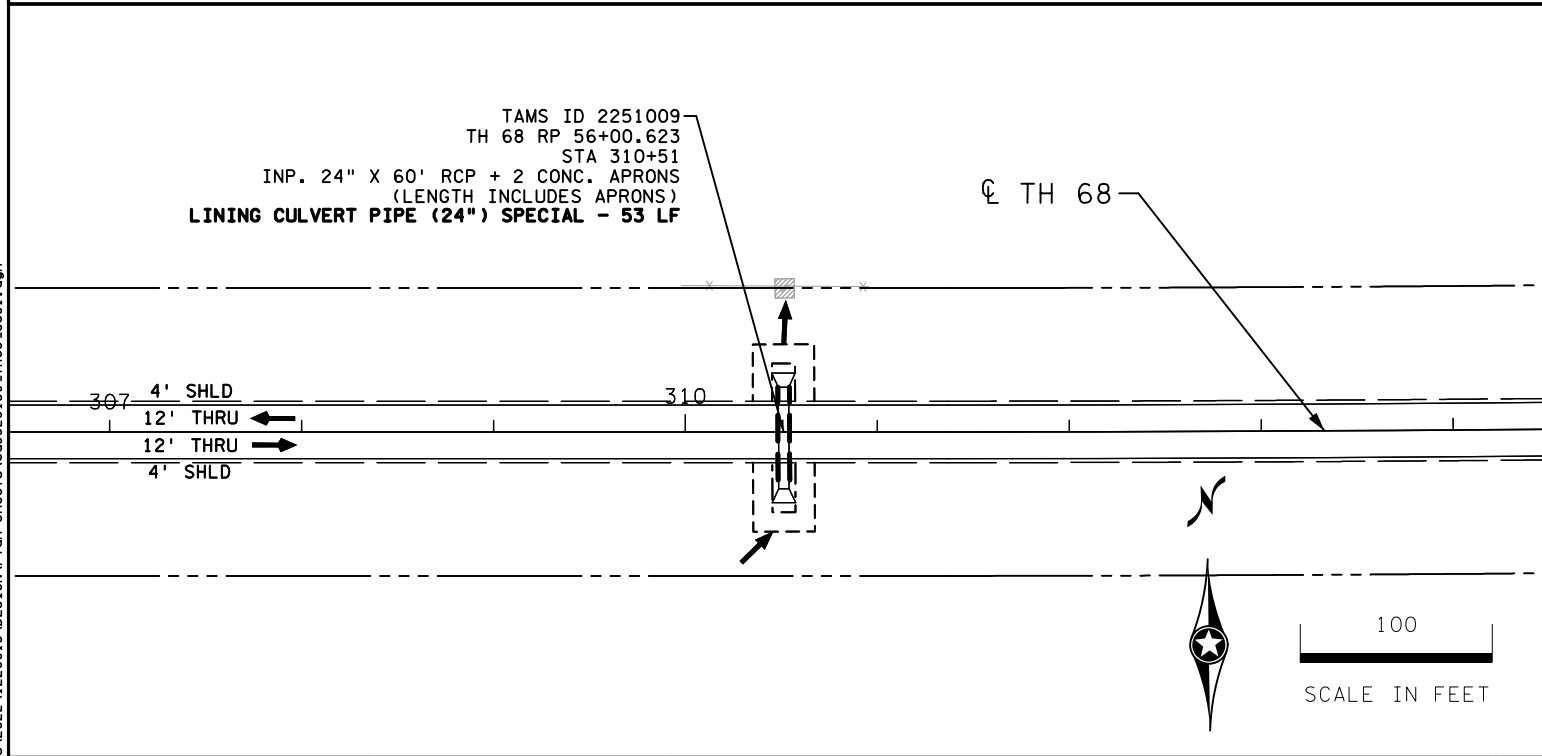
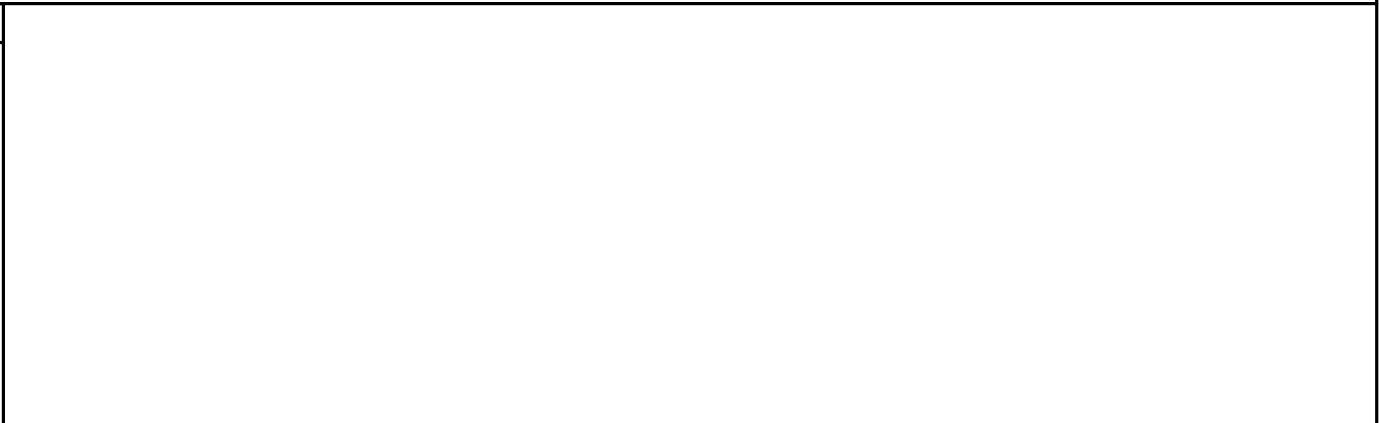
EROSION CONTROL & TURF ESTABLISHMENT PLANS  
TH 68

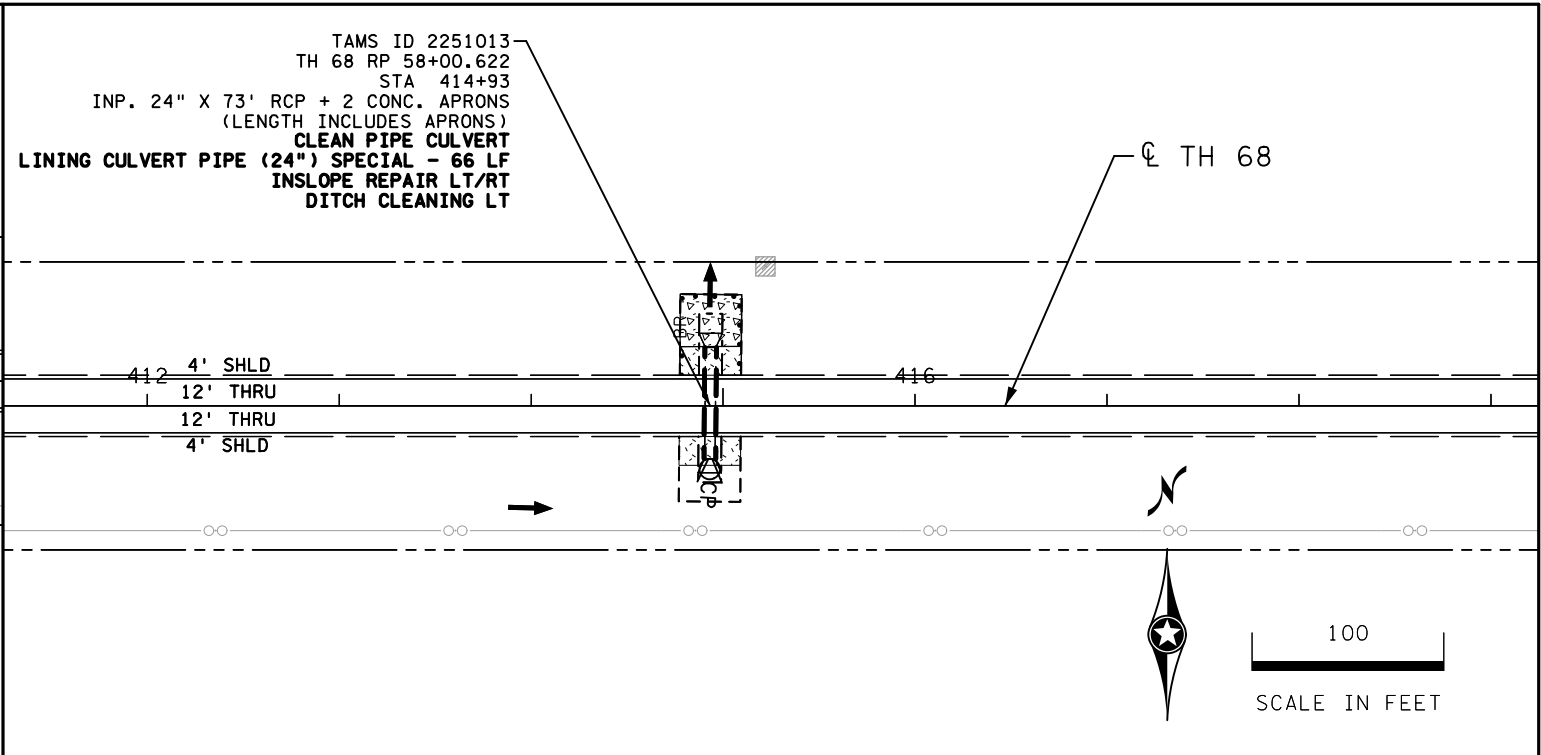
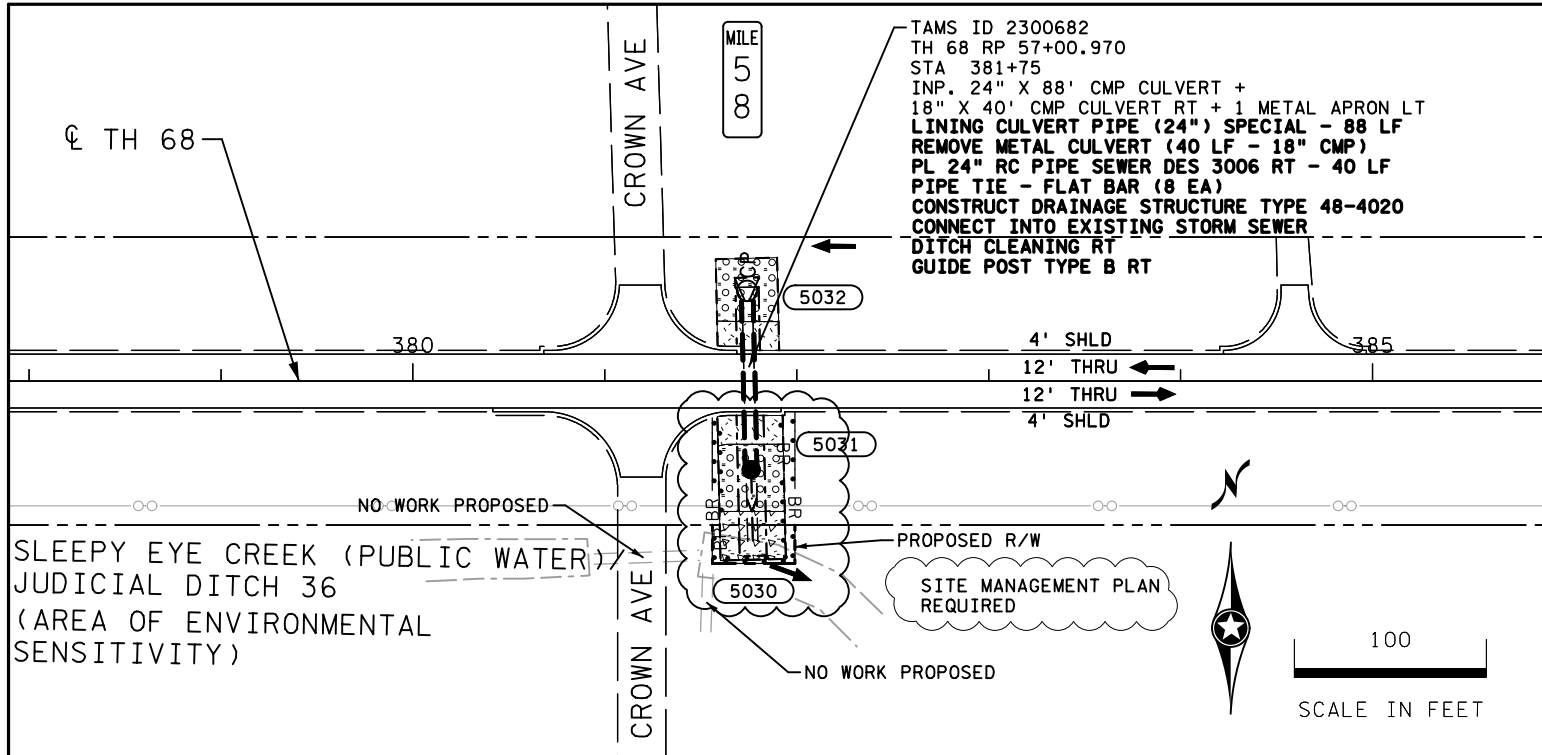
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SHEET NO. 122 OF 212 SHEETS



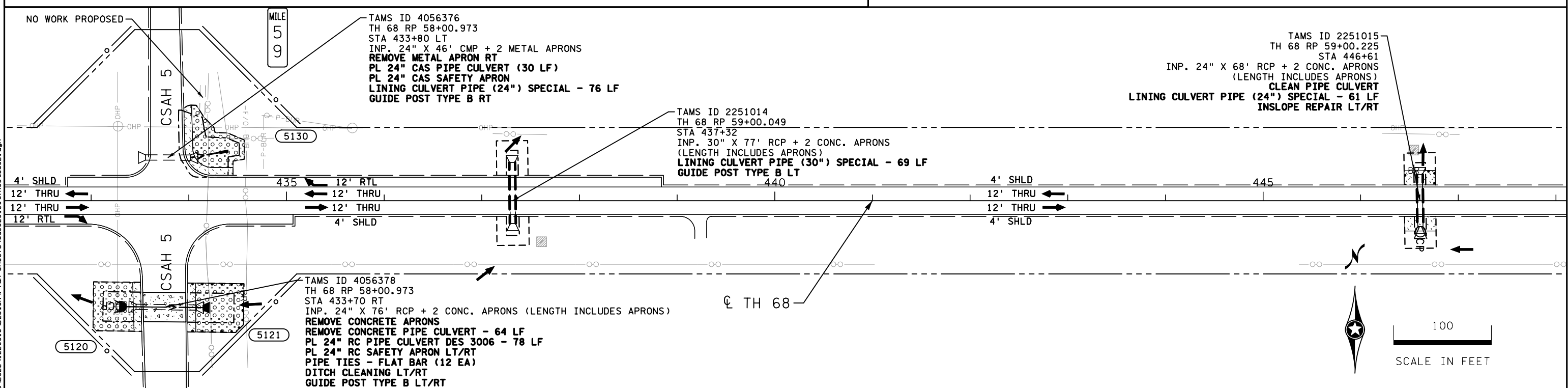
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---	CONSTRUCTION LIMITS		TREE
---	LIMITS OF DISTURBANCE		TREELINE
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE
---	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)
	MAILBOX		PAVEMENT RECONSTRUCTION
	FLOW ARROW		CLEARING
	CULVERT END CONTROL		SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
			SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
			SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)





LEGEND

---	EXISTING R/W		RANDOM RIPRAP		SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
---	CONSTRUCTION LIMITS		TREE		SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
---	LIMITS OF DISTURBANCE		TREELINE		SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE		SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)		SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)
---	OTHER AQUATIC RESOURCE		BR		TEMPORARY FENCE
---	INPLACE CULVERT / STORM SEWER		T-F		SILT FENCE (TYPE MS)
	MAILBOX		MS		PAVEMENT RECONSTRUCTION
	FLOW ARROW		CLEARING		
	CULVERT END CONTROL				



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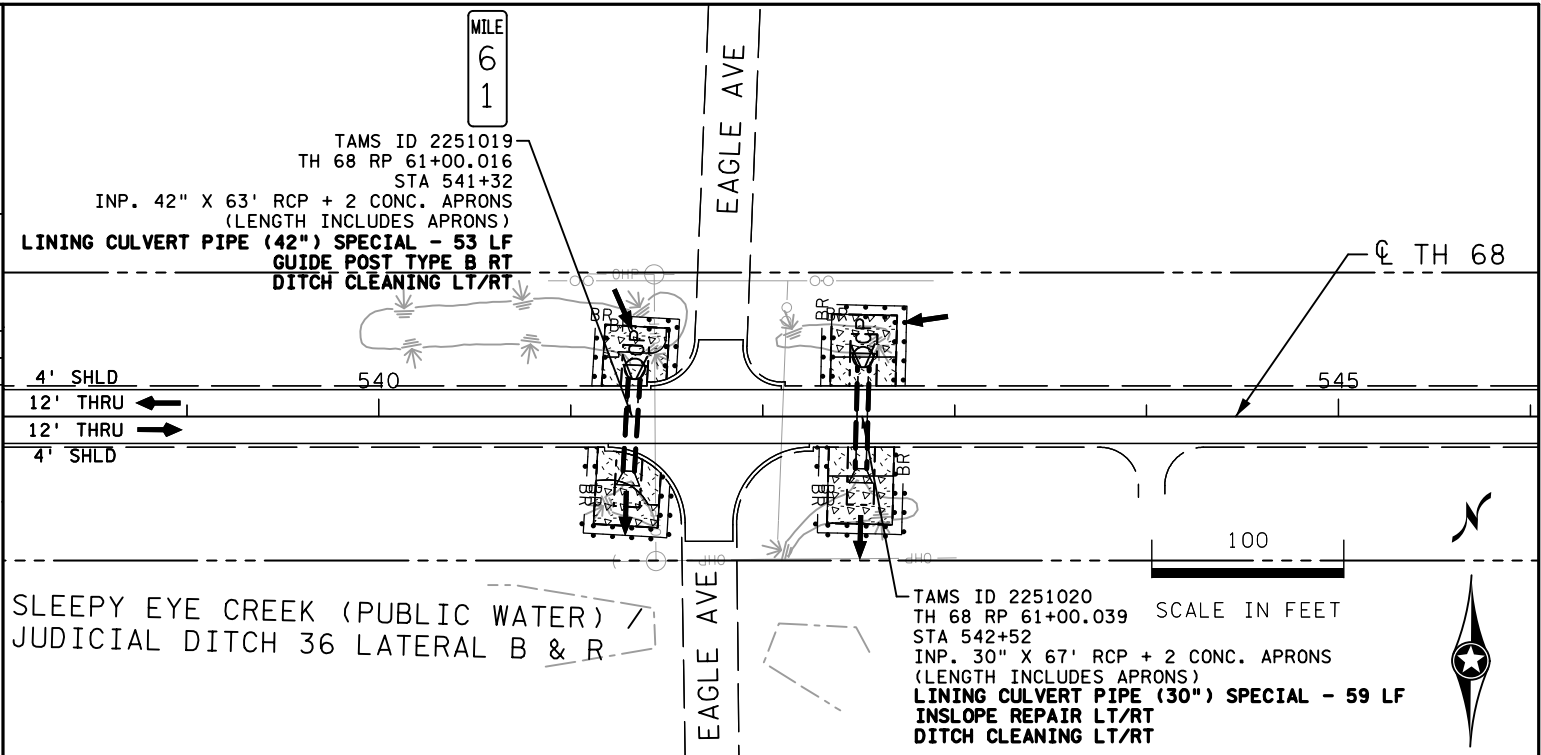
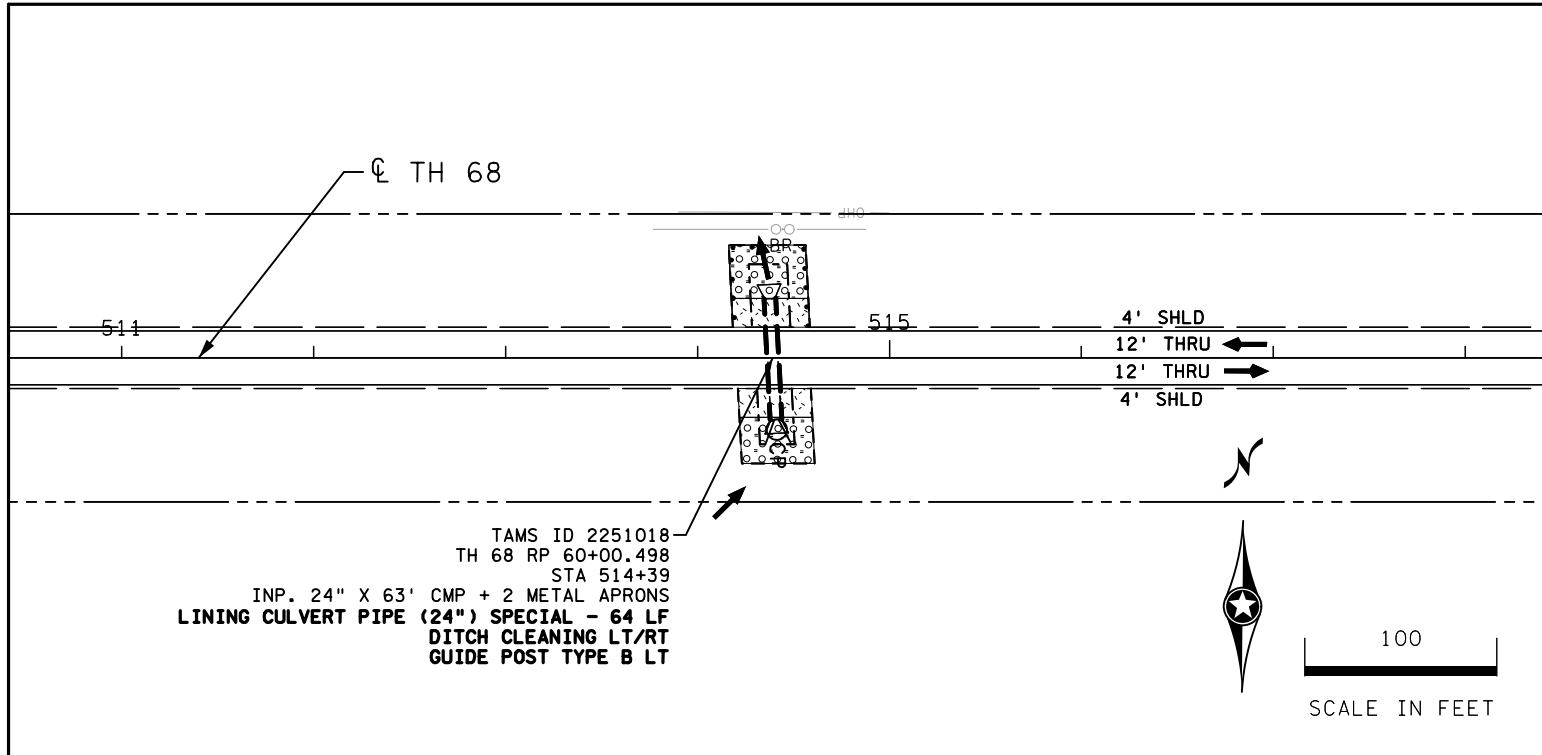
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UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON  
SIGNATURE:   
DATE: 09/19/24 LICENSE #: 54298

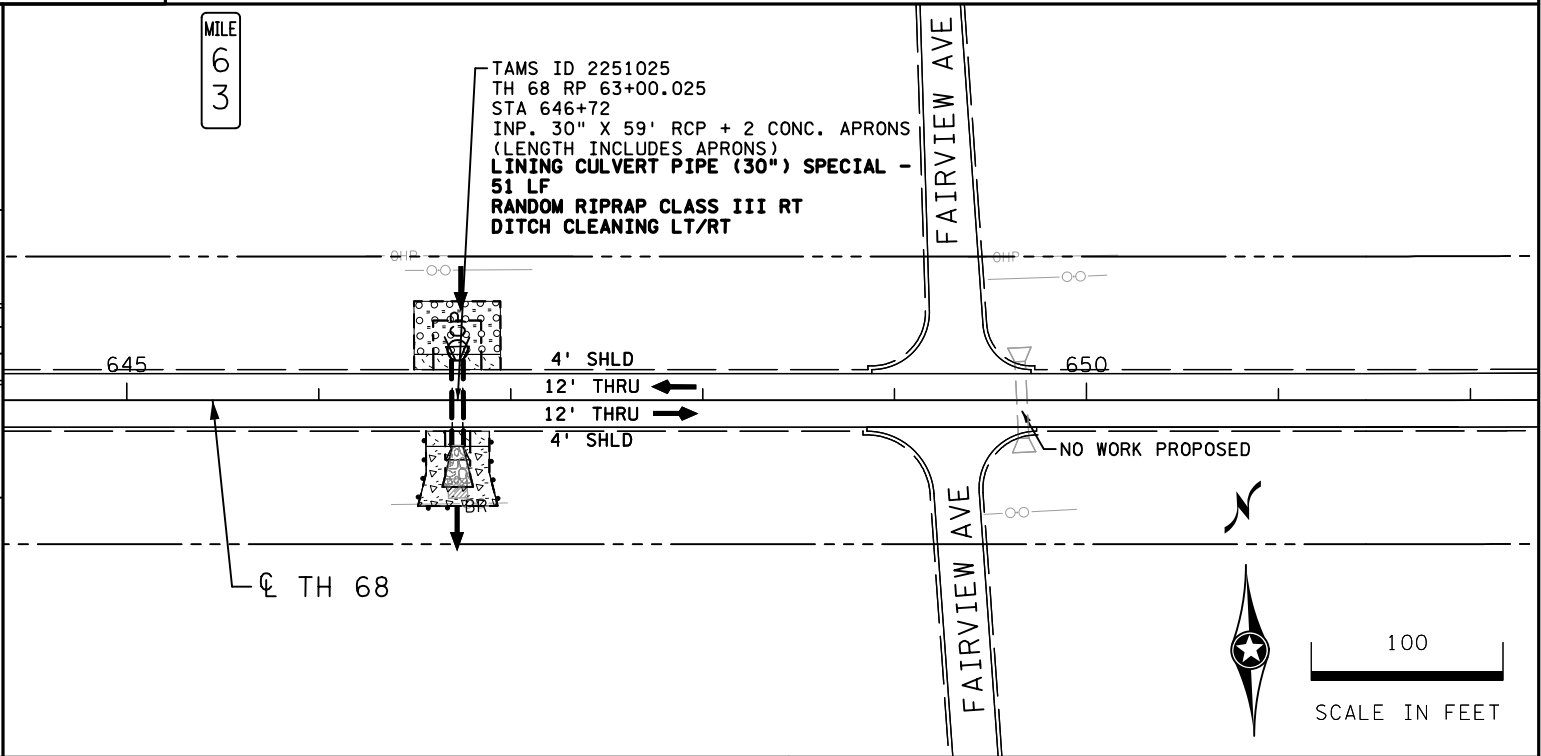
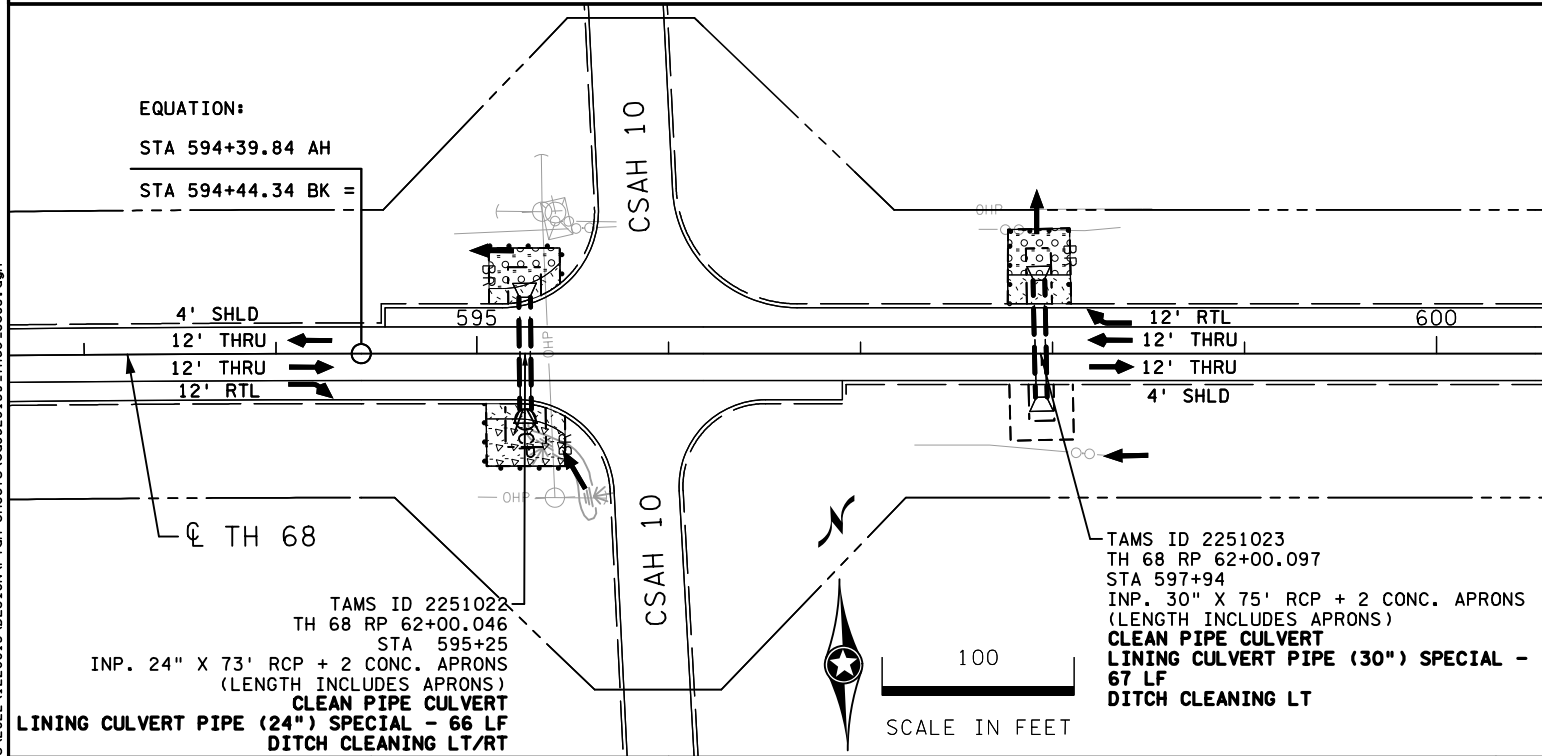
EROSION CONTROL & TURF ESTABLISHMENT PLANS  
TH 68

SP 8828-139  
SHEET NO. 124 OF 212 SHEETS





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---	CONSTRUCTION LIMITS		TREE
---	LIMITS OF DISTURBANCE		TREELINE
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE
==	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)
	MAILBOX		PAVEMENT RECONSTRUCTION
	FLOW ARROW		CLEARING
	CULVERT END CONTROL		SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
			SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
			SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)



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NO	DATE	DWN	CKD	REVISIONS

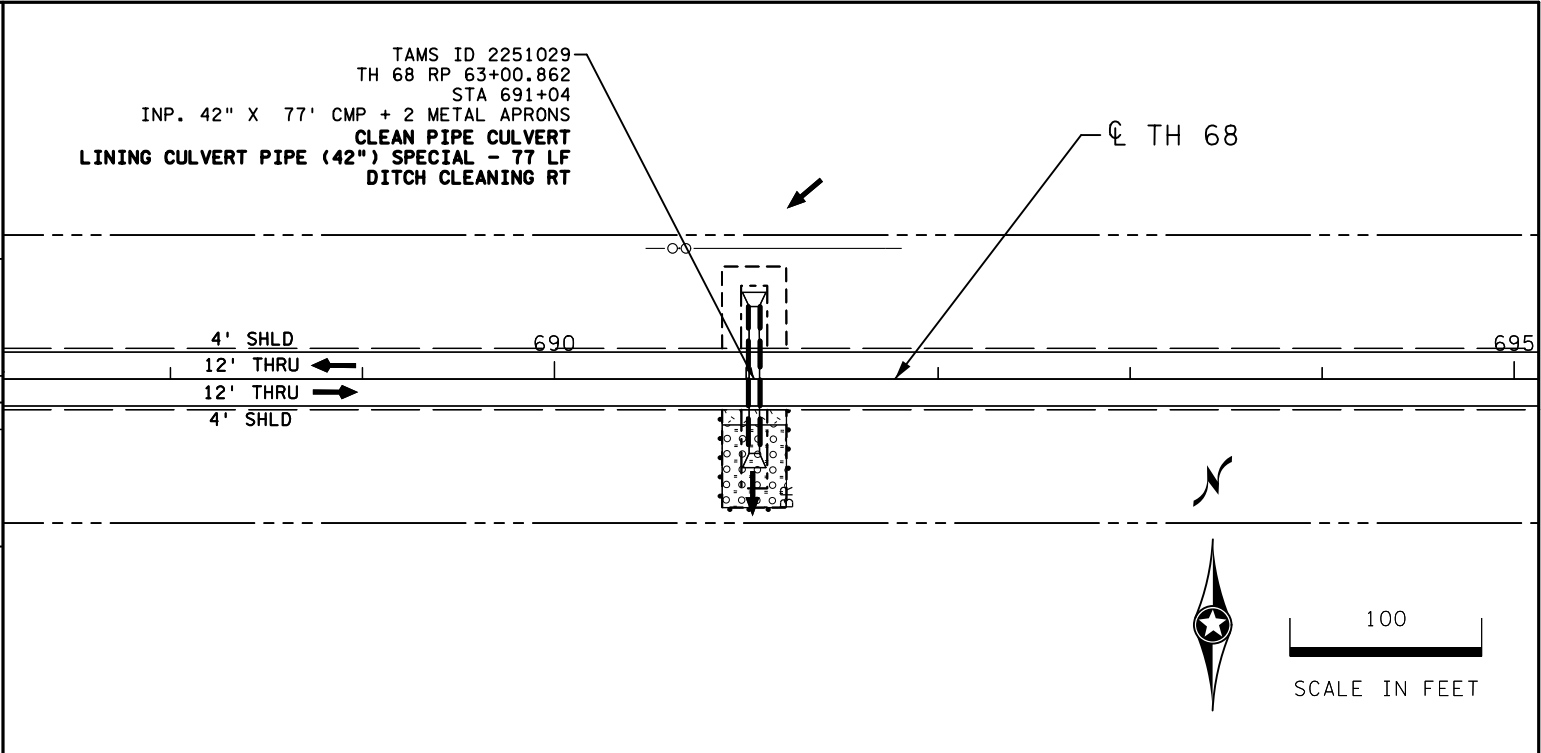
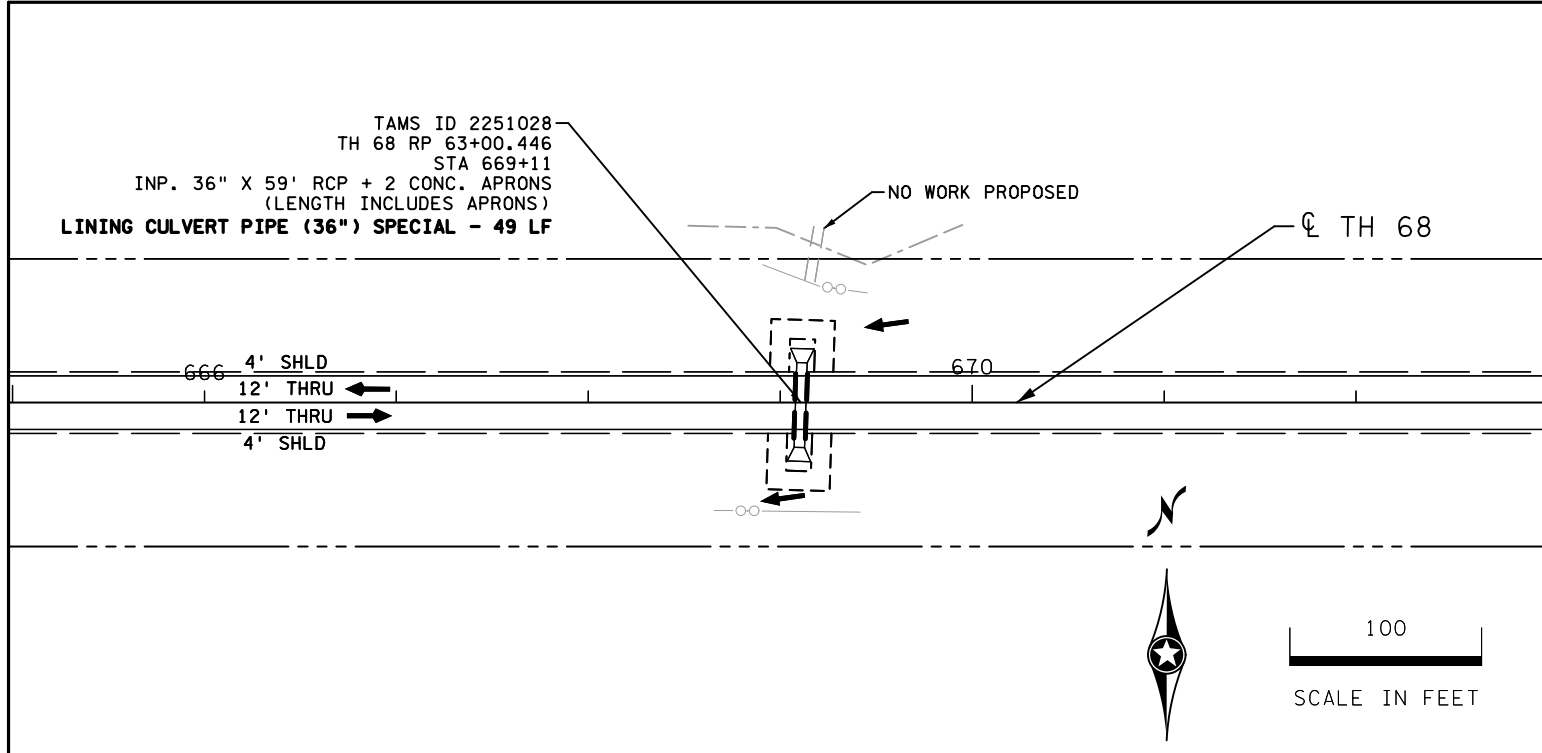


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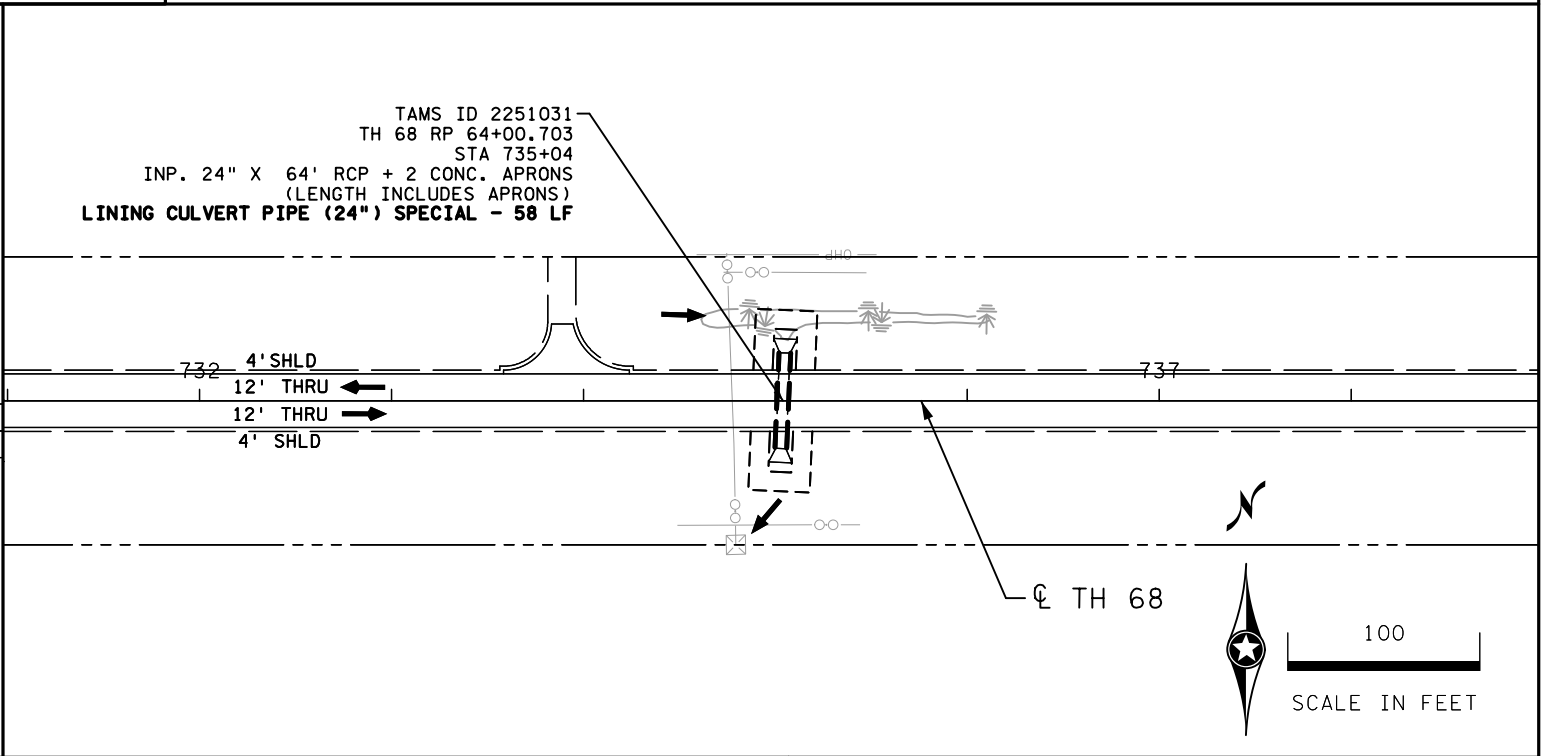
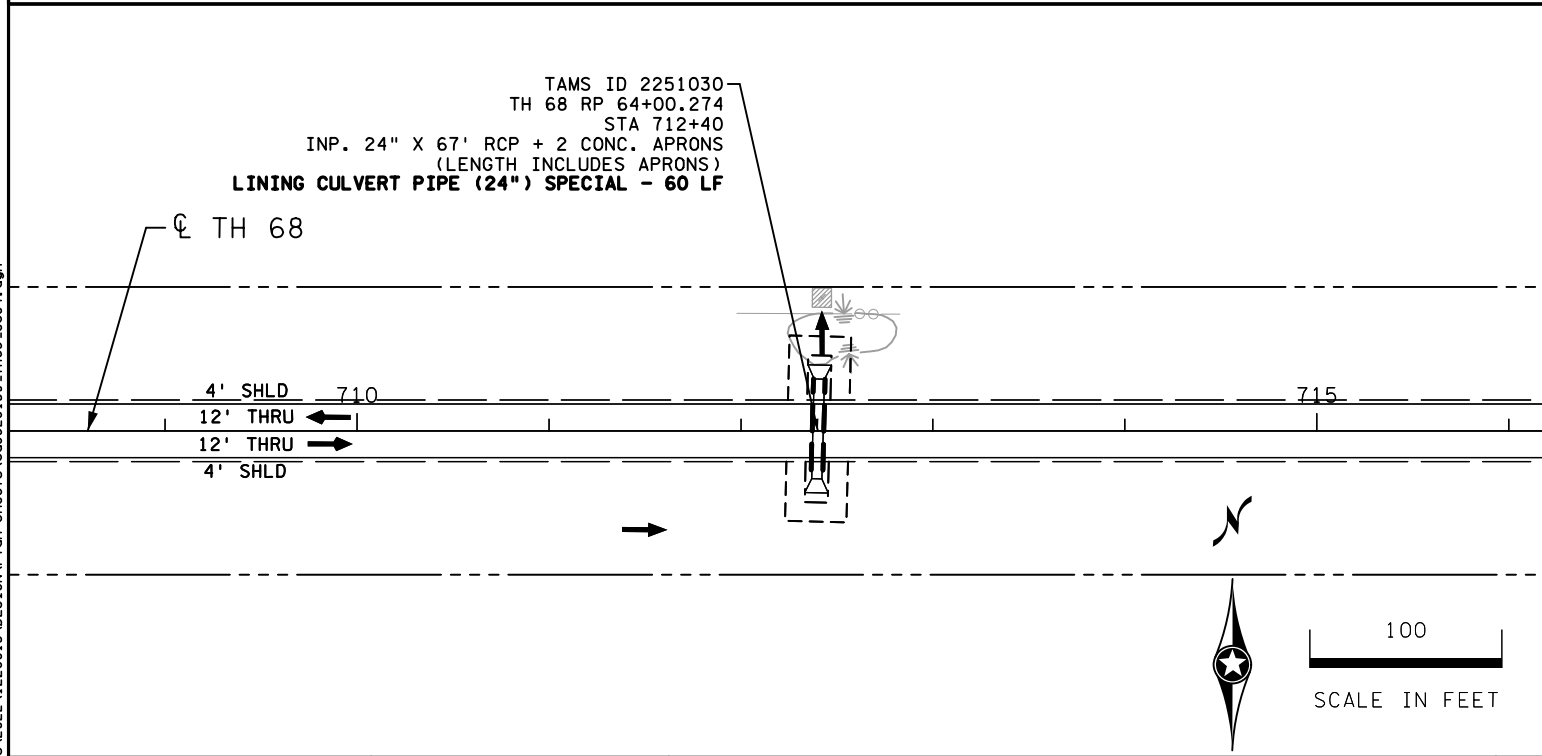
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SIGNATURE:   
DATE: 09/19/24 LICENSE #: 54298

EROSION CONTROL & TURF ESTABLISHMENT PLANS  
TH 68

SP 8828-139  
SHEET NO. 125 OF 212 SHEETS



LEGEND			
---	EXISTING R/W		RANDOM RIPRAP
---	CONSTRUCTION LIMITS		TREE
---	LIMITS OF DISTURBANCE		TREELINE
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE
==	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)
	MAILBOX		PAVEMENT RECONSTRUCTION
	FLOW ARROW		CLEARING
	CULVERT END CONTROL		SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
			SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
			SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)



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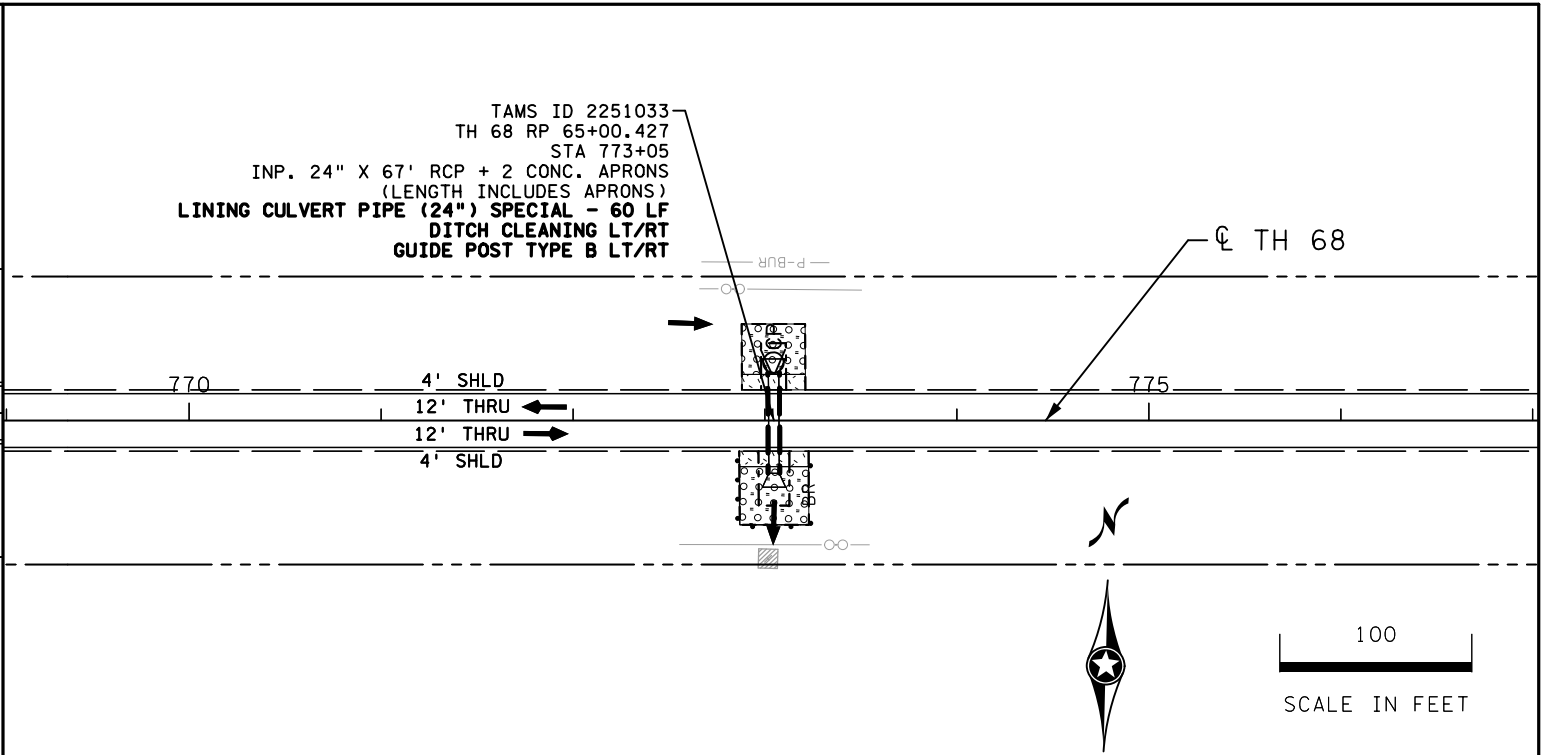
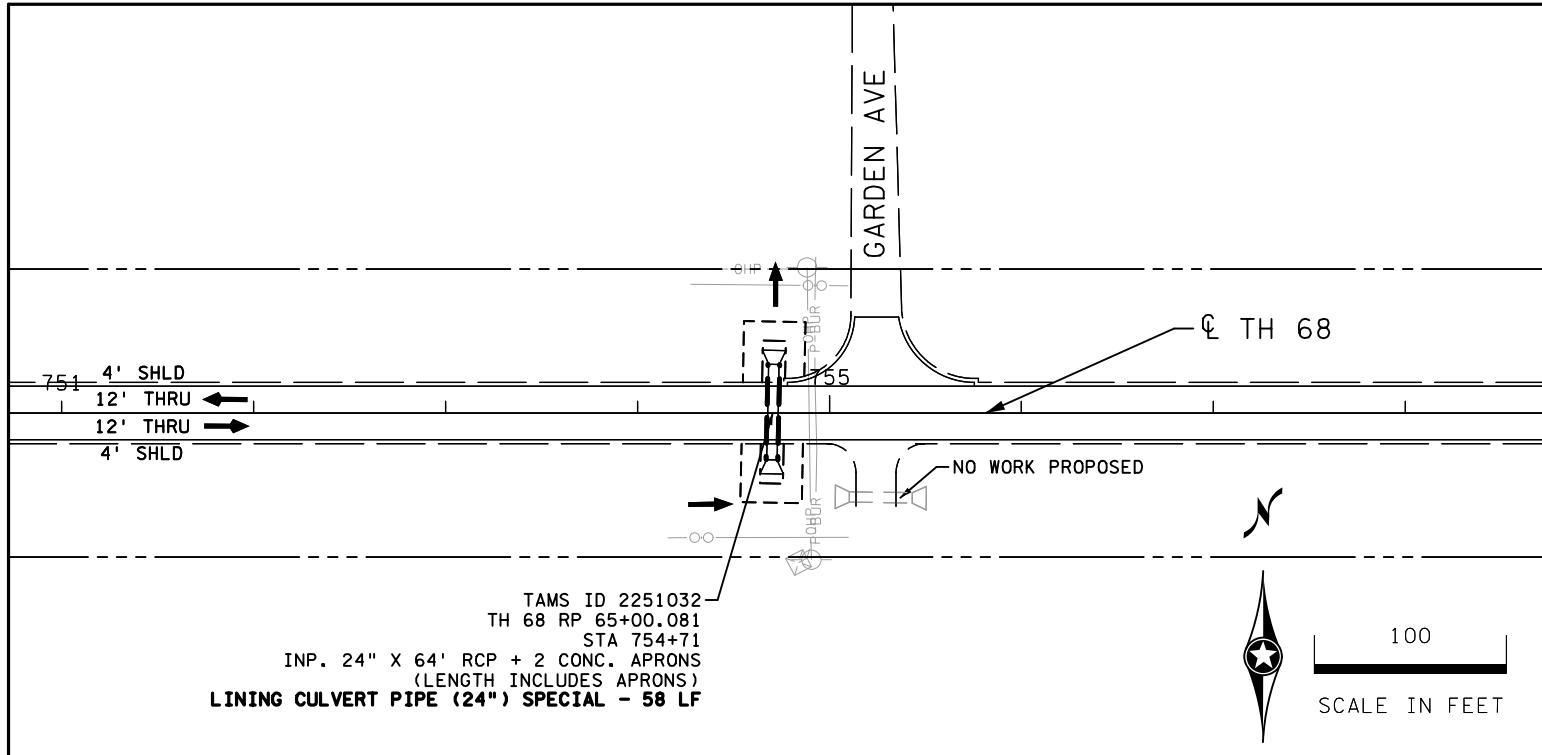


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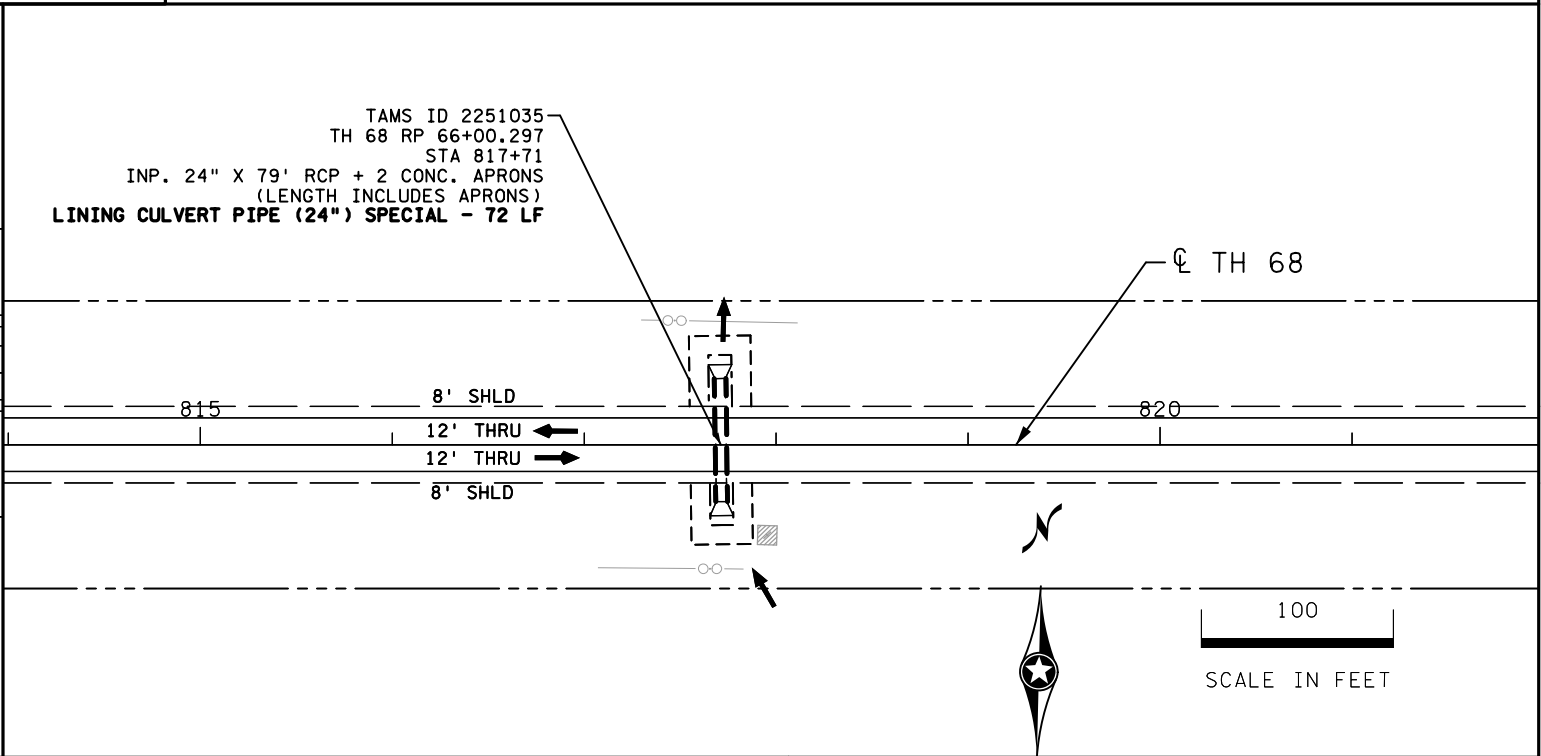
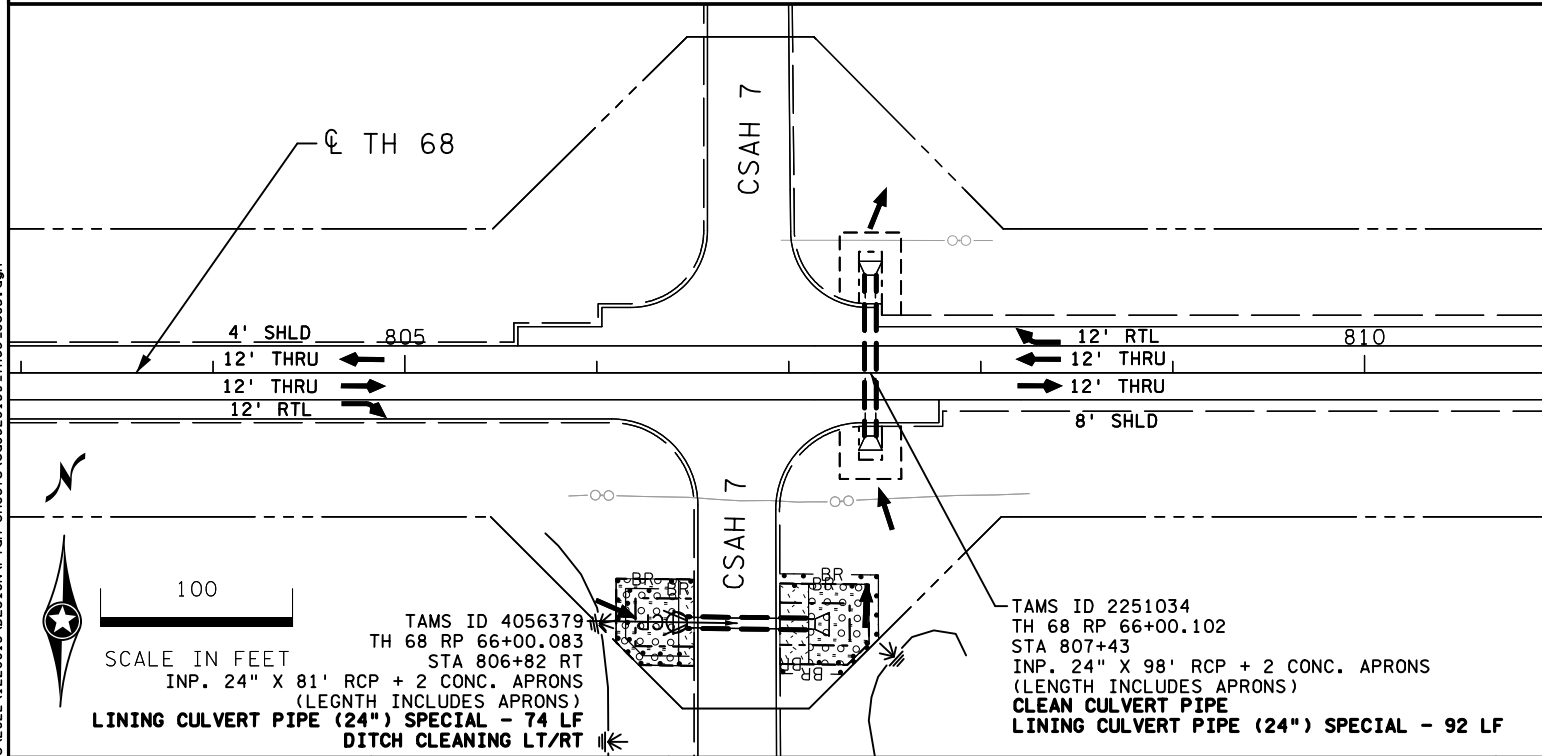
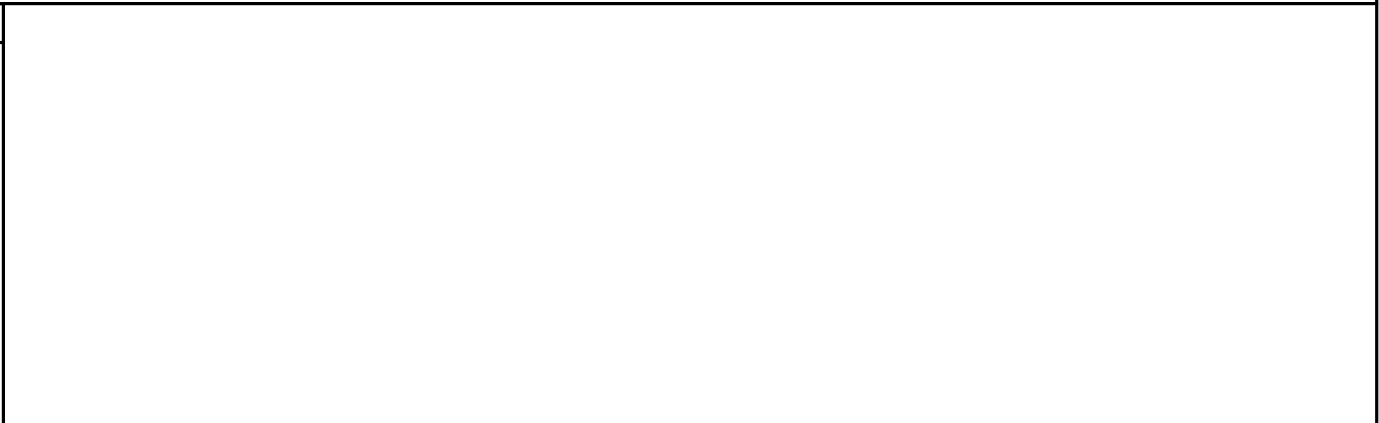
PRINT NAME: DAN SWANSON  
SIGNATURE:   
DATE: 09/19/24 LICENSE #: 54298

EROSION CONTROL & TURF ESTABLISHMENT PLANS  
TH 68

SP 8828-139  
SHEET NO. 126 OF 212 SHEETS



LEGEND			
---	EXISTING R/W		RANDOM RIPRAP
---	CONSTRUCTION LIMITS		TREE
---	LIMITS OF DISTURBANCE		TREELINE
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE
---	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)
	MAILBOX		PAVEMENT RECONSTRUCTION
	FLOW ARROW		CLEARING
	CULVERT END CONTROL		SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
			SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
			SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)



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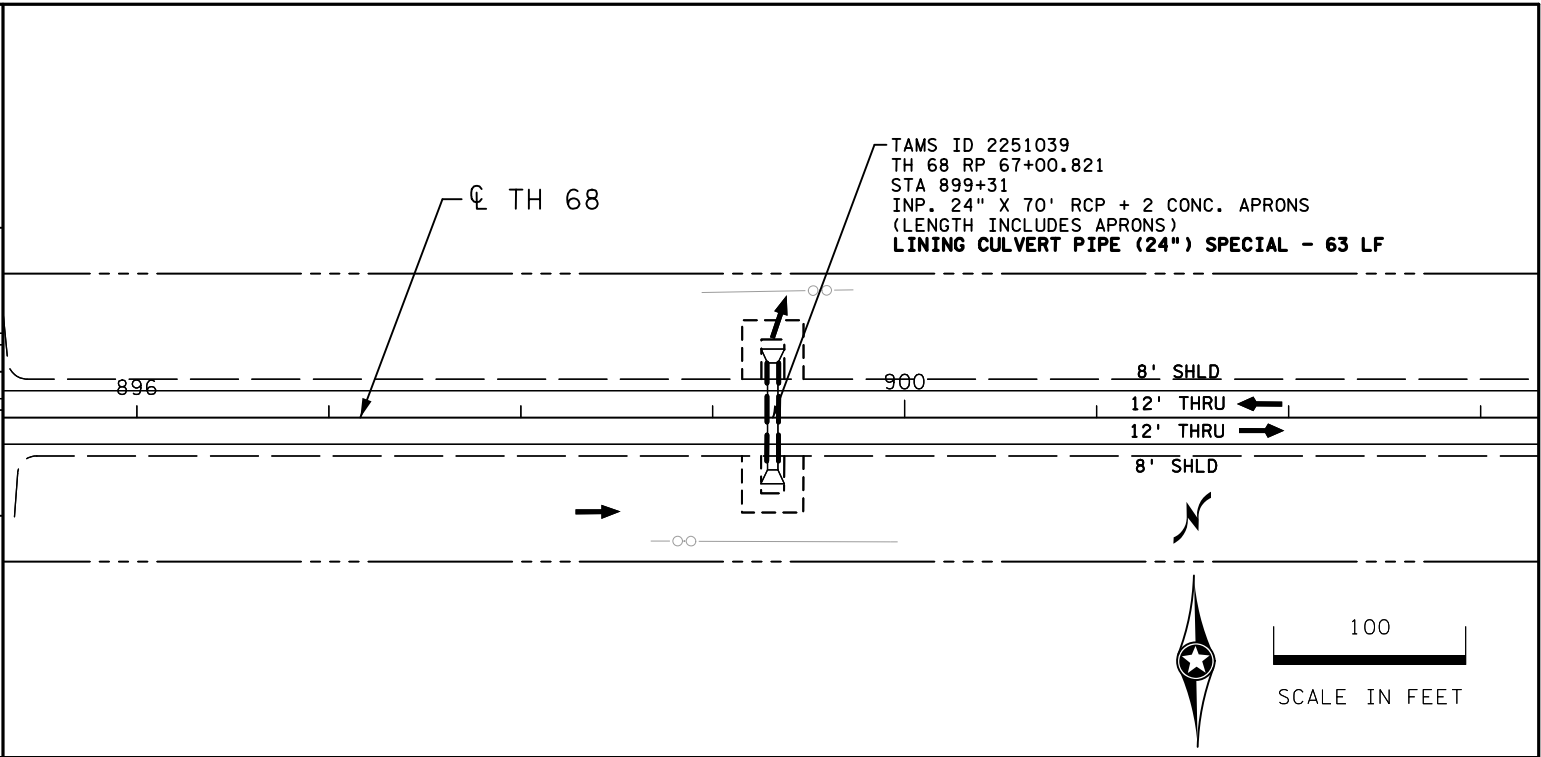
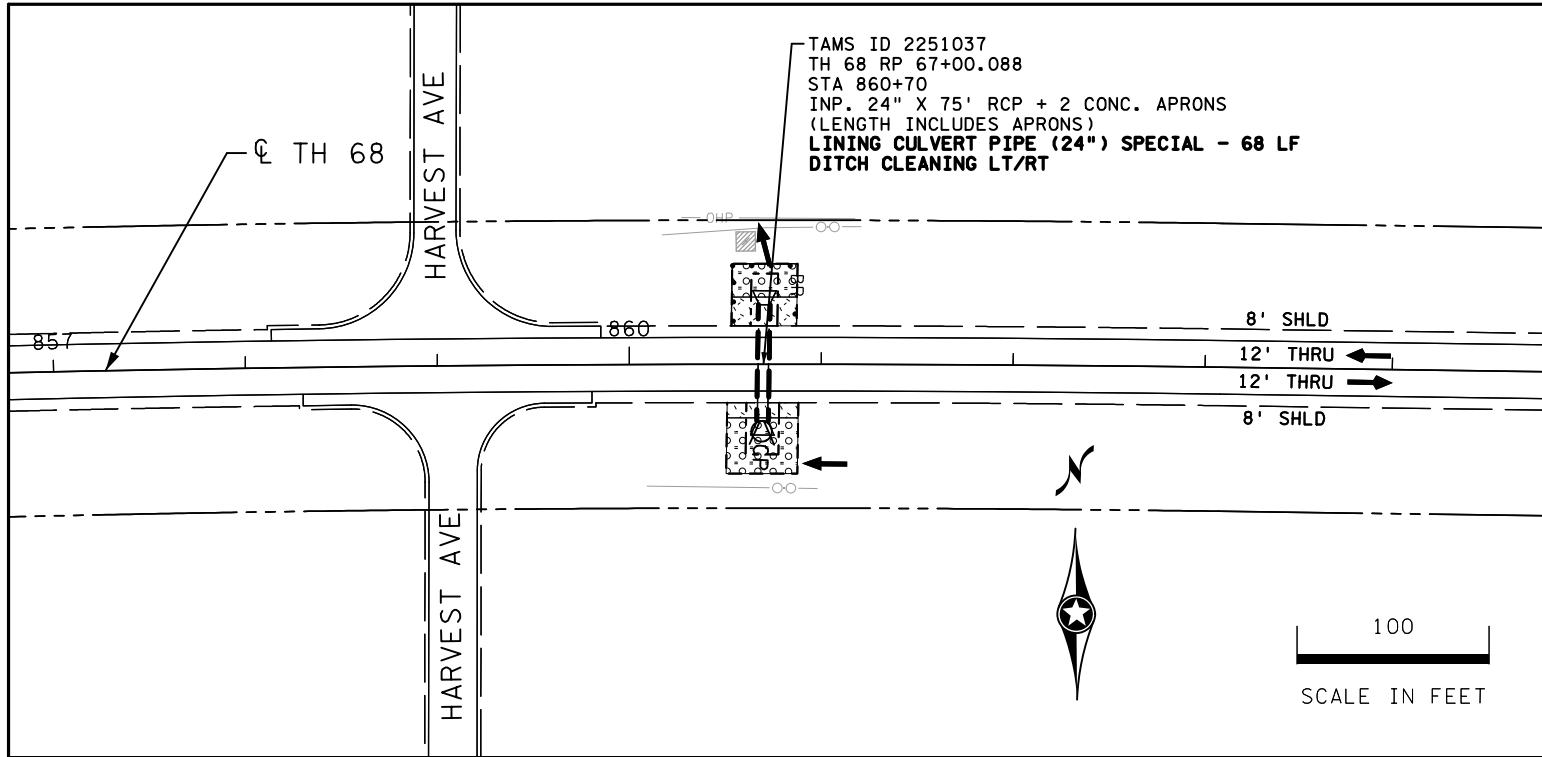
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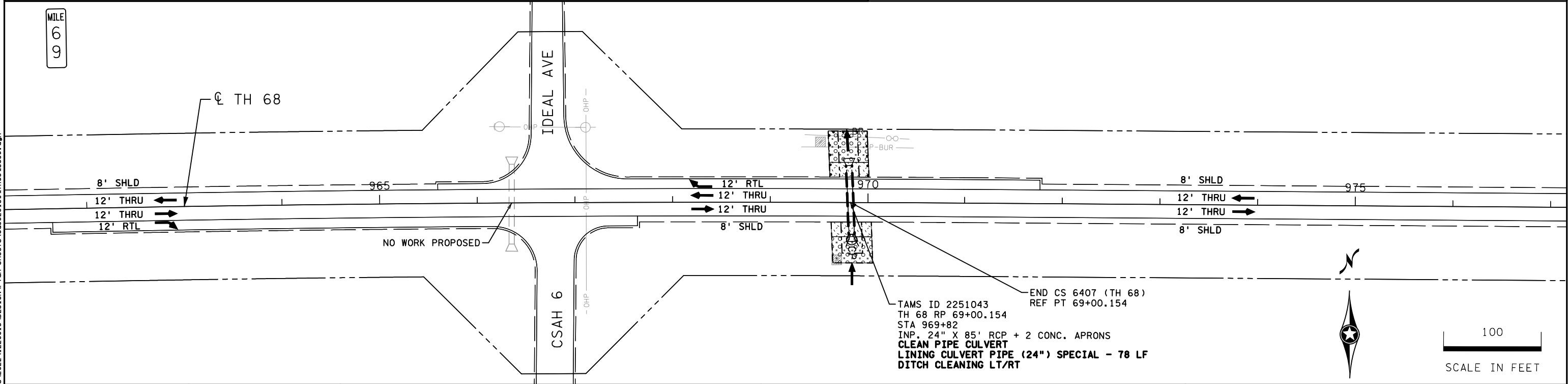
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EROSION CONTROL & TURF ESTABLISHMENT PLANS  
TH 68

SP 8828-139  
SHEET NO. 127 OF 212 SHEETS



LEGEND			
---	EXISTING R/W		RANDOM RIPRAP
---	CONSTRUCTION LIMITS		TREE
---	LIMITS OF DISTURBANCE		TREELINE
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE
==	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)
	MAILBOX		PAVEMENT RECONSTRUCTION
	FLOW ARROW		CLEARING
	CULVERT END CONTROL		SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
			SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
			SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)



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NO	DATE	DWN	CKD	REVISIONS

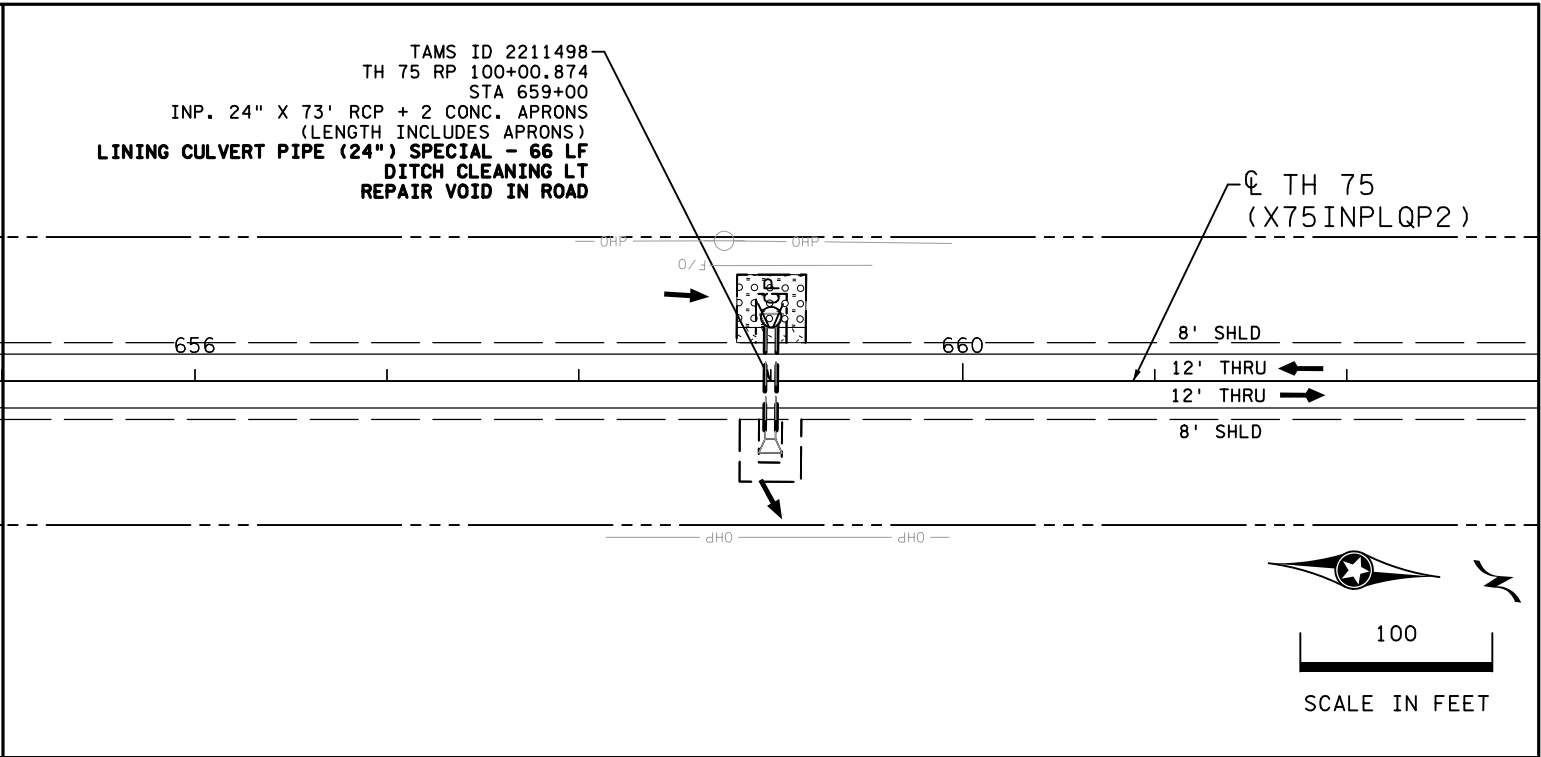
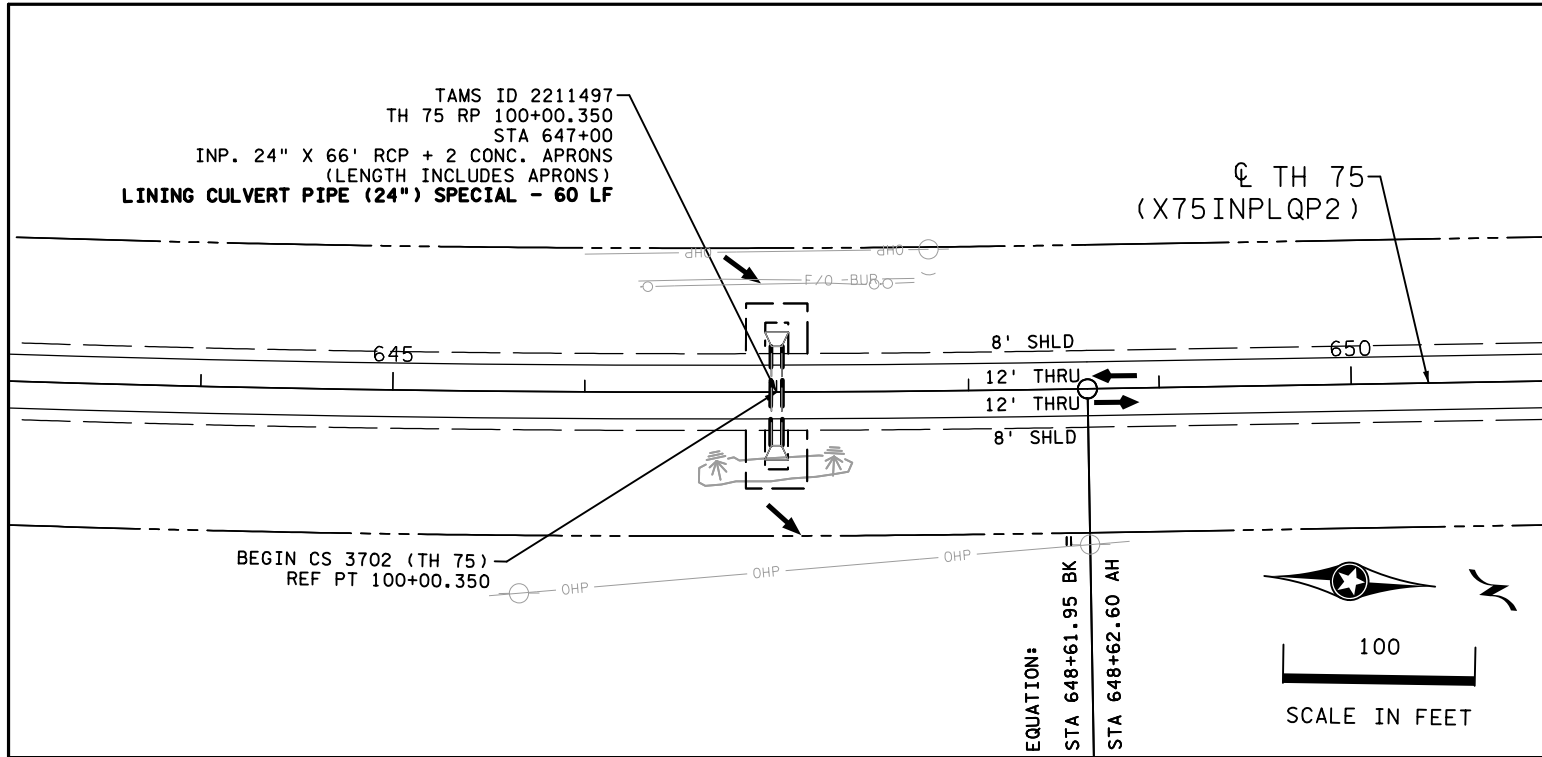


I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

EROSION CONTROL & TURF ESTABLISHMENT PLANS  
TH 68

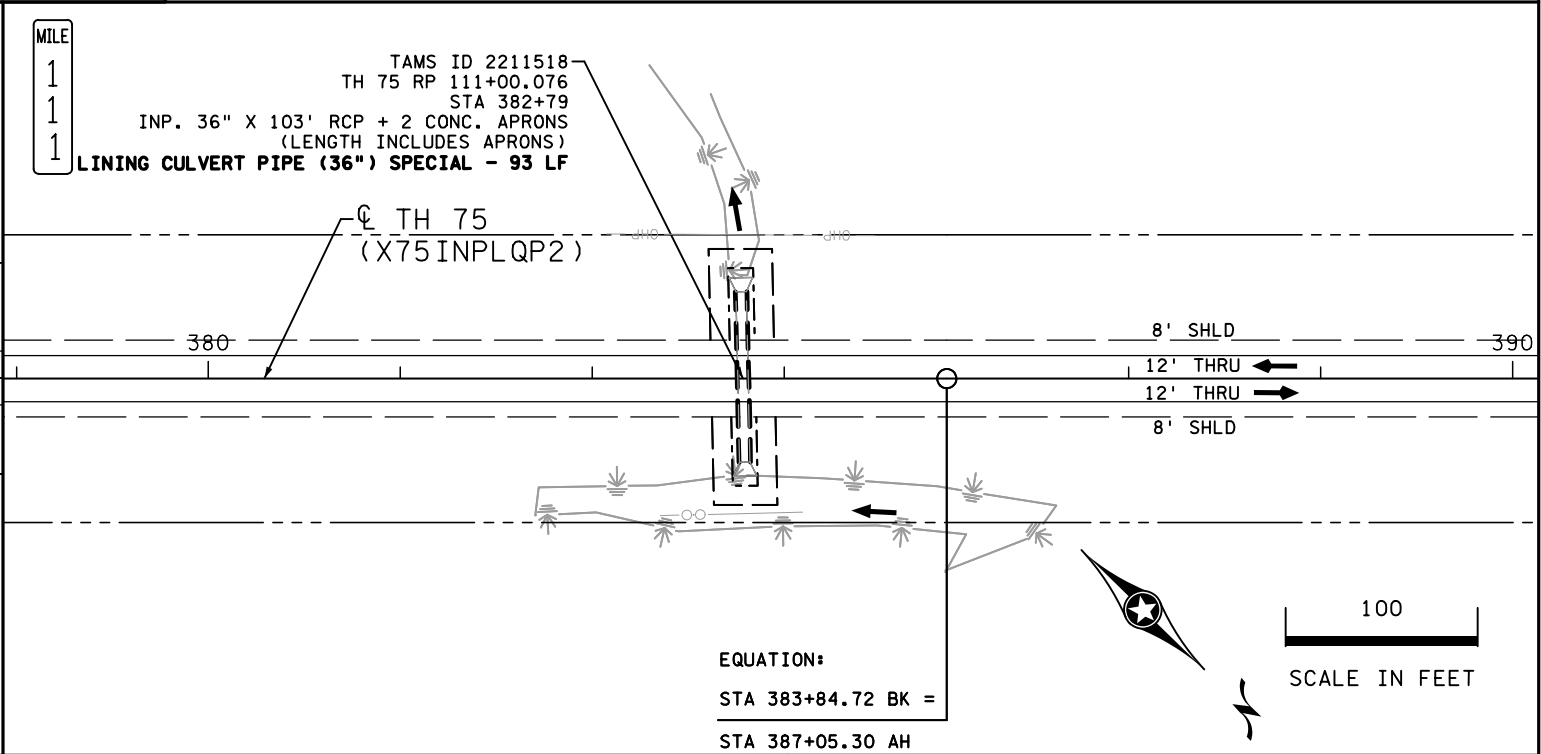
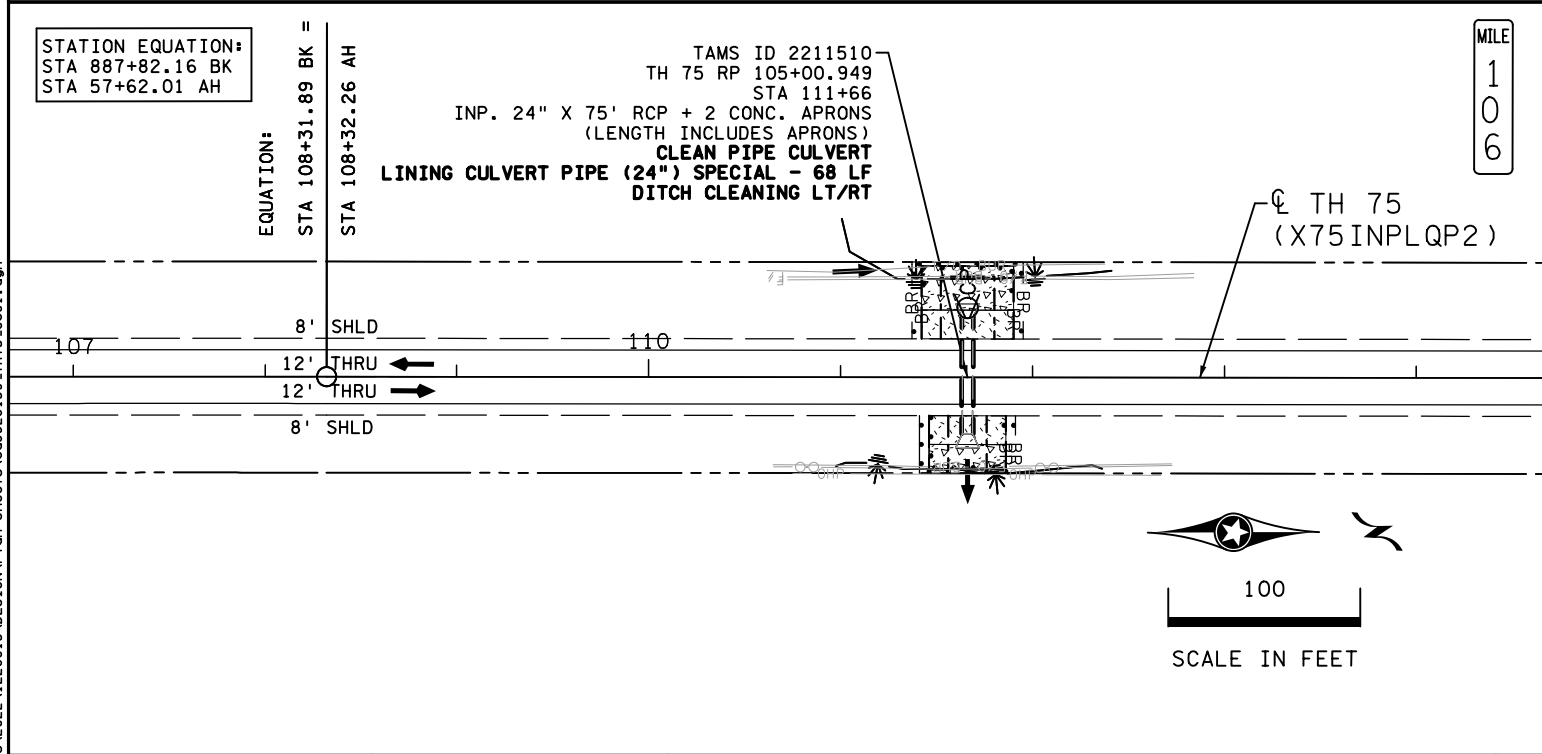
SP 8828-139  
SHEET NO. 128 OF 212 SHEETS



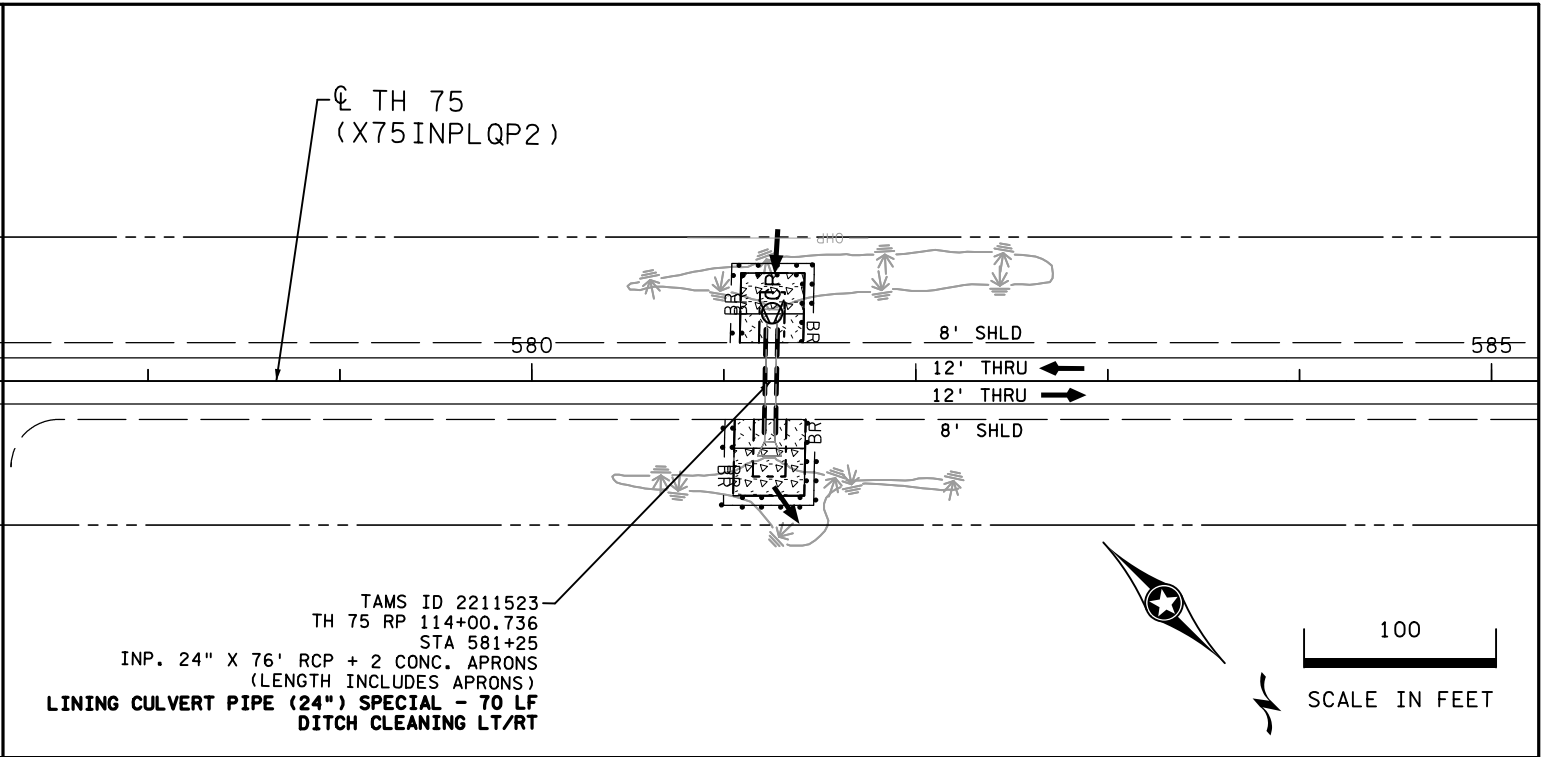
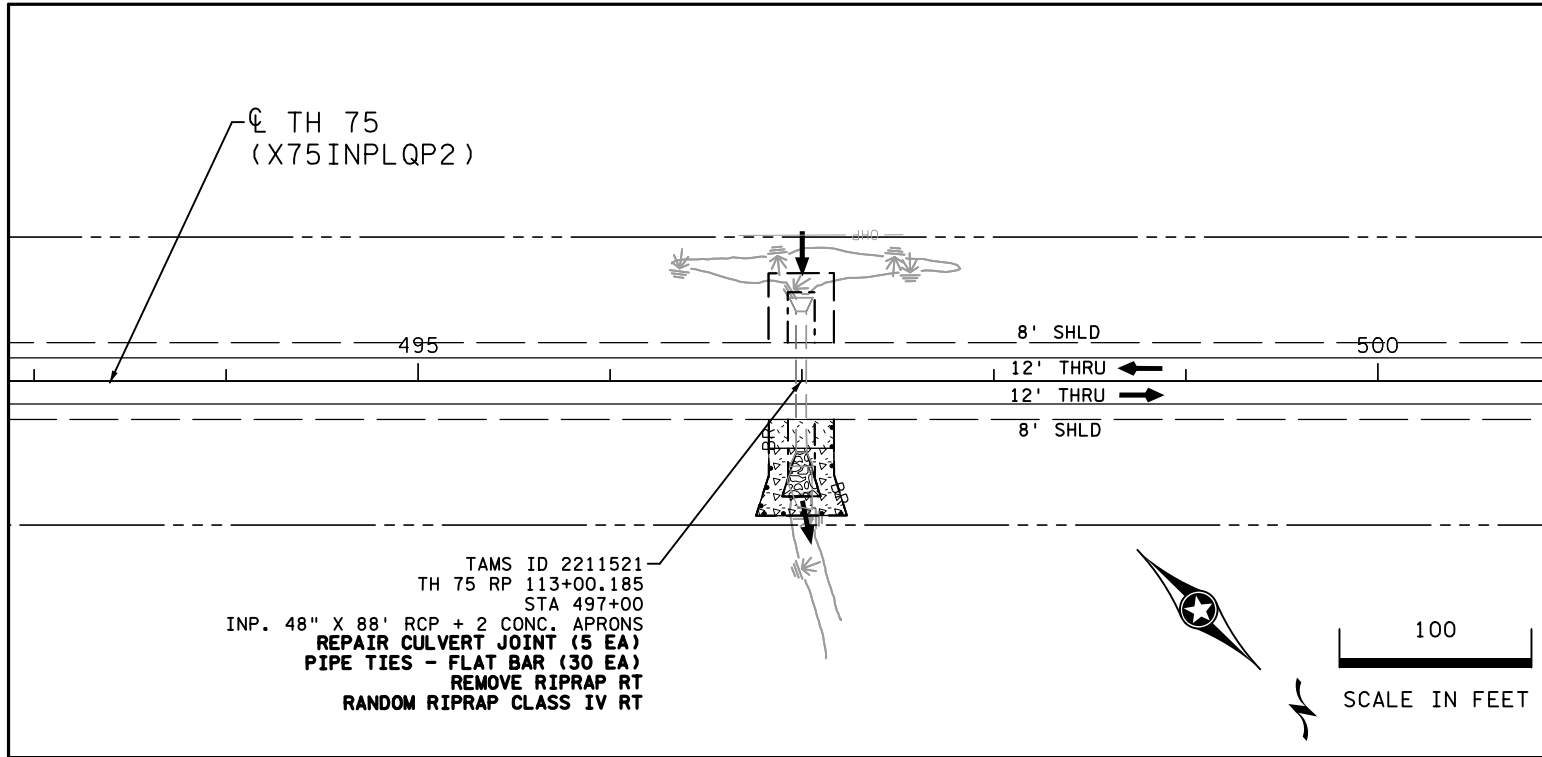
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---	EXISTING R/W		RANDOM RIPRAP
---	CONSTRUCTION LIMITS		TREE
---	LIMITS OF DISTURBANCE		TREELINE
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE
---	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)
	MAILBOX		PAVEMENT RECONSTRUCTION
	FLOW ARROW		CLEARING
	CULVERT END CONTROL		SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
			SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
			SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)

**GENERAL NOTES:**

- ALIGNMENT X75INPLQP2 RUNNING SOUTH TO NORTH. BEGIN STA 413+88.67, END STA 802+81.91.
- ALIGNMENT INPE2 RUNNING NORTH TO SOUTH. BEGIN STA 304+36.69, END STA 781+71.63.



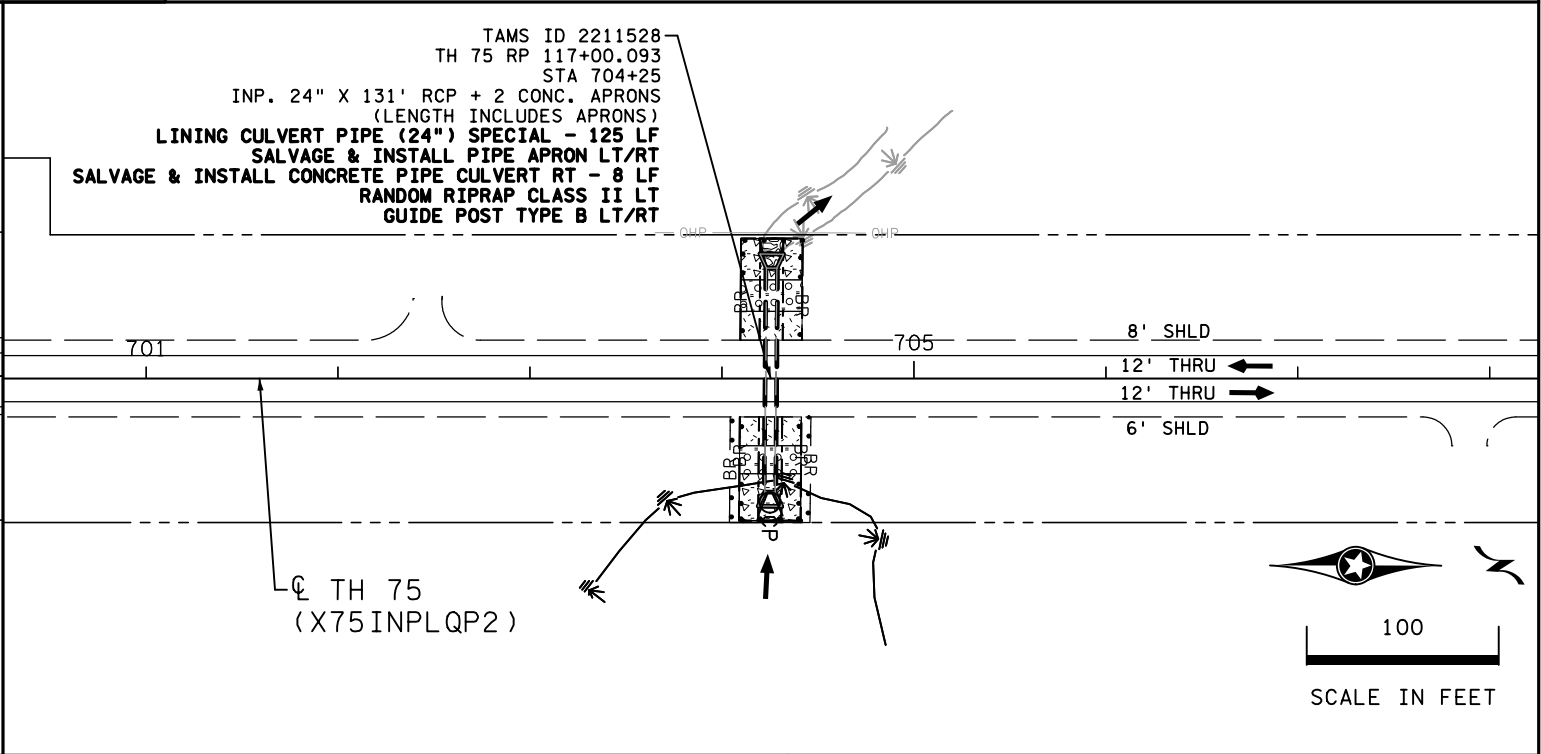
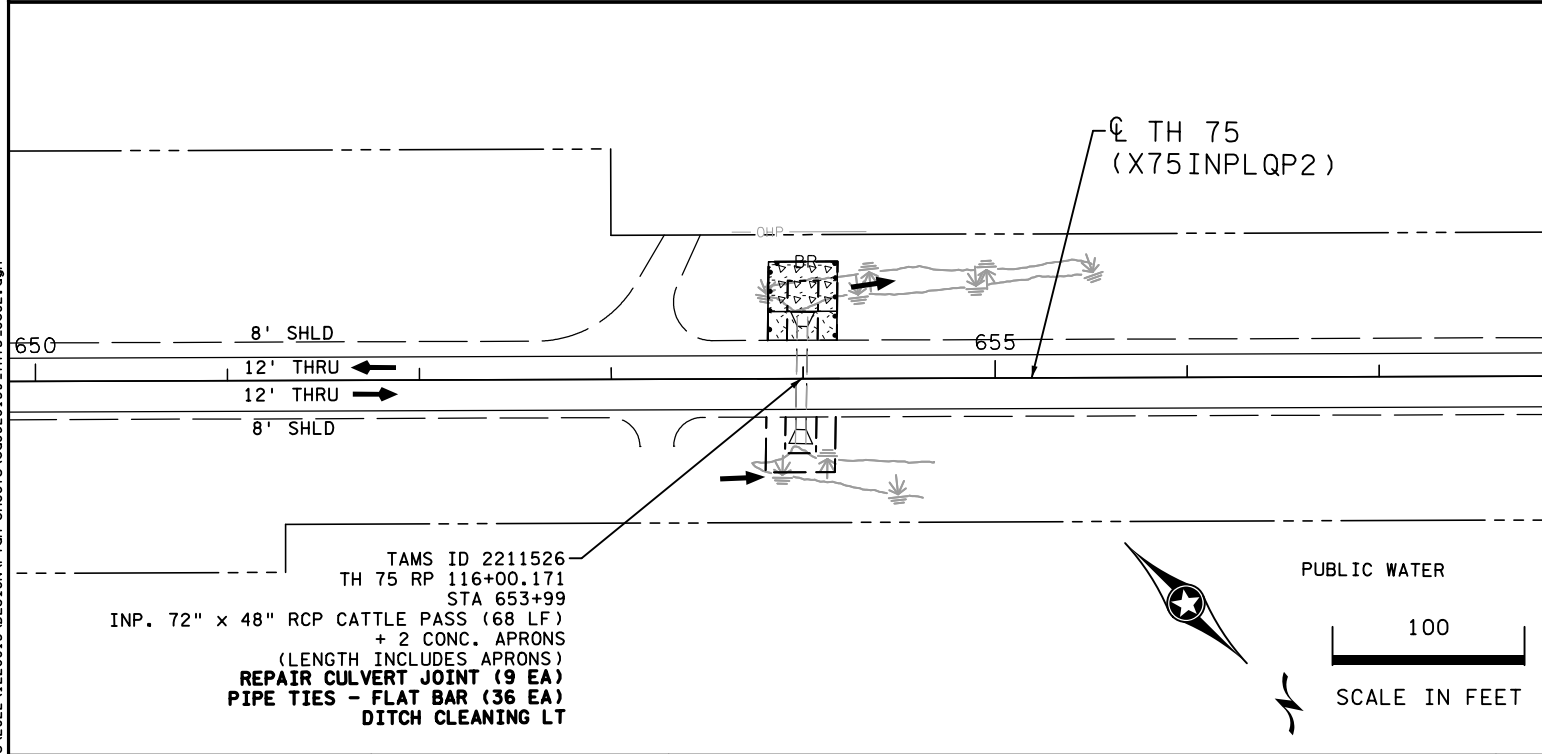




LEGEND			
---	EXISTING R/W		RANDOM RIPRAP
---	CONSTRUCTION LIMITS		TREE
---	LIMITS OF DISTURBANCE		TREELINE
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE
---	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)
	MAILBOX		PAVEMENT RECONSTRUCTION
	FLOW ARROW		CLEARING
	CULVERT END CONTROL		SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
			SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
			SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)

GENERAL NOTES:

- ALIGNMENT X75INPLQP2 RUNNING SOUTH TO NORTH. BEGIN STA 413+88.67, END STA 802+81.91.
- ALIGNMENT INPE2 RUNNING NORTH TO SOUTH. BEGIN STA 304+36.69, END STA 781+71.63.



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NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON  
SIGNATURE:   
DATE: 09/19/24 LICENSE #: 54298

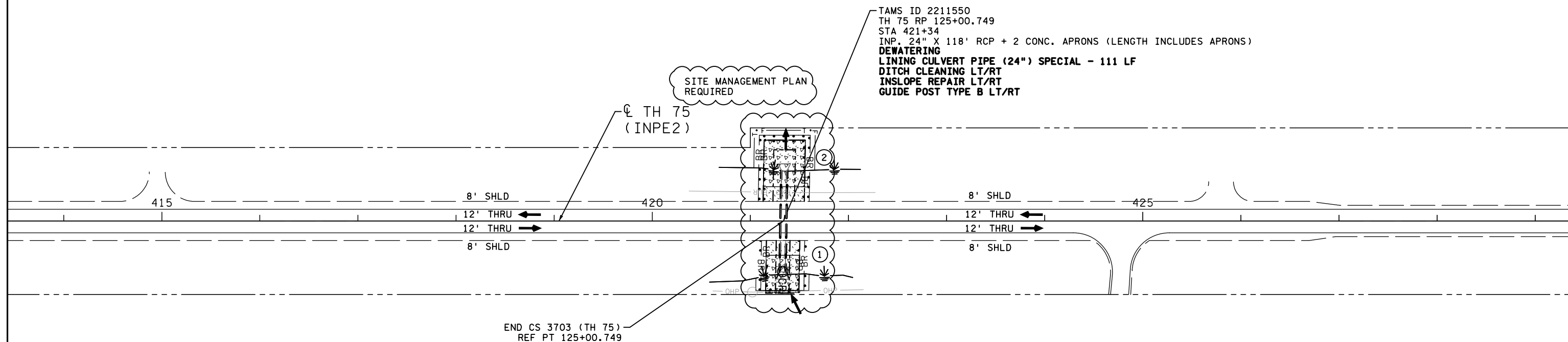
EROSION CONTROL & TURF ESTABLISHMENT PLANS  
TH 75

SP 8828-139  
SHEET NO. 130 OF 212 SHEETS





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SCALE IN FEET



**SPECIFIC NOTES:**

- THIS IS AN AREA OF ENVIRONMENTAL SENSITIVITY. PROTECTED FEATURES ARE PRESENT. DO NOT DISTURB VEGETATION OUTSIDE OF DISTURBANCE LIMITS.
- THIS IS AN AREA OF ENVIRONMENTAL SENSITIVITY. DNR MANAGED LAND. DO NOT DISTURB VEGETATION OUTSIDE OF DISTURBANCE LIMITS.

**LEGEND**

---	EXISTING R/W		RANDOM RIPRAP		SEED MESIC INSLOPE
---	CONSTRUCTION LIMITS		TREE		ROLLED EROSION PREVENTION CAT 20
---	LIMITS OF DISTURBANCE		TREELINE		FERTILIZER TYPE 3 (22-5-10)
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE		SEED TURFGRASS
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)		ROLLED EROSION PREVENTION CAT 20
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE		FERTILIZER TYPE 1 (20-10-20)
---	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)		SEED SOUTHERN TALLGRASS ROADSIDE
	MAILBOX		PAVEMENT RECONSTRUCTION		ROLLED EROSION PREVENTION CAT 25
	FLOW ARROW		CLEARING		FERTILIZER TYPE 3 (22-5-10)
	CULVERT END CONTROL				SEED WET DITCH
					ROLLED EROSION PREVENTION CAT 25
					FERTILIZER TYPE 4 (18-1-8)
					SEED SOUTHERN TALLGRASS ROADSIDE
					ROLLED EROSION PREVENTION CAT 35
					FERTILIZER TYPE 3 (22-5-10)

**GENERAL NOTES:**

- ALIGNMENT X75INPLQP2 RUNNING SOUTH TO NORTH. BEGIN STA 413+88.67, END 802+81.91.
- ALIGNMENT INPE2 RUNNING NORTH TO SOUTH. BEGIN STA 304+36.69, END STA 781+71.63.

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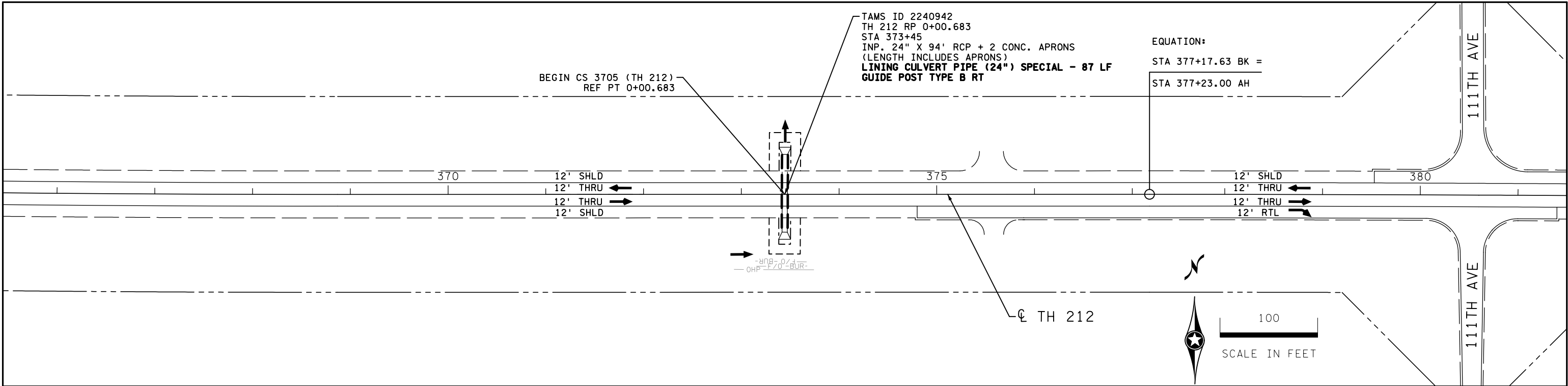
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON  
SIGNATURE:   
DATE: 09/19/24 LICENSE #: 54298

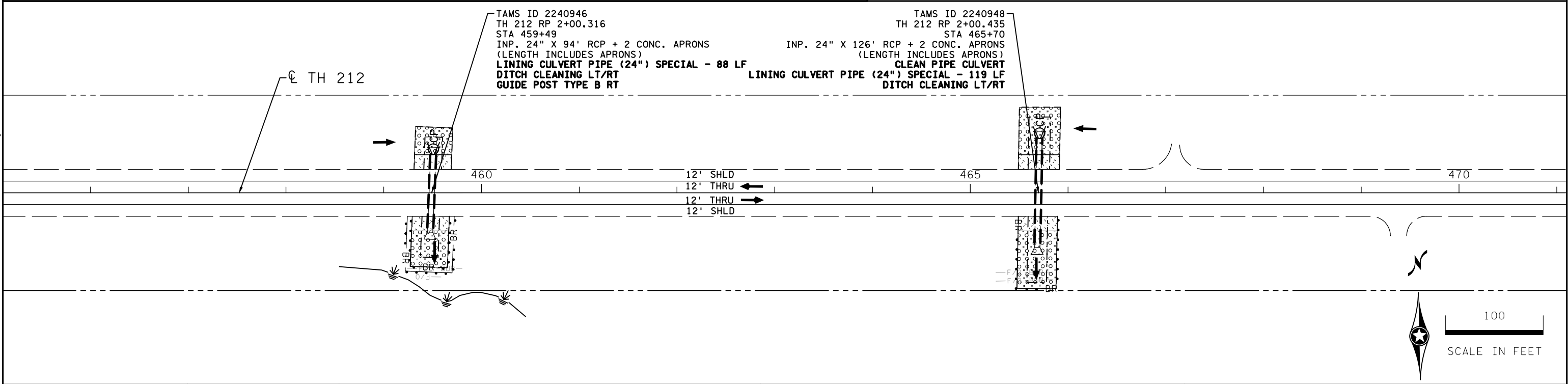
EROSION CONTROL & TURF ESTABLISHMENT PLANS  
TH 75

SP 8828-139

SHEET NO. 132 OF 212 SHEETS



LEGEND			
---	EXISTING R/W		RANDOM RIPRAP
---	CONSTRUCTION LIMITS		TREE
---	LIMITS OF DISTURBANCE		TREELINE
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE
==	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)
	MAILBOX		PAVEMENT RECONSTRUCTION
	FLOW ARROW		CLEARING
	CULVERT END CONTROL		SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
			SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
			SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)



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NO	DATE	DWN	CKD	REVISIONS

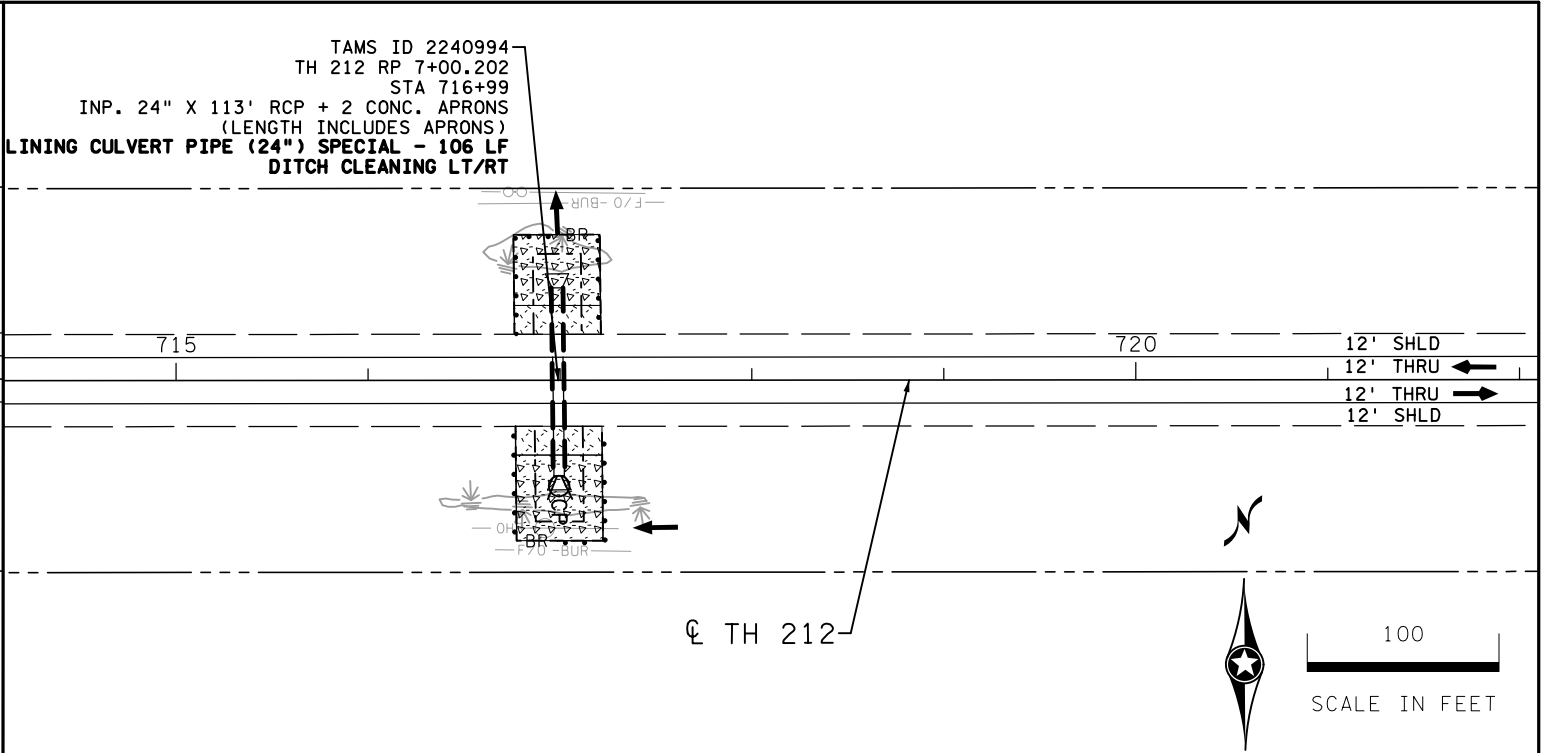
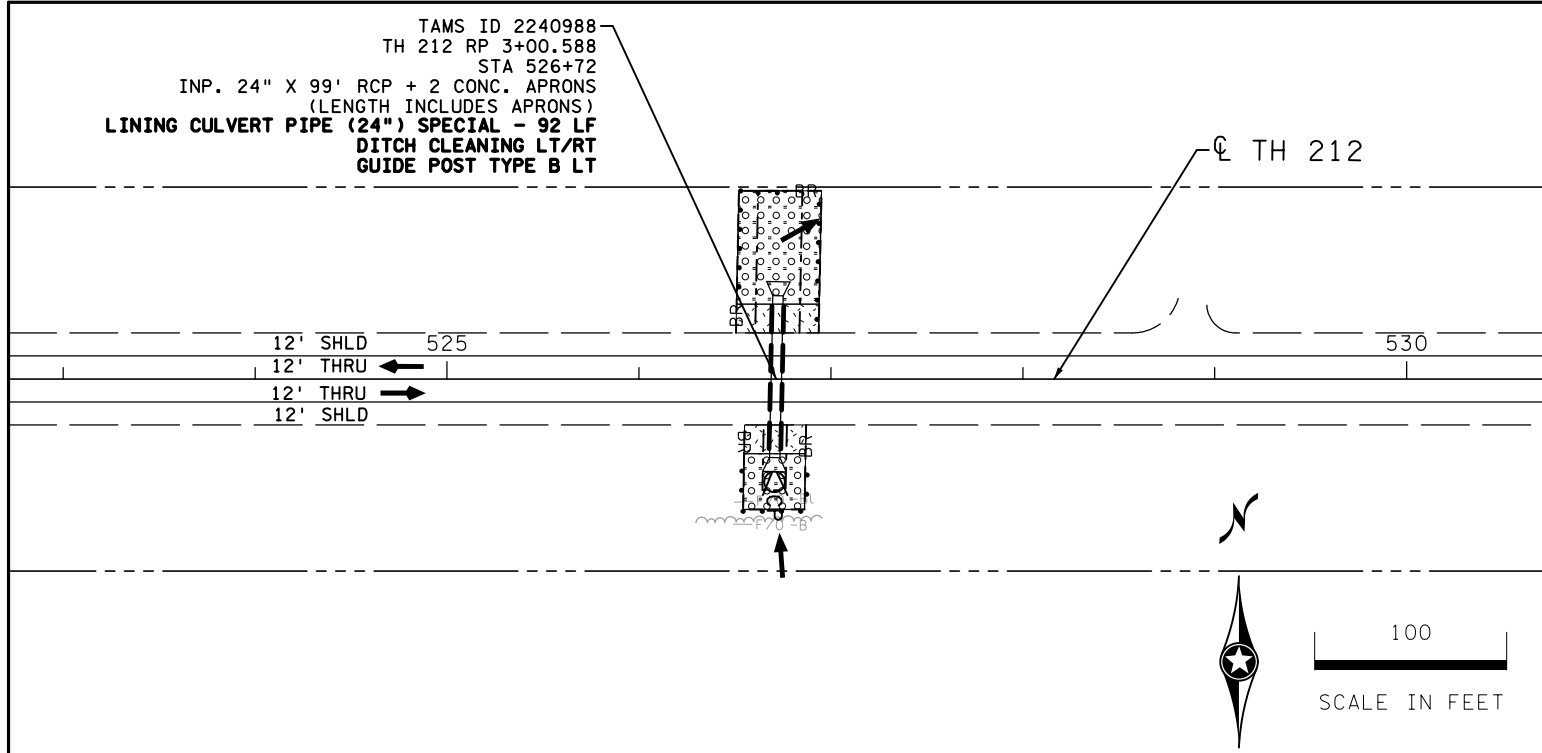


I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

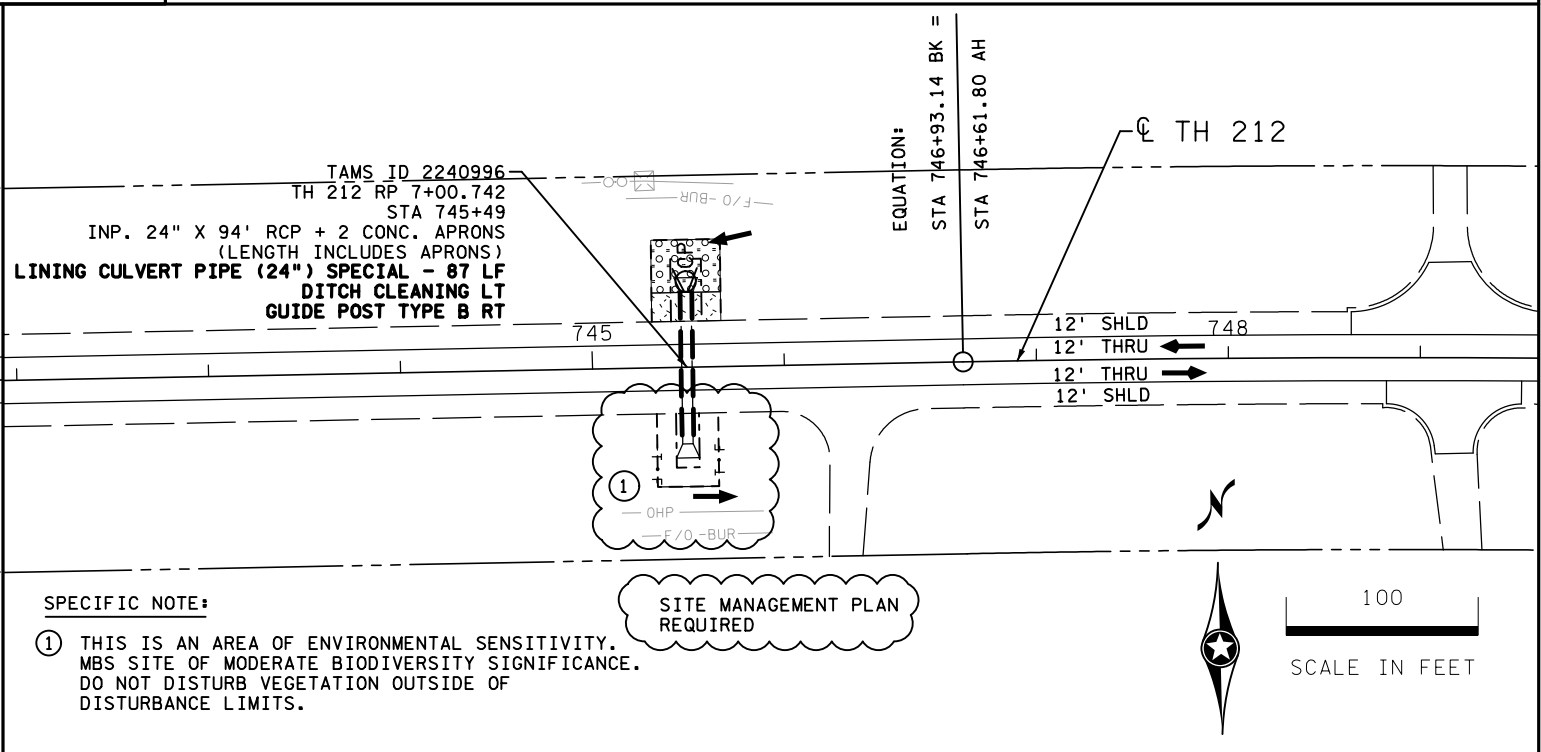
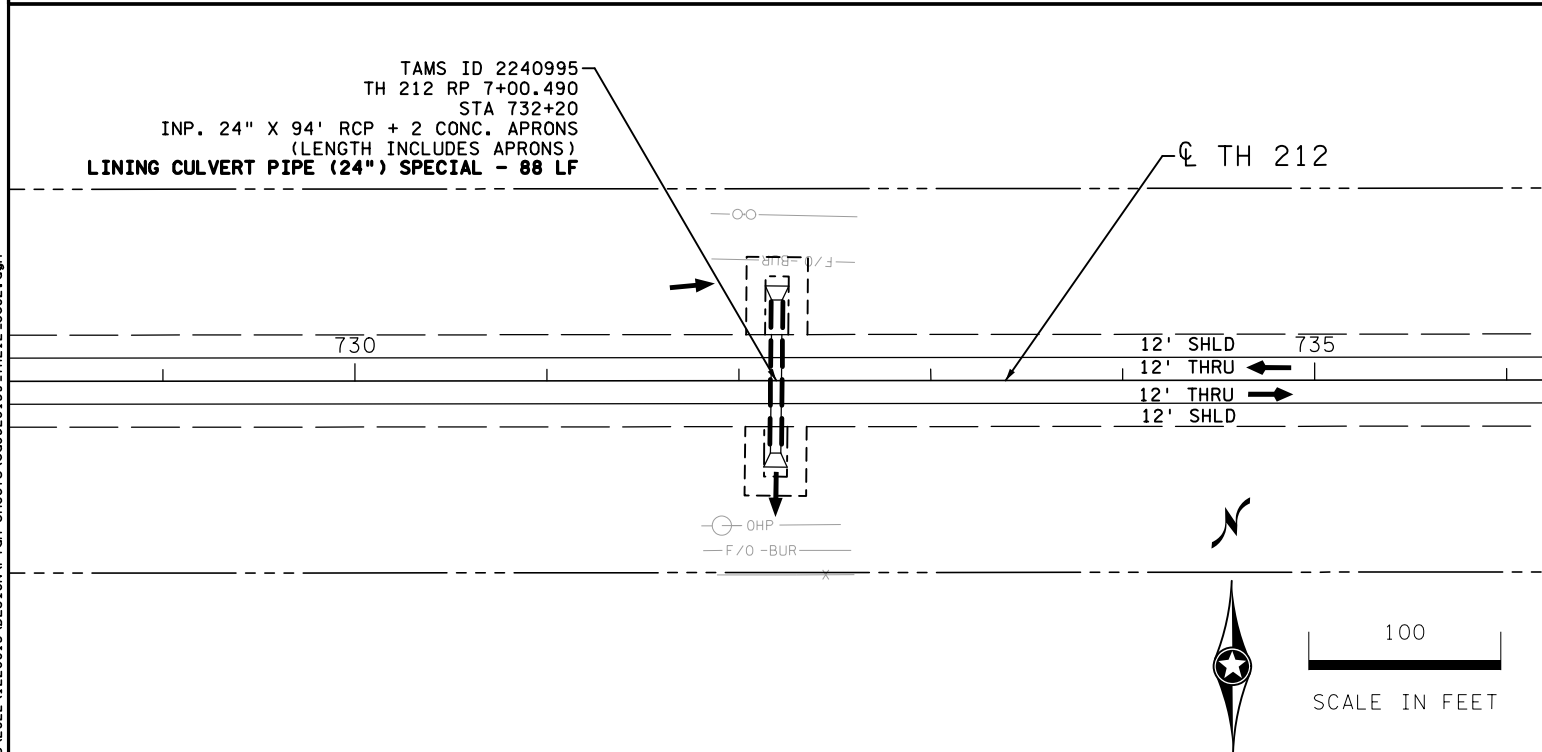
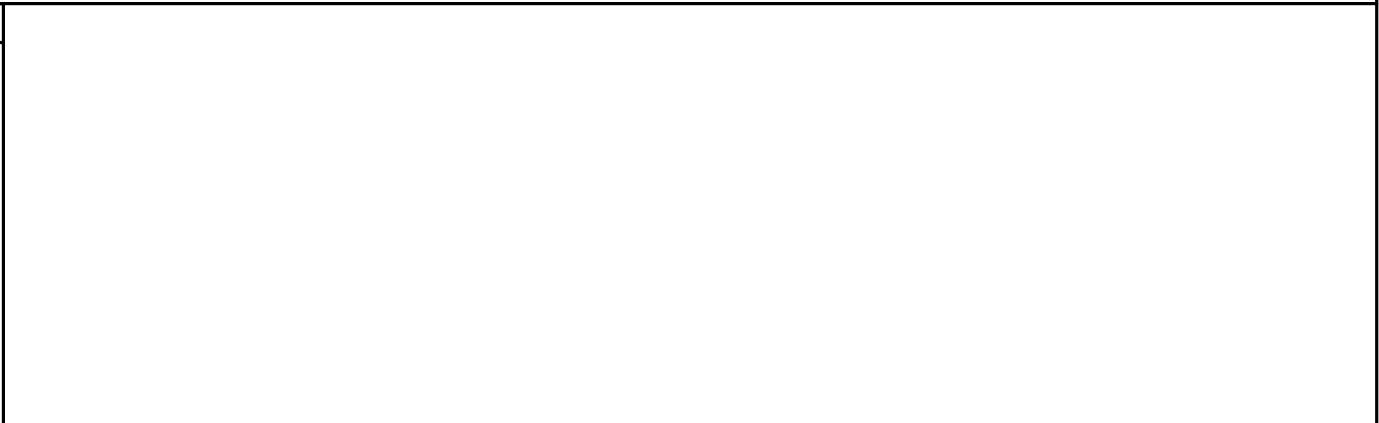
PRINT NAME: DAN SWANSON  
SIGNATURE:   
DATE: 09/19/24 LICENSE #: 54298

EROSION CONTROL & TURF ESTABLISHMENT PLANS  
TH 212

SP 8828-139  
SHEET NO. 133 OF 212 SHEETS



LEGEND			
---	EXISTING R/W		RANDOM RIPRAP
---	CONSTRUCTION LIMITS		TREE
---	LIMITS OF DISTURBANCE		TREELINE
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE
==	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)
	MAILBOX		PAVEMENT RECONSTRUCTION
	FLOW ARROW		CLEARING
	CULVERT END CONTROL		SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
			SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
			SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)



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NO	DATE	DWN	CKD	REVISIONS

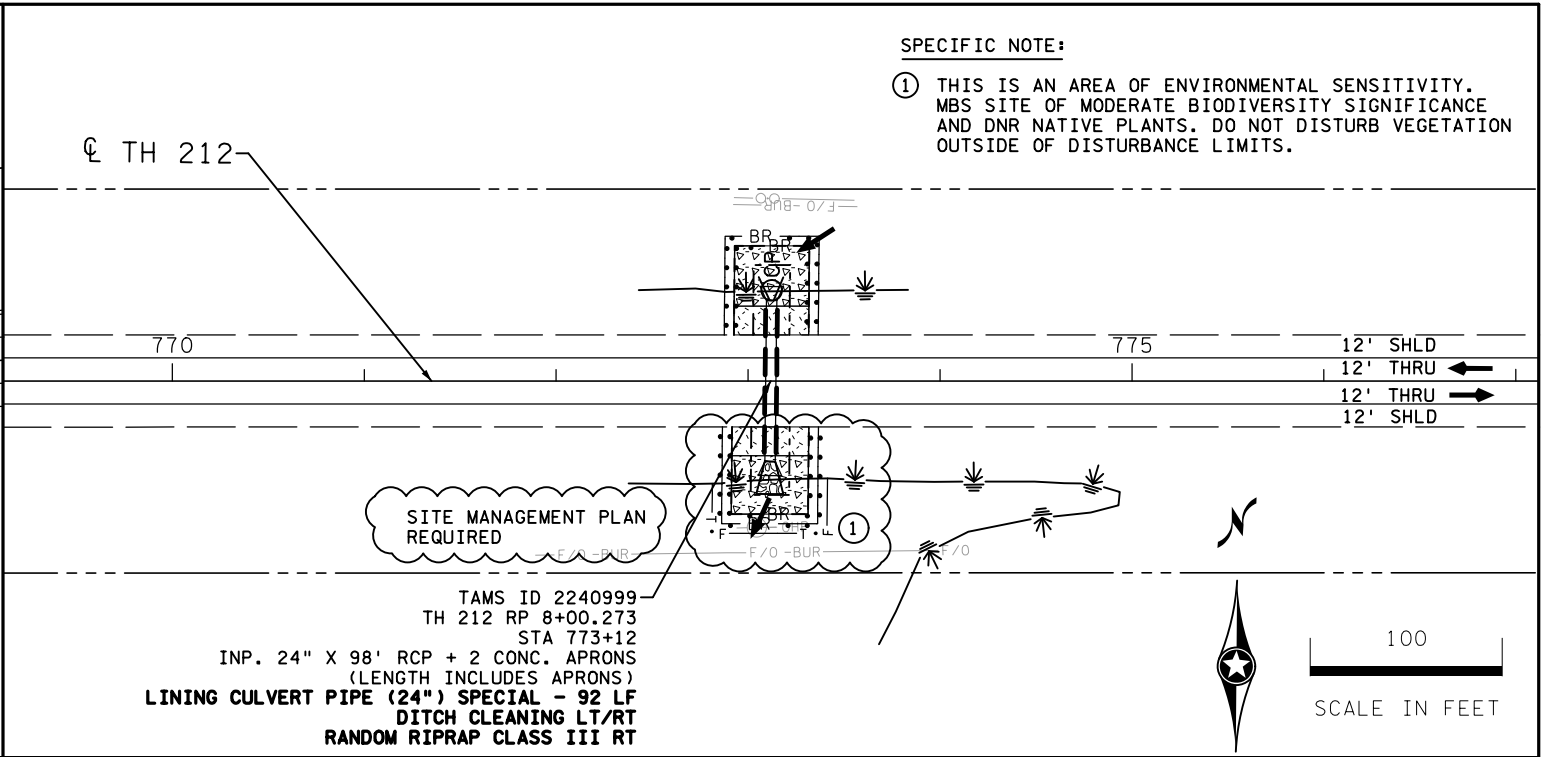
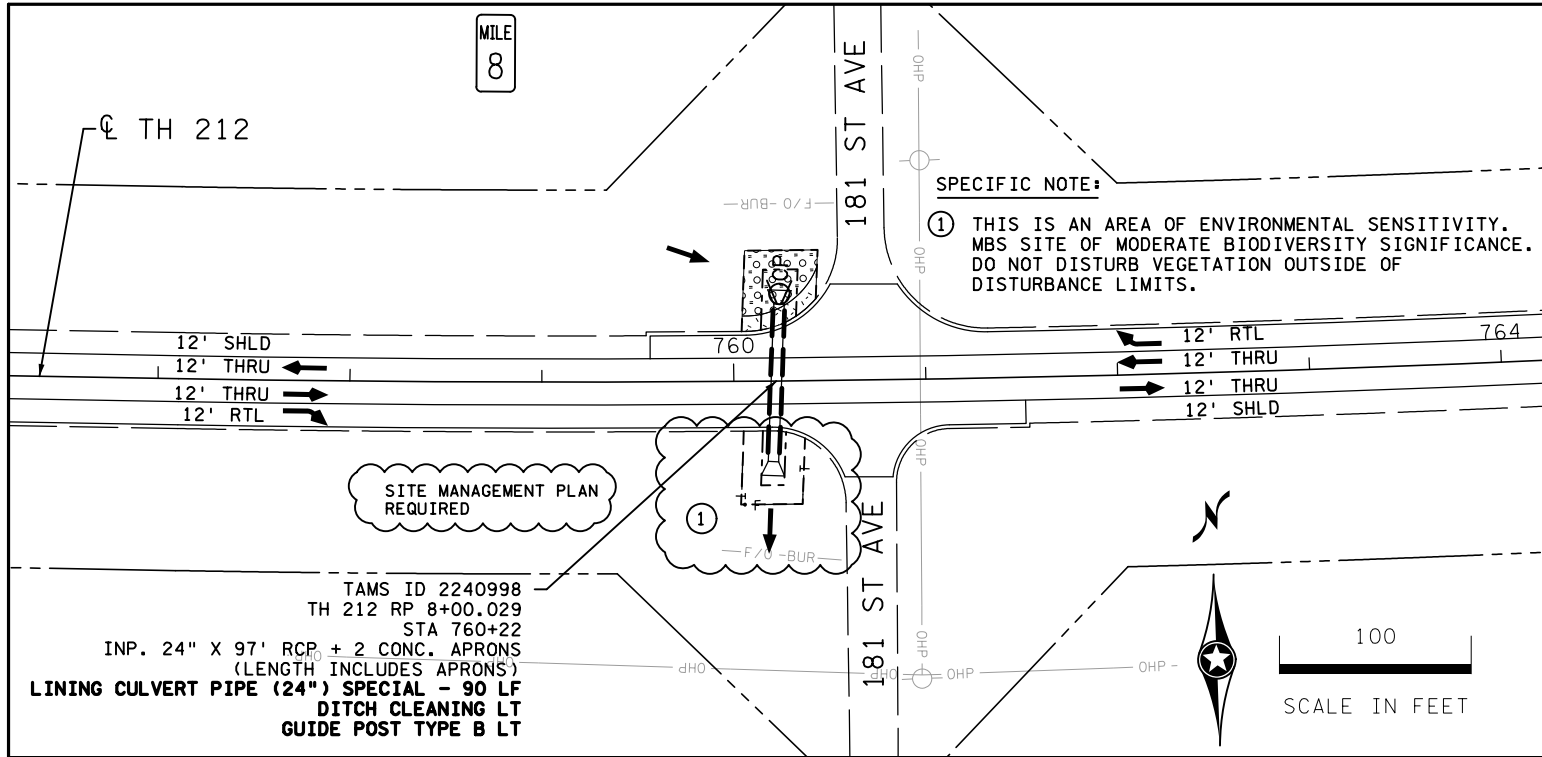
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED  
BY ME OR UNDER MY DIRECT SUPERVISION AND THAT  
I AM A DULY LICENSED PROFESSIONAL ENGINEER  
UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON  
SIGNATURE:   
DATE: 09/19/24 LICENSE #: 54298

EROSION CONTROL & TURF ESTABLISHMENT PLANS  
TH 212

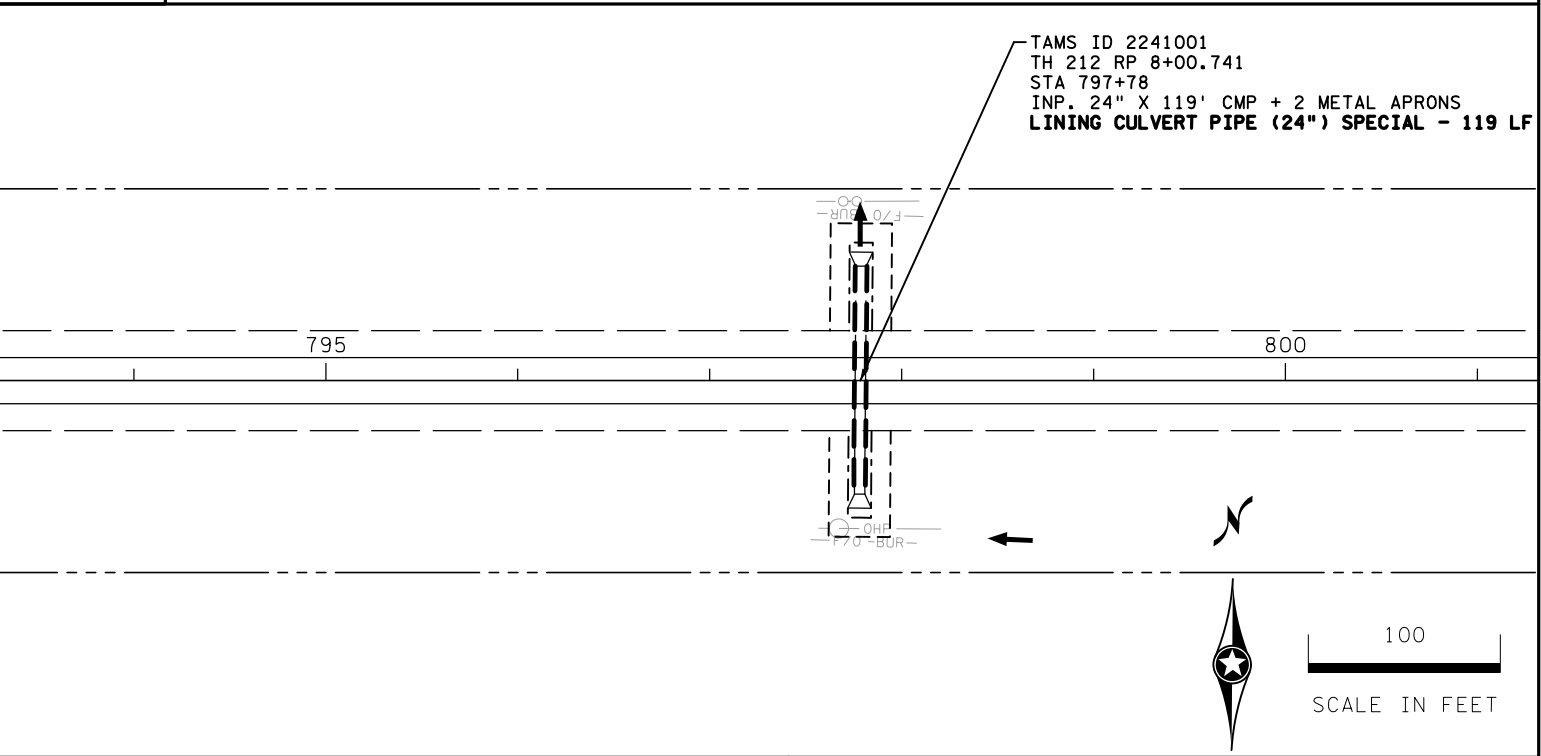
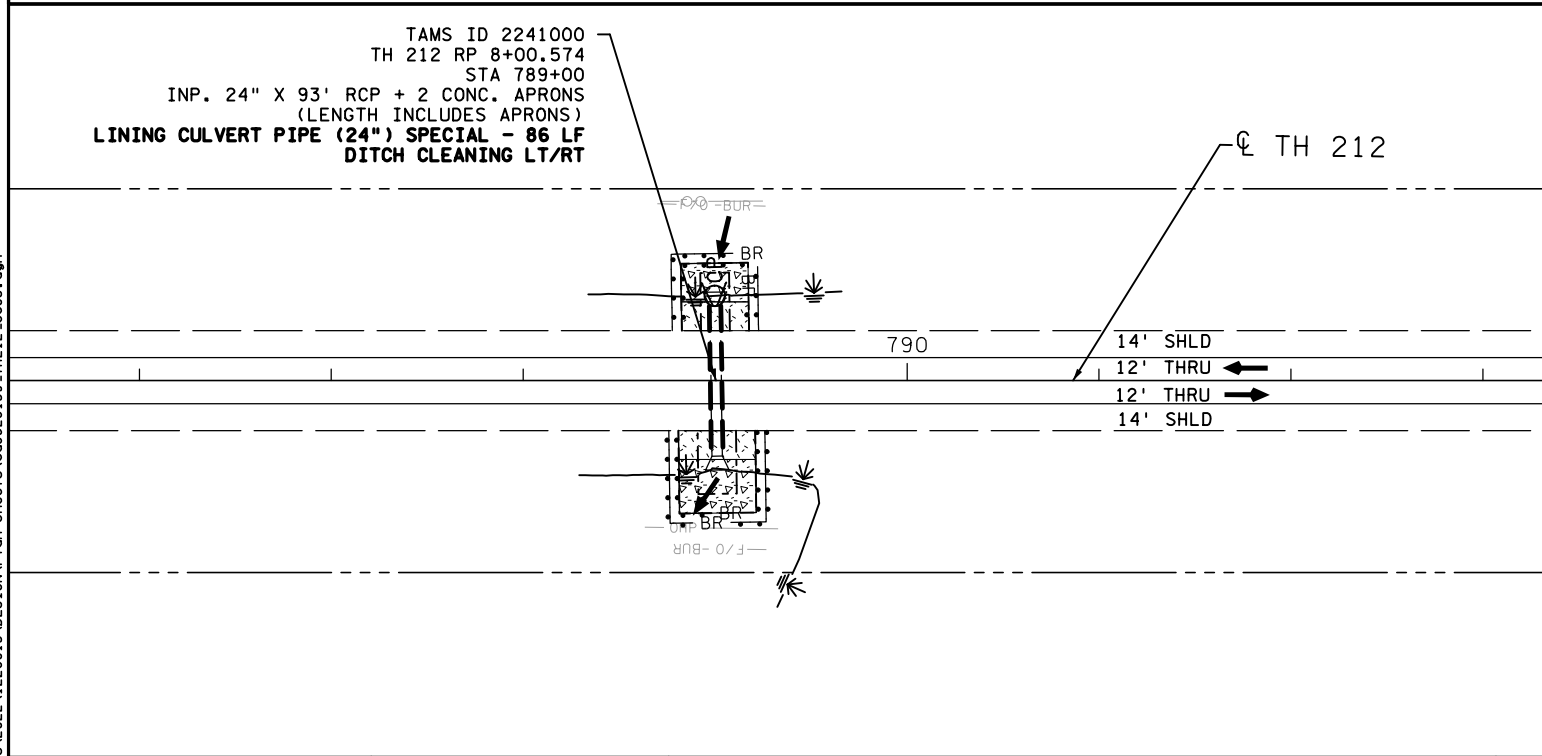
SP 8828-139  
SHEET NO. 134 OF 212 SHEETS





LEGEND			
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---	CONSTRUCTION LIMITS		TREE
---	LIMITS OF DISTURBANCE		TREELINE
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE
==	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)
	MAILBOX		PAVEMENT RECONSTRUCTION
	FLOW ARROW		CLEARING
	CULVERT END CONTROL		SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
			SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
			SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)

			SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
			SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
			SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)



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NO	DATE	DWN	CKD	REVISIONS



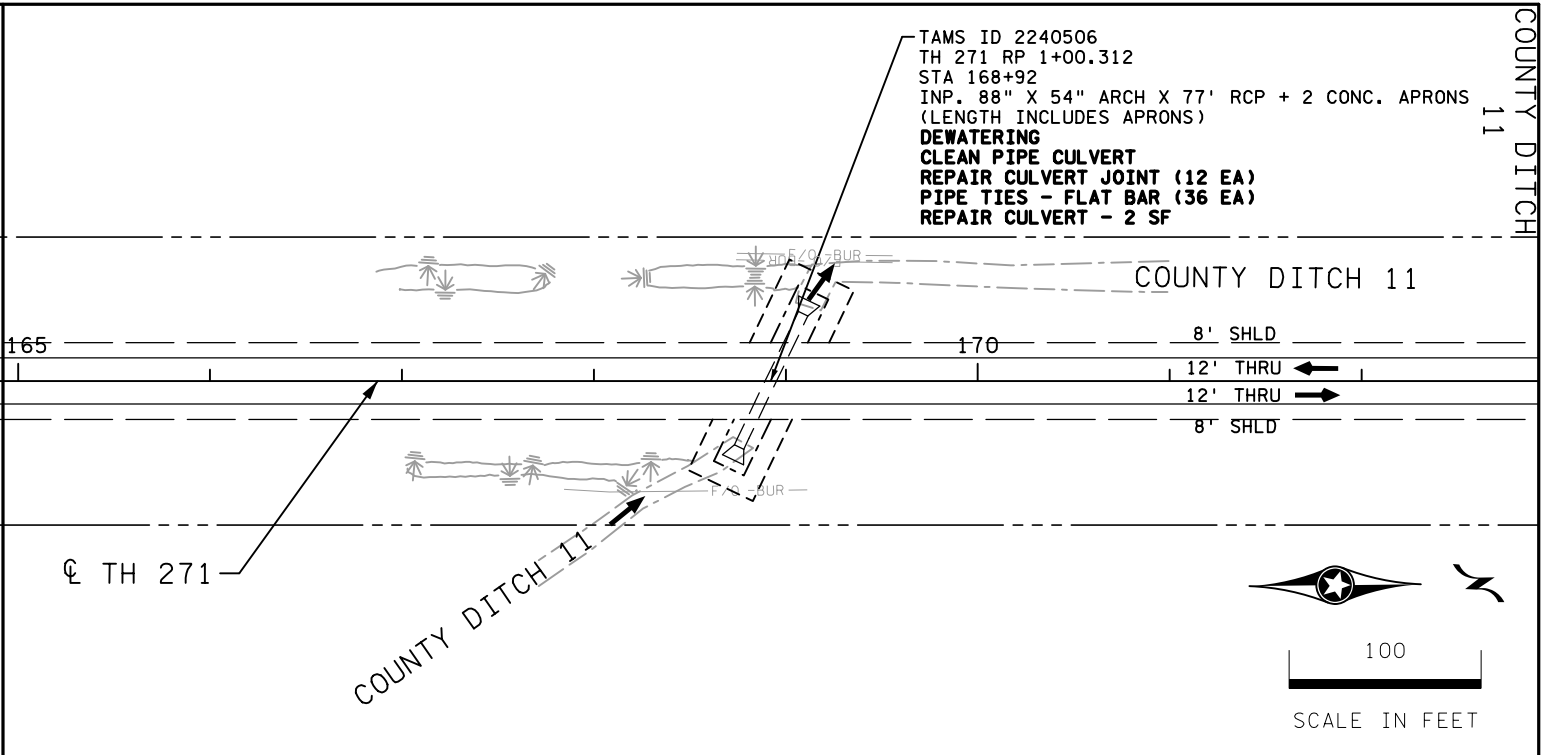
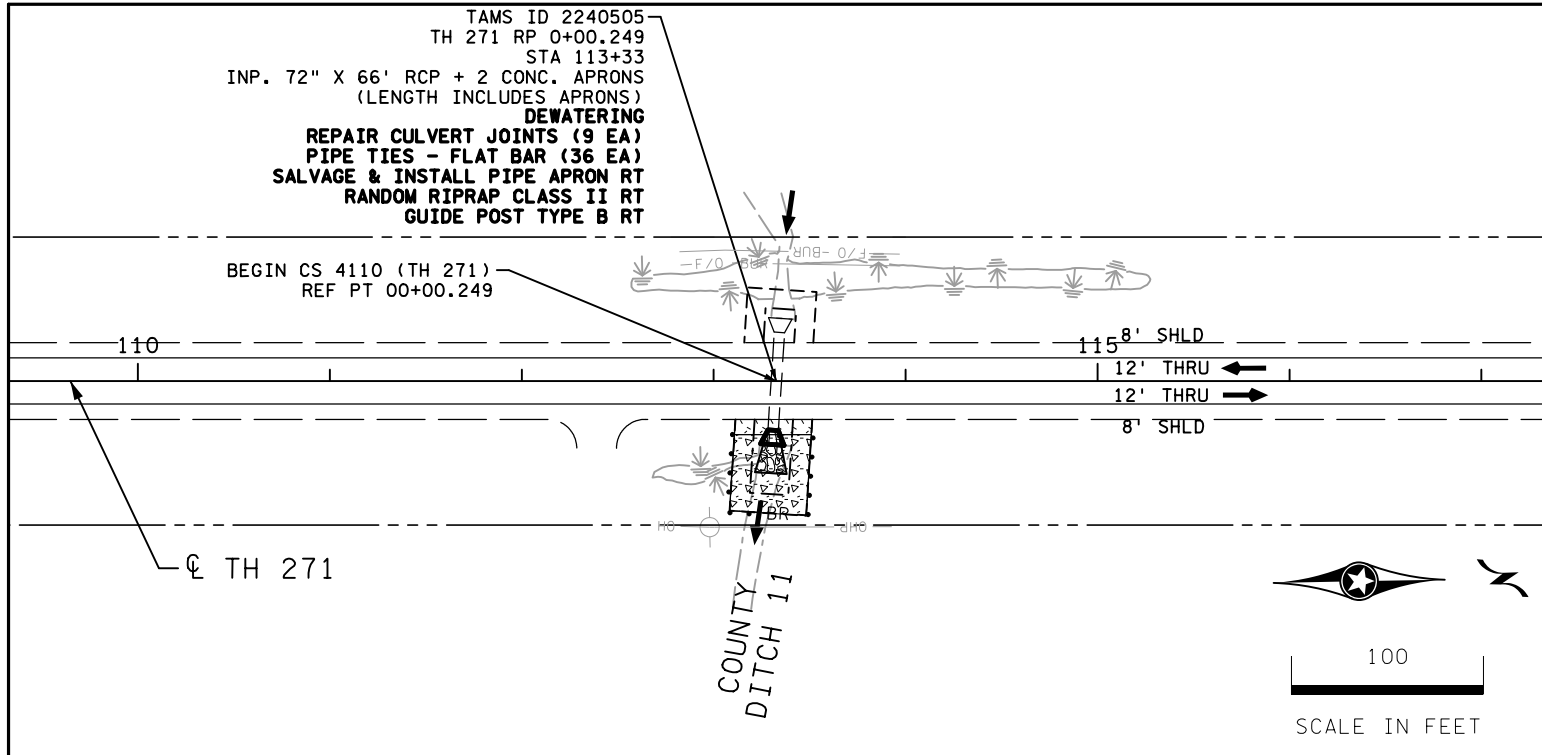
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON  
SIGNATURE:   
DATE: 09/19/24 LICENSE #: 54298

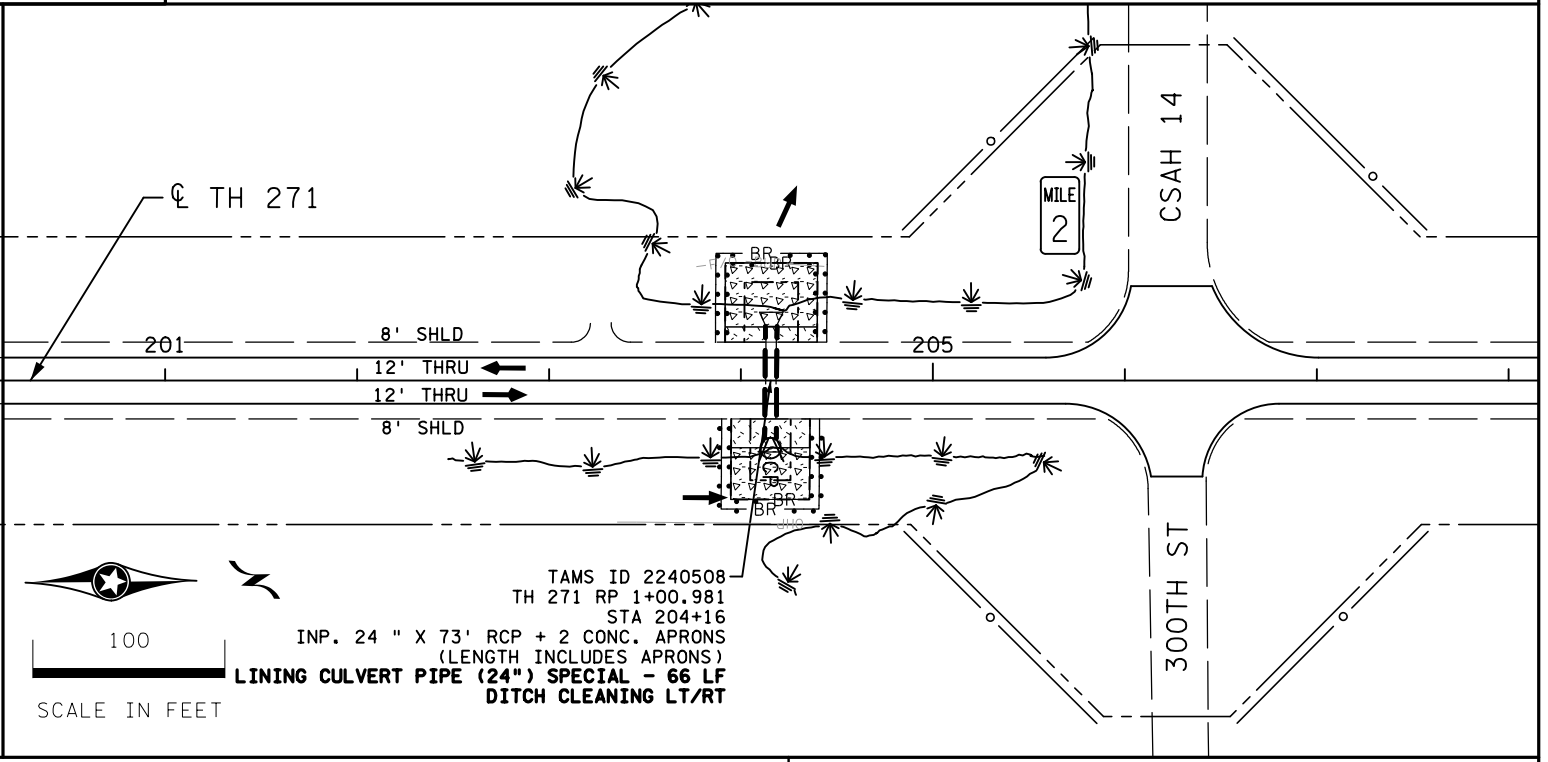
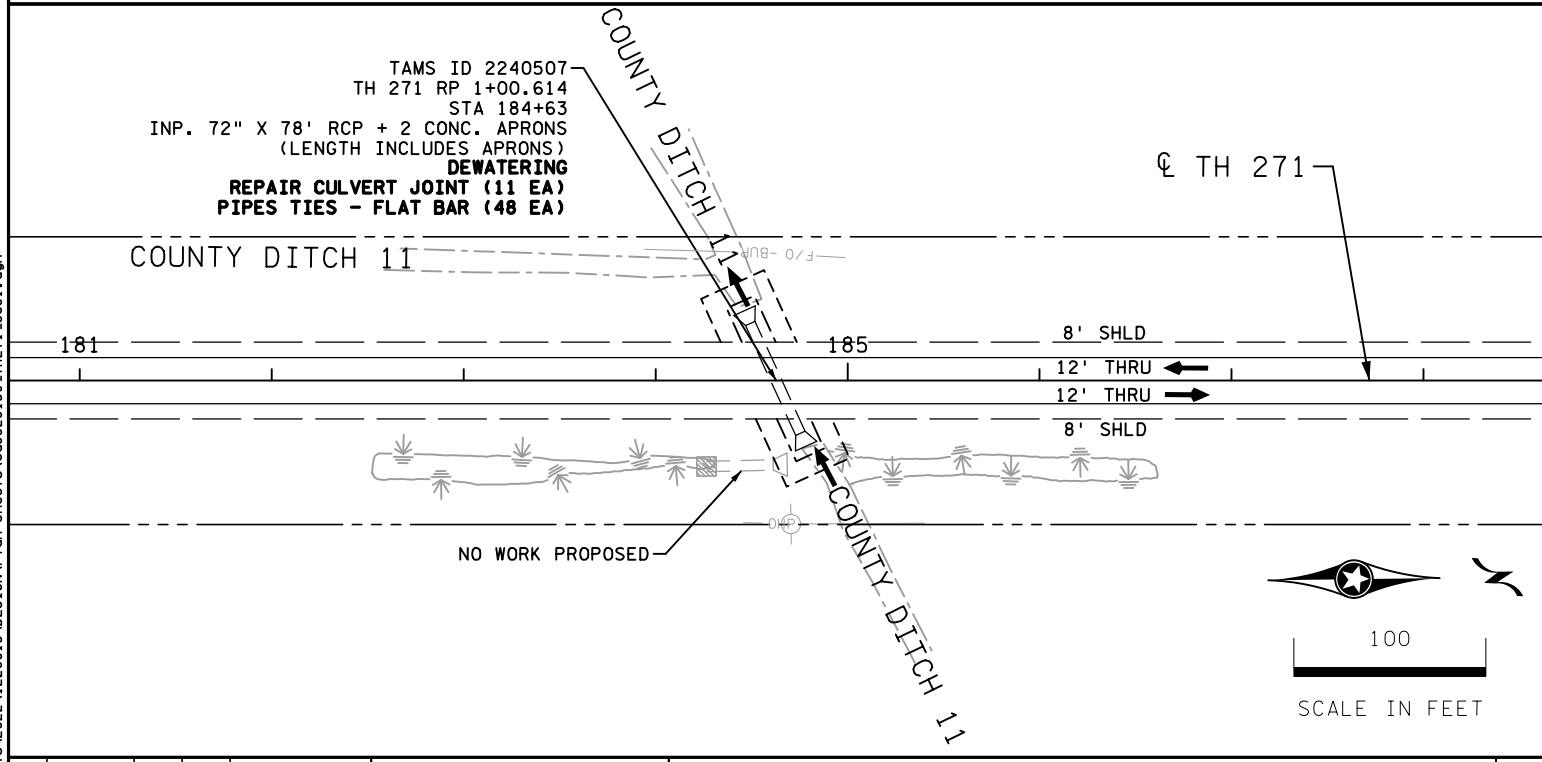
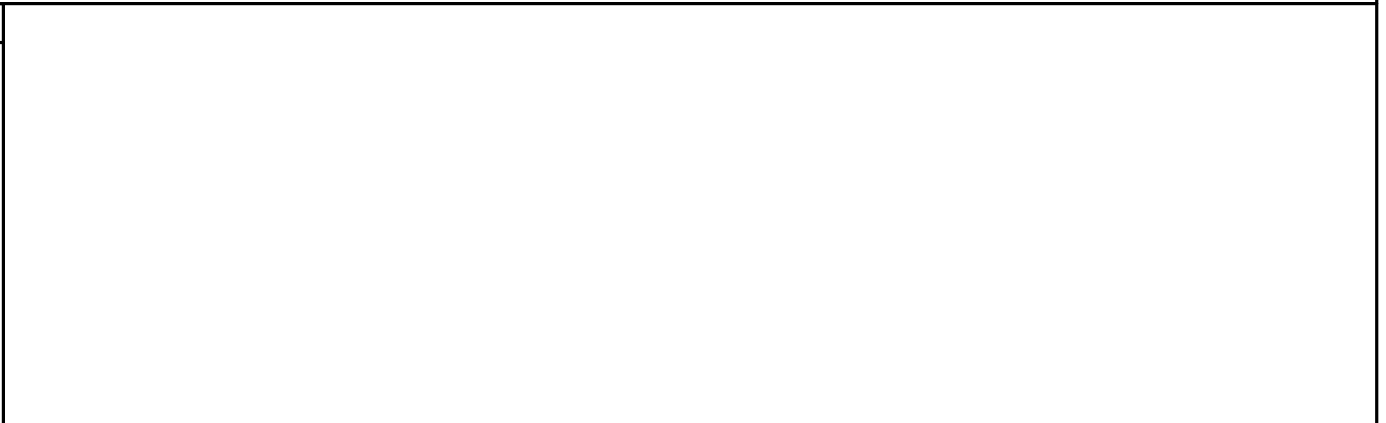
EROSION CONTROL & TURF ESTABLISHMENT PLANS  
TH 212

SP 8828-139  
SHEET NO. 135 OF 212 SHEETS





LEGEND			
---	EXISTING R/W		RANDOM RIPRAP
---	CONSTRUCTION LIMITS		TREE
---	LIMITS OF DISTURBANCE		TREELINE
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE
==	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)
	MAILBOX		PAVEMENT RECONSTRUCTION
	FLOW ARROW		CLEARING
	CULVERT END CONTROL		SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
			SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
			SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)



NO	DATE	DWN	CKD	REVISIONS



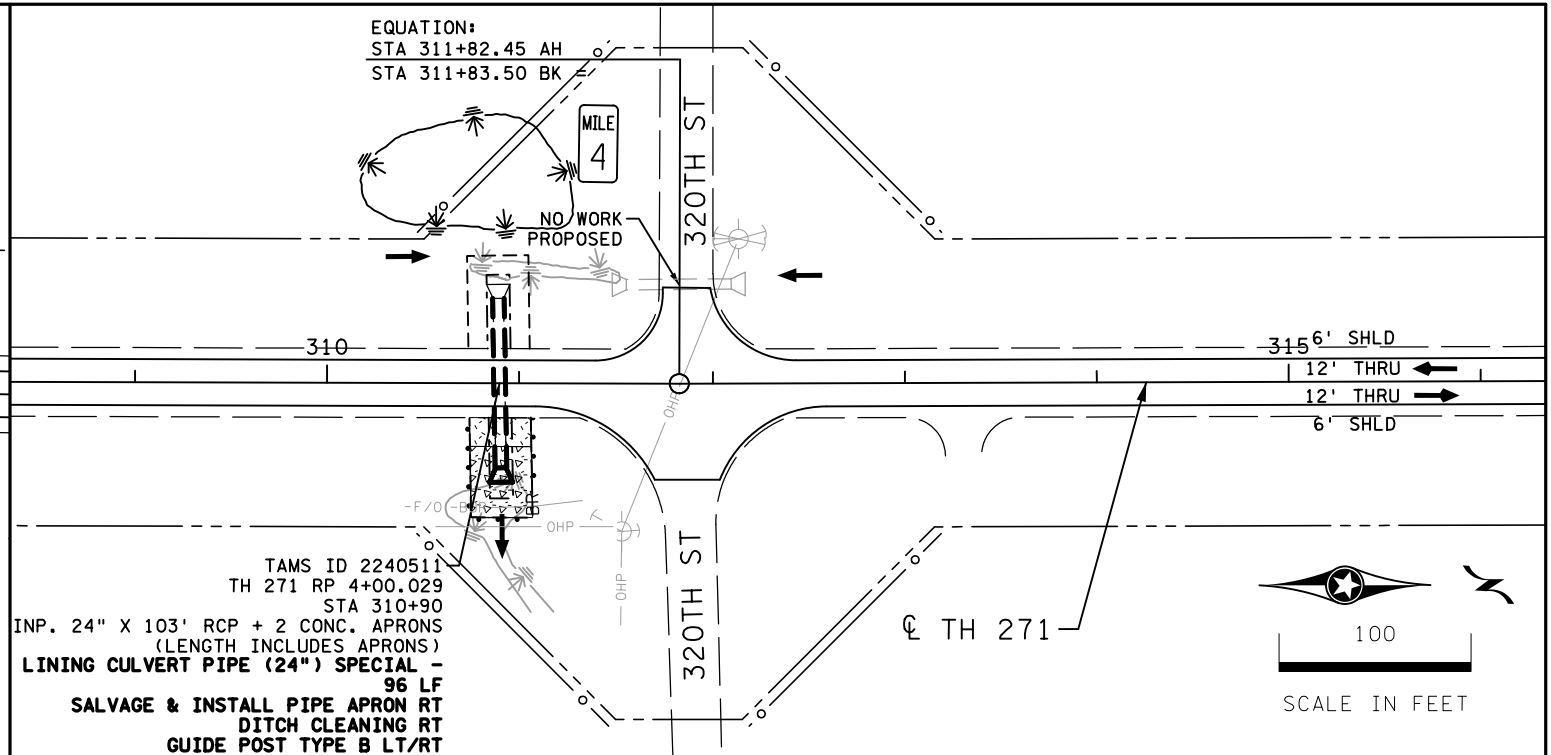
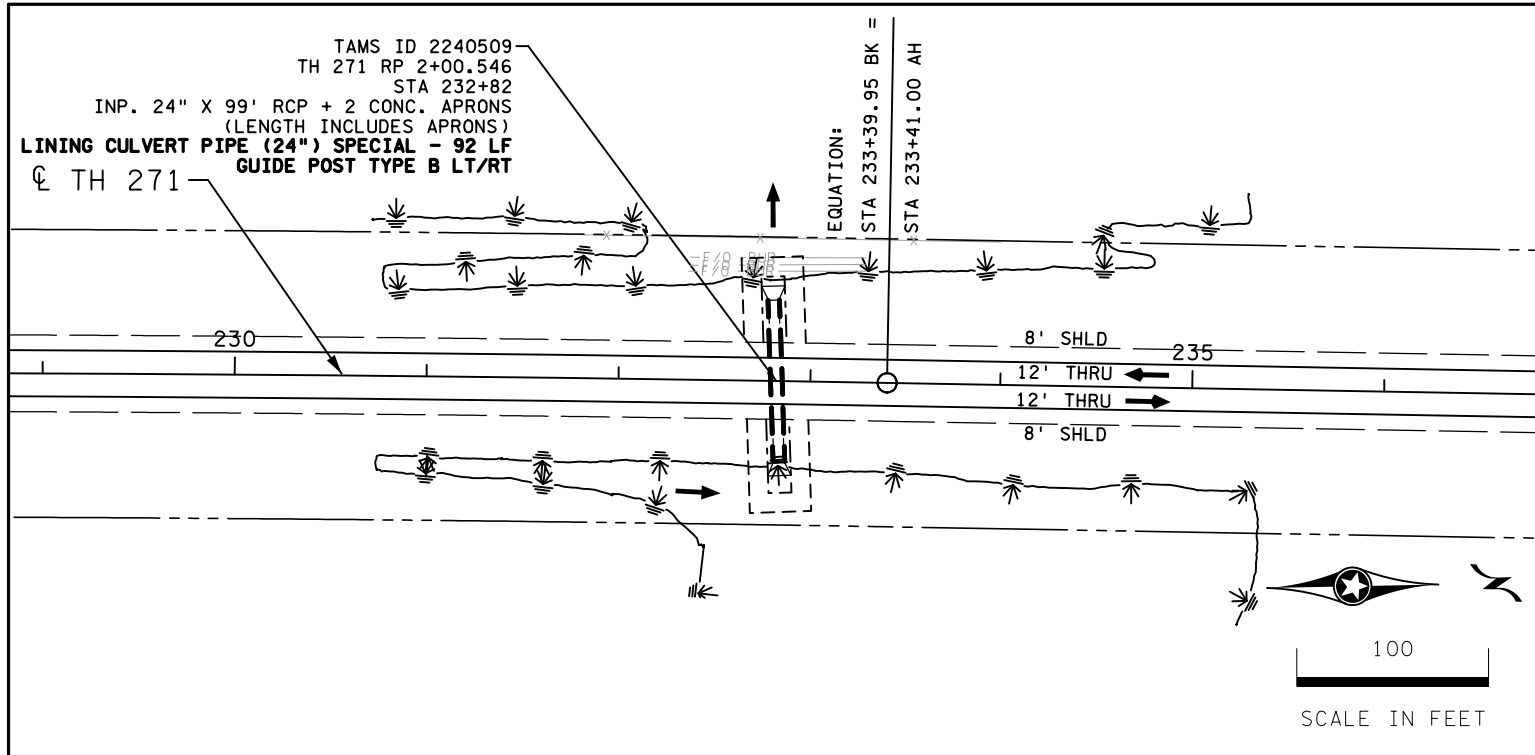
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON  
SIGNATURE:   
DATE: 09/19/24 LICENSE #: 54298

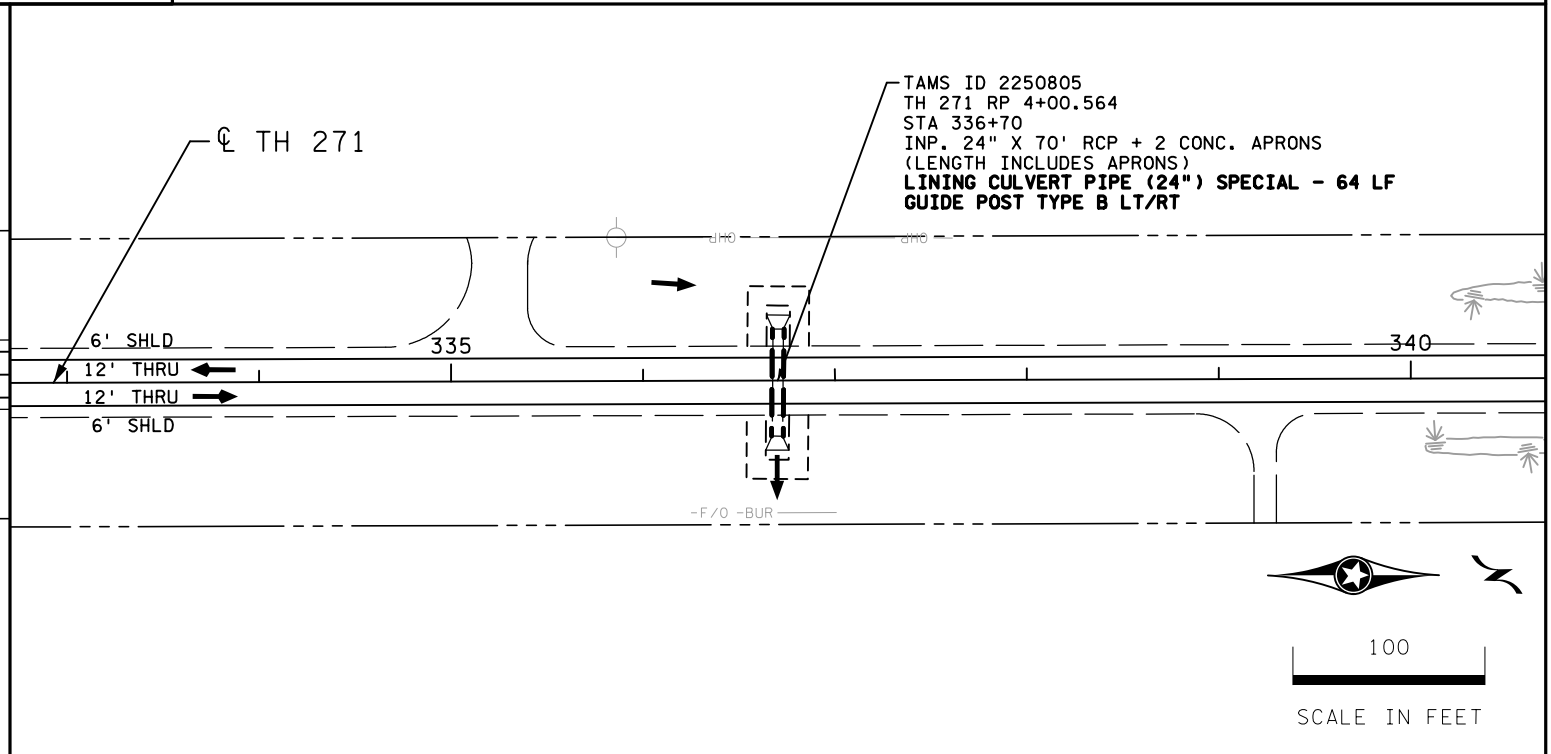
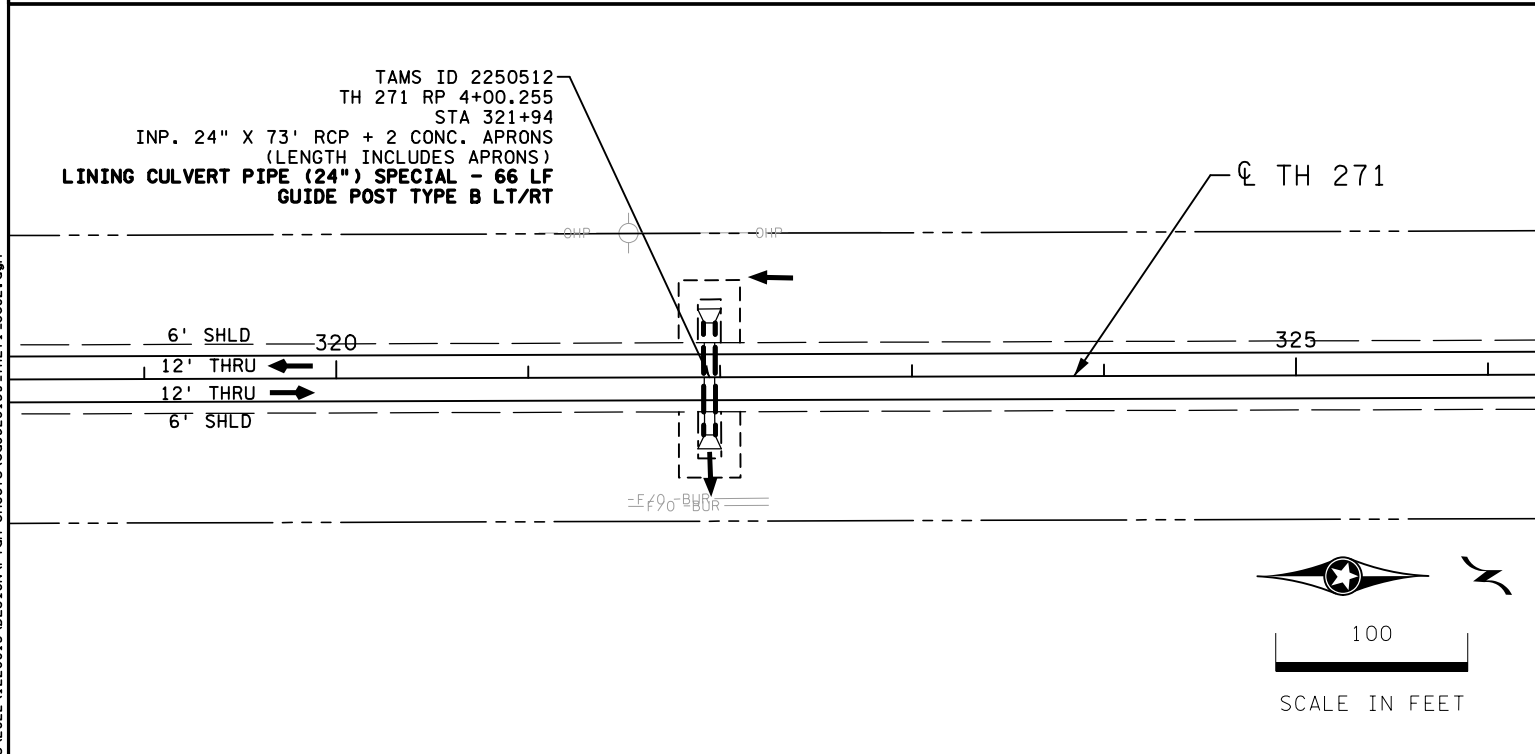
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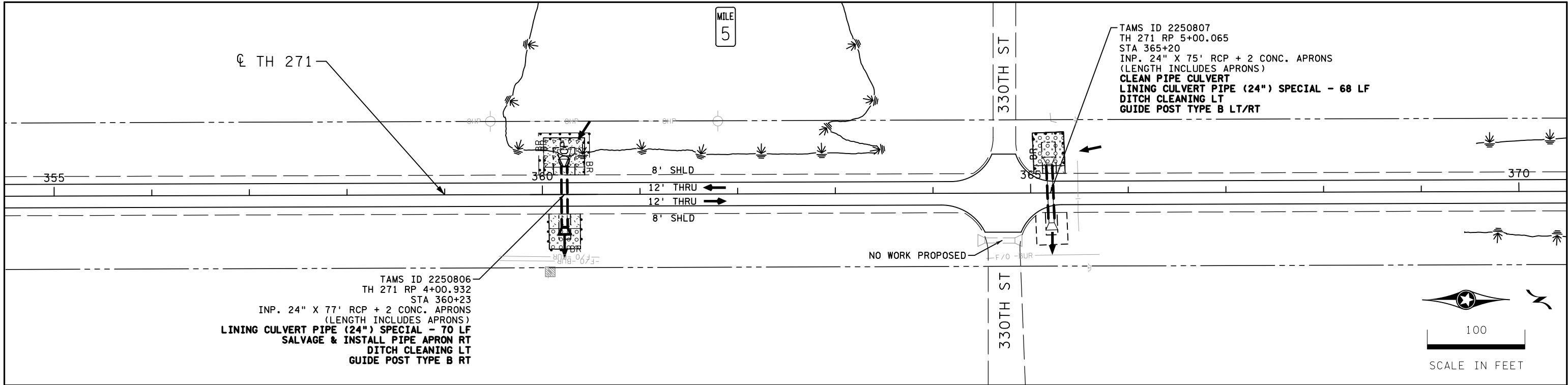
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SHEET NO. 137 OF 212 SHEETS



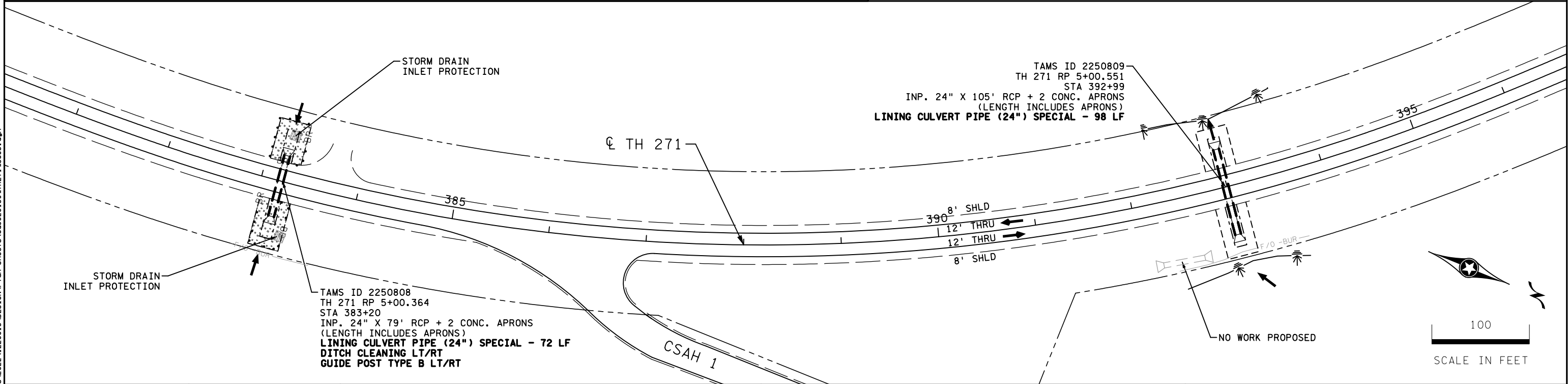


LEGEND			
---	EXISTING R/W		RANDOM RIPRAP
---	CONSTRUCTION LIMITS		TREE
---	LIMITS OF DISTURBANCE		TREELINE
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE
==	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)
	MAILBOX		PAVEMENT RECONSTRUCTION
	FLOW ARROW		CLEARING
	CULVERT END CONTROL		SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
			SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
			SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)





LEGEND			
---	EXISTING R/W		RANDOM RIPRAP
---	CONSTRUCTION LIMITS		TREE
---	LIMITS OF DISTURBANCE		TREELINE
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE
---	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)
	MAILBOX		PAVEMENT RECONSTRUCTION
	FLOW ARROW		CLEARING
	CULVERT END CONTROL		SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
			SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
			SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)



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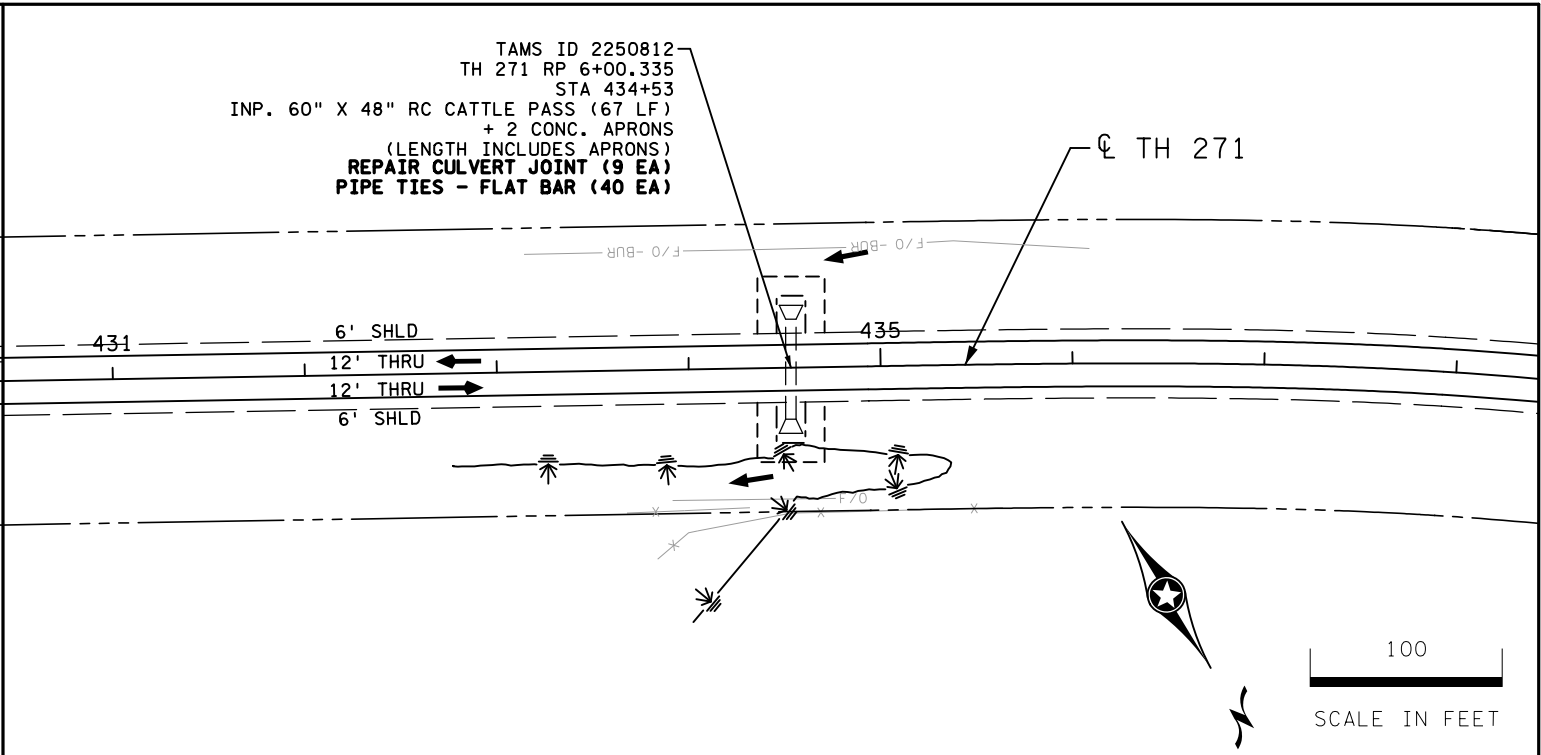
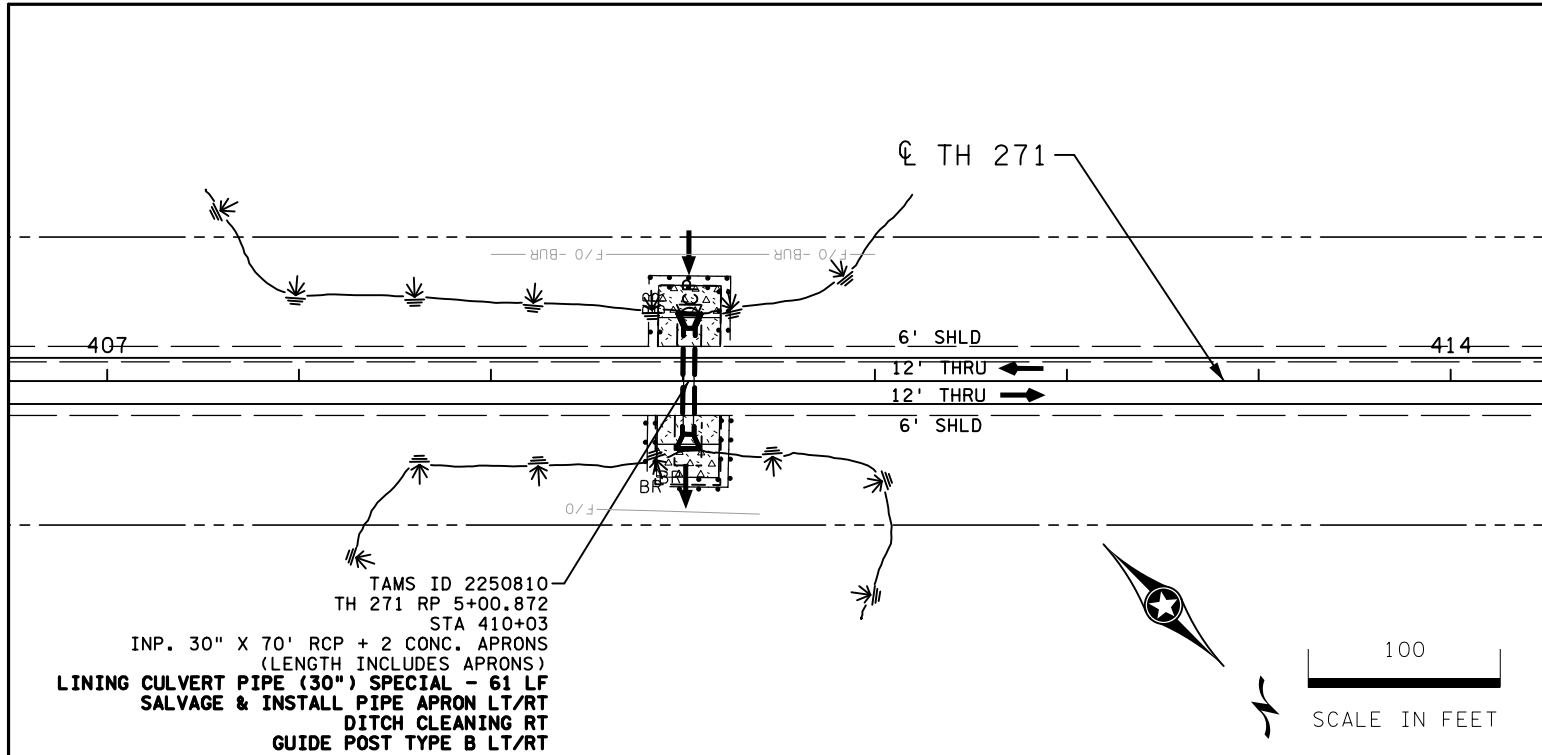


I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

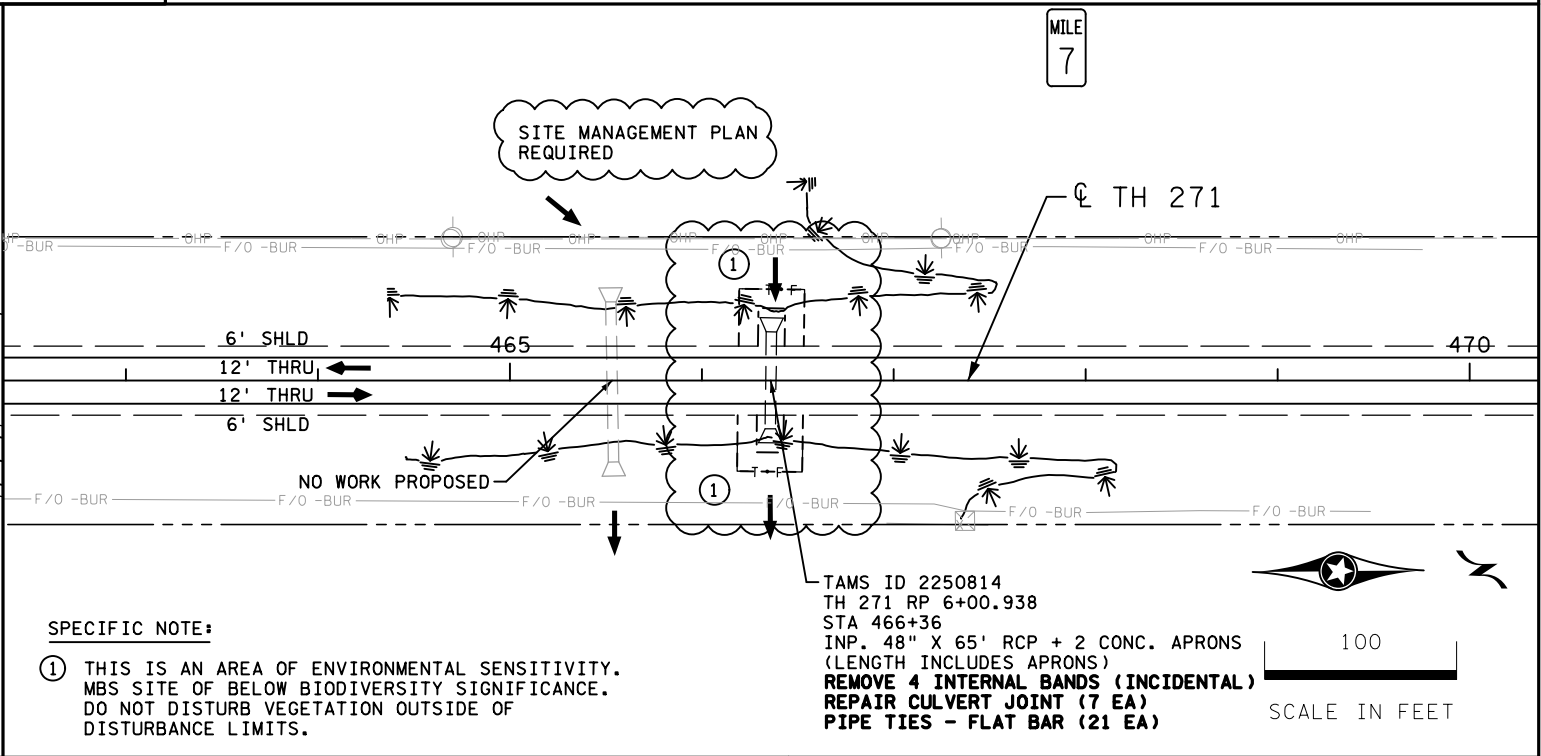
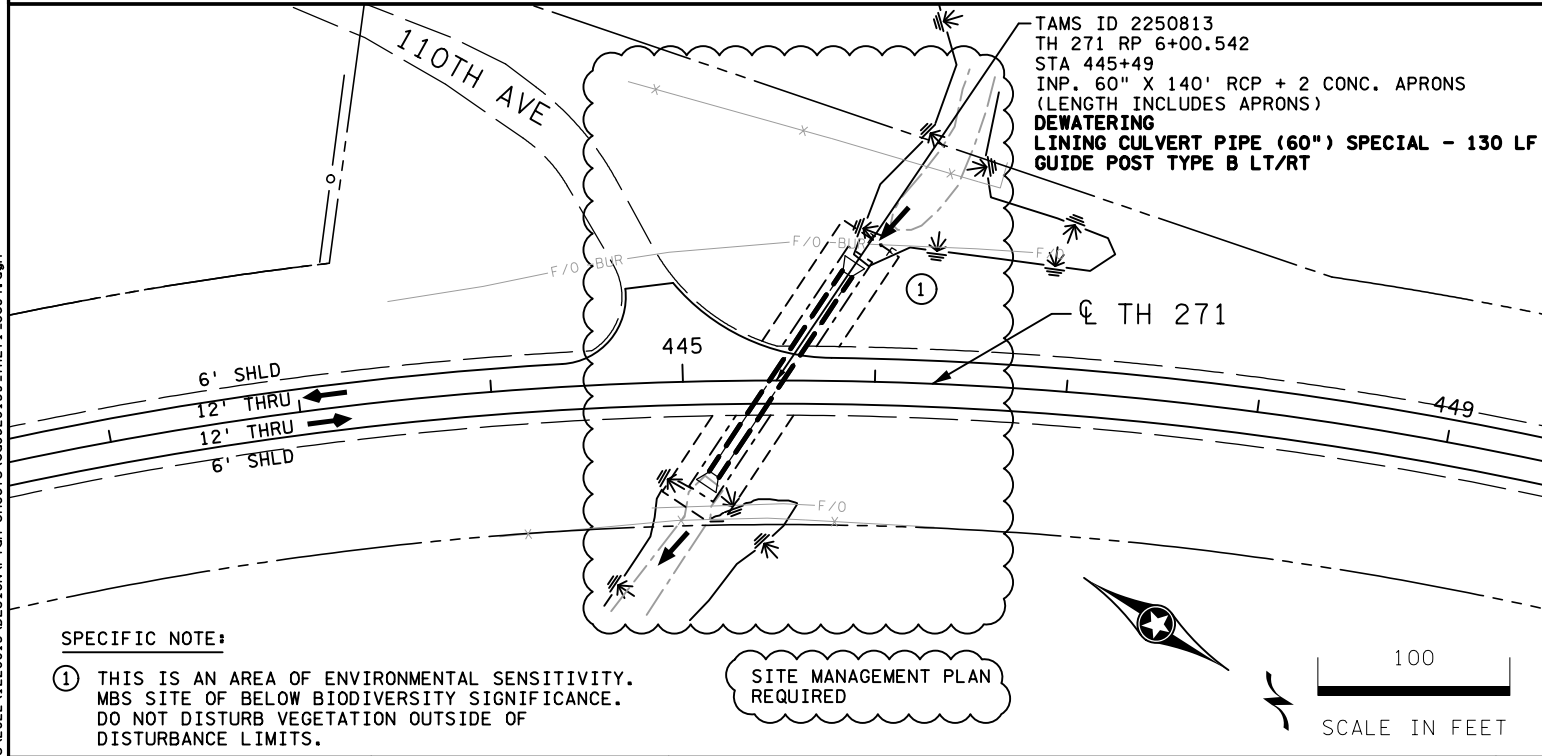
PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

EROSION CONTROL & TURF ESTABLISHMENT PLANS  
TH 271

SP 8828-139  
SHEET NO. 139 OF 212 SHEETS



LEGEND			
---	EXISTING R/W		RANDOM RIPRAP
---	CONSTRUCTION LIMITS		TREE
---	LIMITS OF DISTURBANCE		TREELINE
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE
---	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)
	MAILBOX		PAVEMENT RECONSTRUCTION
	FLOW ARROW		CLEARING
	CULVERT END CONTROL		SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
			SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
			SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
			SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)



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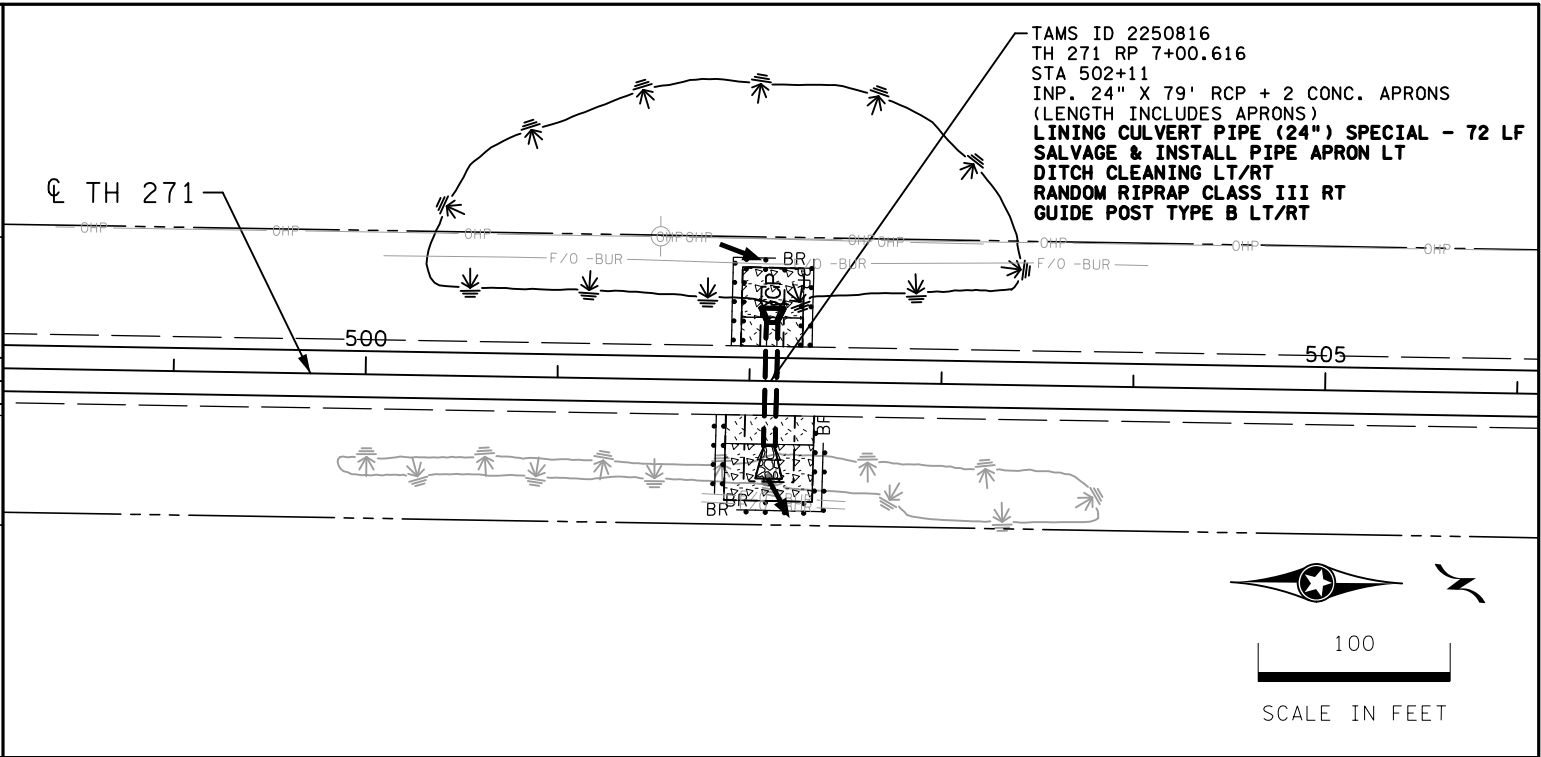
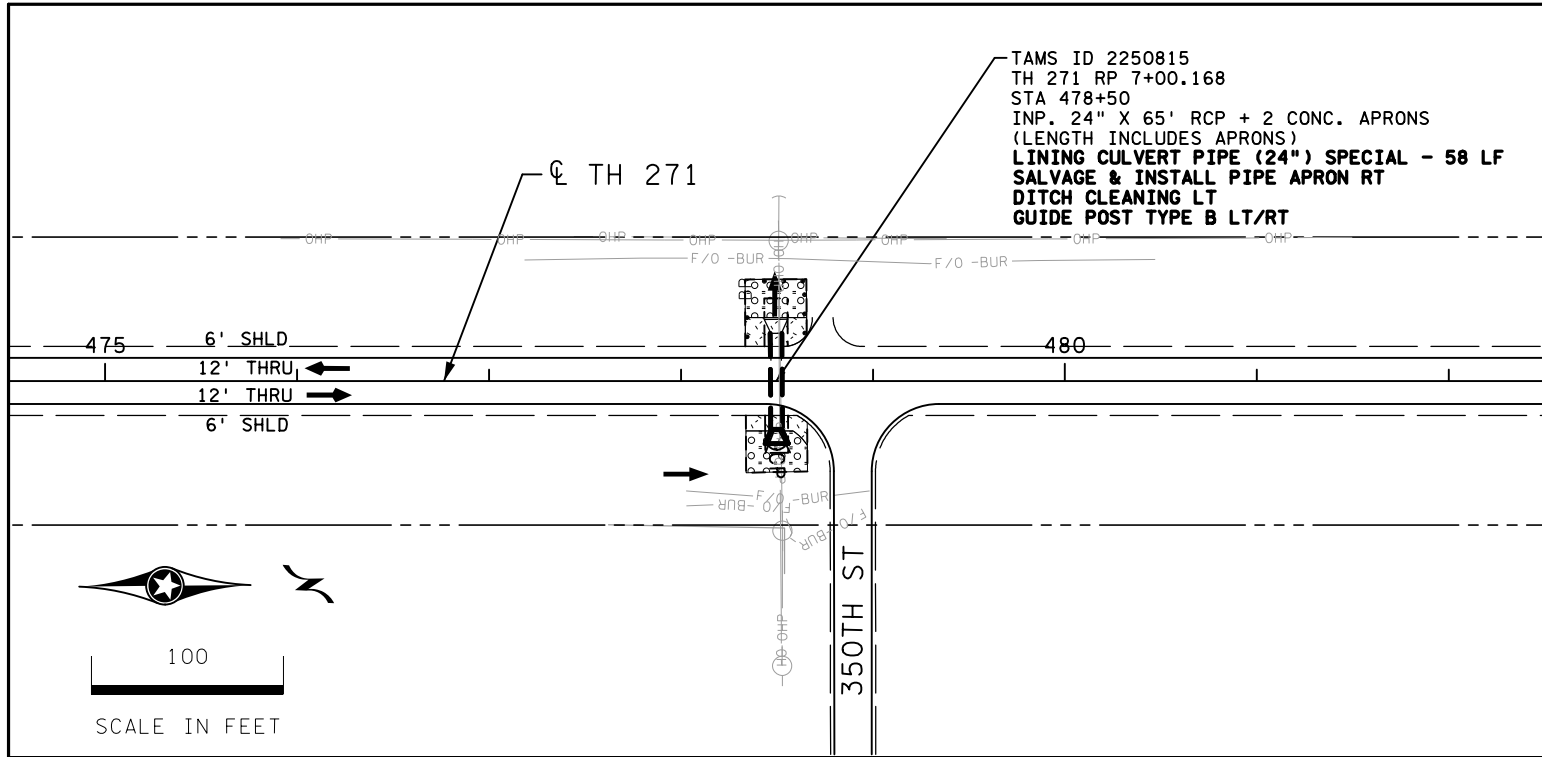


I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON  
SIGNATURE:   
DATE: 09/19/24 LICENSE #: 54298

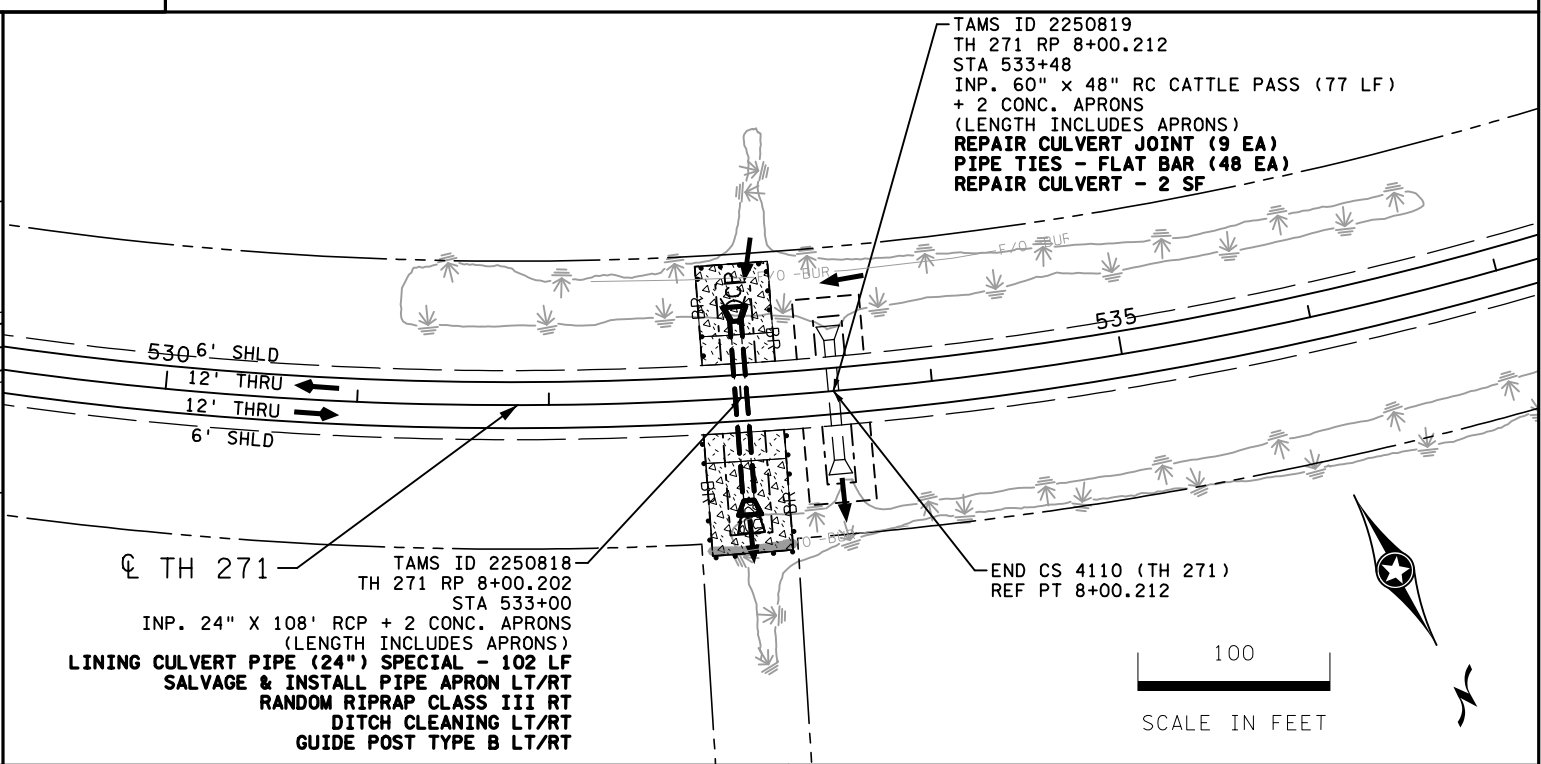
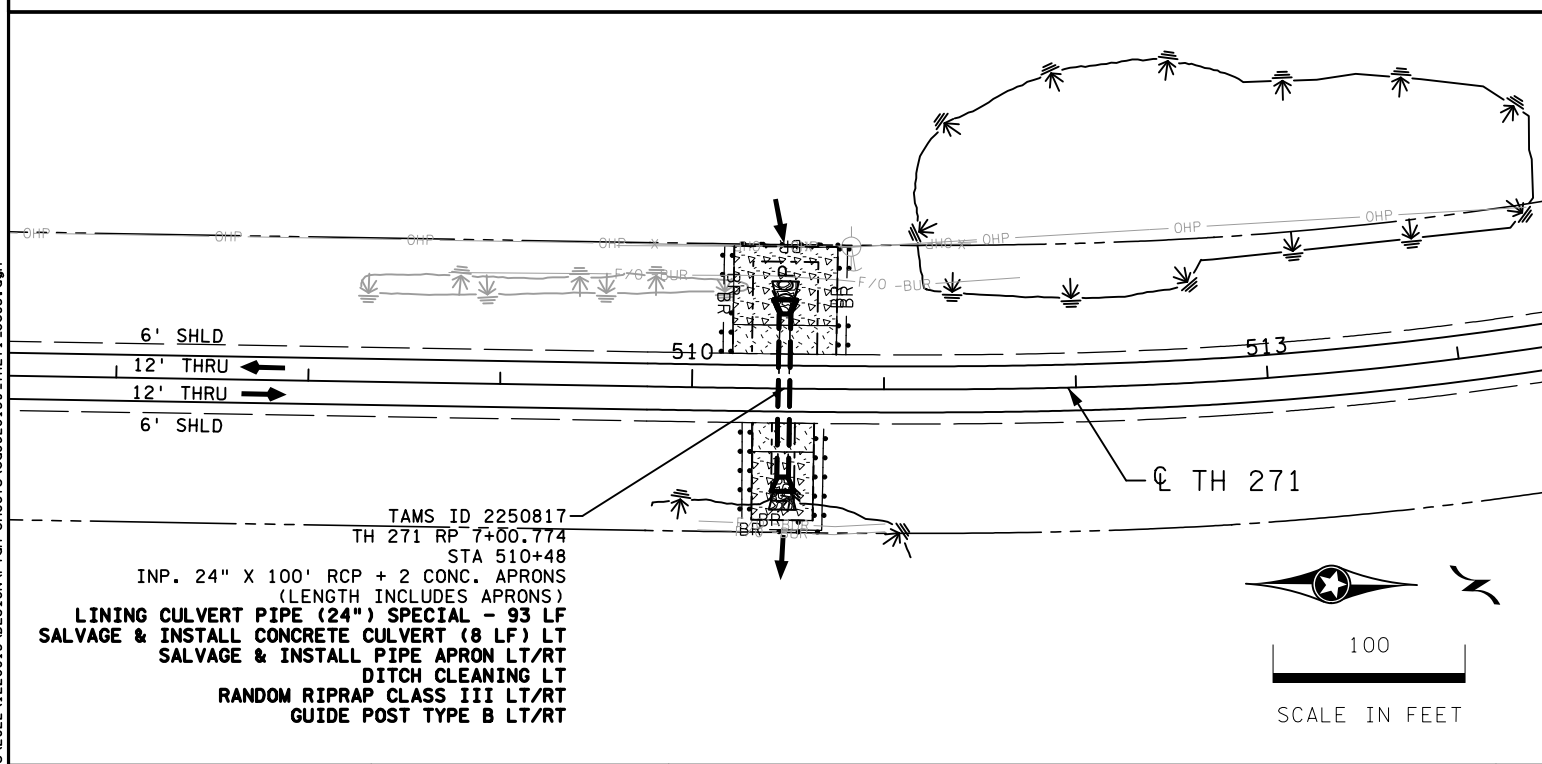
EROSION CONTROL & TURF ESTABLISHMENT PLANS  
TH 271

SP 8828-139  
SHEET NO. 140 OF 212 SHEETS



LEGEND

---	EXISTING R/W		RANDOM RIPRAP		SEED MESIC INSLOPE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
---	CONSTRUCTION LIMITS		TREE		SEED TURFGRASS ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 1 (20-10-20)
---	LIMITS OF DISTURBANCE		TREELINE		SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 3 (22-5-10)
	WETLAND (AREA OF ENVIRONMENTAL SENSITIVITY)		EXISTING FENCE		SEED WET DITCH ROLLED EROSION PREVENTION CAT 25 FERTILIZER TYPE 4 (18-1-8)
	WET DITCH		SEDIMENT CONTROL LOG (TYPE COMPOST)		SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 35 FERTILIZER TYPE 3 (22-5-10)
---	OTHER AQUATIC RESOURCE		TEMPORARY FENCE		
==	INPLACE CULVERT / STORM SEWER		SILT FENCE (TYPE MS)		
	MAILBOX		PAVEMENT RECONSTRUCTION		
	FLOW ARROW		CLEARING		
	CULVERT END CONTROL				



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I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON  
SIGNATURE:   
DATE: 09/19/24 LICENSE #: 54298

EROSION CONTROL & TURF ESTABLISHMENT PLANS  
TH 271

SP 8828-139  
SHEET NO. 141 OF 212 SHEETS

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SP 8828-139 DISTRICT WIDE CULVERT REPAIR DISTRICT 8 COMMITMENT	LOCATION	CONTRACT ITEM	REGULATOR / PARTNER	REFERENCE DOCUMENT	MnDOT TECHNICAL CONTACT	RESPONSIBLE PARTY	NOTES	VERIFICATION	VERIFICATION DATE
WETLANDS									
THERE WILL BE PERMANENT AND TEMPORARY WETLAND IMPACTS. ALL CONSTRUCTION ACTIVITIES INCLUDING SITE ACCESS AND STOCKPILING MUST REMAIN WITHIN THE DISTURBANCE LIMITS. TEMPORARY IMPACTS MUST BE RESTORED TO WETLAND HYDROLOGY AND VEGETATION THROUGH FINAL GRADING TO PRE-CONSTRUCTION CONTOURS AND SEEDING. SEE WETLAND PERMIT FOR ALLOWABLE DURATION OF TEMPORARY IMPACTS.	DELINEATED WETLAND FEATURES	CONSTRUCTION PLAN	USACE, BWSR	USACE TRGP, WCA NOTIFICATION	DISTRICT 8 WETLAND COORDINATOR - ALLEN SCHMITZ, 320-214-6328	CONSTRUCTION			
PUBLIC WATERS									
DO NOT USE HYDRAULIC EROSION CONTROL PRODUCTS THAT CONTAIN PLASTIC FIBERS IN AREAS THAT DRAIN TO PUBLIC WATERS	PROJECT-WIDE	SPECIAL PROVISION (2575) ESTABLISHING VEGETATION AND CONTROLLING EROSION (HYDRAULIC MATRIX)	DNR	ENM RESPONSE	DNR TRANSPORTATION HYDROLOGIST - PATTY FOWLER, 612-708-7732	CONSTRUCTION			
WHEN USING CURED IN PLACE PLASTIC LINERS, DO NOT ALLOW HOT WATER PRECIPITATE OR CHEMICAL CONTAINING PRECIPITATE TO DISCHARGE INTO RECEIVING WATERS.		SPECIAL PROVISION (2503) LINING SEWER PIPE							
CONSTRUCTION STORMWATER									
ANY EROSION CONTROL BLANKET MUST BE NATURAL FIBER NETTING	PROJECT-WIDE	STANDARD SPEC 3885, EROSION CONTROL & TURF ESTABLISHMENT PLAN	DNR, USFWS	ENM RESPONSE	DNR TRANSPORTATION HYDROLOGIST - PATTY FOWLER, 612-708-7732	CONSTRUCTION			
STABILIZE ALL EXPOSED SOILS WITHIN 200' OF PUBLIC WATERS WITHIN 24 HOURS AFTER SOIL DISTURBING ACTIVITY. SEE SWPPP NARRATIVE FOR DATES.	TH 40 PUBLIC WATERS WETLAND, TH 68 SLEEPY EYE CREEK	SWPPP NARRATIVE	MPCA, DNR	PUBLIC WATERS PERMIT, CSW PERMIT					
OTHER AREAS OF ENVIRONMENTAL SENSITIVITY									
AVOID OR MINIMIZE IN-STREAM WORK	EASEMENT AT TH 7 CULVERTS #2256881(LT), #2256882(LT), #2256871(LT)	EROSION CONTROL & TURF ESTABLISHMENT PLAN	DNR	TERMS FOR MNDOT EASEMENT EMND101269	DNR REALTY SPECIALIST - KARLA IHNS, 507-233-1210	CONSTRUCTION	SITE MANAGEMENT PLAN IS REQUIRED AT THESE CULVERTS AND TEMPORARY FENCING WILL BE USED TO MINIMIZE AREA OF IMPACT.		
MULTIPLE TYPES OF SENSITIVE FEATURES ARE PRESENT. WORK AND STAGING OF EQUIPMENT IS NOT ALLOWED IN AREAS MARKED "AREA OF ENVIRONMENTAL SENSITIVITY" OR "AES." WORK IS NOT ALLOWED ADJACENT TO THESE AREAS WITHOUT SUBMITTING A SITE MANAGEMENT PLAN. TEMPORARY FENCING TO BE INSTALLED AT AES LOCATIONS (EXCLUDING WETLANDS).	AES LOCATIONS	EROSION CONTROL & TURF ESTABLISHMENT PLAN, STANDARD SPEC 1717; STANDARD SPEC 2572.3		ENM RESPONSE	DNR TRANSPORTATION HYDROLOGIST - PATTY FOWLER, 612-708-7732; MNDOT ROADSIDE VEGETATION MANAGEMENT UNIT - NATE JOHNSON, 612-723-4288				

ACRONYMS	
<b>AES</b> - AREA OF ENVIRONMENTAL SENSITIVITY	<b>SWPPP</b> - STORM WATER POLLUTION PREVENTION PLAN
<b>BWSR</b> - BOARD OF WATER AND SOIL RESOURCES	<b>TRGP</b> - TRANSPORTATION REGIONAL GENERAL PERMIT
<b>CSW</b> - CONSTRUCTION STORMWATER	<b>USACE</b> - US ARMY CORPS OF ENGINEERS
<b>DNR</b> - DEPARTMENT OF NATURAL RESOURCES	<b>USFWS</b> - US FISH AND WILDLIFE SERVICE
<b>ENM</b> - EARLY NOTIFICATION MEMO	<b>WCA</b> - WETLAND CONSERVATION ACT
<b>MPCA</b> - MINNESOTA POLLUTION CONTROL AGENCY	<b>WMA</b> - WILDLIFE MANAGEMENT AREA

NO	DATE	DWN	CKD	REVISIONS



**ALLIANT**

I HAVE CONFIRMED THAT ALL OF THE COMMITMENTS LISTED IN THIS ENVIRONMENTAL MANAGEMENT PLAN ARE CONTAINED AS REQUIREMENTS IN THE CONTRACT.

SIGNATURE: *Peter A. Harff*

DATE: 09/19/24

ENVIRONMENTAL MANAGEMENT PLAN

SP 8828-139

SHEET NO. 142 OF 212 SHEETS



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SP 8828-139 DISTRICT WIDE CULVERT REPAIR DISTRICT 8 COMMITMENT	LOCATION	CONTRACT ITEM	REGULATOR / PARTNER	REFERENCE DOCUMENT	MnDOT TECHNICAL CONTACT	RESPONSIBLE PARTY	NOTES	VERIFICATION	VERIFICATION DATE
PROTECTED SPECIES									
DUE TO THE POSSIBLE PRESENCE OF PROTECTED BAT SPECIES, CONTRACTOR AND CONSTRUCTION STAFF MUST BE AWARE OF BAT PROTECTION REQUIREMENTS AND NOTIFICATION PROCEDURES FOR BAT SIGHTINGS.	PROJECT-WIDE	SPECIAL PROVISION: PROTECTION OF FISH AND WILDLIFE RESOURCES	USFWS	SECTION 7 CONSULTATION LETTER	MNDOT WILDLIFE ECOLOGIST – RYAN FOLEY, 651-366-3597	CONSTRUCTION			
DIRECT TEMPORARY LIGHTING AWAY FROM WOODED AREAS DURING ACTIVE BAT SEASON. SEE SPECIAL PROVISION FOR DATES.									
TREE CLEARING CAN ONLY OCCUR DURING THE TIME FRAMES SPECIFIED IN THE SPECIAL PROVISIONS TO AVOID AND MINIMIZE IMPACTS TO BATS.									
TO PROTECT ENDANGERED INSECTS AND THEIR HABITAT, RESTRICT ALL ACTIVITIES TO AVOID APPLICATION OF INSECTICIDES AND FUNGICIDES. MINIMIZE HERBICIDE USE. SEE SPECIAL PROVISIONS FOR DETAILS ON ALLOWABLE HERBICIDE USE.									
TO PREVENT MIGRATORY BIRD NESTING, COVER SOIL STOCKPILES WITH FABRIC OR TARPS – OR GRADE SURFACE TO A SLOPE NO STEEPER THAN 65 DEGREES – WHEN ANY SURFACE OF STOCKPILE IS NOT IN USE FOR 48 HOURS OR LONGER									
CONTRACTOR MUST INSPECT CULVERTS, INCLUDING EXPANSION JOINTS, TO DETERMINE IF BATS OR BAT SIGNS ARE PRESENT BEFORE BEGINNING WORK DURING THE BAT ACTIVE SEASON (SEE SPECIAL PROVISIONS FOR DATES). IF BAT SIGNS ARE DETECTED, STOP WORK AND NOTIFY MNDOT WILDLIFE ECOLOGIST.	TH 68 RP 3.52 (YELLOW MEDICINE COUNTY)								
CONTRACTOR MUST INSPECT CULVERTS FOR NESTING BIRDS PRIOR TO CULVERT WORK. IF NESTING BIRDS ARE PRESENT, AVOID WORK IN AREA AND CONTACT WILDLIFE ECOLOGIST.									
TREE CLEARING RESTRICTED TO WHAT IS PROPOSED IN PLAN.	PROJECT-WIDE	EROSION CONTROL & TURF ESTABLISHMENT PLAN							
VEGETATION									
REVEGETATION OF DISTURBED SOILS WILL BE DONE WITH NATIVE MIXES IN AREAS THAT ARE NOT PROPOSED FOR MOWED TURF GRASS	PROJECT-WIDE	EROSION CONTROL & TURF ESTABLISHMENT PLAN	USFWS	SECTION 7 CONSULTATION LETTER	MNDOT WILDLIFE ECOLOGIST – RYAN FOLEY, 651-366-3597	CONSTRUCTION			
AVOID WOUNDING OAKS AND THEIR ROOTS DURING OAK WILT HIGH RISK SEASON (APRIL – AUG)	EASEMENT AT TH 7 CULVERTS *2256881(LT), *2256882(LT), *2256871(LT)	STANDARD SPEC 2572.3	DNR	TERMS FOR MNDOT EASEMENT EMND101269	DNR REALTY SPECIALIST – KARLA IHNS, 507-233-1210				
USE SMALLEST AVAILABLE EQUIPMENT AND PRESERVE AS MUCH EXISTING NATIVE VEGETATION AS POSSIBLE.		EROSION CONTROL & TURF ESTABLISHMENT PLAN					TEMPORARY FENCING INSTALLED TO PRESERVE EXISTING VEGETATION AND LIMIT FOOTPRINT OF PROJECT.		
CONTRACTOR MUST STAY WITHIN DISTURBANCE LIMITS TO AVOID DISTURBING ANY NATIVE FLOWERING PLANTS.	AES LOCATIONS			MNDOT VEGETATION SURVEY AND FOLLOW-UP CORRE- SPONDENCE	MNDOT ROADSIDE VEGETATION MANAGEMENT UNIT – NATE JOHNSON, 612-723-4288				

ACRONYMS	
AES - AREA OF ENVIRONMENTAL SENSITIVITY	SWPPP - STORM WATER POLLUTION PREVENTION PLAN
BWSR - BOARD OF WATER AND SOIL RESOURCES	TRGP - TRANSPORTATION REGIONAL GENERAL PERMIT
CSW - CONSTRUCTION STORMWATER	USACE - US ARMY CORPS OF ENGINEERS
DNR - DEPARTMENT OF NATURAL RESOURCES	USFWS - US FISH AND WILDLIFE SERVICE
ENM - EARLY NOTIFICATION MEMO	WCA - WETLAND CONSERVATION ACT
MPCA - MINNESOTA POLLUTION CONTROL AGENCY	WMA - WILDLIFE MANAGEMENT AREA

NO	DATE	DWN	CKD	REVISIONS



I HAVE CONFIRMED THAT ALL OF THE COMMITMENTS LISTED IN THIS ENVIRONMENTAL MANAGEMENT PLAN ARE CONTAINED AS REQUIREMENTS IN THE CONTRACT.  
SIGNATURE: Peter A. Harff DATE: 09/19/24

ENVIRONMENTAL MANAGEMENT PLAN

SP 8828-139

SHEET NO. 143 OF 212 SHEETS

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE

PROJECT DESCRIPTION/LOCATION

SP 8828-139 IS LOCATED IN THE FOLLOWING LOCATIONS THROUGHOUT DISTRICT 8.

TH4 AT 0.01 MILES NORTH OF 870TH AVE.  
TH7 FROM 0.18 MILES SOUTH OF TH40 TO 0.41 MILES NORTH OF CR29.  
TH7 FROM 0.21 MILES EAST OF 105TH ST SW TO 0.21 MILES EAST OF 105TH ST SW.  
TH40 FROM 0.35 MILES WEST OF 11TH AVE TO 0.7 MILES SOUTH OF 250TH ST.  
TH67 0.1 MILES WEST OF FERGUS AVE.  
TH68 FROM 0.08 MILES WEST OF 140TH ST TO 0.09 MILES EAST OF CSAH 6.  
TH75 FROM 0.46 MILES SOUTH OF CSAH 12 TO 0.87 MILES SOUTH OF 460TH ST.  
TH212 FROM 0.13 MILES WEST OF 111 TH AVE TO 0.76 MILES WEST OF TH 75.  
TH271 FROM 0.25 MILES NORTH OF TH 19 TO 0.34 MILES EAST OF CSAH 19

THE PLANNED SCOPE OF THE PROJECT INCLUDES: CULVERT REPAIR, CULVERT LINING, JOINT REPAIR, CULVERT REPLACEMENT, AND DITCH CLEANING AND GRADING.

THE SWPPP MUST BE AMENDED TO DOCUMENT ANY CHANGES TO EROSION AND SEDIMENT CONTROLS, METHODS OR PRACTICES. THESE AMENDMENTS MUST BE TIMELY TO KEEP THE SWPPP UPDATED AND NEED TO BE KEPT ON SITE.

RESPONSIBILITIES

PROVIDE A CERTIFIED EROSION CONTROL SUPERVISOR PER MNDOT SPECIFICATION 2573.3.A.1. EROSION CONTROL SUPERVISOR WILL WORK WITH PROJECT ENGINEER TO OVERSEE IMPLEMENTATION OF SWPPP AND INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS BEFORE, DURING AND AFTER CONSTRUCTION UNTIL PERMIT TERMINATION CONDITIONS HAVE BEEN MET.

PROVIDE AT LEAST ONE CERTIFIED INSTALLER PER MNDOT SPECIFICATION 2573.3.A.2. FOR EACH CONTRACTOR OR SUBCONTRACTOR THAT PLACES THE PRODUCTS LISTED IN MNDOT SPECIFICATION SECTION 2573.3.A.2.

CHAIN OF RESPONSIBILITY

MNDOT AND THE CONTRACTOR ARE CO-PERMITTEES FOR THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CONSTRUCTION PERMIT. THE CONTRACTOR IS RESPONSIBLE TO COMPLY WITH ALL ASPECTS OF THE NPDES CONSTRUCTION PERMIT AT ALL TIMES UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA. MNDOT'S CONSTRUCTION PROJECT ENGINEER WILL ENSURE THAT THE CONTRACTOR'S EROSION AND SEDIMENT CONTROL SUPERVISOR FULFILLS THEIR DUTIES.

LAND FEATURE CHANGES

TOTAL DISTURBED AREA 11.3 ACRES  
WITHIN THE DISTURBED AREA: TOTAL EXISTING IMPERVIOUS SURFACE AREA 0.579 ACRES  
WITHIN THE DISTURBED AREA: TOTAL PROPOSED IMPERVIOUS SURFACE AREA 0.594 ACRES  
TOTAL PROPOSED NET CHANGE IN IMPERVIOUS SURFACE AREA 0.015 ACRES

SWPPP SHEET DESCRIPTIONS	LOCATION
TEMPORARY EROSION CONTROL MEASURES	SHEETS NO. 46-47A, 48
PERMANENT EROSION CONTROL MEASURES	SHEETS NO. 44-45
DIRECTION OF FLOW	SHEETS NO. 59-96, 104-141
FINAL STABILIZATION	SHEETS NO. 104-141
SOILS AND CONSTRUCTION NOTES	SHEETS NO. 11
DRAINAGE STRUCTURES	SHEETS NO. 59-96
DRAINAGE TABULATION	SHEETS NO. 13-22
STORM SEWER PROFILE SHEETS	SHEETS NO. 178-212
STORM SEWER TABULATION	SHEETS NO. 23
EROSION AND SEDIMENT CONTROL DETAILS	SHEETS NO. 98-103
EROSION CONTROL TABULATION	SHEETS NO. 24-27
TURF ESTABLISHMENT TABULATION	SHEETS NO. 24-27
SITE MAP	SHEETS NO. 1, 146-149
STORMWATER TREATMENT CONSTRUCTION STAGING	SHEETS NO. N/A
STORMWATER CALCULATIONS	HYDRAULICS FOLDER

SOIL TYPES

SOIL TYPES ALONG TH 68 MOSTLY INCLUDE TYPES B, B/D, C, AND C/D OR SILTY LOAM, CLAY LOAM, SANDY CLAY LOAM, AND SANDY CLAY.  
SOIL TYPES ALONG TH 212 MOSTLY INCLUDE TYPES A, B, B/D, C, AND C/D OR LOAMY SAND, SILTY LOAM, CLAY LOAM, SANDY CLAY LOAM, AND SANDY CLAY.  
SOIL TYPES ALONG TH 271 MOSTLY INCLUDE TYPES C AND C/D OR SANDY CLAY LOAM AND SANDY CLAY.  
SOIL TYPES ALONG TH 4 MOSTLY INCLUDE TYPE C/D OR SANDY CLAY.  
SOIL TYPES ALONG TH 40 MOSTLY INCLUDE TYPES B, B/D, C, AND C/D OR SILTY LOAM, CLAY LOAM, SANDY CLAY LOAM, AND SANDY CLAY.  
SOIL TYPES ALONG TH 67 MOSTLY INCLUDE TYPES C AND C/D OR SANDY CLAY LOAM AND SANDY CLAY.  
SOIL TYPES ALONG TH 7 MOSTLY INCLUDE TYPES B, B/D, C, AND C/D OR SILTY LOAM, CLAY LOAM, SANDY CLAY LOAM, AND SANDY CLAY.  
SOIL TYPES ALONG TH 75 MOSTLY INCLUDE TYPES B, B/D, C, AND C/D OR SILTY LOAM, CLAY LOAM, SANDY CLAY LOAM, AND SANDY CLAY.

ENVIRONMENTAL REVIEW

THIS PROJECT IS NOT LOCATED IN A KARST AREA. THERE ARE SEVERAL CALCAREOUS FENS ALONG TH 7.

THIS PROJECT IS NOT LOCATED IN AN EMERGENCY RESPONSE AREA (ERA) PER DEPARTMENT OF HEALTH.

THIS PROJECT IS LOCATED IN A DRINKING WATER SUPPLY MANAGEMENT AREA (DWSMA). THE DWSMA VULNERABILITY IS CLASSIFIED FROM A RANGE OF LOW TO MODERATE.

WATER RELATED PERMITS

AGENCY	TYPE OF PERMIT
MINNESOTA POLLUTION CONTROL AGENCY (MPCA)	NPDES CONSTRUCTION PERMIT
WATERSHED DISTRICT	BUFFALO CREEK, LAC QUI PARLE-YELLOW BANK, UPPER MINNESOTA RIVER, YELLOW MEDICINE RIVER
DEPARTMENT OF NATURAL RESOURCES (DNR)	PUBLIC WATERS PERMIT
ARMY CORPS OF ENGINEERS	TRGP

READ AND REVIEW ALL PERMITS FOR SPECIAL CONDITIONS THAT WILL AFFECT CONSTRUCTION OF THE PROJECT.

ARMY CORPS PERMIT IS NON REPORTING FOR THIS PROJECT. FOLLOW THE CONDITIONS IN THE GENERAL PERMIT FOR TRGP.

IF IT BECOMES NECESSARY TO DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMITS, OPERATIONS SHOULD CEASE AND DETERMINATION MADE IF ADDITIONAL PERMITS ARE NEEDED OR EXISTING PERMITS NEED TO BE MODIFIED.

TEMPORARY DEWATERING ACTIVITIES MAY BE REQUIRED FOR ROADWAY CONSTRUCTION AND UTILITY WORK. CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE MN DNR WATER APPROPRIATION GENERAL PERMIT FOR TEMPORARY PROJECTS (SP1997-0005), REQUIRED FOR WITHDRAWAL OF MORE THAN 10,000 GALLONS OF WATER PER DAY OR 1 MILLION GALLONS PER YEAR FROM SURFACE WATER OR GROUND WATER. AN INDIVIDUAL APPROPRIATIONS PERMIT MAY BE REQUIRED FOR PROJECTS LASTING LONGER THAN ONE YEAR OR EXCEEDING 50 MILLION GALLONS. SUBMIT A SITE MANAGEMENT PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCING WORK.

WATERBODY	NO WORK DURING
LAKES	APRIL 1 - JUNE 30
NON-TROUT STREAMS	MARCH 15 - JUNE 15
TROUT STREAMS	SEPTEMBER 1 - APRIL 1

SPECIAL,IMPAIRED, OR INFESTED WATERS THAT ARE LOCATED WITHIN ONE MILE (AERIAL RADIUS) OF THE PROJECT LIMITS AND RECEIVE RUNOFF FROM THE PROJECT SITE.

LOCATION	WATERBODY NAME	IMPAIRMENT(S) OR SPECIAL STATUS
TH 75	MINNESOTA RIVER (M-055)	BENTHIC MACROINVERTEBRATE BIOASSESSMENTS, E. COLI, MERCURY IN FISH TISSUE
TH 75	YELLOW BANK RIVER (M-055-186)	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS; FECAL COLIFORM; FISH BIOASSESSMENTS; TURBIDITY.
TH 75	UNNAMED STREAM (M-055-181-014)	FISH BIOASSESSMENTS
TH 75	CANBY CREEK (M-055-166-010)	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS; FECAL COLIFORM; FISH BIOASSESSMENTS; TURBIDITY
TH 40	EMILY CREEK (M-055-174)	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS; FECAL COLIFORM; FISH BIOASSESSMENTS; TURBIDITY.
TH 40	LAC QUI PARLE (NW BAY) P37004602	MERCURY IN FISH TISSUE; NUTRIENTS
TH 40, 7	LAC QUI PARLE (SE BAY) P37004601	AMMONIA, UN-IONIZED; MERCURY IN FISH TISSUE; NUTRIENTS
TH 212	LOST CREEK (M-055-166-006-009)	ESCHERICHIA COLI (E. COLI); DISSOLVED OXYGEN, FISH BIOASSESSMENTS, BENTHIC MACROINVERTEBRATE BIOASSESSMENTS
TH 212, 75	LAC QUI PARLE RIVER, WEST BRANCH (M-055-166-006)	FISH BIOASSESSMENTS, MERCURY IN FISH TISSUE
TH 68	SLEEPY EYE CREEK (M-055-095-029)	FECAL COLIFORM; FISH BIOASSESSMENTS
TH 7	CHIPPEWA RIVER (M-055-158)	FECAL COLIFORM; MERCURY IN FISH TISSUE; TURBIDITY
TH 68	LAZARUS CREEK (M-055-166-010-007)	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS; FISH BIOASSESSMENTS
TH 271	LAC QUI PARLE RIVER (M-055-166)	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS; FECAL COLIFORM; FISH BIOASSESSMENTS; TURBIDITY
TH 271	HENDRICKS PUBLIC WATER BASIN P41011000	FISH BIOASSESSMENTS; MERCURY IN FISH TISSUE; NUTRIENTS

WETLANDS AND EXISTING STORMWATER FACILITIES WITHIN AND NEAR THE PROJECT BOUNDARY ARE SHOWN ON DRAINAGE PLANS. AREAS OF ENVIRONMENTAL SENSITIVITY (AES)

PROJECT ORGANIZATION CONTACTS		PHONE
MNDOT D8 EROSION CONTROL SPECIALIST	WARREN TUEL	952-378-5874
MNDOT D8 CONSTRUCTION PROJECT ENGINEER	BEN SANDOZ	320-441-9111
MNDOT CONSTRUCTION RESIDENT ENGINEER	SHANNA KENT	302-234-8474
MNDOT MAINTENANCE CONTACT	JAMIE ORTLOFF	320-864-4417
MINNESOTA DEPARTMENT OF NATURAL RESOURCES	PATTY FOWLER	612-708-7732
BUFFALO CREEK WATERSHED DISTRICT	LARRY PHILLIPS	320-510-0504
LAC QUI PARLE-YELLOW BANK WATERSHED DISTRICT	TRUDY HASTAD	320-598-3117
UPPER MINNESOTA RIVER WATERSHED DISTRICT	AMBER DOSCHADIS	320-839-3411
YELLOW MEDICINE RIVER WATERSHED DISTRICT	JEREMIAH TIMM	507-872-6720
ARMY CORPS OF ENGINEERS	JARRETT CELLINI	651-290-5358

INSPECTION TIMEFRAMES

INSPECT THE ENTIRE CONSTRUCTION SITE A MINIMUM OF ONCE EVERY SEVEN DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS. INSPECT ALL TEMPORARY AND PERMANENT WATER QUALITY MANAGEMENT, EROSION PREVENTION AND SEDIMENT CONTROL BMPS, SURFACE WATERS AND CONSTRUCTION SITE EXITS UNTIL ALL CONSTRUCTION IS COMPLETE AND THE SITE HAS UNDERGONE FINAL STABILIZATION. RECORD ALL INSPECTIONS AND MAINTENANCE ACTIVITIES IN WRITING WITHIN 24 HOURS. SUBMIT INSPECTION REPORTS IN A FORMAT THAT IS ACCEPTABLE TO THE PROJECT ENGINEER.

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NO	DATE	DWN	CKD	REVISIONS



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PRINT NAME: KAYLYN HALEY

SIGNATURE: *Kaylyn Haley*  
DATE 09/13/24 LICENSE # 55993

STORMWATER POLLUTION  
PREVENTION PLAN

SP 8828-139  
SHEET NO. 144 OF 212 SHEETS

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE (CONTINUED)

EROSION AND SEDIMENT CONTROL MEASURES

AREA	TIME FRAME
ESTABLISH SEDIMENT CONTROL DEVICES ON ALL DOWN GRADIENT PERIMETERS AND UPGRADIENT OF ANY BUFFER ZONES	BEFORE ANY UP GRADIENT LAND DISTURBING ACTIVITIES BEGIN
REPAIR, REPLACE OR SUPPLEMENT PERIMETER CONTROL BMPS	WHEN BMP BECOMES NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT OF THE BMP BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY.
REPLACE, REPAIR OR SUPPLEMENT ALL NONFUNCTIONAL BMPS	BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY.
REPAIR, REPLACE, OR SUPPLEMENT INLET PROTECTION BMPS	WHEN THEY BECOME NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT AND/OR DEPTH OF THE BMP BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY.
REMOVE TRACKED SEDIMENT FROM PAVED SURFACES BOTH ON AND OFF SITE (LIGHTLY WET PRIOR TO SWEEPING)	WITHIN 24 HOURS OF DISCOVERY
REMOVE ALL DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATERS AND RESTABILIZE	WITHIN 7 DAYS OF DISCOVERY

1. PROVIDE PERIMETER CONTROL AROUND ALL STOCKPILES AND DO NOT PLACE THEM IN NATURAL BUFFER AREAS, SURFACE WATERS OR STORMWATER CONVEYANCES. TOPSOIL BERMS MUST BE STABILIZED IN ORDER TO BE CONSIDERED PERIMETER CONTROL BMPS.
2. PROTECT STORM SEWER INLETS AT ALL TIMES WITH THE APPROPRIATE INLET PROTECTION BMP AND PROVIDE EMERGENCY OVERFLOW CAPABILITIES. SILT FENCE PLACED IN THE INLET GRATE IS NOT AN ACCEPTABLE INLET PROTECTION BMP FOR GRADING OPERATIONS.
3. PROVIDE SCOUR PROTECTION AT OUTFALL OF DEWATERING ACTIVITIES. PROVIDE STABILIZATION IN TRENCHES CUT FOR DEWATERING OR SITE DRAINING PURPOSES.
4. PREPARE AND SUBMIT A SITE MANAGEMENT PLAN AND CONTACT ALL APPROPRIATE AUTHORITIES PRIOR TO WORKING IN SURFACE WATERS.
5. MAINTAIN ALL BMPS UNTIL WORK HAS BEEN COMPLETED, SITE HAS GONE UNDER FINAL STABILIZATION FOR PERMIT TERMINATION, AND THE NOTICE OF TERMINATION (NOT) HAS BEEN SUBMITTED TO THE MPCA.

STABILIZATION

AREA	TIME FRAME	NOTES
LAST 200 LINEAL FEET OF DRAINAGE DITCH OR SWALE	WITHIN 24 HOURS OF CONNECTION TO SURFACE WATER OR PROPERTY EDGE	2A, 3A
REMAINING PORTIONS OF DRAINAGE DITCH OR SWALE	7 DAYS	3A
PIPE AND CULVERT OUTLETS	24 HOURS	
EXPOSED SOILS AND STOCKPILES	7 DAYS	1A
WHEN CONSTRUCTION HAS TEMP. OR PERM. CEASED	IMMEDIATELY	

- 1A. TEMPORARY SOIL STOCKPILES WITHOUT SIGNIFICANT CLAY OR SILT AND STOCKPILED AND CONSTRUCTED ROAD BASE ARE EXEMPT FROM THE STABILIZATION REQUIREMENT.
- 2A. STABILIZE WETTED PERIMETER OF DITCH (I.E. WHERE THE DITCH GETS WET).
- 3A. APPLICATION OF MULCH, HYDROMULCH (SLOPE>2%), DISANCHORED MULCH (SLOPE>2%),TACKIFIER AND POLYACRYLAMIDE ARE NOT ACCEPTABLE STABILIZATION METHODS IN DITCHES AND SWALES.

MATERIAL STORAGE, WASTE MANAGEMENT, FUELING AND DUST CONTROL

1. PROVIDE A SPILL KIT AT EACH WORK LOCATION ON THE SITE. ENSURE ALL SPILLS ARE CLEANED UP IMMEDIATELY.
2. STORE ALL LIQUID CHEMICALS UNDER COVER WITH SECONDARY CONTAINMENT. CREATE AND FOLLOW A WRITTEN DISPOSAL PLAN FOR ALL WASTE MATERIALS. STORE, COLLECT AND DISPOSE OF ALL SOLID WASTE.
3. FUEL AND MAINTAIN VEHICLES IN A DESIGNATED CONTAINED AREA WHENEVER FEASIBLE. USE DRIP PANS OR ABSORBENT MATERIALS TO PREVENT SPILLS OR LEAKED CHEMICALS FROM DISCHARGING TO SURFACE WATER OR STORMWATER CONVEYANCES.
4. PROVIDE EFFECTIVE CONTAINMENT FOR ALL LIQUID AND SOLID WASTES GENERATED BY WASHOUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS. LIQUID AND SOLID WASHOUT WASTES MUST NOT CONTACT THE GROUND. DESIGN THE CONTAINMENT SO THAT IT DOES NOT RESULT IN RUNOFF FROM THE WASHOUT OPERATIONS OR CONTAINMENT AREA.
5. USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT DISCHARGE OR PLACEMENT OF BITUMINOUS GRINDINGS, CUTTINGS, MILLINGS, AND OTHER BITUMINOUS WASTES FROM AREAS OF EXISTING OR FUTURE VEGETATED SOILS AND FROM ALL WATER CONVEYANCE SYSTEMS, INCLUDING INLETS, DITCHES AND CURB FLOW LINES.
6. USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT CONCRETE DUST, STREET SWEEPING DUST, SAWCUT SLURRY, PLANING WASTE, CONCRETE WASH OUT, AND OTHER CONCRETE WASTES FROM LEAVING MNDOT RIGHT OF WAY, DEPOSITING IN EXISTING OR FUTURE VEGETATED AREAS, AND FROM ENTERING STORMWATER CONVEYANCE SYSTEMS, INCLUDING INLETS, DITCHES AND CURB FLOW LINES.
7. PORTABLE TOILETS MUST BE POSITIONED SO THAT THEY ARE SECURE AND WILL NOT BE TIPPED OR KNOCKED OVER. SANITARY WASTE MUST BE DISPOSED OF PROPERLY IN ACCORDANCE WITH MINN. R. CHAPTER 7041.

IMPORTANT SWPPP NOTES FOR CONSTRUCTION ACTIVITY

1. PREPARE AND SUBMIT A SITE MANAGEMENT PLAN FOR THE ENGINEER'S ACCEPTANCE FOR CONCRETE MANAGEMENT, CONCRETE SLURRY APPLICATION AREAS, WORK IN AND NEAR AREAS OF ENVIRONMENTAL SENSITIVITY, AREAS IDENTIFIED IN THE PLANS AS "SITE MANAGEMENT PLAN AREA", ANY WORK THAT WILL REQUIRE DEWATERING, AND AS REQUESTED BY THE ENGINEER. SUBMIT ALL SITE MANAGEMENT PLANS TO THE ENGINEER IN WRITING. ALLOW A MINIMUM OF 7 DAYS FOR MNDOT TO REVIEW AND ACCEPT SITE MANAGEMENT PLAN SUBMITTALS. WORK WILL NOT BE ALLOWED TO COMMENCE IF A SITE MANAGEMENT PLAN IS REQUIRED UNTIL ACCEPTANCE HAS BEEN GRANTED BY THE ENGINEER. THERE WILL BE NO EXTRA TIME ADDED TO THE CONTRACT DUE TO THE UNTIMELY SUBMITTAL.
2. ROUTE STORMWATER AROUND UNSTABILIZED AREAS OF THE SITE WHENEVER FEASIBLE.
3. CONSTRUCTION PROJECT SHOULD BE PHASED TO MINIMIZE THE DURATION OF EXPOSED SOILS.
4. MINIMIZE COMPACTION OF SOILS AND PRESERVE TOPSOIL IN AREAS WHERE VEGETATION WILL BE ESTABLISHED.
5. DIRECT DISCHARGES FROM BMPS TO VEGETATED AREAS WHENEVER FEASIBLE. PROVIDE VELOCITY DISSIPATION DEVICES AS NEEDED TO PREVENT EROSION.
6. FLOATING SILT CURTAIN IS ALLOWED AS PERIMETER CONTROL FOR IN WATER WORK ONLY. PLACE THE FLOATING SILT CURTAIN AS CLOSE TO SHORE AS POSSIBLE. PLACE PERIMETER CONTROL BMP ON LAND IMMEDIATELY AFTER THE IN WATER WORK IS COMPLETED.
7. DISCHARGE TURBID OR SEDIMENT LADEN WATER TO TEMPORARY SEDIMENT BASINS WHENEVER FEASIBLE. (REQUIRED IF DRAINAGE AREA IS 10 ACRES OR LARGER OR 5 ACRES OR LARGER AND WITHIN 1 MILE OF IMPAIRED WATER) THE EVENT THAT IT IS NOT FEASIBLE TO DISCHARGE THE SEDIMENT LADEN WATER TO A TEMPORARY SEDIMENT BASIN, THE WATER MUST BE TREATED SO THAT IT DOES NOT CAUSE A NUISANCE CONDITION IN THE RECEIVING WATERS OR TO DOWNSTREAM LANDOWNERS. MUST DOCUMENT WHY SEDIMENT BASIN IS NOT FEASIBLE.
8. PROVIDE STABILIZATION IN ANY TRENCHES CUT FOR DEWATERING OR SITE DRAINING PURPOSES.
9. PROVIDE A 50 FOOT NATURAL BUFFER OR, IF BUFFER IS INFEASIBLE, PROVIDE A DOUBLE ROW OF SEDIMENT CONTROLS SPACED AT LEAST 5' APART WHEN A SURFACE WATER IS LOCATED WITHIN 50 FEET OF LAND DISTURBANCE AND STORMWATER FLOWS TO THE SURFACE WATER.
10. PROVIDE A 100 FOOT NATURAL BUFFER OR, IF BUFFER IS INFEASIBLE, PROVIDE A DOUBLE ROW OF SEDIMENT CONTROLS SPACED AT LEAST 5' APART WHEN A SPECIAL WATER IS LOCATED WITHIN 100 FEET OF THE LAND DISTURBANCE AND STORMWATER FLOWS TO THE SPECIAL WATER.
11. SUBSOIL ALL DISTURBED GREEN SPACES EXCEPT AS LISTED IN 2574.3A.5.

PIPE AND STRUCTURE NOTES

1. SIZE AND ELEVATION OF CULVERTS, STORM SEWER PIPES, CATCH BASINS, AND PERMEABLE DITCH BLOCKS HAVE BEEN SPECIFICALLY DESIGNED TO CONFORM TO MNDOT DESIGN STANDARDS AND PERMIT REQUIREMENTS. THE DESIGN COMPUTATIONS ARE ON FILE WITH MNDOT DISTRICT 8 HYDRAULICS. CHANGING THESE ITEMS OR THE DIRECTION OF FLOW FROM WHAT IS SHOWN ON THE PLANS MAY CAUSE PROBLEMS OFF THE PROJECT AND COULD MEAN THE PROJECT IS OUT OF COMPLIANCE WITH APPROVED DRAINAGE PERMITS. ANY CHANGES OF THE DRAINAGE SYSTEM MUST BE APPROVED BY THE DISTRICT 8 HYDRAULICS DESIGNER.
2. SUBSURFACE DRAINAGE TILES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED, REPLACED OR REROUTED, AND CONNECTED TO THE EXISTING TILE OR DRAINAGE SYSTEM TO ENSURE THAT EXISTING UPLAND DRAINAGE IS PERPETUATED. THIS SHALL BE DONE TO THE APPROVAL AND SATISFACTION OF THE ENGINEER.

NPDES PERMIT TERMINATION CONDITIONS

1. PERMITTEES MUST COMPLETE ALL CONSTRUCTION ACTIVITY AND MUST INSTALL PERMANENT COVER OVER ALL AREAS PRIOR TO SUBMITTING NOT. VEGETATIVE COVER MUST CONSIST OF A UNIFORM PERENNIAL VEGETATION WITH A DENSITY OF 70% OF ITS EXPECTED FINAL GROWTH.
2. PERMITTEES MUST REMOVE ANY ACCUMULATED SEDIMENT AND STABILIZE THE PERMANENT STORMWATER TREATMENT SYSTEM(S) AND MUST ENSURE THE SYSTEM(S) ARE OPERATING AS DESIGNED.
3. PERMITTEES MUST REMOVE ALL SEDIMENT FROM CONVEYANCE SYSTEMS PRIOR TO SUBMITTING THE NOT.
4. PERMITTEES MUST REMOVE ALL TEMPORARY SYNTHETIC EROSION PREVENTION AND SEDIMENT CONTROL BMPS PRIOR TO SUBMITTING THE NOT. PERMITTEES MAY LEAVE BMPS DESIGNED TO DECOMPOSE ON-SITE IN PLACE.
5. FOR CONSTRUCTION PROJECTS ON AGRICULTURAL LAND, PERMITTEES MUST RETURN THE DISTURBED LAND TO ITS PRECONSTRUCTION AGRICULTURAL USE PRIOR TO SUBMITTING THE NOT.

NO	DATE	DWN	CKD	REVISIONS



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PRINT NAME: KAYLYN HALEY

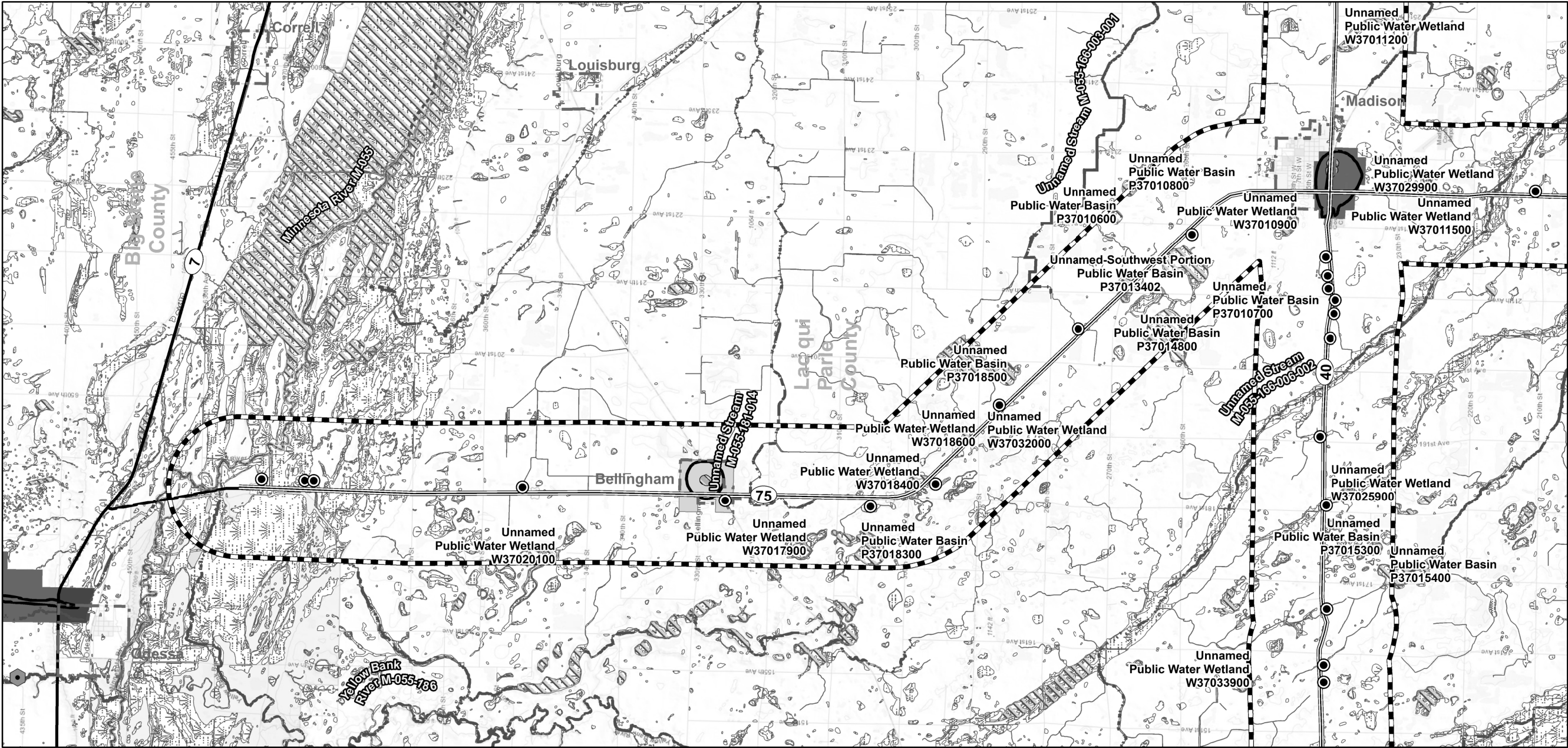
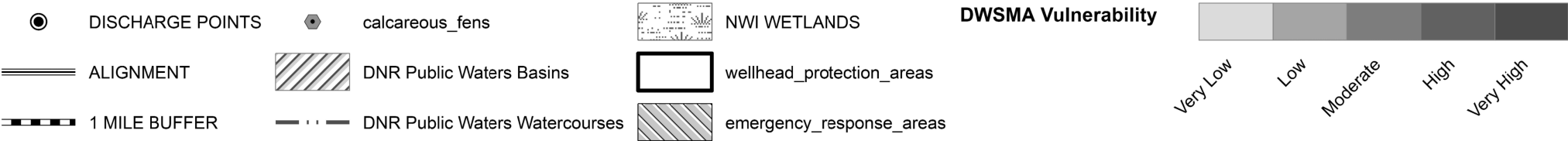
SIGNATURE: *Kaylyn Haley*  
DATE 09/13/24 LICENSE # 55993

STORMWATER POLLUTION  
PREVENTION PLAN

SP 8828-139  
SHEET NO. 145 OF 212 SHEETS



STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE (CONTINUED)  
OFFSITE FLOW INFORMATION DRAWING



TH 40, TH 75, TH 212

SHEET 3 OF 6

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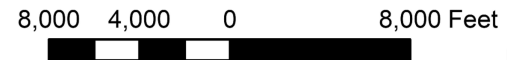
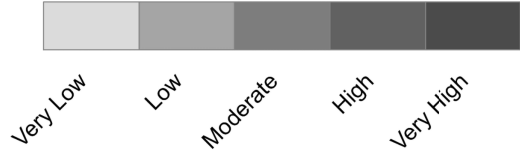
PRINT NAME: KAYLYN HALEY  
SIGNATURE: *Kaylyn Haley*  
DATE: 09/13/24 LICENSE #: 55993

STORMWATER POLLUTION  
PREVENTION PLAN

SP 8828-139  
SHEET NO. 146 OF 212 SHEETS



## OFFSITE FLOW INFORMATION DRAWING



SHEET 4 OF 6

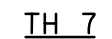
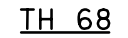
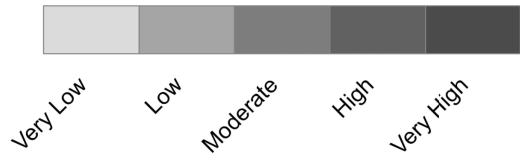
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PRINT NAME: KAYLYN HALEY  
SIGNATURE: Kaylyn Haley  
DATE 09/13/24 LICENSE # 55993

SP 8828-139				
SHEET NO.	147	OF	212	SHEETS



## OFFSITE FLOW INFORMATION DRAWING



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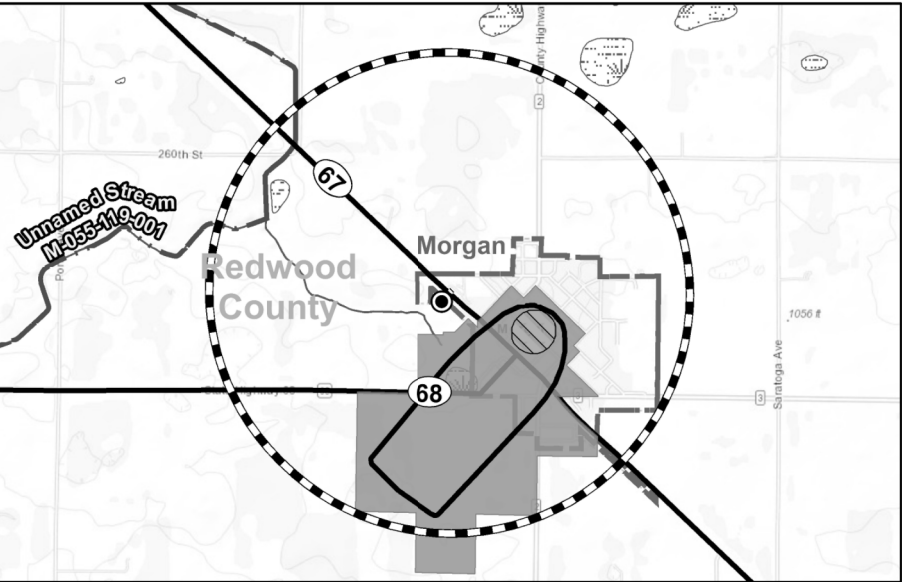
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SIGNATURE: Kaylyn Haley  
DATE 09/13/24 LICENSE # 55993

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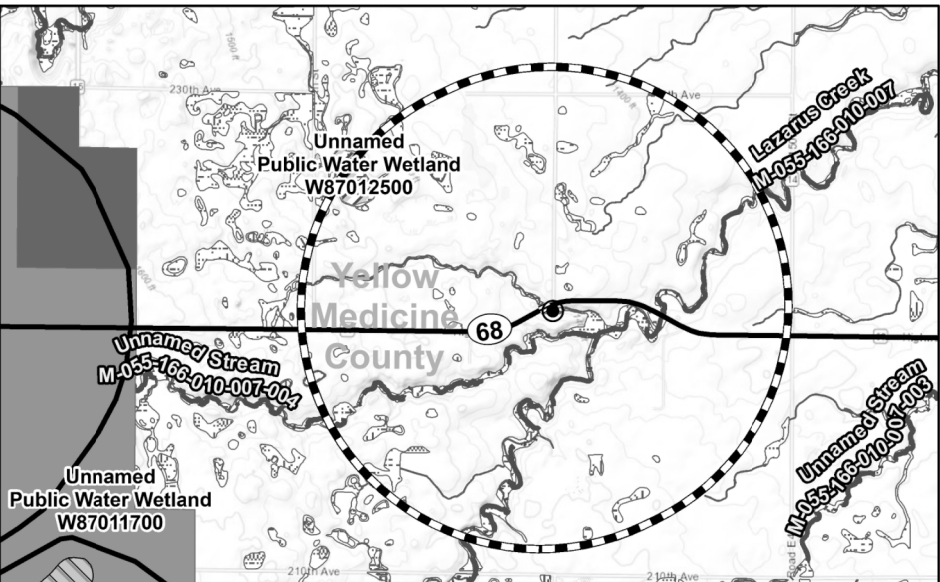
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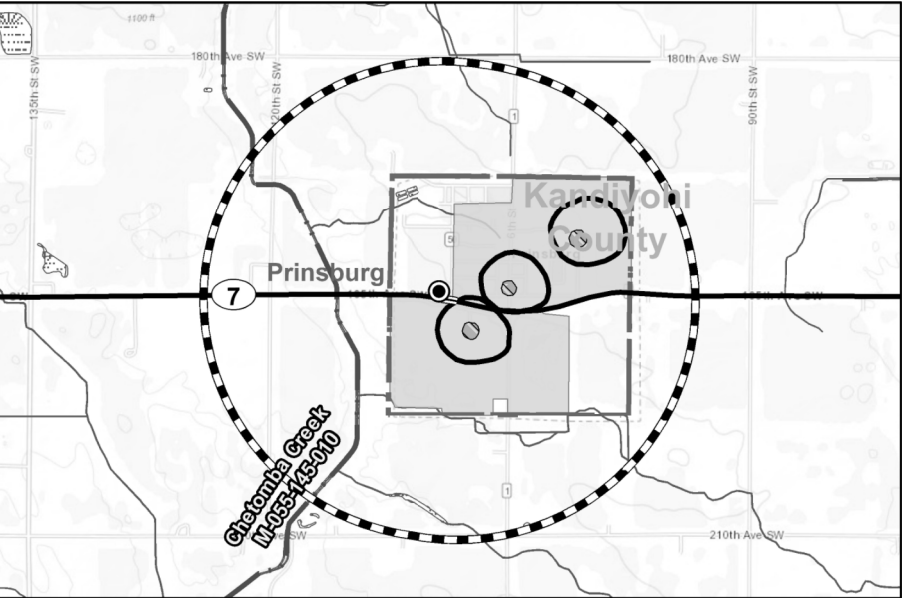
STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE (CONTINUED)  
OFFSITE FLOW INFORMATION DRAWING



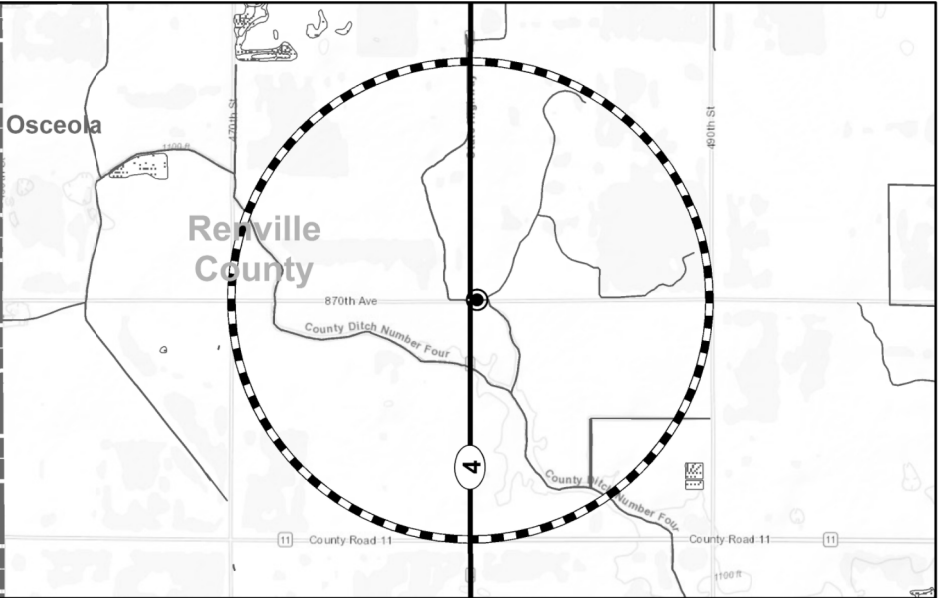
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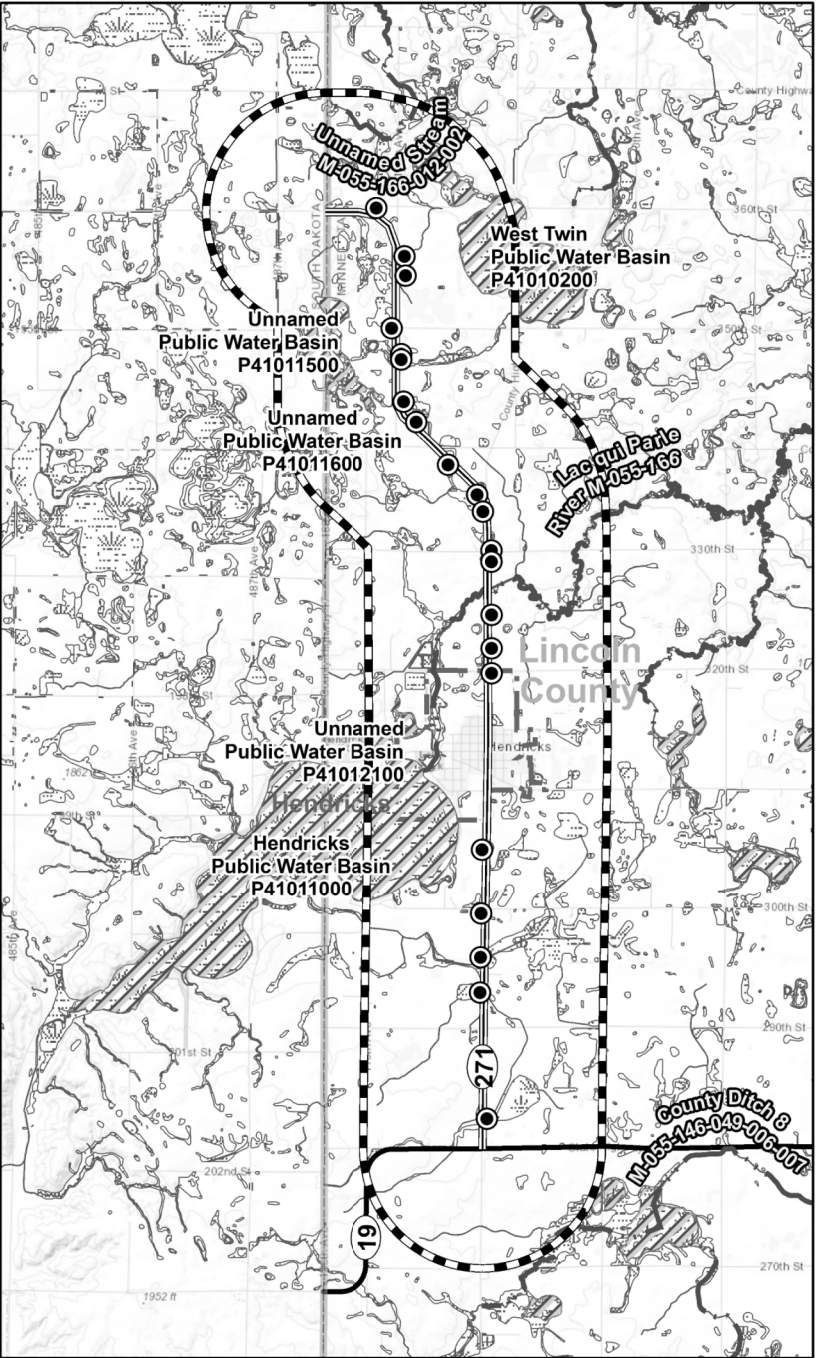
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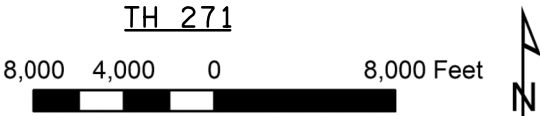
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TH 4



TH 271



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SIGNATURE: *Kaylyn Haley*  
DATE: 09/13/24 LICENSE #: 55993

STORMWATER POLLUTION  
PREVENTION PLAN

SP 8828-139  
SHEET NO. 149 OF 212 SHEETS

NOTES & GUIDELINES

GENERAL INFORMATION:

- 1. ALL DISTANCES ARE APPROXIMATE.
- 2. SEE MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL FOR SHORT TERM TRAFFIC CONTROL LAYOUTS FOR WORK NOT REQUIRING CLOSURE OF THE ROADWAY.

SIGNING:

- 1. ALL TEMPORARY SIGNS ARE REQUIRED TO BE CRASHWORTHY PER THE AASHTO MANUAL FOR ASSESSING SAFETY HARDWARE 2016 (MASH-2016). TEMPORARY SIGN STRUCTURES THAT ARE CRASHWORTHY UNDER THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM REPORT 350 (NCHRP-350) MAY BE USED PROVIDED THE DEVICES WERE ACQUIRED BY THE CONTRACTOR PRIOR TO DECEMBER 31ST, 2019. THE MINNESOTA TYPE "C" AND "D" BRACED LEG U-CHANNEL (KNEE BRACE) SIGN SUPPORT IS NOT ALLOWED.
- 2. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE FINAL SIGNS TO ASSURE THAT THE FINAL SIGNS ARE PLACED AS NEEDED, OR PROVIDE TEMPORARY SIGNING UNTIL THE FINAL SIGNING IS PLACED.
- 3. WHEN MULTIPLE GROUND MOUNTED SIGN STRUCTURES ARE PLACED ADJACENT TO EACH OTHER THERE SHOULD BE NO MORE THAN 2 POSTS WITHIN 84" OF EACH OTHER. WHEN THIS SPACING CAN NOT BE MAINTAINED, THEN SIGN STRUCTURES SHALL BE OFFSET, AND STAGGERED WITH A MINIMUM OF 4' BETWEEN SIGN STRUCTURES BOTH Laterally and Longitudinally.
- 4. WHEN A SIGN OR BARRICADE IS ORIENTED SUCH THAT VISIBILITY TO ROAD USERS INCLUDING BIKES AND PEDESTRIANS IS REDUCED ENOUGH TO CAUSE A HAZARD, DELINEATE THE SIGN/BARRICADE WITH APPROPRIATE DEVICES.
- 5. TEMPORARY SIGNS SHALL BE PLACED SUCH THAT OBSTACLES DO NOT BLOCK THEM FROM BEING VIEWED BY APPROACHING ROAD USERS. OBSTACLES MAY INCLUDE, BUT ARE NOT LIMITED TO, LIGHT POLES, TREES, SIGNS, AND BUILDINGS.
- 6. TEMPORARY SIGNS SHALL BE PLACED AND ORIENTED APPROXIMATELY AS SHOWN IN THE PLAN, AT RIGHT ANGLES TO DIRECTION OF AND FACING THE TRAFFIC THEY ARE INTENDED TO SERVE, UNLESS OTHERWISE SPECIFIED.
- 7. LONGITUDINAL DROPOFFS SHALL BE SIGNED AS SHOWN IN THE "MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL" PAGES (6K-a) THRU (6K-d) UNLESS OTHERWISE SPECIFIED IN THESE PLANS.
- 8. AFTER REMOVAL OF SIGN AND/OR SIGN BASE, BACK FILL, COMPACT, AND LEVEL SOIL TO MATCH SURROUNDING SOIL.

CONSTRUCTION INFORMATION SIGNING:

- 1. THE CONTRACTOR SHALL USE CONSTRUCTION INFORMATION SIGNING AS SHOWN IN THE PLAN WHICH ARE TO BE USED AS FOLLOWS:

FOR INFORMATION ON THE ADVANCED NOTIFICATION SIGNING DISPALY AND DURATIONS SEE THE ADVANCED NOTIFICAITON SIGNING PLAN SHEETS.

IF CONSTRUCTION INFORMATION SIGNING IS NO LONGER VISIBLE TO THE MOTORING PUBLIC ONCE WORK BEGINS, MOVE SAID SIGNING TO A SITE IN ADVANCE OF THE WORK ZONE OR CLOSURE AS SHOWN IN THE PLAN OR APPROVED BY THE ENGINEER.

INDEX






TRAFFIC CONTROL

SHEET NO. DESCRIPTIONS

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154	TEMPORARY SIGN COVERING
156	SIGN POST SPACING CHART FOR SQUARE TUBE
157-164	ADVANCED NOTIFICATION SIGNING AND DETOUR LAYOUT
165-166	RADIUS WIDENING - REDWOOD COUNTY
167	DETOUR PAVING - REDWOOD COUNTY
168	RADIUS WIDENING - YELLOW MEDICINE COUNTY
169	TRAFFIC CONTROL PLAN - TH 7 PRINSBURG
170	RIGHT TURN LANE CLOSURE

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

SYMBOL DESCRIPTION

	TRAFFIC CONTROL SIGN		PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
	TYPE III BARRICADE = 		TYPE A FLASHING WARNING LIGHT

TRAFFIC CONTROL PAY ITEM TABULATION

TC

LOCATION	EXCAVATION - COMMON	COMMON EMBANKMENT (CV)	SUBGRADE PREPARATION 6"-12"	AGGREGATE SURFACING (CV) CLASS 1	(1) CALCIUM CHLORIDE SOLUTION	AGGREGATE BASE (CV) CLASS 5	BITUMINOUS PATCHING MIXTURE	TYPE SP 12.5 WEARING COURSE MIX (3,B) (SPWEB340B)	TRAFFIC CONTROL SUPERVISOR	(2) TRAFFIC CONTROL	SEDIMENT CONTROL LOG TYPE COMPOST	SOIL BED PREPARATION	(3)(4) FERTILIZER TYPE 3	ROLLED EROSION PREVENTION CATEGORY 20	SEEDING	MOWING	WEED SPRAYING	WEED SPRAY MIXTURE	(5) SEED MESIC INSLOPE	(6) SEED SOUTHERN TALLGRASS ROADSIDE
	CU YD		SQ YD	CU YD	GALLON	CU YD	TON	TON	LUMP	SUM	LIN FT	ACRE	POUND	SQ YD	ACRE		GALLON	POUND		
PROJECTWIDE									1	1										
DETOUR - TH 68 YELLOW MEDICINE COUNTY					2240															
DETOUR - TH 68 REDWOOD COUNTY				64			13	180												
RADIUS WIDENING - REDWOOD COUNTY																				
NE INTERSECTION QUADRANT	44	122	30	12		36														
RADIUS WIDENING - YELLOW MEDICINE COUNTY																				
NE INTERSECTION QUADRANT	45	49	68	11		39					75	0.03	8	164	0.03	0.06	0.02	0.01	2	1
TOTAL	89	171	98	87	2240	75	13	180	1	1	75	0.03	8	164	0.03	0.06	0.02	0.1	2	1

- NOTES:
- (1) APPLICATION RATE 0.3 GAL/SQ YD. QUANTITY IS BASED ON A SINGLE APPLICATION.
  - (2) TEMPORARY SIGNS, SIGN COVERINGS, DEVICES (INCLUDING PCMS), AND MODIFICATIONS ARE INCLUDED IN THE LUMP SUM TRAFFIC CONTROL PAY ITEM.
  - (3) SOUTHERN SHORTGRASS ROADSIDE FERT TYPE 3, 22-5-10, AT 200 LBS/ACRE.
  - (4) SOUTHERN TALLGRASS ROADSIDE FERT TYPE 3, 22-5-10, AT 200 LBS/ACRE.
  - (5) SEED MESIC INSLOPE ROADSIDE SHALL BE APPLIED AT A RATE OF 65 LBS/ACRE.
  - (6) SEED SOUTHERN ROADSIDE SHALL BE APPLIED AT A RATE OF 26 LBS/ACRE.



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ANDREW MCCALLUM  
SIGNATURE:   
DATE 09/19/24 LICENSE # 54861

TEMPORARY TRAFFIC CONTROL  
TITLE SHEET























SP 8828-139





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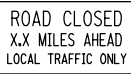





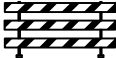




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"M" SERIES						
SIGN	SIGN NO.	COLOR	SIZE (W x H)	ASSEMBLY (W x H)	NUMBER OF POSTS	POST SPACING (INCHES)
     	M4-8	BLACK ON ORANGE	24" x 12"	24" x 63"	1	
	M3-4	WHITE ON BLUE	24" x 12"			
	M1-6M	WHITE AND YELLOW ON BLUE	24" x 24"			
	M5-1 (L OR R)	BLACK ON WHITE	21" x 15"			
	M6-1 (L OR R)	BLACK ON WHITE	21" x 15"			
   	M4-8a	BLACK ON ORANGE	24" x 18"	24" x 54"	1	
	M3-2 M3-4	WHITE ON BLUE	24" x 12"			
   	M4-8	BLACK ON ORANGE	24" x 12"	24" x 48"	1	
	M3-1 M3-3	WHITE ON BLUE	24" x 12"			
	M1-6M	WHITE AND GOLD ON BLUE	24" x 24"			
      	M4-8	BLACK ON ORANGE	24" x 12"	24" x 63"	1	
	M3-1 M3-3	WHITE ON BLUE	24" x 12"			
	M1-6M	WHITE AND YELLOW ON BLUE	24" x 24"			
	M5-1 (L OR R)	BLACK ON WHITE	21" x 15"			
	M6-1 (L OR R)	BLACK ON WHITE	21" x 15"			
	M6-3	BLACK ON WHITE	21" x 15"			

"M" SERIES						
SIGN	SIGN NO.	COLOR	SIZE (W x H)	ASSEMBLY (W x H)	NUMBER OF POSTS	POST SPACING (INCHES)
   	M4-8a	BLACK ON ORANGE	24" x 18"	24" x 54"	1	
	M3-1 M3-3	WHITE ON BLUE	24" x 12"			
	M1-6M	WHITE AND YELLOW ON BLUE	24" x 24"			

BARRICADE MOUNTED SIGNS			
SIGN	SIGN NO.	COLOR	SIZE (W x H)
	R11-3a	BLACK ON WHITE	60" x 30"
 	M4-10 (L OR R)	BLACK ON ORANGE	48" x 18"
	R11-2M	BLACK ON WHITE	48" x 30"

DEVICES		
ITEM	COLOR	SIZE (W x H)
	WHITE ON ORANGE	
	AMBER	
		


GENERAL NOTES:

- SIGN STRUCTURE TABULATIONS INDICATE SQUARE TUBE GROUND MOUNTED SIGN STRUCTURES THAT ARE MASH-16 COMPLIANT.
- USE PRODUCTS FROM THE BASES FOR SQUARE TUBE SIGN STRUCTURES APPROVED/QUALIFIED PRODUCTS LIST FOR THE INDICATED SQUARE TUBE RISER POST SIZE. PLACE PER THE MANUFACTURER'S SPECIFICATIONS.
- ALUMINUM STRINGERS SHALL BE USED FOR SIGNS 36 INCHES AND WIDER. SEE MANUFACTURER'S SPECIFICATIONS FOR SQUARE TUBE MOUNTING DETAILS. STRINGERS ON SINGLE POST ASSEMBLIES ARE REQUIRED TO BE AT LEAST 9 INCHES IN FROM THE EDGE OF THE SIGN.
- UNLESS OTHERWISE INDICATED, USE 2-1/2 INCH RISER POSTS FOR GROUND MOUNTED SIGN STRUCTURES.

NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ANDREW MCCALLUM  
SIGNATURE:   
DATE 09/19/24 LICENSE # 54861

TEMPORARY TRAFFIC CONTROL  
TRAFFIC CONTROL TABULATION

SP 8828-139  
SHEET NO. 152 OF 212 SHEETS

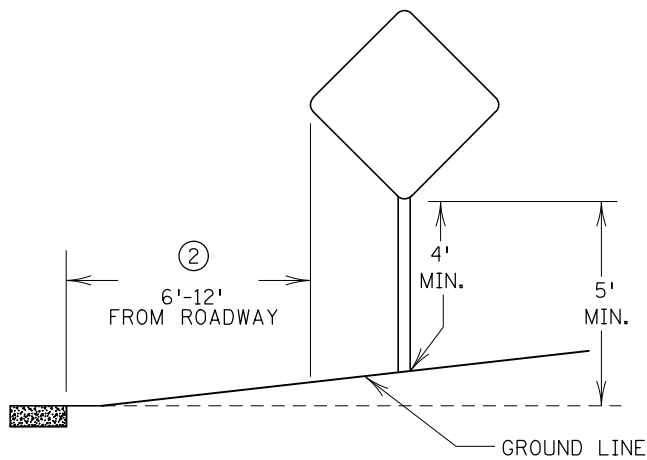
GENERAL NOTES:

1. GROUND MOUNTED SQUARE TUBE SIGN STRUCTURES PLACED WITHIN 50' OF THE RADIUS END OF AN INTERSECTION SHALL BE PLACED ON ONE 2" OR 2-1/2" POST.
2. FOR 2" SQUARE TUBE RISER POST IN SOIL, USE FIN BASE PLACED PER MANUFACTURER'S SPECIFICATIONS. USE A 2" X 2" PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE RISER POST. PLACE 3/8" STAINLESS STEEL BOLT THROUGH THE 5TH HOLE DOWN FROM THE TOP OF THE BASE. RISER POST SHALL REST ON THE BOLT.
3. FOR 2-1/2" SQUARE TUBE RISER POST IN SOIL, USE SLIP BASE PLACED PER MANUFACTURER'S SPECIFICATIONS USING A 10 GAUGE, 2-1/2" X 2-1/2" PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE RISER POST WITH A 10 GAUGE 2-3/16" X 2-3/16" PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE INTERNAL INSERT.

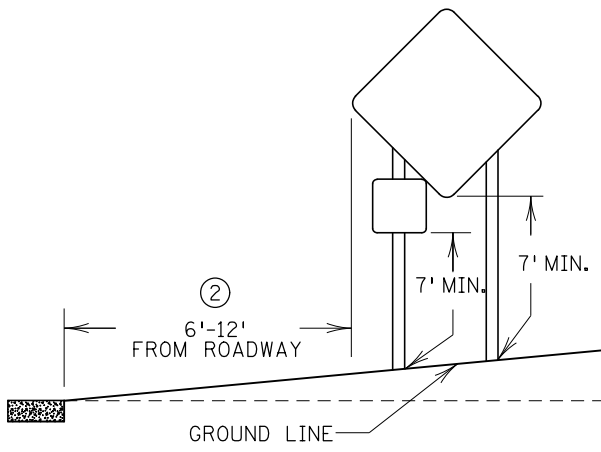
SPECIFIC NOTES:

- ① IF ANY PART OF A SIGN OR SIGN ASSEMBLY EXTENDS MORE THAN 4" INTO THE PEDESTRIAN FACILITY, THE MINIMUM HEIGHT TO BOTTOM OF THE SIGN OR SIGN ASSEMBLY SHALL BE 7'.
- ② 6'-12' FROM EDGE OF ROADWAY, MUST BE A MINIMUM OF 6' FROM EDGE OF PAVED SHOULDER (WHEN PRESENT).
- ③ IF GROUND MOUNTED TEMPORARY SIGN OR SIGN ASSEMBLY IS PLACED ON 2-1/2" SQUARE TUBE RISER POST(S), THE MINIMUM CLEARANCE FROM THE GROUND LINE TO THE BOTTOM OF THE LOWEST SIGN ON THE ASSEMBLY SHALL BE 7', OR AS SHOWN IN DETAIL, WHICHEVER IS GREATER.
- ④ 5' MINIMUM IN RURAL, 7' MINIMUM IN BUSINESS, COMMERCIAL, OR RESIDENTIAL AREAS.
- ⑤ WHEN MULTIPLE GROUND MOUNTED SIGN STRUCTURES ARE PLACED ADJACENT TO EACH OTHER THERE SHOULD BE NO MORE THAN 2 POSTS WITHIN 84" OF EACH OTHER. WHEN THIS SPACING CAN NOT BE MAINTAINED, THEN SIGN STRUCTURES SHALL BE OFFSET, AND STAGGERED WITH A MINIMUM OF 4' BETWEEN SIGN STRUCTURES BOTH Laterally AND LONGITUDINALLY. EXAMPLE SHOWS DETOUR SIGNAGE, BUT THIS REQUIREMENT APPLIES TO ALL SIGNAGE.
- ⑥ INPLACE AND/OR OTHER CONSTRUCTION SIGNING.

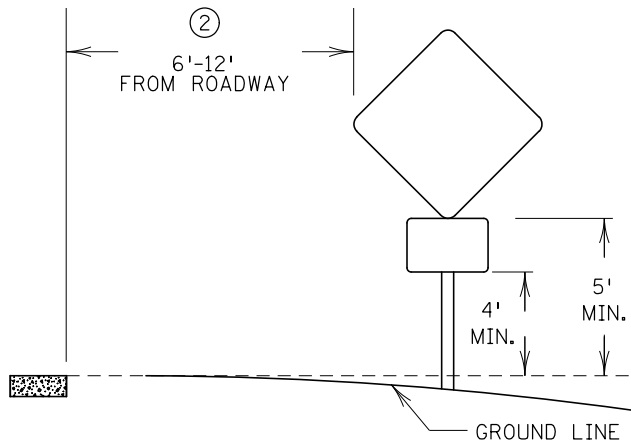
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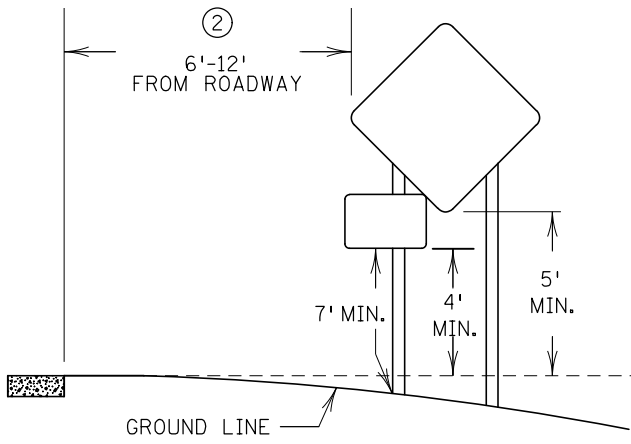
TYPICAL RURAL DESIGN  
AND 2" RISER POST



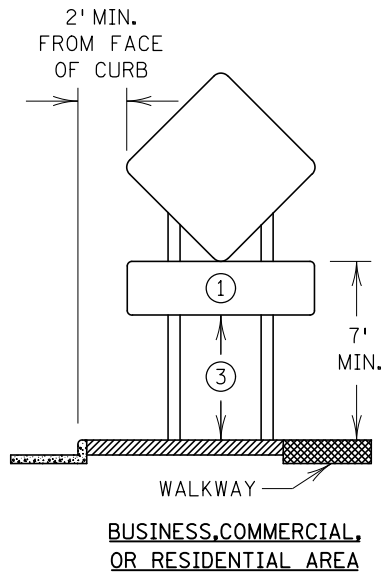
TYPICAL RURAL DESIGN WITH SUPPLEMENTAL  
PLAQUE AND 2-1/2" RISER POST



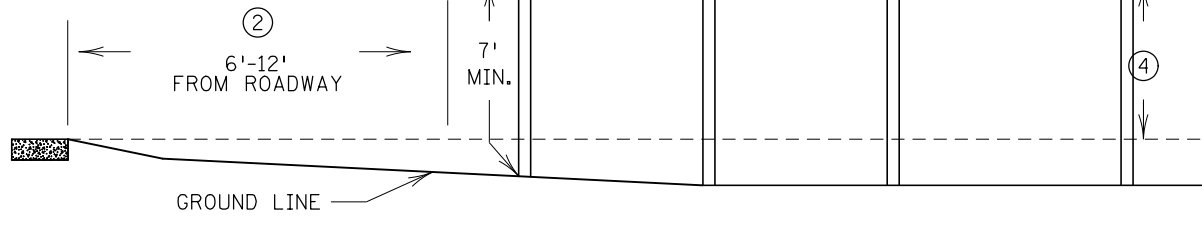
TYPICAL RURAL DESIGN WITH SUPPLEMENTAL  
PLAQUE AND 2" RISER POST



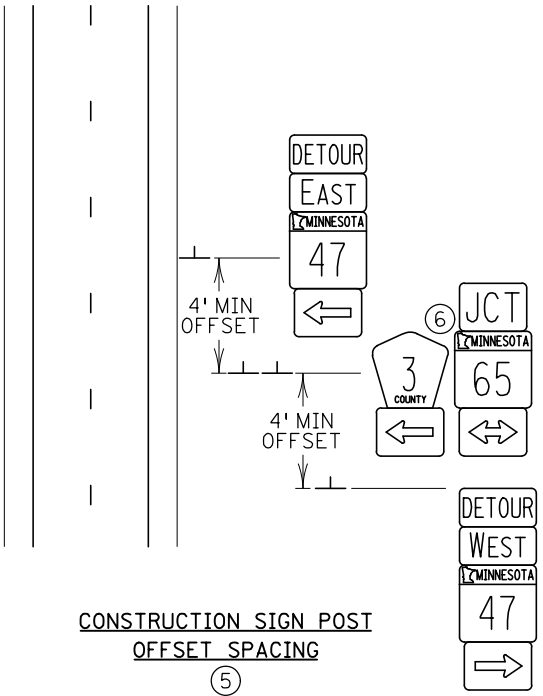
TYPICAL RURAL DESIGN  
2-1/2" RISER POST



BUSINESS, COMMERCIAL,  
OR RESIDENTIAL AREA



TYPICAL G20-X2 DESIGN



PUBLISHED BY OTE 03/15/2021

MODIFIED BY



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ANDREW MCCALLUM  
SIGNATURE: Andrew McCallum  
DATE: 09/19/24 LICENSE #: 54861

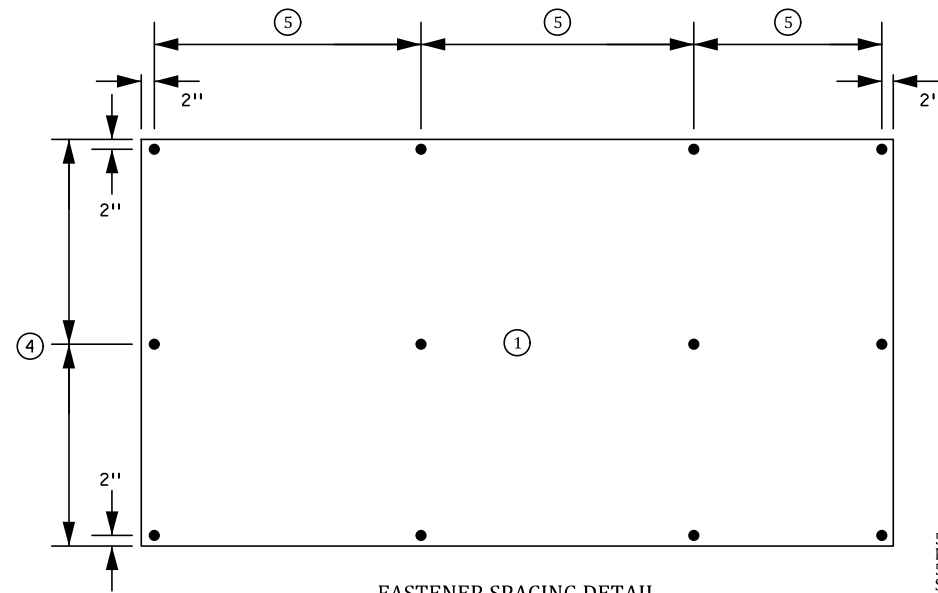
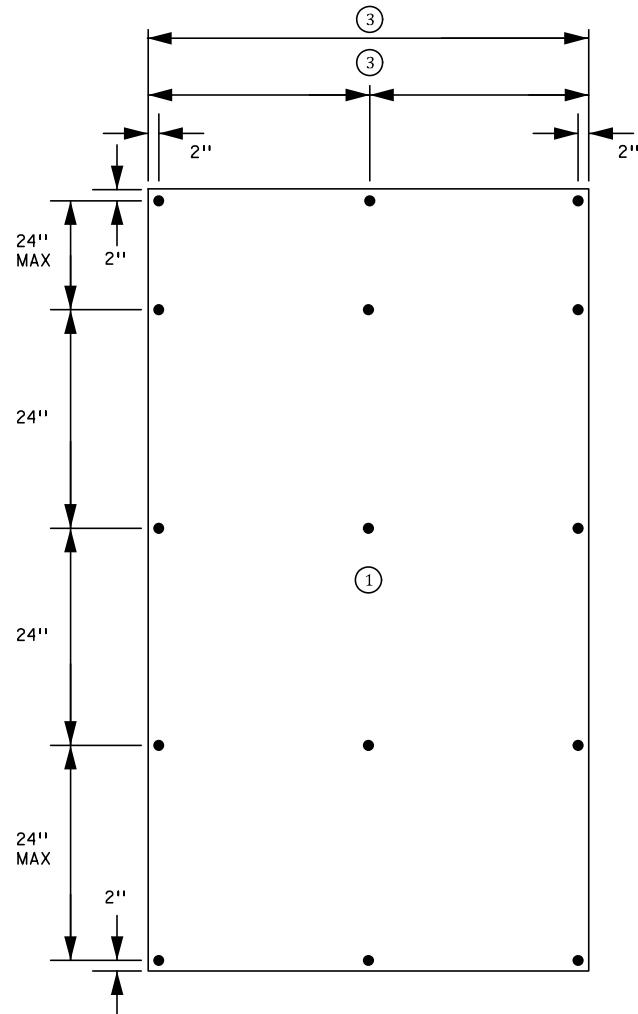
TEMPORARY TRAFFIC CONTROL  
SQUARE TUBE GROUND MOUNTED SIGN PLACEMENT

SP 8828-139

SHEET NO. 153 OF 212 SHEETS



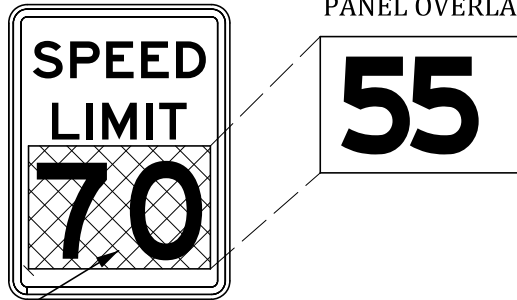
FASTENER SPACING DETAIL  
HORIZONTAL PLACEMENT



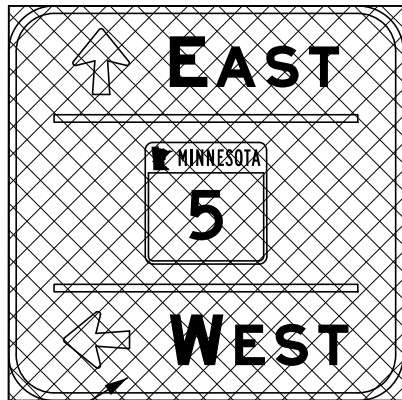
FASTENER SPACING DETAIL  
VERTICAL PLACEMENT

R2-1

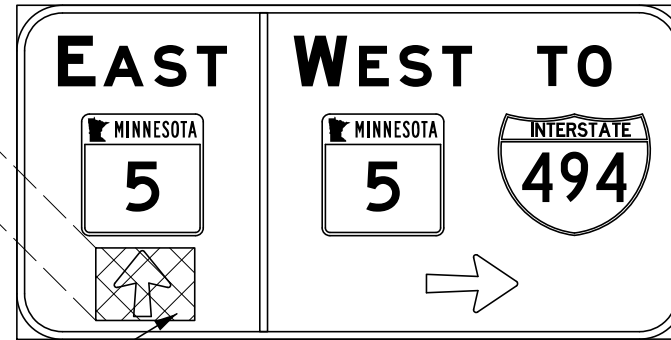
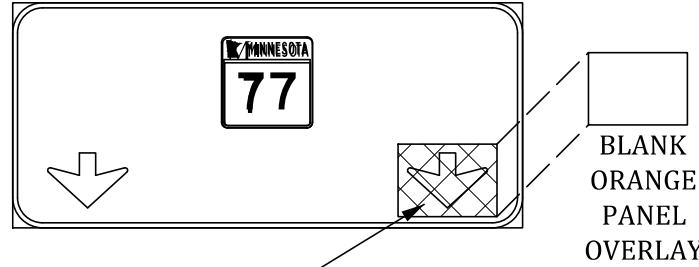
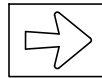
BLACK ON WHITE  
PANEL OVERLAY



BLANK  
NON-REFLECTIVE  
GREEN  
COVER



BLACK ON  
ORANGE  
PANEL  
OVERLAY



BLACK ON  
ORANGE  
PANEL  
OVERLAY



GENERAL NOTES:

- SIGN COVERS ARE USED TO COVER THE ENTIRE PANEL OF A INPLACE SIGN. THE COVER SHALL BE BLANK, GREEN IN COLOR, AND MADE OF A RIGID NON-REFLECTIVE MATERIAL (SHEET ALUMINUM, PLYWOOD, CORRUGATED PLASTIC). OTHER MATERIALS MAY BE USED AS APPROVED BY THE ENGINEER.
- SIGN PANEL OVERLAYS ARE USED TO MODIFY THE MESSAGE OF AN INPLACE SIGN PANEL. THE PANEL OVERLAY SHALL BE MADE OF SHEET ALUMINUM WITH THE APPROPRIATE SHEETING MATERIAL AS SPECIFIED ON THE MNDOT SHEETING FOR RIGID TEMPORARY WORK ZONE SIGNS APL. THE MESSAGE SHALL FOLLOW THE REQUIREMENTS OF THE "MNDOT STANDARD SIGNS AND MARKINGS MANUAL" OR THE "FHWA STANDARD HIGHWAY SIGNS MANUAL" (AND SUPPLEMENTS). THE SIGN PANEL OVERLAY SHALL BE RECTANGULAR IN SHAPE AND FULLY COVER THE MESSAGE ELEMENT(S) BEING MODIFIED.
- SIGN PANEL OVERLAY WITH A MESSAGE SHALL BE BLACK ON FLUORESCENT ORANGE ON ALL SIGNS EXCEPT FOR REGULATORY SIGNS WHICH SHALL BE THE PROPER COLOR ON A WHITE BACKGROUND.
- BLANK SIGN PANEL OVERLAYS SHALL BE FLUORESCENT ORANGE ON ALL SIGNS.
- DO NOT COVER OR MODIFY THE "STOP" (R1-1), "YIELD" (R1-2), OR THE (W14-3) NO PASSING ZONE SIGNS, THESE SIGNS SHALL BE REMOVED IF THEY NO LONGER APPLY OR CONFLICT WITH WORK ZONE SIGNING.
- MINIMIZE DAMAGE TO THE INPLACE SIGN PANEL. DO NOT APPLY TAPE TO THE INPLACE SIGN SHEETING.
- SPACERS (SUCH AS PLASTIC OR RUBBER) SHALL BE A MATERIAL THAT WILL NOT HARM THE INPLACE SIGN SHEETING FACE.
- ATTACH SIGN COVER PANEL OR PANEL OVERLAY USING HARDWARE SHOWN IN THE SPACER DETAIL.
- IF SHEET METAL SCREWS ARE USED TO PLACE CORRUGATED PLASTIC AS A SIGN COVER PANEL, PLACE FENDER WASHERS BETWEEN THE SCREW HEADS AND THE CORRUGATED PLASTIC.
- REMOVE ALL COVERING MATERIAL, MOUNTING HARDWARE, AND FASTENERS WHEN SIGN COVER PANEL OR PANEL OVERLAY IS REMOVED.
- NO HANDLE OR OTHER LIFTING DEVICE SHALL BE LEFT ATTACHED TO ANY SIGN COVER PANEL AFTER PLACEMENT.

SPECIFIC NOTES:

- THE SIGN COVER OR PANEL OVERLY SHALL FULLY COVER THE MESSAGE BEING COVERED OR MODIFIED.
- PLACE SIGN COVER AND PANEL OVERLAYS WITH SPACERS THAT PROVIDE A SPACING OF 1/4 IN TO 1/2 IN BETWEEN THE COVER MATERIAL AND THE INPLACE SIGN. THE SPACERS SHALL HAVE AN OUTSIDE DIAMETER BETWEEN 3/8 IN TO 7/8 IN. EACH FASTENER REQUIRES A SPACER.
- IF THE SIGN COVER OR PANEL OVERLAY IS GREATER THAN 48 IN WIDE, THE FASTENER SPACING SHALL BE NO GREATER THAN 24 IN. IF THE SIGN COVER OR PANEL OVERLAY IS LESS THAN 24 IN WIDE, DO NOT PLACE A CENTER FASTENER (UNLESS REQUIRED BY SPECIFIC NOTE 4).
- VERTICAL SPACING FOR FASTENERS IS 50% OF THE SIGN COVER OR PANEL OVERLAY. IF THE SIGN COVER OR PANEL OVERLAY IS LESS THAN 24 IN HIGH, DO NOT PLACE A CENTER FASTENER (UNLESS REQUIRED PER SPECIFIC NOTE 5).
- HORIZONTAL SPACING FOR FASTENERS SHALL NOT BE LESS THAN 15 IN OR MORE THAN 24 IN.

ASSEMBLY NOTES:

- DRILL 11/32 IN HOLES ON THE SIGN COVER OR PANEL OVERLAY IN ACCORDANCE WITH HELD FASTENER SPACING DETAILS.
- ATTACH PLASTIC SPACERS TO SIGN COVER OR PANEL OVERLAY WITH DOUBLE FACED TAPE, CENTERED BEHIND EACH DRILLED HOLE.
- POSITION THE COVER OR OVERLAY MATERIAL OVER THE SIGN OR MESSAGE TO BE MODIFIED.
- DRILL ALL THE OUTSIDE HOLES THROUGH THE INPLACE SIGN PANEL AND ATTACH THE COVER OR OVERLAY MATERIAL WITH APPROPRIATE FASTENERS.
- DRILL ALL THE INNER HOLES THROUGH THE INPLACE SIGN PANEL AND ATTACH WITH APPROPRIATE FASTENERS.

PUBLISHED BY OTE 08/17/2023

MODIFIED BY



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

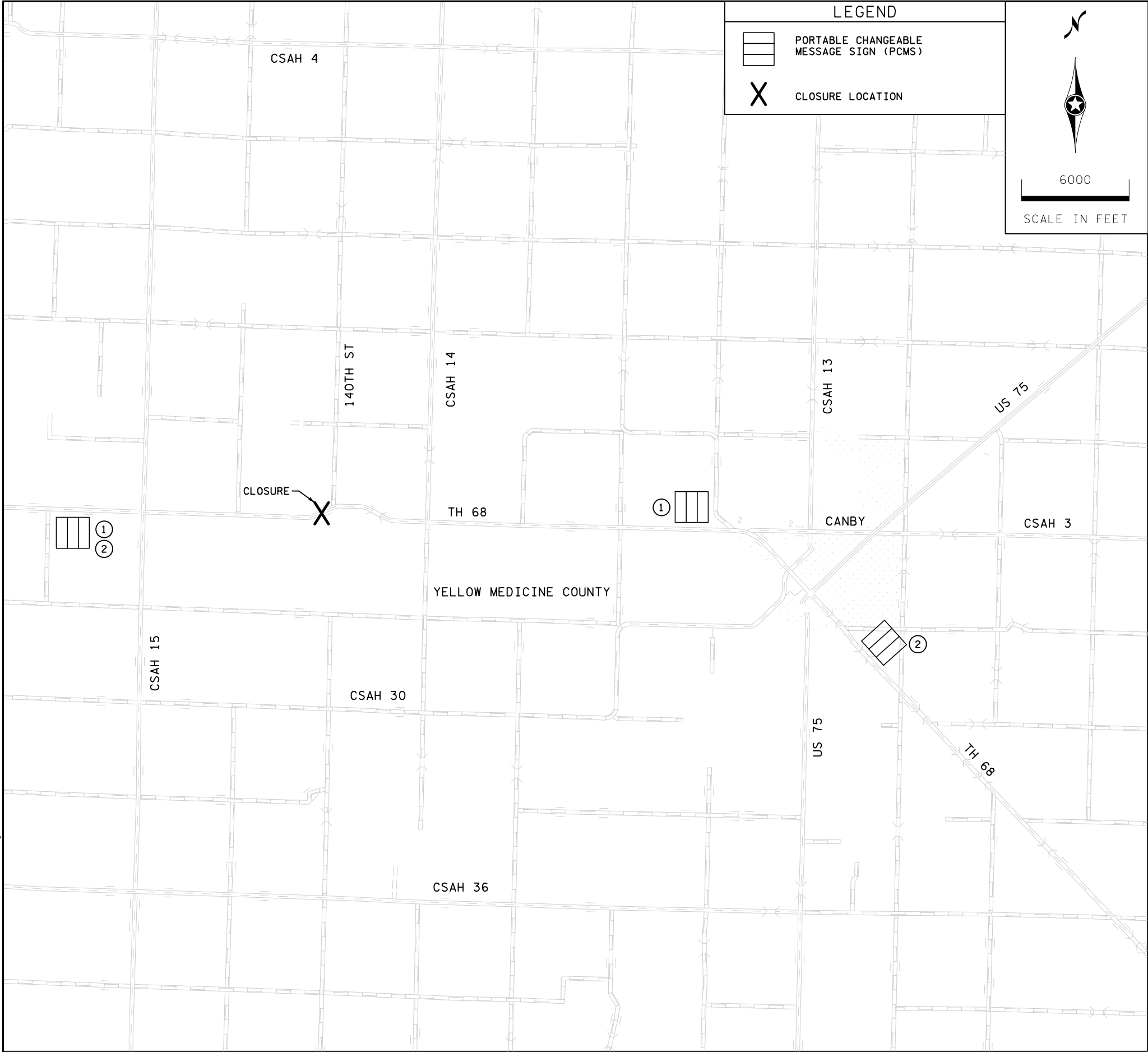
PRINT NAME: ANDREW MCCALLUM  
SIGNATURE: Andrew McCallum  
DATE: 09/19/24 LICENSE #: 54861

TEMPORARY TRAFFIC CONTROL  
TEMPORARY SIGN COVERING

SP 8828-139

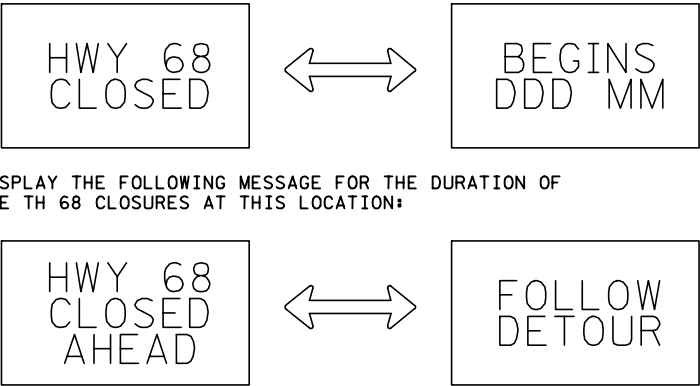
SHEET NO. 154 OF 212 SHEETS





SPECIFIC NOTES:

- ① PLACE TWO-PHASE PCMS 14 DAYS PRIOR TO TH 68 CLOSURES AT THIS LOCATION:
- ② DISPLAY THE FOLLOWING MESSAGE FOR THE DURATION OF THE TH 68 CLOSURES AT THIS LOCATION:



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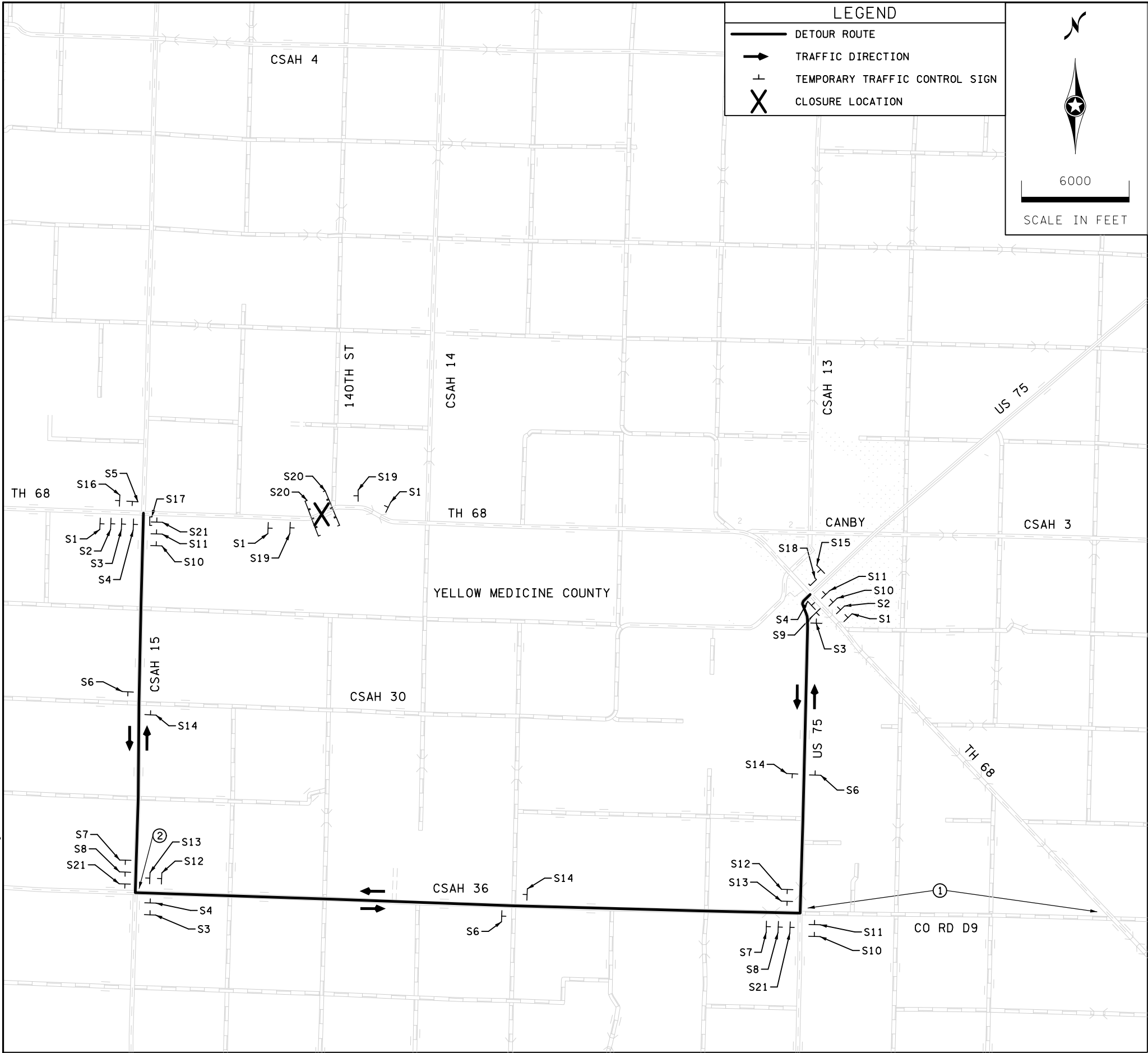
NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ANDREW MCCALLUM  
SIGNATURE: Andrew McCallum  
DATE 09/19/24 LICENSE # 54861

TRAFFIC CONTROL PLAN  
ADVANCED NOTIFICATION SIGNING



ROAD CLOSED AHEAD

S1

DETOUR AHEAD

S2

DETOUR EAST MINNESOTA 68

S3

DETOUR EAST MINNESOTA 68

S4

DETOUR EAST MINNESOTA 68

S5

DETOUR EAST MINNESOTA 68

S6

DETOUR EAST MINNESOTA 68

S7

DETOUR EAST MINNESOTA 68

S8

END DETOUR EAST MINNESOTA 68

S9

DETOUR WEST MINNESOTA 68

S10

DETOUR WEST MINNESOTA 68

S11

DETOUR WEST MINNESOTA 68

S12

DETOUR WEST MINNESOTA 68

S13

DETOUR WEST MINNESOTA 68

S14

DETOUR WEST MINNESOTA 68

S15

END DETOUR WEST MINNESOTA 68

S16

ROAD CLOSED 2 MILES AHEAD LOCAL TRAFFIC ONLY

S17

ROAD CLOSED 5 MILES AHEAD LOCAL TRAFFIC ONLY

S18

ROAD CLOSED AHEAD 750 FEET

S19

ROAD CLOSED

S20

STOP

CROSS TRAFFIC DOES NOT STOP

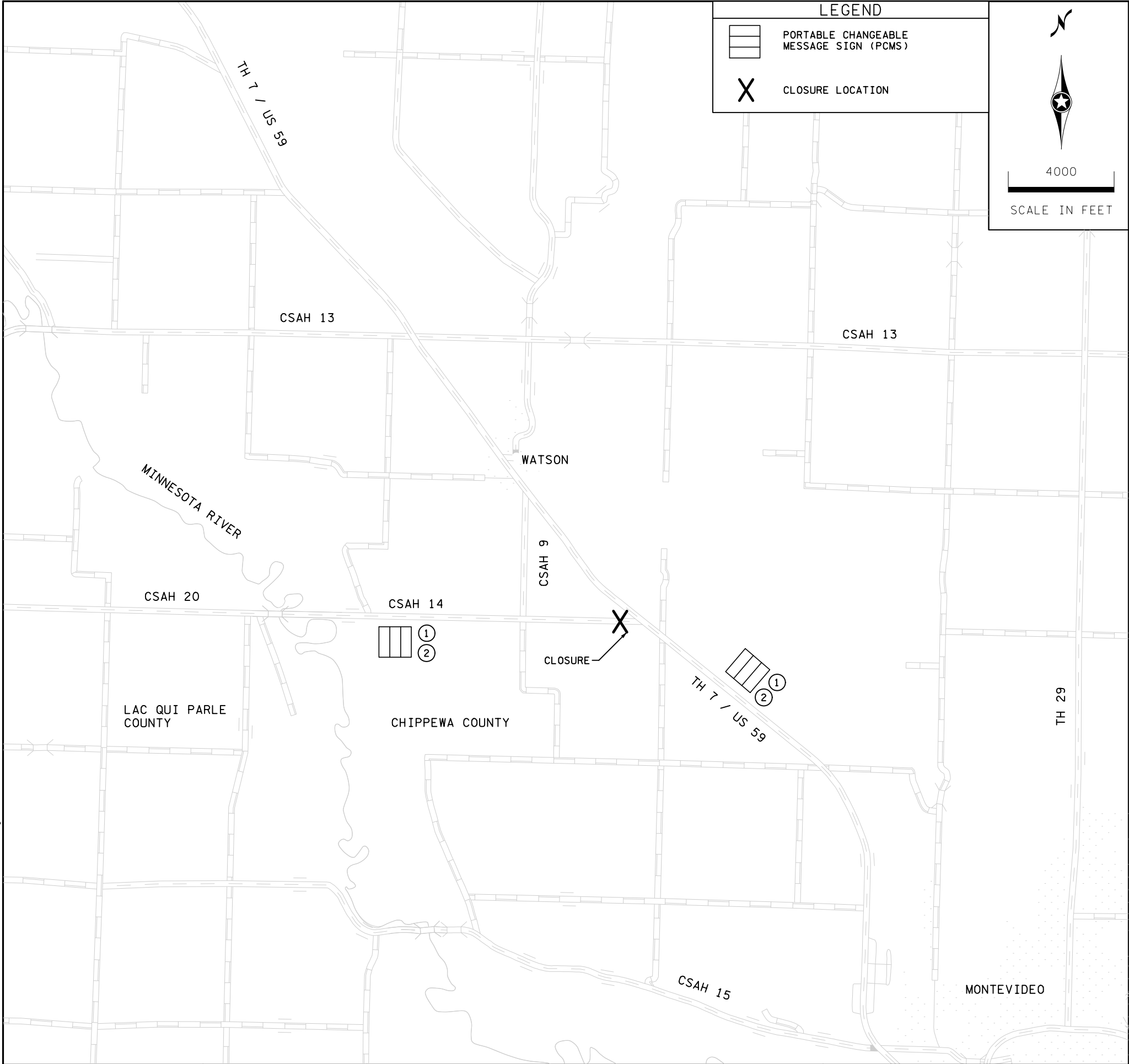
S21

**SPECIFIC NOTES:**

- APPLY CALCIUM CHLORIDE SOLUTION FOR A LENGTH OF 400 FT ADJACENT TO EACH RESIDENCE AND 400 FT AT EACH ROAD INTERSECTION INCLUDING THE BEGINNING AND END OF CO RD D9 BETWEEN US 75 AND TH 68 AS APPROVED BY THE ENGINEER.
- COMPLETE RADIUS WIDENING BEFORE ACTIVATING THE DETOUR ROUTE. SEE SHEET 168.

**GENERAL NOTES:**

- THE CONTRACTOR SHALL FIELD ADJUST LOCATIONS AND SPACING AS NECESSARY TO ACCOMMODATE FIELD CONDITIONS.
- EXISTING SIGNS THAT CONFLICT WITH THE SIGNAGE SHOWN ON THIS PLAN SHEET SHALL BE COVERED UNLESS OTHERWISE SHOWN.
- TRAFFIC CONTROL SIGN SPACING SHALL BE ACCORDING TO FIGURE 6K-11 OF THE MNMUTCD UNLESS OTHERWISE SHOWN. -750 FT SPACING FOR A POSTED SPEED OF 55 MPH.



LEGEND

PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

X

CLOSURE LOCATION

4000

SCALE IN FEET

SPECIFIC NOTES:

1

PLACE TWO-PHASE PCMS 14 DAYS PRIOR TO CSAH 14 CLOSURES:

CR 14  
CLOSED

↔

BEGINS  
DDD MM

2

DISPLAY THE FOLLOWING MESSAGE FOR THE DURATION OF THE CSAH 14 CLOSURES:

CR 14  
CLOSED  
AHEAD

↔

FOLLOW  
DETOUR

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NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

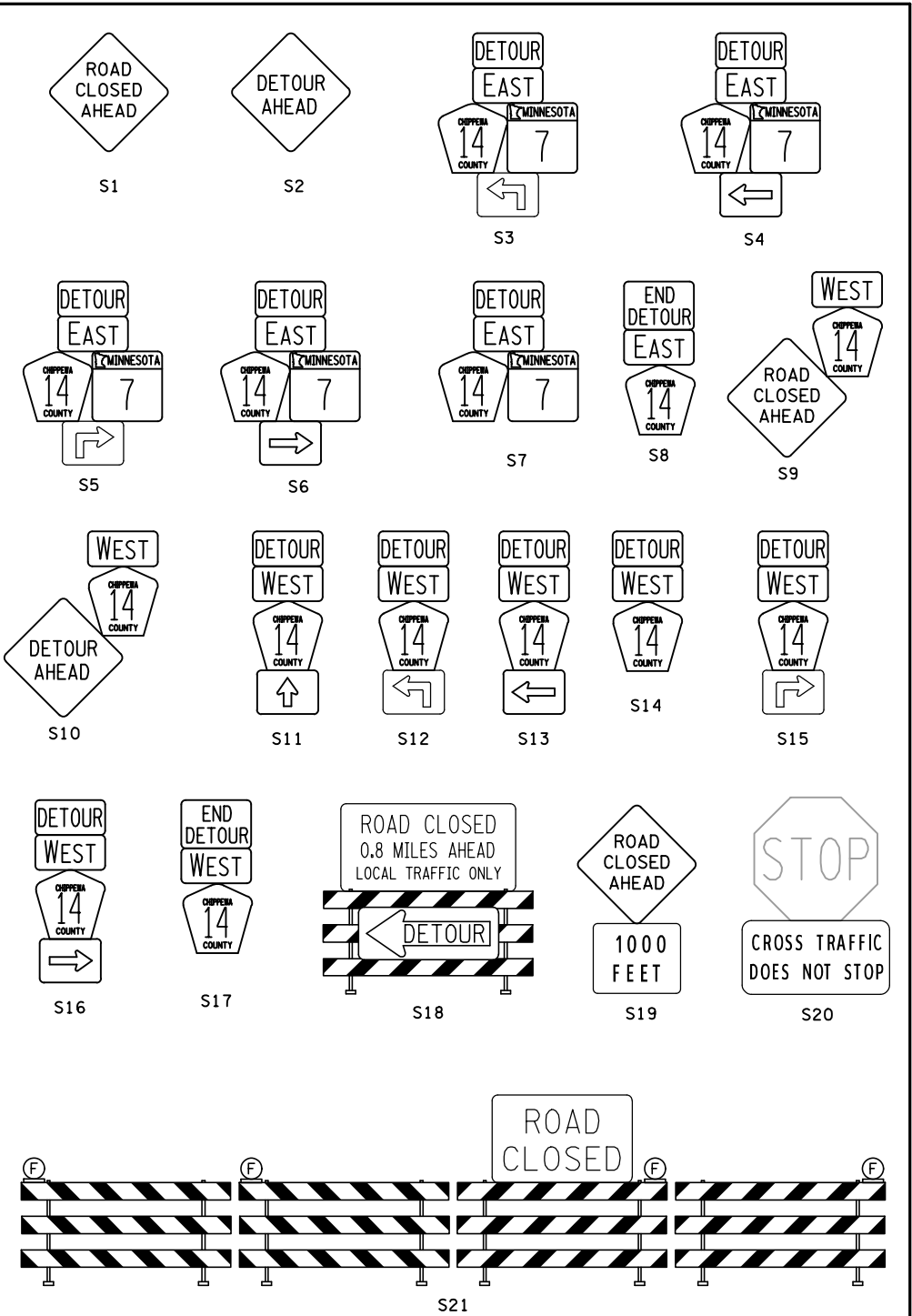
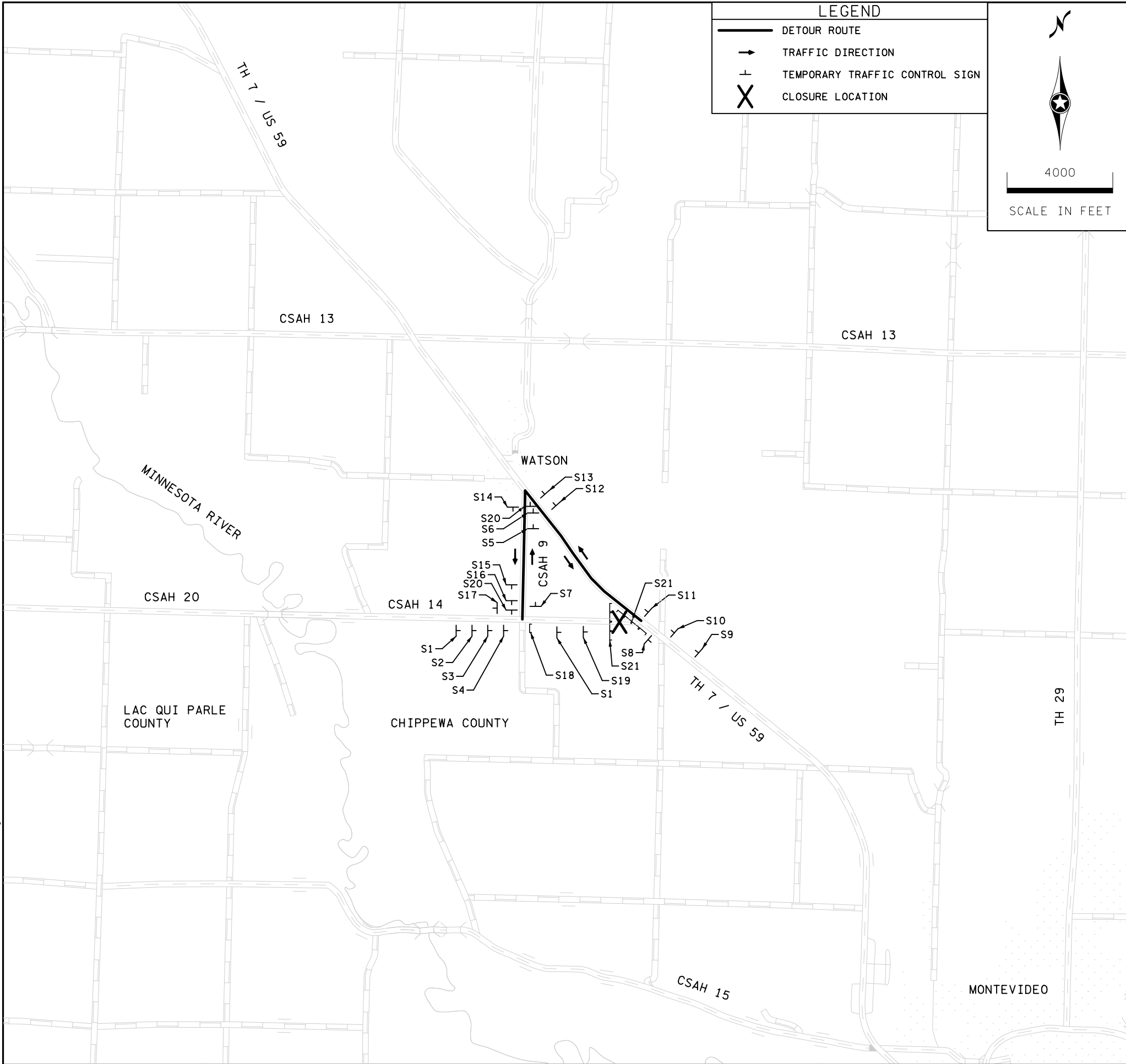
PRINT NAME: ANDREW MCCALLUM  
SIGNATURE: *Andrew McCallum*  
DATE: 09/19/24 LICENSE #: 54861

TRAFFIC CONTROL PLAN  
ADVANCED NOTIFICATION SIGNING

SP 8828-139				
SHEET NO.	159	OF	212	SHEETS



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10/6/2024  
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GENERAL NOTES:

- THE CONTRACTOR SHALL FIELD ADJUST LOCATIONS AND SPACING AS NECESSARY TO ACCOMMODATE FIELD CONDITIONS.
- EXISTING SIGNS THAT CONFLICT WITH THE SIGNAGE SHOWN ON THIS PLAN SHEET SHALL BE COVERED UNLESS OTHERWISE SHOWN.
- TRAFFIC CONTROL SIGN SPACING SHALL BE ACCORDING TO FIGURE 6K-11 OF THE MNMUTCD UNLESS OTHERWISE SHOWN.  
-750 FT SPACING FOR A POSTED SPEED OF 55 MPH.  
-1000 FT SPACING FOR A POSTED SPEED OF 60 MPH.

NO	DATE	DWN	CKD	REVISIONS



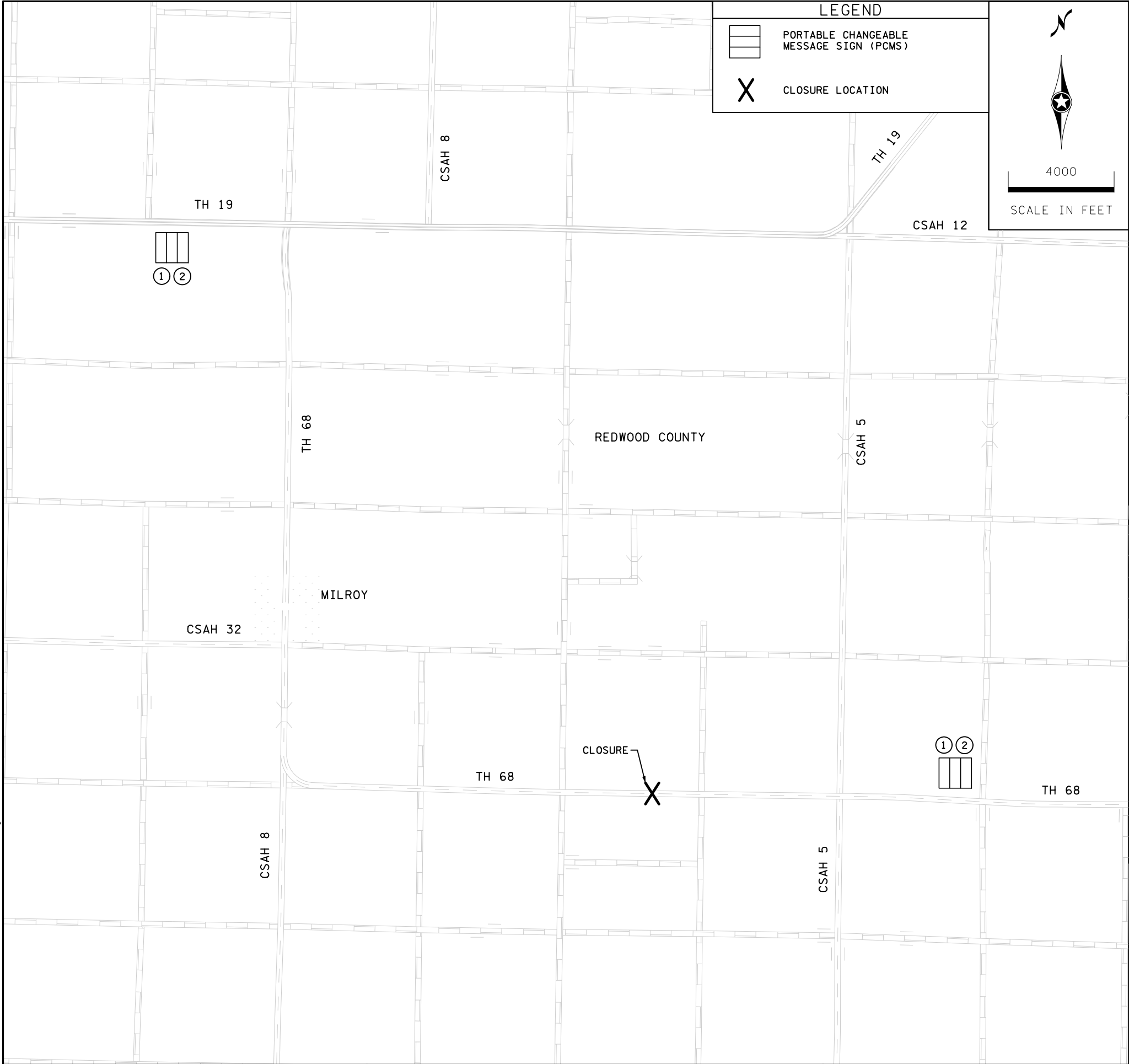
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ANDREW MCCALLUM  
SIGNATURE: *Andrew McCallum*  
DATE: 09/19/24 LICENSE #: 54861

TRAFFIC CONTROL PLAN  
DETOUR LAYOUT - CSAH 14 CHIPPEWA CO

SP 8828-139  
SHEET NO. 160 OF 212 SHEETS

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10/6/2022  
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- SPECIFIC NOTES:**
- ① PLACE TWO-PHASE PCMS 14 DAYS PRIOR TO TH 68 CLOSURES:
- HWY 68  
CLOSED

↔

BEGINS  
DDD MM
- ② DISPLAY THE FOLLOWING MESSAGE FOR THE DURATION OF THE TH 68 CLOSURES:
- HWY 68  
CLOSED  
AHEAD

↔

FOLLOW  
DETOUR

NO	DATE	DWN	CKD	REVISIONS

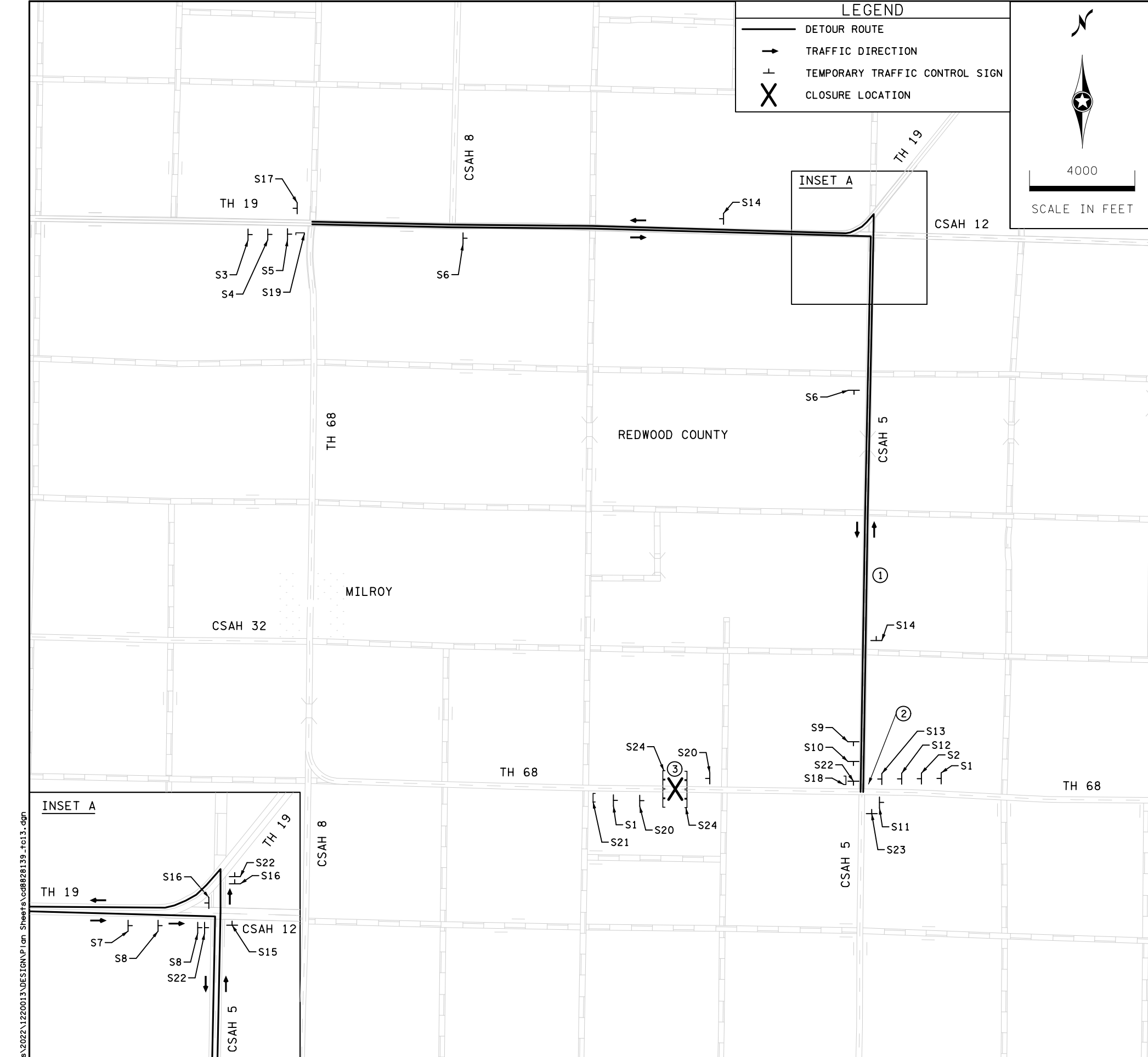


I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ANDREW MCCALLUM  
SIGNATURE: *Andrew McCallum*  
DATE: 09/19/24 LICENSE #: 54861

TRAFFIC CONTROL PLAN  
ADVANCED NOTIFICATION SIGNING

SP 8828-139  
SHEET NO. 161 OF 212 SHEETS



ROAD CLOSED AHEAD

S1

DETOUR EAST MINNESOTA 68

S6

END DETOUR EAST MINNESOTA 68

S11

END DETOUR WEST MINNESOTA 68

S17

ROAD CLOSED 0.6 MILES AHEAD LOCAL TRAFFIC ONLY

S21

DETOUR AHEAD

S2

DETOUR EAST MINNESOTA 68

S7

DETOUR WEST MINNESOTA 68

S12

ROAD CLOSED 1.3 MILES AHEAD LOCAL TRAFFIC ONLY

S18

STOP

CROSS TRAFFIC DOES NOT STOP

S22

ROAD CLOSED AHEAD

S3

DETOUR EAST MINNESOTA 68

S8

DETOUR WEST MINNESOTA 68

S13

ROAD CLOSED 6.6 MILES AHEAD LOCAL TRAFFIC ONLY

S19

ROAD CLOSED

S24

DETOUR AHEAD

S4

DETOUR EAST MINNESOTA 68

S9

DETOUR WEST MINNESOTA 68

S15

ROAD CLOSED AHEAD

S20

DETOUR EAST MINNESOTA 68

S5

DETOUR EAST MINNESOTA 68

S10

DETOUR WEST MINNESOTA 68

S16

DETOUR WEST MINNESOTA 68

S23

**SPECIFIC NOTES:**

① 13 TONS OF TYPE SP 12.5 WEARING COURSE MIXTURE (3,B) FOR PATCHING THE DETOUR ROUTE AS APPROVED BY THE ENGINEER, PAID FOR AS BITUMINOUS PATCHING MIXTURE.

② COMPLETE RADIUS WIDENING BEFORE ACTIVATING THE DETOUR ROUTE. SEE SHEET 165.

③ CLOSURE FOR TH 68 REDWOOD COUNTY AND CSAH 5 REDWOOD COUNTY MAY NOT OCCUR AT THE SAME TIME.

**GENERAL NOTES:**

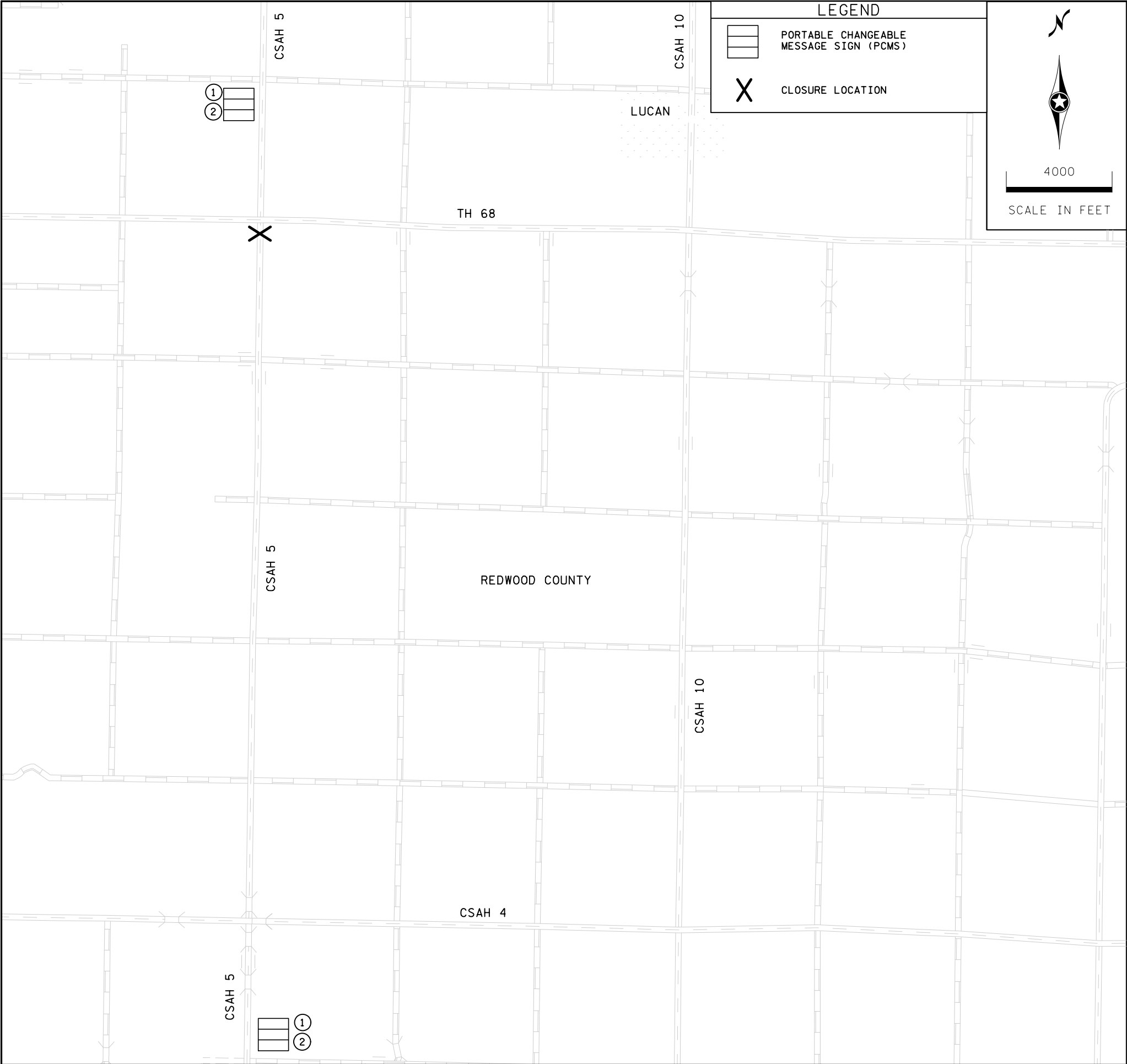
A. THE CONTRACTOR SHALL FIELD ADJUST LOCATIONS AND SPACING AS NECESSARY TO ACCOMMODATE FIELD CONDITIONS.

B. EXISTING SIGNS THAT CONFLICT WITH THE SIGNAGE SHOWN ON THIS PLAN SHEET SHALL BE COVERED UNLESS OTHERWISE SHOWN.


C. TRAFFIC CONTROL SIGN SPACING SHALL BE ACCORDING TO FIGURE 6K-11 OF THE MNMUTCD UNLESS OTHERWISE SHOWN.  
-750 FT SPACING FOR A POSTED SPEED OF 55 MPH.  
-1000 FT SPACING FOR A POSTED SPEED OF 60 MPH.






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10/6/2022  
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**LEGEND**

 PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

 CLOSURE LOCATION

  
  
4000  
SCALE IN FEET

**SPECIFIC NOTES:**

① PLACE TWO-PHASE PCMS 14 DAYS PRIOR TO CSAH 5 CLOSURES:

CR 5  
CLOSED

↔

BEGINS  
DDD MM

② DISPLAY THE FOLLOWING MESSAGE FOR THE DURATION OF THE CSAH 5 CLOSURES:

CR 5  
CLOSED  
AHEAD

↔

FOLLOW  
DETOUR

NO	DATE	DWN	CKD	REVISIONS



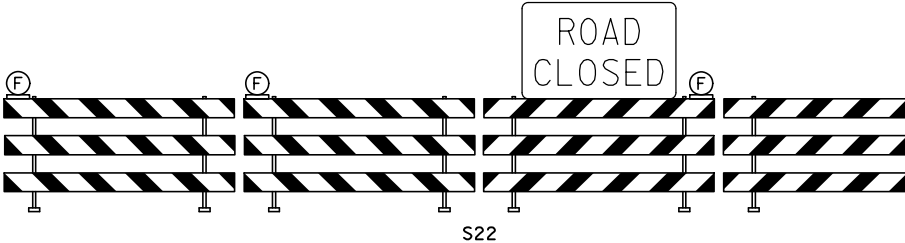
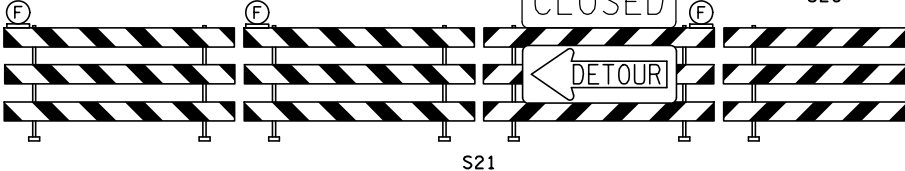
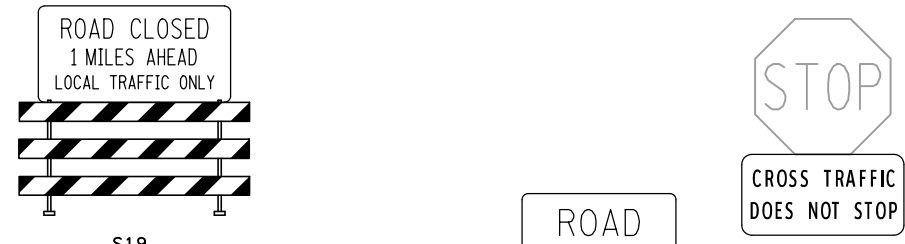
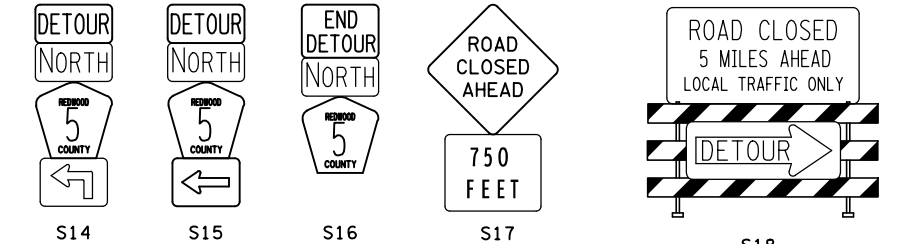
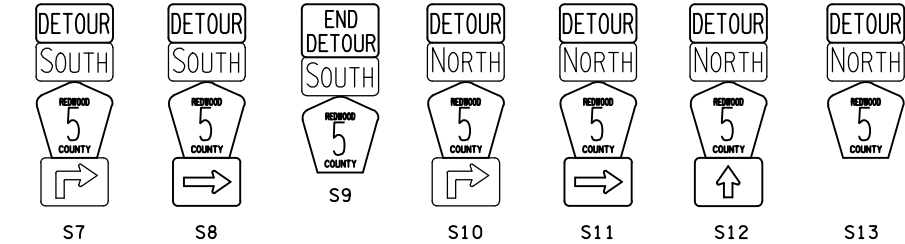
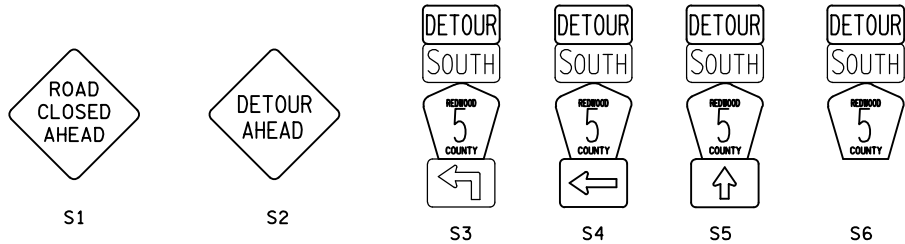
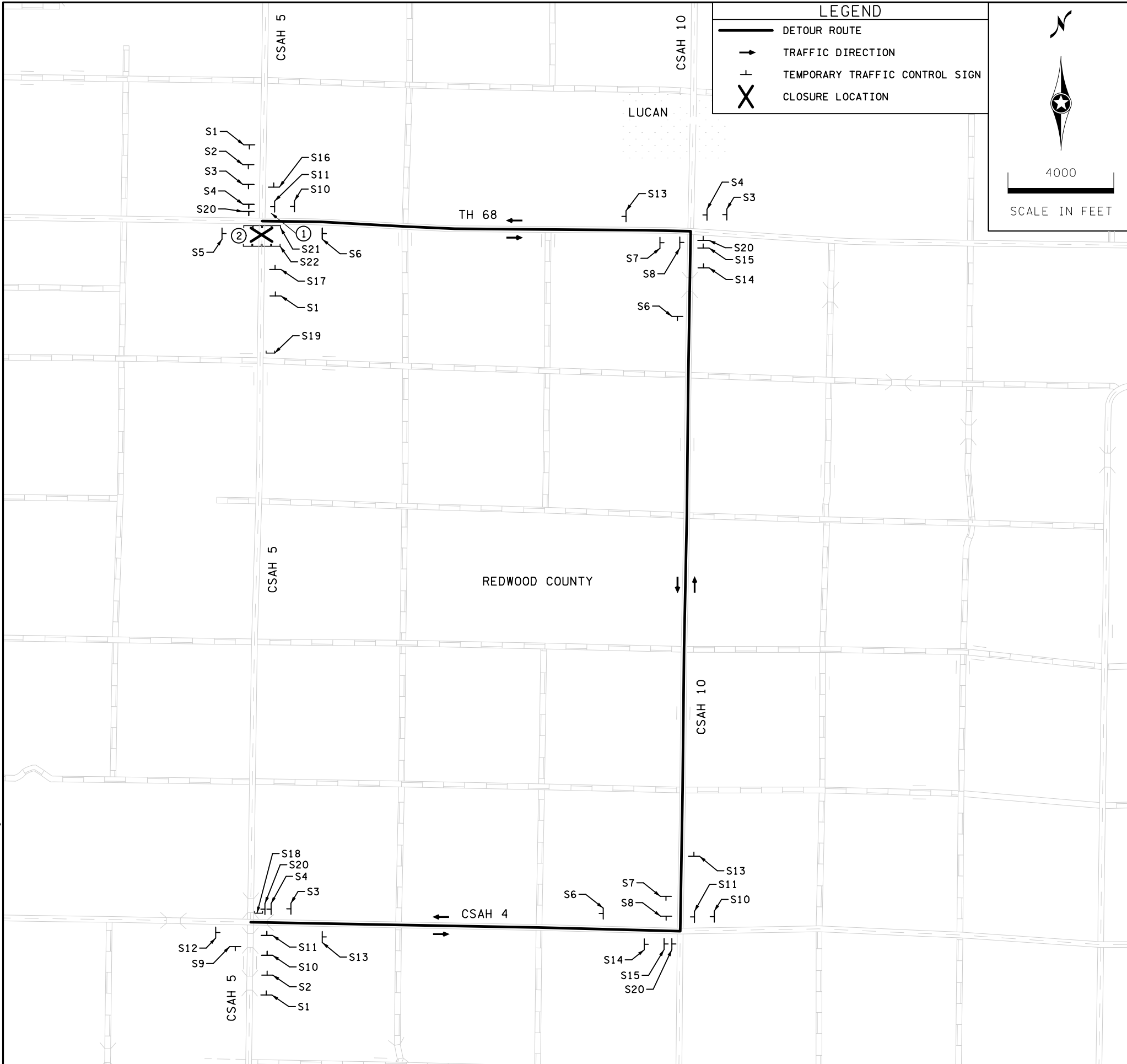
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ANDREW MCCALLUM  
SIGNATURE: *Andrew McCallum*  
DATE: 09/19/24 LICENSE #: 54861

TRAFFIC CONTROL PLAN  
ADVANCED NOTIFICATION SIGNING

SP 8828-139  
SHEET NO. 163 OF 212 SHEETS

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10/6/2022  
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- SPECIFIC NOTES:**
- COMPLETE RADIUS WIDENING BEFORE ACTIVATING THE DETOUR ROUTE. SEE SHEET 165.
  - CLOSURE FOR TH 68 REDWOOD COUNTY AND CSAH 5 REDWOOD COUNTY MAY NOT OCCUR AT THE SAME TIME.
- GENERAL NOTES:**
- THE CONTRACTOR SHALL FIELD ADJUST LOCATIONS AND SPACING AS NECESSARY TO ACCOMMODATE FIELD CONDITIONS.
  - EXISTING SIGNS THAT CONFLICT WITH THE SIGNAGE SHOWN ON THIS PLAN SHEET SHALL BE COVERED UNLESS OTHERWISE SHOWN.
  - TRAFFIC CONTROL SIGN SPACING SHALL BE ACCORDING TO FIGURE 6K-11 OF THE MNMUTCD UNLESS OTHERWISE SHOWN.  
-750 FT SPACING FOR A POSTED SPEED OF 55 MPH.  
-1000 FT SPACING FOR A POSTED SPEED OF 60 MPH.

NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ANDREW MCCALLUM  
SIGNATURE: *Andrew McCallum*  
DATE: 09/19/24 LICENSE #: 54861

TRAFFIC CONTROL PLAN  
DETOUR LAYOUT - REDWOOD CO

SP 8828-139  
SHEET NO. 164 OF 212 SHEETS

GENERAL NOTES:

1. COMPLETE RADIUS WIDENING BEFORE ACTIVATING EITHER TH 68 DETOUR.  
2. SEE THE MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL FOR SHORT TERM TRAFFIC CONTROL LAYOUTS FOR USE DURING THE CONSTRUCTION OF RADIUS WIDENING.

SPECIFIC NOTES:

- ① SALVAGE AND INSTALL SIGNS (2)  
② SEE NEXT SHEET FOR SECTION  
③ PROTECT EXISTING GEODETIC CONTROL MONUMENT

RADIUS WIDENING - REDWOOD COUNTY

WIDEN INPLACE RADIUS  
TH 68 RP 58+00.973

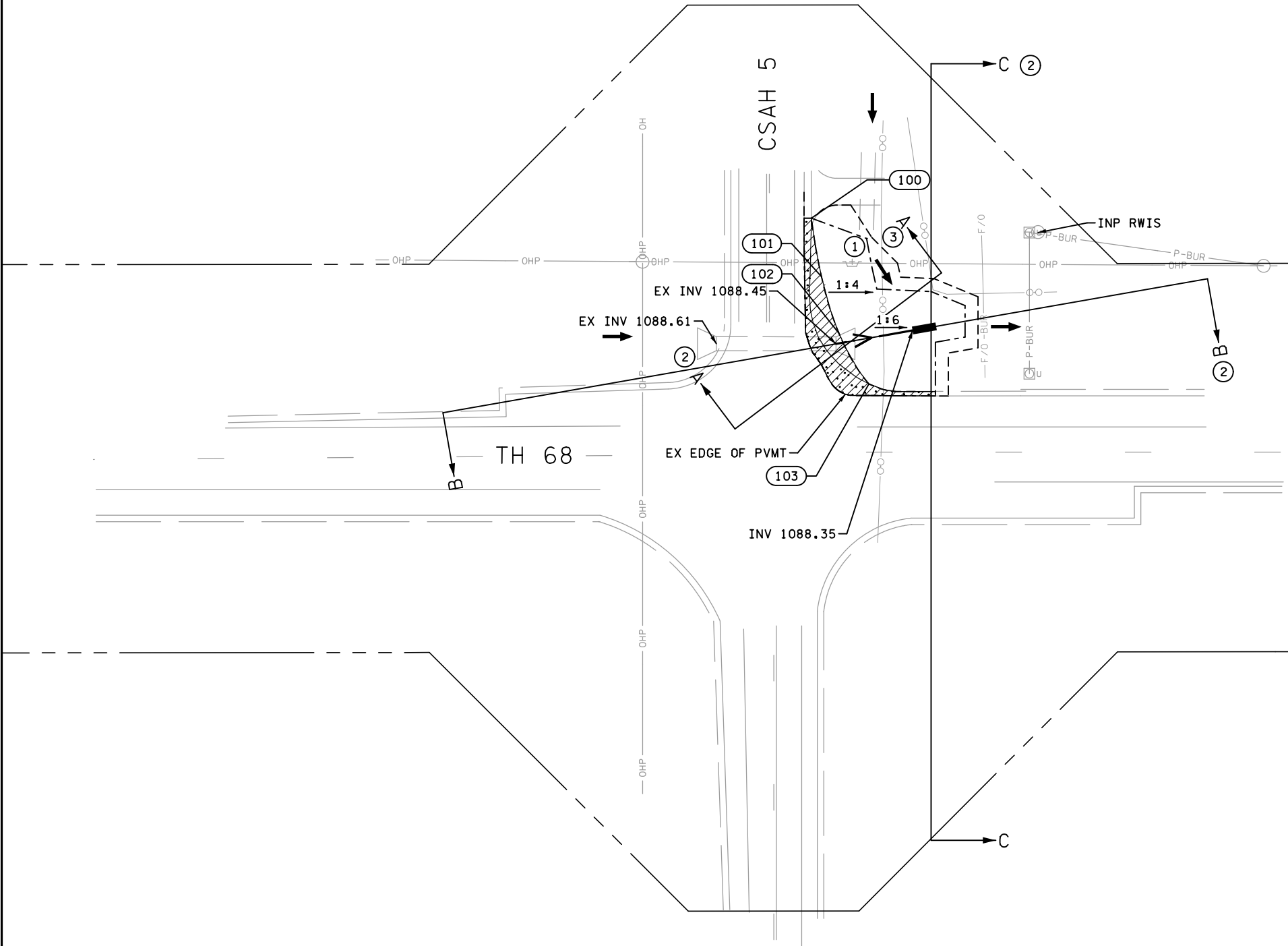
LEGEND	
	DRAINAGE FLOW ARROW
	EXISTING AGGREGATE SURFACING
	PROPOSED AGGREGATE SURFACING
	CONSTRUCTION LIMITS
	LIMITS OF DISTURBANCE

N



50

SCALE IN FEET



CONTROL POINTS				
NO.	X	Y	ELEVATION	DESCRIPTION
100	437417.94	174816.11	1096.34	BEGIN WIDENING
101	437421.82	174793.56	1095.75	INTERMEDIATE POINT
102	437428.55	174771.70	1095.11	INTERMEDIATE POINT
103	437440.14	174752.10	1095.80	END WIDENING

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NO	DATE	DWN	CKD	REVISIONS



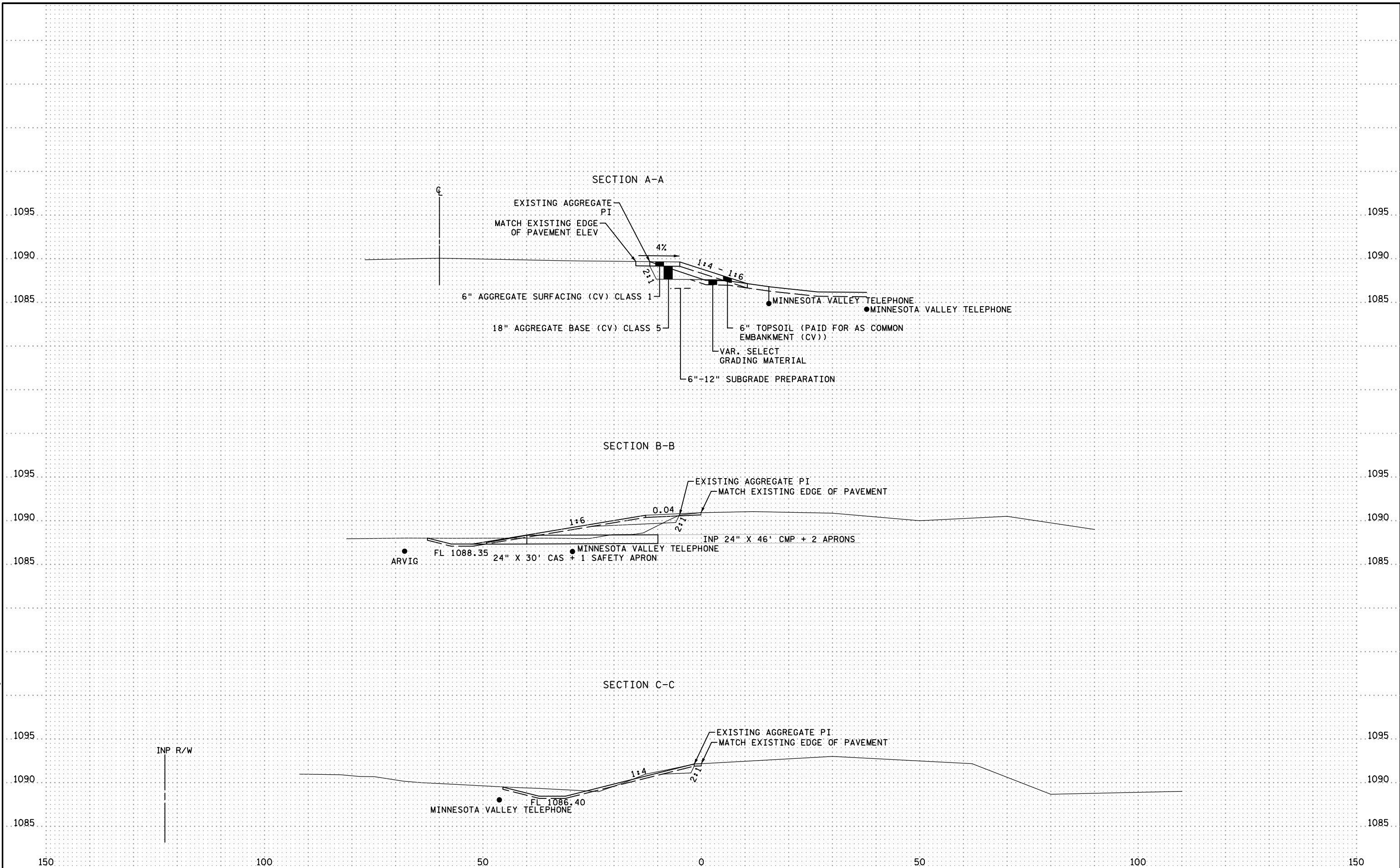
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ANDREW MCCALLUM  
SIGNATURE: *Andrew McCallum*  
DATE: 09/19/24 LICENSE #: 54861

TRAFFIC CONTROL PLAN  
RADIUS WIDENING - REDWOOD COUNTY

SP 8828-139  
SHEET NO. 165 OF 212 SHEETS

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PRINT NAME: ANDREW MCCALLUM  
SIGNATURE: *Andrew McCallum*  
DATE 09/19/24 LICENSE # 54861

TRAFFIC CONTROL PLAN  
RADIUS WIDENING - REDWOOD COUNTY

SP 8828-139  
SHEET NO. 166 OF 212 SHEETS

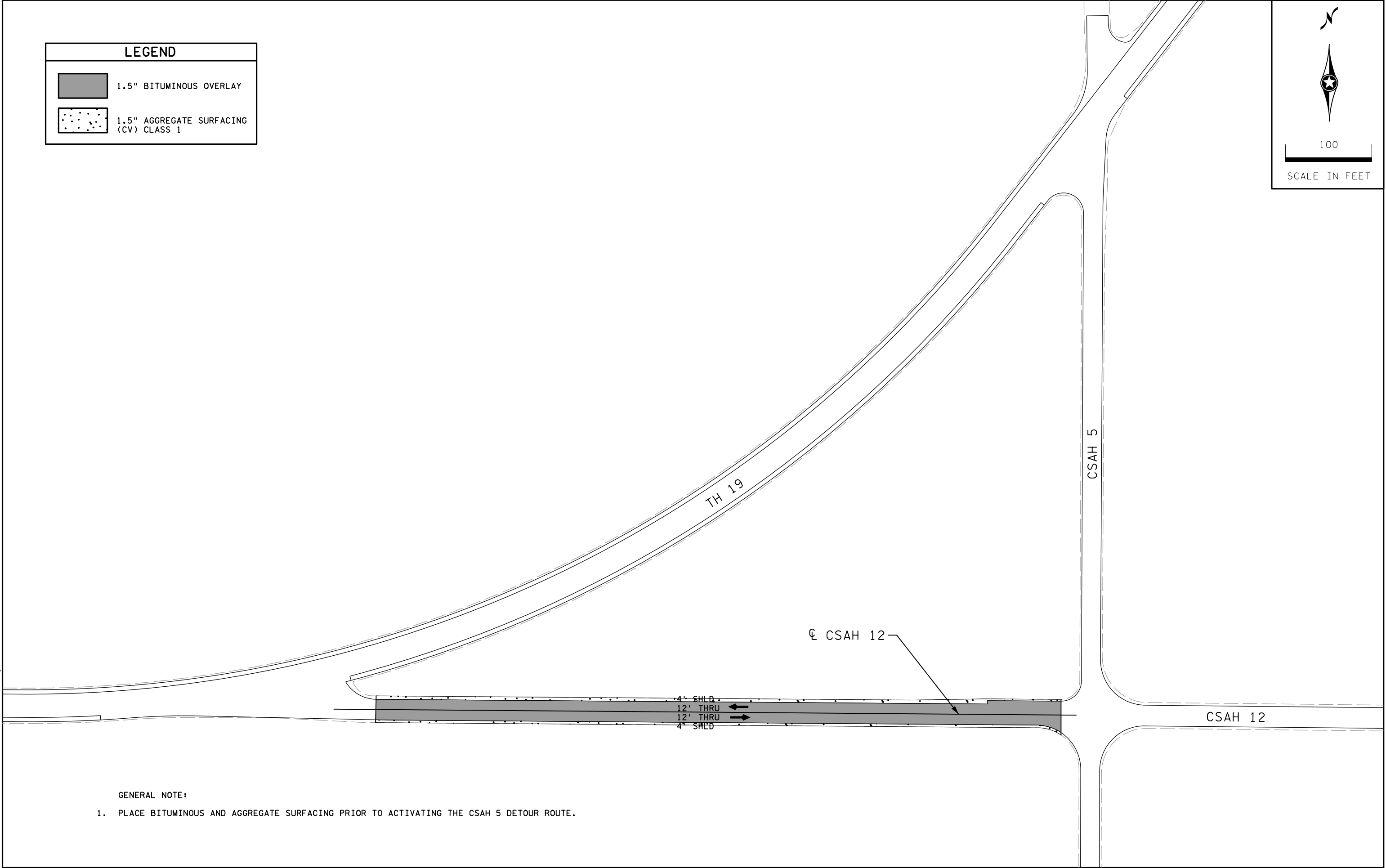
LEGEND

1.5" BITUMINOUS OVERLAY

1.5" AGGREGATE SURFACING  
(CV) CLASS 1

100

SCALE IN FEET



GENERAL NOTE:

1. PLACE BITUMINOUS AND AGGREGATE SURFACING PRIOR TO ACTIVATING THE CSAH 5 DETOUR ROUTE.

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10/6/2022  
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NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ANDREW MCCALLUM  
SIGNATURE: *Andrew McCallum*  
DATE 09/19/24 LICENSE # 54861

TRAFFIC CONTROL PLAN  
DETOUR PAVING - REDWOOD COUNTY

SP 8828-139				
SHEET NO.	167	OF	212	SHEETS

GENERAL NOTES:

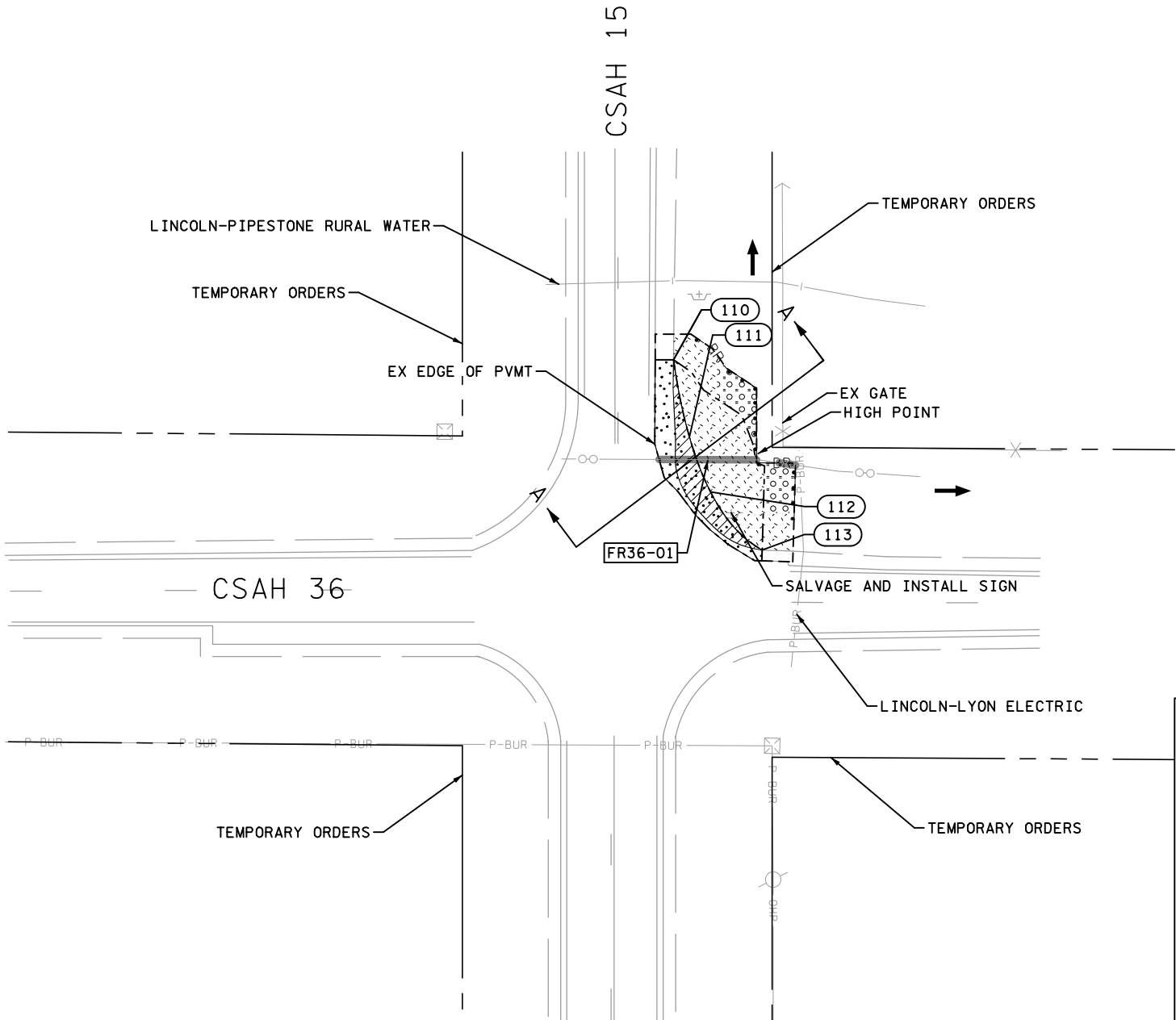
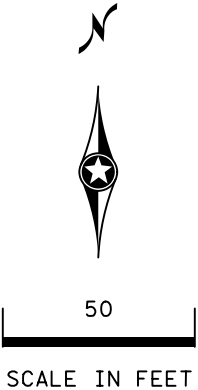
- A. COMPLETE RADIUS WIDENING BEFORE ACTIVATING THE DETOUR ROUTE.
- B. SEE THE MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL FOR SHORT TERM TRAFFIC CONTROL LAYOUTS FOR USE DURING THE CONSTRUCTION OF RADIUS WIDENING.

UTILITY LEGEND				
	AAXX			
CONFLICT	OWNER	DESCRIPTION	ACTION	REMARKS
FR36-01	FRONTIER COMMUNICATIONS	COMM	LEAVE AS IS	

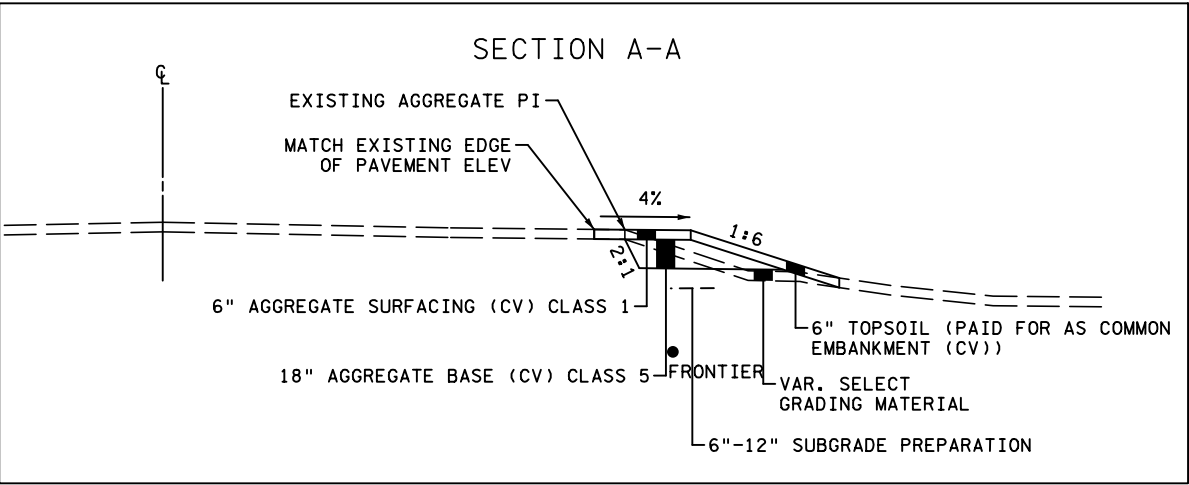
RADIUS WIDENING - YELLOW MEDICINE COUNTY

WIDEN INPLACE RADIUS

LEGEND	
	DRAINAGE FLOW ARROW
	AGGREGATE SURFACING
	RADIUS WIDENING
	SEED MESIC INSLOPE
	ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
	SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION PREVENTION CAT 20 FERTILIZER TYPE 3 (22-5-10)
	SEDIMENT CONTROL LOG TYPE COMPOST
	CONSTRUCTION LIMITS
	LIMITS OF DISTURBANCE



CONTROL POINTS				
NO.	X	Y	ELEVATION	DESCRIPTION
110	364851.48	143687.45	1648.19	BEGIN WIDENING
111	364856.62	143662.57	1648.29	INTERMEDIATE POINT
112	364863.46	143644.78	1648.42	INTERMEDIATE POINT
113	364880.11	143626.09	1649.17	END WIDENING



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I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ANDREW MCCALLUM  
SIGNATURE: *Andrew McCallum*  
DATE: 09/19/24 LICENSE #: 54861

TRAFFIC CONTROL PLAN  
RADIUS WIDENING - YELLOW MEDICINE COUNTY

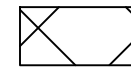
SP 8828-139  
SHEET NO. 168 OF 212 SHEETS



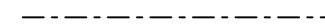
NOTE:  
ALL TRAFFIC CONTROL DEVICES SHALL  
CONFORM TO THE MINNESOTA MANUAL  
ON UNIFORM TRAFFIC CONTROL DEVICES.

EITHER THE CENEX PRIVATE DRIVEWAY OR  
3RD ST MUST REMAIN OPEN TO TRAFFIC  
DURING THE PROJECT. CONTRACTOR IS  
RESPONSIBLE TO MAKE CHANGES TO THE  
TRAFFIC CONTROL AND ONLY HAVE ONE  
OF THE TWO CLOSURES IN PLACE AT  
ANY GIVEN TIME. SEE NEXT SHEET FOR  
TURN LANE CLOSURES.

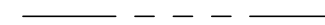
## LEGEND



WORK ZONE



CONSTRUCTION LIMITS



R/W INPLACE



50

SCALE IN FEET

CITY OF PRINSBURG

3RD ST

KANDIYOHI AVE

Q TH 7

EQUATION:  
PT. 527+66.04  
STA 527+66.04 BK =  
STA 527+66.51 AH



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BY ME OR UNDER MY DIRECT SUPERVISION AND THAT  
I AM A DULY LICENSED PROFESSIONAL ENGINEER  
UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ANDREW MCCALLUM  
SIGNATURE: *Andrew McCallum*  
DATE: 09/19/24 LICENSE #: 54861

TRAFFIC CONTROL PLAN  
TH 7 PRINSBURG

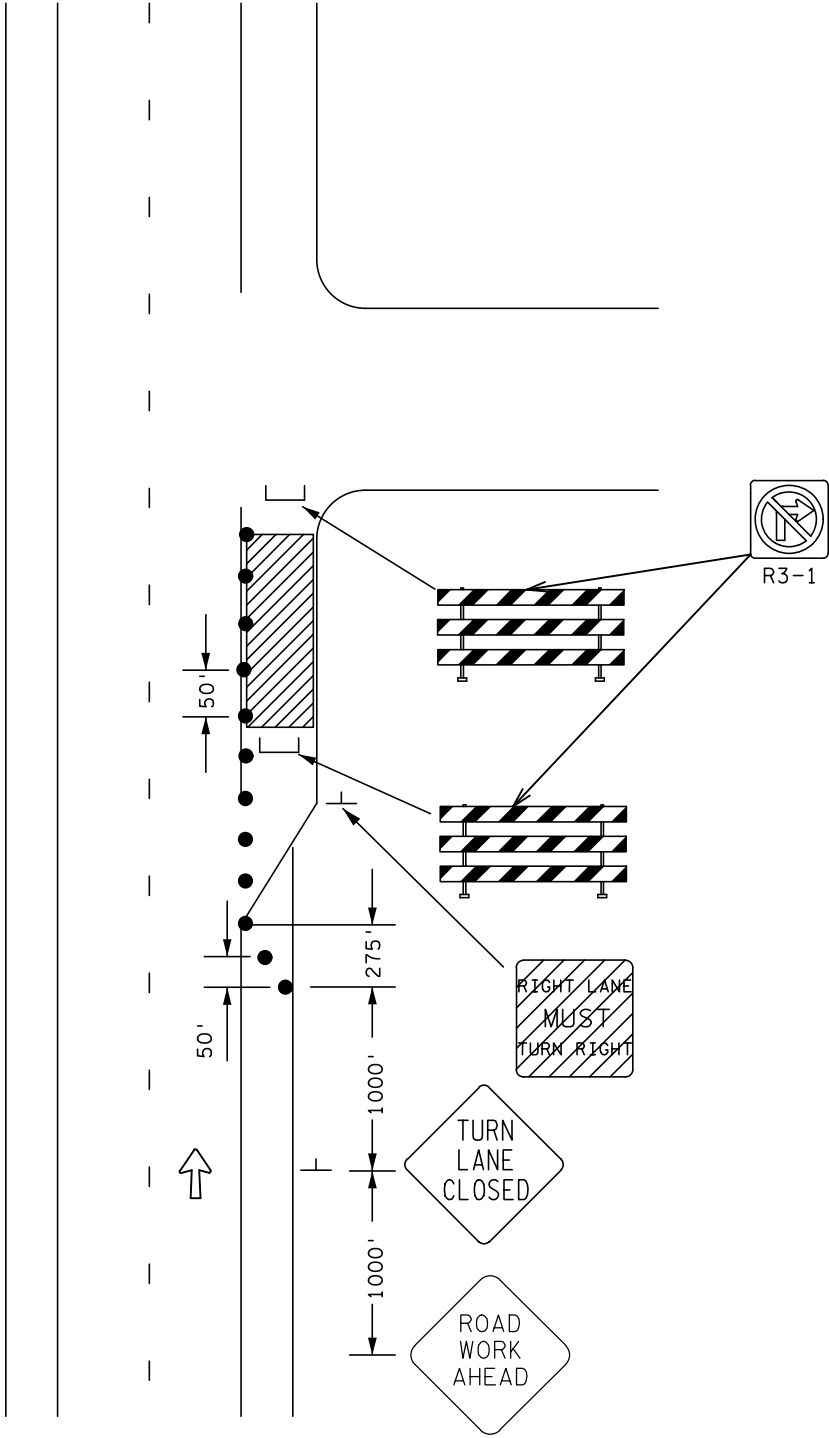
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SHEET NO. 169 OF 212 SHEETS

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NO	DATE	DWN	CKD	REVISIONS

RIGHT TURN LANE CLOSURE



NOTES:

- 1. THIS CLOSURE IS TO BE USED AT 3RD ST IN PRINSBURG
- 2. FOR ANY EXCAVATION OR DROP-OFF IN EXCESS OF 12 IN., SEE THE MINNESOTA DEPARTMENT OF TRANSPORTATION "TEMPORARY BARRIER GUIDANCE MANUAL."

● DRUMS

▨ AREA CLOSED TO TRAFFIC / WORK ZONE

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PRINT NAME: ANDREW MCCALLUM  
SIGNATURE: *Andrew McCallum*  
DATE: 09/19/24 LICENSE #: 54861

TRAFFIC CONTROL PLAN  
RIGHT TURN LANE CLOSURE

SP 8828-139  
SHEET NO. 170 OF 212 SHEETS



PAVEMENT MARKING & SIGNING PLAN

NOTES & GUIDELINES

GENERAL INFORMATION:

1. SEE 2582 IN THE SPECIAL PROVISIONS FOR PAVEMENT MARKING SPOTTING RESPONSIBILITIES.
2. EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY AN AGENCY PLACED YIELD SIGN, STOP SIGN, OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE MAINLINE RADIUS.
3. DO NOT APPLY THE PAVEMENT MARKINGS WHEN WEATHER AND OTHER CONDITIONS CAUSE A FILM OF DUST OR DEBRIS TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL IS APPLIED.
4. THE FILLING OF TANKS, POURING OF MATERIALS, OR CLEANING OF EQUIPMENT SHALL NOT BE PERFORMED ON UNPROTECTED PAVEMENT SURFACES UNLESS ADEQUATE PROVISIONS ARE MADE TO PREVENT SPILLAGE OF MATERIAL.

PERMANENT PAVEMENT MARKING SUMMARY				PM
TAB	SHEET NO	ITEM	UNIT	TOTAL MARKINGS QUANTITY
PM-A	173	4" SOLID LINE MULTI-COMPONENT GROUND IN (WR)	LIN FT	270
PM-A	173	6" SOLID LINE MULTI-COMPONENT GROUND IN (WR)	LIN FT	2990
PM-A	173	4" BROKEN LINE MULTI-COMPONENT GROUND IN (WR)	LIN FT	145
PM-A	173	4" DOUBLE SOLID LINE MULTI-COMPONENT GROUND IN (WR)	LIN FT	860

PERMANENT SIGNING SUMMARY					ST
TAB	SHEET NO	ITEM NO	ITEM	UNIT	TOTAL SIGNING QUANTITIES
ST-A	173	2104	REMOVE SIGN	EACH	1
ST-A	173	2104	SALVAGE DELINEATOR / MARKER	EACH	1
ST-A	173	2104	SALVAGE SIGN	EACH	3
ST-B	173	2104	SALVAGE SIGN SPECIAL	EACH	2
ST-A	173	2564	INSTALL SIGN	EACH	3
ST-B	173	2564	INSTALL SIGN SPECIAL	EACH	2
ST-A	173	2564	INSTALL DELINEATOR / MARKER	EACH	1
ST-A	173	2564	SIGN	SQ FT	6

STANDARD PLANS	
NUMBER	DESCRIPTION
5-297.701	STANDARD SIGN PLACEMENT
5-297.702	DELINEATOR AND MARKER PLACEMENT
5-297.718	SQUARE-TUBE SIGN MOUNTING DETAILS (3 SHEETS)
5-297.721	THREE WALL BASE - FOR 1-3/4" SQUARE TUBE RISER POST
5-297.722	FIN BASE - FOR 2" SQUARE-TUBE RISER POST IN SOIL

GENERAL INFORMATION:

1. MOUNTING HEIGHT IS MINIMUM (WITH A + 6 INCH TOLERANCE).
2. SEE CURRENT MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR STANDARD SIGN DESIGNS, SPLICE PLATES, STRINGERS, AND PUNCHING CODES.
3. SEE STANDARD PLANS AND DETAILS FOR SIGN STRUCTURE INSTALLATION AND PLACEMENT.
4. STANDARD SIGN PLANS ARE LISTED IN THE TABULATIONS WITH TWO DIMENSONS THAT MAY NOT BE THEIR ACTUAL WIDTH OR HEIGHT, BUT INSTEAD ARE LENGTHS OF THEIR SIDES OR DIAMETER. SEE THE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ACTUAL DIMENSIONS OF THESE PANELS BASED UPON THE CORRESPONDING DIMENSIONS FROM THE TABULATION.
5. SIGN AND DELINEATOR / MARKER TABULATIONS DISPLAY SIGN PANEL AND SUPPORT INFORMATION FOR PROPOSED SIGNS. SIGNS BEING REMOVED OR SALVAGED MAY NOT INCLUDE PANEL OR SUPPORT INFORMATION IN THE TABULATION.
6. PLACE SIGNS AFTER FINAL GRADING IS COMPLETE.
7. PLACE NEW REFERENCE LOCATION SIGNS AT THE SAME LOCATION OF THE EXISTING REFERENCE LOCATION SIGN BEING REPLACED. IF LOCATION OF SIGNS CAN NO LONGER BE USED, CONTACT MNDOT OFFICE OF TRANSPORTATION SYSTEM MANAGEMENT FOR GUIDANCE ON PLACEMENT.

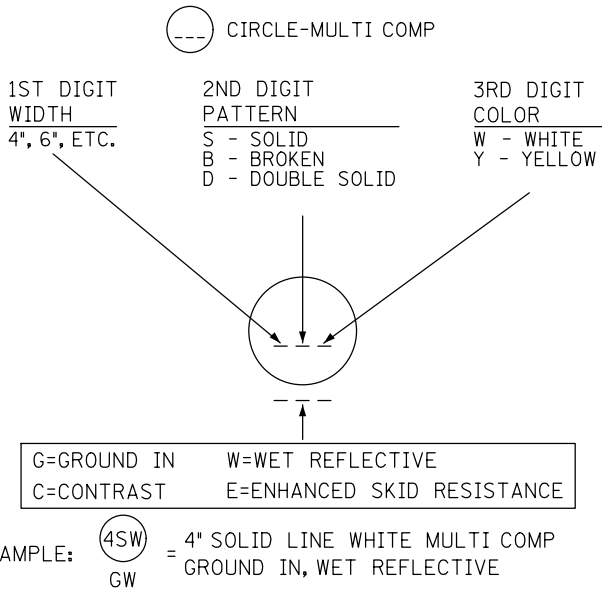
INDEX

SHEET NO.	DESCRIPTION
171	TITLE SHEET
172	GENERAL LAYOUT INDEX MAP
173	TABULATIONS
174-177	ROADWAY LAYOUTS

SYMBOLS & MATERIALS LEGEND

— — — BROKEN LINE-50' CYCLE (10' LINE, 40' GAP)

STRIPING KEY



SIGNING ABBREVIATIONS

SQ-SOIL      SQUARE TUBE IN SOIL

SIGNING LEGEND

⊥ SIGN  
⊥ SIGN BACK TO BACK

PAVEMENT MARKING & SIGNING PLANS  
TITLE SHEET AND TABULATIONS

SP 8828-139

SHEET NO. 171 OF 212 SHEETS

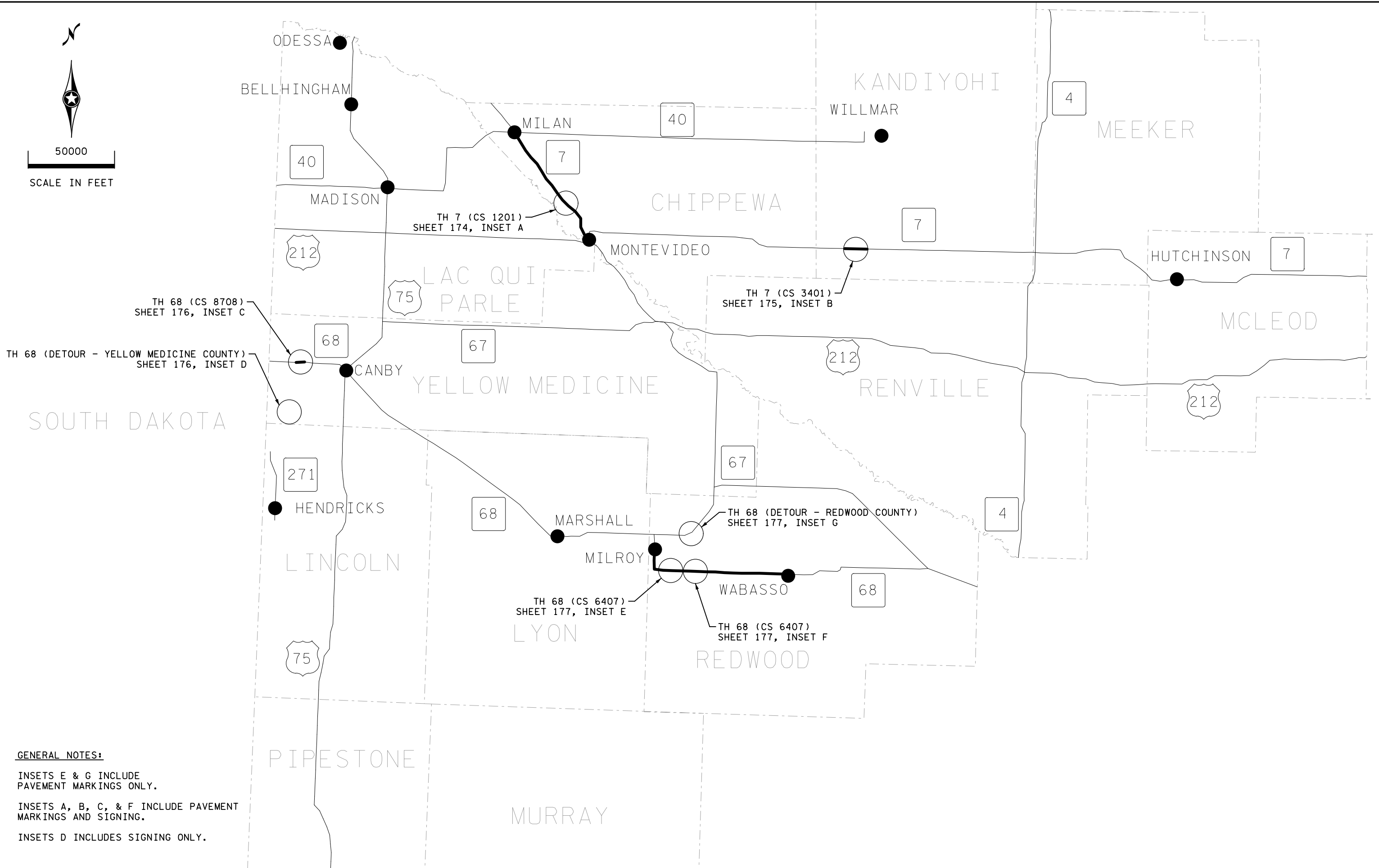
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NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: NICHOLAUS M. GRAGE  
SIGNATURE:   
DATE: 09/19/24 LICENSE # 54159



**GENERAL NOTES:**

INSETS E & G INCLUDE PAVEMENT MARKINGS ONLY.

INSETS A, B, C, & F INCLUDE PAVEMENT MARKINGS AND SIGNING.

INSETS D INCLUDES SIGNING ONLY.

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PRINT NAME: NICHOLAUS M. GRAGE  
SIGNATURE: *N. M. Grage*  
DATE: 09/19/24 LICENSE # 54159

PAVEMENT MARKING & SIGNING PLANS  
GENERAL LAYOUT INDEX MAP

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PAVEMENT MARKING LINEAR MARKINGS												PM-A
ITEM	UNIT	YELLOW					WHITE					PROJECT TOTAL QTY
		QTY TH 7 CS 1201	QTY TH 7 CS 3401	QTY TH 68 CS 6407	QTY TH 68 DETOUR - REDWOOD	QTY TH 68 CS 8708	QTY TH 7 CS 1201	QTY TH 7 CS 3401	QTY TH 68 CS 6407	QTY TH 68 DETOUR - REDWOOD	QTY TH 68 CS 8708	
4" SOLID LINE MULTI-COMPONENT GROUND IN (WR)	LIN FT	50		30		190						270
6" SOLID LINE MULTI-COMPONENT GROUND IN (WR)	LIN FT						50		1010	1560	370	2990
4" BROKEN LINE MULTI-COMPONENT GROUND IN (WR)	LIN FT	10		100		35						145
4" DOUBLE SOLID LINE MULTI-COMPONENT GROUND IN (WR)	LIN FT		65		795							860

SIGN AND DELINEATOR / MARKER													ST-A
SIGN NUMBER	PANEL CODE	PANEL			SUPPORT			REMOVE SIGN	SIGN	SALVAGE SIGN	INSTALL SIGN	SALVAGE DEL INEATOR / MARKER	INSTALL DEL INEATOR / MARKER
		LEGEND	SIZE (W x H)	MOUNTING HEIGHT	TYPE	RISER POST SIZE	NUMBER OF POSTS						
			INCH	FEET		INCHES							
CS 1201 (TH 7)													
S-1	R1-1	STOP	INPLACE	7	SQ-SOIL	2	1			1	1		
	X4-3	CYLINDER STYLE DELINEATOR (WHITE)	INPLACE	4									
CS 1201 (TH 7) TOTAL										1	1		
CS 3401 (TH 7)													
S-2	R1-1	STOP	INPLACE	7	SQ-SOIL	2	1			1	1		
	X4-3	CYLINDER STYLE DELINEATOR (WHITE)	INPLACE	4									
CS 3401 (TH 7) TOTAL										1	1		
CS 8708 (TH 68)													
S-3	W1-8	CHEVRON	18 x 24	5	SQ-SOIL	2	1	1	3.00				
	W1-8	CHEVRON	18 x 24						3.00				
CS 8708 (TH 68) TOTAL								1	6				
CS 6407 (TH 68)													
S-4	M1-6M	REDWOOD COUNTY 5	INPLACE	7	SQ-SOIL	2	1			1	1		
S-5		GEODETIC SURVEY MARKER	INPLACE	4	SQ-SOIL	1-3/4	1					1	1
CS 6407 (TH 68) TOTAL										1	1	1	1
PROJECT TOTAL								1	6	3	3	1	1

SPECIFIC NOTE(S):  
(1) MOUNT BACK TO BACK.

SIGN AND DELINEATOR / MARKER SPECIAL										ST-B
SIGN NUMBER	PANEL				SUPPORT				SALVAGE SIGN SPECIAL	INSTALL SIGN SPECIAL
	PANEL CODE	LEGEND	SIZE (W x H)	MOUNTING HEIGHT	NUMBER OF POSTS	TYPE	RISER POST SIZE	SURFACE TYPE		
			INCH	FEET			INCHES			
TH 68 DETOUR - YELLOW MEDICINE COUNTY										
S-501	SPECIAL	160TH AVENUE	INPLACE	5	1	SQ	2	SOIL	1	1
	SPECIAL	160TH AVENUE	INPLACE							
	SPECIAL	120TH STREET	INPLACE							
	SPECIAL	120TH STREET	INPLACE							
TH 68 DETOUR - YELLOW MEDICINE COUNTY TOTAL									1	1
CS 6407 (TH 68)										
S-502	SPECIAL	STATE 68	INPLACE	5	1	SQ	2	SOIL	1	1
	SPECIAL	STATE 68	INPLACE							
	SPECIAL	CO 5	INPLACE							
	SPECIAL	CO 5	INPLACE							
CS 6407 (TH 68) TOTAL									1	1
PROJECT TOTAL									2	2

SPECIFIC NOTE(S):  
(1) MOUNT BACK TO BACK.

NO	DATE	DWN	CKD	REVISIONS



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PRINT NAME: NICHOLAUS M. GRAGE  
SIGNATURE:   
DATE: 09/19/24 LICENSE # 54159

PAVEMENT MARKING & SIGNING PLANS  
TABULATIONS

SP 8828-139  
SHEET NO. 173 OF 212 SHEETS

INSET A

CL TH 7

12' SHLD

12' THRU

12' THRU

12' RTL

980

983

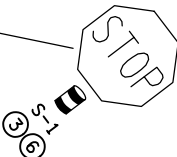
4BY  
GW

4SY  
GW

6SW  
GW

6SW  
GW

TIE INTO EXISTING  
PAVEMENT MARKINGS



CSAH 14 / 20TH ST SW

SIGNING NOTES:

- ③ SALVAGE
- ⑥ INSTALL

50

SCALE IN FEET



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NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: NICHOLAUS M. GRAGE  
SIGNATURE: *N. M. Grage*  
DATE: 09/19/24 LICENSE # 54159

PAVEMENT MARKING & SIGNING PLANS  
TH 7

SP 8828-139  
SHEET NO. 174 OF 212 SHEETS

INSET B

CITY OF PRINSBURG

CL 3RD ST

50

SCALE IN FEET

KANDIYOHI AVE

4DY  
CW

KANDIYOHI AVE  
3RD ST  
②

CL TH 75

530

PLEASANT AVE

EQUATION: PT. 527+66.04  
STA 527+66.04 BK =  
STA 527+66.51 AH

SIGNING NOTES:

- ② INPLACE
- ③ SALVAGE
- ⑥ INSTALL

8:41:40 PM  
10/6/2022  
C:\Users\jg\Documents\2022\1220013\DESIGN\Plan Sheets\cd8828139_pms02.dgn

NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED  
BY ME OR UNDER MY DIRECT SUPERVISION AND THAT  
I AM A DULY LICENSED PROFESSIONAL ENGINEER  
UNDER THE LAWS OF THE STATE OF MINNESOTA.

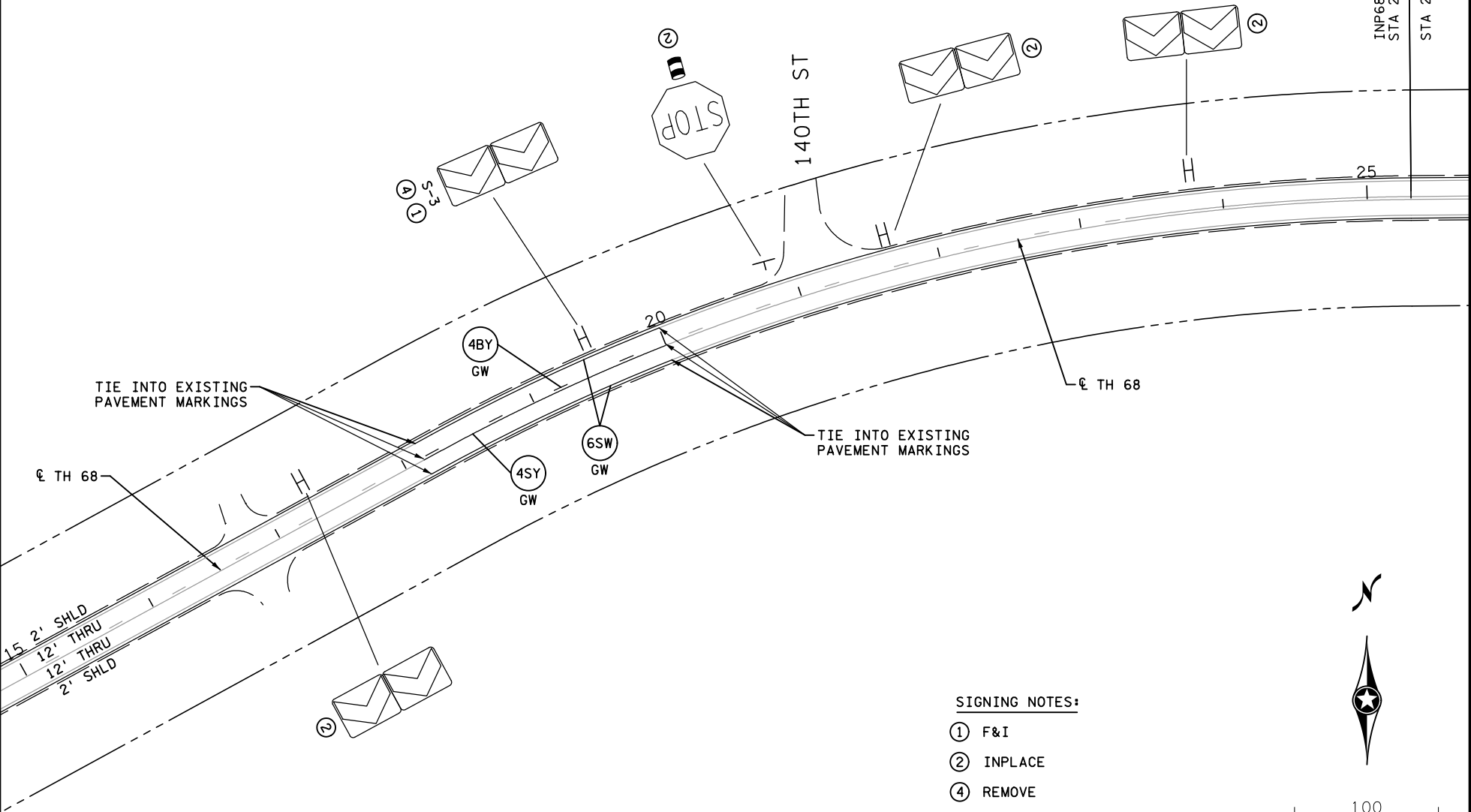
PRINT NAME: NICHOLAUS M. GRAGE  
SIGNATURE: *N. Grage*  
DATE: 09/19/24 LICENSE # 54159

PAVEMENT MARKING & SIGNING PLANS  
TH 7 PRINSBURG

SP 8828-139

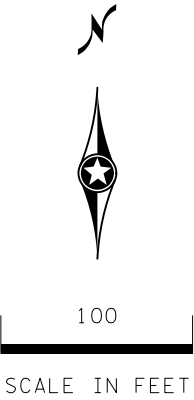
SHEET NO. 175 OF 212 SHEETS

INSET C

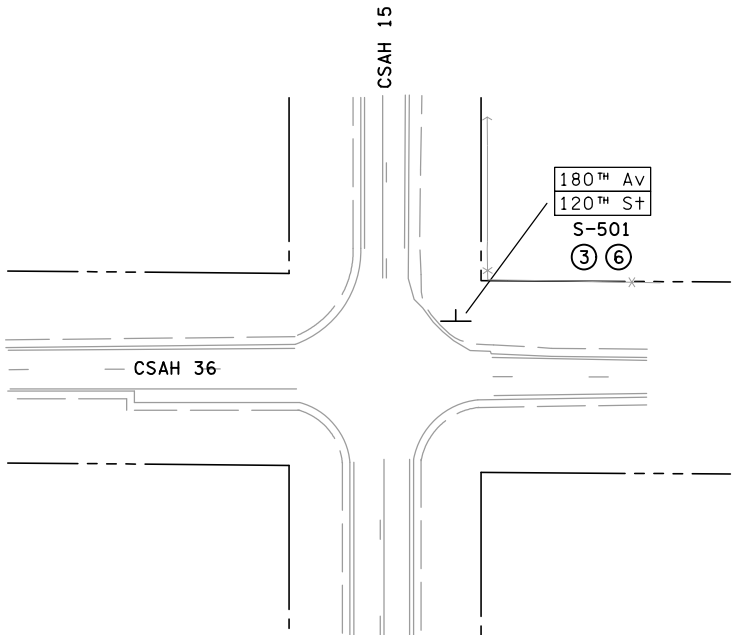


SIGNING NOTES:

- ① F&I
- ② INPLACE
- ④ REMOVE

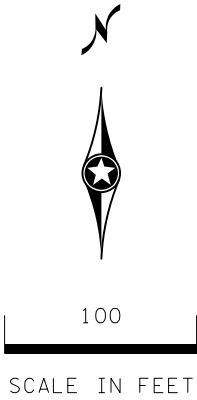


INSET D



SIGNING NOTES:

- ③ SALVAGE
- ⑥ INSTALL



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NO	DATE	DWN	CKD	REVISIONS

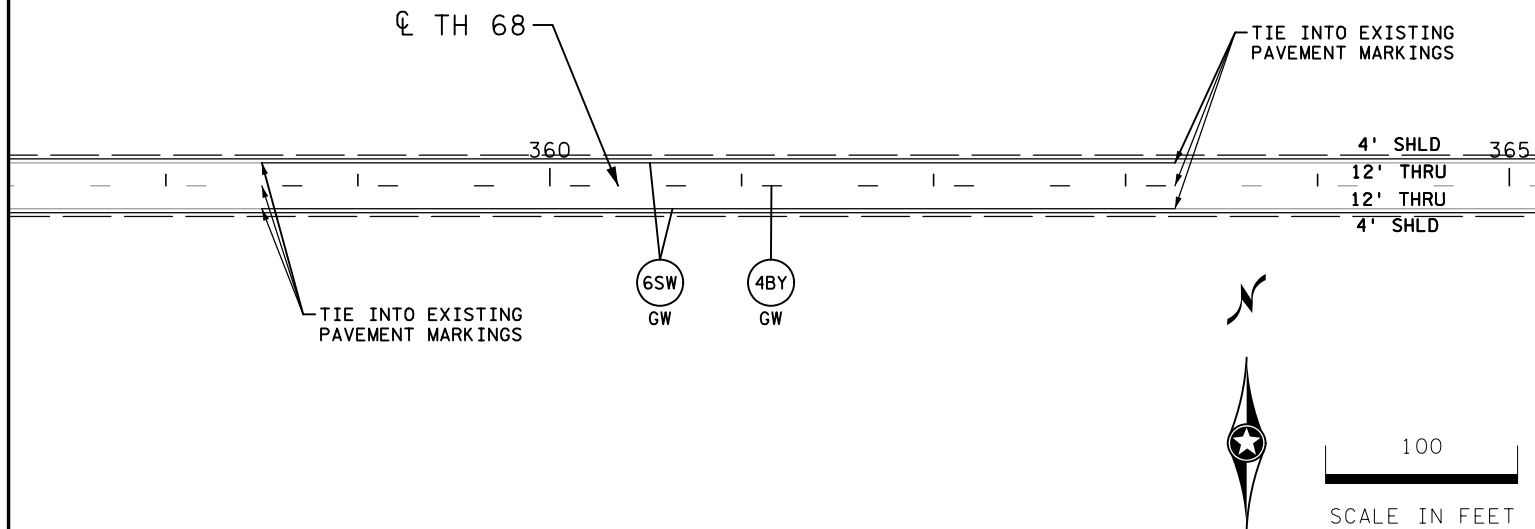


I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

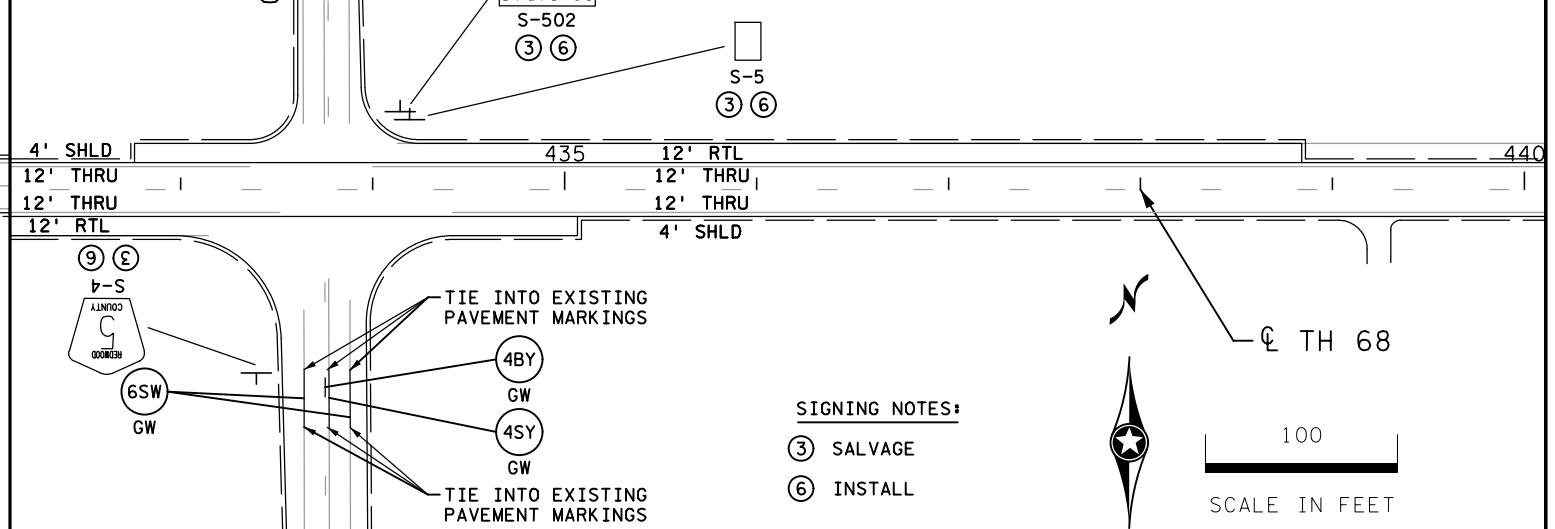
PRINT NAME: NICHOLAUS M. GRAGE  
SIGNATURE: *[Signature]*  
DATE: 09/19/24 LICENSE # 54159

PAVEMENT MARKING & SIGNING PLANS  
TH 68

INSET E

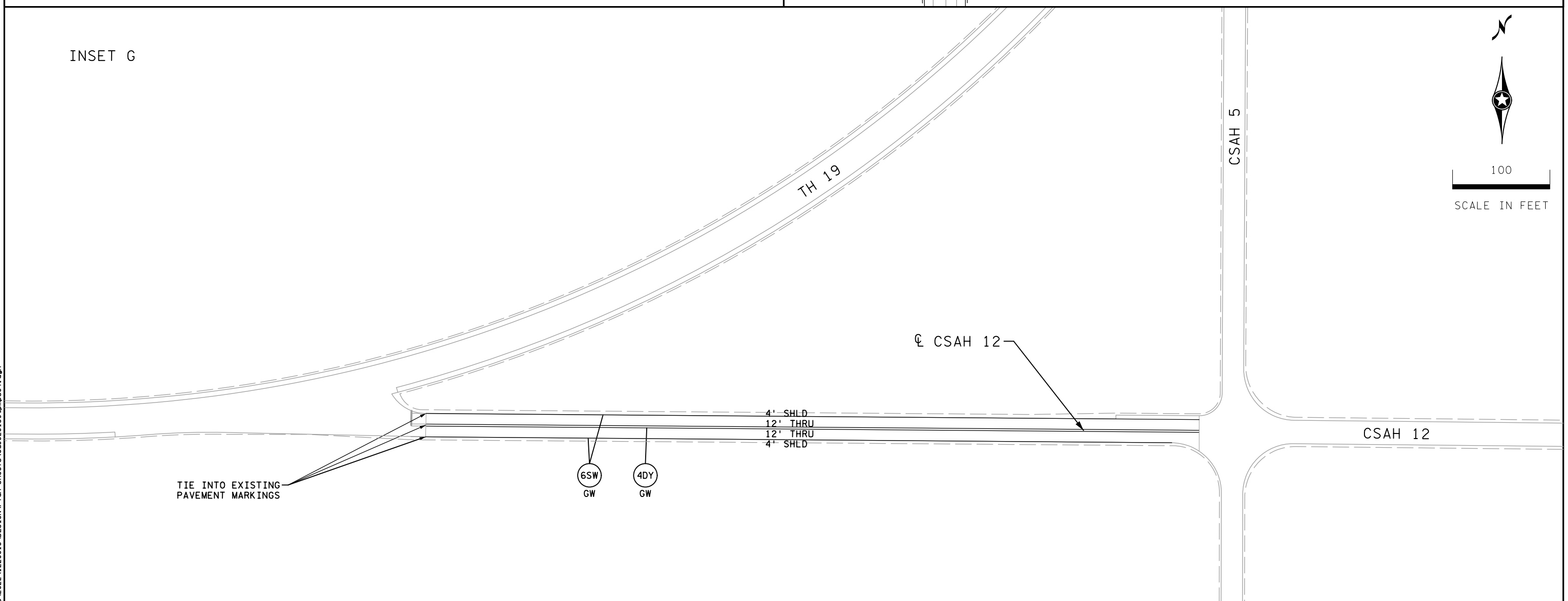


INSET F



SIGNING NOTES:  
③ SALVAGE  
⑥ INSTALL

INSET G



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NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

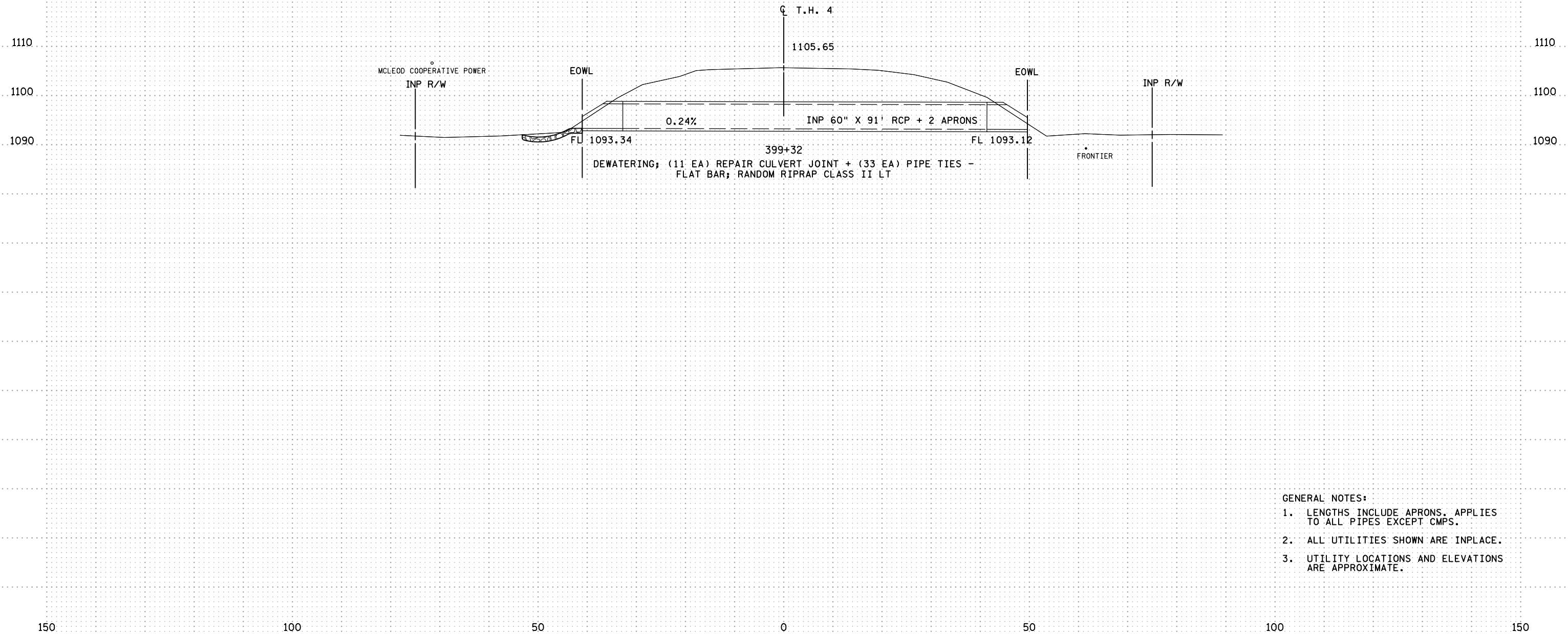
PRINT NAME: NICHOLAUS M. GRAGE  
SIGNATURE: *Nicholaus M. Grage*  
DATE: 09/19/24 LICENSE # 54159

PAVEMENT MARKING & SIGNING PLANS  
TH 68

SP 8828-139  
SHEET NO. 177 OF 212 SHEETS



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- GENERAL NOTES:
1. LENGTHS INCLUDE APRONS. APPLIES TO ALL PIPES EXCEPT CMPS.
  2. ALL UTILITIES SHOWN ARE INPLACE.
  3. UTILITY LOCATIONS AND ELEVATIONS ARE APPROXIMATE.

NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

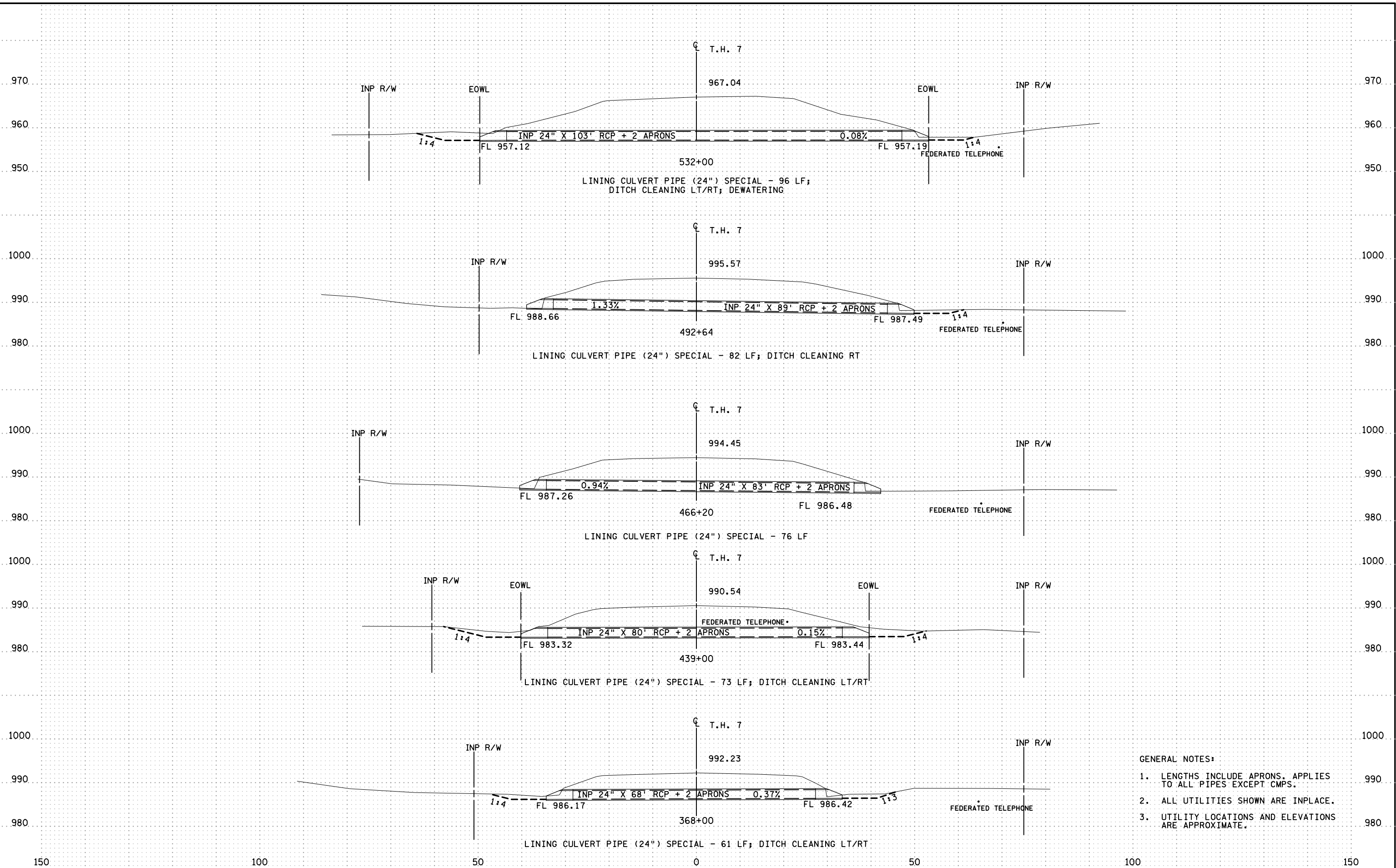
PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE 09/19/24 LICENSE # 54298

DRAINAGE PROFILES  
TH 4

SP 8828-139  
SHEET NO. 178 OF 212 SHEETS



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10/6/2022  
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- GENERAL NOTES:
1. LENGTHS INCLUDE APRONS. APPLIES TO ALL PIPES EXCEPT CMPS.
  2. ALL UTILITIES SHOWN ARE INPLACE.
  3. UTILITY LOCATIONS AND ELEVATIONS ARE APPROXIMATE.

NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

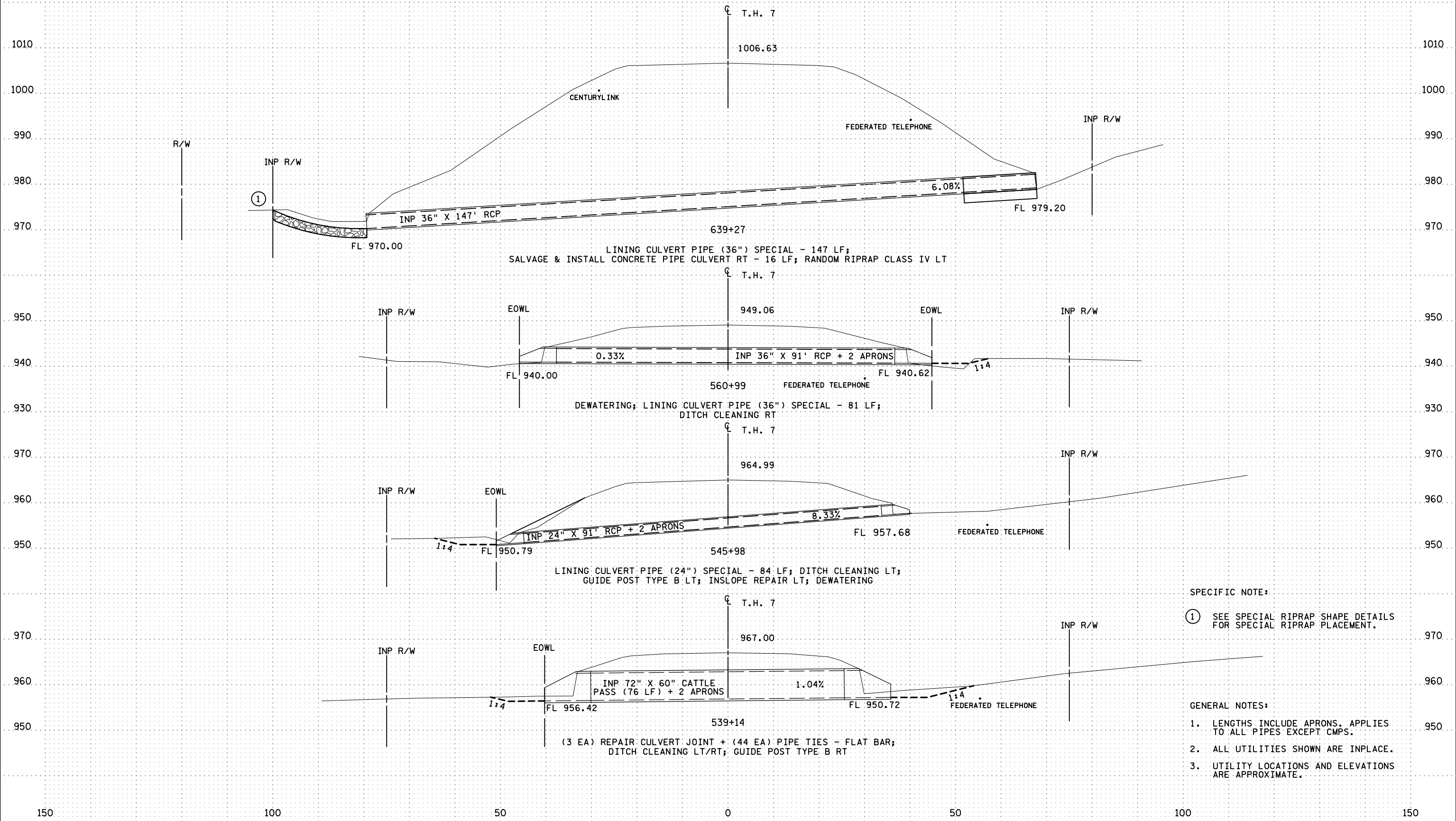
PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

DRAINAGE PROFILES  
TH 7

SP 8828-139

SHEET NO. 179 OF 212 SHEETS

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\\projects\2022\1220013\DESIGN\plan Sheets\cd828139_IHT_chippewa.xs02.dgn



SPECIFIC NOTE:  
① SEE SPECIAL RIPRAP SHAPE DETAILS FOR SPECIAL RIPRAP PLACEMENT.

GENERAL NOTES:  
1. LENGTHS INCLUDE APRONS. APPLIES TO ALL PIPES EXCEPT CMPS.  
2. ALL UTILITIES SHOWN ARE INPLACE.  
3. UTILITY LOCATIONS AND ELEVATIONS ARE APPROXIMATE.

NO	DATE	DWN	CKD	REVISIONS



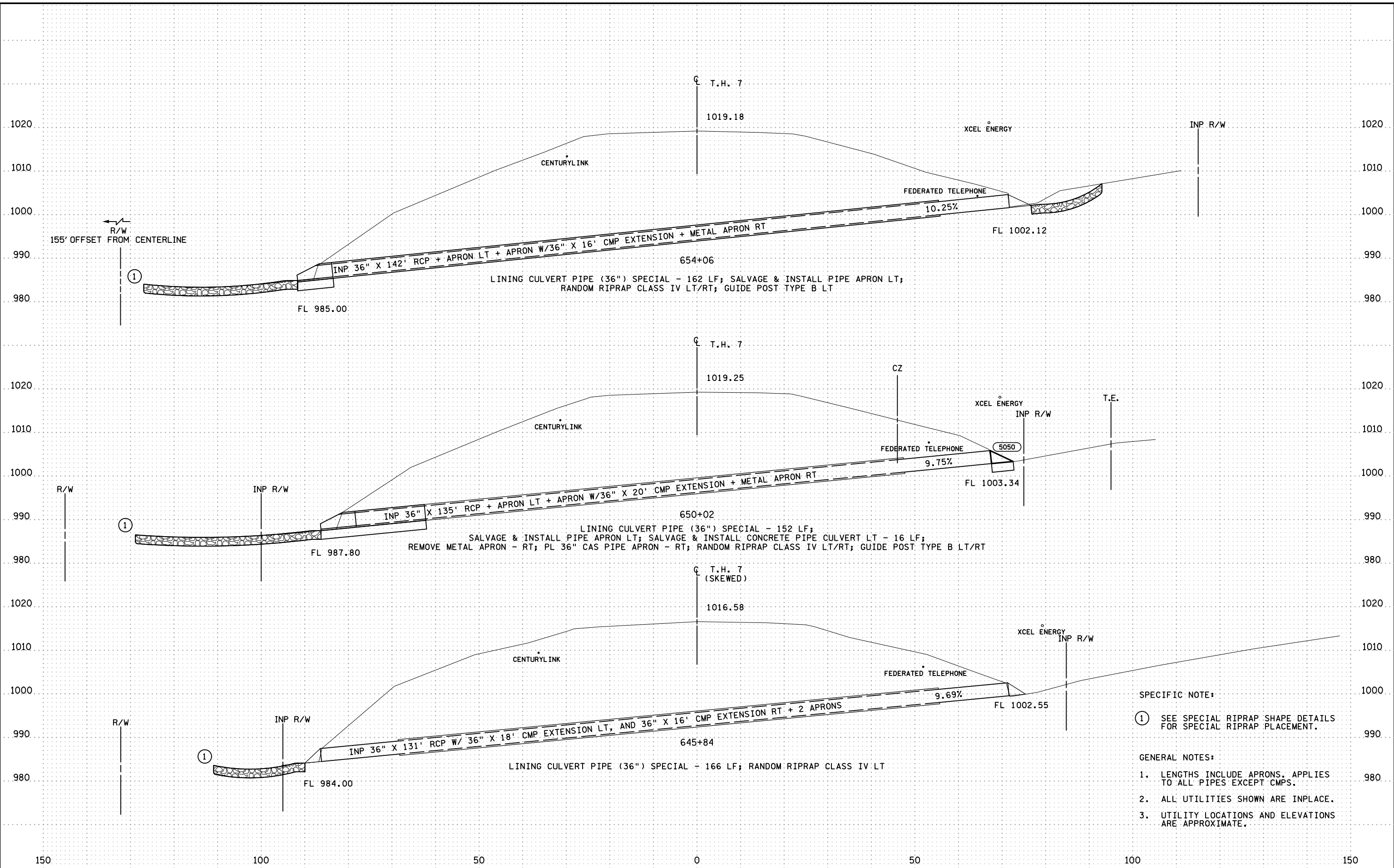
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE 09/19/24 LICENSE # 54298

DRAINAGE PROFILES  
TH 7

SP 8828-139  
SHEET NO. 180 OF 212 SHEETS

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10/6/2022  
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- SPECIFIC NOTE:**
- ① SEE SPECIAL RIPRAP SHAPE DETAILS FOR SPECIAL RIPRAP PLACEMENT.
- GENERAL NOTES:**
- 1. LENGTHS INCLUDE APRONS. APPLIES TO ALL PIPES EXCEPT CMPS.
  - 2. ALL UTILITIES SHOWN ARE INPLACE.
  - 3. UTILITY LOCATIONS AND ELEVATIONS ARE APPROXIMATE.

NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

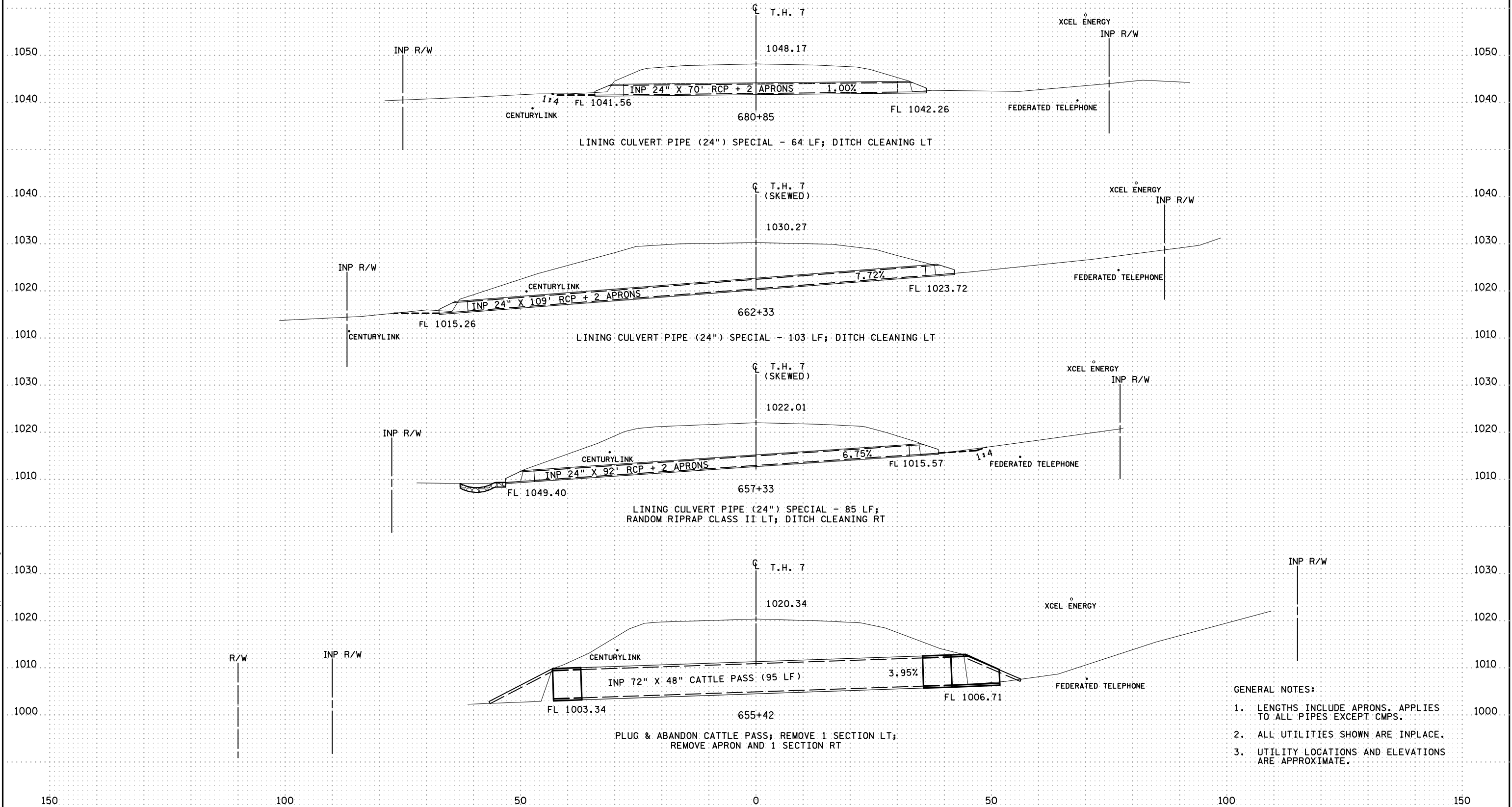
PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

DRAINAGE PROFILES  
TH 7

SP 8828-139  
SHEET NO. 181 OF 212 SHEETS



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GENERAL NOTES:

1. LENGTHS INCLUDE APRONS. APPLIES TO ALL PIPES EXCEPT CMPS.
2. ALL UTILITIES SHOWN ARE INPLACE.
3. UTILITY LOCATIONS AND ELEVATIONS ARE APPROXIMATE.

NO	DATE	DWN	CKD	REVISIONS



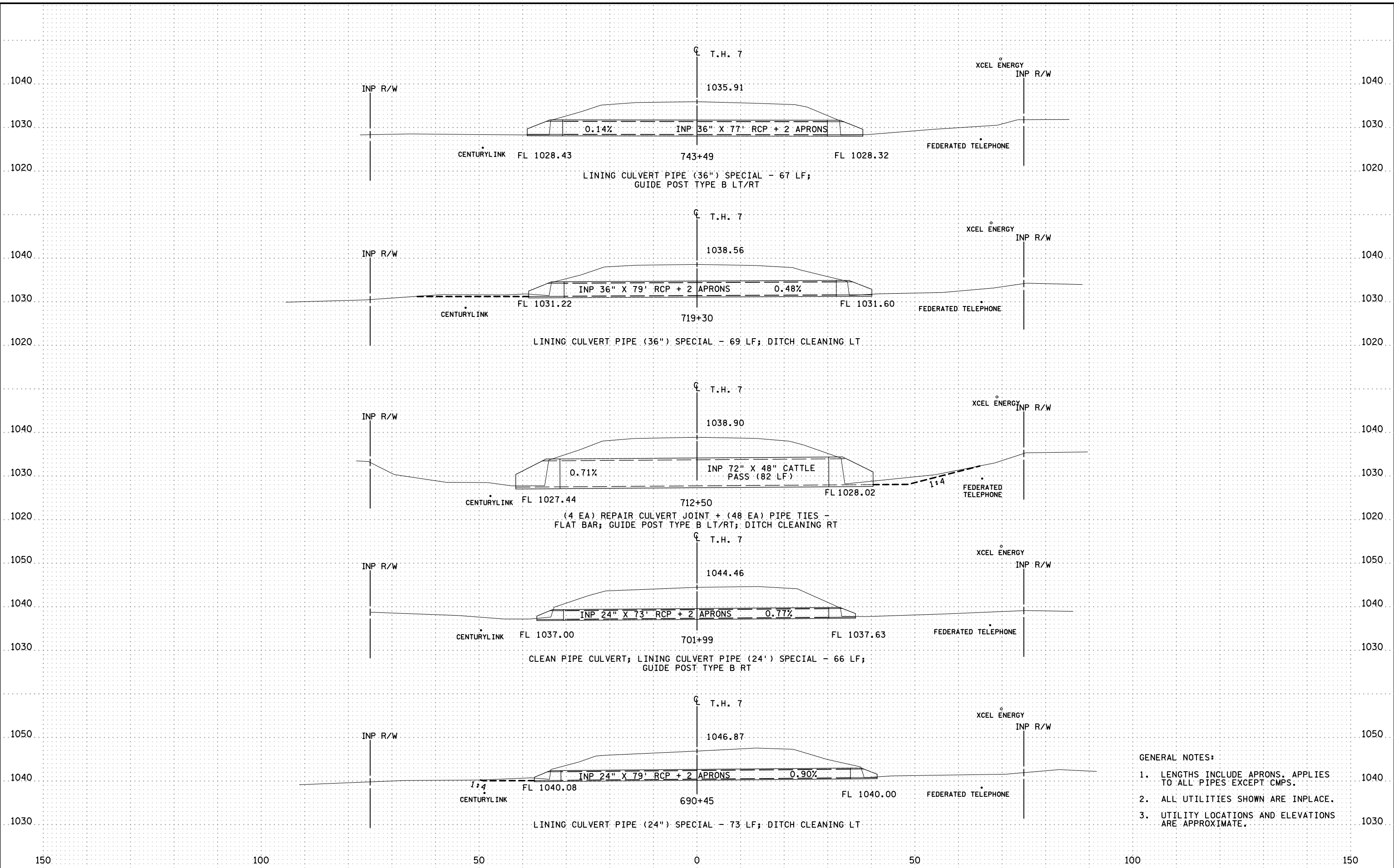
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

DRAINAGE PROFILES  
TH 7

SP 8828-139  
SHEET NO. 182 OF 212 SHEETS

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- GENERAL NOTES:
1. LENGTHS INCLUDE APRONS. APPLIES TO ALL PIPES EXCEPT CMPS.
  2. ALL UTILITIES SHOWN ARE INPLACE.
  3. UTILITY LOCATIONS AND ELEVATIONS ARE APPROXIMATE.

NO	DATE	DWN	CKD	REVISIONS



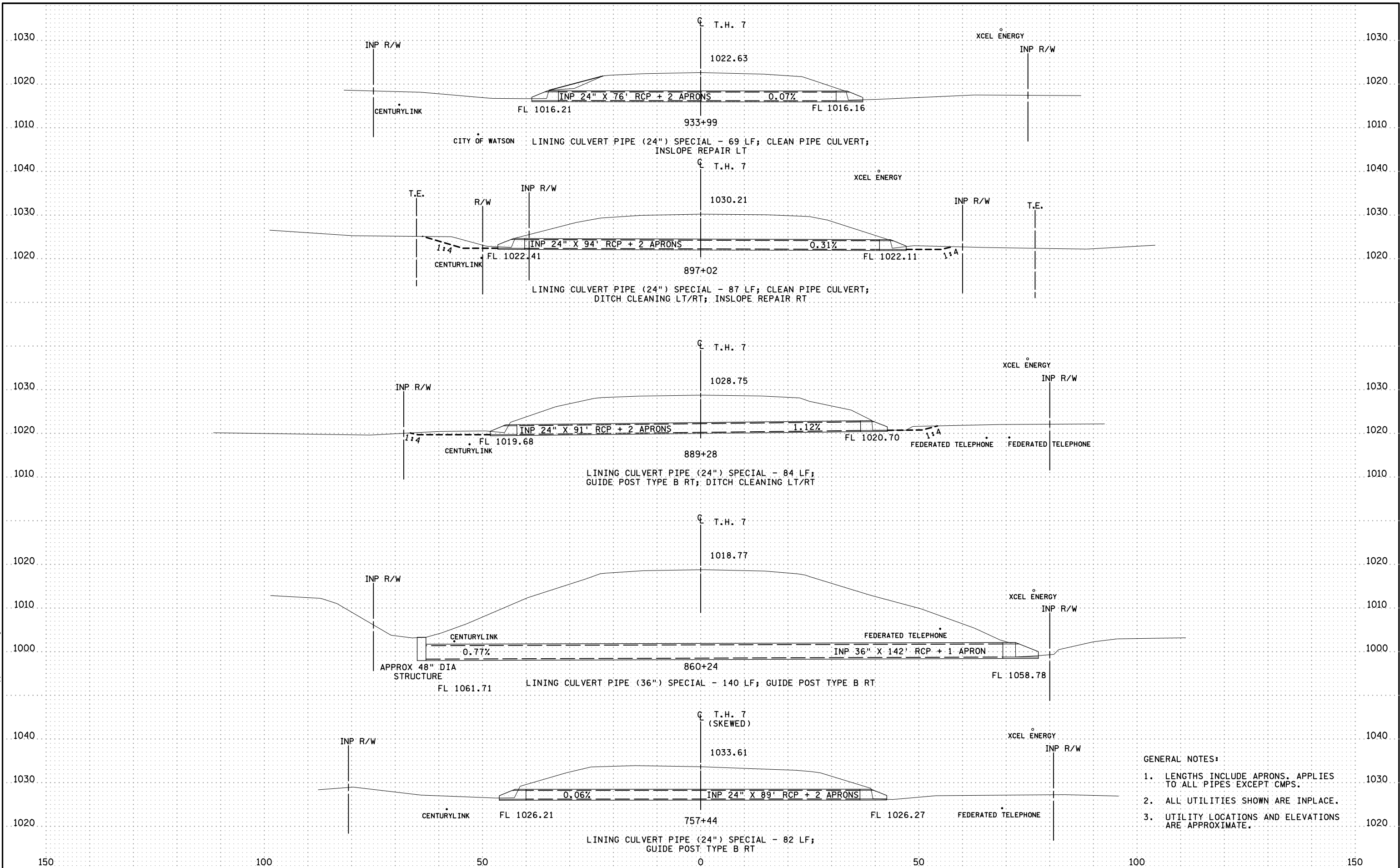
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

DRAINAGE PROFILES  
TH 7

SP 8828-139  
SHEET NO. 183 OF 212 SHEETS

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- GENERAL NOTES:
1. LENGTHS INCLUDE APRONS. APPLIES TO ALL PIPES EXCEPT CMPS.
  2. ALL UTILITIES SHOWN ARE INPLACE.
  3. UTILITY LOCATIONS AND ELEVATIONS ARE APPROXIMATE.

NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

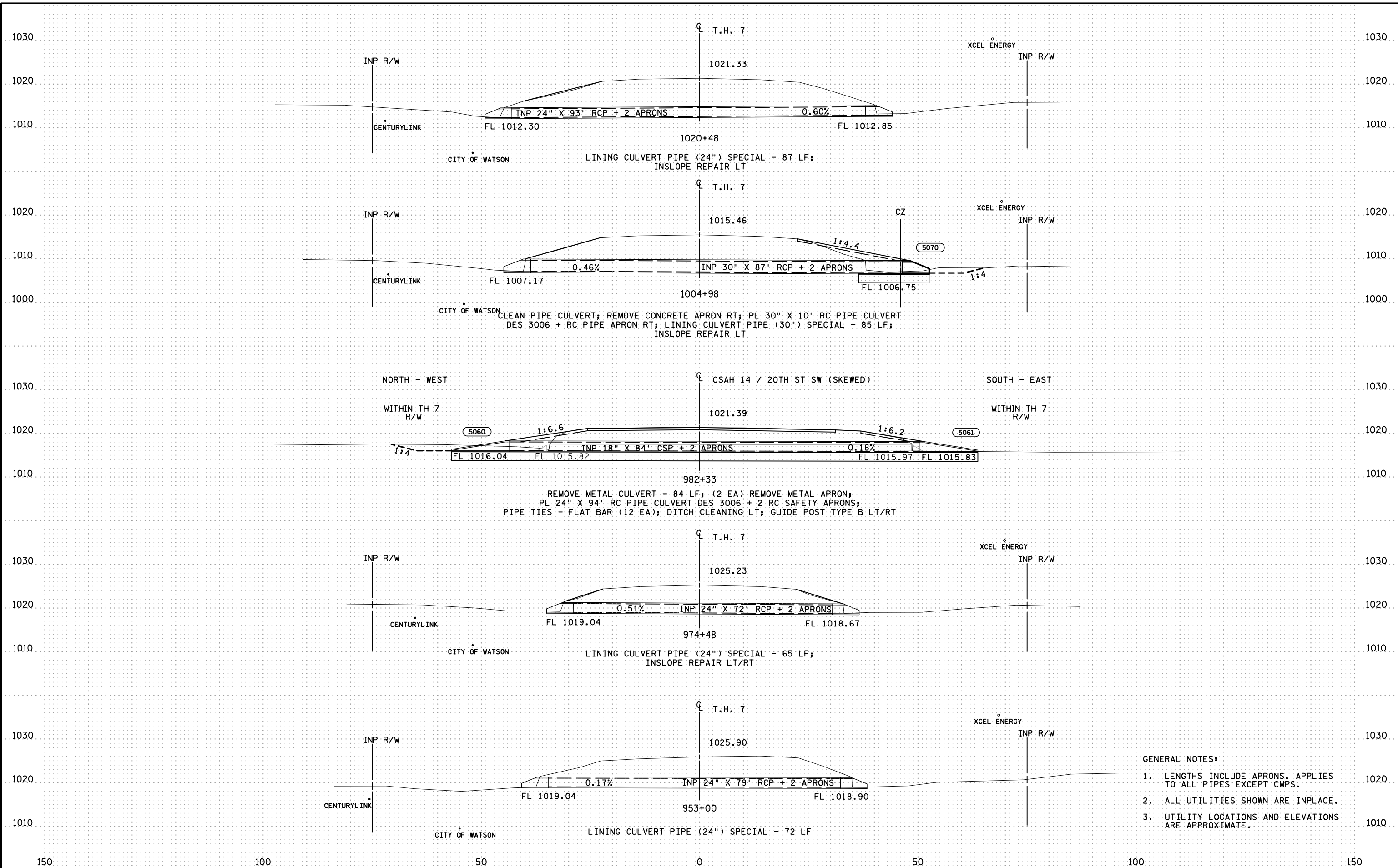
PRINT NAME: **DAN SWANSON**  
SIGNATURE: *[Signature]*  
DATE: **09/19/24** LICENSE #: **54298**

DRAINAGE PROFILES  
TH 7

SP 8828-139  
SHEET NO. 184 OF 212 SHEETS



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- GENERAL NOTES:
1. LENGTHS INCLUDE APRONS. APPLIES TO ALL PIPES EXCEPT CMPS.
  2. ALL UTILITIES SHOWN ARE INPLACE.
  3. UTILITY LOCATIONS AND ELEVATIONS ARE APPROXIMATE.

NO	DATE	DWN	CKD	REVISIONS



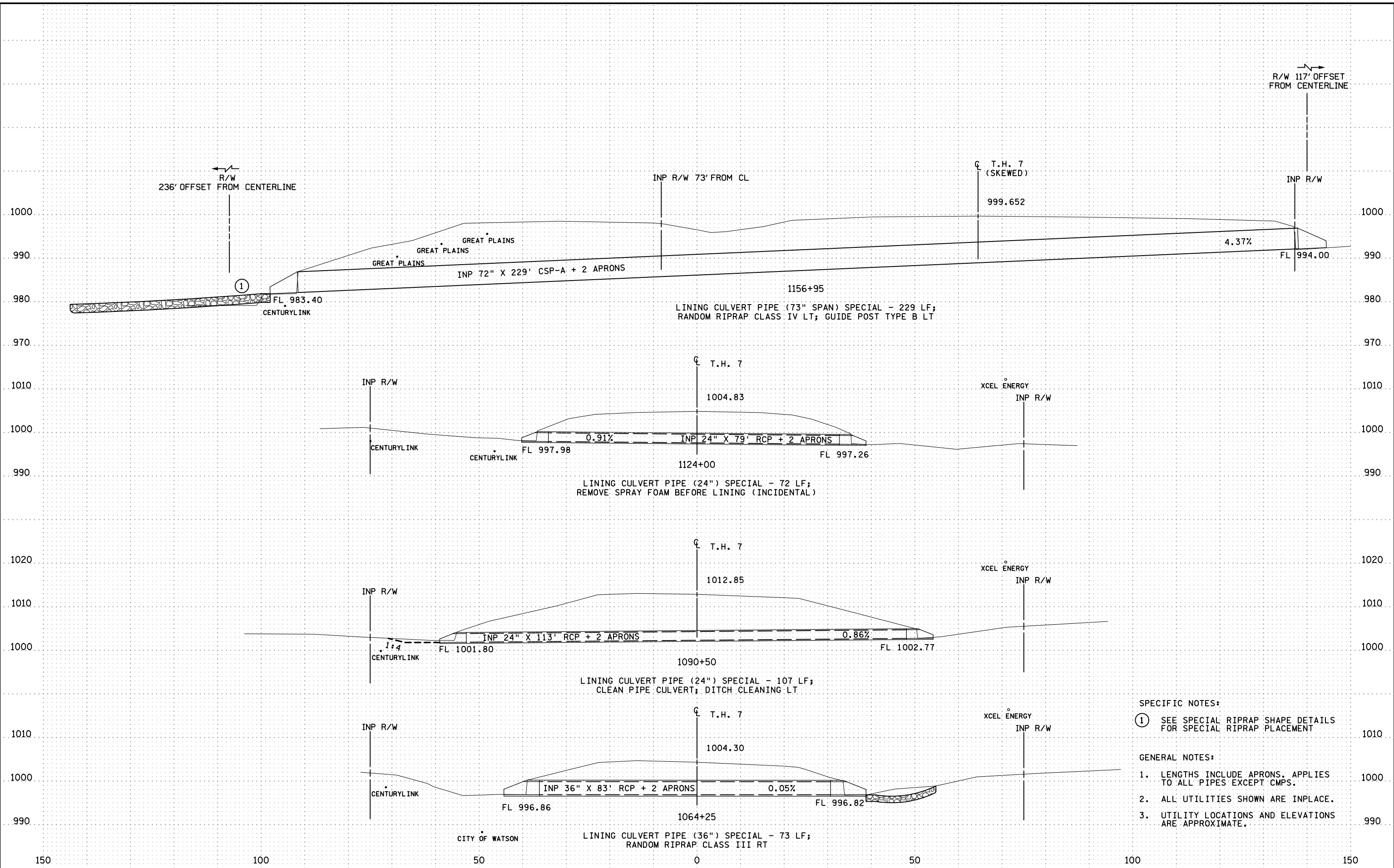
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE 09/19/24 LICENSE # 54298

DRAINAGE PROFILES  
TH 7

SP 8828-139  
SHEET NO. 185 OF 212 SHEETS

1:32:55 PM  
11/16/2022  
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- SPECIFIC NOTES:
- ① SEE SPECIAL RIPRAP SHAPE DETAILS FOR SPECIAL RIPRAP PLACEMENT
- GENERAL NOTES:
- 1. LENGTHS INCLUDE APRONS. APPLIES TO ALL PIPES EXCEPT CMPS.
  - 2. ALL UTILITIES SHOWN ARE INPLACE.
  - 3. UTILITY LOCATIONS AND ELEVATIONS ARE APPROXIMATE.

NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

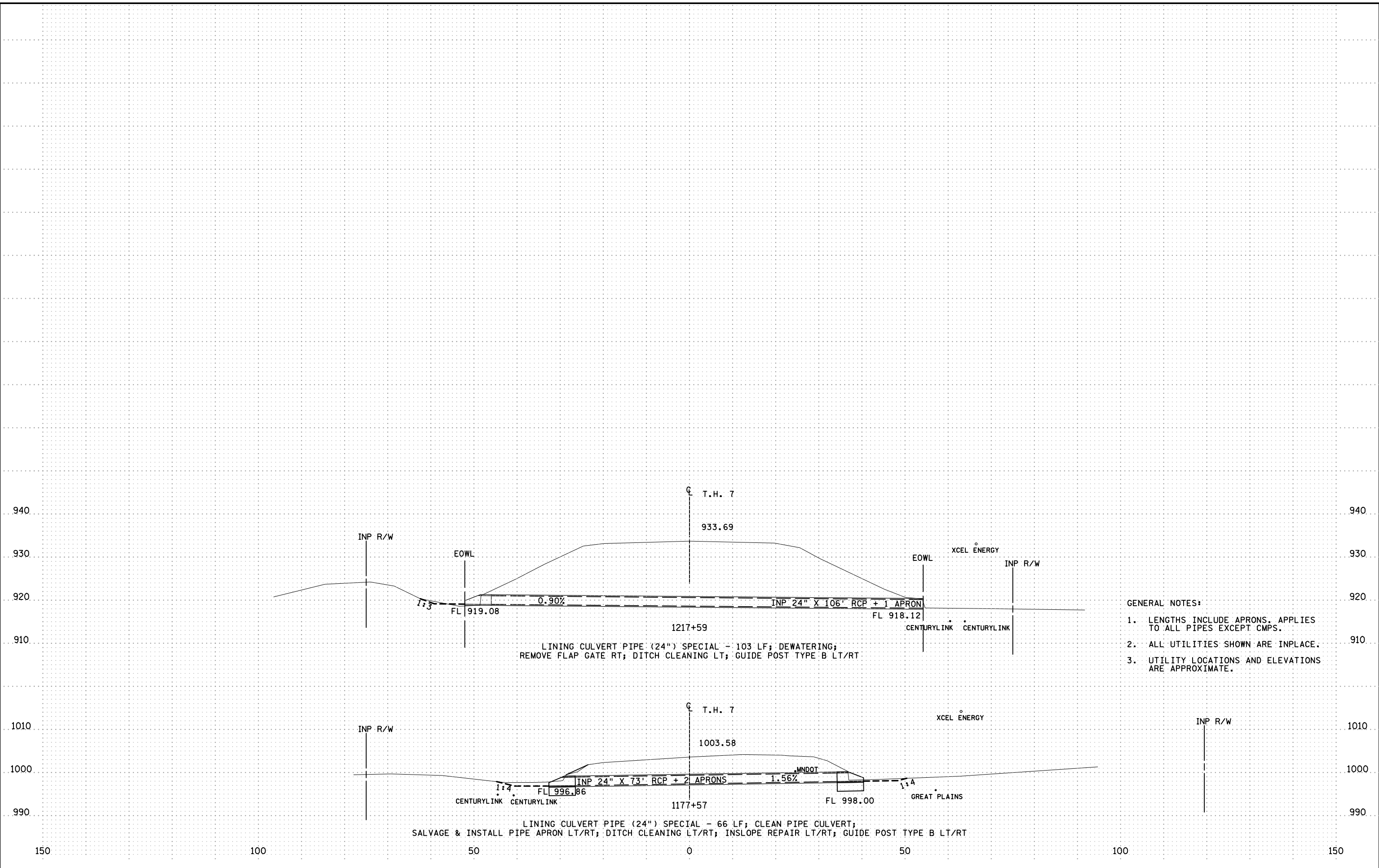
PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

DRAINAGE PROFILES  
TH 7

SP 8828-139  
SHEET NO. 186 OF 212 SHEETS



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- GENERAL NOTES:
1. LENGTHS INCLUDE APRONS. APPLIES TO ALL PIPES EXCEPT CMPS.
  2. ALL UTILITIES SHOWN ARE INPLACE.
  3. UTILITY LOCATIONS AND ELEVATIONS ARE APPROXIMATE.

NO	DATE	DWN	CKD	REVISIONS

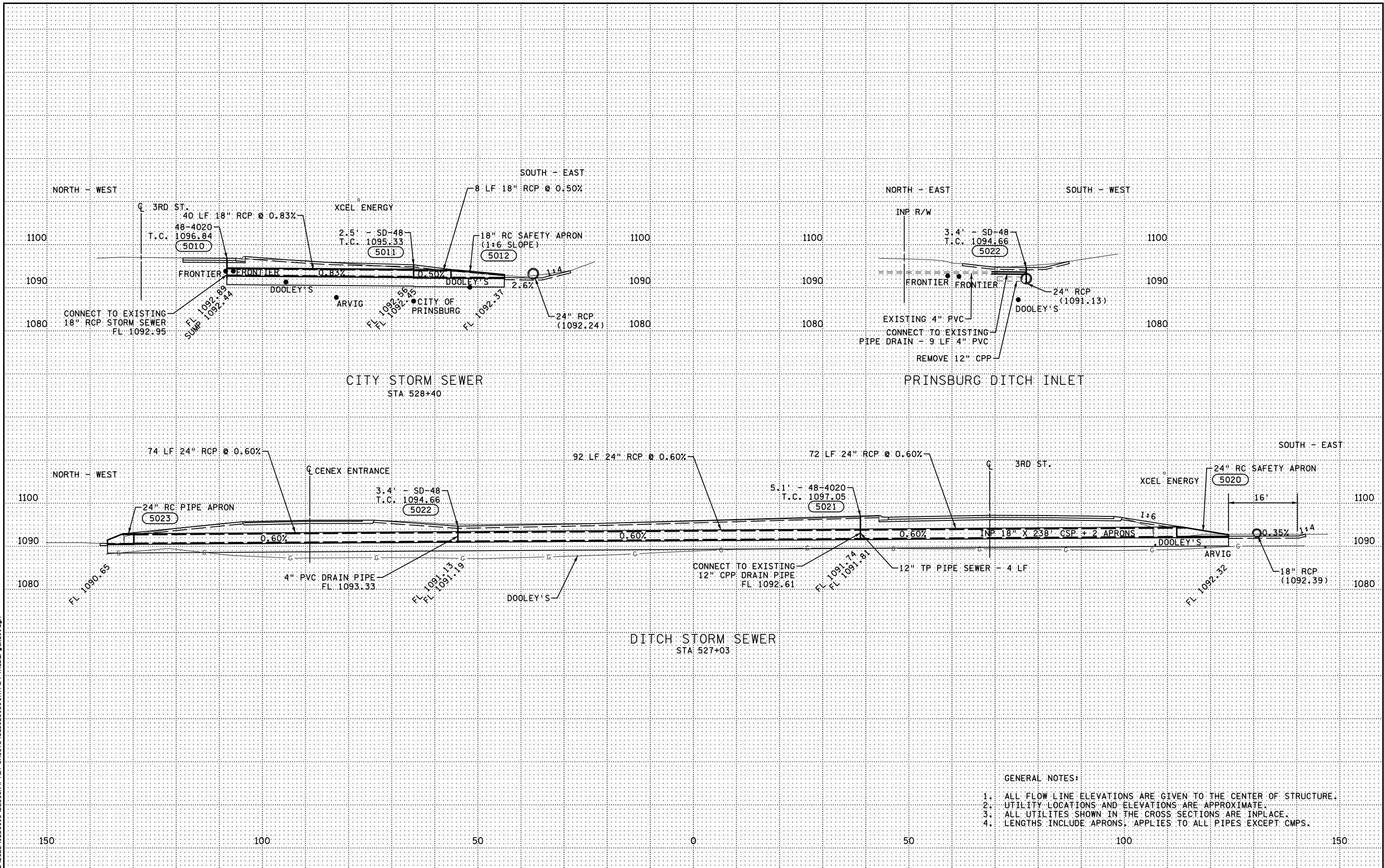


I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

DRAINAGE PROFILES  
TH 7

SP 8828-139  
SHEET NO. 187 OF 212 SHEETS



- GENERAL NOTES:
1. ALL FLOW LINE ELEVATIONS ARE GIVEN TO THE CENTER OF STRUCTURE.
  2. UTILITY LOCATIONS AND ELEVATIONS ARE APPROXIMATE.
  3. ALL UTILITIES SHOWN IN THE CROSS SECTIONS ARE INPLACE.
  4. LENGTHS INCLUDE APRONS. APPLIES TO ALL PIPES EXCEPT CMPS.

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NO	DATE	DWN	CKD	REVISIONS



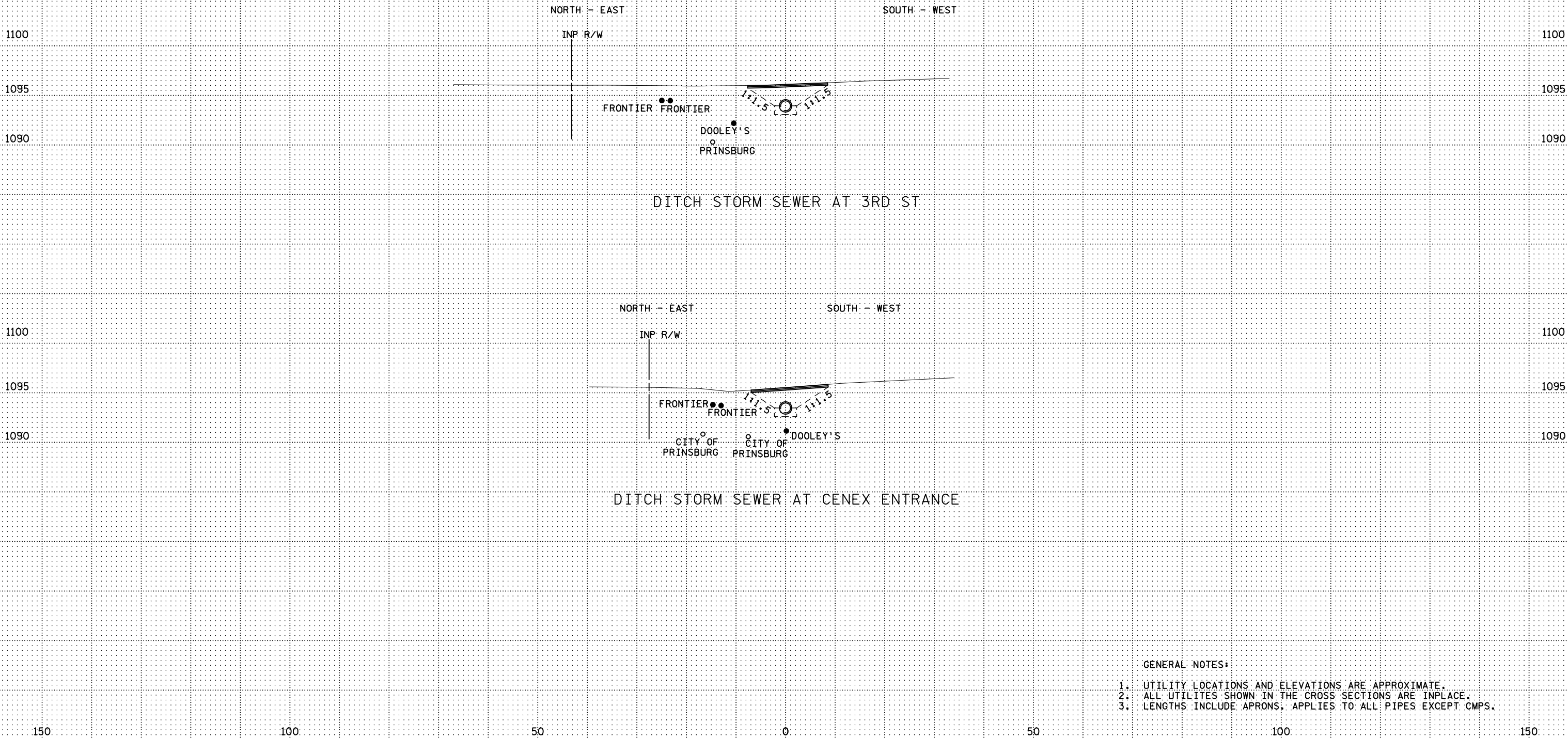
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 1/16/22 LICENSE #: 54298

DRAINAGE PROFILES  
TH 7 PRINSBURG

SP 8828-139  
SHEET NO. 188 OF 212 SHEETS

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\\projects\2022\1220013\DESIGN\Plan Sheets\cd828139_TH7 Pr-Insburg.xs02.dgn



GENERAL NOTES:

1. UTILITY LOCATIONS AND ELEVATIONS ARE APPROXIMATE.
2. ALL UTILITIES SHOWN IN THE CROSS SECTIONS ARE INPLACE.
3. LENGTHS INCLUDE APRONS. APPLIES TO ALL PIPES EXCEPT CMPS.

NO	DATE	DWN	CKD	REVISIONS



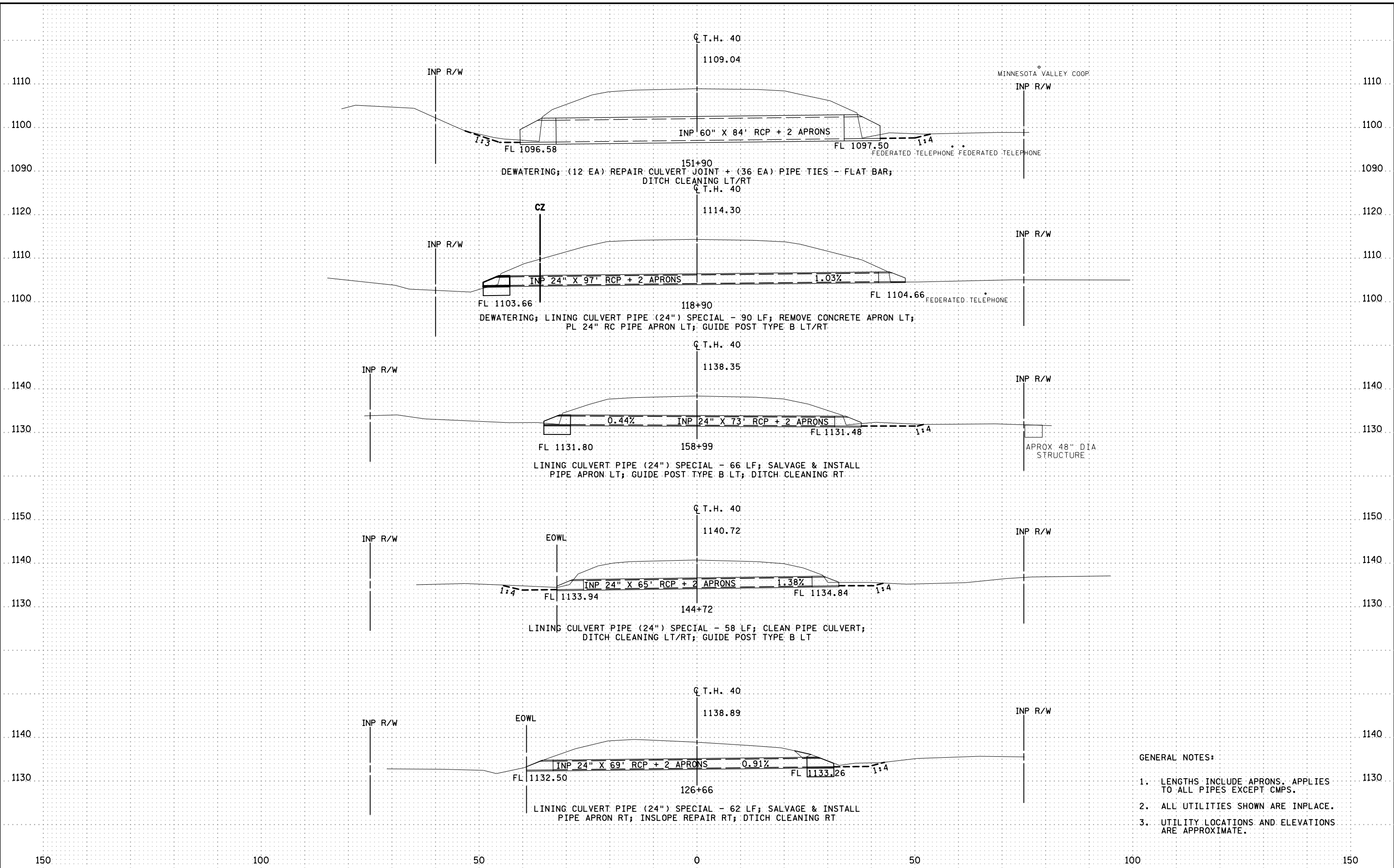
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 1/16/22 LICENSE #: 54298

DRAINAGE PROFILES  
STORM SEWER - TH 7 PRINSBURG

SP 8828-139  
SHEET NO. 189 OF 212 SHEETS

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- GENERAL NOTES:
1. LENGTHS INCLUDE APRONS. APPLIES TO ALL PIPES EXCEPT CMPS.
  2. ALL UTILITIES SHOWN ARE INPLACE.
  3. UTILITY LOCATIONS AND ELEVATIONS ARE APPROXIMATE.

NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

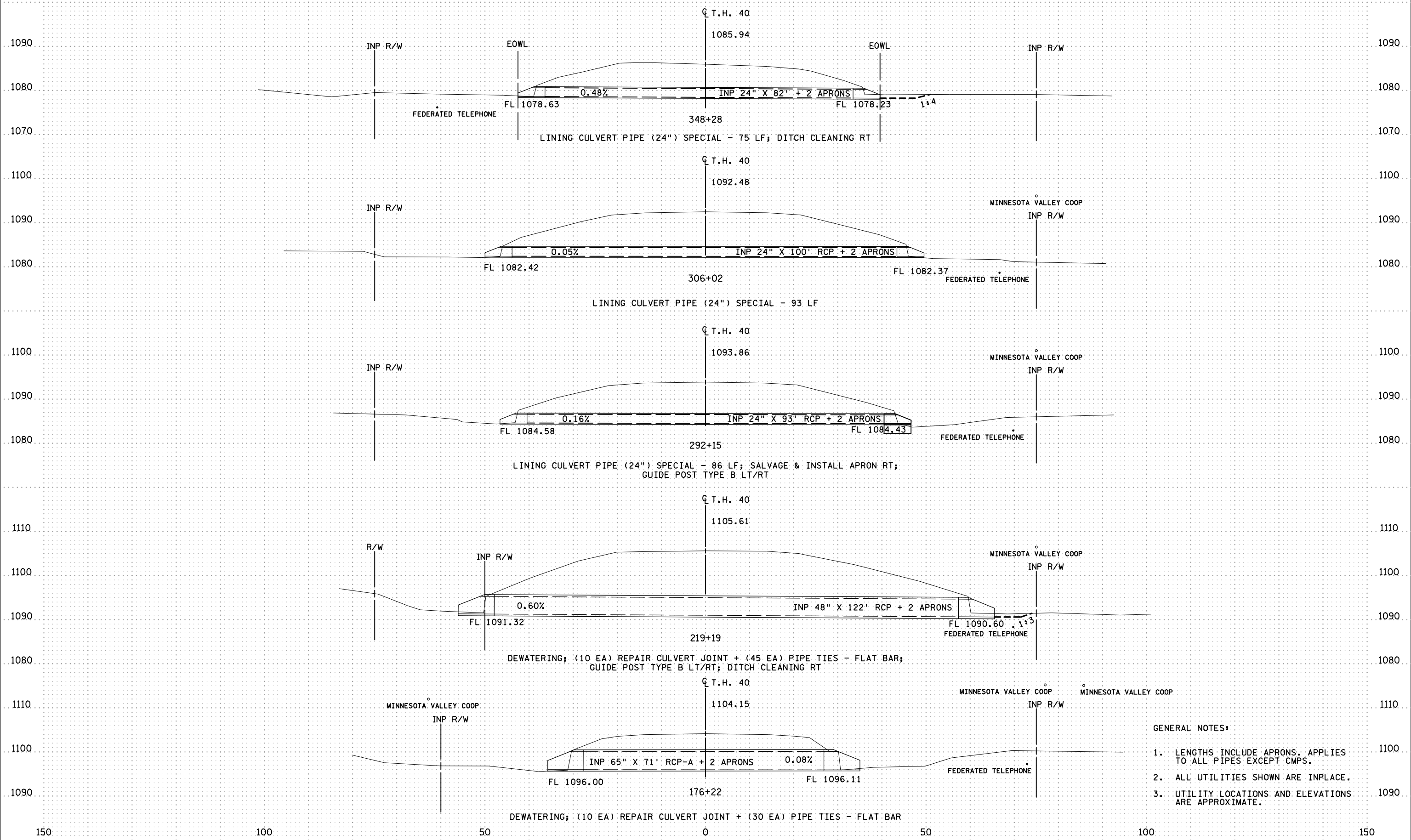
PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

DRAINAGE PROFILES  
TH 40

SP 8828-139  
SHEET NO. 190 OF 212 SHEETS



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- GENERAL NOTES:
1. LENGTHS INCLUDE APRONS. APPLIES TO ALL PIPES EXCEPT CMPS.
  2. ALL UTILITIES SHOWN ARE INPLACE.
  3. UTILITY LOCATIONS AND ELEVATIONS ARE APPROXIMATE.

NO	DATE	DWN	CKD	REVISIONS



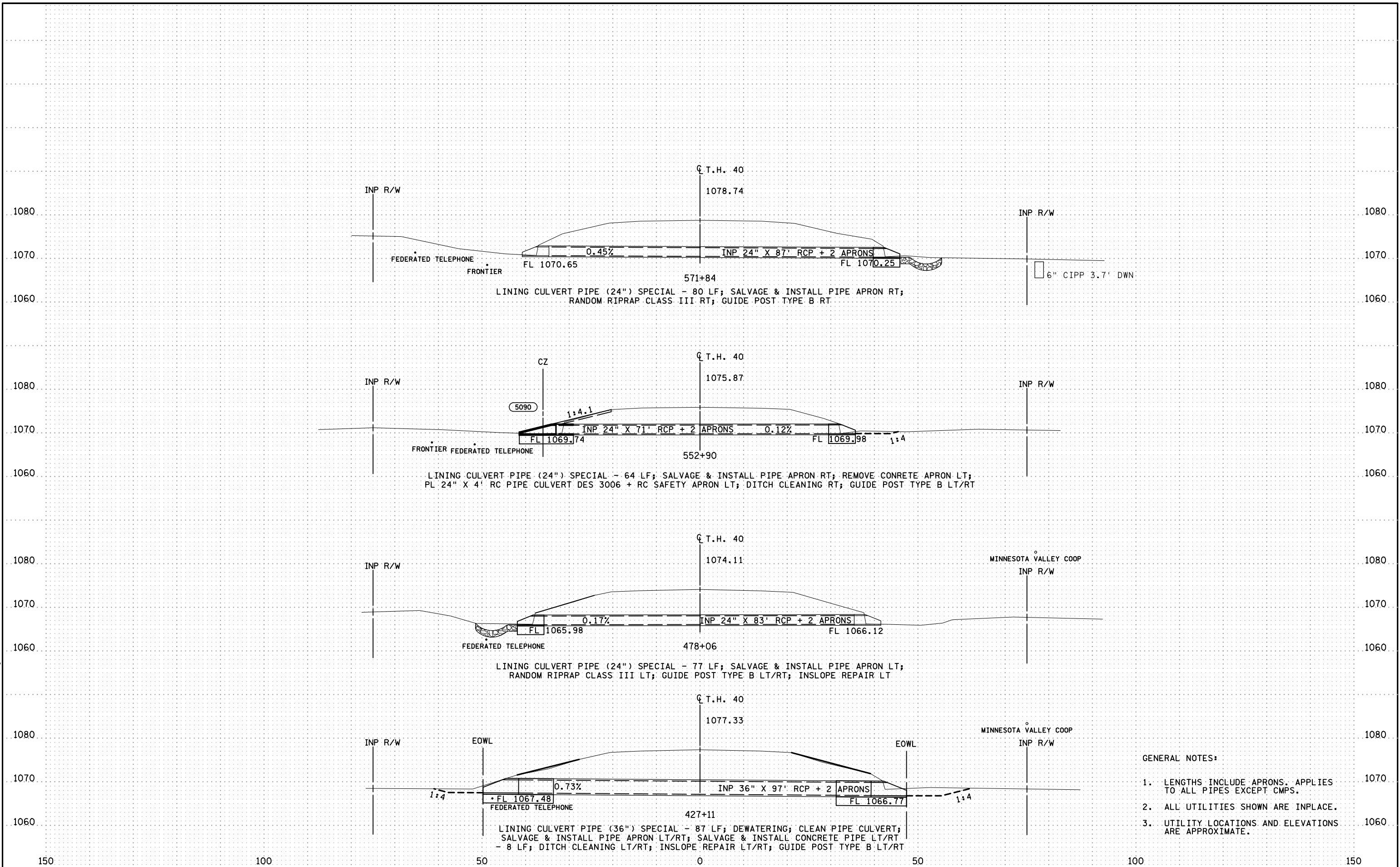
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

DRAINAGE PROFILES  
TH 40

SP 8828-139  
SHEET NO. 191 OF 212 SHEETS

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GENERAL NOTES:

1. LENGTHS INCLUDE APRONS. APPLIES TO ALL PIPES EXCEPT CMPS.
2. ALL UTILITIES SHOWN ARE INPLACE.
3. UTILITY LOCATIONS AND ELEVATIONS ARE APPROXIMATE.

NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

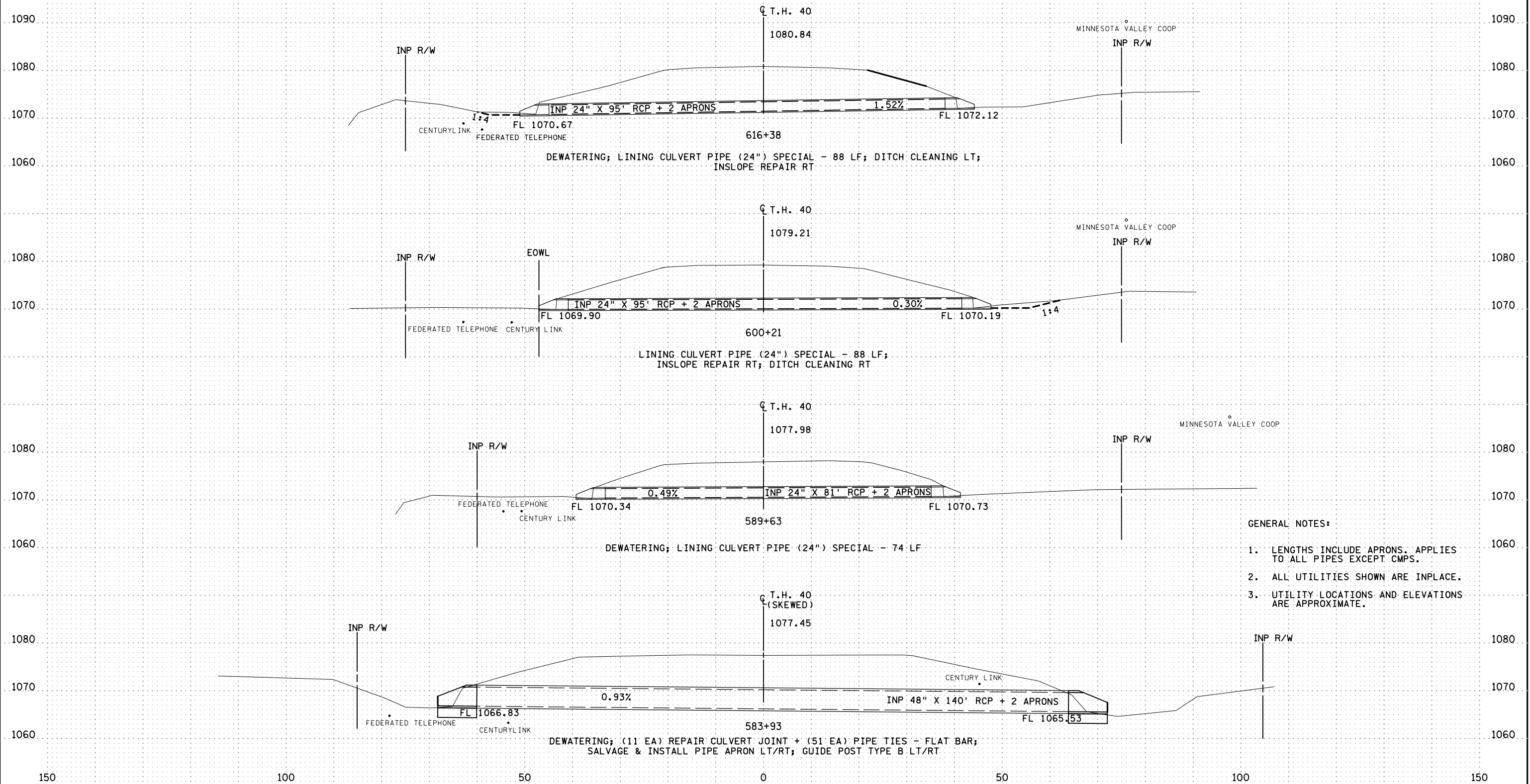
PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

DRAINAGE PROFILES  
TH 40

SP 8828-139

SHEET NO. 192 OF 212 SHEETS

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NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

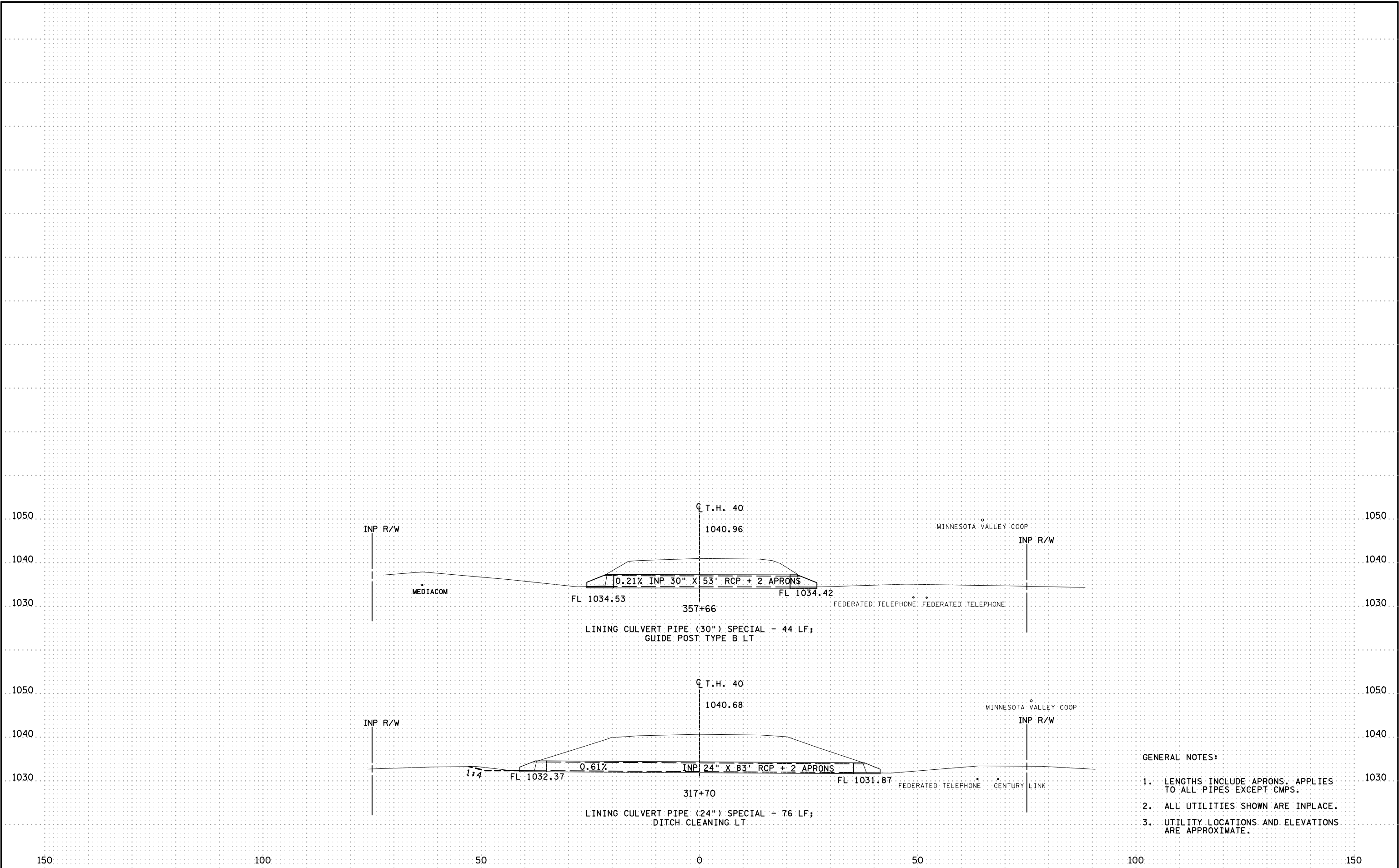
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SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

DRAINAGE PROFILES  
TH 40

SP 8828-139  
SHEET NO. 193 OF 212 SHEETS



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- GENERAL NOTES:
1. LENGTHS INCLUDE APRONS. APPLIES TO ALL PIPES EXCEPT CMPS.
  2. ALL UTILITIES SHOWN ARE INPLACE.
  3. UTILITY LOCATIONS AND ELEVATIONS ARE APPROXIMATE.

NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

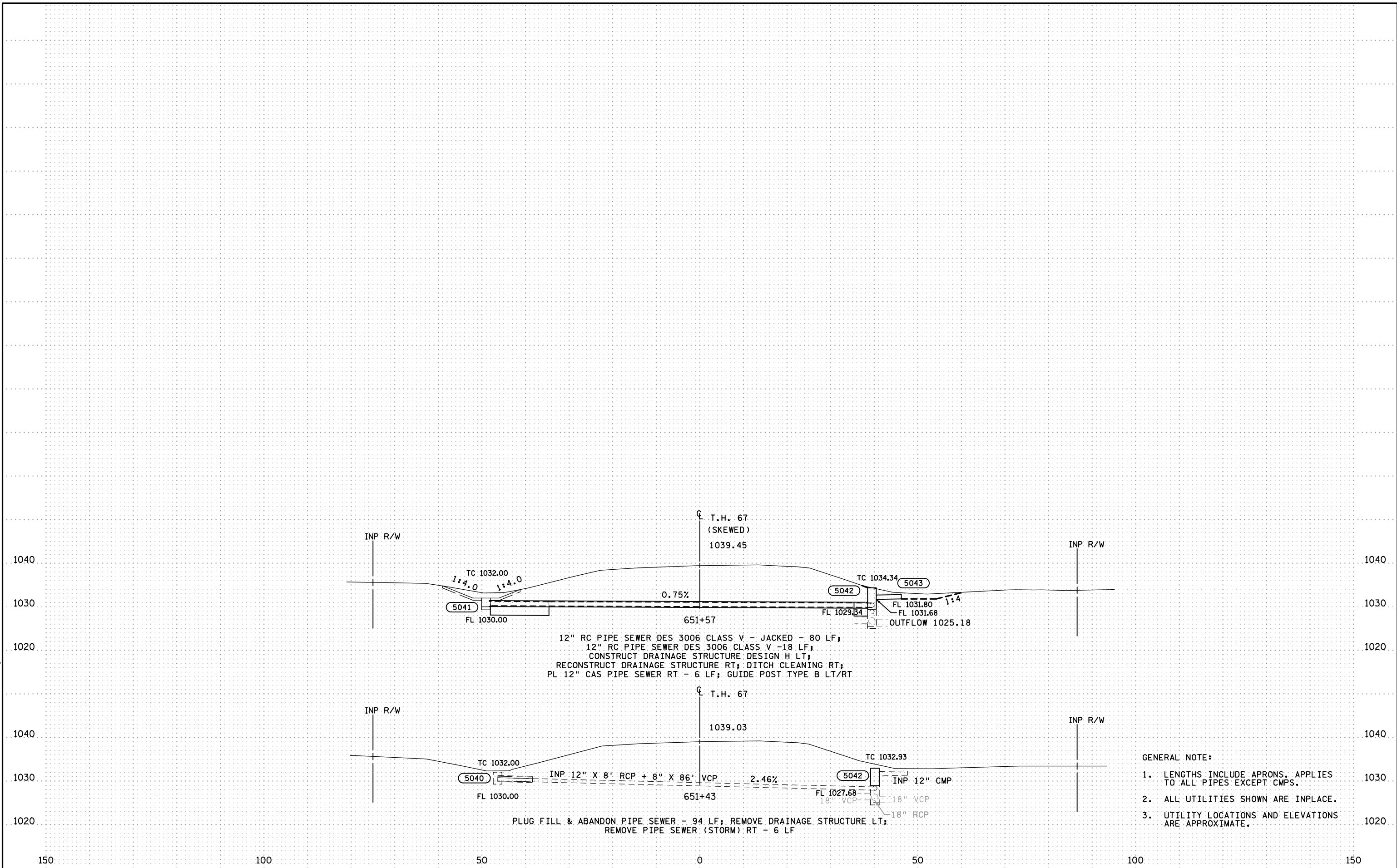
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SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

DRAINAGE PROFILES  
TH 40

SP 8828-139  
SHEET NO. 194 OF 212 SHEETS



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NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

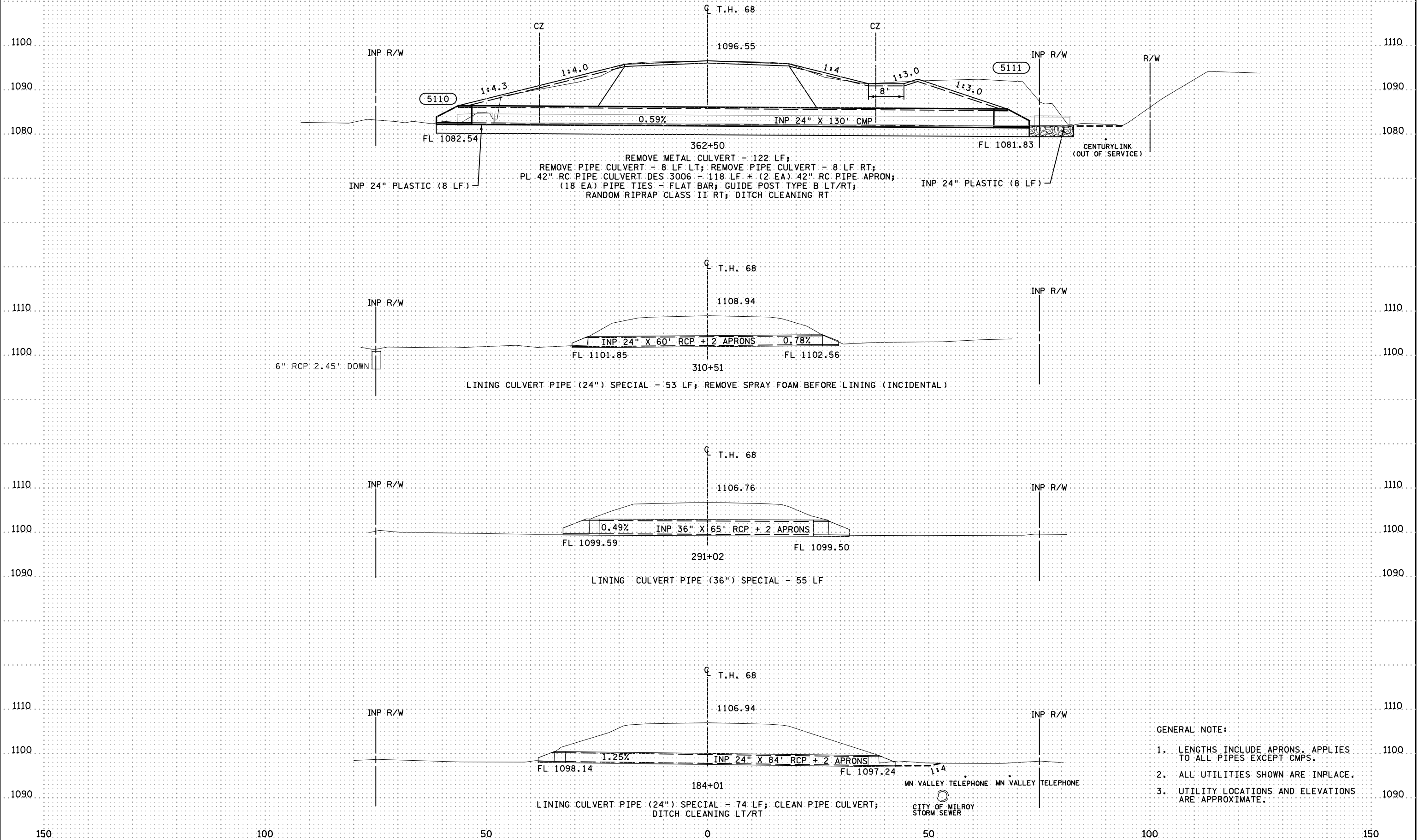
PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

DRAINAGE PROFILES  
TH 67

SP 8828-139

SHEET NO. 195 OF 212 SHEETS

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NO	DATE	DWN	CKD	REVISIONS



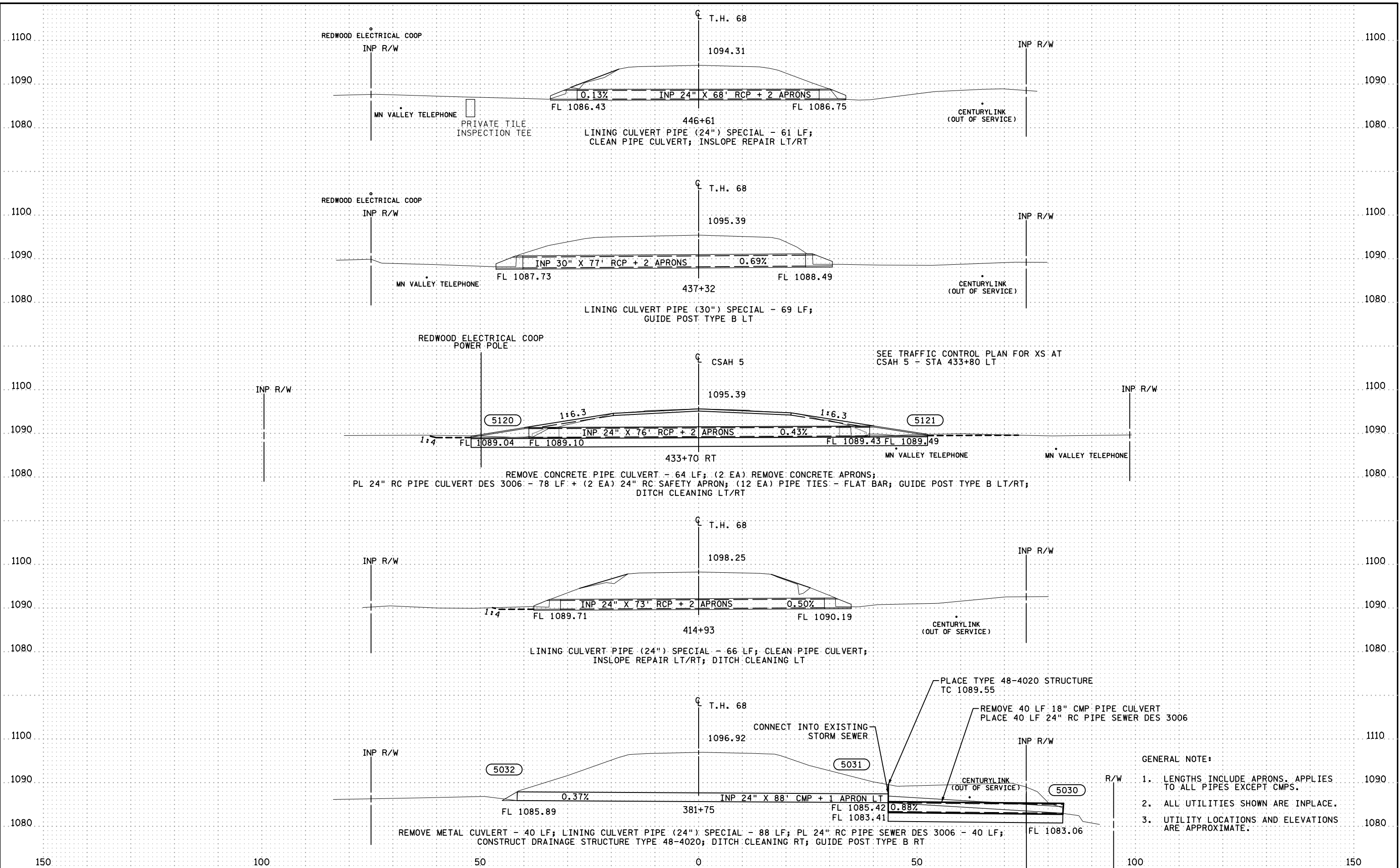
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

DRAINAGE PROFILES  
TH 68

SP 8828-139  
SHEET NO. 196 OF 212 SHEETS

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NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

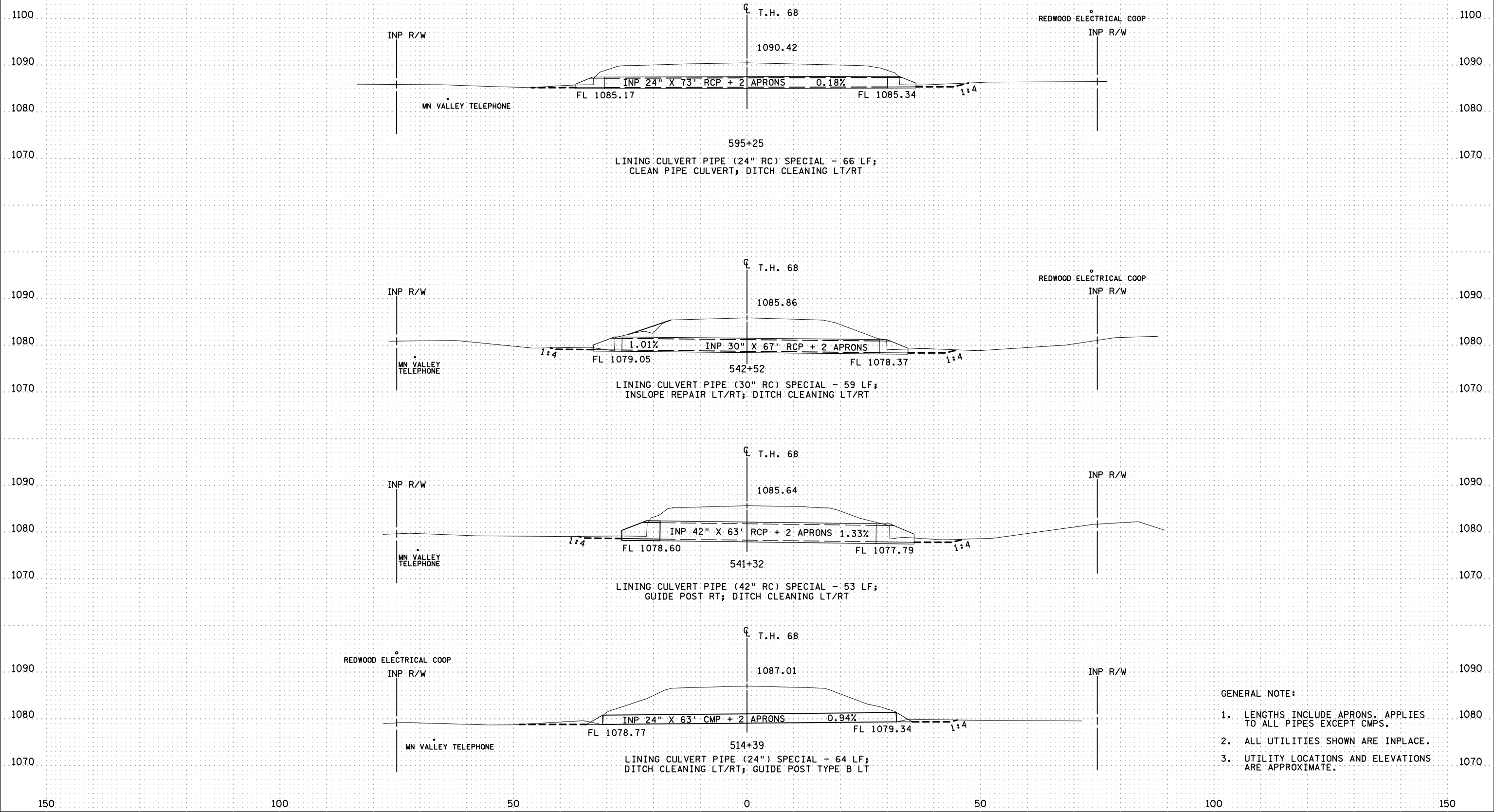
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TH 68

SP 8828-139  
SHEET NO. 197 OF 212 SHEETS

GENERAL NOTE:

1. LENGTHS INCLUDE APRONS. APPLIES TO ALL PIPES EXCEPT CMPS.
2. ALL UTILITIES SHOWN ARE INPLACE.
3. UTILITY LOCATIONS AND ELEVATIONS ARE APPROXIMATE.





- GENERAL NOTE:
1. LENGTHS INCLUDE APRONS. APPLIES TO ALL PIPES EXCEPT CMPS.
  2. ALL UTILITIES SHOWN ARE INPLACE.
  3. UTILITY LOCATIONS AND ELEVATIONS ARE APPROXIMATE.

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NO	DATE	DWN	CKD	REVISIONS



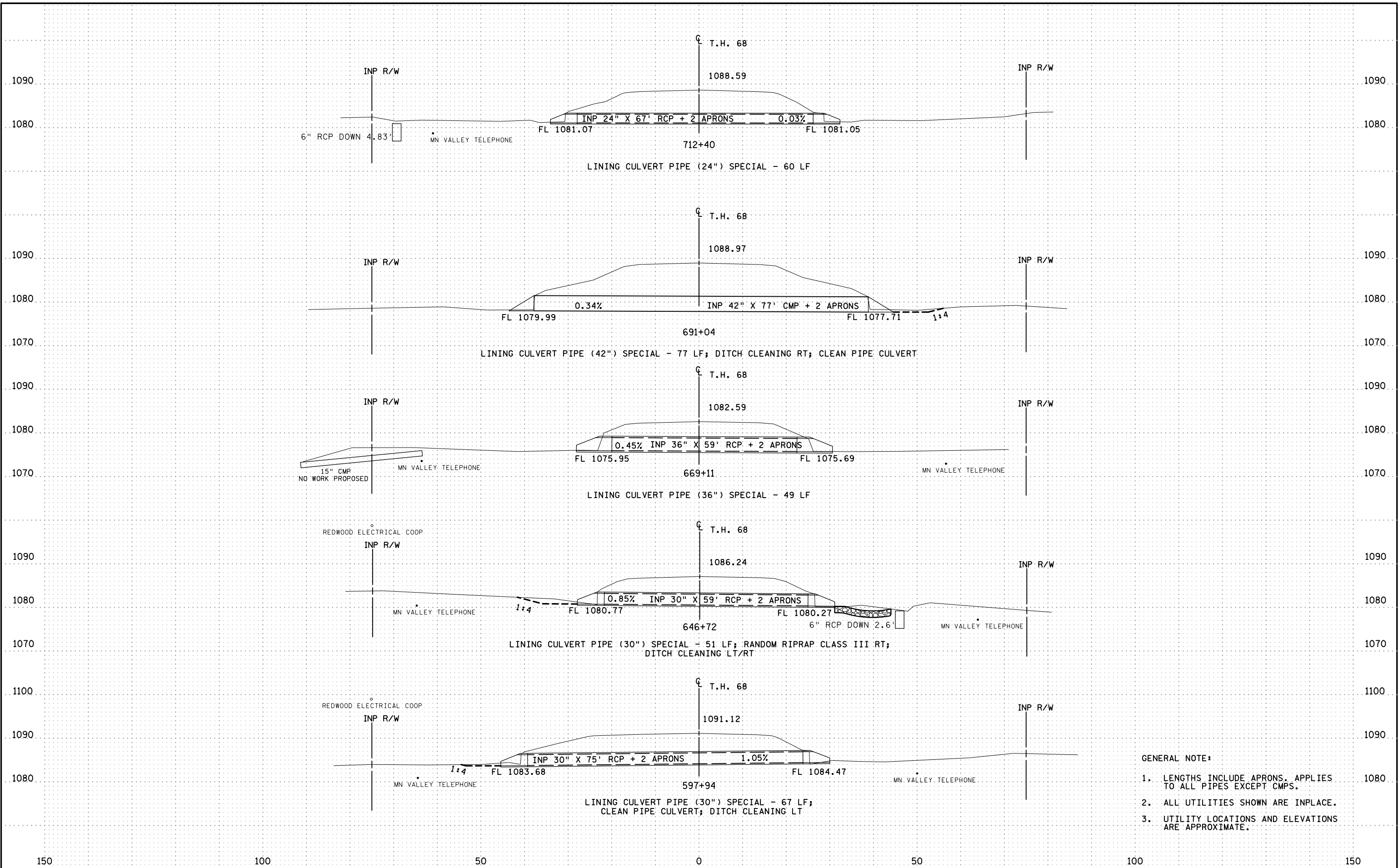
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE 09/19/24 LICENSE # 54298

DRAINAGE PROFILES  
TH 68

SP 8828-139  
SHEET NO. 198 OF 212 SHEETS

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- GENERAL NOTE:
1. LENGTHS INCLUDE APRONS. APPLIES TO ALL PIPES EXCEPT CMPS.
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  3. UTILITY LOCATIONS AND ELEVATIONS ARE APPROXIMATE.

NO	DATE	DWN	CKD	REVISIONS



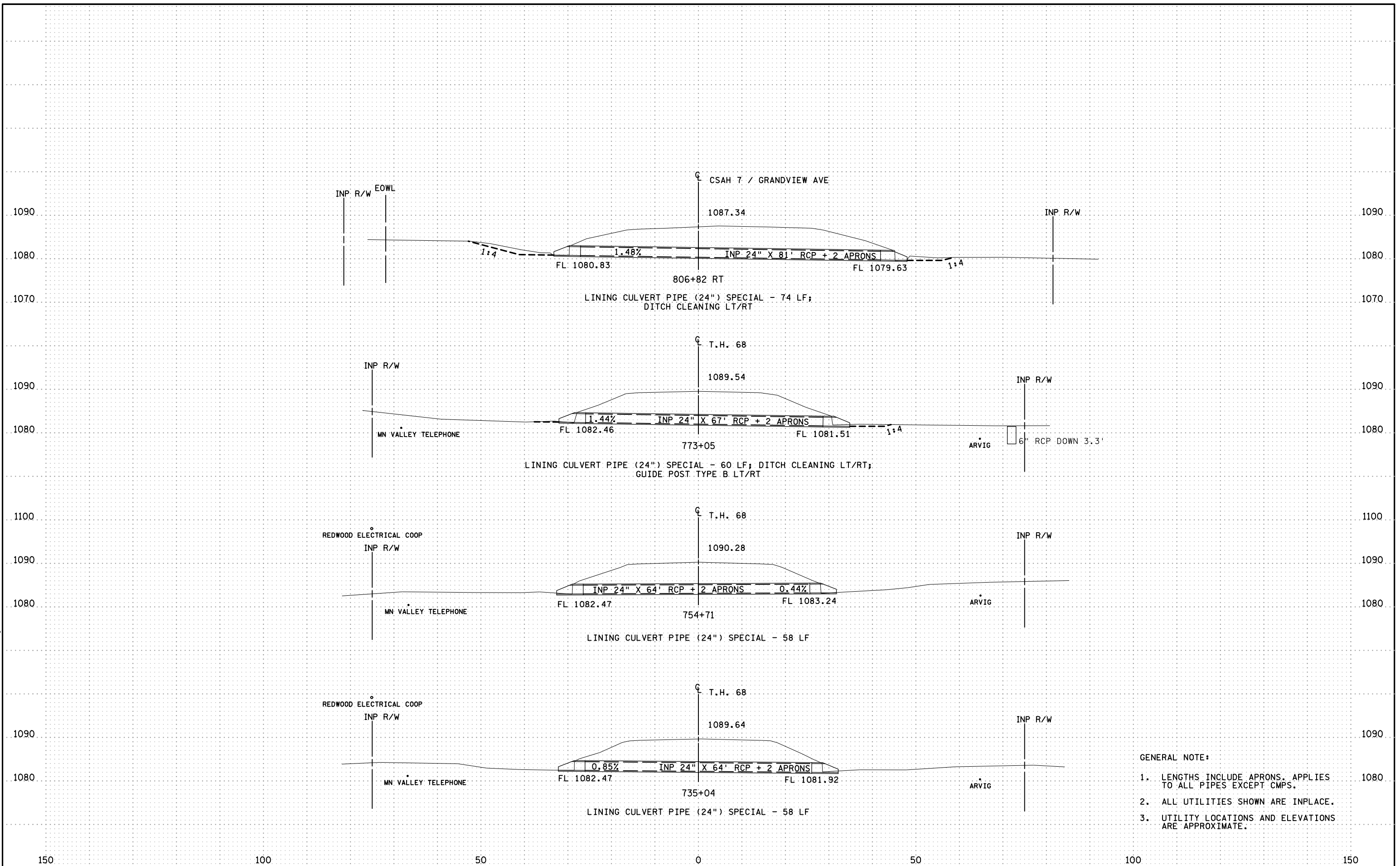
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PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

DRAINAGE PROFILES  
TH 68

SP 8828-139  
SHEET NO. 199 OF 212 SHEETS

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NO	DATE	DWN	CKD	REVISIONS



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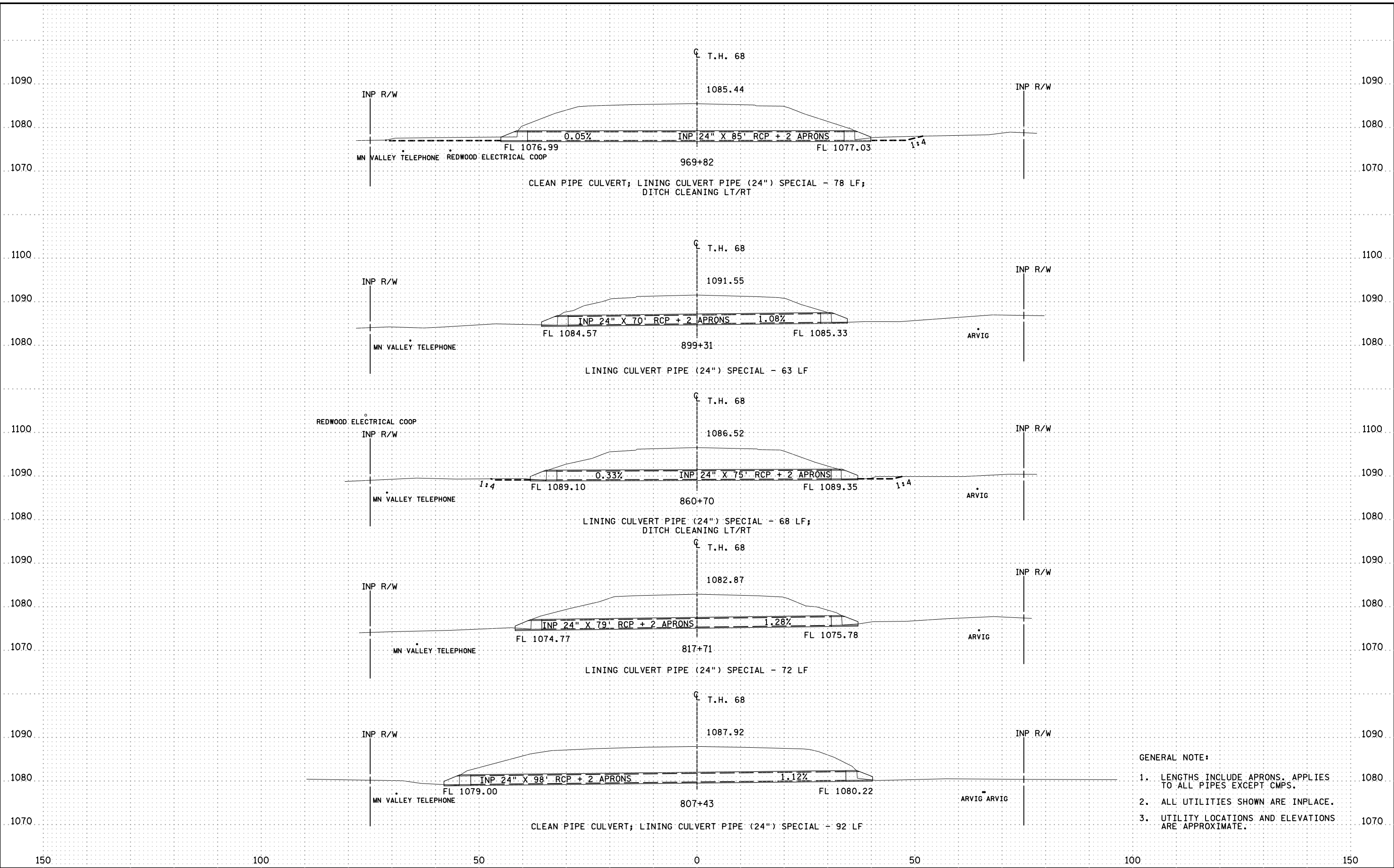
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DATE: 09/19/24 LICENSE #: 54298

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SP 8828-139  
SHEET NO. 200 OF 212 SHEETS



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- GENERAL NOTE:
1. LENGTHS INCLUDE APRONS. APPLIES TO ALL PIPES EXCEPT CMPS.
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  3. UTILITY LOCATIONS AND ELEVATIONS ARE APPROXIMATE.

NO	DATE	DWN	CKD	REVISIONS



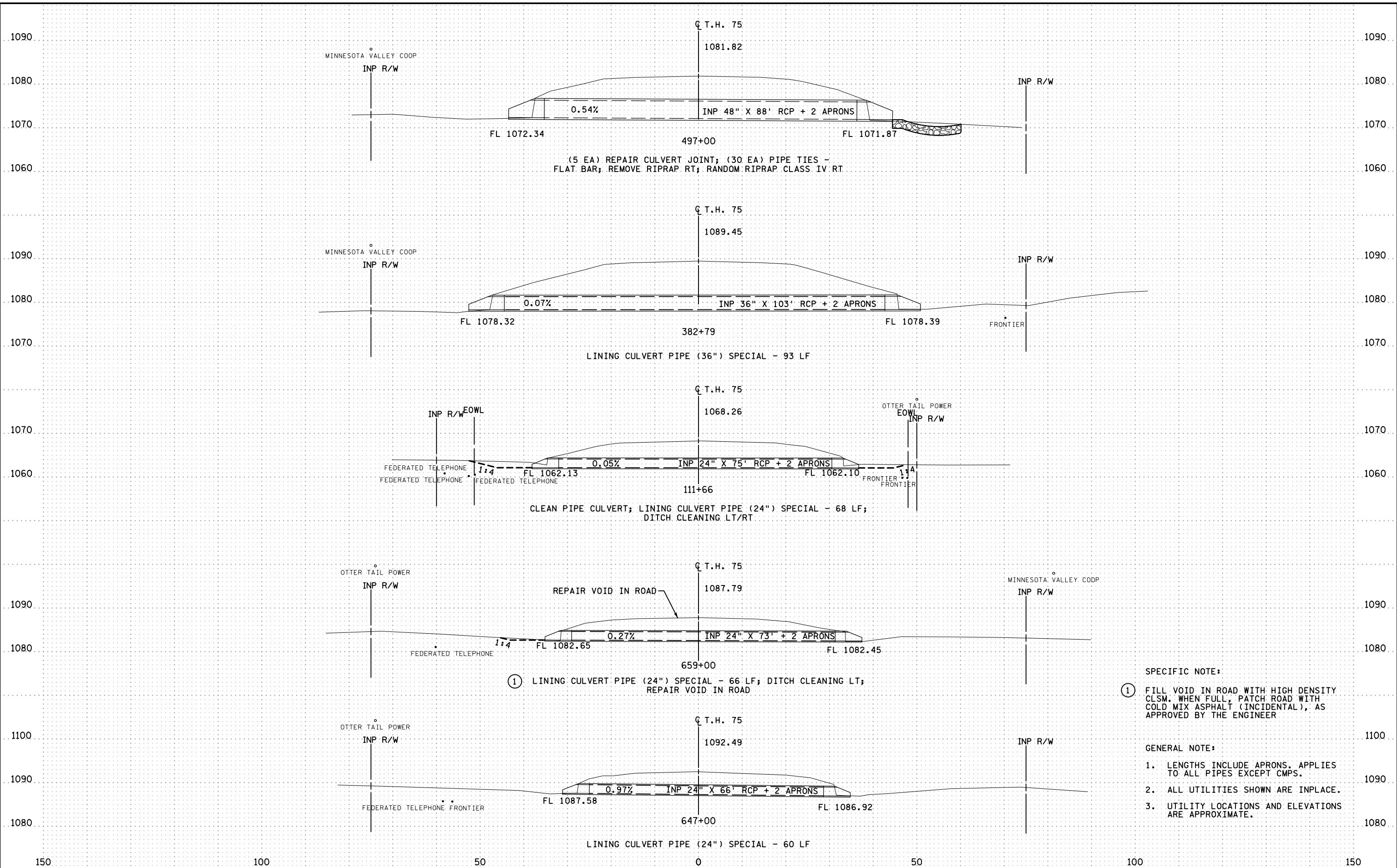
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PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

DRAINAGE PROFILES  
TH 68

SP 8828-139  
SHEET NO. 201 OF 212 SHEETS

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NO	DATE	DWN	CKD	REVISIONS



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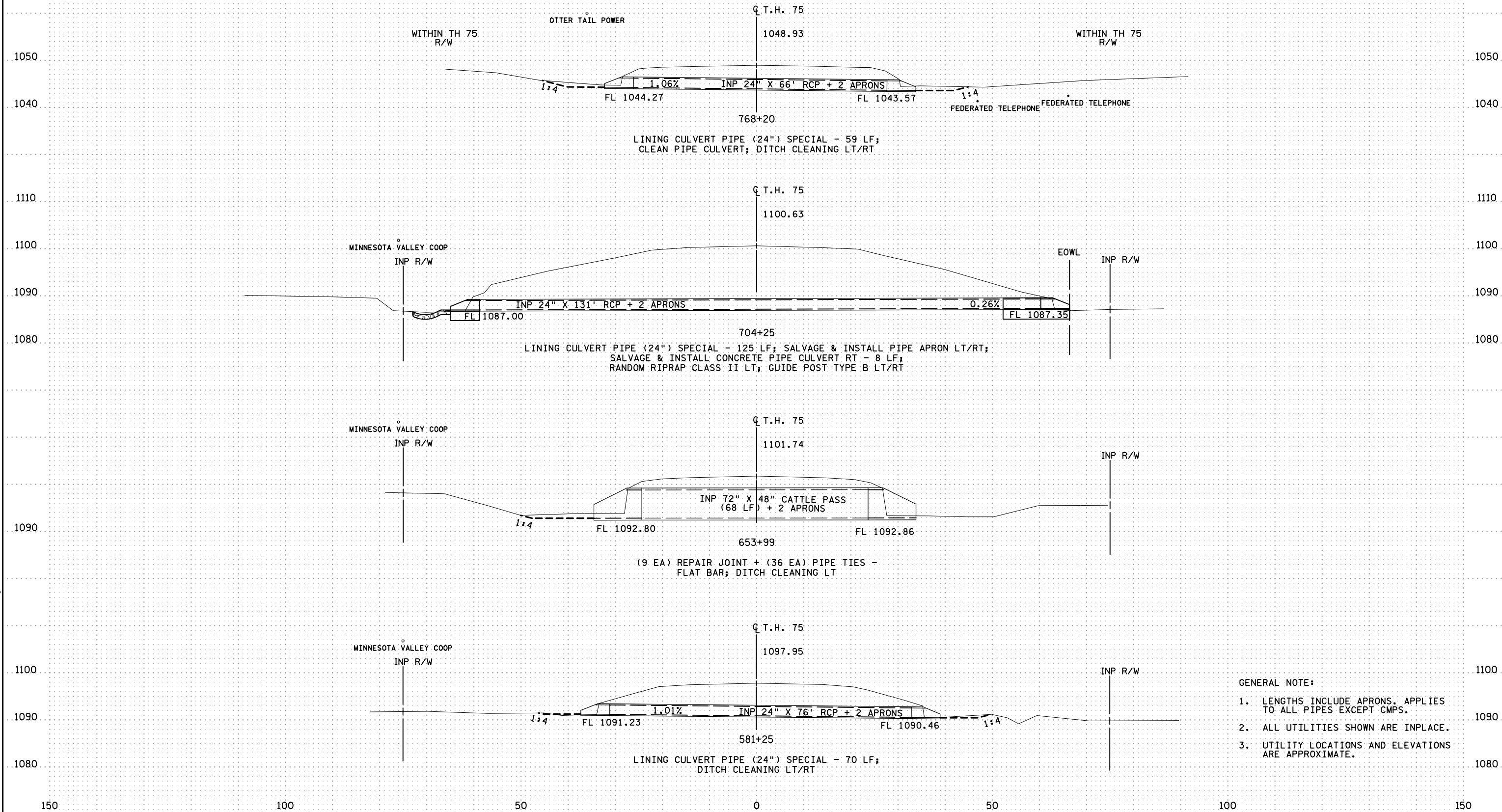
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DRAINAGE PROFILES  
TH 75

SP 8828-139  
SHEET NO. 202 OF 212 SHEETS



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- GENERAL NOTE:
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  3. UTILITY LOCATIONS AND ELEVATIONS ARE APPROXIMATE.

NO	DATE	DWN	CKD	REVISIONS

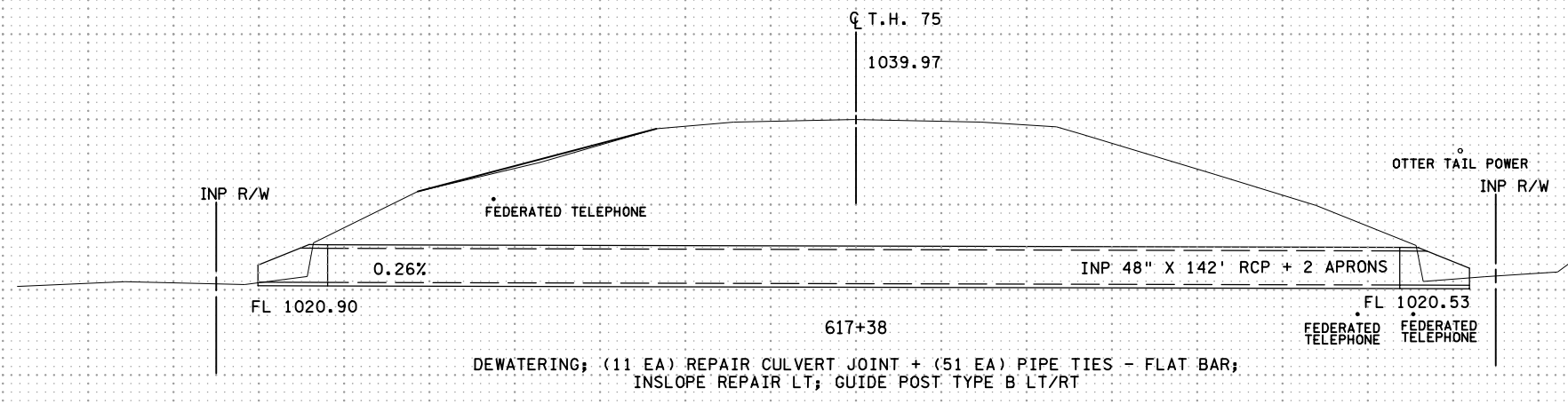
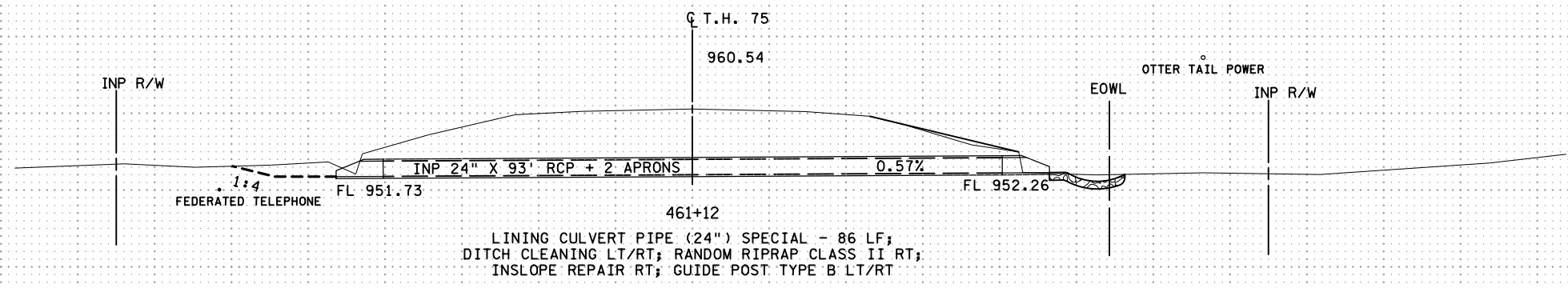
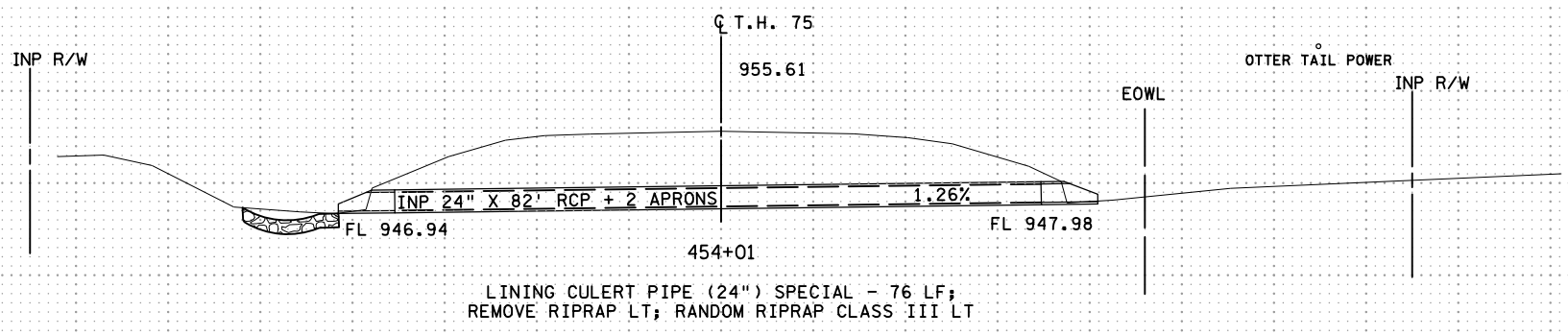
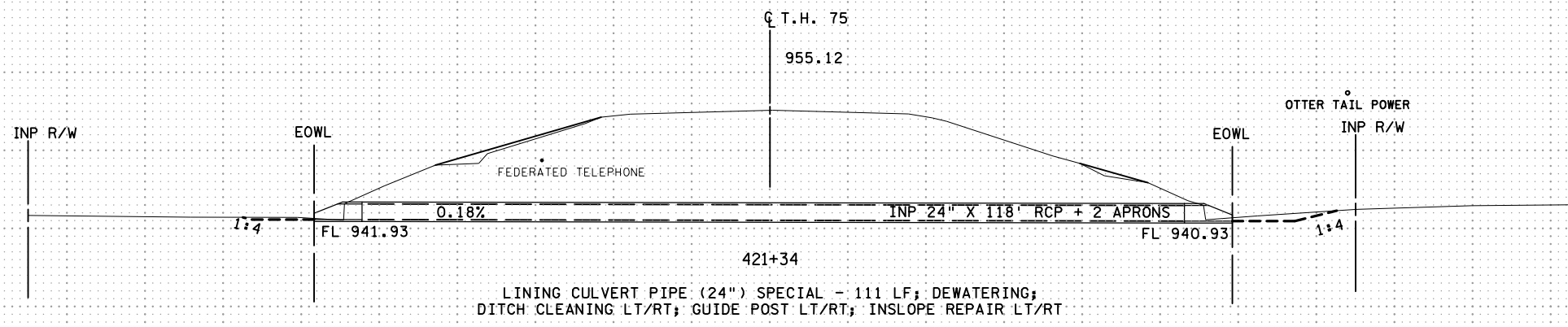


I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

DRAINAGE PROFILES  
TH 75

SP 8828-139  
SHEET NO. 203 OF 212 SHEETS



- GENERAL NOTE:
1. LENGTHS INCLUDE APRONS. APPLIES TO ALL PIPES EXCEPT CMPS.
  2. ALL UTILITIES SHOWN ARE INPLACE.
  3. UTILITY LOCATIONS AND ELEVATIONS ARE APPROXIMATE.

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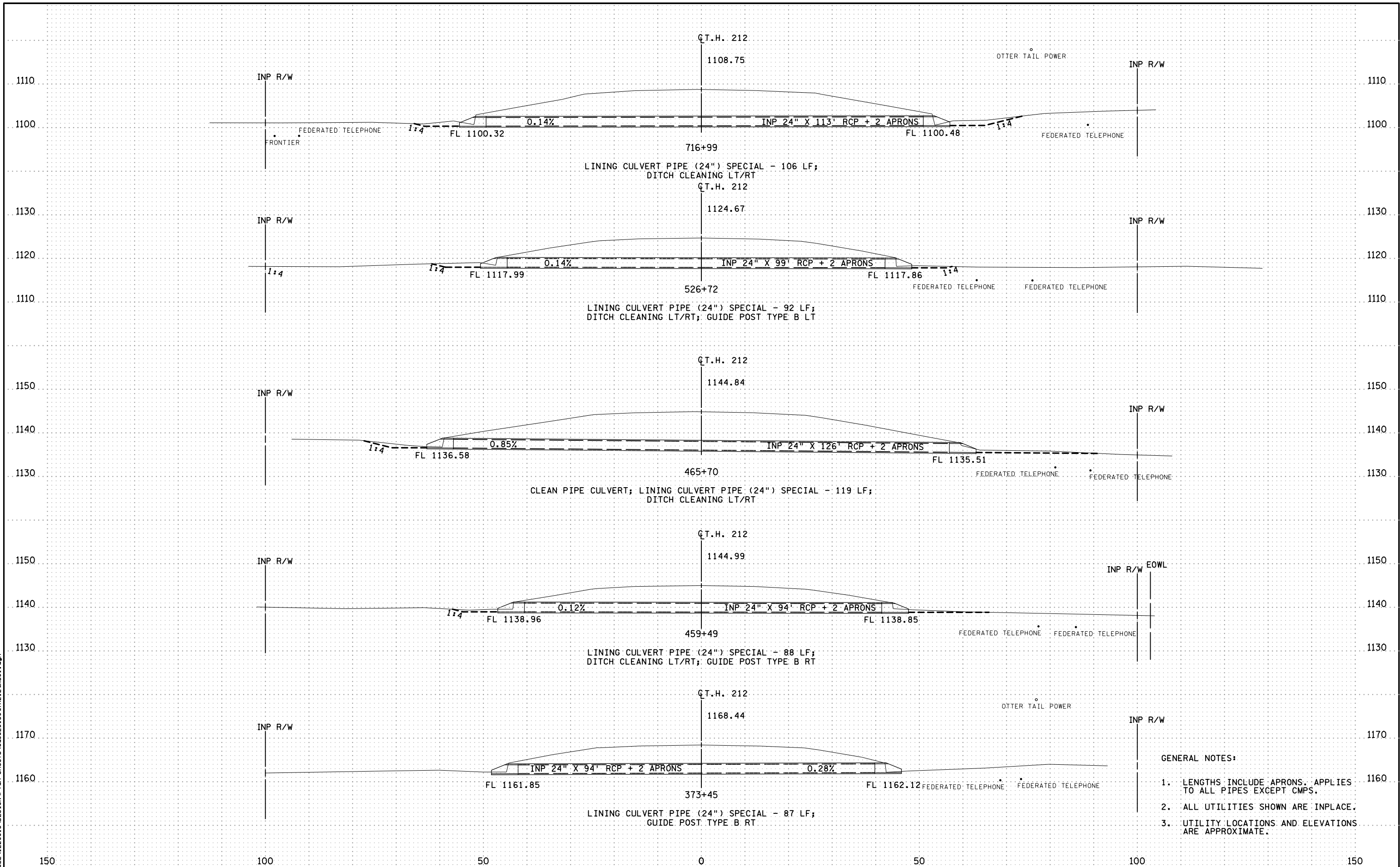
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PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

DRAINAGE PROFILES  
TH 75

SP 8828-139  
SHEET NO. 204 OF 212 SHEETS

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GENERAL NOTES:

1. LENGTHS INCLUDE APRONS. APPLIES TO ALL PIPES EXCEPT CMPS.
2. ALL UTILITIES SHOWN ARE INPLACE.
3. UTILITY LOCATIONS AND ELEVATIONS ARE APPROXIMATE.

NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

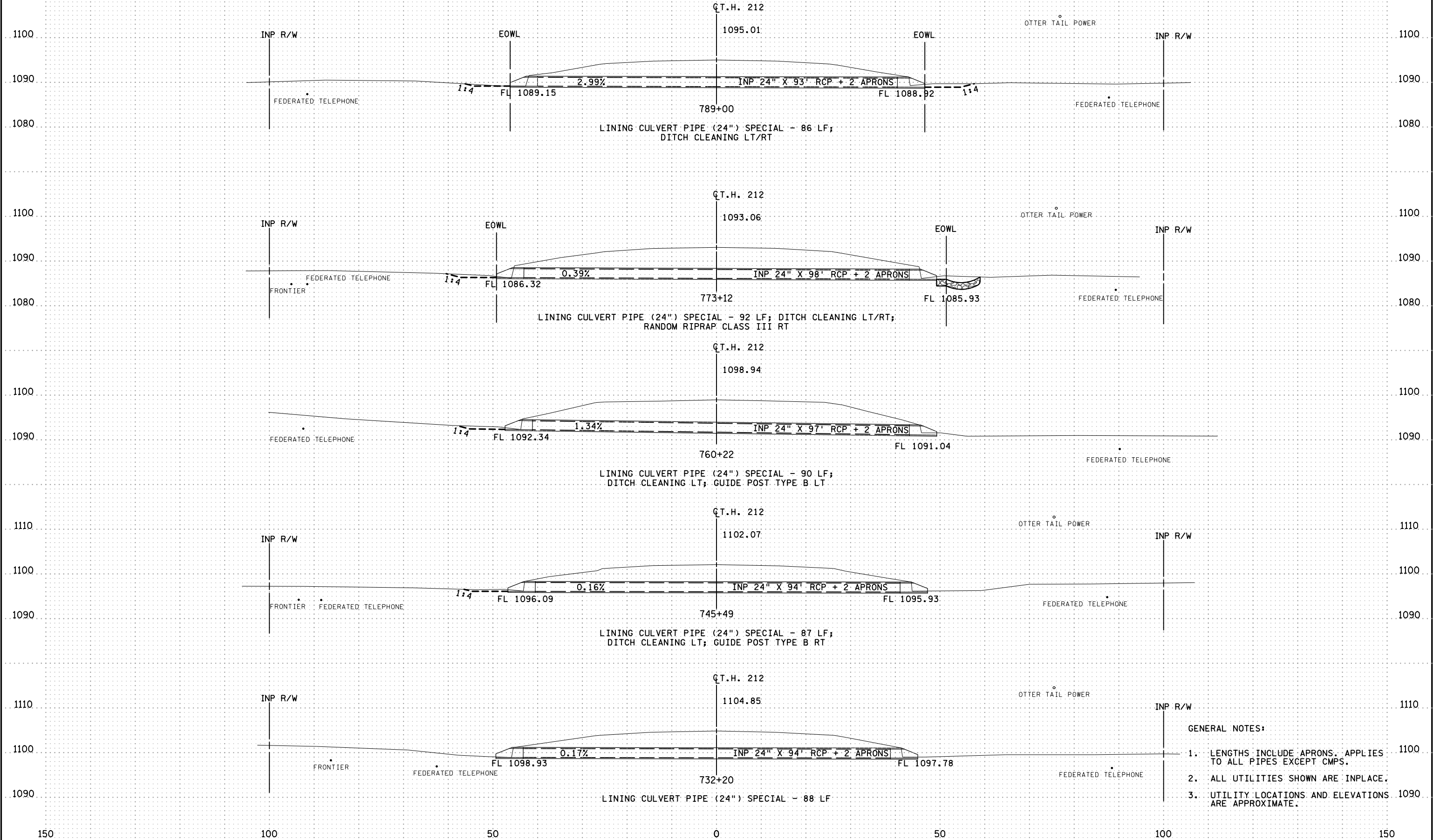
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SP 8828-139

SHEET NO. 205 OF 212 SHEETS



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GENERAL NOTES:

1. LENGTHS INCLUDE APRONS. APPLIES TO ALL PIPES EXCEPT CMPS.
2. ALL UTILITIES SHOWN ARE INPLACE.
3. UTILITY LOCATIONS AND ELEVATIONS 1090 ARE APPROXIMATE.

NO	DATE	DWN	CKD	REVISIONS



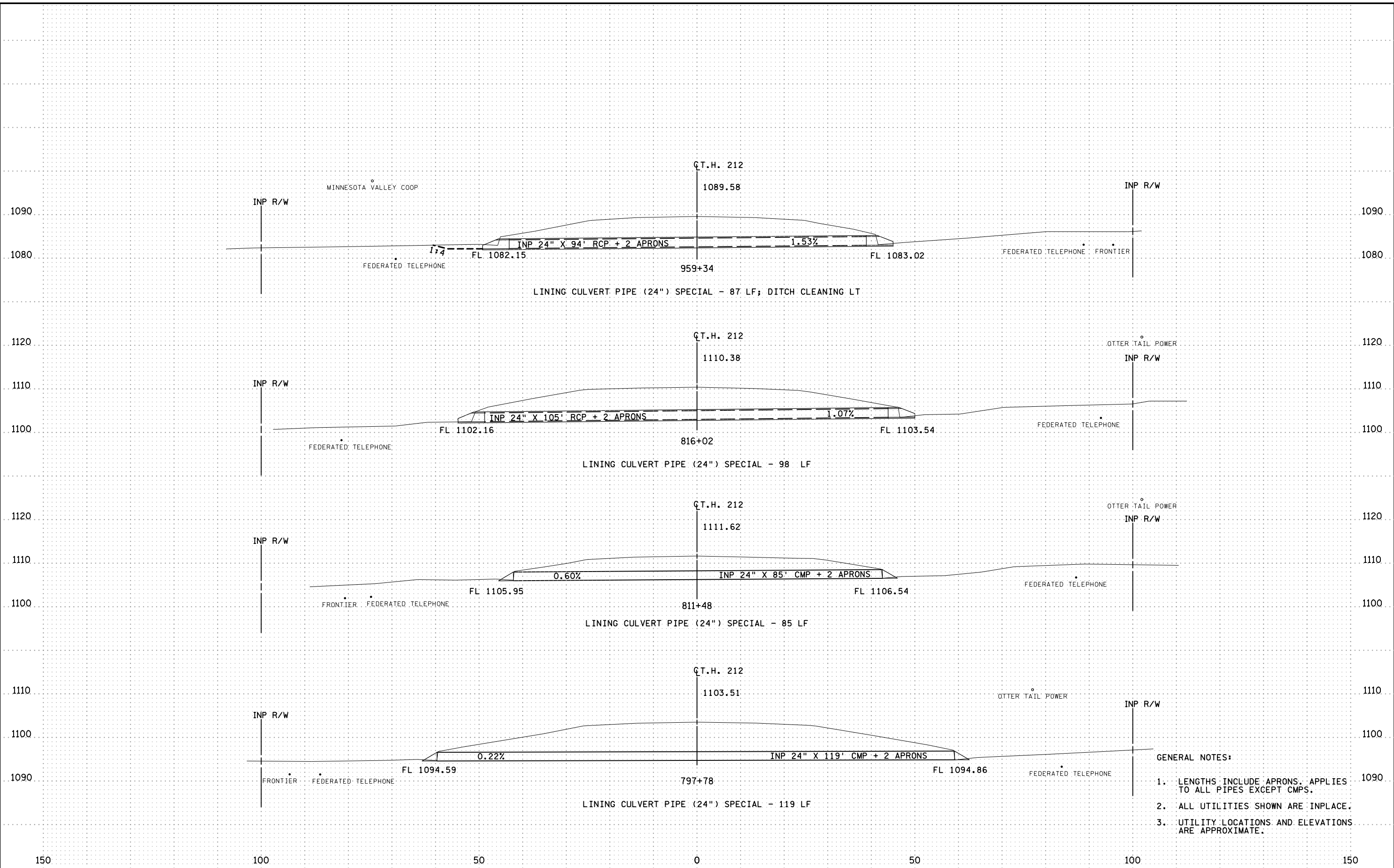
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PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE 09/19/24 LICENSE # 54298

DRAINAGE PROFILES  
TH 212

SP 8828-139  
SHEET NO. 206 OF 212 SHEETS

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- GENERAL NOTES:
1. LENGTHS INCLUDE APRONS. APPLIES TO ALL PIPES EXCEPT CMPS.
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  3. UTILITY LOCATIONS AND ELEVATIONS ARE APPROXIMATE.

NO	DATE	DWN	CKD	REVISIONS



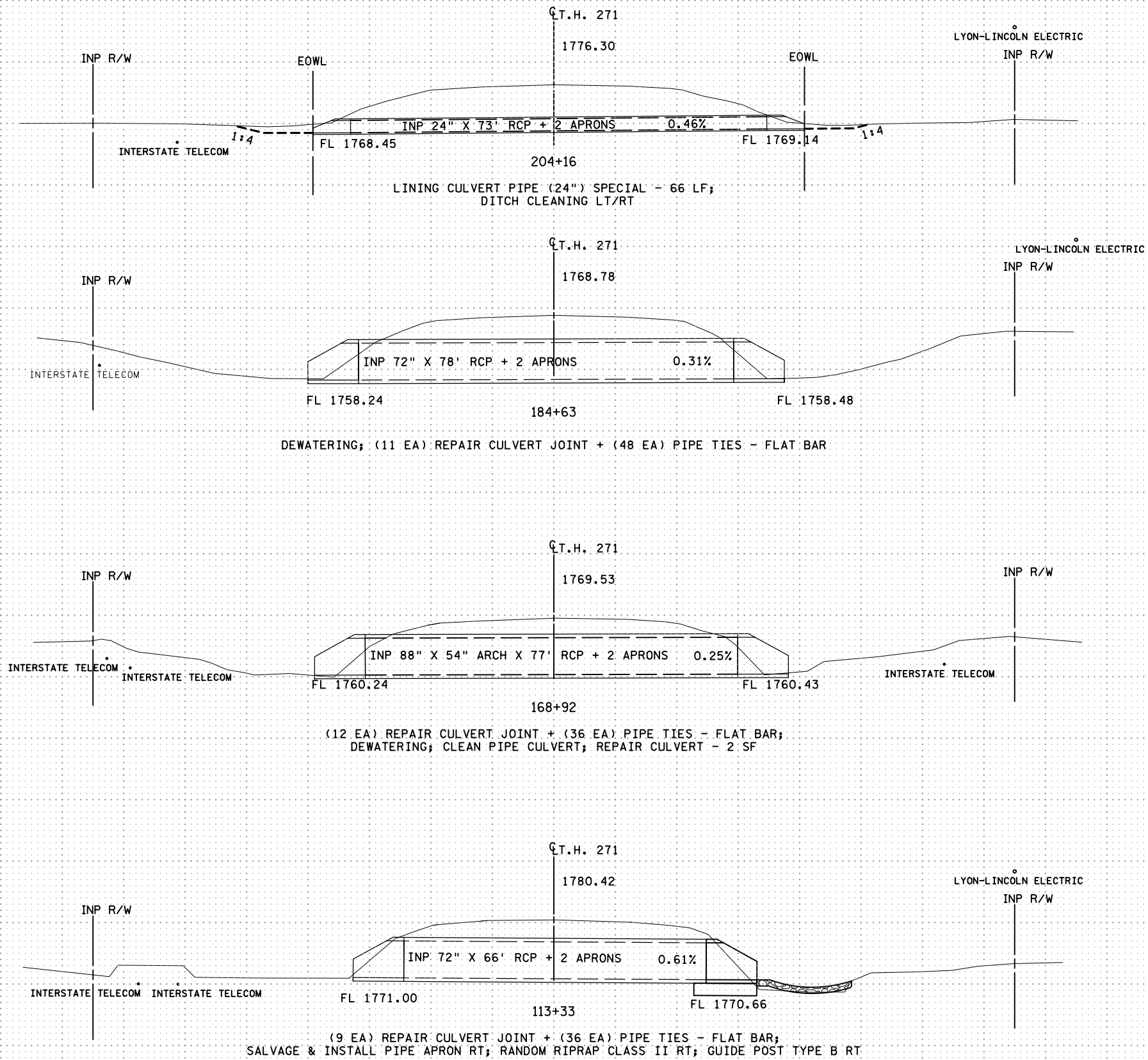
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

DRAINAGE PROFILES  
TH 212

SP 8828-139  
SHEET NO. 207 OF 212 SHEETS

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GENERAL NOTES:

1. LENGTHS INCLUDE APRONS. APPLIES TO ALL PIPES EXCEPT CMPS.
2. ALL UTILITIES SHOWN ARE INPLACE.
3. UTILITY LOCATIONS AND ELEVATIONS ARE APPROXIMATE.

NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

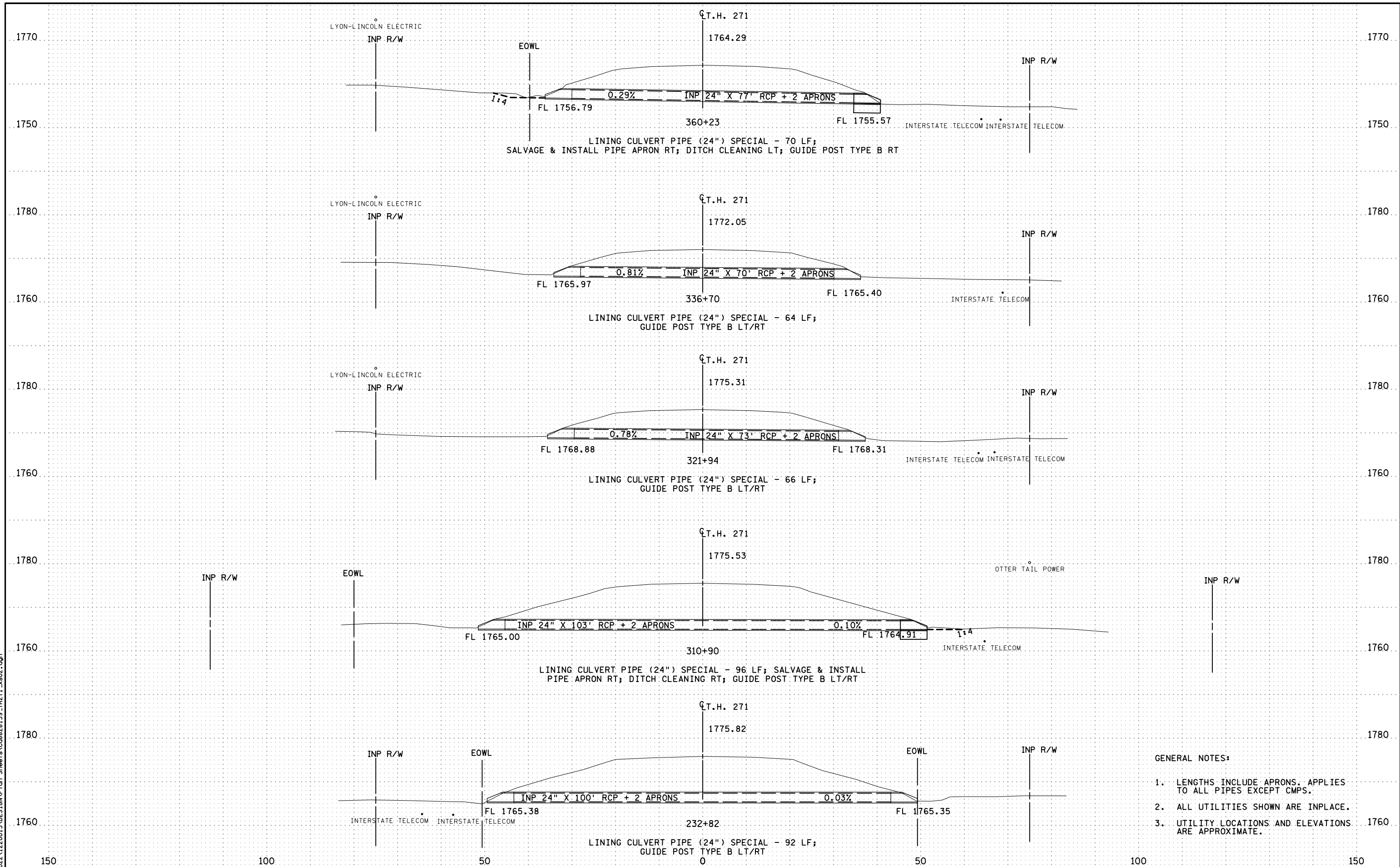
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SP 8828-139  
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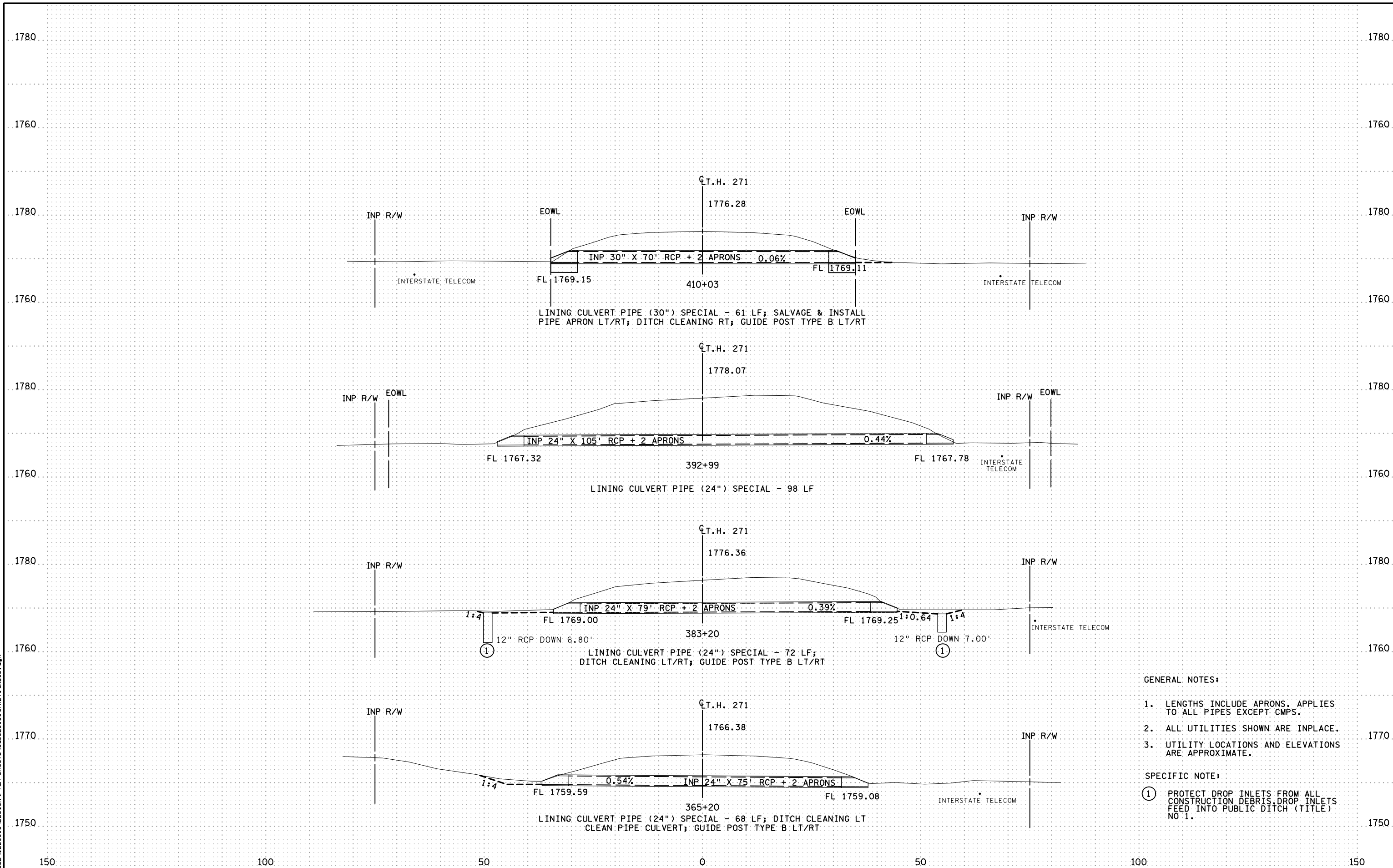
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PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

DRAINAGE PROFILES  
TH 271

SP 8828-139  
SHEET NO. 209 OF 212 SHEETS

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GENERAL NOTES:

1. LENGTHS INCLUDE APRONS. APPLIES TO ALL PIPES EXCEPT CMPS.
2. ALL UTILITIES SHOWN ARE INPLACE.
3. UTILITY LOCATIONS AND ELEVATIONS ARE APPROXIMATE.

SPECIFIC NOTE:

- ① PROTECT DROP INLETS FROM ALL CONSTRUCTION DEBRIS. DROP INLETS FEED INTO PUBLIC DITCH (TITLE) NO. 1.

NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

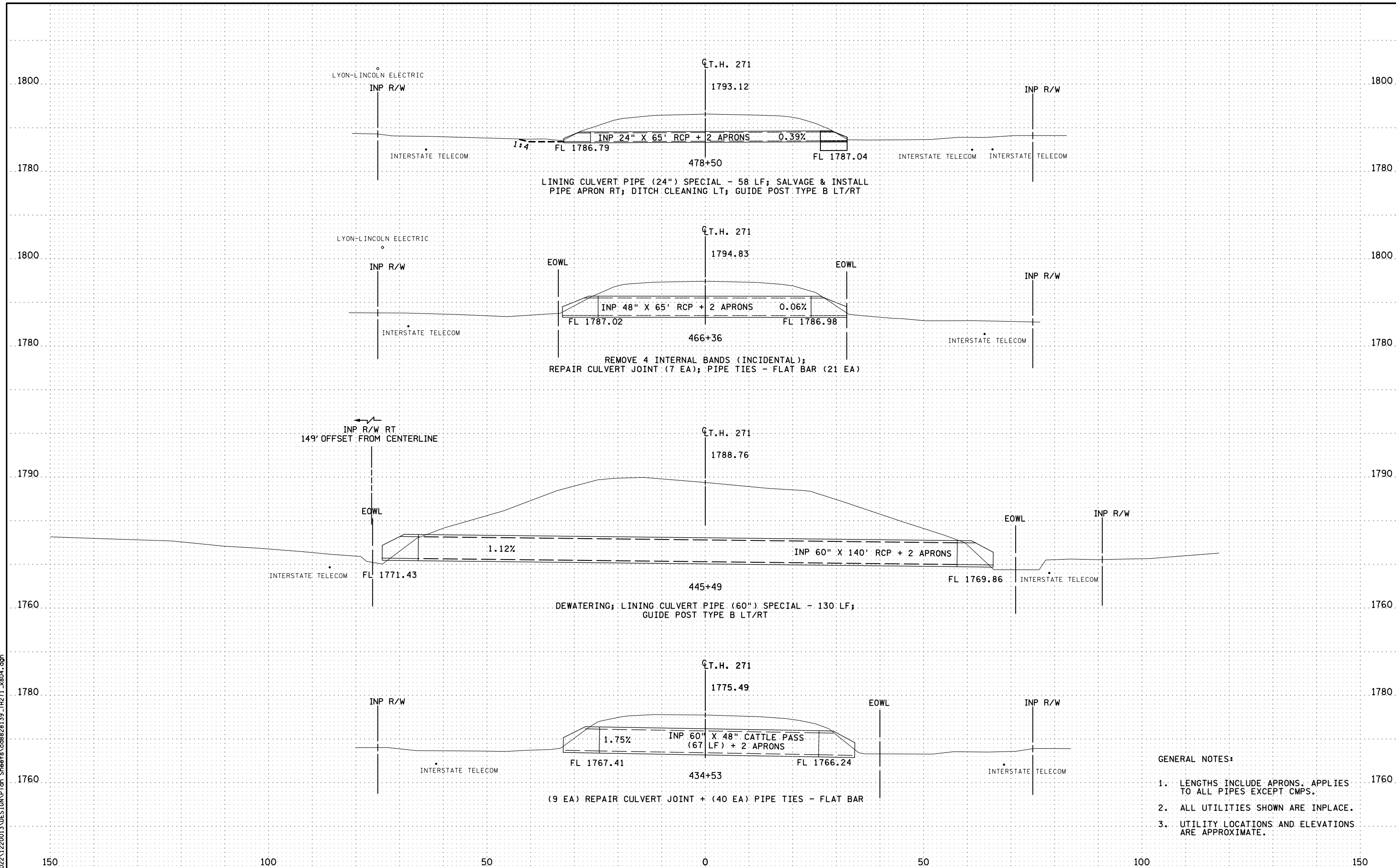
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DATE: 09/19/24 LICENSE #: 54298

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SP 8828-139  
SHEET NO. 210 OF 212 SHEETS



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GENERAL NOTES:

1. LENGTHS INCLUDE APRONS. APPLIES TO ALL PIPES EXCEPT CMPS.
2. ALL UTILITIES SHOWN ARE INPLACE.
3. UTILITY LOCATIONS AND ELEVATIONS ARE APPROXIMATE.

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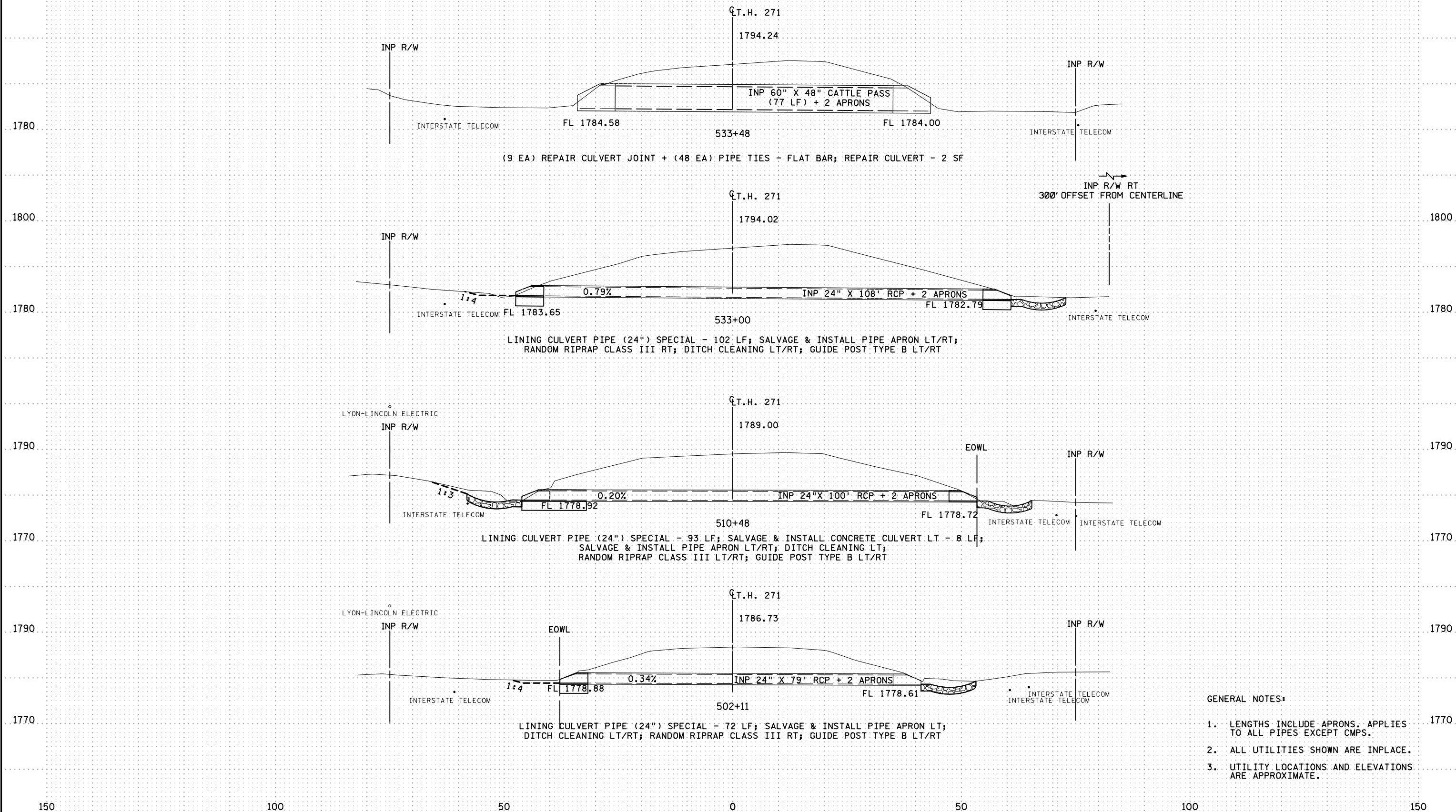
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PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

DRAINAGE PROFILES  
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SP 8828-139  
SHEET NO. 211 OF 212 SHEETS

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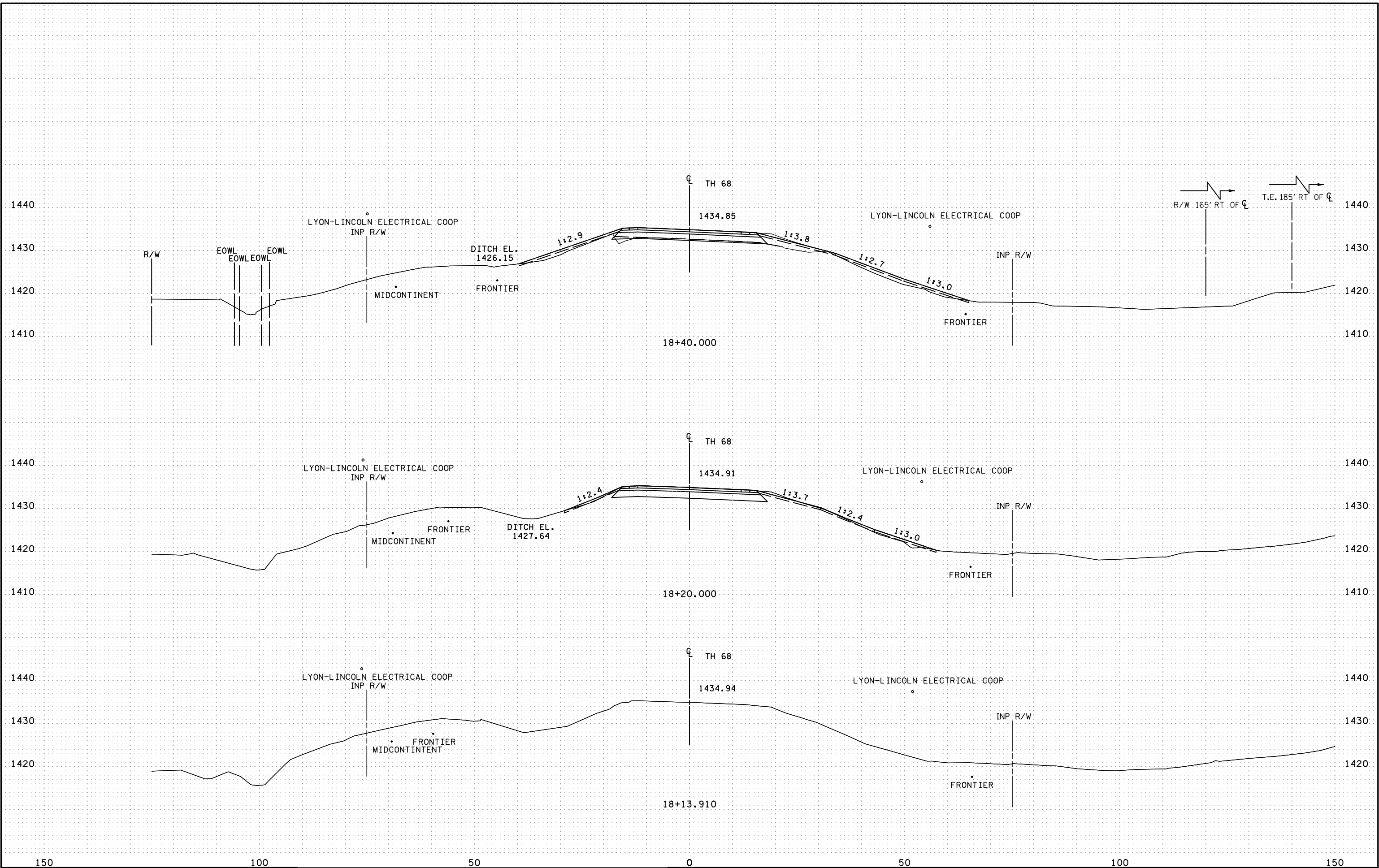
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PRINT NAME: DAN SWANSON  
SIGNATURE: *Dan Swanson*  
DATE: 09/19/24 LICENSE #: 54298

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TH 271

SP 8828-139  
SHEET NO. 212 OF 212 SHEETS

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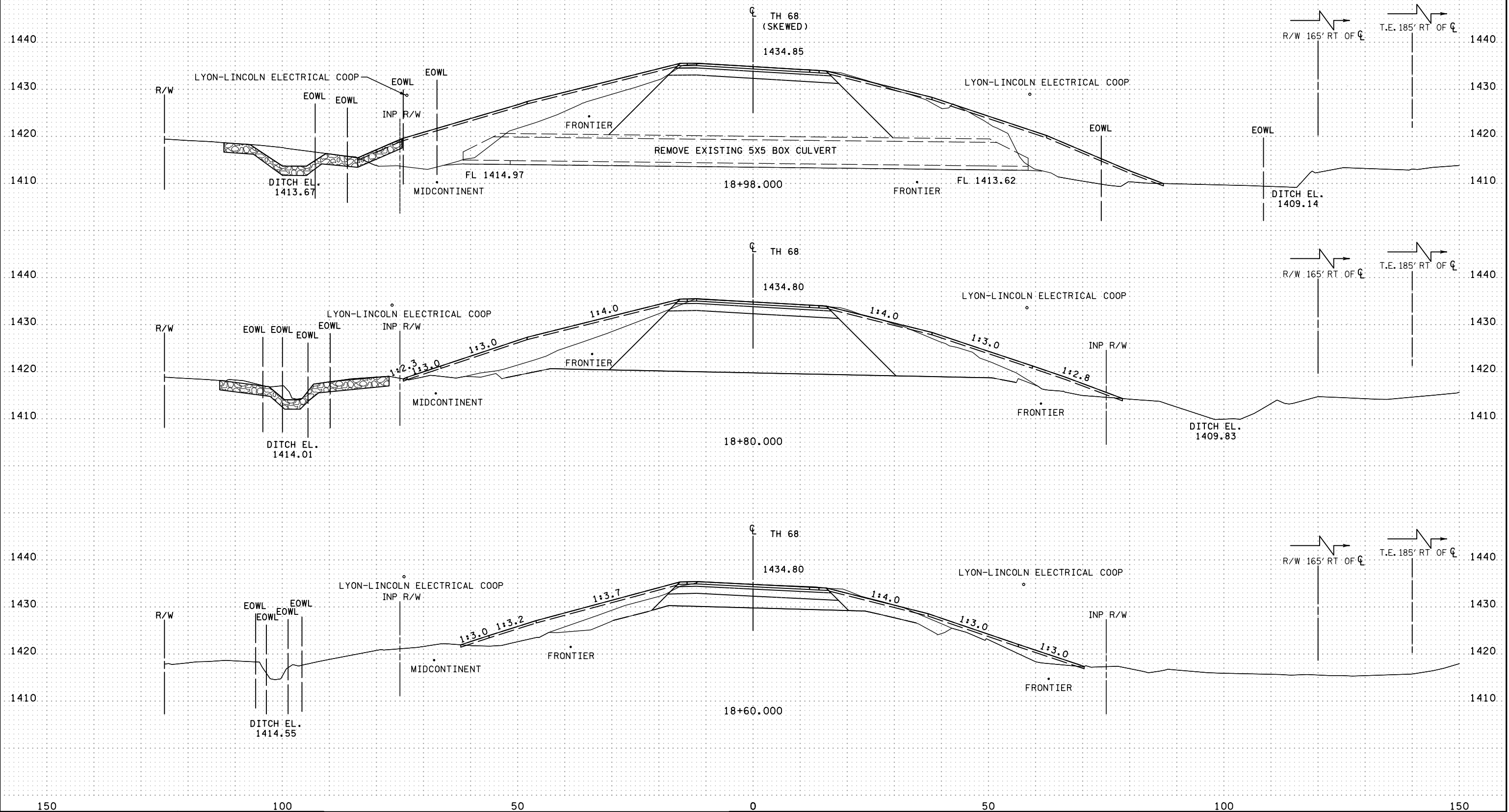


TH 68 BOX CULVERT CROSS SECTIONS  
STA. 18+13.910 - 18+40.000

SP 8828-139  
SHEET NO. X1 OF X12 SHEETS



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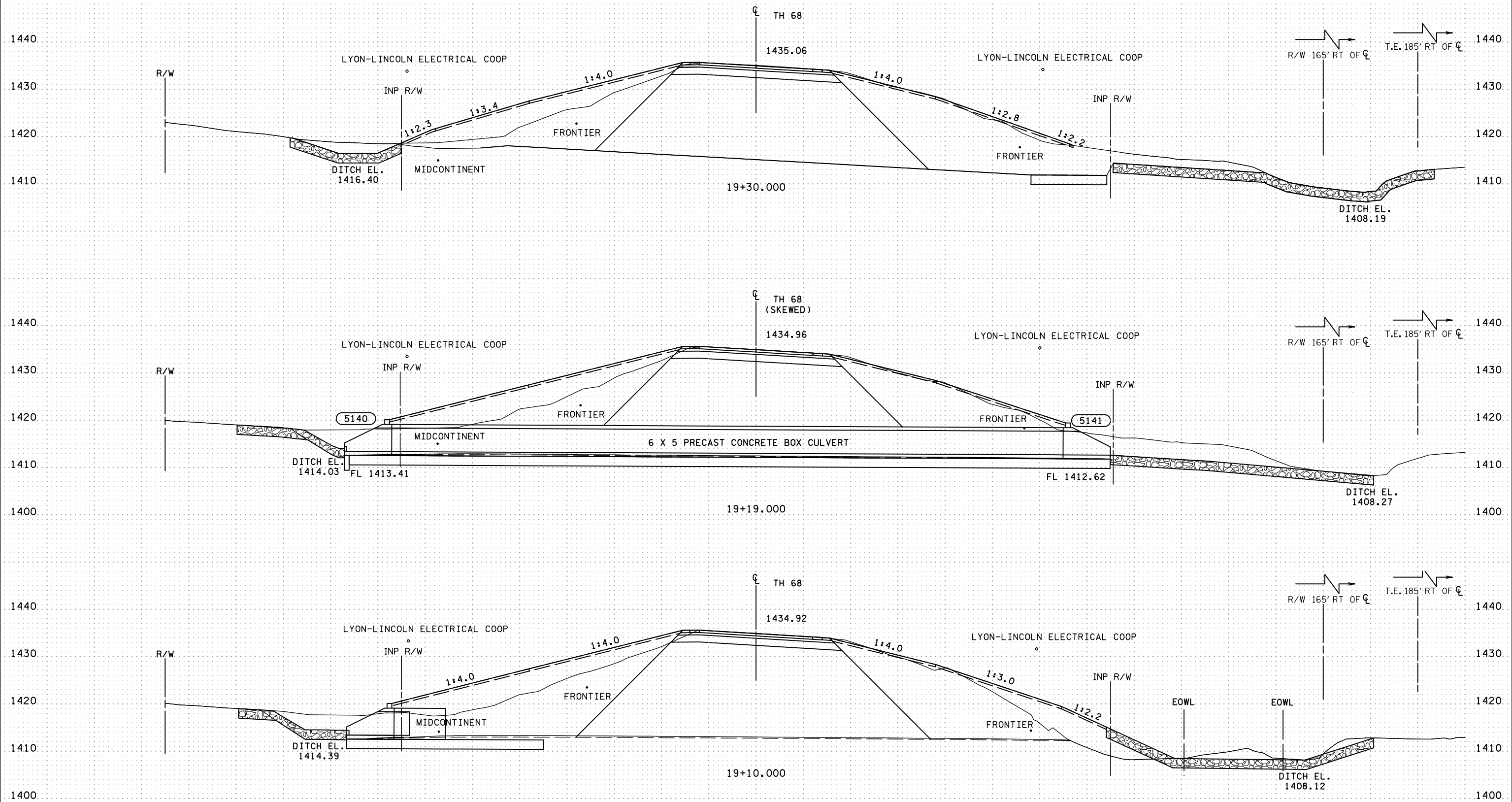
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TH 68 BOX CULVERT CROSS SECTIONS  
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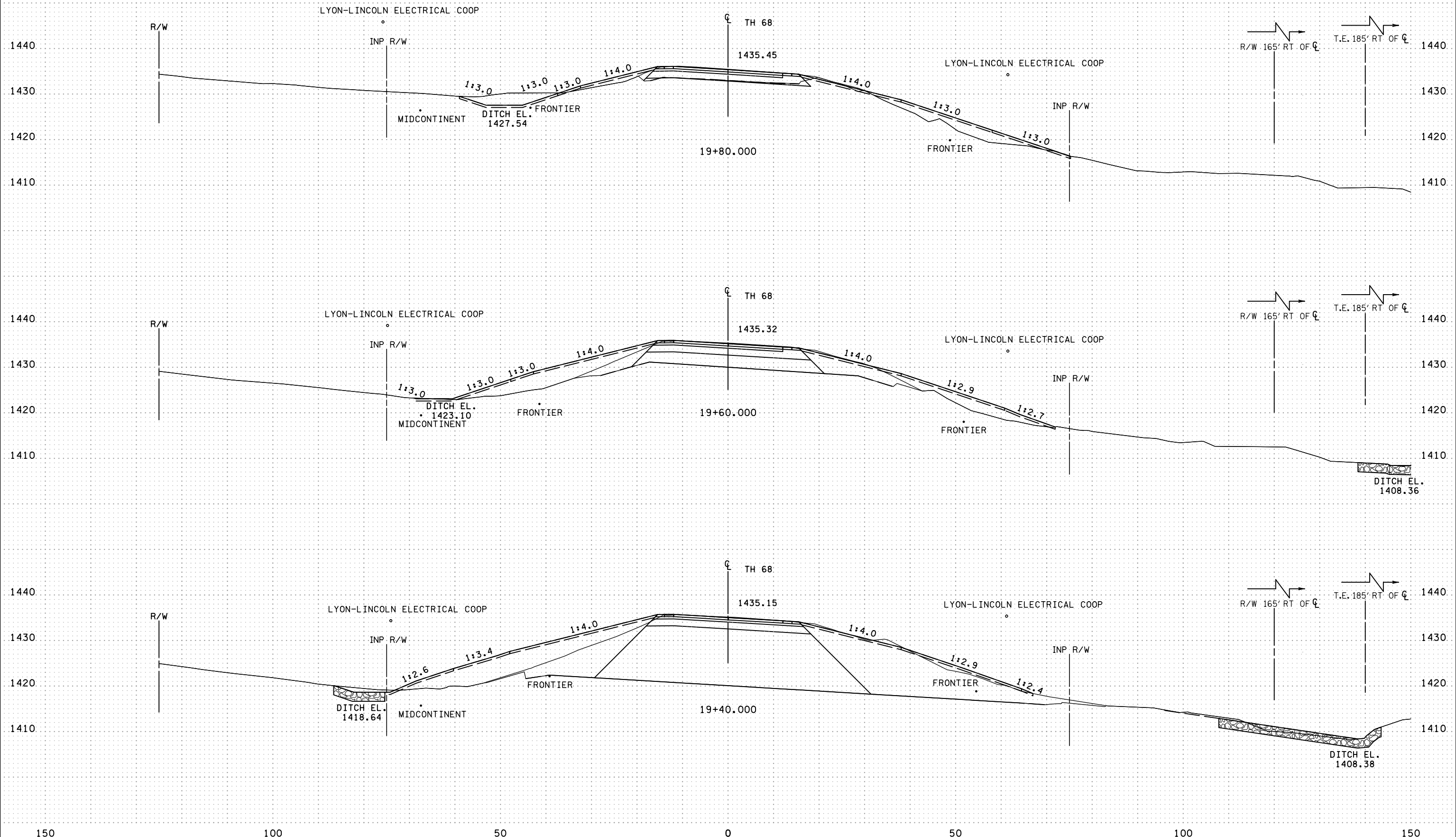
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TH 68 BOX CULVERT CROSS SECTIONS  
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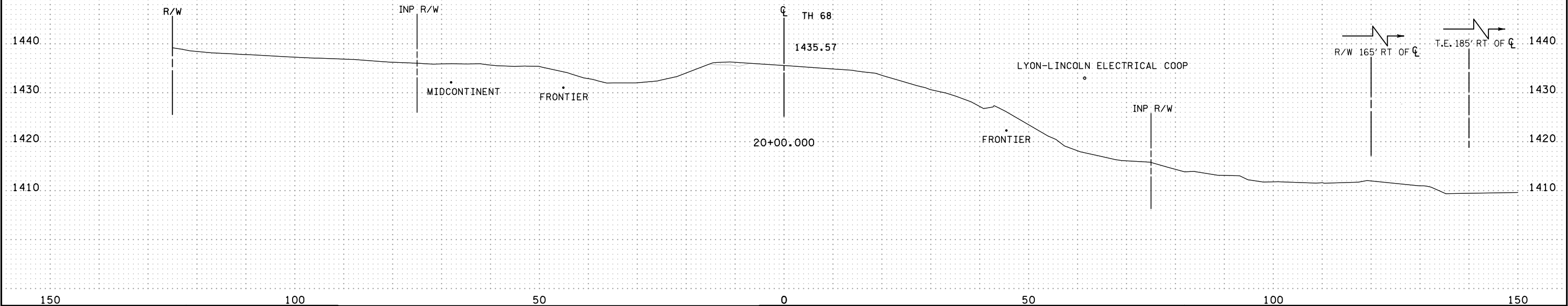


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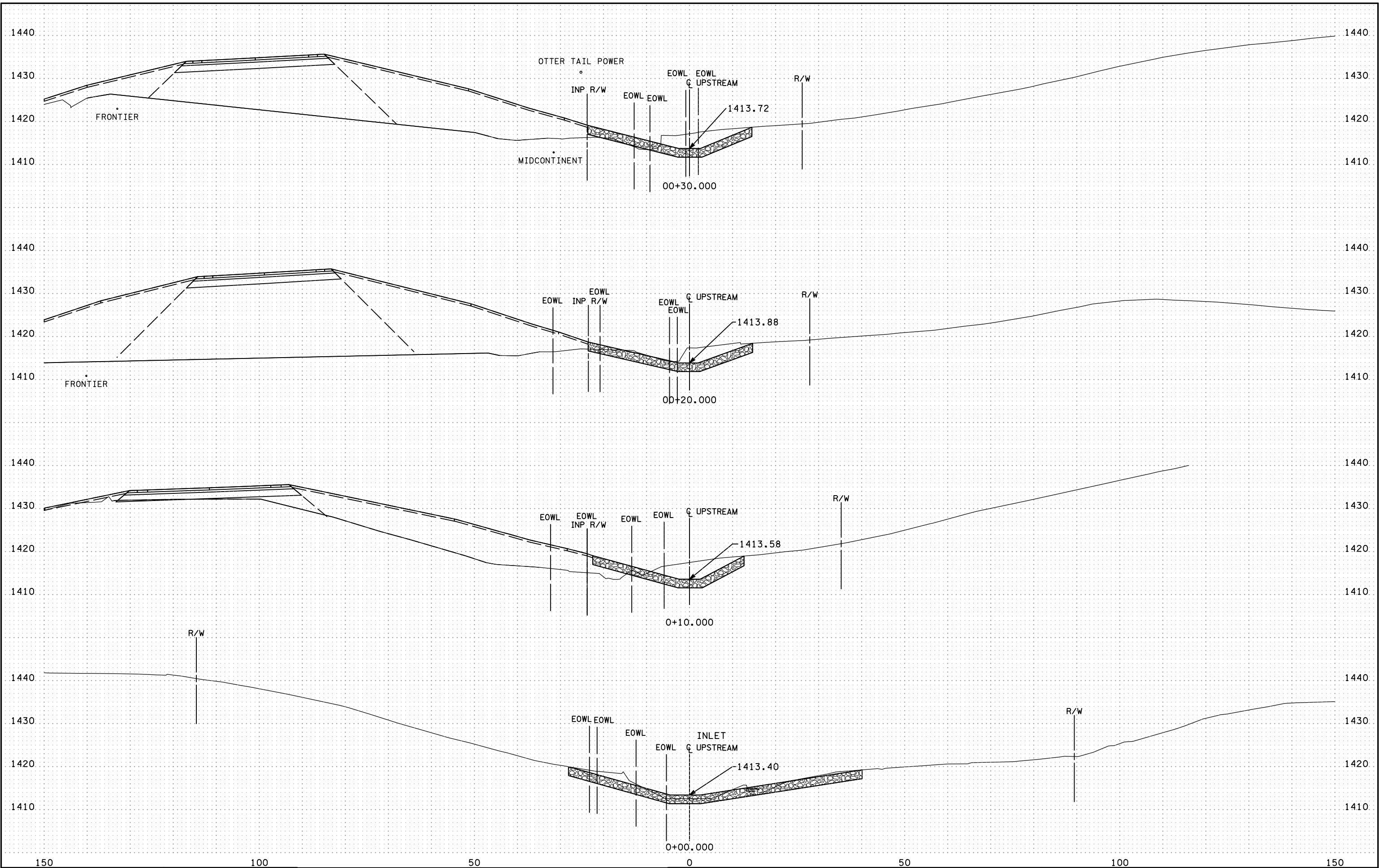


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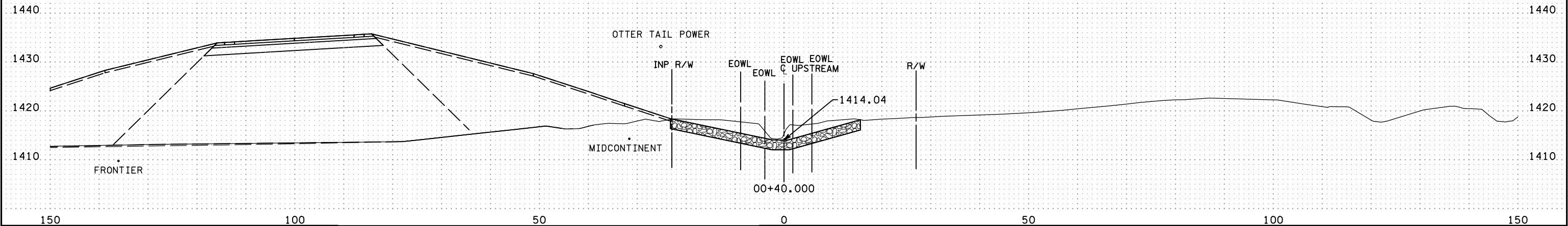


TH 68 BOX CULVERT UPSTREAM CROSS SECTIONS  
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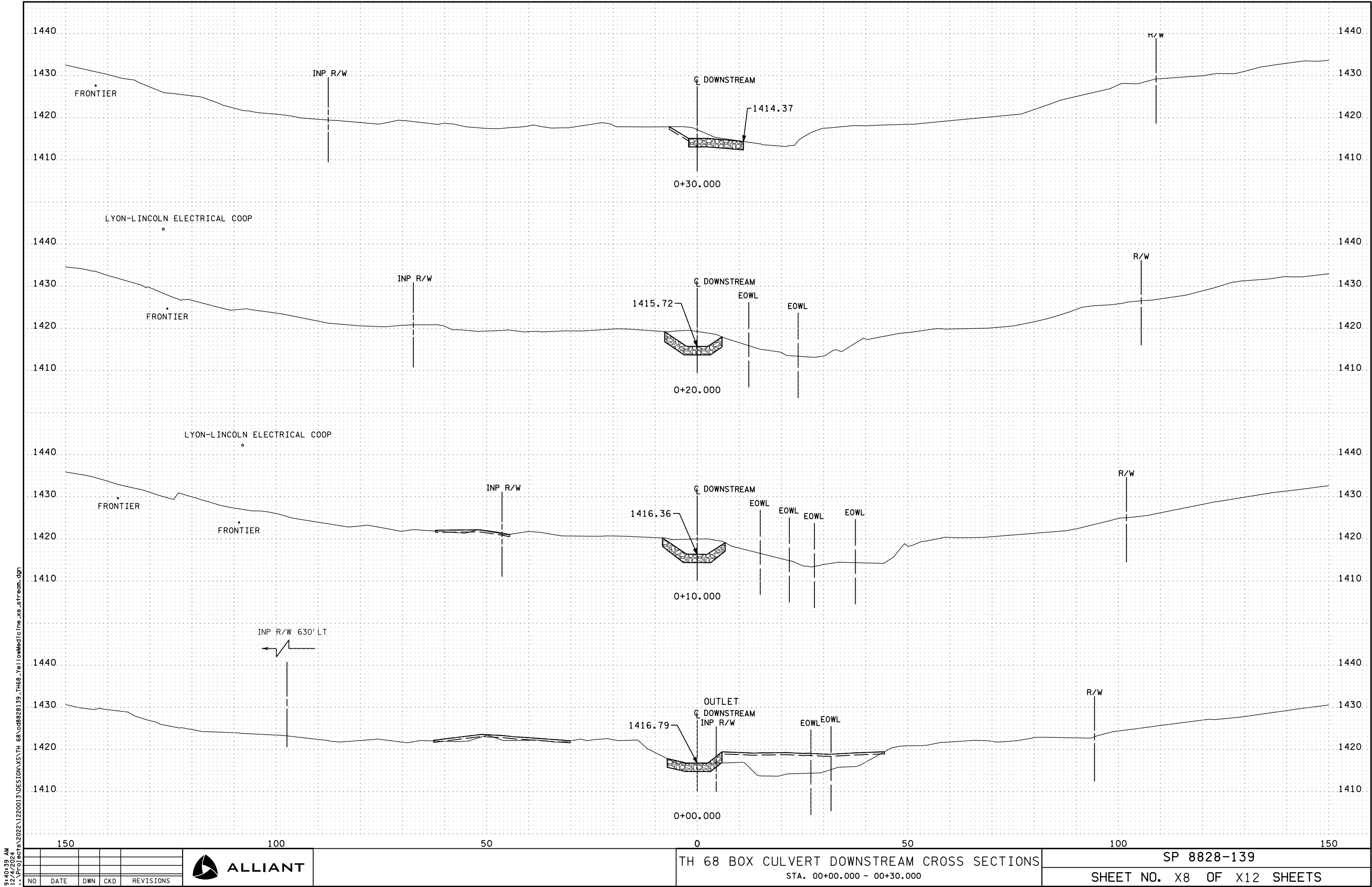


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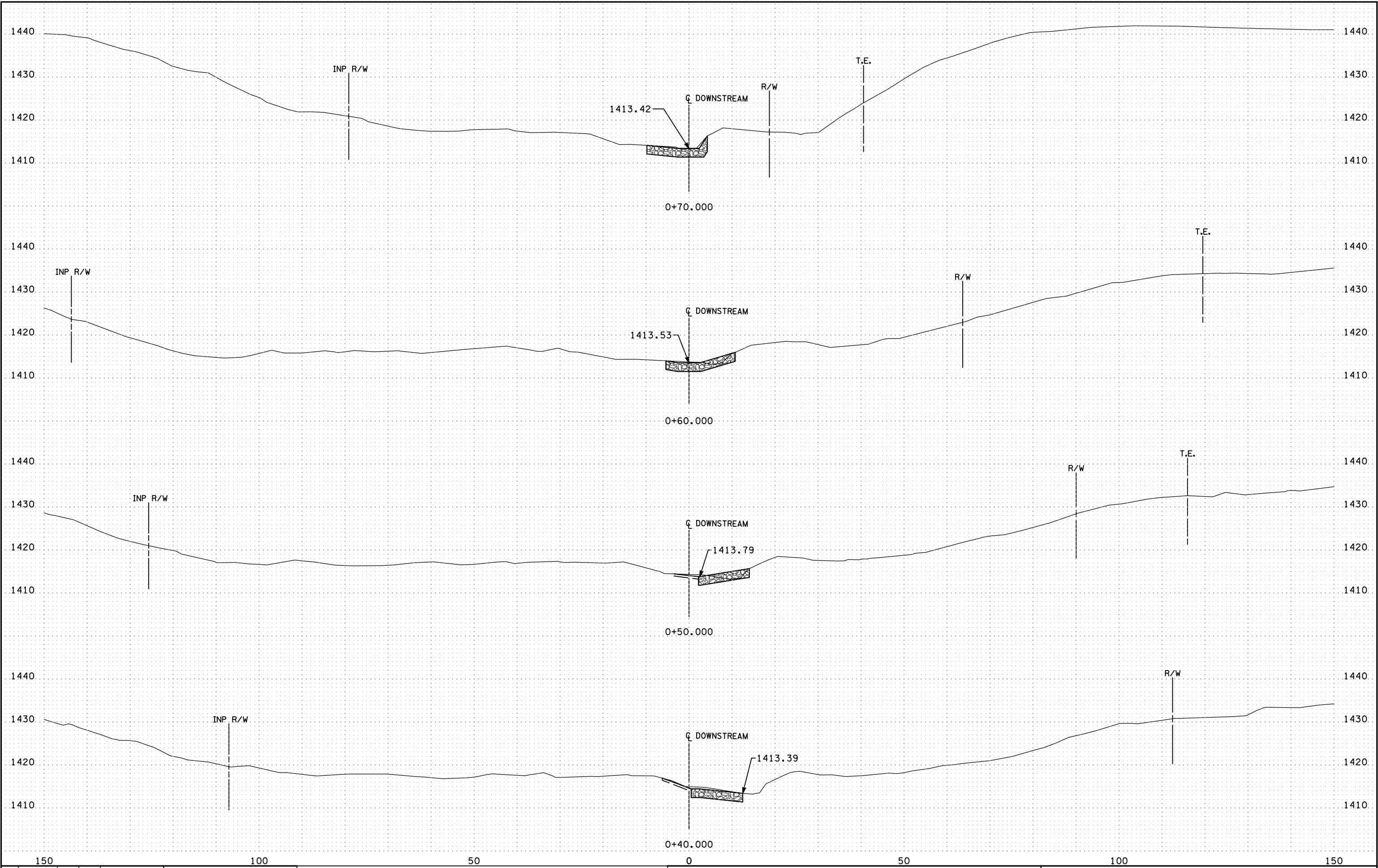


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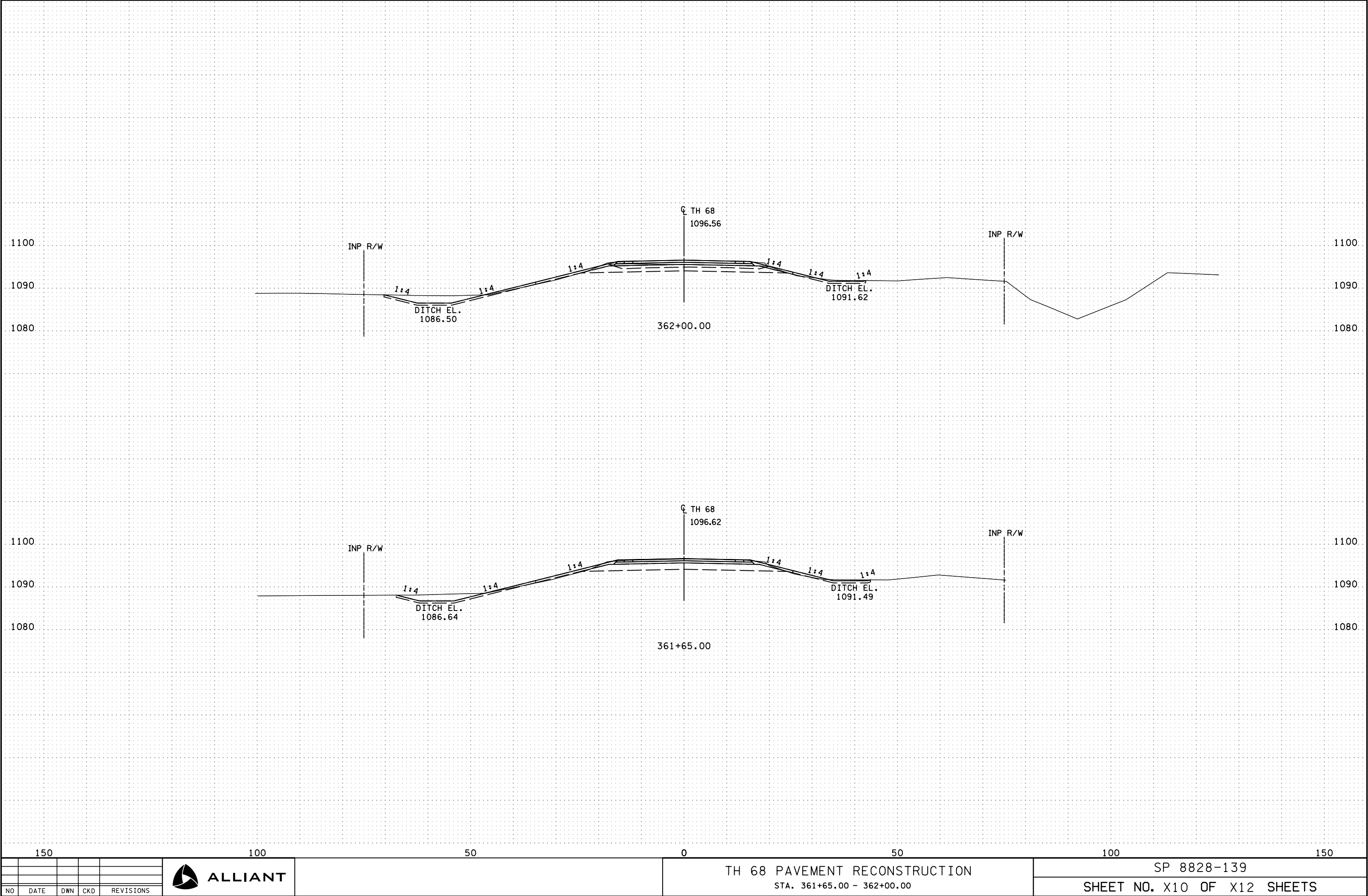
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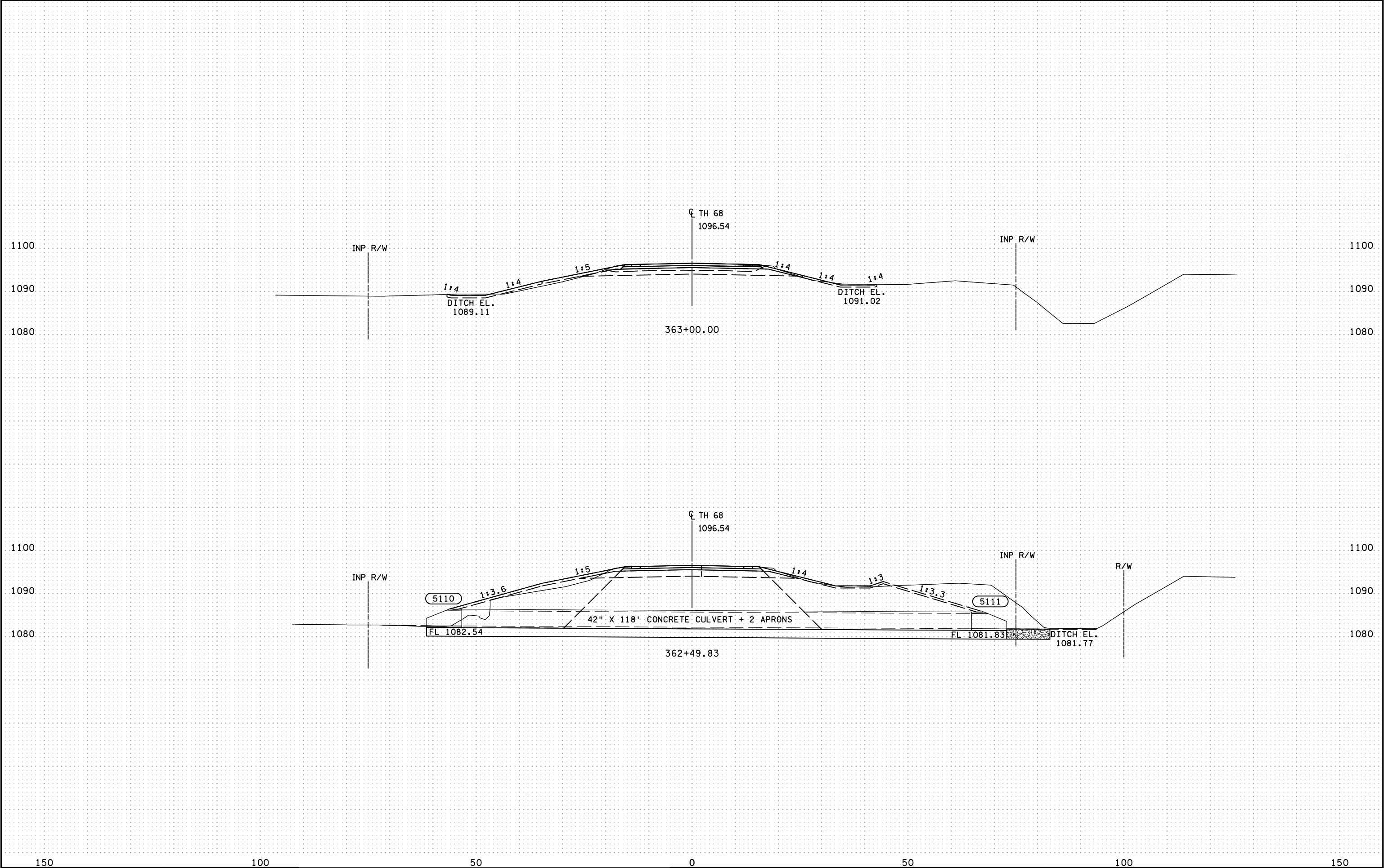
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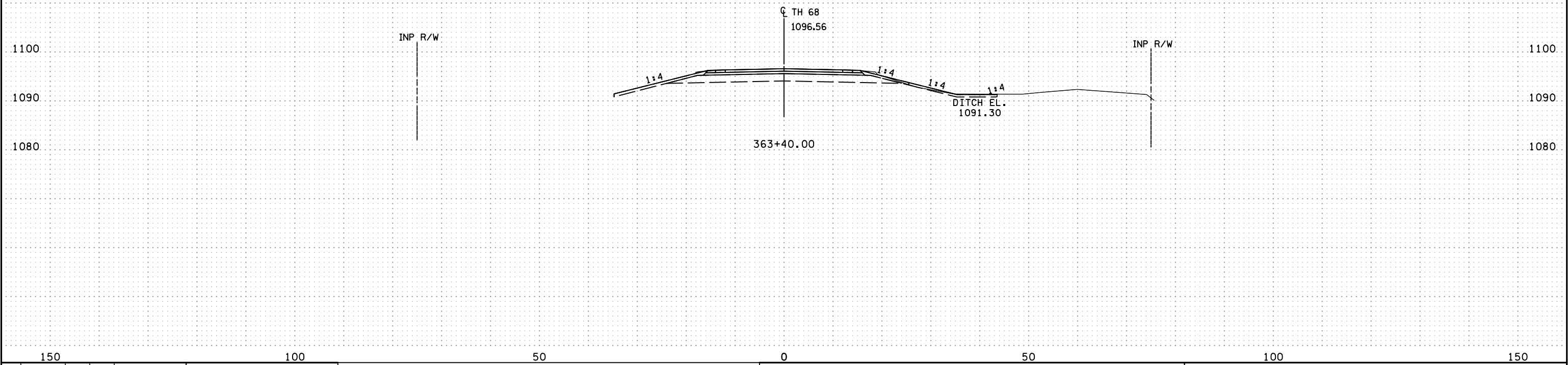


TH 68 PAVEMENT RECONSTRUCTION  
STA. 362+49.83 - 363+00.00

SP 8828-139  
SHEET NO. X11 OF X12 SHEETS



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NO	DATE	DWN	CKD	REVISIONS



TH 68 PAVEMENT RECONSTRUCTION  
STA. 363+40.00

SP 8828-139  
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