# DEPARTMENT OF TRANSPORTATION

# **Proposal**

Letting Date: March 26, 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:	250041
Prime SP:	2102-77
State Project No.:	2102-77 (TH 29=029)
FHWA Project No.:	HSIP-STBG 2125(132)
Location:	In Douglas County on TH 29 from Broadway St to Nokomis St
Type of Work:	Concrete Surfacing, ADA Improvements, Flashing Beacon System, and Signals
Length:	0.531 Miles

Starting Date: September 2, 2025 **Completion Date:** October 17, 2025

The proposal package is complete and approved for letting. Nancy Hanzlik Date: 2025.02.10 06:59:15 -06'00'

Nancy P. Hanzlik, Provisions Engineer

GMG

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.

**Bid Rigging** 

# **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 FEDERALY-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: <a href="https://mn.gov/admin/osp/government/suspended-debarred/index2.jsp">https://mn.gov/admin/osp/government/suspended-debarred/index2.jsp</a> . 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: <u>https://www.sam.gov/SAM/</u>. 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.<sup>1</sup>

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. DEFINITIONS<sup>2</sup>**

- A. <u>Contract</u>: 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. <u>Contracting Authority</u>: 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. <u>Contractor</u>: 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.<sup>3</sup>
- D. <u>Department</u>: 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. <u>First Tier Subcontractor</u>: 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.<sup>4</sup>
- G. <u>Laborer or Mechanic</u>: A worker in a construction industry labor class identified in or pursuant to Minnesota Rules 5200.1100, Master Job Classifications.<sup>5</sup>
- H. <u>Plan</u>: The plan, profiles, typical cross-sections, and supplemental drawings that show the locations, character, dimensions, and details of the work to be done.
- I. <u>Prime Contractor</u>: 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.

<sup>&</sup>lt;sup>1</sup> Minnesota Statute 177.41

<sup>&</sup>lt;sup>2</sup> MN/DOT Standard Specifications for Construction, Section 1103

<sup>&</sup>lt;sup>3</sup> Minnesota Statute 177.44, Subdivision 1

<sup>&</sup>lt;sup>4</sup> Minnesota Rules 5200.1106, Subpart 7(A)

<sup>&</sup>lt;sup>5</sup> Minnesota Rules 5200.1106, Subpart 5(A)

- J. <u>**Project**</u>: 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. <u>Second Tier Subcontractor</u>: An individual, firm, corporation, or other entity to which a first tier subcontractor sublets part of the contract.
- L. <u>Special Provisions</u>: Additions and revisions to the standard and supplemental specifications covering conditions peculiar to an individual project.
- M. <u>Specifications</u>: A general term applied to all directions, provisions, and requirements pertaining to performance of the work.
- N. <u>Subcontractor</u>: An individual, firm, corporation, or other entity to which the prime contractor or subcontractor sublets part of the contract.
- O. <u>Substantially In Place</u>: 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.<sup>6</sup>
- P. <u>**Trucking Broker</u>**: 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.<sup>7</sup></u>
- Q. <u>Trucking Firm/Multiple Truck Owner (MTO)</u>: Any business entity that owns more than one vehicle and hires the vehicles out for services to brokers or contractors on public works projects.<sup>8</sup>
- 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 funds<sup>9</sup> and state funds.<sup>10</sup>
- B. These provisions shall apply to the prime contractor and all subcontractors contracting to do all or part of the work under this contract.<sup>11</sup>
- 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.<sup>12</sup> These provisions shall be incorporated into written subcontracts and must be displayed on the poster board.<sup>13</sup>
- E. The department shall administer this contract in accordance with all applicable federal regulations, state statutes and rules<sup>14</sup>, along with the plans, specifications and provisions, which are incorporated into and found elsewhere in this contract.

<sup>&</sup>lt;sup>6</sup> Minnesota Rules 5200.1106, Subpart 5(C)

<sup>&</sup>lt;sup>7</sup> Minnesota Rules 5200.1106, Subpart 7(C)

<sup>&</sup>lt;sup>8</sup> Minnesota Rules 5200.1106, Subpart 7(B)

<sup>&</sup>lt;sup>9</sup> 29 CFR Part 5.5(a)

<sup>&</sup>lt;sup>10</sup> Minnesota Statute 177.41

<sup>&</sup>lt;sup>11</sup> Minnesota Statute 177.44, Subdivision 1

<sup>&</sup>lt;sup>12</sup> 29 CFR Part 5.5(a)(6)

<sup>&</sup>lt;sup>13</sup> 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.<sup>15</sup> 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.<sup>16</sup> Each statement shall be submitted within seven days after the regular payment date of the payroll period.<sup>17</sup> Each payroll submitted shall include all employees that performed work under this contract and provide at a minimum the following information:<sup>18</sup>
  - 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.<sup>19</sup> 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.<sup>20</sup>
- C. All payroll records must be accompanied with a completed and signed MN/DOT, 21658 Statement of Compliance Form.<sup>21</sup>
- 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.<sup>22</sup>
- 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.<sup>23</sup>

<sup>20</sup> www.dot.state.mn.us/const/labor/

<sup>&</sup>lt;sup>14</sup> Minnesota Rules 8820.3000, Subpart 2

<sup>&</sup>lt;sup>15</sup> Minnesota Court of Appeals Case Number: C6-97-1582

<sup>&</sup>lt;sup>16</sup> Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section V, Subpart 2(c)

<sup>&</sup>lt;sup>17</sup> 29 CFR Part 3.4(a)

<sup>&</sup>lt;sup>18</sup> Minnesota Rules 5200.1106, Subpart 10

<sup>&</sup>lt;sup>19</sup> Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section V, Subpart 2(c)

<sup>&</sup>lt;sup>21</sup> Minnesota Rules 5200.1106, Subpart 10

<sup>&</sup>lt;sup>22</sup> 29 CFR Part 5.5(a)(6)

<sup>&</sup>lt;sup>23</sup> 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.<sup>24</sup>
- 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.<sup>25</sup>
- 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, <u>whichever is greater</u>. 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.<sup>26</sup> 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.<sup>27</sup>
  - 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.<sup>28</sup>
- 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

<sup>&</sup>lt;sup>24</sup> Minnesota Statute 181.032

<sup>&</sup>lt;sup>25</sup> Minnesota Statute 177.44, Subdivision 7 and Minnesota Rules 5200.1106, Subpart 10

<sup>&</sup>lt;sup>26</sup> 29 CFR Part 1.7(a)

<sup>&</sup>lt;sup>27</sup> Minnesota Statute 177.44, Subdivision 4

<sup>&</sup>lt;sup>28</sup> 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.<sup>29</sup>

- 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.<sup>30</sup>
- 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.<sup>31</sup>
  - 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"<sup>32</sup> 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 owneroperator shall not accept a rebate for the purpose of reducing or otherwise decreasing the value of the compensation paid.<sup>33</sup>
- 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.<sup>34</sup>

#### 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.<sup>36</sup>
- C. Credit toward the total prevailing wage rate shall be determined for each individual employee and is allowed for bona fide fringe benefits that:<sup>37</sup>
  - 1. include contributions irrevocably made by a contractor on behalf of an employee to a financially responsible trustee, third person, fund, plan, or program;

<sup>&</sup>lt;sup>29</sup> Minnesota Statute 177.42, Subdivision 6

 <sup>&</sup>lt;sup>30</sup> Minnesota Statute 177.42, Subdivision 1(2)
 <sup>31</sup> Minnesota Rules 5200.0120, Subpart 1
 <sup>32</sup> Minnesota Rules 5200.0120, Subpart 2

<sup>&</sup>lt;sup>33</sup> Minnesota Rules 5200.1106, Subpart 6

<sup>&</sup>lt;sup>34</sup> Minnesota Statute 177.44, Subdivision 6

<sup>&</sup>lt;sup>35</sup> 29 CFR Parts 5.26 and 5.27

<sup>&</sup>lt;sup>36</sup> 29 CFR Part 5.28

<sup>&</sup>lt;sup>37</sup> 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.<sup>38</sup>
- 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.<sup>39</sup>
- 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.<sup>40</sup> 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.<sup>41</sup>
- 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.<sup>42</sup> The prevailing hours of labor is defined as not more than 8 hours per day or more than 40 hours per week.<sup>43</sup>
- 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.<sup>44</sup> The prime contractor shall ensure that all contractors adhere to the following requirements:

<sup>&</sup>lt;sup>38</sup> 29 CFR Part 5.29(f)

<sup>&</sup>lt;sup>39</sup> Minnesota Statute 177.44, Subdivision 7 and Minnesota Rules 5200.1106, Subpart 10

<sup>&</sup>lt;sup>40</sup> Minnesota Rules 5200.1106, Subpart 10

<sup>&</sup>lt;sup>41</sup> Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 7

<sup>&</sup>lt;sup>42</sup> Minnesota Statute 177.44, Subdivision 1

<sup>&</sup>lt;sup>43</sup> Minnesota Statute 177.42, Subdivision 4

<sup>&</sup>lt;sup>44</sup> Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 1(a)

- 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.<sup>45</sup>
- 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".<sup>46</sup> Contractors should refer to the Master Job Classification List<sup>47</sup> 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 requirements<sup>48</sup> 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.<sup>49</sup>
- B. Pursuant with state regulations, owners, supervisors and foreman performing work under the contract<sup>50</sup> 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.<sup>51</sup>
  - 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: <sup>52</sup>
  - 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.

<sup>&</sup>lt;sup>45</sup> Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 2

<sup>&</sup>lt;sup>46</sup> Minnesota Statute 177.44, Subdivision 1

<sup>&</sup>lt;sup>47</sup> Minnesota Rules 5200.1100

<sup>&</sup>lt;sup>48</sup> 29 CFR Part 5.2(o) and Minnesota Statute 177.41

<sup>&</sup>lt;sup>49</sup> Minnesota Statute 177.44, Subdivision 7 and Minnesota Rules 5200.1106, Subpart 10

<sup>&</sup>lt;sup>50</sup> Minnesota Statute 177.44, Subdivision 1

<sup>&</sup>lt;sup>51</sup> 29 CFR Part 5.2(m)

<sup>&</sup>lt;sup>52</sup> 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.<sup>53</sup>
- 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: <sup>54</sup>
  - 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"<sup>55</sup> and compensate the trainee for the actual work performed regardless of the trainee's skill level, unless the trainee is:<sup>56</sup>
    - 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:<sup>57</sup>
  - 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"<sup>58</sup> and compensate the helper for the actual work performed regardless of the helper's skill level.<sup>59</sup>
- 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.<sup>60</sup>

## XI. SUBCONTRACTING PART OF THIS CONTRACT<sup>61</sup>

- 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.

<sup>&</sup>lt;sup>53</sup> MN/DOLI Division of Apprenticeship – April 6, 1995 Memorandum from Jerry Briggs, Director

<sup>&</sup>lt;sup>54</sup> Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 4(b)

<sup>&</sup>lt;sup>55</sup> Minnesota Statute 177.44, Subdivision 1

<sup>&</sup>lt;sup>56</sup> Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 1(a)

<sup>&</sup>lt;sup>57</sup> Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 4(c)

<sup>&</sup>lt;sup>58</sup> Minnesota Statute 177.44, Subdivision 1

<sup>&</sup>lt;sup>59</sup> Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 1(a)

<sup>&</sup>lt;sup>60</sup> Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 4(a)(b)(c)

<sup>&</sup>lt;sup>61</sup> 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.<sup>62</sup>

### 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.<sup>63</sup> 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.<sup>64</sup>

#### 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.<sup>65</sup>
  - 2. The hauling of any or all stockpiled or excavated materials on the project work site to other locations on the same project.<sup>66</sup>
- 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.<sup>67</sup>

<sup>&</sup>lt;sup>62</sup> Minnesota Statute 161.315, Subdivision 3(3)

<sup>&</sup>lt;sup>63</sup> Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 1(a)

<sup>&</sup>lt;sup>64</sup> Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section V, Subpart 2(g)

<sup>&</sup>lt;sup>65</sup> 29 CFR Part 5.2(1)(2)

<sup>&</sup>lt;sup>66</sup> 29 CFR Part 5.2(j)(1)

<sup>&</sup>lt;sup>67</sup> 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.<sup>68</sup>
- 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.<sup>69</sup>
- 4. The delivery of materials from a non-commercial establishment to the project and the return haul.<sup>70</sup>
- 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.<sup>71</sup>
- 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.<sup>72</sup>
- 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.<sup>73</sup>
- 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,<sup>74</sup> which are incorporated into and found elsewhere in this contract.
  - 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.<sup>75</sup> 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.<sup>76</sup> 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).

<sup>&</sup>lt;sup>68</sup> Minnesota Rules 5200.1106, Subpart 3B(2)

<sup>&</sup>lt;sup>69</sup> Minnesota Rules 5200.1106, Subpart 3B(1)

<sup>&</sup>lt;sup>70</sup> Minnesota Rules 5200.1106, Subpart 3B(2)

<sup>&</sup>lt;sup>71</sup> Minnesota Rules 5200.1106, Subpart 3B(3)

<sup>&</sup>lt;sup>72</sup> Minnesota Rules 5200.1106, Subpart 3B(4)

<sup>&</sup>lt;sup>73</sup> Minnesota Rules 5200.1106, Subpart 3B(5)(6)

<sup>&</sup>lt;sup>74</sup> Minnesota Rules 5200.1106, Subpart 1

<sup>&</sup>lt;sup>75</sup> Minnesota Rules 5200.1106, Subpart 10

<sup>&</sup>lt;sup>76</sup> 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.<sup>77</sup>
- 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.<sup>78</sup> 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.<sup>79</sup>
- 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 age<sup>80</sup> and compliance with all applicable federal and/or state regulations.<sup>81</sup>

## 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.<sup>82</sup>
- 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.<sup>83</sup>
  - 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.<sup>84</sup>
  - 3. The department may <u>reject a bid</u> from a prime contractor that has demonstrated continued or persistent noncompliance with the prevailing wage law on previous or current contracts with the department.<sup>85</sup>
  - 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.<sup>86</sup>
- 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.<sup>87</sup>
- D. All required documents and certification reports are legal documents; willful falsification of the documents may result in civil action and/or criminal prosecution<sup>88</sup> and may be grounds for debarment proceedings.<sup>89</sup>

<sup>&</sup>lt;sup>77</sup> Minnesota Rules 5200.0910, Subpart F

<sup>&</sup>lt;sup>78</sup> Minnesota Rules 5200.0930, Subpart 4

<sup>&</sup>lt;sup>79</sup> 29 CFR Part 570.2(a)(ii)

<sup>&</sup>lt;sup>80</sup> Minnesota Statute 181A.06, Subdivision 4

<sup>&</sup>lt;sup>81</sup> MN/DOT Standard Specifications for Construction, Section 1701

<sup>&</sup>lt;sup>82</sup> MN/DOT Standard Specifications for Construction, Section 1801

<sup>&</sup>lt;sup>83</sup> Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 6

<sup>&</sup>lt;sup>84</sup> MN/DOT Standard Specifications for Construction, Section 1906

<sup>&</sup>lt;sup>85</sup> Minnesota Statute 161.32, Subdivision 1(d)

<sup>&</sup>lt;sup>86</sup> MN/DOT Standard Specifications for Construction, Section 1808

<sup>&</sup>lt;sup>87</sup> Minnesota Statute 177.44, Subdivision 6

<sup>&</sup>lt;sup>88</sup> Minnesota Statutes 16B, 161.315, Subdivision 2, 177.43, Subdivision 5 177.44, Subdivision 6, 609.63

<sup>&</sup>lt;sup>89</sup> 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 <u>delivery</u>, 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. <u>Maintenance</u> 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 <u>are covered</u> 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 PREDERTERMINED MINIMUM WAGE, Subp. 2. Classifications.

"General Decision Number: MN20250234 01/24/2025

Superseded General Decision Number: MN20240234

State: Minnesota

Construction Types: Heavy and Highway

Counties: Becker, Big Stone, Clay, Douglas, Grant, Mahnomen, Otter Tail, Pope, Stevens, Swift, Traverse and Wilkin 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> <li>Executive Order 14026</li> <li>generally applies to the contract.</li> <li>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.</li> </ul>
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:	<pre>     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. </pre>

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

Modification Number	Publication Date
0	01/03/2025
1	01/24/2025

#### \* SAMN2024-004 11/18/2024

	Rates	Fringes
ARTICULATED HAULER	\$ 33.58	26.79
BOILERMAKER	\$ 48.35	31.93
BOOM TRUCK	\$ 30.21	22.55
BRICKLAYER	\$ 35.88	23.20
CARPENTER	\$ 36.49	28.29
CEMENT MASON	\$ 45.17	24.22
ELECTRICIAN	\$ 46.00	30.00
FLAG PERSON	\$ 27.50	20.74
GROUND PERSON	\$ 40.14	0.00
HEATING AND FROST INSULATORS	\$ 17.50 **	0.00
IRONWORKER	\$ 41.19	35.68
LABORER: Common or General (GENERAL LABOR WORK)	\$ 32.23	22.88
LABORER: Landscape (GARDENER, SOD LAYER AND NURSERY OPERATOR)	\$ 25.00	0.00
LABORER: Skilled (ASSISTING SKILLED CRAFT JOURNEYMAN)	\$ 32.23	22.88
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)	\$ 25.00	2.00
LINEMAN	\$ 36.26	6.93
MILLWRIGHT	\$ 44.38	28.92
OFF-ROAD TRUCK	\$ 51.13	3.48
PAINTER (INCLUDING HAND		

BRUSHED, HAND SPRAYED, AND

THE TAPING OF PAVEMENT MARKINGS)\$ 32.38	25.28
PAVEMENT MARKING OR MARKING REMOVAL EQUIPMENT ((ONE OR TWO PERSON OPERATORS); SELF-PROPELLED TRUCK OR TRAILER MOUNTED UNITS)\$ 35.00	13.24
Piledriver (INCLUDING VIBRATORY DRIVER OR EXTRACTOR FOR PILING AND SHEETING OPERATIONS)\$ 45.71	29.73
PIPEFITTER/STEAMFITTER\$ 47.91	20.04
PIPELAYER (WATER, SEWER AND GAS)\$ 35.73	22.88
PLUMBER\$ 44.78	23.04

#### POWER EQUIPMENT OPERATOR:

(Highway/Heavy Group 2).....\$ 34.94 26.79 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).....\$ 33.92 26.79 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).....\$ 33.58 26.79 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 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).....\$ 31.71 26.79 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).....\$ 31.06 26.79 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.....\$ 27.00

3.33

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).....\$ 21.39 14.90 TRAFFIC CONTROL PERSON

(TEMPORARY SIGNAGE).....\$ 23.04 17.10

TRUCK DRIVER (Group 1).....\$ 28.92 MECHANIC; TRACTOR TRAILER DRIVER; TRUCK DRIVER (HAULING MACHINERY INCLUDING OPERATION OF HAND AND POWER OPERATED WINCHES) TRUCK DRIVER (Group 2).....\$ 35.66 18.07 FOUR OR MORE AXLE UNIT, STRAIGHT BODY TRUCK

TRUCK DRIVER (Group 3).....\$ 31.93 25.00 BITUMINOUS DISTRIBUTOR DRIVER; BITUMINOUS DISTRIBUTOR (ONE PERSON OPERATION); THREE AXLE UNITS

TRUCK DRIVER (Group 4).....\$ 31.93 25.00 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.

UNDERGROUND AND OPEN DITCH LABORER (EIGHT FEET BELOW STARTING GRADE LEVEL).....\$ 29.00 20.74

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)).

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.

?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.

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#### WAGE DETERMINATION APPEALS PROCESS

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

a) a survey underlying a wage determinationb) an existing published wage determinationc) an initial WHD letter setting forth a position ona wage determination matterd) 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 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"

# $\overline{\mathbb{W}}$ this notice must be posted on the jobsite in a conspicuous place

#### **Construction Type: Highway and Heavy**

#### **Region Number: 04**

Counties within region:

- BECKER-03
- BIG STONE-06
- CLAY-14
- DOUGLAS-21
- GRANT-26
- MAHNOMEN-43
- OTTERTAIL-56
- POPE-61
- STEVENS-75
- SWIFT-76
- TRAVERSE-78
- WILKIN-84

#### Effective: 2024-11-18

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 C	RAFTS 701 - 730)				
101	LABORER, COMMON (GENERAL LABOR WORK)	2024-11-18	32.23	22.88	55.11
		2025-05-01	34.50	24.26	58.76

LABOR CODE AND CLASS		EFFECT DATE	BASIC RATE	FRINGE RATE	TOTAL RATE	
102	LABORER, SKILLED (ASSISTING SKILLED CRAFT JOURNEYMAN)	2024-11-18	32.23	22.88	55.11	
		2025-05-01	34.50	24.26	58.76	
103	LABORER, LANDSCAPING (GARDENER, SOD LAYER AND NURSERY OPERATOR)	2024-11-18	25.00	0.00	25.00	
104	FLAG PERSON	2024-11-18	27.50	20.74	48.24	
105	WATCH PERSON	FOR RATE CALL DLI.PREVWAGE		EMAIL		
106	BLASTER	FOR RATE CALL DLI.PREVWAGE		EMAIL		
107	PIPELAYER (WATER, SEWER AND GAS)	2024-11-18	35.73	22.88	58.61	
		2025-05-01	38.00	24.26	62.26	
108	TUNNEL MINER	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US				
109	UNDERGROUND AND OPEN DITCH LABORER (EIGHT FEET BELOW STARTING GRADE LEVEL)	2024-11-18	29.00	20.74	49.74	
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	21.39	14.90	36.29	
111	TRAFFIC CONTROL PERSON (TEMPORARY SIGNAGE)	2024-11-18	23.04	17.10	40.14	
112		2024-11-18	22.15	12.77	34.92	

#### LABOR CODE AND CLASS

#### EFFECT DATE BASIC RATE FRINGE RATE TOTAL RATE

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.

#### SPECIAL EQUIPMENT (201 - 204)

201	ARTICULATED HAULER	2024-11-18	33.58	26.79	60.37
		2025-05-05	34.60	29.17	63.77
202	BOOM TRUCK	2024-11-18	30.21	22.55	52.76
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	25.00	2.00	27.00
204	OFF-ROAD TRUCK	2024-11-18	51.13	3.48	54.61
205	PAVEMENT MARKING OR	2024-11-18	35.00	13.24	48.24
203	PAVEMENT MARKING OR MARKING REMOVAL EQUIPMENT (ONE OR TWO PERSON OPERATORS); SELF-PROPELLED TRUCK OR TRAILER MOUNTED UNITS.	2024-11-18	53.00	13.24	48.24

#### HIGHWAY/HEAVY POWER EQUIPMENT OPERATOR

GROUP 2	2024-1	11-18	34.94	26.79	61.73
	2025-0	05-05	36.03	29.17	65.20
302	HELICOPTER PILOT (HIGHWAY AND HEAVY ONLY)				
303	CONCRETE PUMP (HIGHWAY AND HEAVY ONLY)				
304	ALL CRANES WITH OVER 135-FOOT BOOM, EX	CLUDING JIB (HIGH	WAY AND HEAVY	Y ONLY)	

LABOR CODE AND CLASS		EFFECT DATE	BASIC RATE F	RINGE RATE TO	TAL RATE	
305	DRAGLINE, CRAWLER, HYDRAULIC BA EQUIPMENT WITH SHOVEL-TYPE CON RATED CAPACITY INCLUDING ALL AT	FROLS THREE CUB	IC YARDS AND OV	ER MANUFACTURE		
306	GRADER OR MOTOR PATROL					
307	PILE DRIVING (HIGHWAY AND HEAVY	ONLY)				
308	TUGBOAT 100 H.P. AND OVER WHEN L	ICENSE REQUIRED	(HIGHWAY AND H	EAVY ONLY)		
GROUP 3		2024-11-18	33.92	26.79	60.71	
		2025-05-05	34.96	29.17	64.13	
309	ASPHALT BITUMINOUS STABILIZER PL	LANT				
310	CABLEWAY					
311	CONCRETE MIXER, STATIONARY PLAN	NT (HIGHWAY AND	HEAVY ONLY)			
312	DERRICK (GUY OR STIFFLEG)(POWER)	(SKIDS OR STATION	NARY) (HIGHWAY	AND HEAVY ONLY	)	
313	DRAGLINE, CRAWLER, HYDRAULIC BA EQUIPMENT WITH SHOVEL-TYPE CON CAPACITY INCLUDING ALL ATTACHM	FROLS, UP TO THRE	EE CUBIC YARDS N	MANUFACTURER.S		
314	DREDGE OR ENGINEERS, DREDGE (POV	WER) AND ENGINE	ER			
315	FRONT END LOADER, FIVE CUBIC YAR HEAVY ONLY)	DS AND OVER INC	LUDING ATTACHN	IENTS. (HIGHWAY A	AND	
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 (HIGHWA	Y AND HEAVY ON	LY)			
GROUP 4		2024-11-18	33.58	26.79	60.37	
		2025-05-05	34.60	29.17	63.77	
323	AIR TRACK ROCK DRILL					
324	AUTOMATIC ROAD MACHINE (CMI OR	SIMILAR) (HIGHWA	AY AND HEAVY O	NLY)		
325	BACKFILLER OPERATOR					
326	CONCRETE BATCH PLANT OPERATOR	(HIGHWAY AND HI	EAVY 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 C	OR SIMILAR TYPE W	/ITH ALL ATTACH	MENTS		
330	CAT CHALLENGER TRACTORS OR SIMILAR TYPES PULLING ROCK WAGONS, BULLDOZERS AND SCRAPERS					
331	CHIP HARVESTER AND TREE CUTTER					
332	CONCRETE DISTRIBUTOR AND SPREAI MACHINE, AND SPRAY MACHINE	DER FINISHING MA	CHINE, LONGITUE	DINAL FLOAT, JOINT		
333	CONCRETE MIXER ON JOBSITE (HIGHW	VAY AND HEAVY O	NLY)			

LABOR CODE AND CLASS	EFFECT DATE BASIC RATE FRINGE RATE TOTAL RATE					
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, PLANNING, 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 31.71 26.79 58.50					

GROUP 5	2024-11-18	31.71	26.79	58.50

LABOR CODE AND CLASS		EFFECT DATE	BASIC RATE	FRINGE RATE	TOTAL RATE
		2025-05-05	32.64	29.17	61.81
369	AIR COMPRESSOR, 600 CFM OR OVER (	HIGHWAY AND HE	EAVY ONLY)		
370	BITUMINOUS ROLLER (UNDER EIGHT	FONS)			
371	CONCRETE SAW (MULTIPLE BLADE) (F	OWER OPERATED	)		
372	FORM TRENCH DIGGER (POWER)				
373	FRONT END, SKID STEER UP TO 1C YD				
374	GUNITE GUNALL (HIGHWAY AND HEA	VY ONLY)			
375	HYDRAULIC LOG SPLITTER				
376	LOADER (BARBER GREENE OR SIMILA	R TYPE)			
377	POST HOLE DRIVING MACHINE/POST H	IOLE AUGER			
378	POWER ACTUATED AUGER AND BORIN	NG MACHINE			
379	POWER ACTUATED JACK				
380	PUMP (HIGHWAY AND HEAVY ONLY)				
381	SELF-PROPELLED CHIP SPREADER (FLA	AHERTY OR SIMIL	AR)		
382	SHEEP FOOT COMPACTOR WITH BLAD	E . 200 H.P. AND OV	/ER		
383	SHOULDERING MACHINE (POWER) APS CHIP SPREADER	SCO OR SIMILAR T	YPE INCLUDING	SELF-PROPELLE	D SAND AND
384	STUMP CHIPPER AND TREE CHIPPER				
385	TREE FARMER (MACHINE)				
GROUP 6		2024-11-18	31.06	26.79	57.85
		2025-05-05	31.95	29.17	61.12
387	CAT, CHALLENGER, OR SIMILAR TYPE	OF TRACTORS, WI	HEN PULLING D	ISK OR ROLLER	
388	CONVEYOR (HIGHWAY AND HEAVY O	NLY)			
389	DREDGE DECK HAND				
390	FIRE PERSON OR TANK CAR HEATER (HIGHWAY AND HEAVY ONLY)				
391	GRAVEL SCREENING PLANT (PORTABI	LE NOT CRUSHING	OR WASHING)		
392	GREASER (TRACTOR) (HIGHWAY AND	HEAVY ONLY)			

GROUP 1		2024-11-18	28.92	21.35	50.27
601	MECHANIC . WELDER				
602	TRACTOR TRAILER DRIVER				
603					

OTHER SIMILAR HEAVY EQUIPMENT) (HIGHWAY AND HEAVY ONLY)

TRACTOR, WHEEL TYPE, OVER 50 H.P., UNRELATED TO LANDSCAPING

OILER (POWER SHOVEL, CRANE, TRUCK CRANE, DRAGLINE, CRUSHERS, AND MILLING MACHINES, OR

SHEEP FOOT ROLLER AND ROLLERS ON GRAVEL COMPACTION, INCLUDING VIBRATING ROLLERS

LEVER PERSON

POWER SWEEPER

393

394

395

396 397

TRUCK DRIVERS

LABOR CODE AND CLASS		EFFECT DATE	BASIC RATE	FRINGE RATE	TOTAL RATE
	TRUCK DRIVER (HAULING MACHINER WINCHES)	RY INCLUDING OPE	ERATION OF HAN	ND AND POWER O	PERATED
GROUP 2		2024-11-18	35.66	18.07	53.73
604	FOUR OR MORE AXLE UNIT, STRAIGH	IT BODY TRUCK			
GROUP 3		2024-11-18	31.93	25.00	56.93
605	BITUMINOUS DISTRIBUTOR DRIVER				
606	BITUMINOUS DISTRIBUTOR (ONE PER	RSON OPERATION)			
607	THREE AXLE UNITS				
GROUP 4		2024-11-18	31.93	25.00	56.93
608	BITUMINOUS DISTRIBUTOR SPRAY O	PERATOR (REAR A	ND OILER)		
609	DUMP PERSON				
610	GREASER				
611	PILOT CAR DRIVER				
612	RUBBER-TIRED, SELF-PROPELLED PA	CKER UNDER 8 TO	NS		
613	TWO AXLE UNIT				
614	SLURRY OPERATOR				
615	TANK TRUCK HELPER (GAS, OIL, ROA	D OIL, AND WATER	R)		
616	TRACTOR OPERATOR, UNDER 50 H.P.				
SPECIAL CRAFTS					
701	HEATING AND FROST INSULATORS	2024-11-18	17.50	0.00	17.50
702	BOILERMAKERS	2024-11-18	46.00	31.93	77.93
		2025-01-01	48.35	31.93	80.28
703	BRICKLAYERS	2024-11-18	35.88	23.20	59.08
704	CARPENTERS	2024-11-18	36.49	28.29	64.78
		2025-01-01	36.49	28.29	64.78
		2025-05-01	41.69	28.29	69.98
705	CARPET LAYERS (LINOLEUM)	FOR RATE CALL <u>DLI.PREVWAGE</u>		EMAIL	
706	CEMENT MASONS	2024-11-18	45.17	24.22	69.39
707	ELECTRICIANS	2024-11-18	46.00	30.00	76.00
		2025-07-01	50.86	30.00	80.86

LABOR CODE AND CLASS

EFFECT DATE BASIC RATE FRINGE RATE TOTAL RATE

711	GROUND PERSON	2024-11-18	40.14	0.00	40.14
712	IRONWORKERS	2024-11-18	41.19	35.68	76.87
713	LINEMAN	2024-11-18	36.26	6.93	43.19
714	MILLWRIGHT	2024-11-18 2025-01-01 2025-05-01	44.38 44.38 48.13	28.92 28.92 29.41	73.30 73.30 77.54
715	PAINTERS (INCLUDING HAND BRUSHED, HAND SPRAYED, AND THE TAPING OF PAVEMENT MARKINGS)	2023-03-01	32.38	25.28	57.66
		2025-05-01	34.98	25.28	60.26
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	47.91	20.04	67.95
719	PLUMBERS	2024-11-18	44.78	23.04	67.82
721	SHEET METAL WORKERS	2024-11-18	27.00	3.33	30.33
723	TERRAZZO WORKERS	FOR RATE CALL 651-284- DLI.PREVWAGE@STATE			
724	TILE SETTERS	FOR RATE CALL 651-284- DLI.PREVWAGE@STATE			
725	TILE FINISHERS	FOR RATE CALL 651-284- DLI.PREVWAGE@STATE			
727	WIRING SYSTEM TECHNICIAN	FOR RATE CALL 651-284- DLI.PREVWAGE@STATE			
728	WIRING SYSTEMS INSTALLER	FOR RATE CALL 651-284- DLI.PREVWAGE@STATE			

### LABOR CODE AND CLASS

#### EFFECT DATE BASIC RATE FRINGE RATE TOTAL RATE

729

ASBESTOS ABATEMENT WORKER

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

730

SIGN ERECTOR

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

## DEPARTMENT OF LABOR AND INDUSTRY

Jan. 6, 2025

# 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 statefunded highway projects effective Jan. 6, 2025. This certification follows the publication of the Notice of Truck Rental Rate Determination in the State Register on Dec. 16, 2024, and the informal conference held pursuant to Minnesota Rules, part 5200.1105 on Dec. 27, 2024.

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	\$61.54	\$37.35	\$98.89
	Increase April 28, 2025	\$64.83	\$37.35	\$102.18
Region 2	Certification date	\$54.57	\$37.35	\$91.92
	Increase April 28, 2025	\$57.49	\$37.35	\$94.84
Region 3	Certification date	\$54.57	\$37.35	\$91.92
	Increase April 28, 2025	\$57.49	\$37.35	\$94.84

Region	Effective date	607 driver rate	Operating cost	Truck rental rate
Region 4	Certification date	\$56.93	\$37.35	\$94.28
Region 5	Certification date	\$39.50	\$37.35	\$76.85
Region 6	Certification date	\$45.00	\$37.35	\$82.35
Region 7	Certification date	\$46.65	\$37.35	\$84.00
Region 8	Certification date	\$42.50	\$37.35	\$79.85
Region 9	Certification date	\$56.36	\$37.35	\$93.71
Region 10	Certification date	\$42.50	\$37.35	\$79.85

# Four or more axle units

Region	Effective date	604 driver rate	Operating cost	Truck rental rate
Region 1	Certification date	\$61.65	\$51.50	\$113.15
	Increase April 28, 2025	\$64.95	\$51.50	\$116.45
Region 2	Certification date	\$54.72	\$51.50	\$106.22
	Increase April 28, 2025	\$57.65	\$51.50	\$109.15
Region 3	Certification date	\$ 39.60	\$51.50	\$91.10
Region 4	Certification date	\$53.73	\$51.50	\$105.23
Region 5	Certification date	\$26.00	\$51.50	\$77.50
Region 6	Certification date	\$54.25	\$51.50	\$105.75

Region 7	Certification date	\$46.15	\$51.50	\$97.65
Region 8	Certification date	\$44.50	\$51.50	\$96.00
Region 9	Certification date	\$56.45	\$51.50	\$107.95
Region 10	Certification date	\$53.70	\$51.50	\$105.20

# 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	\$62.25	\$54.96	\$117.21	\$11.46	\$128.67
	Increase April 28, 2025	\$65.58	\$54.96	\$120.54	\$11.46	\$132.00
Region 2	Certification date	\$55.29	\$54.96	\$110.25	\$11.46	\$121.71
	Increase April 28, 2025	\$58.25	\$54.96	\$113.21	\$11.46	\$124.67
Region 3	Certification date	\$55.29	\$54.96	\$110.25	\$11.46	\$121.71
	Increase April 28, 2025	\$58.25	\$54.96	\$113.21	\$11.46	\$124.67
Region 4	Certification date	\$50.27	\$54.96	\$105.23	\$11.46	\$116.69
Region 5	Certification date	\$28.84	\$54.96	\$83.80	\$11.46	\$95.26
Region 6	Certification date	\$47.40	\$54.96	\$102.36	\$11.46	\$113.82
Region 7	Certification date	\$46.15	\$54.96	\$101.11	\$11.46	\$112.57
Region 8	Certification date	\$47.50	\$54.96	\$102.46	\$11.46	\$113.92

Region 9	Certification date	\$62.70	\$54.96	\$117.66	\$11.46	\$129.12
	Increase April 28, 2025	\$66.05	\$54.96	\$121.01	\$11.46	\$132.47
Region 10	Certification date	\$47.50	\$54.96	\$102.46	\$11.46	\$113.92

The current operating costs and truck rental rates may be reviewed by accessing DLI's website at <a href="https://dli.mn.gov/business/employment-practices/prevailing-wage-minimum-truck-rental-rates">https://dli.mn.gov/business/employment-practices/prevailing-wage-minimum-truck-rental-rates</a>. 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 Chad Schwarz at 320-349-0382 and <u>chad.schwarz@state.mn.us</u>.

### S-2 CLARIFICATION PROCESS

### **REVISED 06/30/22**

The Department will be using a clarification process to respond to questions during the period this Project is Advertised for Bids.

The Clarification responses are meant to clarify the Bidding Package, but will not be used for material changes. Material changes to the Bidding Package will be made via Addendum.

Beginning with the Project advertisement and continuing until award of a Contract for this Project (or cancellation), no employee, member or agent of any potential Contractor, Subcontractor or supplier shall have any ex parte communications regarding this Project with any member of the Department, except for communications expressly permitted by the Engineer. Any potential Contractor, Subcontractor or supplier engaging in such prohibited communications may be disqualified at the sole discretion of the Department.

All requests for clarifications of this Bidding Package must be in writing and submitted via email. E Mail all requests for clarifications to <u>chad.schwarz@state.mn.us</u>, put S.P. 2102-77 Clarification Request in the subject line and request receipt acknowledgement. The request for clarification needs to be as specific as possible, indicating the Proposal Section, Plan Sheet or Pay Item in question.

All responses to requests for clarifications will be posted on the MnDOT E-Plan Room website: <u>http://www.dot.state.mn.us/bidlet/eplan-room.html</u>. The Department will provide notification to all Plan holders as clarifications are posted. The Department will not be bound by the responses to the clarifications requests. Contractors shall only rely on the Plans, the Standard Specifications for Construction, Special Provisions, Addendums and other Contract documents.

The Department will accept clarification requests during the period from Project Advertisement through three Business Days prior to the letting date shown on the cover of the Proposal. The Department will not respond to requests submitted prior to or after this timeframe.

## 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-24 (1712) PROTECTION AND RESTORATION OF PROPERTY.

The Project is located very near to a U.S. Fish and Wildlife Service (USFWS) identified High Potential Zone for the endangered rusty-patched bumble bee. USFWS updates these High Potential Zones annually, typically in March.

Contractor must consult the U.S. Fish and Wildlife Service High Potential Zone mapping each spring, following the update, to ensure the project remains outside of an identified High Potential Zone. Contact the Department's wildlife ecologist (<u>https://www.dot.state.mn.us/environment/wildlife.html</u>) immediately if the project is now within the boundaries identified by USFWS. High Potential Zone mapping: <u>https://www.fws.gov/species/rusty-patched-bumble-bee-bombus-affinis/map</u>

### A 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, <u>https://www.dot.state.mn.us/environment/wildlife.html</u>.

### B 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, <u>https://www.dot.state.mn.us/environment/wildlife.html</u>. 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, <u>https://www.dot.state.mn.us/environment/wildlife.html</u>.

### C 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: <u>https://edocs-public.dot.state.mn.us/edocs\_public/DMResultSet/download?docId=19624648</u>
  - 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: <u>https://edocspublic.dot.state.mn.us/edocs\_public/DMResultSet/download?docId=19624471</u>

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. <u>If the Project is federally funded</u>: 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. <u>If the Project is state funded</u>: 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: 12%

Women: 9%

#### 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: <u>mndot.gov/civilrights/bid-results.html</u>.

- 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;
- 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.
  - 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: <u>mndot.gov/civilrights/federal-aid-</u> 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 <u>ELECTRONIC SUBMISSION OF PAYROLLS AND STATEMENTS AND BIDDERS LISTS FOR</u> <u>FEDERALLY FUNDED PROJECTS</u>

### 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

<u>https://transport.dot.state.mn.us/reference/refvendor.aspx</u>, 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: <u>http://www.dot.state.mn.us/const/labor/civil-rights-labor.html</u>. 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: <a href="http://transport.dot.state.mn.us/reference/refprojectId.aspx">http://transport.dot.state.mn.us/reference/refprojectId.aspx</a>. 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: <a href="https://xml.cloverleaf.net/resourcekit/">https://xml.cloverleaf.net/resourcekit/</a>; 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: <u>https://transport.dot.state.mn.us/reference/refvendor.aspx</u>. 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: <u>http://www.dot.state.mn.us/const/labor/documents/forms/contractorform.pdf</u>. 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 <u>Bid Express</u> 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 <u>biddocsubmittal.DOT@state.mn.us</u> 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 (1507) UTILITY PROPERTY AND SERVICE REVISED 01/27/23

S-11.1 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-11.2 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-11.3 Add the following to MnDOT 1507.2:

The Work under this Contract will affect City of Alexandria 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 Josh Waldorf, Manager of Electric Distribution at telephone (320) 763-6501, 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-12 (1508) CONSTRUCTION STAKES, LINES, AND GRADES

### REVISED 12/20/24

S-12.1 Delete and replace MnDOT 1508 with the following:

The Engineer will set construction stakes to establish lines, slopes, elevations, and continuous Profile Grade for grading, base, and pavement construction to establish the field control for the Project in accordance with Standard Plan 5-297.115. The Engineer will also set construction stakes to establish location, line, and grade controls for drainage facilities, traffic control and protection devices, and other accessory Structures and appurtenances.

The Contractor shall submit a priority list for staking to the Engineer at the weekly meeting and inform the Engineer a minimum of 48 hours before any deviation from that list or the need for any additional staking.

The Contractor shall preserve all stakes and marks. If the Contractor carelessly or willfully destroys or disturbs any of the field control stakes or marks, the Engineer will deduct the Department's cost for replacing the damaged stakes or marks from the payment for the Work.

### A Bridge Staking:

The Engineer will provide offset points for the working lines and the Contractor shall re-establish all working points needed during construction from these offset points.

The Contractor shall lay out Bridge footing corners and wing wall corners. The Engineer will lay out Bridge footing corners and wing wall corners only if x,y coordinates are provided in the Plans.

The Engineer will furnish two benchmarks in the vicinity of this Substructure. The Contractor shall establish required grade points from the benchmark.

The Contractor shall provide Bridge Seat Elevations.

The Engineer will provide beam stool heights as deemed necessary for the performance of the Work.

From the field control, the Contractor shall establish other necessary controls, detail dimensions, and measurements required for proper layout and performance of the Work. The Contractor is fully responsible for all measurements made from the stakes and marks established by the Engineer.

### B Grading, drainage and Structures:

The Contractor is fully responsible for all measurements made from any offset construction stake or measurements made from any stakes and marks established by the Engineer.

The cost of replacing stakes and marks will be based on the actual number of hours of field and office Work in accordance with the following wage and Equipment rates:

<u>Classification</u>	Hourly Rates
Registered Engineer or Land Surveyor	\$150 per hour
3-person crew & equipment	\$250 per hour
2-person crew & equipment	\$195 per hour
1-person crew & equipment	\$110 per hour

The Department is responsible for the accuracy of lines, slopes, grades, and other engineering Work performed by the Department's personnel as specified in this section. The Contractor shall not knowingly take

advantage of Errors or Omissions and shall report any discovered Errors or Omissions to the Engineer immediately upon discovery.

C Automated Machine Guidance Paving

The Engineer will provide the following:

- (1) Control points at 250-foot staggered intervals along the roadway to establish lines, slopes, elevations, and continuous Profile Grade for Automated Machine Guidance pavement construction.
  - a. Tie control points to the MnDOT Geodetic control when available.
  - b. The local accuracy of the horizontal control less than or equal to 0.07 feet at a 95 percent confidence level by performing a traverse or static global positions system (GPS) survey.
  - c. The vertical error in the final adjustment less than or equal to 0.06 feet per mile using differential leveling or trigonometric leveling.
- (2) Control points using a stationary pin, or stake, a minimum of 14-inches long, with a flush identifiable coordinate location (such as a divot or tack).
- (3) Additional control points as needed.

### S-13 (1601) SOURCE OF SUPPLY AND QUALITY REVISED 06/13/24

### S-13.1 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 Unites 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;
- 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-14 (1602) NATURAL MATERIAL SOURCES

S-14.1 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-15 (1606) STORAGE OF MATERIALS REVISED 09/27/24

S-15.1 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 Rightof-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-16 (1701) LAWS TO BE OBSERVED RESTORED AND REVISED 06/30/23

### S-16.1 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-16.2 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 <u>Department of Human Rights, Equal Pay Certificate</u> 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 <u>Department of Revenue</u> 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-17 (1701) LAWS TO BE OBSERVED (WETLANDS)

### **REVISED 06/30/22**

S-17.1 Add the following to MnDOT 1701:

If the Contractor operations involve the excavation and/or disposal of material off Department Right-ofway, 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 <u>http://www.bwsr.state.mn.us/wca-forms-and-templates</u>. 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-18 (1701) LAWS TO BE OBSERVED (CULTURAL RESOURCES – FEDERALLY AND STATE FUNDED)

### REVISED 04/14/23

S-18.1 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-19 (1701) LAWS TO BE OBSERVED (CARGO PREFERENCE ACT, USE OF UNITED STATES -FLAGGED VESSELS)

S-19.1 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-20 (1705) FEDERAL-AID PROVISIONS (FORM 1273)

### NEW 08/08/22

S-20.1 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-21 (1706) EMPLOYEE HEALTH AND WELFARE RESTORED 06/30/23

S-21.1 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-22 (1707) PUBLIC CONVENIENCE AND SAFETY

**RESTORED 06/30/23** 

S-22.1 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-23 (1708) RAILROAD HIGHWAY PROVISIONS NEW 01/27/23

S-23.1 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-23.2 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-24 (1712) PROTECTION AND RESTORATION OF PROPERTY REVISED 09/29/23

S-24.1 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 <u>https://edocs-public.dot.state.mn.us/edocs\_public/DMResultSet/download?docId=38709742</u>.

## S-25 (1717) AIR, LAND, AND WATER POLLUTION

NEW 06/28/24

S-25.1 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-26 (1717) AIR, LAND, AND WATER POLLUTION (CONCRETE GRINDING) REVISED 10/14/22

S-26.1 Add the following to MnDOT 1717:

1717.3 CONCRETE DIAMOND GRINDING OPERATIONS AND SLURRY MANAGEMENT

The Contractor must not permit residue and water to flow across adjacent Traffic Lanes, flow onto Shoulder, flow off Bridge decks, flow into gutters, or flow onto private property. The Contractor shall provide a Plan for both the on-site and off-site slurry management. The Contractor shall choose, and the Engineer will approve, the methods for slurry management in accordance with the following provisions.

Slurry Management is prohibited within federally recognized tribal land boundaries. Identification of federally recognized tribal land boundaries are found on the following website: <u>http://mndot.maps.arcgis.com/apps/webappviewer/index.html?id=f303130822954064a7bfd76489507ec8</u> and will be identified in the Plans.

A ON-SITE SLURRY MANAGEMENT

On-site slurry management is prohibited within Areas of Environmental Sensitivity (AES). These areas will require off-Site slurry management. No slurry discharge is allowed in the AES or within the buffers (see Table SP1717-1) to an AES. Identification of the AES are as follows:

- (1) Minnesota Department of Natural Resources (MnDNR) Public Waters Inventory (PWI).
- (2) National Wetland Inventory (NWI).
- (3) Calcareous fens.

(4) Permanent vegetation designated for preservation, such as areas adjacent to the Right-of-way identified as a 'Site of Biodiversity Significance' or 'Native Plant Community' by the MnDNR Minnesota Biological Survey (MBS).

(5) Prairie remnants, including but not limited to areas adjacent to Railroad Rights-of-way Prairies.

- (6) Wooded areas with Specimen Trees.
- (7) Locations with Federal or State listed Threatened or Endangered plant species.
- (8) Locations with Federal or State listed Threatened or Endangered aquatic species.
- (9) Historic properties.

Identification of items 1-5 are found on the Minnesota Geospatial Commons: https://gisdata.mn.gov/.

Identification of items 6-9 are provided by the Office of Environmental Stewardship (OES) staff through the Project's Early Notification Memo (ENM) process.

The Engineer will identify all AES in the Plans.

Other constraints within the Project that must be addressed in the Slurry Management Plan and require slurry collection are as follows:

(1) Roadways that utilize curb and gutter to convey storm water to catch basin inlets into a closed drainage system (storm sewers).

(2) Inlet Structures that utilize a piping system to convey storm water directly into stormwater treatment facilities or AES.

(3) Bridge deck grinding.

grinder.

(4) Stormwater treatment ponds.

(5) Infiltration/filtration basins.

B OFF-SITE SLURRY MANAGEMENT (when slurry is collected and taken to a containment basin or treatment facility)

Any areas identified in Section A, along with other areas identified by the Engineer will require slurry collection in accordance with the following:

(1) Collect and transport slurry in water-tight haul units to prevent spills.

(2) Provide a temporary or permanent lined containment basin outside the Right-of-way to decant the collected slurry.

(3) Areas outside of the Right-of-way may require a separate National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Permit as per Minnesota Pollution Control Association (MPCA).

(4) Follow additional requirements described below under Slurry Management Plan.

C ON- SITE SLURRY MANAGEMENT (when slurry is spread during the diamond grinding operation)

The Engineer will allow the Contractor to spread the slurry within Department Right-of-way on the vegetated slope and median in accordance with the following requirements:

(1) Maximum Buildup of Slurry Sediment: The Contractor shall spread the slurry at a rate to prevent sediment buildup of greater than 1/2 inch in any location by:

(a) Spreading the slurry further up / down the slope with each subsequent pass of the

(b) Spread the material evenly on the adjacent slopes by using appropriate Equipment (i.e., chain drags, tine harrows, plug aeration, dissipater plate, etc.) to break up the material.

(c) Remove and haul off site any sediment buildup of greater than 1/2 inch.

(d) Other spreading methods, as approved by the Engineer.

(2) Vegetated Medians – The Engineer will allow slurry spreading within the entire Roadway median in accordance with the following:

(a) Maintain a vegetated buffer zone (as per Table SP1717-1) from any identifiable point of concentrated storm water flow. The following are examples of points of concentrated storm water flow in medians:

- i. A transverse ditch bottom width of < 5 feet.
- ii. Longitudinal scouring is apparent within median.
- iii. An identifiable low point (V ditch) that runs parallel to the Roadway.
- (b) Do not spread slurry in areas identified for protection in accordance with Section A.
- (c) Maintain the vegetated buffer zones as per Table SP1717-1.

(3) Vegetated Outside Slopes – Deposit the slurry on either the in-slope or back-slope and maintain the vegetated buffer zones outlined in Table SP1717-1.

- (4) In order to minimize sediment infiltration into drainage systems, the Contractor shall:
  - (a) Only place slurry in locations that flow away from the Roadway.
  - (b) Begin the slurry spreading operation a minimum of 1 foot from the paved Shoulder.
  - (c) Provide compost filter log for inlet protection.
  - (d) Leave compost filter log in place after Project is completed.

Buffer Zone/Area Slurry Spreading is Not Allowed			
Location	Vegetated Buffer Distance, ft		
*Toe of in-slope or fill slope	5		
*Toe of back-slope	5		
Water level in roadside ditch or median ditch	5		
Stormwater treatment ponds	100		
Infiltration/filtration basins	100		
Areas of Environmental Sensitivity	100		
Stormwater inlet without inlet protection	100		
Stormwater inlet with inlet protection 50			
* Does not apply to median areas with a transverse ditch bottom width > 5 feet and standing			

### Table SP1717-1

Buffer Zone/Area Slurry Spreading is Not Allowed

D SLURRY MANAGEMENT PLAN

water is not present.

Prior to grinding operations, the Contractor shall submit to the Engineer in writing the proposed Slurry Management Plan for approval. Grinding operations shall not begin until the Plan is approved by the Engineer.

The Slurry Management Plan shall include the following:

(1) When discharging on the slope, provide a method to identify discharge start and stop locations for the Equipment operator. Examples include:

- (a) Lath and flagging tape
- (b) Barrels
- (c) The Engineer may approve other options as suggested by the Contractor.
- (2) When using a containment basin:

(a) Provide an estimate of the expected volume of slurry on the Project and the volume of the containment basin.

- (b) Ownership and location of the temporary containment basin.
- (c) Method used to line the temporary containment basin. Examples include:
  - i. Clay (including thickness of clay layer)
  - ii. Impermeable membrane (including thickness of membrane).
- (d) Describe management of water. Examples include:
  - i. Allowing the water to evaporate,

ii. Re-using the water in the grinding operation, slurry broadcast operation, in a commercially useful manner (include engineering need, i.e., dust control, grade compaction),

- iii. Water sent via sanitary sewer (provide proper permits)
- iv. Hauling to a water treatment facility; (provide the name of the treating facility).
- (e) Describe management of the solids (fines). Examples include:

i. Using the solids as a fill material, a component in recycled Aggregate or any other commercially useful application (include engineering need),

ii. Solids transported to a reuse storage facility, MPCA permitted lined mixed municipal solid waste or industrial landfill. Furnish the Engineer with a document that identifies the name and location of the reuse storage facility or a MPCA permitted lined mixed municipal solid waste or industrial landfill.

(f) Describe restoration of the containment basin area. Include fill material, topsoil, seed mixtures and temporary covers.

- (3) pH control Plan must include:
  - (a) Procedure used to maintain the pH of the slurry within the acceptable range,
  - (b) Example of pH test results log,
- E CONTROL OF pH

Monitor and control the pH of the slurry for all slurry operations to maintain a pH between 6 and 12.

(1) Calibrate the test Equipment prior to start-up of daily operations.

(2) At the start-up of operations, test the pH at least once per hour to ensure it is within the acceptable limits.

(3) Once the pH control Plan is operational and producing consistent results, the testing frequency may be reduced to 4 tests per day.

(4) Keep a signed and dated log of all pH test results for each piece of Equipment collecting slurry and have available to the Engineer upon request.

F PRIOR TO CONCRETE GRINDING OPERATIONS

The Engineer will schedule a pre-grinding meeting at the Project Site. The Engineer and Contractor will review the Slurry Management Plan for approval, including identification of the AES, acceptable slurry management practices, and any other aspects of the Plan as determined by the Engineer.

#### G STOP WORK

Stop operations and perform the necessary corrective actions before proceeding when any of the following conditions occur:

- (1) Raining during operations resulting in discharge of slurry into buffer areas,
- (2) Equipment failing to contain or remove slurry,
- (3) Defined Quality Control requirements are not followed,
- (4) The slurry is discharged into areas not approved in the Slurry Management Plan,
- (5) The pH is outside the designated range,
- (6) The slurry discharges into waters of the State, or
- (7) A spill.

Notify the State Duty Officer immediately if condition (6) or (7) occurs.

(800) 442-0798 (Outside the Twin Cities); (651) 649-5451 (Twin Cities Calling Area)

# S-27 (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-28 (1801) SUBLETTING OF CONTRACT

# REVISED 10/14/22

S-28.1 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-28.2 Delete the second paragraph of MnDOT 1801.

#### S-29 (1802) QUALIFICATIONS OF WORKERS NEW 06/30/23

#### S-29.1 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-30 (1803) PROGRESS SCHEDULES (BAR CHART/CPM SCHEDULE)

#### **REVISED 01/27/23**

S-30.1 Delete and replace MnDOT 1803 with the attached (1803) Project Schedules.

S-30.2 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.

Weather Contingency By Time Period		
	Anticipated	
	Working Days	
	Lost Due To	
Time Period	Weather	
January	all	
February	all	
March	all	
April 1-15	all	
April 16-30	4	
May	4	
June	3	
July	3 3 3	
August	3	
September	3	
October	4	
November 1-14	4	
November 15-30	all	
December	all	

# Table 1803.1-1 Weather Contingency By Time Period

## S-31 (1804) PROSECUTION OF WORK (ADA) REVISED 01/21/22

#### S-31.1 Add the following to MnDOT 1804:

#### 1804.3 ADA REQUIREMENTS

Pedestrian facilities on this Project must be constructed according to Public Right of Way Accessibility Guidelines (PROWAG) <u>http://www.dot.state.mn.us/ada/pdf/PROWAG.pdf</u>. The appropriate pedestrian ramp details for each quadrant are included in the Plan. The Engineer may provide additional details to those provided in the Plan that meet PROWAG and MnDOT ADA Standards (http://www.dot.state.mn.us/ada/pdf/MnDOT-ada-standards.pdf) as the need arises and field conditions dictate.

A Designate a certified person to assess proposed sidewalk layouts at each site at the preconstruction meeting. Certification is obtained by passing MnDOT's ADA Construction Certification Course, with in the past 3 years. For class dates and locations please refer to the following link at: http://www.dot.state.mn.us/ada/training.html.

A minimum of one person per project must possess a valid ADA Construction Certification card anytime ADA work is being performed on the project. If work on electrical components is the only ADA work taking place on the project the electrician must have in their possession a current MnDOT Signals and Lighting Certification.

ADA work includes: assessment of proposed sidewalk layouts at each site before work begins, determining and marking removal limits for work pertaining to pedestrian facilities, ADA related removals and grading, forming and finishing of concrete at pedestrian facilities, paving pedestrian crossings, placing bituminous pedestrian facilities, final grading, and pavement markings. Any ADA work not listed above can be added at the discretion of the Engineer. An ADA Certified person is not required on site if the only work being performed concerns electrical components such as traffic signals and Accessible Pedestrian Signal (APS ) push button installations.

- B Pedestrian facilities must be constructed to meet the following criteria:
- (1) Pedestrian Access Routes (PAR) must be constructed to meet the following:
  - (a) Minimum 4 feet width.
  - (b) A maximum cross slope of 2.0%.
  - (c) Vertical discontinuities must be less than 1/4 inches.
  - (d) Must provide positive drainage without allowing any ponding and maintain existing drainage flow patterns unless indicated otherwise in the Plan.
  - (e) All grade breaks shall be constructed perpendicular to the path of travel.
  - (f) Maximum 5% running slope unless adjacent roadway profile exceeds 5%.
- (2) Landings are part of the PAR and must be constructed to meet the following:
  - (a) 4 feet by 4 feet minimum width and shall match full width of incoming PAR.
  - (b) Maximum slope of 2.0% in all directions.
  - (c) Required at all locations where the PAR changes directions or inverse running slopes are greater than 2.0%.

- (d) Must be connected to the PAR.
- (e) Shall be constructed as a single plane surface having no grade breaks.
- (3) Ramps are part of the PAR and must be constructed to meet either of the following criteria:
  - (a) Longitudinal slopes less than 5% in the direction of travel requires no landing at the top of the ramp (unless the PAR changes direction).
  - (b) Longitudinal slopes between 5 8.3% in the direction of travel require a landing at the top of the ramp.

C The Contractor and the Engineer shall work together to construct all pedestrian facilities set forth in the plans and in 1804.3B above.

Before any ADA construction begins the Project Engineer will schedule and facilitate an onsite pre-activity meeting that shall consist of a project walk through with the Prime Contractor and the Concrete Flatwork Contractor's MNDOT ADA Construction Certified person. This pre-activity meeting should discuss and document potential issues, any known plan changes, potential discrepancies, and any modifications to the construction plan. The project team should discuss the ADA construction schedule and incorporate into the requirements of MnDOT 1803 (Progress Schedules) including the 2-week look ahead meetings for ADA activities. The discussion should include the sequence of removals and grading, utility placement and relocations, concrete curb and gutter, curb ramp, sidewalk, driveway placements, signals and lighting, temporary pedestrian access including both commercial and residential access, Temporary Pedestrian Access Routes/Alternate Pedestrian Access Routes, and traffic control staging. The Contractor should discuss what equipment, formwork, and materials are to be utilized on the project and how the pedestrian facilities will be constructed.

Notify the Engineer if the plan or site conditions do not allow PROWAAG and MnDOT ADA standards to be met, the Contractor shall consult with the Engineer to determine a resolution. The Engineer shall respond to the Contractor, in a timely manner (up to 24 hours), with a solution on how to proceed. The Contractor shall mitigate any potential delays by progressing other available work on the project.

Pedestrian facilities constructed that are not in accordance with the Plan, do not meet requirements in 1804.3B above, or do not follow the agreed upon resolution with the Engineer, will be corrected by the Contractor at no expense to the Department.

The following Hold Points will be utilized in the construction of pedestrian facilities:

(1) Removal Limits

The Contractor and the Engineer shall use the appropriate ramp, sidewalk, and driveway details in the Plan, and calculate the removal limits for the sidewalk and curb and gutter. If it is determined that the removal limits will exceed the plan removal limits by more than 10 feet and the plan removal limits are not adequate to meet PROWAG and MnDOT ADA Standards the Contractor shall consult with the Engineer to determine a solution. Once the Engineer and the Contractor reach an agreement on how to proceed, the Contractor may finish the removals.

(2) Curb and Gutter at Quadrants

Prior to pouring the curb and gutter at curb ramps the Contractor and the Engineer must verify:

(a) that the curb and gutter will work with any vertical constraints (doorways, steps, bus stops, outwalks and landing areas).

- (b) zero height curb, and curb transitions will be located as shown in the Plans and will provide an adequate detectable edge as shown on Standard Plan 5-297.250 (Sheet 4 of 6).
- (c) verify curb tapers are constructed at correct heights so that positive boulevard slopes and drainage is maintained away from landings and sidewalks, to the newly constructed curb and gutter sections.
- (d) gutter flow lines shall provide positive drainage, maintain existing drainage patterns including existing gutter inflows/outflows. The curb and gutter shall be constructed as detailed in the Plan with a defined flow line and have no vertical discontinuities over 1/4 inch. For required flow line corrections including curb line raises and curb ramp cross slope "tabling", see Standard Plan 5-297.250 (Sheet 6 of 6). Curb shall be poured at 3 percent inflow around the radius or at a minimum distance of 10 feet from any zero height curb section when machine placed. The Contractor shall consult with the Engineer to determine a resolution if any of these conditions cannot be met. Once the Engineer and the Contractor reach an agreement on how to proceed, the Contractor may proceed with pouring the curb and gutter.
- (3) Curb and Gutter at Roadway Sections

Prior to pouring curb and gutter at roadway sections the Contractor must verify:

- (a) proposed curb and gutter heights will work with existing roadway and shoulder slopes.
- (b) The Contractor shall verify prior to placing the pedestrian facilities that positive drainage is maintained. within public Right of Way (RW), as well as maintaining existing off RW drainage. The Contractor shall check to ensure all top back of curb elevations will allow for adequate boulevard slopes, PAR slopes, and widths as shown on Standard Plan 5-297.254 (Sheet 4 of 4) while maintaining vertically constrained match points (doorways, steps, bus stops, outwalks and landing areas).
- (c) The Contractor shall check all driveway locations and widths and conform to construction plans, Sidewalk & Driveway Standard Plan 5-297.254 and Driveway Table for all driveway details including curb heights and curb tapers. Driveway curb sections and aprons shall be constructed to minimize changes in the sidewalk width, alignment, and profile. The Contractor shall consult with the Engineer to determine a resolution if any of these conditions cannot be met. Once the Engineer and the Contractor reach agreement on how to proceed, the Contractor may proceed with pouring the curb and gutter.
- (d) When curb ramps are adjacent to bituminous roadways the concrete curb and gutter and curb ramps including concrete flares shall be tied. Drill and grout of tie bars will be required as per MNDOT 2321 and in accordance with the details shown in Standard Plan 5-297.250 (Sheet 6 of 6).
- (4) Grading, Forming and Finishing

Foundation Preparation work shall consist of constructing all necessary Subgrade Preparation, Aggregate Base, and Grading as indicated in MNDOT 2106, 2112, 2211, MNDOT Standard Plans 5-297.250 (Sheet 6 of 6), and project plans. The testing for pedestrian facilities grading shall be in accordance with the Schedule of Materials Control. After the curb and gutter has been correctly poured, and the Contractor has set the sidewalk forms, the Contractor shall verify prior to placing the curb ramps and sidewalks that positive drainage is maintained within public RW, as well as maintaining existing off RW drainage, and that all the requirements in 1804.3B above will be achieved.

(a) Ramps

In addition, the longitudinal slopes shown in the Construction Plans and the Standard Plan shall be utilized unless these conditions cannot be met. The starting point for setting the forms on the controlling ramp leg, landing, and sidewalk slopes should be the following:

Steep (S) = 7% Flat (F) = 4% Landing = 1% Sidewalk Cross Slope = 1.5%

If any of these requirements cannot be met the Contractor shall meet with the Engineer to determine the best solution. Once the Engineer and the Contractor reach an agreement on how to proceed, the Contractor may proceed with the curb ramp and sidewalk pour.

(b) Landings

An initial landing is the first required landing of a pedestrian ramp. All initial landings required at the top of a ramped sloped surface (greater than 2% longitudinal slope), shall be formed and placed separately in an independent concrete pour. This does not include initial landings placed at roadway grade such as depressed corners, parallel ramps, rural flat landings, or flat cut-throughs. Secondary landings consist of all landings pour. The Contractor shall verify initial landing alignments and elevations to ensure ramp slopes are correct prior to placing curb and gutter. At a minimum this must include string line verification or the setting of landing forms

(c) Driveways

Driveways with concrete aprons matching into concrete sidewalks shall form and place the apron independent of the concrete sidewalk placement. The Contractor shall consult with the Engineer if separate concrete placements for specific driveway locations must be placed monolithic to maintain project schedule or maintain usage of commercial driveways.

All subgrade preparation and grading for the driveways, including placement of select grading materials and aggregate base, shall be completed prior to constructing any concrete driveway flatwork including both concrete walk sections and concrete apron sections.

All necessary subgrade preparation and aggregate base placement for the entire ramp construction limit shall be done before the initial landing is constructed at each location.

D It shall be the responsibility of the Contractor, or Contractor's Surveyor if applicable, to lay out all proposed work at each intersection in accordance with the Plan and requirements listed in this Special Provision. The Contractor may confer with the Engineer for guidance in laying out the proposed work, but it will be the Contractor's responsibility to ensure the proposed work meets all the requirements of this Special Provision. This layout includes, but is not limited to placement of grade breaks, curb transitions, gutter flow lines, truncated dome placement, crosswalk marking placement, flares, landing limits, removal limits, driveway tie in limits, and ramp limits. It is important that the Contractor lay out this work properly to achieve the construction of a compliant pedestrian facility. The Department's surveyor will only stake points and elevations provided in the Plan. For custom designs, other than specific dimensions provided in the Plan, the Contractor shall be expected to scale dimensions from the Plan as needed to construct the facility. If scaled dimensions do not allow for a facility to be constructed to meet the requirements of this Special Provision, the Contractor shall follow the process listed in1804.3C above. This layout work shall be incidental.

E The Contractor shall utilize measures and methods when working near existing buildings that will avoid damaging the building's face or structure. The contractor will be responsible for any damage to the building's face or structure, both below and above ground. Any damage resulting from Contractor's operations will be repaired at the Contractor's expense to the satisfaction of the Engineer.

F The Contractor shall sawcut all concrete curb ramp, sidewalk, and driveway contraction joints. The only exception to the saw cutting contraction joints requirements will be for tooling relief joints on large driveway placements, and long sidewalk placements to prevent random cracks, and for tooling joints on minor repairs.

The Contractor shall snap chalk lines for contraction joint layouts and discuss with the Engineer the locations of all saw cutting, tooled contraction relief joints, and any modifications to Standard Plans.

The Contractor and Engineer shall coordinate and agree on all expansion joint layouts before any concrete placements.

The Contractor shall saw cut curb and gutter contraction joints within the PAR including contraction joints at zero-inch height curb locations.

G The Contractor will round all joints and edges with a 1/4 inch radius grooving or edging tool within the PAR where minor tooling is permitted. This requirement includes all curb and gutter joints at zero inch height curb sections at curb ramps. Contraction joints shall extend to at least 30 percent of walk thickness. The Contractor shall also have the option of providing saw cuts to construct the sidewalk joints. If saw cutting, provide 1/8 inch wide contraction joints within the PAR, including all curb and gutter joints at zero inch height curb sections. When greater than 50 feet of continuous sidewalk runs are constructed the Contractor shall saw cut all joints. This work shall be incidental.

The top grade break of walkable flares needs a visual joint to indicate a change in grade. To eliminate the use of excessive contraction joints in the quadrant the visual joint shall meet MnDOT 2521.3D.2, except the depth requirement is reduced to 1/4 inch.

All saw cutting, tooling, expansion joint material, and separation joint material shall be incidental to payment of curb and gutter, sidewalks, driveways, curb ramps, and landings.

The Contractor shall use an approved ¼ inch Separation Material Type F at back of curb in sections where there is concrete boulevard or driveways as per Standard Plans 5-297.254 (Sheet 3 of 4). Separation material shall match the full height dimension of adjacent concrete.

The Contractor shall use an approved 1/2 inch expansion material meeting MNDOT Specification 3702 type A- E between the outside edge of sidewalk and existing building or structures. No expansion or separation material shall not be placed in the longitudinal joint between the sidewalk and boulevard joint, unless it is necessary to provide expansion at fixed structures.

At locations where sidewalk is adjacent to existing buildings, extend walk up to the edge of building and place 1/2 inch preformed joint filler 1/2 inch lower than top of walk whenever possible. Furnish and install Backer Rod of appropriate diameter when joints are 1/4 inch wide or greater, clean surfaces and apply approved Silicone

Joint Sealant to flush with top of walk. If the transverse sidewalk and boulevard joint layouts cannot be aligned, use approved preformed joint filler with a maximum 1/8 inch width and place between the sidewalk and boulevard to prevent contraction joints from migrating into the adjacent concrete panels.

H The minimum continuous and unobstructed clear width of a Pedestrian Access Route shall be 4.0 feet. All new or reconstructed sidewalk widths shall match or exceed in place sidewalk and in no case shall it be less than 5.0 feet in width except at locations where obstructions cannot be moved or at driveways where slopes exceed the maximum allowable grades. The cross slope of the sidewalk or shared use path shall not exceed 2%, and shall be measured perpendicular to the path of travel across the entire surface width of the sidewalk or shared use path. Curb ramps should match proposed sidewalk PAR width and shall match full shared use path widths. Whenever possible, the entire landings should be placed in a single concrete placement. If this is not possible due to construction staging, follow requirements for reinforcement bar placement and tie adjacent landings together.

In areas where the sidewalk is to be constructed around fixed structures and the grade has been changed, the sidewalk shall be finished around these structures to the satisfaction of the Engineer at no additional cost.

I Longitudinal joint reinforcement- Concrete sidewalks and trails with one or more unrestricted edges that are greater than 7 ft. wide for 4-inch concrete walk, and greater than 10 ft. wide for 6-inch concrete walk shall be constructed according to Concrete Walk Adjacent to Turf detail per Standard Plan 5-297.254 (Sheet 3 of 4).

4-inch concrete walk that requires longitudinal joint reinforcement shall be constructed monolithic as a full width concrete placement using cast in place tie bars.

6-inch concrete walk that requires longitudinal joint reinforcement may use drill and grout or cast in-place tie bars for multiple adjacent concrete placements.

Place tie bar steel to the depth and location shown on the plans. Do not place tie bars within 1' of transverse joint over transverse contraction joints.

Architectural elements such as brick pavers, concrete stamping, and multiple colored concrete placements shall be kept outside the curb ramps and landing areas. Any architectural elements that do not maintain a consistent flat smooth surface shall not be used within the PAR.

J All pedestrian signal systems should be installed as shown in the Plan and must be constructed to meet the following criteria. The Contractor shall verify that the proposed push button locations will meet all of the following criteria before proceeding with the installation of the pedestrian push button system:

(1) Pedestrian push buttons shall be oriented with the button facing towards the intersection and the button face placed parallel to the outside edge of the crosswalk.

(2) Pedestrian push buttons shall be a minimum of 4 feet and a maximum of 10 feet from the back of curb/edge of roadway, but may be placed 1.5 feet to 4 feet from the back of curb/edge of roadway if mounted on a signal pole as indicated in the Plan or as approved by the Engineer.

(3) Pedestrian push buttons shall be located at the outside crosswalk edge and shall be no more than 5 feet offset from the projected outside edge of the crosswalk/ detectable warnings.

Pedestrian push buttons shall be a minimum of 10 feet apart

(4) The maintenance access route (MAR) is needed for mechanical removal of snow and ice. A maintenance access route is only required on the same route as the PAR. At quadrants, the MAR should be a paved surface but does not need to meet the PAR cross slope criteria.

The MAR follows PAR alignment and provides additional clear distance between raised obstacles such as push button stations, electrical foundations (signal, lighting, or cabinet), buildings, V curb, utility poles, sign posts, etc.

The MAR is defined as a 6 foot minimum clear width for sidewalks and 10' minimum clear width for shared use paths.

(5) Each pedestrian push button shall have a landing immediately adjacent to the push button face with minimum dimensions of 4 feet by 4 feet and a maximum slope of 2.0% in all directions. Center the push button on the edge of landing if possible to do so without violating any of the requirements listed in this Special Provision. The landing must be connected to the Pedestrian Access Route.

(6) All new hand holes shall be placed outside of the PAR, inclusive of ramps and landings.

The push buttons shall be mounted at a height of 42 inches as indicated in the Plan, and shall have a 10 inch maximum side reach. Every effort should be made to reduce the side reach distance to the least amount possible.

(7) Crosswalk pavement markings shall be striped in a straight alignment between the outside edges of the detectable warnings from the corner closest to the roadway edge. Markings shall be placed in a continuous straight line of direction unless the crosswalks are shown in the plan to be non-continuous or "kinked" at a median refuge island. In the cases of a kinked crosswalk, 2 push button stations should be used with the button faces placed parallel to the outside edge of each crosswalk.

(8) The Contractor shall maintain all working points marked by the Department's surveyor and use the working points to lay out push button locations in accordance with the Plans and Special Provisions.

If these conditions cannot be met, the Contractor shall consult with the Engineer to determine a resolution per 1804.3C above. Once the Engineer and the Contractor reach an agreement on how to proceed, the Contractor may proceed. If the Contractor constructs pedestrian push button systems or pedestrian facilities which do not meet the criteria or the agreed upon resolution with the Engineer, the Contractor will be responsible for correcting the deficiencies with no compensation paid for the corrective work.

The Contractor must adhere to the following practices:

(1) All push button station bases shall be installed using a breakaway pedestal base, see Typical APS Pedestrian Push Button Location and MnDOT Approved Products List. The pedestal base shall be fastened to the station foundation using 4 5/8 inch (UNC) x 7 1/2 inch stainless steel anchor rods. The push button station foundation shall be constructed as part of the sidewalk by increasing the sidewalk dimension to a 12 inch minimum thickness and an 18 inch minimum diameter to top of sidewalk surface. The push button station foundation shall be placed as part of the landing. All construction joints/grade breaks shall be located outside of foundation area and designated landing area.

(2) Signal pole foundations which are being constructed in or adjacent to sidewalk shall be constructed in accordance with the applicable MnDOT Standard Plate 8120 or 8126. If a push button is proposed to be mounted on a signal pole, a MnDOT approved extension bracket shall be used. If a push button is proposed to be mounted on a signal pole, the APS push button shall meet the vertical, horizontal, and crosswalk skew requirements.

(3) All newly installed pedestal foundations when used as a push button station shall be constructed in accordance with applicable MnDOT Standard Plate 8112. Concrete for new foundation shall be placed either with or after the landing concrete is placed, and the top of the foundation surface shall be 1/4 inch maximum higher than the top of the landing surface. If a push button is placed on a new or existing pedestal pole, the push button shall be installed using three APS push button spacers (Saddle Adaptors), and the APS push button shall meet the vertical, horizontal, and crosswalk skew requirements.

# S-32 (1804) PROSECUTION OF WORK (CONSTRUCTION)

S-32.1 The staging plan located in the plan and these special provisions is specified to minimize the Project impacts on the traveling public and business owners. The Contractor may propose to the Engineer for approval, an alternate staging sequence that meets the intent of the original sequence provided in the Contract. No changes shall be made without the written approval of the Engineer. Additional traffic control or other extra work required in addition to that shown in the plan as a result of alternate staging schemes shall be considered incidental to the original work.

#### S-32.2 TRAFFIC REQUIREMENTS

A traffic control plan shall be submitted to the engineer for approval at least two weeks prior to beginning any work in the intersection TH29 & Broadway St. and at TH29 & Nokomis St. The traffic control plan should include traffic control layouts that may be used and a description of how work will be conducted while keeping the intersections open to traffic.

#### S-33 (1806) DETERMINATION AND EXTENSION OF CONTRACT TIME REVISED 01/27/23

S-33.1 Add the following to MnDOT 1806.3A:

(5) If the Contractor chooses to Work before 12:00 noon on the day before the Holiday period (or later than 12:00 noon if approved by the Engineer), then the Department will assess Working Day charges only for the actual hours worked.

S-33.2 Add the following to MnDOT 1806.3B:

(5) If the Contractor chooses not to Work at all on the day before the Holiday period, then the Department will not assess Working Day charges.

- A The Contractor must start construction operations on September 2, 2025 or no later than eight Calendar days after the date of Notice Contract Approval, whichever is later. The Contractor must not begin construction operations before Contract approval.
- B 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.
- C The Contractor must complete all Work to meet the requirements of 1516.2, "Project Acceptance," under this Contract before October 17, 2025.
- D 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-34 (1807) FAILURE TO COMPLETE THE WORK ON TIME

# **RESTORED 06/30/23**

S-34.1 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-35 (1807) FAILURE TO COMPLETE THE WORK ON TIME (MONETARY DEDUCTIONS) REVISED 09/27/24

- S-35.1 Add the following to MnDOT 1807:
  - A 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.
  - B 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:

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

# Table SP1807-1

C 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-36 (1901) MEASUREMENT OF QUANTITIES

REVISED 12/20/24

S-36.1 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-36.2 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-36.3 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 10,000 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-37 (1902) SCOPE OF PAYMENT

#### **RESTORED 06/30/23**

#### S-37.1 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-38 (1910) COST ESCALATION

REVISED 06/30/22

S-38.1 MnDOT 1910 is hereby supplemented with the attached Fuel Escalation Clause.

# S-39 (2011) AS BUILT

#### REVISED 06/30/23

- S-39.1 DESCRIPTION This Work consists of capturing As-built Asset Features in standard Asset Class deliverable formats.
- S-39.2 MATERIALS BLANK
- S-39.3 CONSTRUCTION REQUIREMENTS
  - A As-built Deliverables in Project Scope
     Complete deliverables marked with an "X' in Table SP2011-1. Certain asset classes use multiple.

In scope	Deliverable Name
Х	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)
	Drainage As-built Mark-up Plan
	Drainage Pipes As-built Survey Data
	Drainage Ponds-Basins As-built Survey Data
	Drainage Structures As-built Survey Data
	Drainage Ponds-Basins Bathymetry Contours
	Drainage Professional Surveyor Letter

#### Table SP2011-1 As Built Deliverables

In scope	Deliverable Name
	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
	[Inclinometer, Piezometer, Shape Accel Array, Data Cabinet, etc.]
	Lighting Systems As-built Mark-up Plan
	Lighting Systems As-built Survey Data
Х	Pavement Messages As-built Survey Data
Х	Signal Systems As-built Mark-up Plan
Х	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 inplace.

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 <u>http://www.dot.state.mn.us/gisspec/index.html</u>.

#### 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: +/- 1foot 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-39.4 METHOD OF MEASUREMENT

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

S-39.5 BASIS OF PAYMENT

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

Item No.	ltem Un	it
2011.601	As Builtlump su	n

# S-40 (2021) MOBILIZATION

REVISED 12/11/24

S-40.1 Delete and replace Table 2021.5-1 of MnDOT 2021.5 with the following:

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	_	

# Table 2021.5-1

\*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-40.2 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-41 (2051) HAUL ROAD MAINTENANCE AND RESTORATION REVISED 04/14/23

#### S-41.1 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:

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

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

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-42 (2102) PAVEMENT MARKING REMOVAL

S-42.1 Add the following to MnDOT 2102.3: Utilize either grinding, water-blasting, or sandblasting Equipment for all pavement marking removal.

### S-43 (2106) EXCAVATION AND EMBANKMENT (COMPACTED VOLUME METHOD) REVISED 10/14/22

S-43.1 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-43.2 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-43.3 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

Muck Location	Compensation
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
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-44 (2108) GEOSYNTHETIC CONSTRUCTION MATERIALS

#### **REVISED 06/28/24**

- S-44.1 Delete and replace note (5) in MnDOT 2108.1 with the following:
  - (5) Provide confinement of granular materials.
- S-44.2 Add the following to MnDOT 2108.1:
  - (6) Provide a geotextile interlayer to concrete pavement.
- S-44.3 Add the following to MnDOT 2108.3A:

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

S-44.4 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-44.5 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-44.6 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 *squ	are yard
2108.504	Geogrid Type 🏽squ	are yard

Notes:

\* Specify Type: 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, or 13. || Specify Type: 1 or 2

# S-45 (2112) SUBGRADE PREPARATION

S-45.1 DESCRIPTION

This Work consists of preparing the subgrade in the pavement insets contained within the Plans in areas where subgrade preparation is specified in accordance with MnDOT 2112.

S-45.2 MATERIALS – See Standard Specifications for Construction

S-45.3 CONSTRUCTION REQUIREMENTS

Complete subgrade preparation per MnDOT 2112, to the depth specified in the pavement insets contained in the Plans

S-45.4 METHOD OF MEASUREMENT The Engineer will measure the area of Subgrade Preparation.

#### S-45.5 BASIS OF PAYMENT

The Contract Unit Price for Subgrade Preparation is compensation in full for Equipment, Materials 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	square yard

#### S-46 (2301) CONCRETE PAVEMENT REVISED 12/20/24

S-46.1 Delete and replace MnDOT 2301.2B.1(1) and MnDOT 2301.2B.1(2) with the following:

Use Type I or Type I/II cement complying with total alkalis (Na2Oe) no greater than 3.0 pounds per cubic yard of concrete resulting from the Portland cement.

S-46.2 Delete and replace MnDOT 2301.2B.3(1) and MnDOT 2301.2B.3(2) with the following:

Use Type IL, IS or IP cement complying with total alkalis (Na2Oe) no greater than 3.0 pounds per cubic yard of concrete resulting from the Portland cement content of the blend.

- S-46.3 Delete and replace MnDOT 2301.2D.1(1) with the following:
  - (1) National Weather Service forecast for the construction area predicts air temperatures of 36°F or less within the next 24 hours.
- S-46.4 Delete and replace the first paragraph of MnDOT 2301.2L with the following:

The Contractor assumes full responsibility for the concrete mix design and performance of the concrete. Acceptance of concrete is contingent on meeting all specification requirements, including but not limited to requirements related to field placement and performance. S-46.5 Delete and replace Table 2301.2-4 of MnDOT 2301.2L.1 with the following:

	Estimated Concrete			mum w/c ratio	Minimum	Cementitious	Air		Minimum	Maximum %SCM		
Concrete Grade	Contract Quantity (yd <sup>3</sup> ) *	Mix Number	Fly Ash	Cement Only/ Slag/ Ternary	Cement Content (Ibs/yd³)	Content (Ibs/ yd <sup>3</sup> )	Content %	Gradation Requirements	Aggregate Size Required	(Fly Ash/ Slag/ Ternary) †	Slump Range	3137 Spec.
	≥ 3,500	3A21	0.40	0.42	385	475 – 615	7.0	Job Mix Formula	1 1/2"	33/35/40	1⁄2 - 2″ ‡	2D.3
	_ = = = = = = = = = = = = = = = = = = =	3A41	0.40	0.42					nominal		2 – 5″	
	< 3,500 and Minor Work and fill-ins not provided by the	3A21S	0.42	0.42	385	475 – 615	7.0	3126 and Table 3137-4	3/4" nominal	al 33/35/40	½ - 2″ ‡	
		3A41S	0.42	0.42	202	475 - 615	7.0	Or Job Mix Formula	5/4 1011111		2 – 5″	2D.3
A	primary paving plant #	3A42 §	0.42	0.42	385	475 – 615	7.0	3126 and Table 3137-4	3/4" nominal	33/35/40 §	2 – 5"	
	Engineer Approved or	3A21HE **	0.40	0.42	385	> 475 – 750	7.0	3126 and Table 3137-4	3/4" nominal	22/25/40	1⁄2 - 2″ ‡	2D.3
	Plan Allowed High-Early	3A41HE **	0.40	0.42	262	2475-750	7.0	Or Job Mix Formula	5/4 nominal	33/35/40	2 – 5″	20.3

Table 2301.2-4Concrete Mix Design Requirements

\* Determined by multiplying the planned pavement area by the planned pavement thickness.

Provide additional cementitious material to meet requirements in accordance with this section at no additional cost to the Department.

+ Refer to Table 2301.2-2 and Table 2301.2-3 for ASR mitigation requirements.

‡ Adjust slump in accordance with 2301.3E.1, "Consistency."

# The 5<sup>th</sup> digit "S" indicates the concrete is for a small concrete paving Project or delivered from a secondary concrete plant for minor Work or fill-ins. The Concrete Engineer considers minor Work or fill-ins as gaps in concrete pavement, turn lanes, Intersections, or other pavement sections as determined by the Engineer, in conjunction with the Concrete Engineer. § The Concrete Engineer will allow a non-Project specific 3A42 mix design provided by a MnDOT certified ready-mix plant submitted in accordance with the first two paragraphs of 2461.2F.3, "Submittal Requirements." If the sand source requires mitigation with a minimum of 30% Class C fly ash in accordance with Table 2301.2-2, the Concrete Engineer will require a minimum of 30% Class C fly ash, 30% Class F fly ash, or 35% slag for all 3A42 mixes.

\*\* The Contractor may use 100% Portland cement for High Early Concrete, provided no mitigation is required for the fine Aggregate and intermediate Aggregate in accordance with Table 2301-2 and coarse Aggregate in accordance with Table 2301.2-3. If mitigation is required, the Contractor is required to use a minimum of 15% of any supplementary cementitious material when designing High Early Concrete. The Contractor may use 100 percent Portland cement for any concrete, provided no mitigation is required for the fine Aggregate or intermediate Aggregate or intermediate Aggregate in accordance with Table 2301.2-2 or the coarse Aggregate in accordance with Table 2301.2-3. If mitigation is required, the Contractor is required to use a minimum of 15 percent of any supplementary cementitious Material.

S-46.6 Delete and replace MnDOT 2301.2L.2 with the following:

Design Grade A concrete mixes based on an absolute volume of 27.00 cubic feet and a target air content of 7.0 percent.

At least 21 Calendar Days before initial placement of the concrete, submit the appropriate Project specific mix design form to the Concrete Engineer for review. When required by Table 2301.2-4, include a job mix formula in accordance with 2301.2L.3, "Job Mix Formula." Use the most current forms, specific gravity, and absorption data available from the MnDOT Concrete Engineering website.

MnDOT will review the Contractor's proposed mix design solely for compliance with the applicable mix design properties in Table 2301.2-4 and Table 2301.2-5. The Department makes no guaranty or warranty, either express or implied, that compliance with mix design properties ensures compliance with any other requirements.

S-46.7 Delete and replace the third and fifth paragraphs of MnDOT 2301.3B.3 with the following:

In conjunction with the Engineer, perform a thorough on-site inspection of the concrete plant and complete MnDOT Form 2164, *Contact Report - Paving*. Sign the report to certify compliance with the paving requirements and to certify review of the continual maintenance of the plant.

If concrete is provided by a certified ready-mix plant, complete MnDOT Form 2164, "Contact Report - Addendum Ready-mix Paving" in accordance with 2301.3B.3.b "Certified Ready-mix Plant Lab - Office Requirements."

S-46.8 Delete and replace MnDOT 2301.3B.3.a(12)(e) with the following:

(e) A 4 burner 30-inch standard stovetop or stove and at least 2 additional burners to perform required Aggregate testing per the *Schedule of Materials Control* 

S-46.9 Delete and replace MnDOT 2301.3B.3.b(4) with the following:

- (4) At least 6 burners to perform required Aggregate testing per the *Schedule of Materials Control*
- S-46.10 Delete and replace MnDOT 2301.3B.4(2) with the following:
  - (2) All Contractor plastic air content tests in the Air Content Charting chart
- S-46.11 Add the following to the fourth paragraph of MnDOT 2301.3C.1:
  - (12) MnDOT Designation Plant/Unit Number (CPAV###)
  - (13) MnDOT Approved Sheet Number (JMF##-###)

S-46.12 Delete and replace the second and third paragraphs of MnDOT 2301.3C.2 with the following:

Test and record the individual gradation results using the QC - JMF Concrete Aggregate Report.

Calculate the moving average of 4 Contractor Aggregate gradation test results during production using the JMF Moving Average Summary workbook.

#### S-46.13 Delete and replace MnDOT 2301.3C.2.b with the following:

#### C.2.b Department Verification of JMF

The Engineer will randomly verify the Contractor combined Aggregate gradation results as defined in the Schedule of Materials Control.

If the individual fraction on any split sample results in a variation between the Contractor and the Engineer greater than that set forth in Table 2301.3-2, the parties shall follow the procedures for test result dispute resolution available from the Laboratory Manual.

Allowable Percentage						
±8						
±6						
± 4						
±3						
±2						
±0.6						

Table 2301.3-2 Allowable Variations on Percent Passing Sieves

S-46.14 Delete and replace the first sentence of MnDOT 2301.3C.3 with the following:

The Engineer will use the Contractor's combined Aggregate gradation (JMF) test results (QC and Verification) documented in the QC - JMF Concrete Aggregate Workbook, as verified by the Engineer in accordance with 2301.3C.2.b, "Department Verification of JMF," to determine eligibility for the Incentive in accordance with 2301.5I.1, "Optimized Aggregate Gradation Incentive."

S-46.15 Delete and replace MnDOT 2301.3C.5 with the following:

#### C.5 Water/Cement (W/C) Ratio

Provide and place concrete with a water/cement ratio not to exceed 0.40 when using fly ash and 0.42 when using cement only, slag or ternary. Make any adjustments immediately when the water/cement ratio exceeds 0.40 when using fly ash and 0.42 when using cement only, slag or ternary.

S-46.16 Add the following to MnDOT 2301.3C.6:

The Engineer will base the statistical analysis of acceptance for water/cement ratio on a per lot basis representing one day's paving. Each individual water/cement ratio determination is considered a sublot. The lot will represent the cumulative average of the sublot values. The Engineer will start a new lot and test if either of the following occurs:

- (1) Mix design change due to a water/cement ratio test result exceeding 0.40 when using fly ash and 0.42 when using cement only, slag or ternary, or
- (2) Cementitious type change in the mix design.

If the quantities of concrete produced result in no Engineer moisture testing for any given day, include the untested quantity of concrete into the next day's production and include that quantity of concrete in the sampling rate. If the untested quantity is on the last day of production, add that quantity to the previous day's production.

S-46.17 Delete and replace MnDOT 2301.3C.8.a with the following:

C.8.a BLANK

S-46.18 Delete and replace the fifth and sixth paragraphs of MnDOT 2301.3E.2 with the following:

When using string line to achieve the line and grade reference, tightly stretch and set the string line parallel to the established grade for the pavement surface to achieve grade reference. Set control reference and support the line at intervals to maintain the established grade and alignment. Set the string lines on both sides of the Roadway when constructing overlays.

S-46.19 Delete and replace the sixth paragraph of MnDOT 2301.3F with the following:

Set frame and ring castings to the elevation shown on the Plans during the paving operations. Do not form "box-outs" of castings unless approved by the Engineer. Placement of ring castings not to exceed 1/4 inch higher than the final pavement surface. Adjust frame castings to provide positive drainage not to exceed 1/4 inch lower than the final pavement surface.

S-46.20 Delete and replace the first sentence of MnDOT 2301.3F.5 with the following:

Use any approved construction header method as shown in the Standard Plan 5-297.221 when constructing construction headers, terminal headers, and permanent headers as shown on the Plans.

S-46.21 Delete and replace MnDOT 2301.3F.6.b with the following.

F.6.b BLANK

S-46.22 Delete and replace the third paragraph of 2301.3G with the following:

Construct tied longitudinal joints in accordance with the following:

- (1) Provide and place straight tie bars on chairs, in stakes, utilizing tie bar basket assemblies, or by appropriate Equipment for depressing the bars to the specified location as shown on the Plans.
- (2) For slipform paving, stake the tie bar steel to the Roadbed or use a mechanical device attached to the spreader or paver to place tie bar steel required for L1T joints as shown on the Plans. Space and depress the tie bar steel to the depth and location shown on the Plans. Do not place tie bars within 18 inches of transverse contraction joints.
- (3) Keyway use is optional for fixed form construction of any thickness or for slipform construction with a pavement design thickness of 10 inches or greater.
- (4) Use of keyway for any other applications requires approval by the Engineer.
- (5) If the Contractor would like to install tie bars without a mechanical device, demonstrate the process to the Engineer for review and approval.
- (6) If any processes for inserting tie bars causes distortion, damage, or cracking to the concrete surface or edge, the Engineer will require the Contractor to discontinue the tie bar placement method and drill and grout the remaining tie bars until an acceptable method is approved by the Engineer.

S-46.23 Add the following to MnDOT 2301.3H:

If dowel bars are not pre-coated with a manufacturer-applied bond breaker material or the coating has rubbed off, coat the dowel bars with a uniform coating of Material in accordance with 3902, "Form Coating Material," with the approval of the Engineer.

S-46.24 Delete the third paragraph of MnDOT 2301.3H.1.

- S-46.25 Delete the second paragraph of MnDOT 2301.3H.2.
- S-46.26 Delete and replace MnDOT 2301.3I with the following:

#### I Definition of a Lot and Sublot for Concrete Field Testing

The Engineer will select random locations for lots for concrete field testing as defined in the *Schedule of Materials Control*.

S-46.27 Delete and replace the first paragraph of MnDOT 2301.3J.4 with the following:

If a dowelled contraction joint has dowel bars out of acceptable alignment during placement in accordance with 2301.3J.3, "Alignment Tolerances," and the Standard Plan 5-297.221, scan both upstream and downstream from the misaligned transverse dowelled joints, from concrete placed in the same operation, until at least 3 joints comply.

S-46.28 Delete and replace MnDOT 2301.3K.1.a with the following:

#### K.1.a Texture Testing

The Engineer will identify the texture testing locations in accordance with the Schedule of Materials Control. The Engineer will verify the volume of the Contractor's testing container prior to the performing texture testing. The Engineer will use the MnDOT Thickness, Texture and MIT SCAN workbook to determine the random texture locations and will provide the Concrete Texture report to the Contractor before the start of paving.

Perform surface texture testing of the concrete pavement in the presence of the Engineer and provide the test results to the Engineer no later than 48 hours after pavement placement unless otherwise approved by the Engineer.

S-46.29 Delete and replace MnDOT 2301.3L.1 with the following:

#### L.1 Thickness Evaluation Procedure

The Engineer will evaluate each differing concrete pavement thickness required on the Project in accordance with the following:

- (1) Through random quality control probing (QCP) or quality control scanning (QCS) and quality acceptance coring (QAC) measurements.
- (2) Identify the thickness measurement using the MnDOT *Thickness, Texture and MIT-SCAN* workbook to determine the random testing locations in accordance with the *Schedule of Materials Control*.
- (3) Provide the field probing or scanning report generated from the MnDOT *Thickness, Texture and MIT-SCAN* workbook to the Contractor before the start of paving.
- (4) Adjust the location to ensure no measurements are taken within 1 foot of the pavement edge and within 4 feet of any transverse or longitudinal joint or other obstructions. If the pavement is placed to a variable cross-section thickness, adjust the location to within 2 feet of the outside lane edge.

S-46.30 Delete the third paragraph of MnDOT 2301.3L.2.

S-46.31 Delete and replace the first paragraph of MnDOT 2301.3.L.2.c with the following:

If a final individual probe or scan measurement shows a thickness deficiency greater than 1/2 inch from Plan thickness, take a quality control core (QC Core) at the probe or scan location to determine if the pavement is defective.

S-46.32 Delete and replace MnDOT 2301.3L.3, "Quality Acceptance Testing - Coring" with the following:

#### L.3 Quality Acceptance Testing – Coring

After concrete pavement placement, the Engineer will mark the QAC core locations in accordance with the *Schedule of Materials Control*. The Engineer will also mark any QC Core locations identified by QCP or QCS testing showing a thickness deficiency greater than 1/2 inch from Plan thickness.

The Contractor will core all marked locations.

The Engineer will allow coring after the concrete meets the requirement of 2301.30, "Opening Pavement to Traffic." Use 3U58M concrete or another concrete mix approved by the Engineer to fill the core holes within 72 hours of coring at no additional cost to the Department. Provide traffic control for coring.

Cut 4-inch Nominal diameter cores at marked locations. Lay the cores next to the holes in a curing condition. Take precautions to ensure the quality of cores. The Engineer will not accept cores out of round, not perpendicular, or containing ridges.

The Engineer will field measure the core thickness to the nearest 1/8 inch, verify (field ID number) the cores, and record the field measurement on the field coring report generated from the MnDOT Thickness, Texture and MIT-SCAN workbook.

The Engineer will pick up the cores from the pavement and submerge the cores in a water tank maintained at a temperature from 60°F to 80°F at the Department field office for at least 28 Calendar Days after concrete placement.

The Engineer will transport the cores in a curing condition, unless older than 28 Calendar Days, to the MnDOT Office of Materials and Road Research.

The MnDOT Office of Materials and Road Research will determine the final pavement thickness by measuring the length of the cores (QC Core and QAC cores) using nine probe testing devices to obtain the average length of the core in one operation. The Department will report the lab measured core length to the nearest 0.05 inch. The Individual lab measured cores may require exploratory coring in accordance with 2301.3L.4, "Final Evaluation of Thickness Measurements."

After Department thickness verification, the Department will test the cores for compressive strength at 60 Calendar Days of age for information only. The Department will test 3 of the cores from the entire Project for rapid chloride permeability (RCP) in lieu of compressive strength testing for information only, unless otherwise directed by the Concrete Engineer.

S-46.33 Delete and replace MnDOT 2301.3L.4, "Evaluation of Cores to Determine Acceptance," with the following:

#### L.4 Final Evaluation of Thickness Measurements

The Engineer will evaluate the MnDOT lab measured thickness cores and QCS scans to determine the final average thickness for each Plan thickness (PT) in accordance with Table 2301.3-6. If all cores and

scans meet the design Plan thickness requirements of the Project, the Engineer will consider the final average core thickness for each Plan thickness acceptable.

Individual Lab Measured Cores and QCS Scans	Exploratory Coring Required	Resolution		
≥ PT	No	The Engineer will evaluate in accordance with 2301.51.5.b, "Final Average Thickness"		
≤ PT – 1/2 inch	No	The Engineer will evaluate in accordance with 2301.5I.5.b, "Final Average Thickness"		
> PT – 1/2 inch to 1 inch	2301.3L.5, "Exploratory Coring"	The Engineer will evaluate in accordance with 2301.5I.5.a(1), "Defective Pavement Area > 1/2 inch to 1 inch		
> PT – 1 inch	2301.3L.5, "Exploratory Coring"	The Engineer will evaluate in accordance with 2301.51.5.a(2), "Defective Pavement Area > 1 inch		

Table 2301.3-6 Concrete Pavement Thickness

S-46.34 Delete and replace the fourth paragraph of MnDOT 2301.3N.2 with the following:

Immediately after completing the wet-cut sawing of the joints, use water under nozzle pressure to remove the sawing residue from each joint and the pavement surfaces. Immediately after completing early-entry sawing of the joints, use air blasting to remove the sawing residue from each joint.

S-46.35 Delete and replace the first paragraph of MnDOT 2301.30 with the following:

Do not open a new pavement slab to general public traffic or operate paving or other heavy Equipment on it for 7 Calendar Days, or until the concrete has reached a minimum flexural strength of 300 pounds per square inch, or minimum compressive strength of 2,000 pounds per square inch; whichever occurs first.

S-46.36 Delete Table 2301.3-7 from 2301.30.

S-46.37 Delete and replace the third paragraph of MnDOT 2301.30 with the following:

Cast and cure the field control specimens in accordance with 2461.3G.5.d, "Strength Specimens for Concrete Paving." Provide moist curing environments in accordance with 2461.3G.5.b(2), "Moist Curing Environment." The Engineer will test the field control specimens for flexural strength in accordance with the Concrete Manual or compressive strength in accordance with 2461.3G.5.c, "Field Control Strength Cylinders."

S-46.38 Delete and replace 2301.30.1 with the following:

#### 0.1 Early Opening of Pavement to Traffic

For earlier opening to general public traffic as required by the Engineer, the Engineer will allow the Contractor to design and construct a section of pavement of High-early strength concrete in accordance with 2301.2-4 at important Road crossings, Intersections, driveway entrances, or other locations as shown on the Plans or directed by the Engineer.

S-46.39 Delete and replace 2301.3Q.1 with the following:

#### Q.1 Random or Uncontrolled Cracking

Repair or replace pavement with random or uncontrolled cracks as directed by the Engineer, in conjunction with the Concrete Engineer. Submit the intended repair technique to the Engineer for approval.

Perform pavement repairs at no additional cost to the Department. If the repair fails, replace the pavement at no additional cost to the Department. The Engineer will accept repairs in accordance with 1516, "Acceptance."

S-46.40 Delete and replace 2301.4G with the following:

#### G Supplemental Pavement Reinforcement

The Engineer will measure supplemental pavement reinforcement by weight.

S-46.41 Delete and replace the first paragraph of MnDOT 2301.5D with the following:

Unless the Plans include a separate Contract Item, the Engineer will consider the Contract square yard price for Concrete Pavement to include the cost of constructing the pavement, including the cost of batch Materials and mixing operations; plant-lab office; producing the concrete; fine grading; forming, including headers; providing and installing keyway and keyway bars, tie bars, taper steel, stopper bars, and other reinforcement bars; installing structural rumble strips; delivering; depositing; placing; spreading; screeding; vibration monitoring; finishing; texturing; curing; protecting; sawing; sealing; probing; scanning; and coring and filling the core holes.

S-46.42 Delete and replace the first paragraph of MnDOT 2301.5E with the following:

Unless the Plans include a separate Contract Item, the Engineer will consider the Contract square yard price for Place Concrete Pavement to include the cost of constructing the pavement, including fine grading; forming, including headers; providing and installing keyway and keyway bars, tie bars, taper steel, stopper bars, and other reinforcement bars; installing structural rumble strips; delivering; depositing; placing; spreading; screeding; vibration monitoring; finishing; texturing; curing; protecting; sawing; sealing; probing; scanning; and coring and filling the core holes.

S-46.43 Delete and replace Table 2301.5-2 of MnDOT 2301.5I.2 with the following:

	When using fly ash	Wher	n using cement only, slag or ternary
W/C Ratio	Incentive/Disincentive per cubic yard*	W/C Ratio	Incentive/Disincentive per cubic yard*
Lot Result		Lot Result	
≤ 0.37	+\$3.00	≤ 0.39	+\$3.00
0.38	+\$1.75	0.40	+\$1.75
0.39	+\$0.50	0.41	+\$0.50
0.40	\$0.00	0.42	\$0.00
0.41	-\$0.50	0.43	-\$0.50
0.42	-\$1.75	0.44	-\$1.75
≥ 0.43	The Engineer, in conjunction with the Concrete Engineer, will determine the concrete suitability for the intended use in accordance with 1503, "Conformity with Contract Documents," and 1512, "Unacceptable and Unauthorized Work." This may include testing on the hardened concrete.	≥ 0.45	The Engineer, in conjunction with the Concrete Engineer, will determine the concrete suitability for the intended use in accordance with 1503, "Conformity with Contract Documents," and 1512, "Unacceptable and Unauthorized Work." This may include testing on the hardened concrete.

#### Table 2301.5-2 W/C Ratio Incentive/Disincentive

	When using fly ash	When using cement only, slag or ternary							
W/C Ratio	Incentive/Disincentive per cubic yard*	W/C Ratio	Incentive/Disincentive per cubic yard*						
Lot Result		Lot Result							
	*Apply Incentive/Disincentive for Concrete Pavement based on the theoretical volume of concrete used by multiplying the measured square yard of concrete by the thickness shown on the Plans. Apply								
Incentive/Disincentive for Structural Concrete based on the daily cubic yards batched of Structural Concrete as verified by the computerized batch ticket printouts from the plant, with consideration of any waste.									

- S-46.44 Delete and replace the title of MnDOT 2301.5I.5.a(1) with the following:
  - I.5.a(1) Defective Pavement Area > 1/2 inch to 1 inch
- S-46.45 Delete and replace MnDOT 2301.5I.5.b with the following:

#### I.5.b. Final Average Thickness

The Engineer will determine the final average thickness using all of the cores and scans for each separate Plan thickness, except under the following conditions:

- (1) Exploratory cores taken to identify the defective pavement area, the Engineer will exclude the cores within the defective pavement area from the final average thickness calculation and substitute the two outside exploratory cores that are within Plan thickness minus 1/2 inch for the defective pavement area.
- (2) The length of core or scan exceeds the Plan thickness plus 0.30 inch, the Engineer will limit the core or scan length to the plan thickness plus 0.30 inch.
- (3) All cores and scans meet the design Plan thickness.
- (4) If the final average thickness for each Plan thickness is deficient by more than the Plan thickness minus 0.10 inch, the Department may apply the monetary deduction to the Plan thickness in accordance with Table 2301.5-5.

#### S-47 (2301) DRILL AND GROUT REINF BAR (EPOXY COATED) REVISED 09/29/23

#### S-47.1 DESCRIPTION

This Work consists of furnishing, drilling, grouting, and inserting No. 4 epoxy coated reinforcement bars in accordance with the detail shown on Sheet No. 8, 11, and 12 of the Plans and MnDOT 2301.

S-47.2 MATERIALS Epoxy Coated Reinforcement Bars..... MnDOT 3301

Non-shrink Grout or Epoxy Adhesive.. Non-shrink Grouts or Epoxies (non-bridge applications) APL

#### S-47.3 CONSTRUCTION REQUIREMENTS

Inject the non-shrink grout or epoxy in the back of the hole in accordance with the Manufacturer's recommendations.

- S-47.4 METHOD OF MEASUREMENT The Engineer will measure the number of epoxy coated reinforcement bars placed.
- S-47.5 BASIS OF PAYMENT

The Contract Unit Price for Drill and Grout Reinforcement Bar (Epoxy Coated) is compensation in full for Equipment, Materials and labor required to complete the Work.

The Department will pay Drill and Grout Reinforcement Bar (Epoxy Coated) on the basis of the following schedule:

Item No.	Item	Unit
2301.602	Drill and Grout Reinf Bar (Epoxy Coated)	each

# S-48 (2399) PAVEMENT SURFACE SMOOTHNESS

#### **REVISED 12/29/23**

S-48.1 Delete and replace Table 2399.3-1 of MnDOT 2399.3B with the following:

Areas Excluded from Smoothness Evaluation						
Pavement	Excluded Areas					
	Paving in areas with a posted vehicle speed less than or equal to 45 mph					
	Ramps, Loops					
Dituminaus ar	Acceleration and deceleration lanes less than 1,000 feet in length					
Bituminous or concrete	Physically isolated segments less than 1,000 feet in length					
concrete	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					

Table 2399.3-1
Areas Excluded from Smoothness Evaluation

S-48.2 Delete and replace Table 2399.3-2 of MnDOT 2399.3B with the following:

Areas Excluded from Smoothness and ALR Evaluation							
Pavement	Excluded Areas						
	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						
Bituminous or	Side Streets, side connections						
concrete	150 feet before stop signs at an Intersection						
	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						
	Paved Shoulders						
Bituminous	Intersections where mainline profiles are merged or blended into the cross Street						
	profile – begin and end exclusion 100 feet from the Intersection radius						
	Doweled Shoulders less than 10 feet in width						
Concrete	Undoweled Shoulders						
	Headers adjacent to colored concrete						

#### Table 2399.3-2 Areas Excluded from Smoothness and ALR Evaluation

#### S-48.3 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-48.4 Delete and replace Table 2399.5-1 of MnDOT 2399.5A.1.a with the following:

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

Table 2399.5-1

#### S-49 (2412) PRECAST CONCRETE BOX CULVERTS

NEW 06/28/24

S-49.1 Add the following to MnDOT 2412.3A:

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

# S-50 (2433) STRUCTURE RENOVATION

**REVISED 06/30/23** 

S-50.1 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-51 (2461) STRUCTURAL CONCRETE REVISED 12/20/24

S-51.1 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-51.2 Delete and replace Table 2461.2-5 of MnDOT 2461.2E.2.a(2) with the following:

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† <del>‡</del>	N/A	10 inches ± 1 inch	#

 Table 2461.2-5

 Concrete Mix Design Requirements for Grout and Lean Mix Backfill Mixes

\* 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-51.3 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-51.4 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-51.5 Delete and replace Table 2461.2-6 of MnDOT 2461.2E.2.b(1) with the following:

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

 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."
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
5	3Y47 **	Deck patching mix	0.45	750	30/35/40	2 – 4	4000 psi	2D.2

If the intended use is not included elsewhere in the Specification or Special Provisions, use mix 3G52, unless otherwise directed by the Engineer.

The minimum Water/Cement (W/C) ratio is 0.30.

<sup>+</sup> Mix 3F57EX requires the use of Coarse Aggregate Designation "7", "2" or "3" for the 4<sup>th</sup> digit in accordance with Table 2461.2-3.

‡ Identify the specific color used on the Certificate of Compliance. Colored concrete is only allowed when specified in the Plans or the Contract.

# Adjust slump in accordance with 2461.3G.7.a, "Concrete Placed by the Slip-Form Method," for slip-form concrete placement.

§ The "-S" indicates a Bridge deck with a structural slab and "-M" indicates a monolithic Bridge deck.

\*\* Mix 3Y47 requires the use of Coarse Aggregate Designation "7" or "3" for the 4<sup>th</sup> digit in accordance with Table 2461.2-3.

S-51.6 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-51.7 Delete and replace Table 2461.2-7 of MnDOT 2461.2E.2.b(2) with the following:

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	Р	-	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

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

\* Supplementary cementitious Materials allowed.

|| 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."

<sup>+</sup> Adjust slump in accordance with 2461.3G.7.a, "Concrete Placed by the Slip-Form Method."

#### S-51.8 Delete and replace Table 2461.2-8 of MnDOT 2461.2E.2.b(3) with the following:

	Project Specific Contracto		2427 ((C
Concrete Grade	Intended Use	Specification	3137 "Coarse Aggregate for Portland Cement Concrete"
А	Concrete Pavement	2301, "Concrete Pavement"	2.D.3
M, V, W, Z	Precast Concrete	2462, "Precast Concrete"	Varies
НРС	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

#### Table 2461.2-8 Project Specific Contractor Designed Mixes

S-51.9 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-51.10 Delete and replace Table 2461.2-11 of MnDOT 2461.2E.4 with the following:

	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 (≤ 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"	
	Cementitious Sources Admixture Dosage Rate	No resubmittal required	
Level 2	Aggregate Source, no change in Aggregate Class ≤ 5% Total Cementitious ≤ 10% Individual Aggregate Weights	Resubmittal of Mix Design	
mixes	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"			

#### Table 2462.2-11 Mix Design Adjustments/Requirements

S-51.11 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-51.12 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 welldistributed 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-51.13 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-51.14 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-51.15 Delete and replace the first paragraph of MnDOT 2461.3F.2 with the following:

Provide one computerized Certificate of Compliance with each truckload of ready mixed concrete at the time of delivery. The Department defines computerized to mean a document that records mix design quantities from load cell and meters.

S-51.16 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-51.17 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-51.18 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-51.19 Delete the second paragraph of MnDOT 2461.3F.3.d.

S-51.20 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-51.21 Add the following to MnDOT 2461.3G after the third paragraph:

Do not start concrete placement when it is raining or snowing.

S-51.22 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-51.23 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-51.24 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-51.25 Delete and replace Table 2461.3-3 of MnDOT 2461.3G.6.a(1) with the following:

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 Concrete Engineer.	e Engineer, in conjunction with the			

# Table 2461.3-3 Chronological Testing Ages of Strength Specimens

#### S-51.26 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-51.27 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-51.28 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-51.29 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.

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 ≤ 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.

Table 2461.5-5 All Concrete Grades

# S-52 (2462) PRECAST CONCRETE

**REVISED 12/20/24** 

S-52.1 Delete and replace Table 2462.2-5 of MnDOT 2462.2E.4 with the following:

Mix Design Adjustments				
Type of Change or Adjustment	Mix Design Approval Resubmittal Requirements			
Admixture Source Aggregate Source Cementitious or SCM Source Admixture Dosage Rate Any Cementitious or SCM Proportion Aggregate Proportions	Resubmittal of Mix Design			

#### Table 2462.2-5 Aix Design Adjustments

S-52.2 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-52.3 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-53 (2506) MANHOLES AND CATCH BASINS

#### **REVISED 09/27/24**

- S-53.1 Delete and replace MnDOT 2506.2B with the following:
  - B Masonry Mortar (Mortar) ...... 3107
- S-53.2 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-54 (2515) REVETMENT SYSTEMS

NEW 06/28/24

S-54.1 Add the following to the first paragraph of MnDOT 2515.3B:

Do not use bedding material that contains recycled concrete aggregate (RCA).

S-54.2 Delete and replace MnDOT 2515.3G 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-55 (2521) WALKS

# REVISED 06/28/24

- S-55.1 Add the following to MnDOT 2521.2A:
  - A.4 Concrete Truck Aprons ..... Mix No. 3F52
- S-55.2 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-55.3 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-55.4 Delete and replace the title of MnDOT 2521.3G to the following:
  - G Concrete Protection from Backfilling and Loading
- S-55.5 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.

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-55.6 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-55.7 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-56 (2521) DRILL AND GROUT REINF BAR (EPOXY COATED) (ADA)

#### REVISED 03/29/24

S-56.1 DESCRIPTION

This Work consists of furnishing, drilling, grouting, and inserting No. 4 epoxy coated reinforcement bars in accordance with MnDOT 2521, MnDOT 2531 and S-30 (1804) PROSECUTION OF WORK (ADA).

- S-56.2 MATERIALS
  - A Epoxy Coated Reinforcement Bars..... MnDOT 3301
  - B Non-shrink Grout or Epoxy...Adhesive Non-shrink Grouts or Epoxies (non-bridge applications) APL
- S-56.3 CONSTRUCTION REQUIREMENTS

Drill and grout or cast-in-place reinforcement bars as shown on MnDOT Standard Plan 5-297.250 (Sheets 3, 4 and 6) with a minimum 2 inch concrete cover.

Protect newly placed concrete from damage by adjacent vibratory, vibratory drilling or backfilling operations for a minimum of 24 hours. Perform vibratory operations and backfilling 72 hours after placing the concrete or after the concrete reaches a compressive strength of at least 2,000 psi.

For cast-in-place reinforcement bars, install reinforcement bars through holes in the forms.

#### S-56.4 METHOD OF MEASUREMENT

The Engineer will measure the number of epoxy coated reinforcement bars placed.

#### S-56.5 BASIS OF PAYMENT

The Contract Unit Price for Drill and Grout Reinforcement Bar (Epoxy Coated) is compensation in full for Equipment, Materials and labor required to complete the Work.

The Department will pay for Drill and Grout Reinforcement Bar (Epoxy Coated) on the basis of the following schedule:

Item No.	Item	Unit
2521.602	Drill and Grout Reinf Bar (Epoxy Coated)	each

# S-57 (2521) CONCRETE CURB RAMP WALK (ADA)

NEW 03/29/24

#### S-57.1 DESCRIPTION

This Work consists of constructing Concrete Curb Ramp Walk, including necessary Subgrade Preparation, and Grading in accordance with MnDOT 2521, MnDOT 2104, MnDOT 2106, MnDOT 2112, MnDOT 2211 and S-30 (1804) PROSECUTION OF WORK (ADA).

S-57.2 MATERIALS – See Standard Specifications for Construction

#### S-57.3 CONSTRUCTION REQUIREMENTS

Grade and compact the subgrade in accordance with MnDOT 2112 and MnDOT 2106.3G.2, "Quality Compaction". Dispose of excess material in accordance with MnDOT 2104.3D.

Grade and compact the aggregate base in accordance with MnDOT 2211 and MnDOT 2106.3G.2, "Quality Compaction".

Prior to initial landing construction ensure the subgrade is prepared and the aggregate base is placed for the entire curb ramp construction.

Construct Concrete Curb Ramp Walk in accordance with Standard Plan No. 5-297.250 and MnDOT 2521.3D.3.

Sawcut contraction joints.

See separate landing pour requirements and reinforcement details on Standard Plan No. 5-297.250 (sheet 6 of 6).

#### S-57.4 METHOD OF MEASUREMENT

The Engineer will measure Concrete Curb Ramp Walk by top surface area, which consists of 6 inch thick concrete at the quadrants including ramps, landings, flares, paved boulevards and thickness transitions until the sidewalk typical section meets full curb height. Refer to Standard Plan No. 5-297.250 (Sheets 1 and 2) curb ramp details and bubble note 1.

In areas where directional curb is constructed, the triangular area behind the projected back of curb line will be measured as Concrete Curb Ramp Walk.

The area under the truncated domes will be measured as Concrete Curb Ramp Walk.

#### S-57.5 BASIS OF PAYMENT

The Contract Unit Price for Concrete Curb Ramp Walk is compensation in full for Equipment, Materials and labor required to complete the Work.

No payment will be made for excavation or borrow, including hauling or disposal, that is necessary to meet the walk grades unless specifically provided for in the Plans.

Drill and Grout Reinforcing Bars will be paid for separately.

Aggregate base will be paid for separately.

The Department will pay Concrete Curb Ramp Walk on the basis of the following schedule:

Item No.	Item	Unit
2521.618	Concrete Curb Ramp Walksqu	are foot

# S-58 (2531) CONCRETE CURBING REVISED 06/28/24

S-58.1 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-58.2 Delete and replace the title of MnDOT 2531.3H with the following:

#### H Concrete Protection from Backfilling and Loading

S-58.3 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-58.4 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-58.5 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-59 (2531) CONCRETE SILL (ADA)

NEW 03/29/24

S-59.1	DESCRIPTION
	This Work consists of constructing a concrete sill at the back of concrete curb and gutter in accordance
with MnDOT 253	1, MnDOT 3301, and S-31 (1804) PROSECUTION OF WORK (ADA).

S-59.2	MATERIALS – See Standard Specifications for Construction			
А	Reinforcement Bars MnDOT 3301 and Standard Plan 5-297.254 (Sheet 4 of 4)			
В	Preformed Joint Filler, Type F Concrete, Vinyl Separation Material APL			
S-59.3	CONSTRUCTION REQUIREMENTS			
MnDOT 253	Construct Concrete Sill in accordance with MnDOT 2531.3B, the third paragraph of MnDOT 2531.3C, MnDOT 2531.3D and MnDOT Standard Plan 5-297.254 (Sheet 4 of 4).			
	Install tie bars and separation material in accordance with MnDOT Standard Plan 5-297.254 (Sheet 4 of 4).			
S-59.1	METHOD OF MEASUREMENT			
	The Engineer will measure the length of Concrete Sill constructed along the back of curb.			
S-59.1	BASIS OF PAYMENT			
	The Contract Unit Price for Concrete Sill is compensation in full for Equipment, Materials and labor			
required to	complete the Work.			
	The Department will pay for Concrete Sill on the basis of the following schedule:			

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

Item No.	Item	Unit
2531.603	Concrete Sill	linear foot

# S-60 (2531) CONCRETE CURB DESIGN V (ADA) REVISED 03/29/24

S-60.1 DESCRIPTION

This Work consists of constructing Concrete Curb Design V of varying heights up to 8 inches in accordance with MnDOT 2531, MnDOT 2521, and S-31 (1804) PROSECUTION OF WORK (ADA).

S-60.2 MATERIALS – See Standard Specifications for Construction

#### S-60.3 CONSTRUCTION REQUIREMENTS

Concrete Curb Design V may be constructed independent of, or integral to, the adjacent sidewalk. Match the bottom elevation of the Concrete Curb Design V to the bottom elevation of the adjacent sidewalk slab.

When Concrete Curb Design V is constructed independent of the sidewalk, clean the joint to maximize the bond between the walk and Concrete Curb Design V. Align the joint locations in the Concrete Curb Design V with the joint locations in the adjacent concrete walk.

The locations requiring the use of Concrete Curb Design V will be as shown in the Plans or as determined in the field by the Engineer. Determine the height and length of the Concrete Curb Design V and obtain Engineer approval prior to curb construction. Engineer's approval is required for any additional Concrete Curb Design V to be placed on the Project.

#### S-60.4 METHOD OF MEASUREMENT

The Engineer will measure the length of Concrete Curb Design V constructed, along the face of the curb. Curb height is measured from the top of the adjacent concrete curb ramp walk to the top of the curb.

Pedestrian concrete approach nose adjacent to the pedestrian ramp will be measured as 2 feet of Concrete Curb Design V. No measurement will be made for pedestrian concrete approach nose adjacent to Roadway curb and gutter.

#### S-60.5 BASIS OF PAYMENT

The Contract Unit Price for Concrete Curb Design V is compensation in full for Equipment, Materials and Labor required to complete the Work.

Lengths of Concrete Curb Design V that is constructed integral and never reach 3-inch height will be paid for as Concrete Walk.

The Department will pay for Concrete Curb Design V on the basis of the following schedule:

Item No.	Item	Unit
2531.603	Concrete Curb Design V	linear foot

# S-61 (2531) TRUNCATED DOMES

# REVISED 03/29/24

#### S-61.1 DESCRIPTION

This Work consists of furnishing and installing Truncated Dome Systems at pedestrian curb ramps in accordance with MnDOT 2531, MnDOT 2521, S-31 (1804) PROSECUTION OF WORK (ADA), and Standard Plate 7038.

#### S-61.2 MATERIALS

A Detectable Warning Surfaces.....APL

#### S-61.3 CONSTRUCTION REQUIREMENTS

No cutting of coated colored truncated domes is allowed. Obtain Engineer's acceptance prior to cutting uncoated uncolored truncated domes. Minimum cut section surface area is two square feet. Grind cut edges smooth. A maximum of one cut section is allowed per pedestrian ramp.

Firmly press truncated domes into concrete filling the vent holes on the truncated dome plates.

Finish the concrete surface flush to within a tolerance of 1/16 inch with the detectable warning surface plate edge. Provide a 3-inch maximum concrete border around the edges of the truncated domes surface in accordance with Standard Plans No. 5-297.250.

Place the detectable warning surface plates flush to within a tolerance of 1/16 inch with adjacent plates.

The zero-inch height curb locations may be adjusted up to 6 inches laterally if radial dome sections are

used.

Truncated domes shall provide a visual contrast to the concrete ramp of either dark on light or light on

dark.

#### S-61.4 METHOD OF MEASUREMENT

The Engineer will measure the area of truncated domes installed in accordance with MnDOT 1901.2.

The Engineer will measure the length of radial truncated domes along the long chord.

#### S-61.5 BASIS OF PAYMENT

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

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

Item No.	Item	Unit
2531.618	Truncated Domessqu	are foot

## S-62 (2557) FENCING

NEW 09/29/23

S-62.1 Delete and replace MnDOT 2557.2E with the following:

Provide concrete mix 3G52 in accordance with 2461, "Structural Concrete."

# S-63 (2562) ADDITIONAL TRAFFIC CONTROL DEVICES AND EXTENDED USE OF TRAFFIC CONTROL DEVICES

#### REVISED 12/20/24

#### S-63.1 DESCRIPTION

This Work consists of providing additional traffic control devices in accordance with S-64 (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-63.2 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-63.3 CONSTRUCTION REQUIREMENTS

Furnish the additional traffic control devices as ordered by the Engineer.

#### S-63.4 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-63.5 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:

ltem Number	Item	Unit	Pre-determined Price
2562.602	Impact Attenuator (Extended Duration)*#	Each	\$85.51
2562.603	Pedestrian Channelizer (Extended Duration)*#	Linear Foot	\$0.41
2562.603	Portable Precast Concrete Barrier Design 8337 (Extended Duration)*#	Linear Foot	\$0.10
2562.610	Flagger	Hour	
2562.610	Police Officer <sup>†</sup>	Hour	

Table SP2562-1		
Additional Traffic Control Devices, Flaggers and Police Officers		

ltem Number	Item	Unit	Pre-determined Price
2562.613	Sidewalk Barricade	Unit Day	\$1.85
2562.613	Type III Barricade	Unit Day	\$3.36
2562.613	Flasher Type A (Low Intensity)	Unit Day	\$0.65
2562.613	Tubular Marker	Unit Day	\$0.56
2562.613	Type A Cone Channelizer	Unit Day	\$0.40
2562.613	Type A Weighted Channelizer	Unit Day	\$0.89
2562.613	Opposing Traffic Lane Divider	Unit Day	\$4.38
2562.613	Reflectorized Drum	Unit Day	\$1.11
2562.613	Flashing Arrow Board	Unit Day	\$43.70
2562.613	Portable Changeable Message Sign‡	Unit Day	\$97.17
2562.613	Vehicle Speed Feedback Sign	Unit Day	\$49.04
2562.613	48"X48" Sign	Unit Day	\$2.00
2562.613	48"X48" Sign with Supports	Unit Day	\$3.04
2562.613	Portable Sign Support	Unit Day	\$1.04
2562.618	Standard Sign*	Square Foot	\$0.31
2562.618	Construction Sign Special (Additional)	Square Foot	\$48.29
2562.613	Construction Sign Special (Extended Duration)*#	Square Foot	\$0.45
2562.613	Audible Message Device	Unit Day	\$1.44
2562.613	Temporary Pedestrian Ramp	Unit Day	\$9.39
2562.613	Portable Rumble Strips (set of 3)	Unit Day	\$64.78

<sup>+</sup> Will be paid at the invoice price plus 10 percent.

+ 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-64 (2563) TRAFFIC CONTROL, when Contract Time is extended.

# S-64 (2563) TRAFFIC CONTROL

**REVISED 09/27/24** 

#### S-64.1 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: <u>http://www.dot.state.mn.us/trafficeng/publ/index.html</u>

#### S-64.2 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)" 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. <u>https://techmemos.dot.state.mn.us/techmemo.aspx</u>

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-64.3 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-ofway. 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 Signs and Structures damaged by the Contractor shall be replaced at the Contractor's expense.

B.6 Provide Work Zone Data Exchange (WZDx) compliant flashing arrow boards. Provide data in accordance with the MnDOT WZDx requirements for Connected Work Zone Devices found on MnDOT Work Zone website.

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.1.1 Temporary lane closures or other traffic restrictions will only be permitted between the official hours of sunrise and sunset.

G.2 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.3 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.4 Use Drum Channelizers in all lane closure tapers and in any shifts in traffic alignment.

G.5 No center lane closures will be permitted.

G.6 Maintain a minimum of two miles between temporary lane closures.

G.7 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.

#### 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 No flagging is required on this Project.
- J Milling, Sealcoating, and Paving Operations
- K Signal Systems

K.1 Do not interfere with the operation of any traffic signal system, except as required by the Contract. Notify the Engineer at least 24 hours prior to beginning any work that will interfere with any traffic signal system or its detection system.

K.2 The in place signal system(s) must remain in operation until the new signal system(s) become operational.

K.3 During the period when the existing signal system is not operational and the new signal system is operational, provide, erect, and maintain "Stop Ahead" and "Stop" signs. The Engineer will determine the quantity and size of the temporary signs as well as their placement in the field.

L Maintenance and Staging of Traffic Control

L.1 Maintain the existing traffic movements at the following Intersections: TH 29 (3<sup>rd</sup> Ave) & Broadway St; and TH 29 (3<sup>rd</sup> Ave) & Nokomis St.

L.2 Pedestrian traffic must be maintained and guided through the Project at all times.

#### S-64.4 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-64.5 BASIS OF PAYMENT

Partial payments for lump sum Pay Item 2563.601 (Traffic Control) will be made as follows:

- (1) When all traffic control devices for an individual stage, as shown on the Traffic Control Layouts, have been installed, 75% of the Contract Unit Price for that stage will be paid.
- (2) When all work in an individual stage and all traffic control devices for that stage are removed, the remaining 25% of the Contract Unit Price for that stage will be paid.
- 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-65 (2563) ALTERNATE PEDESTRIAN ROUTE REVISED 10/14/22

#### S-65.1 DESCRIPTION

This Work includes furnishing, installing, maintaining, and removing all traffic control devices required to provide safe movement of pedestrians through the Project at all times from commencement of the Work until Project Acceptance in accordance with S-64 (2563) TRAFFIC CONTROL.

#### S-65.2 MATERIALS

Temporary Signs and Devices	S-64 (2563) TRAFFIC CONTROL
Temporary Pedestrian Ramp .	MnDOT Standard Plan 5-297.813
Temporary Truncated Domes	Detectable Warning Surfaces (Temporary) APL

Pedestrian Channelizer	MnDOT Standard Plan 5-297.813
Audible Message Device	Audible Message Devices APL
Temporary Walkway Surface	MnDOT Standard Plan 5-297.813

#### S-65.3 CONSTRUCTION REQUIREMENTS

Submit a proposed Alternate Pedestrian Route (APR) Plan to the Engineer for acceptance if an APR Plan is not present in the Plans, or if the Contractor modifies the APR Plan. Submit the proposed APR 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 APR modification until accepted by the Engineer.

Maintain pedestrian facilities undergoing improvements, or affected by construction, in a condition that accommodates public traffic. Do not close pedestrian facilities, except as authorized. The Engineer may modify these requirements as deemed necessary. Provide tamperproof AMDs and monitor daily to verify accurate, clear, and audible messaging.

Maintain and guide pedestrian traffic through the Project at all times using continuous Alternate Pedestrian Routes (APRs) per standards set forth in the MN MUTCD Chapter 6D. Provide each APR to the same level of accessibility of each existing access and walkway prior to construction.

Provide and place audible message devices (AMDs), temporary curb Ramps, pedestrian barricades, pedestrian channelizers, detectable edges, temporary walkway surfaces and other accessible design features as necessary.

Provide continuous temporary walkway surfaces that are smooth, stable and slip resistant in relevant weather conditions. Temporary walkway surfaces will allow the normal usage of wheelchairs, walkers, strollers, and other mobility devices. Concrete, bituminous, steel, rubber, wood (3/4 inch or thicker), and plastic are acceptable surface Materials for the temporary walkway surface. Gravel, millings, or other uneven surfaces are not acceptable surface Materials. Support the temporary walkway surface with a solid base.

Any portable sign or barricade placed in or adjacent to a pedestrian walkway shall have a detectable edge to guide pedestrians with visual disabilities around the sign or barricade. A maximum gap of 2" is allowed from the bottom of the device or detectable edge to the walkway to allow for drainage.

Minimize disruption to pedestrians to the maximum extent feasible by providing APRs in the following order of preference:

- (1) Provide the APR on the same side of the Street as the disrupted route utilizing bypasses.
- (2) Where it is not feasible to provide a same side APR, provide an APR on the other side of the Street.
- (3) Where it is not feasible to provide an APR on the other side of the Street, provide an APR Detour with trailblazing signs.

If existing parking spots are desired to be used for an APR route within the Project limits, contact the City of Alexandria for approval and parking banning notification procedures.

Schedule and coordinate the replacement of pedestrian access to accommodate the needs of businesses and residences **7** days prior to the replacement. Leave the existing Sidewalks inplace until such time that it is required to remove them to accommodate new construction. Pedestrian access may be provided to businesses and homes using any public access from adjacent parking lots and side Streets. Provide front door access to buildings without alternate public entrances. Protect the pedestrian route with pedestrian barricades or pedestrian channelizing devices if it is adjacent to construction, excavation drop-offs, traffic, or other hazards. Protect the pedestrian route with portable barrier if it is on the Shoulder, in a parking lane, or in a closed lane adjacent to traffic on a multilane Road or if the speed limit is 45 mph or greater. When both sides of a pedestrian route require channelizing devices, use similar types, unless portable barrier is used to protect pedestrians from traffic.

No pedestrian curb Ramp or blended transition work shall occur concurrently at the same Intersection.

Notify the Engineer in writing at least **24** hours prior to the start of any construction operation that will necessitate a change in pedestrian access.

Furnish the name, address, email, and phone number of at least one individual responsible for the maintenance of the APR. This individual shall be "on call" 24 hours a day, seven days per week during the times any devices, furnished and installed by the Contractor, are in place. Submit the required information to the Engineer at the pre-construction meeting.

Answer calls immediately and begin corrective measures needed within one hour.

#### S-65.4 METHOD OF MEASUREMENT

The Engineer will measure Alternate Pedestrian Route as a lump sum in accordance with MnDOT 1901.12.

#### S-65.5 BASIS OF PAYMENT

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

The Department will pay for Alternate Pedestrian Route on the basis of the following schedule:

Item No.	ltem Uni	it
2563.601	Alternate Pedestrian Routelump sur	n

#### S-66 (2563) PORTABLE CHANGEABLE MESSAGE SIGN REVISED 06/30/22

S-66.1 DESCRIPTION

This Work consists of furnishing, installing, maintaining, and removing Portable Changeable Message Signs (PCMS) in accordance with S-64 (2563) TRAFFIC CONTROL.

- S-66.2 MATERIALS Changeable Message Signs - Type C.....Temporary Traffic Control Electronic Equipment APL
- S-66.3 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-66.4 METHOD OF MEASUREMENT

The Engineer will measure the number of portable changeable message signs furnished and installed or the number of Unit Days each portable changeable message sign is in service.

#### S-66.5 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.

The Department will pay for Portable Changeable Message Sign on the basis of the following schedule:

Item No.	Item	Unit
2563.602	Portable Changeable Message Sign	each
2563.613	Portable Changeable Message Sign	unit day

## S-67 (2573) STORM WATER MANAGEMENT REVISED 04/14/23

S-67.1 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	
Flocculant Sock (250,000 gal. treatment vol.) Bale Barrier	
Silt Fence, Type HI	
Silt Fence, Type SD	
Silt Fence, Type MS	
Flotation Silt Curtain, Type: Moving, 1.2 m (4 foot) depth	
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)	
Water Treatment Type Sediment Tank	\$20,250.00/each

# S-68 (2574) SOIL PREPARATION

**RESTORED 06/30/23** 

S-68.1 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	
	+=,=====,===,===

# S-69 (2575) ESTABLISHING VEGETATION AND CONTROLLING EROSION REVISED 06/28/24

#### S-69.1 Delete and replace Table 2575.3-1 with the following:

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,	April 1 – June 1	July 20 – September 20	
Snow Fence Ground Cover,			
Inslope mixes, Patch mix*			
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.			

Table 2575 2-1

#### S-69.2 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-69.3 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-69.4 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-69.5 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-69.6 Delete Table 2575.3-3 Rapid Stabilization and replace it with the following:

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> <li>330 pounds of Stabilized Fiber Matrix (3884.2 B.3) per 1,000 gallons of slurry</li> </ul>	
	<ul> <li>10 pounds of Two-year Cover Crop Seed Mixture per 1,000 gallons of slurry</li> </ul>	
	<ul> <li>50 pounds of 10-10-10 Type 3 slow release fertilizer per 1,000 gallons of slurry</li> </ul>	
	<ul> <li>875 gallons of water per 1,000 gallons of slurry</li> </ul>	
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	

# Table 2575.3-3

S-69.1 Add the following to MnDOT 2575.4:

The Engineer will measure Seed Mixture Special in accordance with 2575.4B "Seed".

S-69.2 Add the following to MnDOT 2575.5K:

Item No.	Item	Unit
2575.608	Seed	pound

S-69.3 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	
22-111	
32-241	
34-171	

#### **Erosion Control Blanket**

Category 25	\$2.40/square yard
Category 30	
Category 72	\$11.00/square yard

#### **Rapid Stabilization**

Method 1	., , ,
Method 2	
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-70 (2581) REMOVABLE PREFORMED PLASTIC MASK (BLACK)

#### REVISED 06/30/22

#### S-70.1 DESCRIPTION

This Work consists of furnishing, placing, maintaining, replacing, removing, and disposing of temporary pavement marking material over inplace pavement markings on bituminous pavement in accordance with MnDOT 2104 and MnDOT 2581.

S-70.2 MATERIALS – See Standard Specifications for Construction

#### S-70.3 CONSTRUCTION REQUIREMENTS

Fully cover conflicting pavement markings with plastic mask (black).

For recessed longitudinal pavement markings, plastic mask (black) may be trimmed to fit within recessed area. Excess material shall be discarded in accordance with MnDOT 2581.3.

For pavement marking messages, fully cover irregular shaped markings with a rectangle shape of least dimensions.

#### S-70.4 METHOD OF MEASUREMENT

The Engineer will measure Removable Preformed Plastic Mask (Black) tape on equivalent lengths of 6 inch wide marking tape furnished and installed. Segmented line markings will be measured by the actual length of material used and will not include the gap between the line segments.

#### S-70.5 BASIS OF PAYMENT

The Contract Unit Price for Removable Preformed Plastic Mask (Black) is compensation in full for Equipment, Materials and labor required to complete the Work.

The Department will pay for Removable Preformed Plastic Mask (Black) on the basis of the following schedule:

Item No.	Item	Unit
2581.603	Removable Preformed Plastic Mask (Black)	linear foot
2581.618	Removable Preformed Plastic Mask (Black)	square foot

# S-71 (2582) PAVEMENT MARKINGS

REVISED 09/29/23

S-71.1 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-71.2 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  $\pm$  10 mil.

S-71.3 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.

	White	Yellow
Pref Tape	600 millicandela/square	500 millicandela/square
	meter/lux	meter/lux
Pref Thermo	300 millicandela/square	200 millicandela/square
	meter/lux	meter/lux
Pref Thermo, ESR	250 millicandela/square	150 millicandela/square
(Enhanced Skid	meter/lux	meter/lux
Resistance)		
Multi Comp	300 millicandela/square	200 millicandela/square
	meter/lux	meter/lux
Paint	275 millicandela/square	180 millicandela/square
	meter/lux	meter/lux

### Table 2582.3-2 Minimum Initial Pavement Marking Dry Retroreflectivity

#### 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			
	\A/l-1+-	Vallari	

	White	Yellow
All Materials	200 millicandela/square	200 millicandela/square
	meter/lux	meter/lux

# S-72 (2582) PAVEMENT MARKINGS (SPOTTING METHOD AND WR) REVISED 06/30/23

# S-72.1 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-72.2 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-73 (3107) MASONRY MORTAR

**RESTORED 06/30/23** 

- S-73.1 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-74 (3113) ADMIXTURES FOR CONCRETE RESTORED 06/30/23

S-74.1 Delete and replace MnDOT 3113.2A with the following:

#### A Materials

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-75 (3115) FLY ASH FOR USE IN PORTLAND CEMENT CONCRETE

# NEW 03/29/24

S-75.1 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-76 (3116) NATURAL POZZOLAN

#### NEW 06/28/24

S-76.1 SCOPE Provide natural pozzolan for use in concrete and other applications.

#### S-76.2 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-76.3 SAMPLING AND TESTING Provide samples for testing meeting the requirements of fly ash in the *Schedule of Materials Control*.

#### S-77 (3131) INTERMEDIATE AGGREGATE FOR PORTLAND CEMENT CONCRETE NEW 09/29/23

S-77.1 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-78 (3137) COARSE AGGREGATE FOR PORTLAND CEMENT CONCRETE NEW 03/29/24

- S-78.1 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-78.2 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-79 (3138) AGGREGATE FOR SURFACE AND BASE COURSES REVISED 03/29/24

- S-79.1 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 percent. Meet all other virgin Aggregate requirements in 3138.2B, "Virgin Materials".
- S-79.2 Add the following note under Table 3138.2-3 of MnDOT 3138.2E:

For 100 percent 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-79.3 Delete and replace MnDOT 3138.2D(5) with the following:
  - 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-80 (3149) GRANULAR MATERIAL

NEW 06/28/24

S-80.1 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.

Structural Backin 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

Delete and replace MnDOT 3236.2A with the following:

Table 3149.2-3 Structural Backfill Requirements

(1) Provide screened Material meeting the requirements of 3137.2B, "Classification," for Class C.

# S-81 (3236) REINFORCED CONCRETE PIPE

**RESTORED 06/30/23** 

А

S-81.1

Materials		
A.1	Aggregate Quality	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

#### S.P. 2102-77 (T.H. 29=003) February 6, 2025

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-81.2 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-81.3 Delete and replace Table 3236.3-1 of MnDOT 3236.3C.2 with the following:

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 a	re as required by the Project Specific	cations. Begin a new schedule of testing		
after changing the mix design, after shutti production run, and when beginning a new		rs and renovations, when beginning a new g to the 0.01 in D-load. Testing to failure is		

# Table 3236.3-1 1 Minimum Three Edge Bearing Testing Rates

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 service on each combination of pipe size 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-82 (3238) PRECAST CONCRETE BOX CULVERTS

#### **RESTORED 06/30/23**

- S-82.1 Add the following to MnDOT 3238.2B:
- S-82.2 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-82.3 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-83 (3491) PRESERVATIVES AND PRESERVATIVE TREATMENT OF WOOD PRODUCTS RESTORED 06/30/23

S-83.1 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-84 (3702) PREFORMED JOINT FILLERS

NEW 03/29/24

- S-84.1 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-84.2 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 1/4-inch thick Type F joint filler material as a separation material between sidewalk and back of curb.

S-84.3 Delete and replace Table 3702.2-1 with the following:

<b>.</b>				Туре			
Properties	A B C D-1 D-2		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	> 90	> 90	> 95	> 80	> 70	> 90
Recovery	percent	percent	percent	percent	percent	percent	percent
Extrusion	< 0.25	< 0.25	< 0.25	< 0.5	< 0.25	< 0.25	< 0.25
EXTLUSION	inches	inches	inches	inches	inches	inches	inches
			> 30		> 3.5	> 19	> 50
Density +	-	-	pounds /	-	pounds /	pounds /	pounds /
			cubic feet		cubic feet	cubic feet	cubic feet
Water	_				< 1 percent	< 15	< 1
Absorption	-		_		< i percent	percent	percent

Table 3702.2-1
Preformed Joint Filler Requirements

<b>D</b>	Туре								
Properties	Α	В	С	D-1	D-2	E	F		
Asphalt						> 35	-		
Content	-	-	-	-	-	percent			
Evenneine		> 140	> 140	-	-	-			
Expansion -	-	percent	-				-		
* To 50 percer	nt of the origin	al thickness							
Compression	requirements	s per ASTM D7	174, Standar	d Specificatio	n for Preform	ed Closed-Cell Po	lyolefin		
Expansion Join	nt Fillers for Co	ncrete Paving	and Structure	al Constructio	on				

# S-85 (3721) PREFORMED ELASTOMERIC COMPRESSION JOINT SEALERS FOR CONCRETE

NEW 06/28/24

+ Air-dried

S-85.1 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-86 (3733) GEOSYNTHETIC MATERIALS

**RESTORED AND REVISED 06/30/23** 

S-86.1 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.

		Type *						
	ASTM Test Method		1					
Geotextile Property	Units	Fabric	Knit sock	3	4	5	6	7†
B1 Grab Tensile Strength minimum, each principal direction	D4632	100	_	100	200	200	+	300
Bi Grab Tensile Strength minimum, each principal direction	Pounds	100	_	100	200	200	Ŧ	300
B2 Elongation minimum, each principal direction	D4632			50	50	-	±	50
Bz Elongation minimum, each principal direction	Percent			50	50		+	30
B3 Seam Breaking Strength minimum #	D4632	90	_	90	180	180	‡	270
BS Sealli Breaking Strength minimum #	Pounds							270
B4 Apparent Opening Size (AOS) §	D4751	40	40 as applied	50	50	30	20	50
B4 Apparent Opening Size (AOS) 3	U.S. Sieve	40	40 as applied	30	50	50	20	50
DE Dormittivity minimum **	D4491	0.7	2.75 releved	0.5	0.5	0.05	0.05	0.5
B5 Permittivity minimum**	sec <sup>-1</sup>	0.7 2.75 relaxed	0.5	0.5	0.05	0.05	0.5	
DC Duratura stranstheminimum	D6241		100					
B6 Puncture strength minimum	Pounds	_	180	_	_	_	_	-
B7 Wide Width Strip Tensile Strength minimum each principal	D4595						+	
direction	pounds/feet	_	_	_	_		+	

Table 3733.2-1 Geotextile Properties for Types 1, 3, 4, 5, 6, 7

\* Minimum Average Roll Values (MARV) based on an average of at least three tests per swatch.

Provide socks made of knit polymeric Materials and meeting the requirements of *ASTM D6707-06*, *Standard Specification for Circular-Knit Geotextile for Use in Subsurface Drainage Applications*, 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.

<sup>+</sup> Needle-punched nonwoven. Do not use thermally bonded (heat-set) fabric.

‡ 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.
# 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 (*ASTM D6193-16, Standard Practices for Stiches and Seams*) using a two-spool sewing machine and install seams facing upward. For seaming with adhesives, see the *Approved/Qualified Products List* available on the Department's website.

§ For U.S. Sieve sizes, the AOS Number must be equal to or greater than the Sieve size specified.

\*\* Permittivity: P = K/L, where K = fabric permeability and L = fabric thickness.

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: ≥ 3.3x10 <sup>-4</sup> feet/second	ASTM D5493 MnDOT Modified‡ or ASTM D4491#
In-plane water permeability	At 2.9 psi: ≥ 1.6x10 <sup>-3</sup> feet/second	ASTM D6574 MnDOT Modified§ or
(transmissivity) under load (pressure)	At 29 psi: ≥ 6.6x10 <sup>-4</sup> feet/second	ASTM D4716**
Weather resistance	Retained strength ≥ 60 percent	ASTM D4355 III at 500 hours exposure
Alkali resistance	≥ 96 percent polypropylene/polyethylene	Manufacturer certification of polymer

## Table 3733.2-2 Type 8 Geotextile Properties

			Type 9		Туре	11	Тур	e 12
				Minimum Average Ro		oll Value		
Properties	Test Method	Unit	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				0.8	9	0.90	
Properties	Test Method	Unit		Maximum Roll Value				
Apparent Opening Size (AOS)	ASTM D4751	U.S. Sieve	3	0	40	)	4	0
Properties	Test Method	Unit		Mir	nimum Av	erage Ro	oll Value	
Permittivity	ASTM D4491	sec <sup>-1</sup>	0	.5	0.9	0	1	.0
Flow Rate	ASTM D4491	gal/min/ft <sup>2</sup>	4	0	75	5	75	
Properties	Test Method	Unit	Minimum Roll Value					
UV Resistance (at 500 hours exposure)	ASTM D4355	% Strength Retained	70		90	)	g	0
Seam Breaking Strength	ASTM D4884	Pounds/ inch	20	00				

Table 3733.2-3 Types 9, 10, 11, and 12 Geotextile Properties

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.

Type 13 Geotextile Properties						
			Minimum Average Roll Value			
Properties	Test Method	Unit	MD and CD			
Wide Width Max Elongation	ASTM D4595	%	20			
Permittivity	ASTM D4491	Sec <sup>-1</sup>	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			

Table 3733.2-4 Type 13 Geotextile Properties

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 <sup>2</sup>	30 MARV

S-86.2 Renumber Table 3733.2-4, "Geogrid Properties" of MnDOT 3733.2C to Table 3733.2-5, "Geogrid Properties".

## S-87 (3876) SEED

## NEW 06/28/24

S-87.1 Delete and replace Table 3876.2-1 with the following:

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

#### Table 3876.2-1 MnDOT Seed Mixes

## S-87.2 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-88 (3885) ROLLED EROSION PREVENTION PRODUCTS RESTORED AND REVISED 06/30/23

S-88.1 Delete and replace Tables 3885.2-1, 3885.2-2, and 3885.2-5 of MnDOT 3885.2A with the following:

Category 10 Category 20 Category 30 Criteria Net Number (upper/lower) 1 2 2 70 percent Straw, Fiber Fill Material 100 percent Straw 100 percent Straw 30 percent Coconut/hemp Mass, minimum\*+ 0.43 0.43 0.42 (pound per square yard) Reported Fiber Length, 80 percent greater than 3 3 3 (inch) Reported Functional Longevity, 75 3 4.5 9 percent remaining (month) Reported Target Service Life (month) 9 4 12 Permissible shear, unvegetated# 1.50 1.75 2.00 (pound per square foot) Flow, probable maximum# (feet 4.5 6 8 per second) Machine Direction (MD) Tensile Strength, minimum§ 70 160 160 (pounds per foot) TD Tensile Strength, minimum§ (pounds 50 110 150 per foot) U or round head metal, Wood or biodegradable || plant-based plastic 11-13 gage, Helical twist pin, Washer/60D (6 barbed, glue, U, or round Permissible Anchor Type Washer/60D inches) Nail<sup>+</sup> head metal, 11-13 gage (6 inches) Nail<sup>+</sup> 8 inches Minimum anchor embedment length 4 inches 6 inches

Table 3885.2-1 Temporary, Straw-based Products

\* 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.

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

Table 3885.2-2 Temporary, Wood Fiber Based Products

## S.P. 2102-77 (T.H. 29=003) February 6, 2025

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

\* Derived from hardwood (Aspen spp.) or softwoods (pine).

|| Dry mass at the time of manufacture following ASTM protocols.

<sup>+</sup> 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.

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			

Table 3885.2-5
Permanent, Synthetic-based, Soil or Organic Fiber Media Filled Products

\*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.

|| 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.

+ ASTM D6566 Mass Per Unit Area of Turf Reinforcement Mats

*‡ ASTM D4355 Deterioration of Geotextiles by Exposure to Light, Moisture and Heat in a Xenon Arc-Type Apparatus # ASTM D6460 Performance in Protecting Earthen Channels from Stormwater-Induced Erosion.* 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.

## Minimum anchor embedment length may be reduced for anchors that are an alternative to straight pins or to account for site specific soil conditions.

§ ASTM D6818 Ultimate Tensile Properties of Rolled Erosion Control Products

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.

#### S-89 (3886) SILT FENCE

**RESTORED 06/30/23** 

S-89.1 Delete and replace Table 3886.2-1 of MnDOT 3886.2A with the following:

			Silt Fence R	equirements			
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 <sup>-1</sup>	130
PA woven geotextile	36	100	No. 30 Sieve	_	70	0.1 s <sup>-1</sup>	5
SD woven or nonwoven geotextile **	36	100	_	_	70	_	_
TB polyester or polyvinyl Fabric	60	200	_	90 pounds	70	0	0

Table 3886.2-1

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 SS

I hereby certify that the Special Provisions for traffic control signal construction (Division SS) 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.

Lucas H Sim	or	isc	on	Digitally signed by Lucas H Simonson DN: C=US, E=lucas.simonson@bolton-menk.com, O=Bolton & Menk, CN=Lucas H Simonson
				Reason: I am the author of this document Date: 2025.02.07 07:51:58-06'00'

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Lucas H. Simonson

Lic. No 60649

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## SS-1 (2565) FLASHING BEACON SYSTEM

## SS-1.1 DESCRIPTION

This work consists of furnishing and installing materials and electrical equipment, all to provide one complete operating Rectangular Rapid Flashing System at the intersections of TH 29 & Jeferson St and TH 29 & Lake St in Alexandria, MN in accordance with the applicable provisions of MnDOT 2565; the current edition of the National Electrical Code; with the plans; and as follows:

## SS-1.2 ACRONYMS

BLANK

## SS-1.3 SHOP DRAWINGS

Provide shop drawing details for materials and electrical equipment not on MnDOT's APL, as specified in the contract documents.

## SS-1.4 MATERIALS

## A 3803.2A

Delete paragraph (1) and replace it with the following:

(1) NRTL listed meeting UL 651, "Schedule 80, Type EB and A Rigid PVC Conduit and Fittings."

## B 3803.2B

Delete paragraph (1)

Delete paragraph (2) and replace it with the following:

(2) NRTL listed meeting UL651A, "Schedule 80 High Density Polyethylene (HDPE) Conduit."

## C Pedestal Poles and Bases

Provide four inch diameter straight pedestal poles and pedestal bases meeting the following requirements. Ensure the following requirements are met to properly install pedestal poles into the pedestal bases in accordance with "Installation of Pedestrian Head Pedestal Poles and Bases" as specified in the Construction Requirements section of these Special Provisions.

## C.1 Pedestal Poles (Shafts)

Provide aluminum pedestal poles for vehicle and pedestrian signal heads meeting the required height as shown on the Plans with a maximum pole shaft height of 14 feet and the following:

6061-T6 or 6063 T6 Alloy Schedule 80 Natural or spun finish NPT tapered threads ANSI/ASME B1.20.1 Minimum 2 inches and maximum 2 ½ inches of thread length on one end to screw into the top of the pedestal base Nominal or trade size of 4 inches (4 ½ inch OD)

## C.2 Pedestal Bases

Provide pedestal bases for 4 Inch diameter shaft listed on MnDOT's APL-Signals.

#### http://www.dot.state.mn.us/products/signals/index.html

Furnish and install shims provided and recommended by the pedestal base manufacturer. Ensure the shims are sized to accommodate the required 1 inch diameter foundation anchor rods. If the pedestal base manufacturer does provide shims, then furnish and install shims in accordance with Shim and Washer Standard Plate No. 8129.

Install shims in accordance with "Installation of Pedestrian Head Pedestal Poles and Bases" as specified in the Construction Requirements section of these Special Provisions.

#### C.3 Pedestal Pole Locknuts

Provide 3003 aluminum conduit locknuts sized for 4- inch straight pedestal pole shaft (4-<sup>1</sup>/<sub>2</sub> OD) NPT threads to prevent the pole from turning inside the pedestal base instead of the pedestal base set screws and thru-bolts. Install the locknuts in accordance with Installation of Pedestal Poles and Pedestal Bases in the Construction Requirements section of these Special Provisions.

#### D Pedestal Foundations (Straight Shaft and Pedestal Base)

Provide foundations for the four inch diameter straight pedestal poles and pedestal bases in accordance with Light Foundation Design E Standard Plate No. 8127, except construct foundations with a 13 inch bolt circle using 1 inch diameter anchor rods Type B in accordance with MnDOT Spec. 3385, a minimum 3 inch to a maximum 4 inch anchor rod projection.

Install foundations as specified in the Construction section of these Special Provisions, "Installation of Pedestal Foundations".

#### D.1 Hardware for Pedestal Foundations

Note 2 and the Anchor Rod Detail on Light Foundation Design E Standard Plate No. 8127 are replaced with the following:

Provide four 1 inch diameter Type B anchors and nuts in accordance with MnDOT Spec. 3385 per foundation. Provide a 2  $\frac{1}{2}$  inch OD x 1-1/16 ID x 1/4 inch or 3/8 inch thick 1018 or 1020 galvanized steel washer for each anchor rod.

#### E Type TS Signal Poles and Foundations

Type TS signal poles and foundations will be used. See plans for standard plates, standard plans, and project pole and mast arm details.

#### F Rectangular Rapid Flashing Beacon

Provide and install rectangular rapid flashing beacons with all the necessary mounting hardware for installation on signal pedestals as specified in the plans and make the system operational.

The rectangular rapid flashing beacon systems shall meet the following requirements:

- Include signs for each direction of traffic on each side of the roadway,
- For each system, show 3 RRFBs to each direction of traffic on each side of the roadway (2 two-sided RRFB units, 2 single-sided RRFB units, 1 overhead unit for each direction),
- RRFB's shall be mounted below pedestrian warning signs, see Plans for detail,
- Shall be solar powered, 5 solar panels total, see plans for detail
- System shall communicate wirelessly, with conduit connections as detailed in the Plan
- Have daylight distance visibility of 1000 feet or greater,
- Have night distance visibility of one mile or greater,
- Meet FHWA standards for rectangular rapid flashing beacon size and brightness,
- Light indications shall be a minimum 5.8" wide by 2.55" high. Two indications shall be
  installed on an assembly facing in the direction of the approaching vehicular traffic. The
  light indication assembly shall be a single unit that can be field adjustable from either a
  unidirectional or bidirectional configuration. The light indication assembly shall be
  constructed of durable and corrosion resistant powder coated aluminum. Each indication

shall be located between the bottom of the crossing warning sign and the top of the supplemental downward diagonal arrow as shown in the construction detail of the plans.

- The two RRFB indications shall be aligned horizontally, with the longer dimension of the indication horizontal, and a minimum space between the two indications of approximately 7" measured from inside edge of one indication to inside edge of second indication.
- The outside edges of the two indications, including any housing, shall not protrude beyond the outside edges of the integral signage of the RRFB.
- Each RRFB to be supplied with all required hardware to install assembly. All exposed hardware shall be vandal resistant.

#### G Pole Mounted Rectangular Rapid Flashing Beacon Cabinet and Controller

Provide and install rectangular rapid flashing beacon controller and pole mounted cabinet with all the necessary mounting hardware on the pole and make the system operational.

The rectangular rapid flashing beacon controller and cabinet shall meet the following requirements:

- Provide an interconnected rectangular rapid flashing beacon system,
- Shall be solar powered
- Communicate wirelessly with the other controllers and provide an interconnected rectangular rapid flashing beacon system,
- Provide pedestrian pushbutton activation of the system,
- The control circuit shall have the capability of independently flashing up to two independent outputs. The LED light outputs and flash pattern shall be completely programmable. The flashing output shall use the WW+S flash pattern based on a flash cycle length of 800 milliseconds for 75 flashing sequences per minute, as approved by the FHWA March 20, 2018 Interim Approval for Optional Use of Pedestrian-Actuated Rectangular Rapid-Flashing Beacons at Uncontrolled Marked Crosswalks (IA-21).
  - The left side beacon is on for 50 milliseconds
  - Both beacons are dark for 50 milliseconds
  - **The right side beacon is on for 50 milliseconds** Both beacons are dark for 50 milliseconds
  - Both beacons are dark for 50 milliseconds
  - The left side beacon is on for 50 milliseconds Both beacons are dark for 50 milliseconds
  - The right side beacon is on for 50 milliseconds
  - Both beacons are dark for 50 milliseconds
  - Both beacons are on for 50 milliseconds Both beacons are dark for 50 milliseconds
  - Both beacons are on for 50 milliseconds
    - Both beacons are dark for 250 milliseconds
- The control circuit shall be installed in an IP67 rated enclosure. The system controller shall be network enabled for remote management of the system using the public internet. Remote management features shall include configuring flash pattern, flash duration, system activation reporting and GPS. All circuit connectors shall conform to Ingress Protection, IP-67 rating, dust proof, and protected from temporary immersion in water up to 3 feet deep for 30 minutes.

#### H Pedestal Mounted Solar Panels and Battery

Provide and install solar panel systems and batteries complete with all internal equipment, wiring, and mounting hardware to make the system operational.

The solar systems and batteries shall meet the following requirements:

- Meet the power needs of the rectangular rapid flashing beacon system in this area of the country during all times of the year and at all times of the day. System autonomy shall be at least 7 days.
- Battery units shall at least be 12vdc 40AH Sealed Gel Batteries. All batteries shall be sealed in a plastic polypropylene case to provide moisture and corrosion resistance. All batteries shall operate between the temperatures of -60 and +60 degrees C. Number and size of batteries shall be appropriate for the power needs of the system. Batteries shall include all charge controllers as necessary.
- RRFB power: One solar panel on each pole shall be mounted to an adjustable aluminum plate and bracket at an angle of 45-60 to provide maximum output. All solar panel connectors shall conform to Ingress Protection, IP-67 rating, dust proof, and protected from temporary immersion in water up to 1 meter deep for 30 minutes. This solar panel shall be used to power the RRFB.

## I Accessible Pedestrian Signals (APS)

Provide Accessible Pedestrian Signals in accordance with MnDOT Spec. 3833 "Accessible Pedestrian Signal Push Buttons and Mounting Hardware" and as follows:

Present the order form in this section to the APS manufacturer to ensure the braille message is added to the pedestrian information sign and the correct voice messages are programmed in the pedestrian push buttons.

The top half of the form below can be downloaded by following the link.

https://edocs-public.dot.state.mn.us/edocs\_public/DMResultSet/download?docId=36421074

#### Accessible Pedestrian Signal (APS) ORDER FORM

## Intersection: TH 29 and Jefferson St

## Total Number of Pedestrian Push Buttons: 6

Field Wiring Interface Board: One needed for each intersection Qty: 1

CCU: (Central Control Unit) One needed for each intersection Qty: 1

#### Push Button and Sign Braille Information

Button	Arrow Direction R/L
PB-1	R
PB-2	L
PB-3	R and L(Bi-Directional)

	I
PB-3	R and L(Bi-Directional)
PB-4	R and L(Bi-Directional)
PB-5	R
PB-6	L

Street Name
(Street Being Crossed)
TH 29

#### **Custom Voice Message Details**

System I.D. \_\_\_\_ T.E. No. \_\_\_\_\_

Message will be recorded correctly.

\*Note that unless Street, Drive, Avenue etc....are necessary for intersection identification, it is recommended to not include them in the verbal message.

The bottom half form below can be downloaded by following the link.

https://edocs-public.dot.state.mn.us/edocs\_public/DMResultSet/download?docId=28204324

	PB-1 thro	ugh PB-6	
Walk Message:			
	High Way Twenty Nine	Warning lights are flashing	High Way Twenty Nine
	(Street Being Crossed)	are nashing	(Street Being Crossed)

## Intersection: TH 287 and Lake St

## System I.D. \_\_\_\_ T.E. No. \_\_\_\_\_ Total Number of Pedestrian Push Buttons: 6

#### Field Wiring Interface Board: One needed for each intersection Qty: 1

CCU: (Central Control Unit) One needed for each intersection Qty: 1

## Push Button and Sign Braille Information

Button	Arrow Direction R/L
PB-1	R
PB-2	L
PB-3	R and L(Bi-Directional)
PB-4	R and L(Bi-Directional)
PB-5	R
PB-6	L

Street Name
(Street Being Crossed)
TH 29

#### **Custom Voice Message Details**

Message will be recorded correctly.

\*Note that unless Street, Drive, Avenue etc....are necessary for intersection identification, it is recommended to not include them in the verbal message.

The bottom half form below can be downloaded by following the link.

https://edocs-public.dot.state.mn.us/edocs\_public/DMResultSet/download?docId=28204324

	PB-1 throu	ugh PB-6	
Walk Message:			
	High Way Twenty Nine	Warning lights are flashing	High Way Twenty Nine
	(Street Being Crossed)	are nasining	(Street Being Crossed)

#### J Pedestrian Instruction Signs

Provide and install a  $9'' \times 12''$  pedestrian instruction sign (R10-25) shown in the Plans with each pedestrian push button installation. Fabricate the signs in accordance with MnDOT 2564.

Provide sign base material in accordance with the applicable provisions of MnDOT 2564 and 3352. Sign face and sign legend materials shall be Sign Sheeting for Rigid Permanent Signs, Delineators and Markers (Type IX or Type XI). The retroreflective sheeting types and qualified products used for rigid permanent signs, markers and delineators can be found on the MnDOT Approved/Qualified Products Lists WEB site for Signing under Sheeting Materials.

http://www.dot.state.mn.us/products/index.html

Mount each sign as detailed in the Plan to the satisfaction of the Engineer. Signs shall be included in the Pedestrian Crosswalk Flasher System pay item.

#### K Pedestrian Signs

Provide and install  $36'' \times 36'' W11-2$  (Pedestrian Crossing) signs mounted back-to-back or singlesided to pedestal poles as noted in the Plans. Provide and install a  $30'' \times 18'' W16-7PL/R$  (Down Arrow) signs mounted back-to-back or single sided on pedestal pole. Fabrication of the signs shall be in accordance with MnDOT 2564.

Provide sign base material in accordance with the applicable provisions of MnDOT 2564 and 3352. Sign face material shall be fluorescent yellow-green reflective sheeting (Type IX FL). The retroreflective sheeting types and qualified products used for rigid permanent signs, markers and delineators can be found on the MnDOT Approved/Qualified Products Lists WEB site for Signing under Sheeting Materials.

#### http://www.dot.state.mn.us/products/index.html

Mount each sign as detailed in the Plan to the satisfaction of the Engineer. Signs shall be included in the Pedestrian Crosswalk Flasher System pay item.

#### L Warranty

The Contractor shall warrant and guarantee satisfactory in-service operation of all furnished and installed materials and electrical equipment in accordance with MnDOT 2565.2A5, <u>including that the period</u> <u>of in-service warranty shall be one (1) year</u> beginning with the "turn-on" of the pedestrian crosswalk flasher system as documented by the Engineer.

The Contractor shall retain spares of equipment to have on-hand during the period of in-service warranty.

## SS-1.5 CONSTRUCTION REQUIREMENTS

#### A Storing Materials

Store and handle materials in accordance with 1606 "Storage of Materials", 1607 "Handling Materials" and the manufacturer's requirements.

#### **B** Installation of Pedestal Foundations

Provide "Pedestal Foundations" and "Signal Head Pedestal Pole Foundations" in accordance with the Materials section of these Special Provisions when required and install meeting the following.

Ensure foundations are installed flush with ground level or concrete sidewalk. Re-install foundations that are below ground level or sidewalk or projecting above ground level or sidewalk to meet ADA and AASHTO Breakaway Support requirements.

## C Anti-Seize Lubricant

Apply brush on anti- seize lubricant to all threaded portions of the RRFB prior to assembly to the satisfaction of the Engineer.

The following is list of assemblies require anti-seize lubricant:

- 1) Traffic signal pedestals anchor rods above concrete foundations
- 2) Traffic signal pedestal base and shaft
- 3) Pedestal base shaft set screws
- 4) Pedestal shaft caps
- 5) Pedestal base access door locking screw
- 6) Blind threaded inserts (rivet nuts)
- 7) Pedestal reinforcing collars

8) Pedestrian push-button mounting hardware and sign mounting hardware

## D Installation of Pedestal Poles and Pedestal Bases

Install the four inch diameter straight pedestal poles and pedestal bases at locations shown on the Plans, in accordance with the Materials section of these special provisions, and meeting the following.

Before installing signal heads, pedestrian heads, and pedestrian pushbuttons on poles, and before installing the pedestal bases on foundations, fully seat the NPT threads of the poles (shafts) into the threaded neck of the pedestal bases. Once the NPT threads of the pole are fully seated into the NPT threaded connection of the pedestal base, install the required aluminum conduit locknut on the protruding threads of the pole inside the base and tighten the locknut against the underside of the base to prevent the pole from turning instead of using set screws, thru-bolts, or additional hardware. Ensure the pole thread length is the required minimum 2 inches to maximum 2 <sup>1</sup>/<sub>2</sub> inches to install the conduit locknut as specified onto the protruding threads inside the base. Do not use the pedestal base set screws or install thru bolts to keep the pole from turning inside the threaded connection of the base. Do not drill holes in the neck of the pedestal base and add hardware to prevent the pole from turning.

Once the structure is installed on the foundation then install the signal heads, pedestrian heads, and pushbuttons and ensure alignment of the components in relation to the intersection before final fastening to the pole. After installing components on the pole, do not align the heads and pushbuttons to the intersection by using the threaded connection of pedestal base to turn the pole.

Fasten the pole bases to foundation anchorages using the required washers specified in the Materials section of these Special Provisions. Tighten anchor rods in accordance with "Single Nut Connection Installation for Traffic Signal Structures" in the Construction section of these Special Provisions.

#### E Cast In Place (CIP) Concrete Curing

Ensure CIP concrete meets the minimum curing period in accordance with 2401.3 G.1 "Minimum Curing Period",

For installation of adhesive anchoring systems in concrete ensure concrete cure time is a minimum of 14 days.

## F Activating Flasher System

MnDOT Specification 2565.3AA is hereby deleted and replaced with the following:

When the pedestrian crosswalk flasher system is to be placed in operation, all rectangular rapid flashing beacons shall be aimed to approaching traffic and as directed by the Engineer. The Contractor shall notify the Engineer at least 48 hours in advance of the scheduled pedestrian crosswalk flasher system turn-on.

The Contractor and the RRFB System manufacturer or an authorized product representative shall be present at time of turn on to provide assistance to ensure the pedestrian crosswalk flasher system is operating correctly and in a safe manner. The Contractor shall provide all necessary parts and labor to rectify any malfunctioning components of the pedestrian crosswalk flasher system installed by the Contractor. All components of the pedestrian crosswalk flasher system must be completely operational to the satisfaction of the Engineer before the actual pedestrian crosswalk flasher system turn on is performed.

The Contractor shall not turn the pedestrian crosswalk flasher system ON or OFF without the specific approval of, and in the presence of the Engineer.

If at any point a road is to be opened to traffic, but the permanent pedestrian crosswalk flasher system is not in place, the Contractor is responsible to provide, erect, and maintain a temporary system until the proposed system is operational. Pedestrian crossings with temporary signal systems will be

required where there is high pedestrian traffic and a lack of alternate pedestrian routes. Each temporary signal system and operation must be approved by the Engineer. The Engineer will also determine the quantity and size of the temporary signal systems as well as their placement in the field. All costs incurred to provide, erect, and maintain such temporary signal systems shall be considered incidental work for which no direct payment will be made.

## SS-1.6 MEASUREMENT AND PAYMENT

## A Pedestrian Crosswalk Flasher System

Furnishing and Installing materials and electrical equipment, all to provide a complete operating Rectangular Rapid Flashing System at each of the intersections of TH 29 & Jefferson St and TH 29 & Lake St in Alexandria, MN as contained in these Special Provisions and in the Plans will be measured as separate, fully operational systems and paid for as specified in MnDOT 2565.4 and MnDOT 2565.5 respectively for Item:

- 2565.616 (FLASHING BEACON SYSTEM "A") TH 29 & JEFFERSON
- 2565.616 (FLASHING BEACON SYSTEM "B") TH 29 & LAKE

as contained in these Special Provisions and in the Plans will be measured as an integral unit and paid for as specified in MnDOT 2565.4 and MnDOT 2565.5 respectively for Item No. 2565.616 (FLASHING BEACON SYSTEM) at the Contract price per SYSTEM, which price will be compensation in full for all costs.

## B As Built Drawings and GPS Coordinates

As Built drawings and GPS coordinates of the Pedestrian Crosswalk Flasher System in accordance with Division S Special Provisions "As-Builts" included in Pay Item No. 2011 (AS BUILT).

## SS-2 (2565) REVISE SIGNAL SYSTEM

This Work consists of removing items of the existing traffic control signal system; Providing and installing materials and electrical equipment; and installing Department furnished materials as specified, to provide a complete operating revise signal system at the intersection of T.H. 29 & Broadway St and T.H. 29 & Nokomis St in Alexandria, MN in accordance with MnDOT 2565; the current edition of the National Electrical Code; the Plans; and the following:

## SS-2.1 GENERAL

## A Revise Existing Traffic Control Signal System

Revise the existing traffic control signal system as shown on the Plans and in accordance with the following:

Remove and dispose of items of the existing traffic control signal system not being reused in the revise signal system as required by the Plans and these Special Provisions.

Incorporate into the revise signal system in place items of the existing traffic control signal system as shown on the Plans

Install Department furnished traffic materials as specified

Provide and install new items as required on the Plans which includes the following: LED vehicle signal indications

Traffic control signal electrical cables and conductors

Provide and install new labels to identify cables and conductors as required by the Plans

Terminate cables and conductors as required to provide an operational revise signal system to the satisfaction of the Engineer

#### SS-2.2 MATERIALS

#### A Department Provided Materials

The Department provides at no cost to the Contractor, the following materials and electrical equipment for the Contractor to install:

- (1) One traffic control signal cabinet each complete with an actuated controller unit and signal control equipment
- (2) Riser adaptor
- (3) Four sets of anchor rods, nuts, and washers per cabinet (one set includes one anchor, one nut, and one washer)
- (4) Rubber gasket per cabinet installed between the bottom of the cabinet and the concrete equipment pad
- (5) Department Provided Warning Stickers on New Sign Panels

The Department provides at no cost to the Contractor, warning stickers to be applied to new sign panels. Coordinate quantity required for the project with the Engineer.

- (6) Video detection
- (7) Radar detection
- (8) Non-Intrusive detection processors

#### **B** Contractor Provided Equipment for Traffic Control Signal Cabinets

Contractor provided equipment for traffic control cabinets when specified includes EVP phase selectors and APS central control units.

Deliver equipment for integration into the Department provided traffic control signal cabinet at least 30 Business Days in advance of needing the traffic control signal cabinet on the Project to the following address:

MnDOT Electrical Services Section (ESS) 6000 Minnehaha Avenue St. Paul, MN. 55111- 4014

To ensure integration into the correct signal cabinet, before delivery to ESS, label the equipment packaging with the following:

Assigned Traffic Engineering (TE) Number
State Project Number
Contractor name
Contact name and phone number

Notify ESS at least 3 Business Days in advance before delivering the equipment. Have the TE Number on hand before calling. Contact the following in the order listed until notification has been received:

Electronic Maintenance Supervisor	651-366-5759
Stockroom	651-366-5720
Transportation Program Supervisor	651-366-5734

## C Build America Buy America

Use construction materials, and domestically manufactured products that are composed predominately of steel, iron, or both, for the permanent installation of MnDOT electrical systems, in accordance with MnDOT Division S Special Provisions (1601) SOURCE OF SUPPLY AND QUALITY requirements.

#### D Low Profile Hydraulic Torque Wrench

Use an approved low profile hydraulic torque wrench listed on MnDOT's APL for Lighting "Low profile hydraulic torque wrench" on the top nuts to tighten PA and BA traffic signal mast arm pole anchor rods to the required torque values specified in the MnDOT *Anchor Rod Tightening Handbook*. Use a working handheld digital pendant or, digital or analog gauge with the low-profile hydraulic torque wrench to ensure specified torque values have been met and can be verified in foot pounds by the installer and inspector during the tightening process.

If the gauge display is in pounds per square inch (PSI), convert PSI to foot pounds and ensure the calculations are correct. Submit the PSI to foot pounds converted values to the Engineer before installing the poles. The submittal and Engineer's review does not relieve responsibility for tightening anchor rods to the required torque values.

Obtain Engineer's approval of the wrench and provide proof of calibration done in the last 12 months from an accredited calibration service before installing the poles.

#### E Mast Arm Pole Standards and Luminaires

Provide mast arm poles and LED luminaires in accordance with MnDOT 2565, 3810, and 3831, and as follows:

Mast Arm Extension with Flange Brace Provide and install mast arm extensions with flange brace as shown on the Plans MnDOT approved mast arm extensions with flange brace are listed on MnDOT's APL for Signals:

#### **F** Grease Filled Wire Nuts

Provide NRTL listed and labeled grease filled wire nuts to insulate and seal individual splices of signal control cable meeting the following requirements:

Pre-filled twist-on wire connector Silicone based sealant UL 486C listed and labeled UL 486D listed for direct burial UL 94V-2 Flame Rating CSA-C22.2 NO. 188 listed CSA-C22.2 NO. 198.2 listed for direct burial RoHS Compliant Sized in accordance with the intended conductors being spliced

## SS-2.3 CONSTRUCTION REQUIREMENTS

#### A Storing Materials

Store and handle Materials in accordance with 1606 "Storage of Materials", 1607 "Handling Materials" and the manufacturer's requirements.

## **B** Pick Up Department Provided Materials

Pick up materials and electrical equipment from:

MnDOT's Electrical Services Section, 6000 Minnehaha Avenue,

St. Paul, MN. 55111-4014.

Follow these requirements:

Request from the Electrical Services Section the materials and electrical equipment listed in Contract Documents.

Direct MnDOT's Electrical Services Section to the T.E. Request No.

Request Department provided materials at least 30 business days in advance of needing the material on the project.

Notify MnDOT's Electrical Services Section at least 3 business days in advance of intention to pick up materials and electrical equipment. Contact:

Electronic Maintenance Supervisor	651 366 5759
Stockroom	651 366 5720
Transportation Program Supervisor	651 366 5753

Pick up the Department provided materials and electrical equipment at the above specified location and transport them to the job site

Secure each cabinet in an upright position when transporting to the job site. Ensure that each cabinet being transported will not tip and be damaged

Notify the Engineer in advance of contacting MnDOT's Electrical Services Section.

#### C Installation of Department Provided Materials

Install the Department provided traffic control signal cabinets each complete with actuated controller unit and all required signal control equipment.

For a complete operating traffic control signal cabinet installation, provide and install materials and electrical equipment including the following:

A cabinet concrete foundation as part of the equipment pad concrete foundation using Department provided anchor rods, nuts, and washers

Bonding and grounding materials and connections

Field conductor connections in each traffic control signal cabinet as directed by the Engineer to make each traffic control signal system operational.

Protect the Department provided cabinet pallet from damage and return the pallet to MnDOT Central Electrical Inventory Center at the address specified elsewhere in these Special Provisions.

## D Splicing

Install grease filled wire nuts for splicing signal control cable in the base of the pole.

#### **E** Maintenance of Existing Electrical Systems

Maintain and keep in operation new and existing electrical systems in accordance with 2565.3B and as follows:

Locate underground facilities of existing traffic control signal systems including temporary, and newly constructed signal systems within the limits of the construction project, for the duration of the construction project in accordance with the applicable provisions of MnDOT 1514 and in accordance with Minnesota State Statute 216D.

Responsibility for locating underground traffic control signal system facilities is transferred from the Department to the Contractor on the Project start date as shown on the Proposal.

Request at the start of the Project for MnDOT's locating group to provide an initial locate of the underground traffic control signal system facilities within the project limits. Submit initial locate requests to MnDOT's Locating Office a minimum of 4 business days before the Project start date.

Locate requests that are within the construction Project limits will continue to be received by MnDOT's Locating Office. These locate tickets will be forwarded to the Contractor's representative responsible for coordinating locate requests within the project's limits. The locate tickets will be forwarded via email or fax. Confirm receipt of the locate ticket by notifying MnDOT's locating office within 2 hours of MnDOT sending the locate request.

Repair traffic control signal system facilities damaged as the result of improperly located or unmarked underground traffic control signal system facilities within the project limits.

Repair the damaged underground traffic control signal system facilities in accordance with 2545.3A, 2565.3B and RTMC design and construction requirements.

Before an authorized Work suspension begins, ensure existing, temporary, and new electrical systems are in full working order in accordance with the Contract. Maintenance and operations of electrical systems will not be suspended until the following requirements have been met:

Remedy electrical Work deemed unsafe by the Engineer

Notify ESS, MnDOT Locating Office, and the district traffic office of Work suspension start and stop dates

Schedule and provide a walk through with ESS and the district traffic office

Locate the underground system with paint, stakes, and flags upon request

- Provide and install marker ball locators in handholes and underground enclosures
- Submit to the Engineer a current As-Built redlined drawing of the electrical systems (existing, temporary, and new)
- Cover and clearly mark above ground splices not protected by a structure
- Electrical components and devices are in working order

Due to the nature of electrical systems, Partial Acceptance will not be granted because of an authorized Work suspension unless the new electrical system Work has been completed and inspected in accordance with the Contract and the new system is fully operational.

During periods of authorized Work suspension, the Department will perform routine maintenance and GSOC locate requests on the Project in accordance with 1514 "Maintenance During Construction".

When resuming Work after authorized Work suspension, remove temporary construction or Materials that the Department used to maintain the electrical system during the suspension. This Work is included in the Unit Prices of the Pay Items that are part of the Traffic Control Signal System.

Submit to the Engineer a completed *Locating Responsibility Form* included in this section, with contact information including the names and telephone numbers for 24 hours a day, 7 days a week maintenance as defined in this section.

Until final written acceptance of the Project by the Engineer (MnDOT 1716), locate underground traffic control signal facilities as required in this section. This Work is included in the Unit Prices of the Pay Items Traffic Control Signal System.

Notify MnDOT's Locating Office to provide contact information and establish assumed responsibility for locating MnDOT's underground traffic control signal system facilities within the Project. Fill out the form in this section and submit to the Engineer at the pre-construction meeting. Send a copy of the completed form to:

Electrical Services Dispatch Phone: (651)366-5750 Fax: (651)366-5742 E mail: <u>ElectricalServicesDispatch.dot@state.mn.us</u> 6000 Minnehaha Ave. St. Paul, MN 55111-4014 and Locating Supervisor Phone: (651)755-9061 Fax: (651)366-5742 E mail: <u>bruce.camitsch@state.mn.us</u> 6000 Minnehaha Ave. St. Paul, MN 55111-4014

**MnDOT District Signal Operations** 

Name: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

E mail: \_\_\_\_\_

Address: \_\_\_\_\_

Until final written acceptance of the project by the Engineer (MnDOT 1716) locate underground traffic control signal facilities as required above.

# Locating Responsibility Form

Job S.P. Number	
	 -
Јор Туре	 -
Start Date	 -
End Date	 -
т.н.	 -
Location	 -
Lighting/ Signal Inspector	 _
Contractor	 -
Contractor (24 Hour Contact)	 -
Project Manager	-
Phone Number	 -
Fax Number	 -
Email	 -
Electrician	 -
Phone Number	 -
Locator Area	 -
Project Engineer	 -
Phone Number	 -
Chief Inspector	 -
Phone Number	 -
Weekly Meeting	

## F Compliance with NEC Article 110. 24

Provide fault current calculations in accordance with 2565.3Z and as follows:

Fill out the following Electric Service Information Form for Traffic Control Signal Systems.

Provide to the Engineer, before final acceptance of the project, four copies of the *Electric Service Information Form for Traffic Control Signal Systems* and the Engineer will distribute the copies as follows:

MnDOT Electrical Services Section MnDOT Traffic Electrical Systems Engineer MnDOT District Traffic Engineer

The Contractor provided "*Electric Service Information Form for Traffic Control Signal Systems*" and available fault current calculations and labeling are included in the Unit Prices of the Pay Items that are part of the Traffic Control Signal System.

			Service Cabinet Main Circuit Breaker Size in AMPS								
ystems			Calculated Available Fault Current at the line Side of the Meter Socket								
			Length of conductors in feet from transformer connection to meter socket connection.		s in feet from tion to meter sction.	Neutral	Neutral	Neutral	Neutral	Neutral	
				L2 =	L2 =	L2 =	L2 =	L2 =			
ignal S	orm For Traffic Control Signal S	TransformerSize of bitternalLength of conductors in feet from tength of conductors in feet from 	[1 =	[] =	[1 =	[1 =	[1 =				
Electric Service Information Form For Traffic Control Signal Systems Contractor:				Size of Conductors In American Wire Gauge (AWG)							
						Transformer Internal Impedance Z in Percent					
	Contractor:		Electric Utility Transformer Size In KVA								
			Transformer Primary Fuse Size and Type								
	mber:			Intersection Meter Address							
			Intersection						e 110.24		
	Project Number:	Date:	MN/DOT Signal System ID						NEC Article 110.24		

## **G** Install Salvaged Mast Arm Mounted Signs

Salvage and re-install mast arm mounted sign panels on the traffic control signal mast arms at the locations shown on the Plans. If required by the Engineer, provide new mounting brackets and mounting hardware for each salvaged sign panel.

This Work is included in the Unit Price of the Pay Item No. 2565.616 (REVISE SIGNAL SYSTEM).

#### H Removal Operations

Remove in place Materials as specified on the Plans.

Remove in-place conduit systems, cables and conductors as shown on the Plans except under roadway surfaces and within two feet of the Roadbed.

Except under roadway surfaces and within two feet of the Roadbed, remove in-place conduit systems, cables and conductors no longer in service that are not shown on the Plans for removal. This Work will be paid for as Extra Work in accordance with 1402.5 "Extra Work".

Do not Abandon the in-place conduit systems, cables and conductors unless it has been determined by the Engineer, ESS, and the district traffic office that removal operations would have a direct negative impact on a structure, facility, or vegetation listed in 2572.3A "Protecting and Preserving".

Backfill trenches, holes, and depressions caused by removal operations in accordance with 2104.3E "Backfilling Depressions".

Destroy removed structures not containing lead by rendering them unusable to the satisfaction of the Engineer before disposing.

Dispose of Materials in accordance with 2104.3D "Disposal of Materials and Debris".

Submit to the Engineer a receipt from the facility where Materials were delivered and disposed of or recycled.

The Office of Environmental Stewardship sets the policy and procedures for regulated materials management.

Follow the links below to obtain the current work order form and the list of approved waste contractors.

http://www.dot.state.mn.us/environment/regulatedmaterials/wastemgmt.html

Hazardous Waste Work Order Form (Word)

MnDOT approved list of waste contractors (Word)

#### I As Built Drawings and GPS Coordinates

As Built drawings and GPS coordinates in accordance with Division S Special Provisions "As-Builts" including Pay Item No. 2011.601 (As-builts).

## SS-2.4 MEASUREMENT

#### A Method of Measurement

Removing items of the existing traffic control signal system; furnishing and installing materials and electrical equipment; and installing Department furnished materials as specified, to provide a complete operating revise signal system at the intersection of T.H. 29 & Broadway St and T.H. 29 &

Nokomis St in Alexandria, MN as contained in these Special Provisions and as shown on the Plans will be measured as an integral unit complete in place.

## SS-2.5 PAYMENT

## A Basis of Payment

Removing items of the existing traffic control signal system; furnishing and installing materials and electrical equipment; and installing Department furnished materials to provide a complete operating revise signal system at the intersection of T.H. 29 & Broadway St and T.H. 29 & Nokomis St in Alexandria, MN ,as contained in these Special Provisions and as shown on the Plans will be paid for under Item No. 2565.616 (REVISE SIGNAL SYSTEM) at the Contract price per SYSTEM.

- 2565.616 (REVISE SIGNAL SYSTEM "A") TH 29 & BROADWAY
- 2565.616 (REVISE SIGNAL SYSTEM "B") TH 29 & NOKOMIS

# **DIVISION ST**

Section		Page
No.	Item	No.
ST-1	(2104) REMOVING MISCELLANEOUS STRUCTURES	1-ST
ST-2	(2564) TRAFFIC SIGNS AND DEVICES	2-ST
ST-3	(3352) SIGNS	7-ST
ST-4	(3402) SQUARE TUBULAR SIGN POSTS	9-ST

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.

Digitally sig DN: C=US Chris Dahl NG, Christian C

Chris Dahl

Lic. No. 49845

# **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 Remove Sign Panel

Remove and dispose of the sign panel and mounting hardware. Leave the sign structure in place.

If a sign panel is removed from a painted signal pole, repair any painted areas damaged by the sign mounting or removal process by cleaning, prime painting, and finish painting in accordance with the applicable provisions of 2565.3U "Painting".

If a sign panel is removed from a galvanized pole, repair any galvanized finish damaged by the sign mounting or removal process in accordance with ASTM A780 Annex A2. Only use zinc rich paints found on MnDOT's Approved/Qualified Products List for "Signals".

## C 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, City of Alexandria or Douglas County.

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.

## D Salvage Sign

Dismantle the sign. Remove and dispose of the sign structure and mounting hardware. Salvage and store the sign panel(s) and delineator/marker panel(s), if present, for reinstallation.

#### E Salvage Sign Special

Dismantle the sign special. Remove and dispose of the sign structure and mounting hardware. Salvage and store the bracket assembly with street name plates attached 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 City of Alexandria or Douglas County specifications, 3352, "Signs", and these Special Provisions, at no cost to the Department, City of Alexandria or Douglas 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	Remove Sign Panel	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 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:

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#### 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.

Remove galvanizing slag from base pieces that would cause a gap between the top and bottom pieces.

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.

Remove galvanizing slag from base pieces that would cause a gap between the top and bottom pieces.

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 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.

Remove galvanizing slag from base pieces that would cause a gap between the top and bottom pieces.

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.

#### E Sign Panel

#### Add the following to 2564.3, "Construction Requirements":

Fabricate the sign panel 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.

Attach new panel to support structure using new stringers as needed and mounting hardware.

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 panel by square foot based on the nominal dimensions of the sign panel. Sign panel is considered rectangular for the purpose of measurement except that the Engineer will measure a triangular shaped sign panel as the actual area of the triangle. The Engineer will not make deductions for rounded corners. Sign panel includes new sign panel, 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
2564.618	Sign	Square Foot
2564.618	Sign Panel	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	
<u>&lt;</u> 18	0.063 <u>+</u> 0.004	
>18 - 30	0.080 <u>+</u> 0.005	
>30	0.100 <u>+</u> 0.005	
Sign Panel Overlay	0.063 <u>+</u> 0.004	
X4-3 Cylinder Delineator	0.040 <u>+</u> 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 no splice retroreflective sheeting for sign face material on a single sign base material sheet, except when different sheeting colors abut. 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				
Pro	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 be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and th

#### 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 be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be considered Project Float and the contractual completion date will be contractual completion da

#### 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			
			L	evel 4: Stage TBD
Ì	Ì			Level 5: Detail to be defined by Contractor
Ì				Level 5: Detail to be defined by Contractor
	Ì	Ī	L	evel 4: Stage TBD
	ĺ			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 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
  - (I) 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 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:

- 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 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	<b>Original Submission</b>	1 <sup>st</sup> Resubmission	2 <sup>nd</sup> Resubmission	
First Preliminary Schedule	####-###-PR00-Rev0	####-###-PR00-Rev1	####-###-PR00-Rev2	
1 <sup>st</sup> Subsequent Preliminary Schedule edulSchedule	####-###-PR01-Rev0	####-###-PR01-Rev1	####-###-PR01-Rev2	
2 <sup>nd</sup> Subsequent Preliminary Schedule, etc. edulSchedule	####-###-PR02-Rev0	####-###-PR02-Rev1	####-###-PR02-Rev2	
Baseline Schedule	####-###-BSLN-Rev0	####-###-BSLN-Rev1	####-###-BSLN-Rev2	
1 <sup>st</sup> Update Schedule	####-###-UP01-Rev0	####-###-UP01-Rev1	####-###-UP01-Rev2	
2 <sup>nd</sup> Update Schedule, etc.	####-###-UP02-Rev0	####-###-UP02-Rev1	####-###-UP02-Rev2	
1 <sup>st</sup> Rebaseline Schedule	####-###-RB01-Rev0	####-###-RB01-Rev1	####-###-RB01-Rev2	
2 <sup>nd</sup> Rebaseline Schedule, etc.	####-###-RB02-Rev0	####-###-RB02-Rev1	####-###-RB02-Rev2	
1 <sup>st</sup> Impact Schedule	####-###-IS01-Rev0	####-###-IS01-Rev1	####-###-IS01-Rev2	
2 <sup>nd</sup> 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 <sup>th</sup> 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
  - 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:

- 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	СҮ	0.17
2105	Rock Excavation	СҮ	0.27
2105	Muck Excavation	СҮ	0.17
2105	Subgrade Excavation	СҮ	0.17
2105	Unclassified Excavation	СҮ	0.23
2105	Granular Borrow (EV)	СҮ	0.17
2105	Granular Borrow (CV)	СҮ	0.19
2105	Granular Borrow (LV)	СҮ	0.14
2105	Select Granular Borrow (EV)	СҮ	0.17
2105	Select Granular Borrow (CV)	СҮ	0.19
2105	Select Granular Borrow (LV)	СҮ	0.14
2105	Common Borrow (EV)	СҮ	0.17
2105	Common Borrow (CV)	СҮ	0.19
2105	Common Borrow (LV)	СҮ	0.14
2105	Topsoil Borrow (EV)	СҮ	0.17

Specification Number	Item	Unit	Gallons of Fuel per Unit
2105	Topsoil Borrow (CV)	СҮ	0.19
2105	Topsoil Borrow (LV)	СҮ	0.14
2106	Excavation – Common	СҮ	0.17
2106	Excavation – Subgrade	СҮ	0.17
2106	Excavation – Rock	СҮ	0.27
2106	Excavation – Muck	СҮ	0.17
2106	Common Embankment (CV)	СҮ	0.19
2106	Granular Embankment (CV)	СҮ	0.19
2106	Select Granular Embankment (CV)	СҮ	0.19
2106	Select Granular Embankment (CV) Modified (%) (CV)	СҮ	0.19
2211	Aggregate Base	Ton	0.55
2211	Aggregate Base (LV)	СҮ	0.77
2211	Aggregate Base (CV)	СҮ	0.99
2211	Open Graded Aggregate Base (CV)	СҮ	0.99
2211	Shoulder Base Aggregate, Class	Ton	0.55
2211	Shoulder Base Aggregate (LV), Class	СҮ	0.77
2211	Shoulder Base Aggregate (CV), Class	СҮ	0.99

Specification Number	Item	Unit	Gallons of Fuel per Unit
2232	Mill Bituminous Surface t inches	SY	0.019* <i>t</i>
2301	Concrete Pavement <i>t</i> inches	SY	0.027* <i>t</i>
2301	Place Concrete Pavement t inches	SY	0.027* <i>t</i>
2360	Type SP () Wearing Course Mixture	Ton	0.90
2360	Type SP () Wearing Course Mixture	Ton	0.90
2360	Type ( ) Mixture <i>t</i> inches thick	SY	0.051* <i>t</i>
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.

MnDOT SD-15 May 1, 2023 Schedule of Materials Control for 2020 Standard Specifications

# Schedule of Materials Control 2023 Version

## MnDOT SD-15 May 1, 2023 Schedule of Materials Control for 2020 Standard Specifications

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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.

#### <u>Contact the MnDOT District Independent Assurance Inspector when the project starts to provide the proper</u> <u>servicing of your project.</u>

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 <u>Telephone Index</u> is included with the Schedule giving contact information for the specialty areas if further information is required regarding the various materials. A <u>Form Index</u> is also included.

The Department maintains the <u>Approved/Qualified Products List</u> (APL/QPL) and the Certified Products and Services List, as well as the Schedule of Materials Control. All are available electronically on the <u>Office of Materials and Road Research</u> 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 retested 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 mean Smoothness value is greater than 10 percent and 3 inches/mile of the Contractor's weighted mean Smoothness value, the retested segment Smoothness and ALR values as the basis for acceptance, incentive/disincentive, and Corrective Work monetary deductions.

# MnDOT SD-15 May 1, 2023Schedule of Materials Control for 2020 Standard SpecificationsI. 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	<ol> <li>Gradation         <ol> <li>(a) Aggregate Surfacing</li> <li>(b) Aggregate Base</li> <li>(c) Drainable Aggregate Base</li> <li>(d) Shoulder Base</li></ol></li></ol>	3136 3138	Production: 1/1000 yd <sup>3</sup> (CV) Only required for 1906.2, "Material on Hand"	$< 250 \text{ yd}^3$ (CV) or 500 tons: No tests required $\geq 250 \text{ yd}^3$ (CV) to $\leq 2,000 \text{ yd}^3$ (CV) or $\geq 500 \text{ tons to } \leq 4,000 \text{ tons:}$ 2 random samples from each lot and average. > 2,000 yd <sup>3</sup> (CV) or 4,000 tons: Divide into lots with lot size no greater than 2,000 yd <sup>3</sup> (CV) or 4,000 tons 2 random samples from each lot and average	l 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 <sup>3</sup> (CV) Only required for 1906.2, "Material on Hand"	30 lb. 1 per 40,000 yd <sup>3</sup> (CV) or 1 per 80,000 tons <i>(See Notes 1, 2, 10, &amp; 11)</i> 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	<ul> <li>(h) Granular Backfill</li> <li>(i) Aggregate Backfill</li> <li>(j) Granular Bedding</li> <li>(k) Aggregate Bedding</li> <li>(l) Coarse Filter Aggregate</li> <li>(m) Fine Filter Aggregate</li> <li>(n) Structural Backfill</li> </ul>	3149	1 per source. Only required for 1906.2, "Material on Hand"	l 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. <i>(See Notes 6 &amp; 8)</i> 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	<ul> <li>3a. Compaction Compliance-Non-Granular Material</li> <li>Non-granular material has greater than 20% passing the number 200 sieve.</li> <li>Specified Density or Light Weight Deflectometer (LWD)</li> </ul>	2106	Roadway EmbankmentWithin road core:1 per 10,000 yd³Material outside road core:Test at Engineer's discretionTrenches for TransverseCulverts and Abutments:1 per every 2 feet of fill heightTrenches for longitudinal water-main, storm-sewer, sanitary,gas, and retaining walls. Also, sidewalks and trails:1 per 500 feetSubgrade Preparation1 per 25 Road Stations(See Notes 11 & 12)	G&B-001 G&B-304
Multiple	<ul> <li>3b. Compaction Compliance -Granular Material Dynamic Cone Penetration (DCP) Index Method, LWD, or specified density</li> <li>(a) Aggregate Base</li> <li>(b) Shoulder Base Aggregate</li> <li>(c) Walks and Trails</li> <li>Granular material has 20% or less passing the number 200 sieve.</li> </ul>	3138	For aggregate base and shoulder base: 1 per 2,000 yd <sup>3</sup> (CV) or 1 per 4,000 ton 1 per 500 feet for sidewalks and trails <i>(See Note 10, 11, &amp; 12)</i>	G&B-001 G&B-204 G&B-601 G&B-603
(d) 2215	<ul> <li>3b. Compaction Compliance -Granular Material (Continued)</li> <li>(d) Full Depth Reclamation (FDR)</li> </ul>	2215	1 per 10,000 yd <sup>2</sup> (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 <sup>3</sup> 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

Pay Item Number	Test Type / Material	Minimum Contractor Testing Rate	
Multiple	<b>3c. Compaction Compliance-Test Rolling</b> (See Note 9)	Contractor to perform test rolling at top of: 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). Minimum 12' width and 300' length. Department to observe test rolling.	

Pay Item Number	Test Type / Material	Material       Minimum Department Testing         No.       No.		Form No. (See Note 4)
Multiple	<ul> <li>4. Moisture Content Test During Compaction <ul> <li>(a) Aggregate Surfacing (See Notes 1 &amp; 7)</li> <li>(b) Aggregate Base (See Note 1)</li> <li>(c) Shoulder Base Aggregate (See Note 1)</li> <li>(d) Structure Excavations and Backfills</li> <li>(e) Walks and Trails</li> </ul> </li> </ul>	3138 3149	For 2118, 2211, 2221, and 2521: 1 per 1,000 yd <sup>3</sup> up to 10 maximum For 2451: 1 per structure., however, for multiple adjacent structures, may test once, use judgement For Quality Compaction: Test at Engineer's discretion.	G&B-001 G&B-105 G&B-106
(f) 2215	(f) Full Depth Reclamation (See Note 1)	2215	1 per 20,000 yd <sup>2</sup>	G&B-001
	(g) All embankment materials <i>(See Note 1)</i> (h) Subgrade Preparation <i>(See Note 1)</i>	2106 3149	Embankment Materials: 1 per 10,000 yd <sup>3</sup> up to 10 maximum Subgrade Preparation: 1 per 25 Road Stations For Quality Compaction: Test at Engineer's discretion.	G&B-105 G&B-106

#### MnDOT SD-15 May 1, 2023 Schedule of Materials Control for 2020 Standard Specifications 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. (See Note 4)
	<ul> <li>5. Aggregate Quality <ul> <li>(a) LAR, Insoluble Residue (IR), and</li> <li>Lithological Exam</li> </ul> </li> <li>(b) Bitumen content; % crushing; clay content; plasticity index; percentage of Concrete, Masonry Concrete, Glass, Brick and other Objectionable Material in a Recycled Aggregate Sample.</li> </ul>	3136 3138 3149	1 per source. Only required for 1906.2, "Material on Hand" <i>(See Note 5)</i>	<ul> <li>(a) 2 per source</li> <li>For larger quantities from carbonate quarries, LAR and IR are required. Always required for structures regardless of quantity.</li> <li>(See Notes 1, 2, &amp; 3)</li> <li>(b) 2 per source</li> <li>Test at the discretion of the Engineer, however crushing is required for drainable bases regardless of quantity (2212 &amp; 3136).</li> <li>(See Notes 1, 2, 3, &amp; 5)</li> <li>30 lb.</li> </ul>	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. (See Note 4
	6. Depth Check Full Depth Reclamation (FDR)	1 per mile	l 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.

#### MnDOT SD-15 May 1, 2023 Schedule of Materials Control for 2020 Standard Specifications P a g e 6 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 yd<sup>3</sup> (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 yd<sup>3</sup>, one may use Quality Compaction as the only test method, except when backfilling structures.

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	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. ContentAt the discretionof the Engineer.PI/Clay contentNot 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)				

MnDOT SD-15 May 1, 2023Schedule of Materials Control for 2020 Standard SpecificationsI. Grading, Base, and Reclamation Construction Items (www.dot.state.mn.us/materials/gradingandbase.html)

Contractor QC Tests Requirements for C Stabilized Full Depth Reclamation (SFD	Cold in Place Recycled Bituminous (CIR) & Cold Central Plant R) Spec 2215	Recycling Bituminous (CCPR) Spec 2390 &
Test Name	Rate	Method/Location
<b>SFDR:</b> Simple gradation for unstabilized material	1 per mile	G&B Manual .215 & Form G&B-101 Report sieves 3" & 2"
<b>CIR, CCPR, &amp; SFDR:</b> 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".
<i>CIR, CCPR, &amp; SFDR:</i> 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
<b>SFDR</b> : Penetration Index (DCP) for unstabilized material	2 per mile	G&B Manual .255 & Form G&B-205
<b>CIR &amp; SFDR:</b> Calibrate mineral stabilizing agent application rate	Once using design rate per vane feeder	G&B Manual .286
<b>CCPR &amp; SFDR:</b> 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: <i>CIR &amp; SFDR:</i> Cement <i>CIR, CCPR, &amp;/SFDR:</i> 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
<i>CIR, CCPR, &amp; SFDR stabilized:</i> Control strip	Minimum 1 per project	
<b>CIR, CCPR, &amp; SFDR:</b> Foaming asphalt checks expansion ratio & half-life	1 per load (if using foamed asphalt)	Grading & Base Manual .285 and Form G&B-404
<i>CIR, CCPR, &amp; SFDR:</i> 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 <sup>st</sup> day's production until moisture stabilizes, then get the 2 <sup>nd</sup> in new area until moisture stabilizes.	Grading & Base Manual

I. Grading, Base, and Reclamation Construction Items (www.dot.state.mn.us/materials/gradingandbase.html)

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	Observe the Contractor	
application rate		
Yield check:		
CIR & SFDR: Mineral Stabilizing Agent	1 per day each	G&B Manual .286 & Forms G&B-402 & 403
CIR, CCPR, & SFDR: Liquid Bit. Material		
CIR, CCPR, & SFDR stabilized:	Observe the Contractor	Grading & Base Manual .282 & Form G&B-405
Compaction (Nuclear Density)		
CIR, CCPR, & SFDR stabilized: Control Strip	Observe the Contractor	
CIR, CCPR, & SFDR stabilized:	1 per 250,000 gallons	1 quart from first load, then take samples randomly
Bituminous Material Samples		
<i>CIR, CCPR, &amp; SFDR stabilized:</i> 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>Independent Assurance Sampling and Testing</u> assures testers are sampling and testing properly and that equipment is calibrated correctly.	Department	Contractor or Department	Contractor or Department

# Schedule of Materials Control for 2020 Standard Specifications

II. Bituminous Construction Items for Specification 2360 (cont.)

A. Pre-Pro	duction Sampling	and Testi	ng for Specification 2360 Plant Mixed Asphalt		
Minimum S	ample Sizes:				
		y Sample	e Size for Lab Submittal:		
			ble for quality testing and Percent Crushing 80 lb		
	Minus #4 agg	regate for	quality testing 35 lb		
			as 2 Gyratory specimens for volumetric testing 80 lb		
			TSR testing (option A) 80 lb		
			TSR testing plus 6 Gyratory specimens (option B) 20 lb		
	Mineral filler.		2 lb		
	RAP for Qual				
			dation and Quality Testing 10 lb		
	Asphalt Binde		1 qu		
All aggregat	es and mixtures wil	l be split	according to G&B Manual 5-692.141, "Quartering Method of	Sample Size Reduction"	
Pay Item No.	Test Type	Spec. No.	<b>Producer/Contractor Testing</b>	Department Testing	Form No.
2360	Bituminous Mix Design (QC/QA)	2360	Contractor submits Mix Design Option 1 or Option 2	<b>Option 1</b> - 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.	Approved Mix Design Report
				<b>Option 2</b> - Laboratory Mix Design: Review submitted Mix data only.	
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.	Test as directed by the Bituminous Engineer or the District Materials Engineer.	Test Report
			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.		
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

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B. BITUM	INOUS PRODU	CTION fo	or Specification 2360	·		
	Verification	n Compan	Verification Test ion testing from Department split sample is required to b		formed 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.         Minus #4 Aggregate Type for Quality Testing       35 lb.         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       90 lb.         Aggregate Specific Gravity (QC/QA)       90 lb.         Asphalt Binder (QA)       1 quart         Emulsified Asphalt (QA)       ½ gallon						
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		Take additional samples when aggregate qualities approach specification limits or when material variation is observed, take additional field samples as requested by Project Engineer. Take additional samples when material variation is observed in RAP or RAS. Take additional field samples as requested by Project Engineer. Conduct random belt samples and test for aggregate quality as directed by the Engineer.	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)

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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	<ul> <li>(a) Incinerator Oven MnDOT Lab Manual 1853</li> <li>(b) Chemical Extraction MnDOT Lab Manual 1851 or 1852</li> <li>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.</li> <li>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).</li> <li>REMARKS: <i>(See Notes #1, #2 &amp; #4)</i></li> <li>A computer file of the plant's control settings is required every 20 minutes of production.</li> </ul>	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. The Department reviews the computer files of the plant's control settings. REMARKS: (See Notes #3 & #7)	TSS
2360	Mixture Properties (QC/QA, Verification*) Maximum Specific Gravity Lab Manual 1807	2360	Contractor performs test 1807 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: ( <i>See Notes #1, #2, &amp; #4</i> )	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: <i>(See Notes # 3 &amp; #7)</i>	TSS

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: ( <i>See Notes #1, #2, &amp; #6</i> )	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 samples can be taken at any time or location. REMARKS: <i>(See Notes #3 &amp; #7)</i>	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: ( <i>See Notes #1, #2, #4, #5, &amp; #6</i> ) 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.		TSS

# II. Bituminous Construction Items for Specification 2360 (cont.)

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Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Department Testing	Form No.
2360	Core Density and Thickness Lab manual 1810	2360	measure, and saw cores into separate lifts. Sawing of cores into separate lifts is required.	Complete core stationing spreadsheet to determine core locations and then mark all coring locations on the pavement.	Core Density Worksheet Core Density
			project work hours so the Department may observe and record the saturated surface dry and immersed weight of the cores.	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. Selects at least one of the two companion cores per lot to test for verification. REMARKS: <i>(See Notes #3 &amp; #6)</i>	Incentive/ Disincentive worksheet.
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

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Minimum Sample Sizes:         Quality Sample Size for Lab Submittal:         Asphalt Binder (QA)/Cutback Asphalt (QA)       1quart 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	Asphalt SupplierQC testing is the responsibility of the bituminous material supplier aspart of the Combined State Binder Certification program at the ratespecified in https://engineering.purdue.edu/~csbg/method.html.During Asphalt Mixture Production (Field Verification Sample)Obtain asphalt binder samples from a sampling valve locatedbetween the pump and the drum. Contractor personnel will obtainsamples, under the observation of a Department representative, byrandom selection from shipments of material at the project site. Thesamples shall be taken from the first load and subsequently 1 per1000 tons of liquid asphalt binder for each supplier and grade ofasphalt binder per contract. For contracts with less thanapproximately 25 tons (one truck transport) of asphalt binder,sampling may be waived. A minimum of 1 gallon of binder must bedrawn and wasted from the asphalt binder sample from the weighpod. Provide asphalt binder sample in clean 1-quart steel container.The Inspector will monitor the sampling the Contractor performs.	During Asphalt Mixture Production (Field Verification Sample) Observe contractor personnel taking sample from sampling valve and submit to MnDOT Chemical Lab.	2413 Asphal Sample Identification Card		
2357	Emulsified Asphalt (QA only)	3151.2	Tack Coat 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 Aspha Sample Identificatio 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)		of the distributor for the first load placed on the project then		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 is required to test this sample. The results shall be used as part of the QC program.	Department	Department	Contractor
IAST	The <u>Independent Assurance Sampling and Testing</u> assures testers are sampling and testing properly and that equipment is calibrated correctly.	Department	Contractor or Department	Contractor or Department

# Schedule of Materials Control for 2020 Standard Specifications

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
<b>Bituminous</b> <b>Mixture Tests</b> 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) <i>(See Note 1)</i> 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.

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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.

# Schedule of Materials Control for 2020 Standard Specifications

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.
<b>Gradation</b> 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.

### MnDOT SD-15 May 1, 2023 Schedule of Materials Control for 2020 Standard Specifications

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.	
<b>Gradation</b> 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
<b>Quality Tests</b> 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. <i>(See Note 1)</i>	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 <i>(See Note 1)</i> Submit companion 1 per day to Department: Sample Size: 65 lbs. 3 full 6" by 12" cylinder molds	<b>Tests:</b> %AC, Gradation, Max Gravity, Bulk Gravity, Voids, VMA, CAA, voids in coarse aggregate (VCA) fines/effective asphalt. <i>(See Notes 1 &amp; 2)</i>	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

Schedule of Materials Control for 2020 Standard Specifications

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.

Schedule of Materials Control for 2020 Standard Specifications

#### 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 <u>minimums</u>. 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 <sup>1</sup>/<sub>4</sub> yd<sup>3</sup>, 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 <u>Independent Assurance Sampling and Testing assures testers are sampling and testing</u> properly and that equipment is calibrated correctly.	Department	Contractor or Department	Contractor or Department

#### **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.	<ul> <li><u>Certified ready-mix and concrete paving:</u></li> <li>1 per certified source when the plant is certified.</li> <li>Take an additional sample: <ol> <li>If the plant changes sources, or</li> <li>As the Contract requires.</li> </ol> </li> <li><u>For precast concrete:</u></li> <li>1 per 3 months during Department production.</li> <li>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.</li> </ul>	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	<ul> <li><u>Certified ready-mix and concrete paving:</u></li> <li>Air Entrainment: 1 when the plant is certified</li> <li>Type A water reducer: 1 when plant is certified</li> <li>All other admixtures: 1 when plant is certified, or first time used</li> <li>Take an additional sample of any admixtures used: <ol> <li>If the plant changes sources, or</li> <li>As the Contract requires.</li> </ol> </li> <li><u>For precast concrete:</u></li> <li>per 3 months during Department production.</li> <li>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.</li> </ul>	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

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Remarks:		00 0	e Sample Sizes ality tests require con	mpanion samples, do	uble sample sizes. Samples taken at	location identified on Contac	t Report located a	at plant.
Gradation:         Gradation:           Coarse Aggregate:         3/4" Plus:         30 lb.           3/4" Minus, #67:         10 lb.           3/4" Minus, #67:         10 lb.           #7, CA-70:         6 lb.           #89, CA-80:         500 g		<b>Gradation:</b> <u>Fine Aggregate:</u> Sand: 500 g	Moisture:Coarse Aggregate:2000 gIntermediate Aggregate:500 gFine 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 Coars 3/4" Plus: 3/4" Minus, # #7, CA-70: #89, CA-80: CIA:	e <b>Aggregate:</b> 5000 g ≇67: 2500 g 2500 g 500 g 500 g		
emarks:	·		te Plant Product	n a <u>week</u> , plant mon	itoring is not required except for mo oducer/Contractor Testing	nthly aggregate quality testing	Department Testing	Form No.
2301 2302	Gradation (QC/QA)	2461 3126 3131	JMFs and Bridge I Daily Concrete Qu 20 – 400 yd <sup>3</sup> : 1 pe				None	Concrete Ready-Mix

2462	If using the same source and fraction, Producer may use daily QC gradation results to satisfy weekly QC	and S	Sample
2506	gradation requirements. Record test results in both sections of QC Workbook.	L	log
2511 2514 2519 2521 2531	All other mix designs: Weekly Concrete Quantity: 20 – 400 yd <sup>3</sup> : 1 per fraction per source >400 yd <sup>3</sup> : 1 additional per fraction per source		U
2533 2545 2550 2554 2557 2564 2565	<ul> <li>Take the additional gradation after <u>weekly</u> total exceeds 400 yd<sup>3</sup>.</li> <li><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%.</li> <li>Hold QA (QC companion) samples until they are picked up by the Department monitor. Discard after 14 calendar days.</li> </ul>		
	Performing testing on representative material at the end of the most recent day of production is allowed.		

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# Schedule of Materials Control for 2020 Standard Specifications

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Certified	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 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.	<ul> <li>Weekly Concrete Quantity:</li> <li>20 – 400 yd<sup>3</sup>: 1 per fraction per source</li> <li>&gt;400 yd<sup>3</sup>: 1 additional per fraction per source</li> <li>Take the additional gradation after weekly total exceeds 400 yd<sup>3</sup>.</li> <li>Include JMF Number and Verification Companion results on Sample ID Card.</li> <li>Wash all fine aggregate Verification samples.</li> </ul>	Concrete Ready- Mix Plant QC Workbook Concrete Ready- Mix Plant QA Workbook Aggregate Gradation Control Charts and Sample Log				
2514 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	When Department concrete is produced:1 per fraction per source per 30 calendar days.When bridge deck concrete is produced:1 per fraction per source per 30 calendar days tested for3137.2.D.2Identify quality samples with a "Q" on the Sample IDCard and the Quality companion sample. Write3137.2.D.2 on bridge deck concrete Sample ID Cards.	2410 Sample ID Card				
2303	Aggregate Moisture (QC)	2461	<ul> <li>Daily Concrete Quantity ≥ 20 yd<sup>3</sup>:</li> <li>1 per fraction per source completed every 4 hours and enter results into batching system in real time.</li> <li>Complete the initial moisture content prior to the start of concrete production each day.</li> <li>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.</li> </ul>	None	Concrete Ready- Mix Plant QC Workbook				

#### **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	Concrete paving batch plant: Daily Concrete Quantity $\geq$ 250 yd <sup>3</sup> : 1 per 2500 yd <sup>3</sup> per fraction per source	None	JMF Concrete Aggregate Workbook
			Take initial samples for aggregate gradation testing within the first 500 yd <sup>3</sup> .		2410 Sample ID Card when
			Certified ready-mix plant using JMF: Daily Concrete Quantity: 20 – 400 yd <sup>3</sup> : 1 per fraction per source >400 yd <sup>3</sup> : 1 additional per fraction per source		samples are submitted to MnDOT Laboratory
			Take the additional gradation after <u>daily</u> total exceeds 400 yd <sup>3</sup> .		
			<b>Notes:</b> 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%.		
2301	Gradation (Verification/ Verification Companion)	3126 3131 3137	Concrete paving batch plant: Test the Verification Companion sample. Complete on the day the sample was taken.	Concrete paving batch plant:Daily Concrete Quantity $\geq$ 500 yd <sup>3</sup> :1 per fraction per source	JMF Concrete Aggregate Workbook
	Companion)		Certified ready-mix plant using JMF: Test the Verification Companion sample. Complete on the day the sample was taken.	Certified ready-mix plant using JMF: Daily concrete quantity $\geq 100 \text{ yd}^3$ : 1 per fraction per source	2410 Sample ID Card when samples are
			Wash all fine aggregate Verification Companion samples.	Wash all fine aggregate Verification samples.	submitted to MnDOT
				Include the JMF Number and the QC Verification Companion results on Sample ID Card.	Laboratory
				<b>Note:</b> The Department may use the Verification sample for the Coarse Aggregate Quality incentive/disincentive testing, if applies.	

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# Schedule of Materials Control for 2020 Standard Specifications

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Concrete	Concrete Pavement - Concrete Plant Production (cont.)								
Pay Item No.	Test Type		Producer/Contract or Testing	Department Testing	Form No.				
2301	Coarse Aggregate Percent Passing - #200 (QC/QA)	3131 3137	Test the Verification Companion sample <b>Test these samples</b> <b>at the plant</b> .	<ul> <li>For a concrete paving batch plant:</li> <li>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.</li> <li>Test 1 Verification sample per week thereafter</li> <li>Test these samples at the plant.</li> <li>For a certified ready-mix plant using JMF:</li> <li>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.</li> <li>Test 1 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.</li> <li>Test 1 Verification sample per week thereafter</li> <li>Test 1 Verification sample per week thereafter</li> <li>Test 1 Verification sample per week thereafter</li> </ul>	JMF Concrete Aggregate Workbook				
2301	Aggregate Quality Testing including Coarse Aggregate Percent Passing - #200	3126 3131 3137	Test at Producer/Contractor Discretion	<ul> <li>Pre-Production Testing for concrete paving batch plants: If entire project &lt; 3,500 yd<sup>3</sup>: Pre-production sampling is not required</li> <li>If entire project ≥ 3,500 yd<sup>3</sup>: 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.</li> <li>During concrete production for concrete paving batch plants and certified ready-mix using JMF: 1 randomly selected test each fraction every 20,000 yd<sup>3</sup> of production.</li> <li>Split the Quality sample 4 ways: 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.</li> <li>Identify quality samples with a "Q" on the Sample ID Card.</li> <li>See additional requirements for first sand quality sample under ASR Testing.</li> </ul>	2410 Sample ID Card				

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# Schedule of Materials Control for 2020 Standard Specifications

MnDOT SD-15 May 1, 2023Schedule of Materials Control for 2020 StandardIV.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	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. <i>If w/c incentives do not apply:</i> <u>For a concrete paving batch plant:</u> 1 per 1000 yd <sup>3</sup> per fraction per source or completed every 4 hours, whichever results in the higher sampling rate. <u>For a certified ready-mix plant using JMF:</u> 1 per fraction per source completed every 4 hours. Enter results into batching system in real time.	<ul> <li>If w/c incentives apply:</li> <li>For a concrete paving batch plant:</li> <li>1 per 1000 yd<sup>3</sup> or completed every 4 hours, whichever results in the higher sampling rate. Take initial samples for aggregate moisture testing within the first 250 yd<sup>3</sup>.</li> <li>For a certified ready-mix plant using JMF:</li> <li>1 per 200 yd<sup>3</sup> or completed every 4 hours, whichever results in the higher sampling rate. Take initial samples for aggregate moisture testing within the first 100 yd<sup>3</sup>.</li> <li>Use aggregate moisture results for determining the water content to calculate the w/c ratio incentive/disincentive.</li> <li>Do not leave samples unattended.</li> <li>Enter results into batching system in real time.</li> </ul>	W/C Ratio Calculatior Workbook				
	Water Content Verification Testing (Microwave or Phoenix Oven Verification)	2301	Obtain the plastic concrete sample at the plant.	<ul> <li>If w/c incentives apply: Microwave or Phoenix oven verification testing to verify the w/c ratio is completed in conjunction with Department aggregate moisture testing.</li> <li>For a concrete paving batch plant: Take initial verification test within the first 250 yd<sup>3</sup>. At least one additional verification test should be taken if more than 1,000 yd<sup>3</sup> is produced in a day.</li> <li>For a certified ready-mix plant: Take initial verification test within the first 100 yd<sup>3</sup>. At least one additional verification test should be taken if more than 400 yd<sup>3</sup> is produced in a day.</li> </ul>					
	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					

# MnDOT SD-15 May 1, 2023Schedule of Materials Control for 2020 StandardIV.Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html) Schedule of Materials Control for 2020 Standard Specifications

Concrete	Concrete Pavement - Concrete Plant Production (cont.)								
Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Department Testing		Form No.			
2301	2301 Coarse 3137 Aggregate Quality Testing for Incentive/		137 Test at Contractor's discretion	If coarse aggregate quality incentives apply: Test the Class B aggregates for % absorption and Cla carbonate including any other tests necessary to mak	te those determinations.	2410 Sample ID Card			
	Disincentive			Sample the 2 largest fractions in accordance with the	e following table and 2301:	Coarse Aggregate			
				Coarse Aggregate Quality Incen Sampling Rates	tive/Disincentive	Quality Incentive/			
				Plan Concrete yd <sup>3</sup>	Samples per fraction (n)	Disincentive Workbook			
				3,500 - 7,500	3				
				7,501 - 10,000	5				
				10,001 – 25,000	10				
				25,001 - 50,000	15				
				> 50,000	20				
				<b>Identify incentive samples on the Sample ID Card</b> <u><b>Note:</b></u> The Verification Gradation sample may be use Quality incentive/disincentive testing.					
2301	Alkali Silica	2301	None	ASR Testing is not required if the entire project i	s <3,500 cu. yd.	2410			
	Reactivity (ASR)			1 per paving project per sand source		Sample ID Card			
				<ul> <li>Provide the following samples:</li> <li>1) 5 lb. of cement</li> <li>2) 5 lb. of supplementary cementitious materia</li> <li>3) 10 lb. of sand.</li> </ul>	ıl (fly ash or slag), and	24300 ID Card Cement Samples			
				Write "Project Specific ASR Testing" on all 3 Samp Write "Verification" on the Sample ID cards if the c		24308 ID Card Fly Ash			
				cementitious samples are also used for verification to		Samples			

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.	
				<ul> <li>Take an additional sample:</li> <li>1) If the plant changes sources, or</li> <li>2) As the Contract requires.</li> </ul>	
				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	<b>Prior to production:</b> 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%,	None	3U18 and 3U58N Quality Control Worksheet
			Hold QA (QC companion) samples until they are picked up by the Department monitor. Discard after 14 calendar days.		
	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.	2410 Sample ID Card
	Aggregate Moisture Testing (QC)	2461	Complete the initial moisture content prior to the start of concrete bagging each day.	None	

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 <sup>2</sup>	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	Preformed Elastomeric Type	3721	6 ft.	1 per lot source per project	-
2401	Silicone Joint Sealer	3722	1 pt.	1 per source per project	
2406	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	Burlap	3751	1 yd <sup>2</sup>	Visual Inspection Must be free from holes.	
2533 2533 2545 2550 2554 2557 2564	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 <u>pre-approved</u> lots at <u>http://www.dot.state.mn.us/products/concrete/curingcompounds.html</u> If sampling is required, materials must be thoroughly stirred or agitated immediately prior to taking sample. Store sample in steel container and cover immediately.	
2565	Plastic	3756		Visual Inspection Must be white opaque and free from holes.	

#### 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 yd<sup>3</sup>, 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 <u>after</u> 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.	<b>Contractor Testing</b>	Department Testing	Form No.
2302 2452 2461 2506	Air Content for Type 3 Concrete (Verification)	2461	None	1 per 100 yd <sup>3</sup> Test first load each day per mix	
2511 2514 2515 2520	Slump (Verification)	2461	None	Test slump if concrete is suspected to be outside of required slump range	2409
2521 2531 2533 2545	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.	ID Card Concrete Test Cylinder When submitting samples, record all
2550 2554 2557 2564 2565	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 <sup>3</sup> per mix per day MnDOT will cast up to three (3) field control cylinders.	samples, record all field test results and Batch Ticket Numbe on the Cylinder ID Card.

### 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 <sup>1</sup>/<sub>4</sub> yd<sup>3</sup>, 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 <u>after</u> 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	Air Content for Type 3 Concrete (Verification)	2401 2461	None	1 per 100 yd <sup>3</sup> Test first load each day per mix	
2461 2506	Slump or Spread (SCC) (Verification)	2401 2461 SCC Special Provision	None	1 per 100 yd <sup>3</sup> Test first load each day per mix Test slump if concrete is suspected to be outside of required slump range	2409 ID Card Concrete Test Cylinder
	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.	When submitting samples, record all
	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.	<ul> <li>1 set of 3 (28-day) cylinders for 100 yd<sup>3</sup>, then 1 set of 3 (28-day) cylinders per 300 yd<sup>3</sup> thereafter per mix per day</li> <li><u>For Grades HPC, SCC, and MC</u>: 1 set of 3 (56-day) cylinders per day</li> </ul>	field test results and Batch Ticket Number on the Cylinder ID Card.
			Provide moist curing environments for initial and intermediate curing of all cylinders.	MnDOT will cast up to three (3) field control cylinders.	

# Schedule of Materials Control for 2020 Standard Specifications

MnDOT SD-15 May 1, 2023Schedule of Materials Control for 2020 StandardIV.Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

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 Workshee
2519	Compressive Strength (QC/Verification)	2461 2519	<ul> <li>1 set of 4 cylinders at the point of placement per 300 yd<sup>3</sup> per day</li> <li>Cast 3 x 6 cylinders in accordance with ASTM C495.</li> <li>Field cure in accordance with 2461.3G5.b.</li> </ul>	<ul><li>Transport cylinders to the MnDOT Office of Materials and Road Research for testing.</li><li>MnDOT will break 4 cylinders at 28-days in accordance with ASTM C495 (do not oven dry before testing).</li></ul>	2409 ID Card Concrete Test Cylinder

### **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 <sup>3</sup> 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	<ul> <li>For information only:</li> <li>1 beam (28-day) per week per mix</li> <li>1 cylinder (28-day) per week per mix may be substituted at the discretion of the Engineer</li> <li>Provide moist curing environments, fabricate beams or cylinders, deliver to curing site, and clean beam boxes.</li> </ul>	Supply beam boxes or cylinder molds. Cure and test beams and cylinders.	Concrete Test Beam Data Worksheet
	Opening to Traffic Strength		For opening to traffic:	Supply beam boxes or cylinder molds for field control testing. Cure and test beams and cylinders.	Concrete Test Beam Data Worksheet

#### 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	1 quality assurance core (QAC) per 4,000 lin. lane feet. <u>Projects &gt; 3,500 cu. yd. when concrete is placed directly on grade, or the</u> <u>concrete overlay is placed on existing asphalt pavement with no</u>	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	<u>For concrete projects &gt; 3,500 cu. yd., scan the following</u> : Test 5 random doweled contraction joints per 1,000 lin. lane feet For mechanically placed L1T joints, randomly test 45 lin. feet per 1,000 lin. feet	Observe Contractor steel location testing when possible	Thickness, Texture and MIT-SCAN Report

## **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:       1/2 pint         Store the sample in a sealed plastic container.       Store the sample in a sealed plastic container.		2410 Sample ID Card	
	Gradation and Aggregate Quality Testing <u>including</u> Coarse Aggregate Percent Passing - #200	3126 3137	<ul> <li>Prior to concrete production:</li> <li>Provide the Department with:</li> <li>Aggregate pit numbers</li> <li>1 passing gradation result per aggregate fraction per source</li> <li>No quality test results are required.</li> </ul>	t with:1 gradation and quality per aggregate fraction prior to concrete production and each time aggregate is delivered to the site.bersn result tion perIdentify 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 - Lo	ow Slum	p Concrete for Bridge Dec	k 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 <sup>3</sup> Test at beginning of pour each day		Weekly Report of Slump Concrete"	
Slump       2461       None       1 per 15 yd <sup>3</sup> 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.			Weekly Report of Slump Concrete"				
	Compressive Strength	2461	None	1 set of 3 cylinders (28-day) per 100 yd <sup>3</sup>		2409 ID Card Concrete Test Cylinder	

#### **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		None	For volumetric batching only: Each time mobile mixer is calibrated: Obtain a 5 lb. sample	24300 ID Card Cement Samples
				Store the sample in a sealed container and include the supplier's delivery invoice from which the sample is obtained.	
			None	Each time mobile mixer is calibrated: Obtain a 1/2 pint sample	2410 Sample ID Card
				Store the sample in a sealed plastic container.	
	Gradation (QC/Verification)	3126 3137	<ul> <li>Prior to concrete production:</li> <li>Provide the Department with: <ul> <li>Aggregate pit numbers</li> <li>1 passing gradation result per aggregate fraction per source.</li> </ul> </li> <li>Test companion samples at Contractor's discretion.</li> </ul>	For volumetric batching only: Prior to concrete production and each time aggregate is delivered to the site: 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.	For volumetric batching only:         Prior to production and each time aggregate is delivered to site:         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

Concrete Fie	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	<ul><li>1 per 15 yd<sup>3</sup> or 1 per 4 hours whichever results in the highest sampling rate</li><li>Test at beginning of pour each day.</li></ul>	Concrete Pavement Repair (CPR) Workbook				
	Slump (Verification)	2461	None	<ol> <li>per 15 yd<sup>3</sup> or 1 per 4 hours whichever results in the highest sampling rate Test at beginning of pour each day.</li> <li>Allow mix to hydrate 5 minutes before slump test to assure all cement is saturated.</li> </ol>					
				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 <sup>3</sup> 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	NonePrior to production and each time aggregate is delivered to site:1 per aggregate fraction per source	
	Quality Testing <u>including</u> Coarse Aggregate Percent Passing	3131 3137	None	Prior to production and each time aggregate is delivered to site: 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 Compressive2302Any additional field control cylinders are the responsibility1 set of 3 cylinders (28-day) 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)	Sampling Rate for	Sample Size	Notes
2571 2574 2575	1. Topsoil borrow <sup>a</sup>	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)	<ul> <li><sup>a</sup> 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.</li> <li>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.</li> <li>Where topsoil material is blended with compost and drainage medium (Filtration Topsoil Borrow) for use in filtration basins the following tests are required:</li> <li>Compost – Compost material shall be provided by vendors included on the APL/QPL.</li> <li>Sand Drainage Material – test sand for particle size meeting the requirements of 3126, Fine Aggregate for Portland Cement Concrete.</li> </ul>
2571 2575 2577	2. Plant Stock & Landscape Materials <sup>b</sup>	3861 and 2571.2A1	Field Inspection at Job Site, submit itemized report for each shipment <sup>c.</sup>			<ul> <li><sup>b</sup> 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.</li> <li><sup>c</sup> 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: <ol> <li>A MnDOT Certificate of Compliance for Plant Stock, Landscape Materials, and Equipment</li> <li>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.</li> <li>A copy of the most recent Certificate of Nursery Inspection for each plant stock supplier.</li> <li>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.</li> <li>Bills of lading (shipping documents) for all materials delivered.</li> <li>Invoices for all materials to be used.</li> <li>Each bundle, bale, or individual plant must be legibly and securely labeled with the name and size of each species or variety.</li> </ol> </li> </ul>

## Schedule of Materials Control for 2020 Standard Specifications

MnDOT SD-15 May 1, 2023 Schedule of 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 <sup>d</sup>	3885	Visual Inspection	1 per 18,000 lin. feet, QA Mass, ASTM D6475 test. - See Footnote <sup>d</sup>		<sup>d</sup> 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 °	3885	Visual Inspection			<sup>e</sup> Check Web site for list of approved products. www.dot.state.mn.us/products
2573	5. Silt Fence <sup>f</sup>	3886	Check Product Label. Obtain Manufacturer's Certificate of Compliance with Roll Number and MARV values			<sup>f</sup> Check APL/QPL of accepted geotextiles www.dot.state.mn.us/products
2573	6. Flotation Silt Curtain <sup>g</sup>	3887	Visual Inspection			<sup>g</sup> 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 <sup> h</sup>	3885	Visual Inspection			<sup>h</sup> 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 <sup> i</sup>	3898	Visual Inspection	None		<sup>i</sup> Certificate of Compliance and MSDS to the Engineer.
2571 2575	10. Fertilizer <sup>j</sup>	3881	Visual Inspection			<sup>j</sup> 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 <sup>k</sup>	3879	1 gradation test per 200 tons			<sup>k</sup> 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) <sup>1</sup>	3882	Visual Inspection, Check if from Certified Vendor by Minnesota Crop Improvement Association. <b>Must be tagged</b> , grain straw only.			<sup>1</sup> Certified mulch will be indicated by label. Do not accept Mulch that arrives on project without tags <b>attached</b> to bales.

MnDOT SD-15 May 1, 2023Schedule of MV.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) <sup>m</sup>	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.			<sup>m</sup> 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) <sup>n</sup>	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.			<sup>n</sup> 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 °	3878	A certified tag by Minnesota Crop Improvement Association for Salt tolerant sod. Final Visual Inspection at site.			<sup>o</sup> 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	3890	Visual Inspection			<sup>p</sup> Check APL/QPL.
2571	17. Compost B. Compost Non-Certified Source <sup>q</sup>	3890	Inspection of source 6 weeks prior to delivery.			<sup>q</sup> Retain Certificate of Compliance, 6 weeks prior to delivery. Applies only to 2571 Landscape pay items.
2575	18. Hydraulic Erosion Control Product <sup>r</sup>	3884				<sup>r</sup> Check APL/QPL. Installer needs to show certificate of training.

# MnDOT SD-15 May 1, 2023 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 <i>(See Notes)</i>	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 <i>(See Notes)</i>	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. <i>(See Notes)</i> 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	l 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	

# MnDOT SD-15 May 1, 2023 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. <i>(See Notes)</i> 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. <i>(See Notes)</i> 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. <i>(See Notes)</i> 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. <i>(See Notes)</i> Lab Sample Required	Submit Draw Down for color match/approval prior to start of painting <i>(See Notes)</i> 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.

# MnDOT SD-15 May 1, 2023 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. <i>(See Notes)</i>	1 per lot	1 pint	Form 02415 List batch numbers.
			Lab Sample Required			
	Noise Wall Stain	Special Provisions	Check for listing on Qualified Products website. (See Notes)	1 per lot	1 pint	Form 02415 List batch numbers.
			Lab Sample Required			
2582	Drop-on Glass Beads	3592	Check for listing on Qualified Products website. (See Notes)	1 per lot	1 quart	Form 02415 List lot numbers and retain Certificate of Compliance
			Lab Sample Required			
	Preformed Pavement Marking Tape and Thermoplastic	3354 3355 3556	Check for listing on Qualified Products website. <i>(See Notes)</i> Lab Sample Required	1 per lot of each color and width	Tape:3 yds if 12" or lessTape:1 yd if greater than 12"Thermo: 1 piece for lines	Form 02415 List lot numbers and retain Certificate of Compliance.
					under 12" wide or 6" x 6" for other shapes	
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.h tml) for guidance on suspect items to determine need for sampling and submittal to the Chem Lab for testing.

## Schedule of Materials Control for 2020 Standard Specifications

## MnDOT SD-15 May 1, 2023 Schedul VII. Metallic Materials and Metal Products

Pay Item No.	Kind of Material	Spec. No.	Acceptance Testing	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, (See Notes)	Bolts: 1 Post bolt and 4 splice bolts with nuts for each 1,000 units or less.		<b>Form 02415 or 2403</b> 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 – (See Notes)	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 – (See Notes)	1 from one end of a section for each 200 rail sections (or portion thereof) or 1 per each 100 terminal sections		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, (See Notes)	l 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

MnDOT SD-15 May 1, 2023Schedule of MatVII.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</i> <i>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, (See Notes)	No sample required. (See Notes)		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, (See Notes)	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, <u>www.dot.state.mn.us/materials/lab.html</u>

# MnDOT SD-15 May 1, 2023Schedule of MatVII.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	Sam ple 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	(See Notes)	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		<b>Form 02415 or 2403</b> 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.

# MnDOT SD-15 May 1, 2023 Schedule of M 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</i> <i>Notes)</i>	Field sample not necessary for uncoated fabric. If epoxy-coated, submit 2-ftsquare 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</i> <i>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 (See Notes)	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. (See Notes)	1 for each size and of each lot supplied.	Mechani cal splice coupler and reinforce ment 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.

## Schedule of Materials Control for 2020 Standard Specifications

# MnDOT SD-15 May 1, 2023 Schedule of M 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.		<b>Form 02415 or 2403</b> 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 (See Notes) 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	<ol> <li>Structural Steel</li> <li>B. For Concrete Girders- Diaphragms and sole plates</li> </ol>	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	<ol> <li>Structural Steel</li> <li>Expansion joints</li> </ol>	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/

## Schedule of Materials Control for 2020 Standard Specifications

MnDOT SD-15 May 1, 2023Schedule of MVII.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: <u>http://www.dot.state.mn.us/bridge/</u>

## Schedule of Materials Control for 2020 Standard Specifications

MnDOT SD-15 May 1, 2023 Schedule of M 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/

## MnDOT SD-15 May 1, 2023 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			<b>Form 02415 or 2403</b> 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	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	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	Special	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.

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	<ol> <li>Corrugated Metal Products</li> <li>B. Structural Plate</li> </ol>	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.		<b>Form 02415 or 2403</b> 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.	

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	<ul><li>4. Precast/Prestressed Concrete Structures</li><li>A. Reinforced Precast Box Culvert</li></ul>	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	<ul> <li>4. Precast/Prestressed Concrete Structures</li> <li>B. Precast/Prestressed Concrete Structure (beams, posts, wetcast pipe and manholes, miscellaneous concrete products, etc.).</li> </ul>	2405 2462	<ol> <li>air test per pour (1st load)</li> <li>slump/spread test</li> <li>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.</li> </ol>	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.	

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		<b>Form 02415 or 2403</b> 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	l 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

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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	<ul> <li>13. Plastic Pipe</li> <li>A. Corrugated</li> <li>Polyethylene (CP) –</li> <li>Dual Wall</li> <li>B. Polypropylene</li> <li>(PP) – Dual Wall</li> <li>C. Polyvinyl</li> <li>Chloride (PVC) –</li> <li>Profile Wall</li> </ul>	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		<ul> <li>Form P2501</li> <li>Send form to State Hydraulic Engineer</li> <li>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.</li> <li>A Certificate of Compliance in accordance with Specification 1603 is required.</li> </ul>
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	<ul> <li>(a) 1 per project for pipe wrap or trench lining for Permeable base designs.</li> <li>(b) 1 per 50,000 yd<sup>2</sup> of each type of fabric or geogrid.</li> <li>(c) Seam, if required, 1 per project.</li> <li>Small Quantity Acceptance</li> <li>For fabric totals &lt; 200 yd<sup>2</sup></li> <li>For pipe wrap totals &lt; 1000 Lin. Ft</li> <li>No sampling required</li> <li>Use Inspection Report for Small Quantities (Form 2403)</li> <li>Check: <ul> <li>Certificate of Compliance</li> <li>Identifying label on product</li> <li>Geotextile Small Quantity Acceptance List at <u>http://www.dot.state.mn.us/mate rials/aggregatedocs/gtxlist.pdf</u></li> </ul> </li> </ul>	<ul> <li>(a) 10</li> <li>Lin. Ft.</li> <li>(b) 4</li> <li>yd2*</li> <li>(c) 10</li> <li>Lin. Ft.</li> <li>**</li> </ul>	<ul> <li>Provide a Certificate of Compliance with minimum average roll values (MARV) for all specified geotextile properties. Values must meet</li> <li>Specification 3733 requirements for the specific application. Submit copy of Certificate with material samples &amp; send to the CO Materials</li> <li>Laboratory.</li> <li>Obtain a random sample with no more than 1 sample per individual roll. For Type 6 &amp; special geosynthetics, submit pages of Special Provisions that list required material properties.</li> <li>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.</li> <li>* Do not sample first full turn of rolled product.</li> <li>** Provide seam sample with 3 feet of geosynthetic material on each side of seam (in direction perpendicular to seam).</li> </ul>

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	<ol> <li>Brick</li> <li>A. Sewer (clay) and</li> <li>Building</li> </ol>	3612 to 3615	Visual Inspection	1 per 50,000 brick or fraction thereof	6 whole bricks	
2506	<ol> <li>Brick</li> <li>B. Sewer (Concrete)*</li> </ol>	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	<ol> <li>Concrete Masonry Units</li> <li>B. For Modular Block</li> <li>Retaining Walls</li> </ol>	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.

## X. Brick, Stone, and Masonry Units

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	<ol> <li>gradation per product per year of Class I – V Random Riprap, adhering to the requirements listed in Supplemental Specification 2511.3F.1.</li> <li>Provide certification for each product, using Form G&amp;B-104.</li> </ol>	1 gradation per project, source and Class using D <sub>85</sub> 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.

# MnDOT SD-15 May 1, 2023Schedule of Materials Control for 2020 Standard SpecificationsXI.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	<b>Form 02415 or 2403</b> 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	<b>Form 02415 or 2403</b> 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	<ul><li>6. Pulling Vaults and</li><li>Splice Vaults</li><li>(Polymer Concrete)</li></ul>	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.

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	<b>Form 02415 or 2403</b> 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	<ul> <li>12. Conduit and Fittings (Cont.)</li> <li>Non-Metallic Rigid PVC and HDPE Conduit</li> <li>A. Rigid PVC Conduit</li> <li>B. High Density Polyethylene (HDPE) Conduit</li> </ul>	3803	Visual Inspection	None	<b>Form 02415 or 2403</b> 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	<b>Form 02415 or 2403</b> Conduit shall be labeled as being listed by a National Recognized Testing Laboratory (NRTL). Retain Form 02415 or 2403 in Project File

# MnDOT SD-15 May 1, 2023Schedule of Materials Control for 2020 Standard SpecificationsXI.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	<b>Form 02415 or 2403</b> 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.

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	<b>Form 02415 or 2403</b> 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	<ul><li>26. Cable and Conductors (Cont.)</li><li>B. Electrical Cables and Single Conductors with Jacket</li></ul>	3815.2B.2(b ) 3815.2B.3 3815.2B.5 3815.2C.1 3815.2C.3 3815.2C.4 3815.2C.4 3815.2C.6 3815.2C.7 3815.2C.8 3815.2C.14	Visual Inspection	1 per size per lot Sample Size: 5 feet	<b>Form 02415 or 2403</b> 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.

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	<ul><li>27. Cable and Conductors (Cont.)</li><li>C. Fiber Optic Cables</li></ul>	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	45 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.

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	<ul> <li>A. Ensure the stainless-steel woven wire cloth meets the requirements.</li> <li>B. Visual Inspection - verify make and model number as shown on MnDOT's APL/QPL</li> <li>C. Visual Inspection - verify make and model number as shown on MnDOT's APL/QPL</li> </ul>	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	0	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		Certification Required
Compost	V: Landscaping etc.	16	43	APL/QPL <u>http://www.dot.state.mn.us/products/erosioncontrolandlandscap</u> <u>ing/compost.html</u>
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		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.

## MnDOT SD-15 May 1, 2023 Schedule of Materials Control for 2020 Standard Specifications P Telephone Index for Schedule of Materials Control

Section	Page	Section Name	Contact	Phone
Part I	Page 2	Grading, Base & Reclamation –	Terry Beaudry	(651) 366-5456
		Specifications 2106, 2111, 2112, 2118, 2211, 2212, 2215, 2221, and 2390		(651) 366-5596
Website: www	.dot.state.mn.u	s/materials/gradingandbase.html		
Part II	Page 10	Bituminous - Spec. 2360	John Garrity	(651) 366-5577
Part II C	Page 15	Asphalt Binder	Allen Gallistel	(651) 366-5545
	8		Jason Szondy	(651) 366-5549
Website: www	v.dot.state.mn.u	s/materials/bituminous.html		
Part III	Page 17	Bituminous Specialty Items	Joel Ulring	(651) 366-5432
1 uit 111	ruge r	Brannious spectary rems	Jerry Geib	(651) 366-5496
Part IV	Page 24	Concrete – General	Maria Masten	(651) 334-4015
	r uge 2 r	Aggregates, Mix Designs and Certified	Matt Herbst	(651) 283-7127
		Ready-Mix – Metro		
		Certified Ready Mix – Greater MN North	Brad Swenson	(218) 232-1012
		Certified Ready Mix – Greater MN South	Mike Daniels	(320) 293-9421
		Paving	Rob Golish	(651) 216-0516
1		Bridges	Jake Gave	(612) 554-9289
		Pavement Rehabilitation	Gordy Bruhn	(651) 398-9597
Website: www	v.dot.state.mn.u	s/materials/concrete.html		L
Part V	Page 41	Landscaping and Erosion Control Items		
	8	Erosion Control	Ken Graeve	(612) 386-6101
		Landscaping	Carol Zoff	(612) 449-0754
		Wood Chips	Tina Markeson	(651) 366-3619
Part VI	Page 44	Chemical Items	Allen Gallistel	(651) 366-5545
i uit vi	r uge i r		Jason Krogman	(651) 366-5550
Part VII	Page 47	Metallic Materials and Metal Products	6	()
	1 age +/	Sampling	Jemal Jeju	(651) 366-5539
		Test Results	Laboratory	(651) 366-5560
		Bridge Structural Metals	Rich Karras	(651) 366-4569
	D			(031) 500 1507
Part VIII	Page 55	Miscellaneous Materials Sections 1thru 3	Ismal Isin	(651) 266 5520
			Jemal Jeju Rich Karras	(651) 366-5539
		Section 4 Test Results	Laboratory	(651) 366-4569 (651) 366-5560
	D 56		Laboratory	(031) 300-3300
Part IX	Page 56	Geosynthetics, Pipe, Tile, and		
		Precast/Prestressed Concrete		
		Sections 1 -2, 6-11, & 13	T 1 T	((51) 2(( 5520
		Sections 3, 4 & 5	Jemal Jeju	(651) 366-5539
		Section 12	Rich Lamb Blake Nelson	(651) 366-5595
		Section 14 Test Results		(651) 366-5599
	D (0		Laboratory	(651) 366-5560
Part X	Page 60	Brick, Stone and Masonry Units/Modular Retaining Wall Blocks		
		Sections 1, 2A & 3	Jemal Jeju	(651) 366-5539
		Section 2B	Blake Nelson	(651) 366-5599
		Section 2B	Andrea Hendrickson	(651) 366-4466
		Test Results	Laboratory	(651) 366-5560
D VI	D (1			(031) 300-3300
Part XI	Page 61	Electrical & Signal	Susan Zarling	(651) 224 7052
		Sections 1, 8-11 Section 5	Susan Zarling	(651) 234-7052
1		Section 5 Section 3	Jemal Jeju Gordy Bruhn	(651) 366-5539
1			Gordy Bruhn Laboratory	(651) 398-9597
1		Test Results	Laboratory	(651) 366-5560

# MnDOT SD-15 May 1, 2023 Schedule of Materials Control for 2020 Standard Specifications P a g e 7 3 Form Index

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:
<ul> <li>This contract will be solicited and administered by:</li> <li>□ The Minnesota Department of Transportation (MnDOT)</li> <li>□ A local governmental unit</li> </ul>	Design-bid-build (DBB)
	Design-build (DB)
	Construction Manager/General Contractor (CM/GC)
	OR
	□ 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 Management System. 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. To qualify for credit toward the DBE goal, a DBE firm must be certified on or before the proposal due date.

**False Claims**. The Federal False Claims Act (31 USC §§ 3729-3733) and Minnesota False Claims Act (Minn. Stat. § 15C) 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 a RGN goal. While DBE participation is encouraged on proposals with a RGN goal, responders are not required to submit GFE documentation specified in Table A, other than (the information page (Parts A-C) and the Bidders' lists (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:

- to qualify for credit toward the DBE goal, a DBE firm must be certified on or before the proposal due date.
- hiring a DBE as a subcontractor or consultant to do project work,
- purchasing materials from a DBE (typically one hundred percent of the manufacturer's contracted amount, sixty percent of the supplier's contracted amount, or forty percent of the distributor's contracted amount will count toward the goal),
- leasing equipment from a DBE,
- entering into a joint venture with a DBE, or
- 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	
<ul> <li>Design-bid-build administered by MnDOT</li> <li>Construction Manager/General Contractor administered by MnDOT</li> <li>Design-build administered by MnDOT</li> <li>IF THE DBE GOAL IS MET</li> <li>Exhibit A for each DBE participating on the project, including bid/quote for each firm and the DBE Regular Dealer/Distributor Affirmation Form for each Regular Dealer/Distributor.</li> <li>Parts A, B, C, and I of the GFE consolidated form.</li> <li>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 D and E of the GFE consolidated form.</li> </ul>	<ul> <li>Construction Contract administered by local governmental unit</li> <li>PT contract administered by MnDOT or local governmental unit</li> <li>IF THE DBE GOAL IS MET</li> <li>Exhibit A for each DBE participating on the project, including bid/quote for each firm and the DBE Regular Dealer/Distributor Affirmation Form for each Regular Dealer/Distributor.</li> <li>Parts A, B, C, D, E, and I of the GFE consolidated form.</li> </ul>
<ul> <li>IF THE DBE GOAL IS NOT MET</li> <li>Exhibit A for each DBE participating on the project, including bid/quote for each firm and the DBE Regular Dealer/Distributor Affirmation Form for each Regular Dealer/Distributor.</li> <li>Parts A, B, C, F, G, H and I of the GFE consolidated form.</li> <li>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 parts D and E of the GFE consolidated form.</li> <li>Any additional information that will help explain the responder does not meet the DBE goal).</li> </ul>	<ul> <li>IF THE DBE GOAL IS NOT MET</li> <li>Exhibit A for each DBE participating on the project, including bid/quote for each firm and the DBE Regular Dealer/Distributor Affirmation Form for each Regular Dealer/Distributor.</li> <li>Parts A, B, C, D, E, F, G, H and I of the GFE consolidated form.</li> <li>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).</li> </ul>

Design-bid-build	Professional-technical
Date and Time	Date and Time
The submission due date is the 5 <sup>th</sup> calendar day after the bid due date.	The submission due date is the 5 <sup>th</sup> calendar day after the successfu responder is notified by MnDOT.
Format and Location	Format and Location
The responder must submit documents via email to	The responder must submit documents via email to
ocrformsubmissions.DOT@state.mn.us.	ocrformsubmissions.DOT@state.mn.us.
Construction Manager/General Contractor	Design-build
Date and Time	Date and Time
The submission is due on the date and time the price proposal is due.	Civil Rights submission documents in Table A are due with the proposal.
Format and Location	
The responder must submit documents via email to	Format and Location
ocrformsubmissions.DOT@state.mn.us.	See the Design-Build "Instructions to Proposers" for format and
	location delivery specifics.
On All Projects	

due on the next calendar day that is not a Saturday, Sunday, federal holiday, or Minnesota state holiday.

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 prior 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 prior 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 or any portion of its work, (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 or reduce its work, (3) demonstrate good cause to terminate the DBE as described in **Attachment 4.** The responder must complete the online form requesting approval of the termination of a DBE subcontract or any portion of its work. The responder must attach any supporting documentation to demonstrate good cause. Once approved, the responder should 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

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.

## DBE Commitments and Continuing Good Faith Efforts

It is the Prime's responsibility to meet its original commitments to DBE firms and make good faith efforts to meet the project goal, based on final contract amount. If there is a change order to a contract on which there is a DBE contract goal, then that contract goal applies to the full contract amount as modified by the change order. 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.

Table C – Required Payment Submissions			
<ul> <li>Design-bid-build administered by MnDOT</li> <li>Construction Manager/General Contractor administered by MnDOT</li> <li>Design-build administered by MnDOT</li> </ul>	□ Construction Contract administered by local gov't unit □ PT contract administered by MnDOT		
<ul> <li>Within 10 business days of the responder's receipt of MnDOT payment:</li> <li>the responder must pay its subcontractors</li> <li>the payment information to subcontractors should be entered via CRL no later than one calendar week after payment.</li> <li>When final payment has been made to subcontractors:</li> <li>the responder must submit information about the responder's final payment to each subcontractor via CRL.</li> <li>the responder must submit a Total Payment Affidavit to ocrformsubmissions.dot@state.mn.us.</li> </ul>	<ul> <li>Within 10 business days of the responder's receipt of MnDOT or Local Government Unit payment:</li> <li>the responder must pay its subcontractors</li> <li>the responder must submit a Contractor Payment Form to MnDOT OCR on a monthly basis. All subcontractors, if they have lower tiered subcontractors, regardless of DBE status, are required to complete Contractor Payment Forms. The subcontractor should submit its Contractor Payment Form to the Prime Contractor, and the Prime Contractor must submit all Contractor Payment Forms to OCR.</li> </ul>		
	<ul> <li>When final payment has been made to all subcontractors:</li> <li>the responder must submit a Total Payment Affidavit and Final Contractor Payment Form to <u>ocrformsubmissions.dot@state.mn.us</u>.</li> </ul>		

## 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
- Exhibit E DBE Regular Dealer/Distributor Affirmation Form

## Attachment 1 - Counting and Commercially Useful Function (CUF)

## **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(s)).
- 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, except as provided for in § 26.87(j).
- (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.
  - A. 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. Manufacturing includes blending or modifying raw materials or assembling components to create the product to meet contract specifications. When a DBE makes minor modifications to the materials, supplies, articles, or equipment, the DBE is not a manufacturer. Minor modifications are additional changes to a manufactured product that are small in scope and add minimal value to the final product.

- 2. 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 (including transportation costs) toward DBE goals.
  - A. For purposes of this section (f), a regular dealer is a firm that owns (or leases) and operates, 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 sufficient quantities, and regularly sold to or leased to the public in the usual course of business.
  - B. Items kept and regularly sold by the DBE are of the "general character" when they share the same material characteristics and application as the items specified by the contract.
  - C. 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. A DBE supplier performs a CUF as a regular dealer and receives credit for 60 percent of the cost of materials or supplies (including transportation cost) when all, or at least 51 percent of, the items under a purchase order or subcontract are provided from the DBE's inventory, and when necessary, any minor quantities delivered from and by other sources are of the general character as those provided from the DBE's inventory.
  - D. A DBE may be a regular dealer in such bulk items as petroleum products, steel, concrete or concrete products, gravel, stone or asphalt without owning and operating a place of business as provided in 49 C.F.R. §26.55(e)(2)(ii) if the firm both owns and operates distribution equipment used to deliver the products. Any supplementing of regular dealers' own distribution equipment must be by a long-term operating lease agreement and not on an ad hoc or contract-by-contract basis<sup>1</sup>.
  - E. A DBE supplier of items that are not typically stocked due to their unique characteristics (e.g., limited shelf life or items ordered to specification) should be considered in the same manner as a regular dealer of bulk items per D above. If the DBE supplier of these items does not own or lease distribution equipment, as descried above, it is not a regular dealer.
  - F. Packagers, brokers, manufacturers' representatives, or other persons who arrange, facilitate, or expedite transactions are not regular dealers within the meaning of this section (f).
- 3. If the materials or supplies are purchased from a DBE distributor that neither maintains sufficient inventory nor uses its own distribution equipment for the products in question, count 40 percent of the cost of materials or supplies (including transportation costs). A DBE distributor is an established business that engages in the regular sale or lease of the items specified by the contract. A DBE distributor assumes responsibility for the items it purchases once they leave the point of origin (e.g., a manufacturer's facility), making it liable for any loss or damage not covered by the carrier's insurance. A DBE distributor performs a CUF when it demonstrates ownership of the items in question and assumes all risk for loss or damage during transportation, evidenced by the terms of the purchase order or a bill of lading (BOL) from a third party, indicating Free on Board (FOB) at the point of origin or similar terms that transfer responsibility of the items in question to the DBE distributor. If these conditions are met, DBE distributors may receive 40 percent for drop-shipped items. Terms that transfer liability to the distributor at the delivery destination (e.g., FOB destination), or deliveries made or arranged by the manufacturer or another seller do not satisfy this requirement.
- (g) With respect to materials or supplies the responder purchases from a DBE which is neither a manufacturer, a regular dealer, nor a distributor, MnDOT will count the entire amount of fees or commissions that MnDOT deems to be reasonable, including transportation charges for the delivery of materials or supplies. MnDOT, however, will not count any portion of the cost of the materials or supplies themselves toward DBE goals.

<sup>&</sup>lt;sup>1</sup> Credit associated with trucking is calculated differently than the delivery of materials or supplies performed as part of a regular dealer CUF.

## **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 within 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 USDOT.

## **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 also lease trucks from a non-DBE firm, including from an owner-operator. The DBE that leases trucks equipped with drivers from a non-DBE is entitled to credit for the total value of transportation services provided by non-DBE leased trucks equipped with drivers not to exceed the value of transportation services on the contract provided by DBE-owned trucks or leased trucks with DBE employee drivers. Additional participation by non-DBE owned trucks equipped with drivers receives credit only for the fee or commission it receives 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 hauling 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 their designee, will determine whether or not the responder made adequate GFEs to meet the goal. The determination will be sent via email to the responder. If the Director determines that the responder failed to make adequate GFE, the responder may request an administrative reconsideration of that determination (49 CFR §26.53(d)).

## 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.

The responder must send the request via email, MnDOT must **receive** it no later than the fifth business day after the responder receives notice of the Director's determination.

### **Reconsideration Process**

The Commissioner of MnDOT will designate officials to serve as Reconsideration Officials. The Reconsideration Officials shall not have had 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 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 prior written approval from MnDOT OCR, terminate a DBE or any portion of its work listed in the original DBE commitment (submitted Exhibit A). When MnDOT or a local recipient initiates a termination or reduction of work the responder is not required to obtain prior written approval from OCR. Notification of the change to the DBE and OCR is still requested. A termination includes any reduction or underrun in work listed for a DBE not caused by a material change to the prime contract by the recipient. This requirement applies to instances that include, but are not limited to, when a prime contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm. 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)(3), 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 or any portion of its work 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 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.** 

PLE	ASE PRINT CLEARLY OR TYPE.	Pre-Award Commitment:	Post-Award Commitment:
Sect	ion (A): ( <u>All</u> DBE subcontractors, including tru		
Latt	ing Date:	T BE COMPLETED BY THE DBE PRIN	umber:
Prin	e Contractor:		
DBE	E Subcontractor:	Phone #:	
		Total Subcontract \$:	
	DBE Participation	Claimed: Percent% Amou	unt \$
*Ple	ase see instructions to determine DBE Participa	ation to claim.	
Sec	ction (B): (All DBE subcontractors, including the	rucking firms and suppliers, must complete t	his section.)
1.	List the work scopes to be performed and the	associated North American Industry Classif	fication System (NAICS) codes for each item:
	Description/Scope of work	Associated NAICS Code	Applicable dollar amount
2.	Will your firm be renting equipment from the p	rime or the firm you are contracting with? If	f yes, list the cost of the rental.
	a. Yes No Cost of		
3.	Will you be subcontracting to any other firms?		
	If yes, answer the following: Firm's Name:	\$ amount o	f the work:
ectio	<b>n</b> (C) (DBE firms manufacturing or who are reg	ular dealers/distributors/brokers)	
	your firm the manufacturer of the materials yo		
	your firm a material supplier (including bulk it		
	yes, complete the DBE Regular Dealer-Distrib		
*/	All material suppliers, distributors, or brokers m	nust submit a copy of their quotes with this for	form. Please ensure quantities are included.
	n (D) TO BE COMPLETED ONLY BY DB		ad total hours:
1	How many fully operational units will be your	(Estimated total hours:	
1. 2.			

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:

### 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 <sup>1</sup>/<sub>3</sub> TO <sup>1</sup>/<sub>2</sub> 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 <u>No</u>

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.

PA	ART A – PRIME CON	TRACTOR'S INFORMA	TION (You must cor	nplete this part.)
COMPANY NAM	ЛЕ			
ADDRESS	STREET	CITY	STATE	ZIP CODE
PHONE #	F	FAX #	EMAIL ADDRE	ESS
CONTACT PERS	SON	TITLE		

PART B - PROJECT DESCRIPTION (You must complete this part.)								
STATE PROJECT #			CONTRACT # (If Appli	cable)	Attach copy of MnDOT Advertisement			
ANTICIPATED START DATE	NTICIPATED START DATE (Based on progress schedule)		EXPECTED COMPLETION DATE (Based on progress schedule)					
DBE GOAL		DBE CO	OMMITMENT	(Type of GFE Information – Check one only)				
%	VS		%	□ Pre-award				
/0			/0	<sup>o</sup> Dost-award/Execution				
TOTAL DBE PARTICIPATIO	N DOL	LARS B	ASED ON ADVERTIS	ED DBE GOAL (Total pr	ime 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 \$ )	\$



Contractor:

PA	RT D – BIDDI	ERS LIST - DBE (	QUOTES	SUBMITTED (You must compl	ete this part. If the project is let by MnDOT, ye	ou must submit information	L
			t all bids/quo	otes you have received <u>and</u> enter your	DBE Commitments on this form.)		
List their	E COMMITMENTS all DBE firms who provide quote(s). BE Contractor Ir	ed quotes or bid proposals. Indica	te whether the qu	uotes were accepted. Please include a copy of	Description of Work	Dollar Amount Of Bid/Proposal.	Will Firm Be Used?
	DBE Contractor Name						Yes
	Contact Name						
1.	Address						No
	Federal Tax #		E-mail				
	Phone		Fax:				
	DBE Contractor Name						Yes
	Contact Name						
2.	2. Address						No
	Federal Tax #		E-mail				
	Phone		Fax				
	DBE Contractor Name						Yes
	Contact Name						
3.	Address						No
	Federal Tax #		E-mail				
	Phone		Fax				
	DBE Contractor Name						Yes
	Contact Name						
4.	Address:						No
	Federal Tax #		E-mail				
	Phone		Fax				



Contractor:

PA	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 abo	out bids/quo	tes you have received through the AAS	SHTOWare Project CRL online system rather t	han on this form.)			
List their	quote(s).		ndicate whether t	he quotes were accepted. Please include a copy of	Description of Work	Dollar Amount Of Bid/Proposal.	Will Firm Be Used?		
	NON-DBE Contractor Name						Yes		
	Contact Name								
1.	Address		•				No		
	Federal Tax #		E-mail						
	Phone		Fax:						
	NON-DBE Contractor Name						Yes		
	Contact Name								
2.	Address						No		
	Federal Tax #		E-mail						
	Phone		Fax						
	NON-DBE Contractor Name						Yes		
	Contact Name								
3.	Address						No		
	Federal Tax #		E-mail						
	Phone		Fax						
	NON-DBE Contractor Name						Yes		
	Contact Name								
4.	Address:						No		
	Federal Tax #		E-mail						
	Phone		Fax						



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?		DBE?		DBE? Phone #		Phone #	Dates, Method of Contact				Description of Work	Dollar Amount of Quote
	Yes	No		DATES	METHOD								
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													



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.				



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:



## 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:

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.

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:	1 <sup>st</sup> Tier Sub- Contractor:
Payment Reporting Period:	From:	То:	

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, <u>no later than ten</u> (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 Yet)			DBE? (Check if Yes)	Description of Work		Subcontract Amount
1.				1.		1.
2.				2.		2.
3.				3.		3.
4.				4.		
5.				5.		
6.				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:		

Completed Contractor Payment forms can be emailed to OCRFormsubmissions.DOT@state.mn.us



## Disadvantaged Business Enterprise (DBE) Total Payment Affidavit

MnDOT Office of Civil Rights

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 has been performed by a DBE on this project. **If the dollar value of the DBE firm's total work is less than the original subcontract, please describe below.** 

State Project Number: \_\_\_\_\_

STATE OF MINNESOTA COUNTY OF\_\_\_\_\_

I,\_\_\_\_\_, being first duly sworn, do depose and say that:

- 1. I am the authorized representative of \_\_\_\_\_\_\_ 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 this contract/ project:

## Disadvantaged Businesses

	Name of Firm	Dollar Amount Of Subcontract	Retainage Amount	Bond Held	Total Dollar Amount
1					
2					
3					
4					
5					
6					
7					
8					
	Total				

4. If the total dollar value of a DBE firm's portion of the work was less than the original amount committed to be performed by the DBE, you must explain below and provide supporting documentation.

5. I have fully informed myself regarding the accuracy of the statements made in this Affida	accuracy of the statements made in this Affidavi	. I have fully informed myself regarding the	5.
--	--	--	----

	Signed:	:	
Subscribed and sworn to l	pefore me		
Thisday of	, 20		
(Notary Public)			
My commission expires	, 20		
	•	ubmit one affidavit to the Project Engineer and Rights at: OCRformsubmissions.dot@state.m	

OMB Control #2105-0586 (Exp. 5/31/2027) DBE Regular Dealer/Distributor



**Affirmation Form** 

Bidder Name:

Contract Name/Number:

Sections 26.53(c)(1) of Title 49 Code of Federal Regulations requires recipients to make a preliminary counting determination for each DBE listed as a regular dealer or distributor to assess its eligibility for 60 or 40 percent credit, respectively, of the cost of materials and supplies based on its demonstrated capacity and intent to perform as a regular dealer or distributor, as defined in section 26.55(e)(2)(iv)(A),(B),(C), and (3) under the contract at issue. The regulation requires the recipient's preliminary determination to be made based on the DBE's written responses to relevant questions and its affirmation that its subsequent performance of a commercially useful function will be consistent with the preliminary counting of such participation. The U.S. Department of Transportation is providing this form as a tool for recipients, prime contractors, regular dealers, and distributors to use to carry out their respective responsibilities under this regulation. The form may be used by each DBE supplier whose participation is submitted by a bidder for regular dealer or distributor credit on a federally-assisted contract with a DBE participation goal. The form may also be used by prime contractors in connection with DBE regular dealer or distributor participation submitted after a contract has been awarded provided such participation is subject to the recipient's prior evaluation and approval. If this form is used, it should be accompanied by the bidder's commitment, contract, or purchase order showing the materials the DBE regular dealer or distributor is supplying. Use of this tool is not mandatory. If a recipient chooses a different method for complying with Section 26.53(c)(1), it must include that method in its DBE Program Plan. DBE Name:

Total Subcontract/Purchase Order Amount:

Authorized DBE Representative (Name and Title):

NAICS Code(s) Related to the Items to be Sold/Leased:

NO 1. Will **all** items sold or leased be provided from the on-hand inventory at your establishment? YES

(If "YES," you have indicated that your performance will satisfy the regular dealer requirements and may be counted at 60%. STOP here. Read and sign the affirmation below. If "NO" Continue.)

- a) Are you selling bulk items (e.g., petroleum products, steel, concrete, concrete products, sand, gravel, asphalt, etc.) or items not typically stocked due to their unique characterisics (aka specialty items)?
  - YES NO (If "YES," Go to Question 2. If "NO" Continue.)
- b) Will at least 51% of the items you are selling be provided from the inventory maintained at your establishment, and will the minor quantities of items delivered from and by other sources be of the general character as those provided from your inventory?

NO\* (If "YES," you have indicated that your performance will satisfy the regular dealer requirements and YES may be counted at 60%. STOP here. Read and sign the affirmation below.

<sup>\*</sup>If I., I.a), and I. b) above are "NO," your performance on the whole will not satisfy the regular dealer requirements; therefore, only the value of items to be sold or leased from inventory can be counted at 60%. (<u>Go to Question 3</u>. to determine if the items delivered from and by other sources are eligible for Distributor credit.)

2. Will you deliver all bulk or specialty items using distribution equipment you own (or under a long-term lease) and operate?

NO YES (If "YES," you have indicated that your performance will satisfy the requirements for a regular dealer of bulk items and may be counted at 60%. STOP here. Read and sign the affirmation below.)

<sup>1</sup> If "NO," your performance will not satisfy the requirements for a regular dealer of bulk items; the value of items to be sold or leased cannot be counted at 60%. (Go to Question 3.)

- 3. Will the written terms of your purchase order or bill of lading from a third party transfer responsibility, including risk for loss or YES<sup>2</sup> NO<sup>3</sup> damage, to your company at the point of origin (e.g. a manufacture's facility)?
  - a) Will you be using sources other than the manufacturer (or other seller) to deliver or arrange delivery of the items sold or leased ? YES<sup>2</sup> NO<sup>3</sup>

<sup>2</sup> If your responses to 3 and 3.a) are "YES," you have indicated that your performance will satisfy the requirements of a distributor; therefore, the value of items sold or leased may be counted at 40%.

<sup>3</sup> If you responded "NO" to either 3 or 3.a), counting of your participation is limited to the reasonable cost of fees or commissions charged, including transportation charges for the delivery of materials or supplies; the cost of materials or supplies may not be counted.

I affirm that the information that I provided above is true and correct and that my company's subsequent performance of a commercially useful function will be consistent with the above responses. I further affirm that my company will independently negotiate price, order specified quantities, and pay for the items listed in the bidder's commitment. This includes my company's responsibility for the quality of such items in terms of necessary repairs, exchanges, or processing of any warranty claims for damaged or defective materials.

Printed Name and Signature of DBE Owner/Authorized Representative:

The bidder acknowledges its responsibility for verifying the information provided by the DBE named above and ensuring that the counting of the DBE's participation is accurate. Any shortfall caused by errors in counting are the responsibility of the bidder. Printed Name and Signature of Bidder's Authorized Representative:

#### 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 designbuild 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 nonminority 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 nonminority 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 <u>29 CFR part 1</u>, 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 <u>DBAconformance@dol.gov</u>. 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 <u>DBAconformance@dol.gov</u>, 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 reprocurement 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, <u>31</u> 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. <u>3141(2)(B)</u> 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 <u>40 U.S.C.</u> <u>3141(2)(B)</u> 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 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 Actscovered 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/WHD/ 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 <u>29 CFR part 3</u>; 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 <u>18 U.S.C. 1001</u> and <u>31</u> <u>U.S.C. 3729</u>.

(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 <u>29 CFR part 30</u>.

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 subcontract or o 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  $\underline{40}$  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  $\frac{40 \text{ U.S.C. } 3144(b)}{40 \text{ C.S.C. } 0 \text{ or } \S 5.12(a).}$ 

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, <u>18</u> <u>U.S.C. 1001</u>.

**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  $\frac{29 \text{ CFR part 1}}{29 \text{ CFR part 1}}$  or  $\frac{3}{2}$ ;

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 <u>29 CFR part 1</u> or <u>3</u>;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or  $\underline{29 \ CFR \ part 1}$  or  $\underline{3}$ ; or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or <u>29 CFR part 1</u> or <u>3</u>.

# 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 reprocurement 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, <u>31</u> 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 lowertier 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)

 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 longstanding 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 Federalaid 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 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).

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.

#### <u>Notice</u>

- 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
  - 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: <u>http://www.dot.state.mn.us/const/labor/posterboards.html</u>

#### 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 <u>Workplace Violence Continuum</u> 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 <u>MMB Respectful Workplace</u> 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 <u>MnDOT Discrimination Policy</u> 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 <u>Report Wrongdoing/Questionable Activity Form</u>; 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, <u>Minnesota</u> <u>Statutes Chapter 13</u>, 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

1-9-15 Signature and Date Signed c1/ IL

**Governance Council** Sue Stein, Director, Corporate Services Division

7-16-15

Signature and Date Signed

Responsible Senior Officer Tracy Hatch, Deputy Commissioner/CFO/COO

7.17.15 atch 01  $\cap \circ$ Signature and Date \$igned

#### 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.

DEPARTMENT OF TRANSPORTATION

- 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-thestreet 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.)
- 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(I) 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).
- 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	ОН	OVERHEAD
BR	BRIDGE or BARE ROOT	P-A	PIPE-ARCH
CAL	CALIPER	PAVT	PAVEMENT
CL	CLASS or CENTERLINE	PC	POWDER COAT or PRECAST
СОМР	COMPONENT	PERF	PERFORATED
CONC	CONCRETE	PL	PLATE
COND	CONDUCTOR	РР	POLYPROPYLENE
CONST	CONSTRUCT	PREF	PREFORMED
CONT	CONTRAST or CONTAINER	PREST	PRESTRESSED
СР	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
НР	HIGH PRESSURE	TEMP	TEMPORARY
HT	HEIGHT	THERMO	THERMOPLASTIC
HVAC	HEATING, VENTILATION, AIR CONDITIONING	ТР	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

	Proposal Schedule of Items		
Proposal ID: 250041	SP No.: 2102-77	Trunk Hwy: 29=029	
<b>SECTION:</b> 0001	SP 2102-77		
Alt Set ID:	Alt Mbr ID:		

Proposal Line	Item ID	Approximate	Unit Price	Bid Amount	
Number	Description	Quantity and Units	Dollars Cents	Dollars Cents	
0005	2011601/01000 AS BUILT	LUMP SUM	LUMP SUM		
0010	2021501/00010 MOBILIZATION	LUMP SUM	LUMP SUM		
0015	2051501/00010 MAINT AND RESTORATION OF HAUL ROADS	LUMP SUM	LUMP SUM	·	
0020	2102503/00010 PAVEMENT MARKING REMOVAL	11,680.000 L F			
0025	2102518/00010 PAVEMENT MARKING REMOVAL	345.000 S F			
0030	2104502/00820 REMOVE CASTING	2.000 EACH			
0035	2104502/01220 REMOVE SIGN	22.000 EACH			
0040	2104502/01675 REMOVE SIGN PANEL	5.000 EACH			
0045	2104502/03300 SALVAGE SIGN	3.000 EACH			
0050	2104503/00195 SAWING CONCRETE PAVEMENT (FULL DEPTH)	3,502.000 L F			
0055	2104503/00315 REMOVE CURB AND GUTTER	290.000 L F			
0060	2104504/00010 REMOVE CONCRETE MEDIAN	60.000 S Y			
0065	2104504/00090 REMOVE CONCRETE PAVEMENT	2,198.000 S Y			

	Proposal Schedule of Items		
Proposal ID: 250041	SP No.: 2102-77	Trunk Hwy: 29=029	
<b>SECTION:</b> 0001	SP 2102-77		
Alt Set ID:	Alt Mbr ID:		

Proposal Line	Item ID	Approximate	Unit Price	Bid Amount
Number	Description	Quantity and Units	Dollars Cents	Dollars Cents
0070	2104518/00140 REMOVE CONCRETE WALK	1,732.000 S F		
0075	2104602/00400 SALVAGE SIGN SPECIAL	2.000 EACH		
0080	2106507/00010 EXCAVATION - COMMON	26.000 C Y		
0085	2106507/00130 COMMON EMBANKMENT (CV)	11.000 C Y		
0090	2112604/00010 SUBGRADE PREPARATION	110.000 S Y		
0095	2211507/00170 AGGREGATE BASE (CV) CLASS 5	369.000 C Y		
0100	2301504/00085 CONCRETE PAVEMENT 8.5"	110.000 S Y		
0105	2301602/00071 DRILL AND GROUT REINF BAR (EPOXY COATED)	1,119.000 EACH		
0110	2506502/06000 CASTING ASSEMBLY	2.000 EACH		
0115	2506502/06020 ADJUST FRAME AND RING CASTING	2.000 EACH		
0120	2521518/00060 6" CONCRETE WALK	10,540.000 S F		
0125	2521602/00030 DRILL AND GROUT REINF BAR (EPOXY COATED)	346.000 EACH	·	
0130	2521618/00400 CONCRETE CURB RAMP WALK	2,214.000 S F		

	Proposal Schedu	Page 3 of 5	
Proposal ID: 250041	SP No.: 2102-77	Trunk Hwy: 29=029	
<b>SECTION:</b> 0001	SP 2102-77		
Alt Set ID:	Alt Mbr ID:		

Proposal Line	Item ID	Approximate	Unit Price	Bid Amount
Number	Description	Quantity and Units	Dollars Cents	Dollars Cents
0135	2531503/02320 CONCRETE CURB AND GUTTER DESIGN B624	3,526.000 L F	·	i
0140	2531603/24020 CONCRETE SILL	58.000 L F		
0145	2531603/24130 CONCRETE CURB DESIGN V	88.000 L F		
0150	2531618/00010 TRUNCATED DOMES	374.000 S F		
0155	2563601/00010 TRAFFIC CONTROL	LUMP SUM	LUMP SUM	
0160	2563601/00100 ALTERNATE PEDESTRIAN ROUTE	LUMP SUM	LUMP SUM	
0165	2563602/01100 PORTABLE CHANGEABLE MESSAGE SIGN	4.000 EACH	·	
0170	2564602/01515 INSTALL SIGN	3.000 EACH		
0175	2564602/01516 INSTALL SIGN SPECIAL	2.000 EACH		
0180	2564618/00010 SIGN	280.000 S F	·	
0185	2564618/00020 SIGN PANEL	19.000 S F		
0190	2565616/00001 FLASHING BEACON SYSTEM A	1.000 SYS		
0195	2565616/00001 FLASHING BEACON SYSTEM B	1.000 SYS		

	Proposal Schedule of Items		
Proposal ID: 250041	SP No.: 2102-77	Trunk Hwy: 29=029	
<b>SECTION:</b> 0001	SP 2102-77		
Alt Set ID:	Alt Mbr ID:		

Proposal Line	Item ID	Approximate	Unit Price	Bid Amount
Number	Description	Quantity and Units	Dollars Cents	Dollars Cents
0200	2565616/00101 REVISE SIGNAL SYSTEM A	1.000 SYS		
0205	2565616/00102 REVISE SIGNAL SYSTEM B	1.000 SYS		
0210	2573502/00110 STORM DRAIN INLET PROTECTION	36.000 EACH		. <u></u>
0215	2573503/00060 SEDIMENT CONTROL LOG TYPE STRAW	93.000 L F		. <u> </u>
0220	2574508/00011 FERTILIZER TYPE 1	6.000 LB		
0225	2575504/00011 SODDING TYPE LAWN	49.000 S Y		·
0230	2575504/00012 SODDING TYPE SALT TOLERANT	28.000 S Y		
0235	2581503/00224 24" REMOVABLE PREFORMED PAVEMENT MARKING TAPE CONTRAST	40.000 L F	·	
0240	2581603/00020 REMOVABLE PREFORMED PLASTIC MASK (BLACK)	425.000 L F	·	·
0245	2582503/10124 24" SOLID LINE PAINT	470.000 L F		
0250	2582503/40104 4" SOLID LINE MULTI-COMPONENT GROUND IN (WR)	3,201.000 L F		·
0255	2582503/40106 6" SOLID LINE MULTI-COMPONENT GROUND IN (WR)	2,040.000 L F		<u>-</u>

# Minnesota Department Of Transportation

Proposal Schedule of Items			Page 5 of 5
Proposal ID: 250041	SP No.: 2102-77	Trunk Hwy: 29=029	
<b>SECTION:</b> 0001	SP 2102-77		
Alt Set ID:	Alt Mbr ID:		

Proposal Line	Item ID	Approximate	Unit Price	Bid Amount	
Number	Description	Quantity and Units	Dollars Cents	Dollars Cents	
0260	2582503/40204 4" BROKEN LINE MULTI-COMPONENT GROUND IN (WR)	858.000 L F	·		
0265	2582503/40304 4" DOTTED LINE MULTI-COMPONENT GROUND IN (WR)	78.000 L F	·		
0270	2582503/40404 4" DOUBLE SOLID LINE MULTI- COMPONENT GROUND IN (WR)	1,131.000 L F			
0275	2582503/76124 24" SOLID LINE PREFORM THERMO GROUND IN	321.000 L F			
0280	2582518/04020 PAVEMENT MESSAGE PREFORM THERMOPLASTIC GROUND IN	78.000 S F	·		
0285	2582518/08060 CROSSWALK PREFORM THERMOPLASTIC GROUND IN ENHANCED SKID RESISTANCE	1,908.000 S F	·		
	Section: 000	)1	Total:	. <u></u> .	

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**

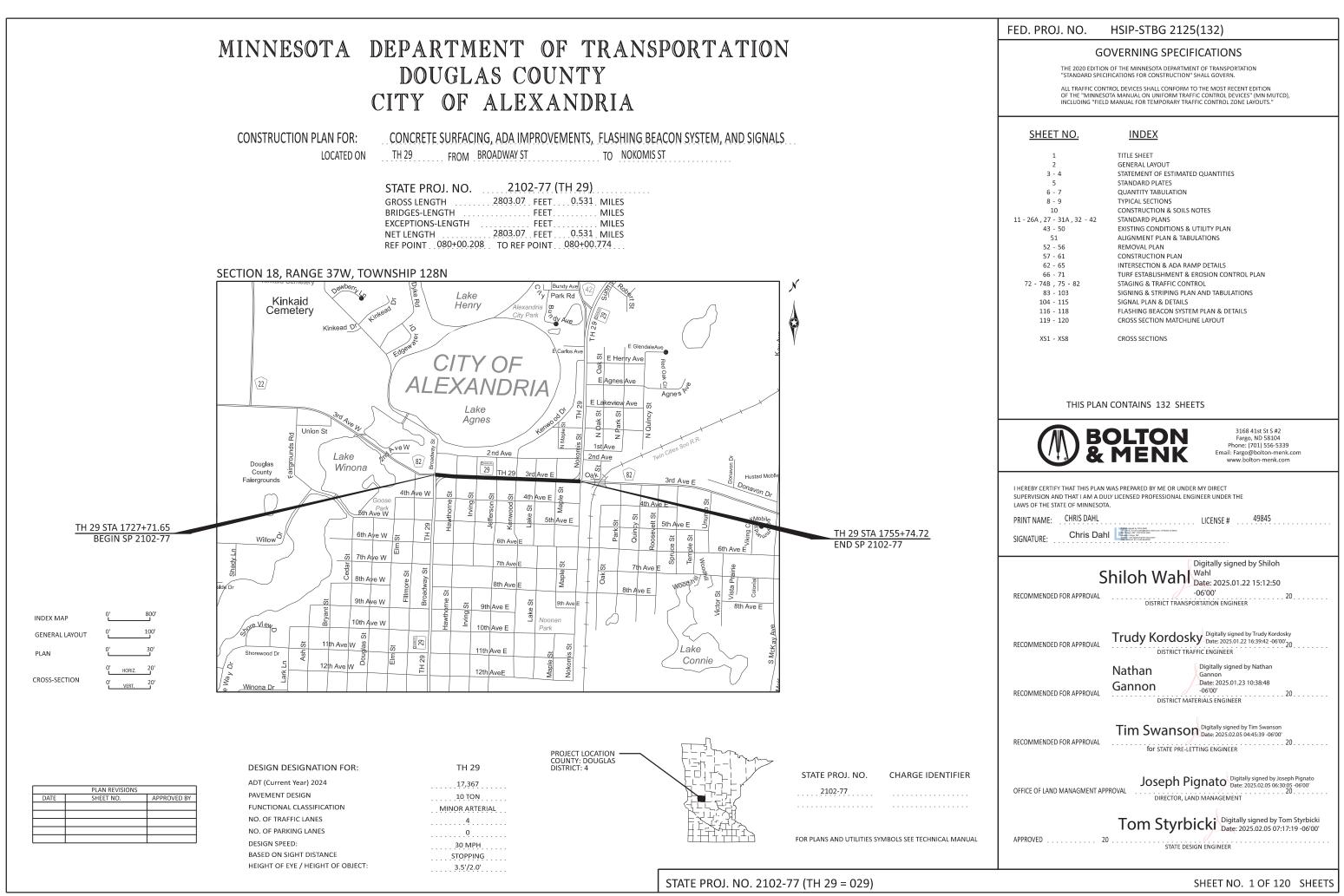
Date	, 20		
			(Name of Contractor/Principal)
		By:	
		J	(Officer)
		By:	
		J	(Officer)
			(Name of Surety)
		By:	
		J	(Attorney-in-Fact)
(Surety	y Corporate Seal)		

### ACKNOWLEDGEMENT IN A REPRESENTATIVE CAPACITY (Corporation, LLC, Partnership or Other Entity)

STATE OF				
COUNTY OF				
This instrument was acknowledged before	e me on(date)	by	(name)	
and	as	and		
and(name)	(title)		(title)	
of	alf of whom the instrument was executed			
	Notary Signature:			
	Title: <u>Notary</u>			
	Commission Expiration			
ACKNOW	LEDGEMENT IN AN INDI	VIDUAL CAPA	CITY	
STATE OF COUNTY OF				
This instrument was acknowledged before	e me on(date)	by	(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 (name)		
C C	(date) (name)		
as Attorney-in-Fact of	(name of surety)		
	(name of surety)		
	Notary Signature:		
	Title: <u>Notary</u>		
	Commission Expiration:		
(Notary Stamp/Seal)			
NOTICE TO PERSONAL SURETIES:	Bond will not be accepted unless accompanied by a sworn financial statement o 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 mus 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		

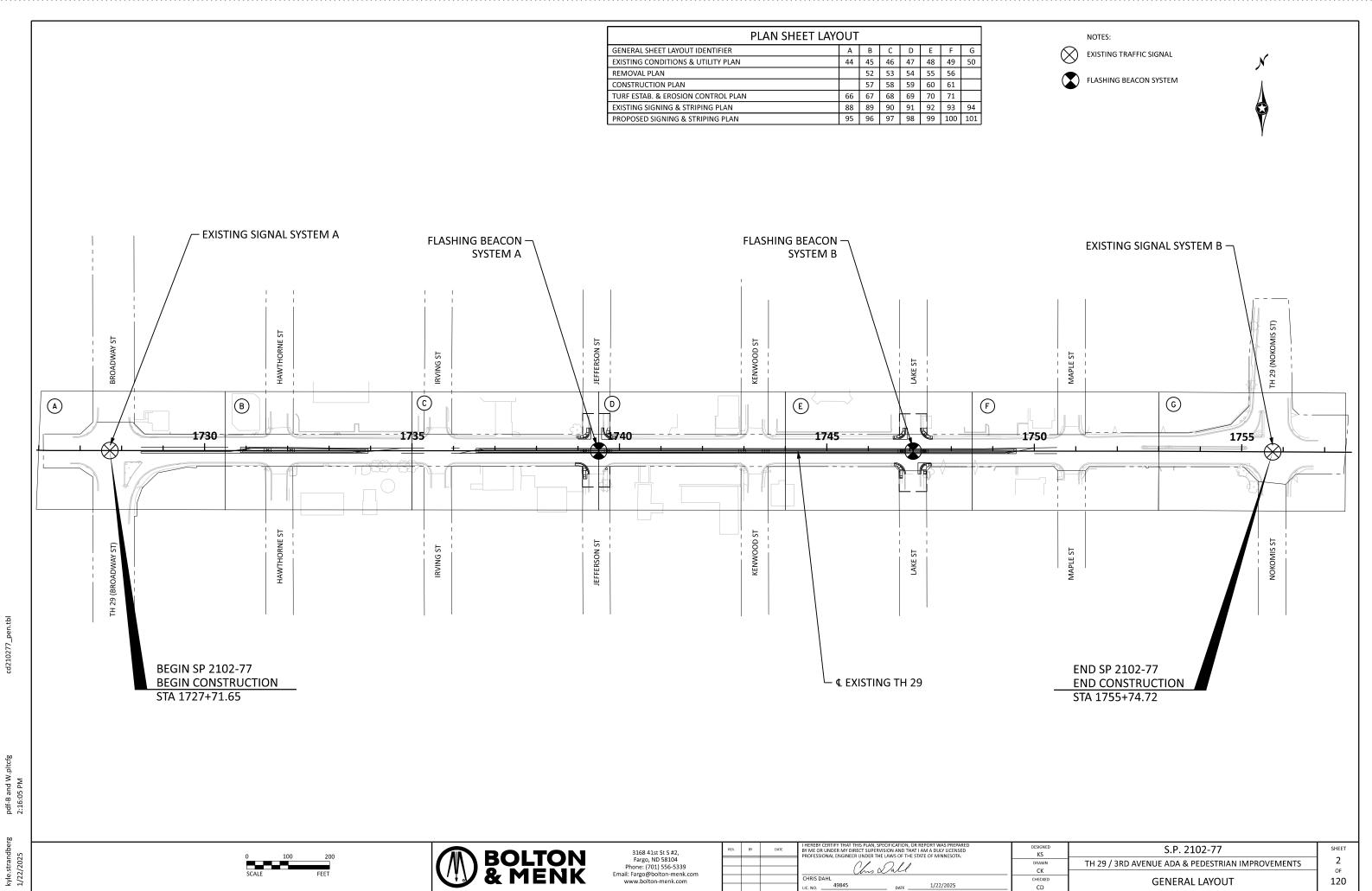


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yle.strandber /16/2025

PLAN SHEET LAYOUT								
GENERAL SHEET LAYOUT IDENTIFIER	Α	В	С	D	Е	F	G	
EXISTING CONDITIONS & UTILITY PLAN	44	45	46	47	48	49	50	
REMOVAL PLAN		52	53	54	55	56		
CONSTRUCTION PLAN		57	58	59	60	61		
TURF ESTAB. & EROSION CONTROL PLAN	66	67	68	69	70	71		
EXISTING SIGNING & STRIPING PLAN	88	89	90	91	92	93	94	
PROPOSED SIGNING & STRIPING PLAN	95	96	97	98	99	100	101	



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# STATEMENT OF ESTIMATED QUANTITIES

		ITEM NO.	ITEM DESCRIPTION	6		PARTICIPATING SP 2102-77 (A)	
ТАВ	SHEET NO.			NOTES	UNIT		
						QUANTITY	
		2011.601	AS BUILT		LUMP SUM	1	
		2021.501	MOBILIZATION		LUMP SUM	1	
		2051.501	MAINT & RESTORATION OF HAUL ROADS		LUMP SUM	1	
F	84	2102.503	PAVEMENT MARKING REMOVAL		LIN FT	11680	
F	84	2102.518	PAVEMENT MARKING REMOVAL		SQ FT	345	
В	6	2104.502	REMOVE CASTING		EACH	2	
ST-R	85	2104.502	REMOVE SIGN		EACH	22	
ST-A	86 - 87	2104.502	REMOVE SIGN PANEL		EACH	5	
ST-A	86 - 87	2104.502	SALVAGE SIGN		EACH	3	
В	6	2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)		LIN FT	3502	
В	6	2104.503	REMOVE CURB & GUTTER		LIN FT	290	
В	6	2104.504	REMOVE CONCRETE MEDIAN		SQ YD	60	
В	6	2104.504	REMOVE CONCRETE PAVEMENT		SQ YD	2198	
В	6	2104.518	REMOVE CONCRETE WALK		SQ FT	1732	
ST-A	86 - 87	2104.602	SALVAGE SIGN SPECIAL		EACH	2	
A	6	2106.507	EXCAVATION - COMMON	(P)	CUYD	26	
А	6	2106.507	COMMON EMBANKMENT (CV)	(P)	CU YD	11	
С	6	2112.604	SUBGRADE PREPARATION		SQ YD	110	
C	6	2211.507	AGGREGATE BASE (CV) CLASS 5	(P)	CUYD	369	
C	6	2301.504	CONCRETE PAVEMENT 8.5"		SQ YD	110	
С	6	2301.602	DRILL & GROUT REINF BAR (EPOXY COATED)		EACH	1119	
G	7	2506.502	CASTING ASSEMBLY		EACH	2	
 B	6	2506.502	ADJUST FRAME & RING CASTING		EACH	2	
C	6	2521.518	6" CONCRETE WALK		SQ FT	10540	
D	7	2521.602	DRILL & GROUT REINF BAR (EPOXY COATED)		EACH	346	
	,	20211002			Extern		
С	6	2521.618	CONCRETE CURB RAMP WALK		SQ FT	2214	
С	6	2531.503	CONCRETE CURB & GUTTER DESIGN B624		LIN FT	3526	
С	6	2531.603	CONCRETE SILL		LIN FT	58	
С	6	2531.603	CONCRETE CURB DESIGN V		LIN FT	88	
D	7	2531.618	TRUNCATED DOMES		SQ FT	374	
		2563.601	TRAFFIC CONTROL		LUMP SUM	1	
		2563.601	ALTERNATE PEDESTRIAN ROUTE		LUMP SUM	1	
		2563.602	PORTABLE CHANGEABLE MESSAGE SIGN		EACH	4	
ST-A	86 - 87	2564.602	INSTALL SIGN		EACH	3	
ST-A	86 - 87	2564.602	INSTALL SIGN SPECIAL		EACH	2	
ST-A	86 - 87	2564.618	SIGN		SQ FT	280	
ST-A	86 - 87	2564.618	SIGN PANEL		SQ FT	19	
	116	2565.616	FLASHING BEACON SYSTEM A		SYSTEM	1	
	116	2565.616	FLASHING BEACON SYSTEM B		SYSTEM	1	
		2565.616	REVISE SIGNAL SYSTEM A		SYSTEM	1	



3168 41st St S #2.
Fargo, ND 58104
Phone: (701) 556-5339
Email: Fargo@bolton-menk.co
www.bolton.monk.com

	REV.	вү	DATE	I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.
om				Chis Dall
.0111				CHRIS DAHL
				49845 1/16/2025

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erg kyle.strandbe 1/16/2025

#SEQ01

FUNDING NOTES:

(A) 90% FEDERAL HSIP / 10% STATE FUNDS (CAPPED), REMAINDER: 81.42% FEDERAL STBG / 18.58% STATE FUNDS

NOTES:

(P) PLAN QUANTITY

	DESIGNED KS	S.P. 2102-77	SHEET
	DRAWN	TH 29 / 3RD AVENUE ADA & PEDESTRIAN IMPROVEMENTS	3
ŀ	CK CHECKED CD	STATEMENT OF ESTIMATED QUANTITIES	₀⊧ 120
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STATEMENT OF ESTIMATED QUANTITIES							
						PARTICIPATING	
ТАВ	SHEET NO.	ITEM NO.	ITEM DESCRIPTION	NOTES	UNIT	SP 2102-77 (A)	
						QUANTITY	
		2565.616	REVISE SIGNAL SYSTEM B		SYSTEM	1	
Е	7	2573.502	STORM DRAIN INLET PROTECTION		EACH	36	
E	7	2573.503	SEDIMENT CONTROL LOG TYPE STRAW		LIN FT	93	
E	7	2574.508	FERTILIZER TYPE 1		POUND	6	
E	7	2575.504	SODDING TYPE LAWN		SQ YD	49	
F	7	2575 504				20	
-	7	2575.504	SODDING TYPE SALT TOLERANT		SQ YD	28 40	
TC-A	74	2581.503	24" REMOVABLE PREFORM PAVEMENT MARKING TAPE CONTRAST		LIN FT		
TC-A F	74 84	2581.603 2582.503	REMOVABLE PREFORMED PLASTIC MASK (BLACK) 24" SOLID LINE PAINT		LIN FT LIN FT	425 470	
F	84	2582.503				3201	
F	84	2582.503	4" SOLID LINE MULTI COMP GR IN (WR)		LIN FT	3201	
F	84	2582.503	6" SOLID LINE MULTI COMP GR IN (WR)		LIN FT	2040	
F	84	2582.503	4" BROKEN LINE MULTI COMP GR IN (WR)		LIN FT	858	
F	84	2582.503	4" DOTTED LINE MULTI COMP GR IN (WR)		LIN FT	78	
F	84	2582.503	4" DBLE SOLID LINE MULTI COMP GR IN (WR)		LIN FT	1131	
F	84	2582.503	24" SOLID LINE PREF THERMO GR IN		LIN FT	321	
F	84	2582.518	PAVT MSSG PREF THERMO GR IN		SQ FT	78	
F	84	2582.518	CROSSWALK PREF THERMO GR IN ESR		SQ FT	1908	



3168 41st St S #2,
Fargo, ND 58104
Phone: (701) 556-5339
Email: Fargo@bolton-menk.c
www.bolton-menk.com

	REV.	ВҮ	DATE	I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.
) com				Chrs Lall
n				CHRIS DAHL
				49845 DATE 1/16/2025

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FUNDING NOTES:

(A) 90% FEDERAL HSIP / 10% STATE FUNDS (CAPPED), REMAINDER: 81.42% FEDERAL STBG / 18.58% STATE FUNDS

	DESIGNED	S.P. 2102-77	SHEET
	KS DRAWN	TH 29 / 3RD AVENUE ADA & PEDESTRIAN IMPROVEMENTS	4
_	CK		₀⊧ 120
_	CD	STATEMENT OF ESTIMATED QUANTITIES	120
			- •

THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL
HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT
STANDARD PLATES
DESCRIPTION
CATCH BASIN FRAME CASTING (FOR SQUARE GRATE) - CASTING NO. 805
CATCH BASIN GRATE CASTING - CASTING NO. 814A
CONCRETE CURB (DESIGN B, DESIGN V, DESIGN S, DESIGN DR AND DESIGN BR)(2 SHEETS)
DETECTABLE WARNING SURFACE TRUNCATED DOMES
CONCRETE CURB AND GUTTER (DESIGN B AND DESIGN V)
INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB AND GUTTER)
CONCRETE APPROACH NOSE DETAIL
TEMPORARY CHANNELIZERS (3 SHEETS)
PEDESTAL AND PEDESTAL BASE (FOR TRAFFIC CONTROL SIGNALS SUPPORT) (2 SHEETS)
POLE AND MAST ARM TYPE TS FOR MAST ARM LENGTHS 15' TO 55'
LIGHT FOUNDATION - DESIGN E PRECAST/CAST-IN-PLACE (40 FT. POLE OR LESS) (2 SHEETS)

BOLTON & MENK	
------------------	--

3168 41st St S #2.	
Fargo, ND 58104	
Phone: (701) 556-5339	2
Email: Fargo@bolton-menk	
www.bolton-menk.com	

	REV.	ВҮ	DATE	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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om				CHRIS DAHL
				49845 DATE 1/16/2025

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	DESIGNED	S.P. 2102-77	SHEET
	DRAWN	TH 29 / 3RD AVENUE ADA & PEDESTRIAN IMPROVEMENTS	5
_	CK		OF
_	CD	STANDARD PLATES	120

		EARTHWORK SUMMARY (A-1)												
				2:	106									
		ALIGNMENT	STATION	LOCATION	EXCAVATION - COMMON	COMMON EMBANKMENT								
_					CU YD	CU YD								
	102-77	EXISTING TH 29	1727+71.65 TO 1735+60.00	LT/RT										
	SP 21	EXISTING TH 29	1735+60.00 TO 1755+74.72	LT/RT	26	11								
	11													

NOTES:

(A-1) QUANITY FOR PEDESTRIAN RAMPS AT JEFFERSON ST AND LAKE ST.

Γ	MISCELLANEOUS REMOVALS													
	2104													
							REMOVE							
	ALIGNMENT	STATION	LOCATION	SAWING CONCRETE PAVEMENT (FULL DEPTH)	CURB & GUTTER	CONCRETE MEDIAN	CONCRETE PAVEMENT	CONCRETE WALK	CASTING	ADJUST FRAME & RING CASTING				
				LIN FT	LIN FT	SQ YD	SQ YD	SQ FT	EACH	EACH				
02-77	EXISTING TH 29	1727+71.65 TO 1735+60.00	LT/RT	643			457							
SP 210	EXISTING TH 29	1735+60.00 TO 1755+74.72 LT/RT		2859	290	60	1741	1732	2	2				
		SP 2102	2-77 TOTAL	3502	290	60	2198	1732	2	2				

AGGREGATE & CONCRETE SUMMARY														С
				2112	2211		-	2301		252	21		2531	
	ALIGNMENT	STATION	LOCATION	SUBGRADE PREPARATION	AGGREGATE BASE (CV) CLASS 5	CONCRETE PAVEMENT 8.5"			CONCRETE CURB RAMP WALK WALK		CONCRETE SILL	CONCRETE CURB & GUTTER DESIGN B624	CONCRETE CURB DESIGN V	
							HEADER	LONGITUDINAL	BACK OF CURB					
				SQ YD	CU YD	SQ YD		EACH		SQ FT	SQ FT	LIN FT	LIN FT	LIN FT
02-77	EXISTING TH 29	1727+71.65 TO 1735+60.00	LT/RT	18	68	18	8	18	206	104	2213		617	
SP 21(	EXISTING TH 29	1735+60.00 TO 1755+74.72	LT/RT	92	301	92	7	12	868	2110	8327	58	2909	88
		SP 210	2-77 TOTAL	110	369	110		1119		2214	10540	58	3526	88

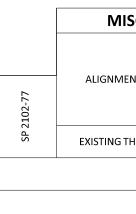
3168 41st St S #2,	REV.	ВҮ	DATE	I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Fargo, ND 58104 Phone: (701) 556-5339 : Fargo@bolton-menk.com				Chrs Dall
/ww.bolton-menk.com				CHRIS DAHL
				LIC. NO 49845 DATE1/16/2025



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	DESIGNED KS	S.P. 2102-77	SHEET
	DRAWN	TH 29 / 3RD AVENUE ADA & PEDESTRIAN IMPROVEMENTS	6
	CK	TH 29 / 3RD AVENUE ADA & PEDESTRIAN INIPROVENIENTS	OF
-	CK		
	CHECKED	QUANTITY TABULATIONS	120
_	CD	QUARTITE INDUCTIONS	120

						D			
				2!	521			2531	
	INTERSECTION	QUADRANT / CUT-THROUGH	LOCATION			TRUNCATED DOMES			
				LONGITUDINAL	TRANSVERSE	LANDING	END OF CURB TIE IN		
				EACH	EACH	EACH	EACH	SQ FT	RADIUS
		WEST	LT	4		5	3	12	RECTANGULAR
		CUT-THROUGH	RT	4		5	3	12	RECTANGULAR
	HAWTHORNE ST	EAST	LT	4			3	12	RECTANGULAR
		CUT-THROUGH	RT	4			3	12	RECTANGULAR
		NE	LT		5	10	9	22	22'
	JEFFERSON ST	SW	RT	20	12	14	10	14	25.7'
		NW	LT		6	10	9	26	14'
		WEST	LT	4			3	16	RECTANGULAR
		CUT-THROUGH	RT	4			3	16	RECTANGULAR
~		EAST	LT	4			3	16	RECTANGULAR
2102-77		CUT-THROUGH	RT	4			3	16	RECTANGULAR
210		WEST	LT	5			3	12	RECTANGULAR
SP		CUT-THROUGH	RT	5			3	12	RECTANGULAR
	KENWOOD ST	EAST	LT	5			3	12	RECTANGULAR
		CUT-THROUGH	RT	5			3	12	RECTANGULAR
		NE	LT		4	9	9	14	25.7'
		SE	RT		5	16	12	34	16'
		SW	RT		5	16	9	20	25'
		NW	LT		6	10	10	20	16'
	LAKE ST	WEST	LT	5			3	16	RECTANGULAR
		CUT-THROUGH	RT	5			3	16	RECTANGULAR
		EAST	LT	5			3	16	RECTANGULAR
		CUT-THROUGH	RT	5			3	16	RECTANGULAR
		SP	2102-77 TOTAL	92	43	95	116	374	



NOTES:

1/16/2025

DATE \_

			ERO	OSION CONTROL /	' TURF ESTABLISH	MENT		E
				257	2573		2!	575
	ALIGNMENT	STATION	LOCATION	STORM DRAIN INLET PROTECTION	SEDIMENT CONTROL LOG TYPE STRAW	FERTILIZER TYPE 1 (E-1)	SODDING TYPE LAWN	SODDING TYPE SALT TOLERANT
				EACH	LIN FT	POUND	SQ YD	SQ YD
02-77	EXISTING TH 29	1727+71.65 TO 1735+60.00	LT/RT	8				
SP 21(	EXISTING TH 29	1735+60.00 TO 1755+74.72	LT/RT	28	93	6	49	28
		SP 2102	2-77 TOTAL	36	93	6	49	28

NOTES:
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(E-1) USE FERTILIZER TYPE 1 ANALYSIS 20-10-20 APPLICATION RATES = 350 LBS/AC

BOLTON & MENK	
---------------	--

3168 41st St S #2,	REV.	BY	DATE	I HEREBY CERTIFY THAT THIS PLA BY ME OR UNDER MY DIRECT SU PROFESSIONAL ENGINEER UNDE	PERVISION AND THAT I	AM A DULY LICENSED
Fargo, ND 58104 Phone: (701) 556-5339 Email: Fargo@bolton-menk.com						TE OF MININESOTA.
				(In	, Dall	
www.bolton-menk.com				CHRIS DAHL		
				49845	DATE	1/16/2025

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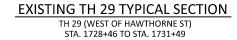
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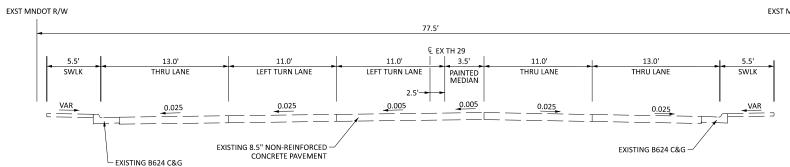
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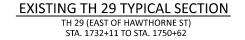
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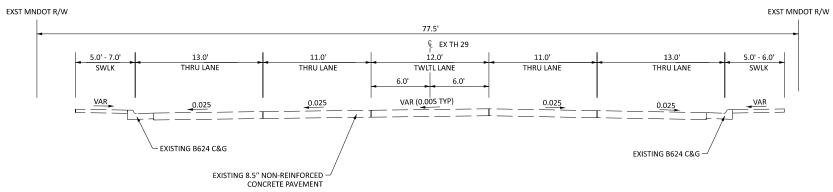
(G-1) FRAME CASTING 805, STANDARD PLATE 4132 GRATE CASTING 814A, STANDARD PLATE 4152

KS 31112102 77	
DRAWN TH 29 / 3RD AVENUE ADA & PEDESTRIAN IMPROVEMENTS	7
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CD QUAINTITY IABOLATIONS	120









	<b>BOLTON</b> & MENK	
	& MENK	

3168 41st St S #2,	REV.	вү	DATE	I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.
Fargo, ND 58104				<u> </u>
Phone: (701) 556-5339 Email: Fargo@bolton-menk.com				Chis Dall
www.bolton-menk.com				CHRIS DAHL
				LIC. NO

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GENERAL NOTES:

ALL SLOPES ARE FT. PER FT.

ALL DIMENSIONS LOCATED AT CURB AND GUTTER ARE MEASURED TO THE FACE OF CURB.

R/W - RIGHT OF WAY

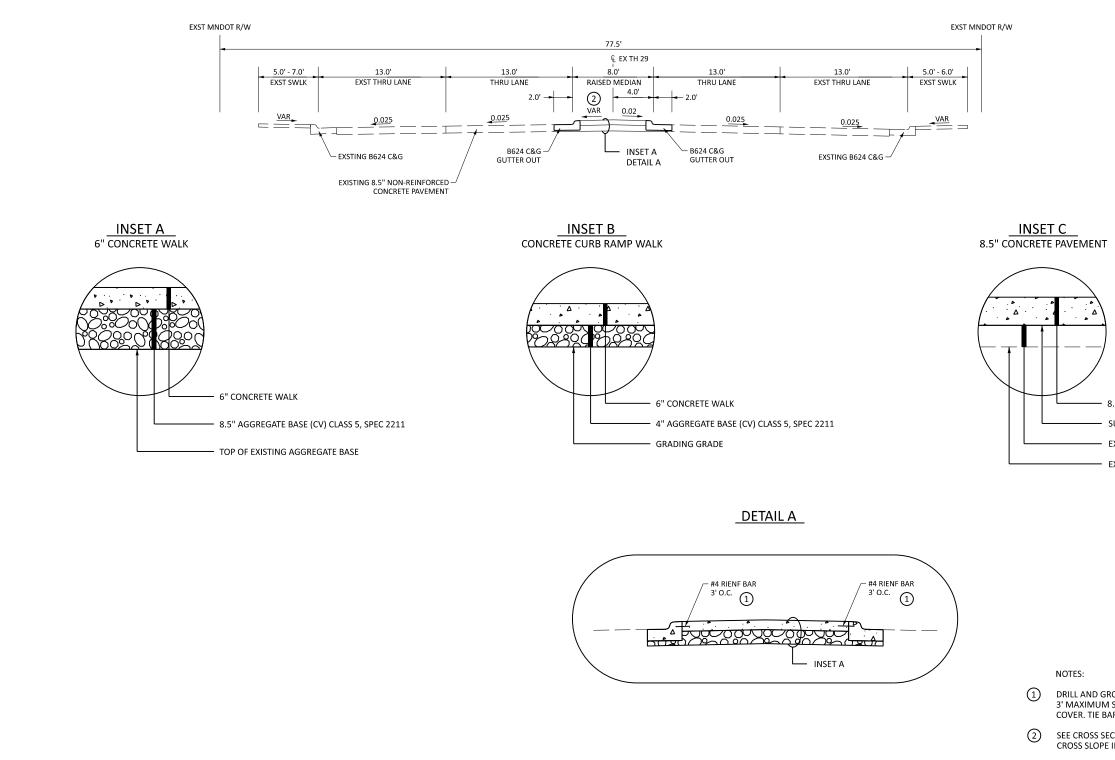
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_	CD	TYPICAL SECTIONS	120

### PROPOSED TH 29 TYPICAL SECTION

STA. 1730+86 TO STA. 1733+94 STA. 1736+54 TO STA. 1749+56



<b>WV &amp; MENK</b>			<b>BOLTON</b> & MENK
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Fargo, ND 58104			
Phone: (701) 556-5339 Email: Fargo@bolton-menk.com			
www.bolton-menk.com			

BY	DATE	I HEREBY CERTIFY THAT THIS PLAN, SP BY ME OR UNDER MY DIRECT SUPERVI PROFESSIONAL ENGINEER UNDER THE	SION AND TH	AT I AM A DULY LICENSED
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		LIC. NO	DATE	1/16/2025

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GENERAL NOTES:

ALL SLOPES ARE FT. PER FT.

ALL DIMENSIONS LOCATED AT CURB AND GUTTER ARE MEASURED TO THE FACE OF CURB

SEE CONSTRUCTION PLAN FOR INSET B AND C LOCATIONS.

R/W - RIGHT OF WAY

8.5" CONCRETE PAVEMENT SUBGRADE PREPARATION EXISTING AGGREGATE BASE EXISTING GRADING GRADE

DRILL AND GROUT NO. 4 X 8" LONG TIE BARS (EPOXY COATED). 3' MAXIMUM SPACING BETWEEN BARS WITH 2" MINIMUM CONCRETE COVER. TIE BARS EMBEDDED 4" WITH 2" MINIMUM COVER.

SEE CROSS SECTIONS FOR ADDITIONAL CROSS SLOPE INFORMATION.

	DESIGNED KS	S.P. 2102-77	SHEET
	DRAWN CK	TH 29 / 3RD AVENUE ADA & PEDESTRIAN IMPROVEMENTS	9 0F
-	CHECKED	TYPICAL SECTIONS	120
_	CD		

## CONSTRUCTION NOTES:

- THE GRADE SHALL BE SHAPED AND COMPACTED AT THE END OF EACH WORKING DAY TO SEAL THE SURFACE AND PROVIDE DRAINAGE. Α. THIS SHALL BE INCIDENTAL
- WHERE PRESENT, THE CONTRACTOR SHALL REMOVE ALL CONFLICTING PORTIONS OF INPLACE PAVEMENT EDGE DRAINS, SUBDRAINS, В. AND PRECAST CONCRETE HEADWALLS AS NECESSARY FOR ROADWAY CONSTRUCTION, WHICH SHALL BE INCIDENTAL WORK. THE REMOVED MATERIALS. IF ANY, SHALL BECOME THE PROPERTY OF THE CONTRACTOR, FOR ABANDONED PRIVATE UTILITY CONDUIT AND WIRE. REMOVE ALL IF EXPOSED WITHIN THE SUBCUT OF THE PROPOSED ROADWAY. AREAS OUTSIDE OF THE ROADWAY SUBCUT CAN BE LEFT IN PLACE OR REMOVED WITHIN REASON PER APPROVAL OF THE ENGINEER.
- C. ANY WORK ROADS THE CONTRACTOR BUILDS TO FACILITATE CONSTRUCTION. INCLUDING THE REMOVAL OF THE WORK ROADS AND ESTABLISHING TURF WHERE APPROPRIATE, SHALL BE AT NO COST TO THE DEPARTMENT. SUBSOILING SHALL BE REQUIRED AFTER THE REMOVAL OF THE WORK ROADS TO RESTORE PERMEABILITY OF THE UNDERLYING SOILS, PRIOR TO PLACEMENT OF SLOPE DRESSING. THIS WORK SHALL BE AT NO COST TO THE DEPARTMENT. WORK ROADS SHALL COMPLY WITH ALL REQUIREMENTS OF THE REGULATORY AGENCIES (CORPS OF ENGINEERS, DNR, MPCA, ETC.).
- THE CONTRACTOR'S PERSONNEL OR ANY OTHER PERSONNEL MAY NOT USE THE NEW ROAD SURFACE OR ROADBED FOR THE PURPOSE OF D. STOCKPILING AGGREGATE MATERIAL OR ANY OTHER MATERIAL FOR ANY LENGTH OF TIME DURING THE DURATION OF THE PROJECT.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH PROVIDING AND MAINTAINING TEMPORARY ACCESS DURING Ε. CONSTRUCTION FOR ALL PROPERTY OWNERS AND BUSINESSES ADJACENT TO THE PROJECT. SEE SPECIAL PROVISIONS. THIS SHALL BE INCIDENTAL
- PROVIDE A FULL DEPTH SAWCUT WHERE PLACING NEW PAVEMENT NEXT TO INPLACE PAVEMENT TO ENSURE A UNIFORM JOINT. E.
- THE CONTRACTOR HEREBY REMINDED OF THEIR RESPONSIBILITY UNDER STATE LAW TO CONTACT ALL UTILITIES THAT MAY HAVE FACILITIES G. IN THE AREA. CONTACT MUST BE MADE THROUGH GOPHER STATE ONE-CALL.
- CAUTION SHALL BE EXERCISED IN EXCAVATION AREAS NEAR IN-PLACE UTILITIES INTENDED TO REMAIN IN-PLACE IN ORDER TO AVOID Н. CONTACT WITH THOSE UTILITIES (INCIDENTAL).
- UTILITY RELOCATIONS IN THE AREA WILL BE OCCURRING PRIOR TO OR DURING THE PROJECT. THE CONTRACTOR IS TO EXPECT UTILITY CONFLICTS AND ACCOUNT FOR THEM IN THEIR WORK SCHEDULE.

## **EROSION CONTROL NOTES:**

- 1. LIMITED TO INSPECTION, MAINTENANCE, AND REMOVAL OF BMPS TO ACCOMMODATE CONTRACTOR PHASING.
- ALL STREETS IN AND ADJACENT TO THE PROJECT SHALL REMAIN CLEAN AND PASSABLE AT ALL TIMES. ADJACENT STREET AND CURB LINE TO BE SWEPT FREE OF DEBRIS AT THE END OF EACH WORK DAY, OR AS OFTEN AS NEEDED 2. TO ENSURE PUBLIC SAFETY.
- EROSION CONTROL MUST BE IN PLACE AND APPROVED BY THE ENGINEER BEFORE A STAGING PHASE OF CONSTRUCTION 3. CAN BEGIN.
- INLET PROTECTION WILL BE PLACED AT ALL CATCH INLETS WITHIN THE PROJECT AREA ALONG WITH IMMEDIATE 4. DOWN-GRADE CB'S OUTSIDE OF THE PROJECT LIMITS PER STANDARD DETAILS.
- 5. INFILTRATION PROTECTION
- 6. STABILIZATION OF DISTURBED AREAS SHALL BE DONE BY PERMANENT TURF ESTABLISHMENT WHENEVER POSSIBLE.
- 7. SEDIMENTATION COULD BE A PROBLEM.
- 8.
- PERIMETER SEDIMENT CONTROL BMPS (SILT FENCE OR BIO ROLL) SHALL BE PLACED PRIOR TO ANY REMOVALS. 9
- IN THE EVENT THAT PERMANENT STABILIZATION CANNOT BE IMPLEMENTED WITHIN 7 DAYS AFTER CONSTRUCTION ACTIVITY 10. IN THE DISTURBED AREA HAS CEASED, TEMPORARY STABILIZATION'S BMPS MUST BE SCHEDULED TO OCCUR WITHIN THAT 7 DAY TIME FRAME
- 11. ALL DISTURBED AREAS WITHIN 200' OF A RECEIVING WATER OR WETLAND SHALL BE TEMPORARILY STABILIZED AT THE END OF EACH WORKING DAY AND PERMANENTLY STABILIZED WITHIN 24 HOURS AFTER CONSTRUCTION ACTIVITY HAS CEASED.
- 12. WET APPLICATION SHALL BE USED FOR ALL CONCRETE SAWING. SLURRY CREATED SHALL BE CLEANED UP AS CREATED.

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Email: Fargo@bolton-menk.com
www.bolton-menk.com

	REV.	BY	DATE	BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
				THORESIGNAL ENGINEER ON DER THE EARS OF THE STATE OF MININESOTA.
com				(his Xall
com				CHRIS DAHL
				49845 1/16/2025

I HEREBY CERTIFY THAT THIS PLAN SPECIFICATION OR REPORT WAS PREPARE

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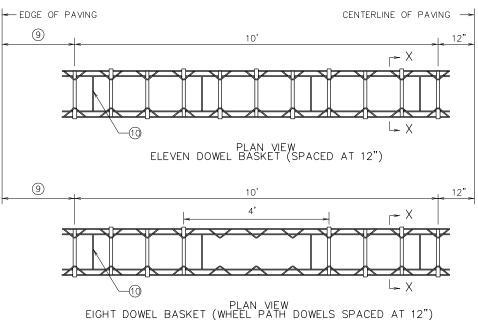
PAYMENT FOR ALL WORK ASSOCIATED WITH EROSION AND SEDIMENT CONTROL SHALL BE AS DESCRIBED IN THE PLANS AND SPECIFICATIONS. UNLESS OTHERWISE AUTHORIZED BY THE OWNER NO ADDITIONAL PAYMENT SHALL BE MADE FOR ANY WORK REQUIRED TO ADMINISTER AND MAINTAIN THE SITE EROSION AND SEDIMENT CONTROL IN COMPLIANCE WITH THE MINNESOTA POLLUTION CONTROL AGENCY (MPCA) - GENERAL STORM WATER PERMIT FOR CONSTRUCTION ACTIVITY (MN R100001) INCLUDING BUT NOT

ALL STORM SEWER STRUCTURES SHALL BE PROTECTED FROM INFILTRATION OF SILT DURING CONSTRUCTION BY APPROVED

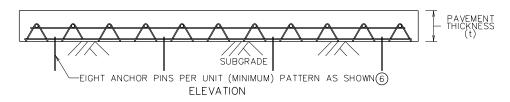
THE CONTRACTOR SHALL PROVIDE PERIMETER CONTROL DAY-TO-DAY AT DISTURBED UNSTABILIZED AREAS WHERE EROSION OR

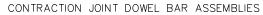
ADDITIONAL EROSION AND SEDIMENT CONTROL MAY BE ADDED DURING ANY STAGING PHASES PER APPROVAL OF THE ENGINEER.

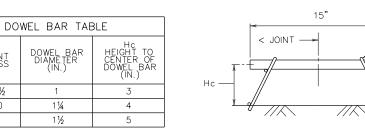
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	CHECKED	SOILS & CONSTRUCTION NOTES	120
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SEE STANDARD PLATE 1103 FOR DOWEL BAR ASSEMBLY

PAVEMENT

(IN.)

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8 - 10

NOTES:

≥ 10½

FURNISH AND INSTALL ALL JOINT SEALER IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

SEE STANDARD PLANS 5-297.217 AND 5-297.219 FOR CONCRETE MAINLINE/RAMP PAVEMENT.

SEE PAVING LAYOUTS IN THE PLANS FOR JOINT CLASS DESIGNATION TO BE USED AND SPECIAL REINFORCEMENT REQUIRED.

1 JOINT DEPTH AND TOLERANCE: t/3 ' 1/4".

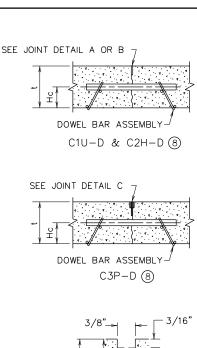
(2) JOINT DEPTH ¼" MORE THAN THE PREFORMED SEALER WHEN COMPRESSED TO FIT THE JOINT DESIGN WIDTH. "a" DIMENSION APPLIES AT ANY POINT THROUGHOUT "c" DEPTH. SHARP CORNERS NOT PERMITTED. PROVIDE CORNERS WITH SUITABLE FILLET.

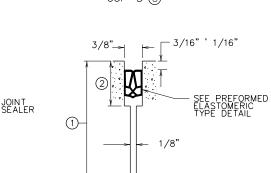
(3) CLEAN JOINT FACES WITH WATER DURING THE SAW CUTTING OPERATION OR BY WATER BLASTING AFTER SAWING.

(4) CLEAN AND DRY JOINT FACES BY SANDBLASTING AND AIR BLASTING, WHEN SEALING IS REQUIRED.

(5) JOINT WIDTH TOLERANCE IS +?" TO -?".

PAVEMENT JOINTS CONTRACTION (DESIGN C)





JOINT DETAIL C (4)5 SAWED AND SEALED

REFERENCE

HAPE FOR INSTALLATION CELL MIN. )

SATISFACTORY

REQUIRED DIMENSIONS (2) JOINT TYPE TRANSVERSE NOMINAL SEALER SIZE USE IN ALL 3/8" JOINTS 0.69" + 0.13" - 0.05"a 0.08" ± 0.02' b 0.25" MIN. С 0.63" MIN. d

SEE JOINT DETAIL A OR B

SEE JOINT DETAIL C

1/8"\_\_

1

JOINT DETAIL A (3)5

SAWED & UNSEALED

C1U & C2H

C3P

PREFORMED ELASTOMERIC TYPE DETAIL (2)

1/8"

1

JOINT DETAIL B (4)5

SAWED & SEALED

		NTRACTIO TAIL & S	N JOINT EALER S	REFERENC SPEC. TABL	È, E
	JOINT RE WITHOUT DOWELS	FERENCE WITH DOWELS	JOINT DETAIL	JOINT SEALER SPEC.	JOINT WIDTH
	C1U	C1U-D	A	UNSEALED	1/8"
	C2H	C2H-D	В	3725	1/8"
	C3P	C3P-D	С	3721	3/8"
	NO. = U = H = P =	LEGEN CONTRAC JOINT REF UNSEALEC HOT POUF PREFORME DOWEL B	RED	EXAMP	
DII OFFICE C	ENGSTROM RECTOR OF MATERIALS D RESEARCH				

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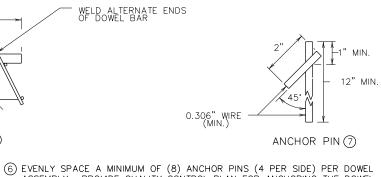
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STATE PROJECT NO. 2102-77 (TH 29)





- ASSEMBLY. PROVIDE QUALITY CONTROL PLAN FOR ANCHORING THE DOWEL BAR ASSEMBLIES TO THE ENGINEER FOR ACCEPTANCE PER SPEC. 2301.
- () ANCHOR PIN REQUIREMENTS FOR CONCRETE PAVEMENT ON GRADE CONSTRUCTION. FOR CONCRETE OVERLAYS, ANCHOR PIN REQUIREMENT AS APPROVED BY THE ENGINEER.
- 8 TOLERANCES:
  - PLACE DOWEL BARS PARALLEL TO THE SUBSTRATE SURFACE '?" IN 15".
  - PLACE DOWEL BARS PARALLEL TO THE CENTERLINE OF THE PAVEMENT '¼" IN 15"
- SAVEMENT 24 IN 15 SAW CONTRACTION JOINTS PERPENDICULAR TO THE CENTERLINE OF THE PAVEMENT AND CENTERED ON THE DOWEL BAR '3". HEIGHT (hC) TO CENTER OF DOWEL BAR ' ½".
- DISTANCE TO EDGE OF PAVEMENT FROM OUTSIDE DOWEL:
  3' 0" FOR 14' 0" LANE.
  2' 6" FOR 13' 6" LANE.
  2' 0" FOR 13' 0" LANE.

- 1' 0" FOR 12' 0" LANE.
- (1) CONTRACTOR OPTION TO CUT AND BEND SPACER WIRES AFTER STAKING.

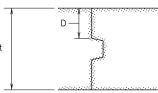
APPROVED: 10-03-2022 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER		ANDA PLAN 297.2		1 OF 4
	SHEET NO.	11	OF	120	SHEETS

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GLENN ENGSTROM LEAD DIRECTOR EXPERT OFFICE OF MATERIALS OFFICE & ROAD RESEARCH

FIXED FORM	KEYWAY TABLE 🔞
t PAVEMENT THICKNESS	D (MIN. DEPTH)
< 7"	2-1/2"
7"TO 7-1/2"	3"
8"TO 9-1/2"	4"
≥ 10"	5"
	t PAVEMENT THICKNESS < 7" 7"TO 7-1/2" 8"TO 9-1/2"

PAVEMENT KEYWAY DETAIL 6



JOINT SEALER

JOINT DETAIL A 35 SAWED & UNSEALED

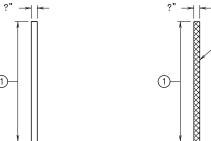
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SEE JOINT DETAIL A OR B

L1U & L1H

SEE JOINT DETAIL A OR B 7

t/2



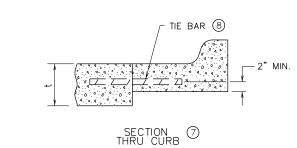
1 JOINT DETAIL B (4)5

SAWED & SEALED

L1TU & L1TH ()

51

┌ TIE BAR ⑧



KEYWAY

L2KTU 26

tie bar 🛞

- TIE BAR 🛞

L2TU (2)

- BUTTED

L3U

SLABS PAVED CONCURENTLY 3'-0" 3'-0"

L1T PAVING DETAIL

LEGEND L = LONGITUDINAL JOINT NO. = JOINT REFERENCE 1 = PAVED CONSTRUCTION 2 = TIED CONSTRUCTION J 3 = BUTTED CONSTRUCTION K = KEYWAY T = TIE BARS U = UNSEALED H = HOT POURED

C	LONGI DETAIL &	TUDINAL JO SEALER SP
J	OINT REFER	RENCE
WITHOUT TIE BARS	WITH TIE BARS	WITH KEYWAY & TIE BARS
L1U	L1TU	
L1H	L1TH	
	L2TU	L2KTU
L3U		
	LEGEN	חו

SLIPFORM K	EYWAY TABLE 6
t PAVEMENT THICKNESS	D (MIN. DEPTH)
< 10"	NO KEYWAY
≥ 10"	5"

PROVIDE EPOXY-COATED TIE BARS COMPLYING WITH SPEC. 3301.

NOTES:

FURNISH AND INSTALL ALL JOINT SEALER IN ACCORDANCE

SEE STANDARD PLANS 5-297.217 AND 5-297.219 FOR CONCRETE MAINLINE AND RAMP PAVEMENT.

SEE PAVING LAYOUTS IN THE PLANS FOR JOINT CLASS DESIGNATION TO BE USED AND SPECIAL REINFORCEMENT

LONGITUDINAL JOINTS SAWED WIDER THAN 1/8", CONTACT

THE CONCRETE UNIT FOR SEALING RECOMMENDATIONS.

(2) BEND TIE BARS 90 DEGREES WHEN INSERTED IN THE L2 JOINTS, EXCEPT WHEN NOTED OTHERWISE IN THE PLANS.

1 JOINT DEPTH AND TOLERANCE: t/3 ' 14".

WITH THE MANUFACTURER'S RECOMMENDATIONS.

REQUIRED.

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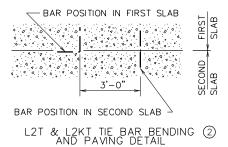
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PAVEMENT JOINTS

LONGITUDINAL (DESIGN L)

### DINT REFERENCE, PECIFICATION TABLE JOINT SEALER SPEC JOINT DE TAIL JOIN T WID TH UNSEALED 1/8" А В 3725 1/8" UNSEALED NONE NONE UNSEALED EXAMPLE 1 2KTU JOINT IOIN T N JOINT

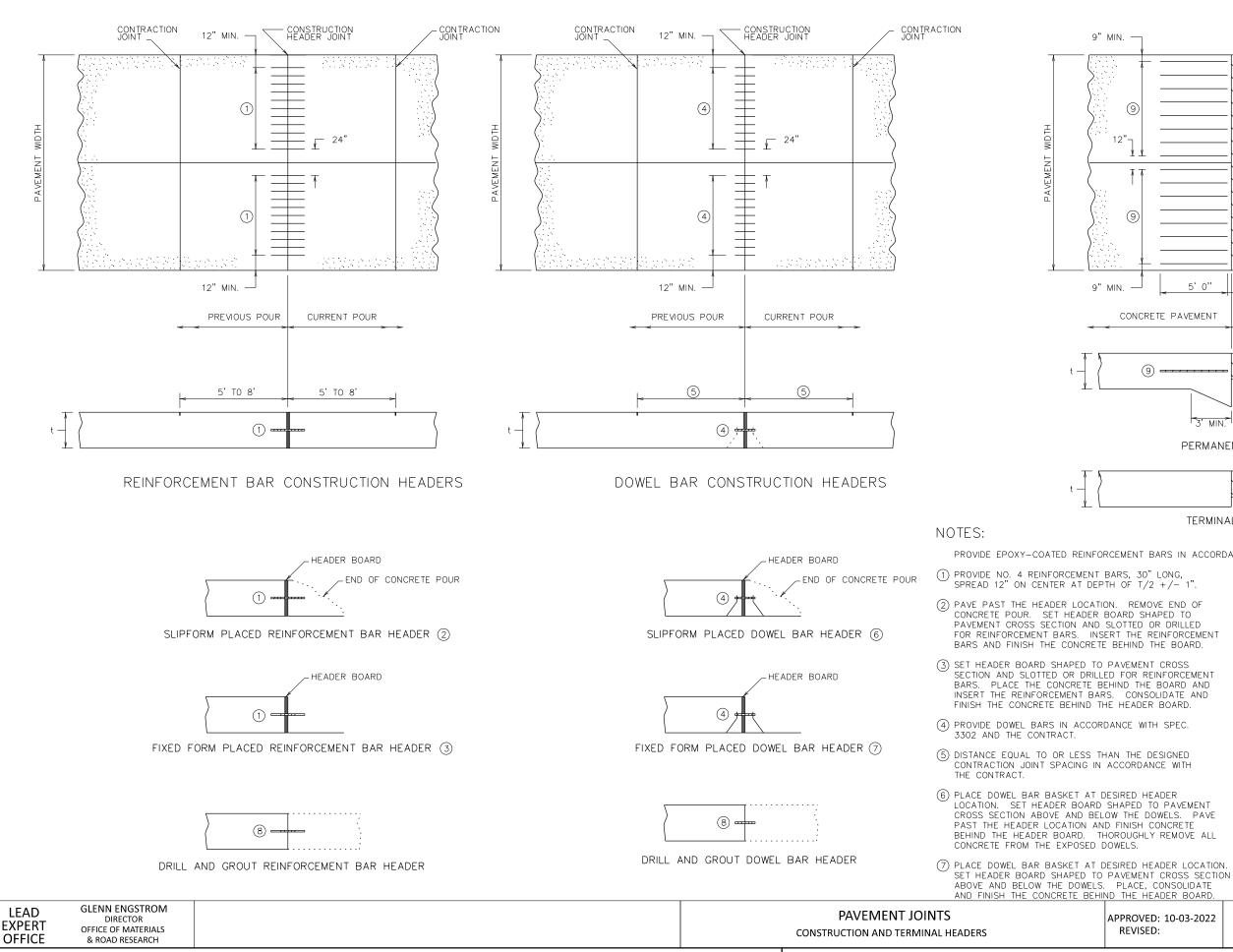


- (3) CLEAN JOINT FACES WITH WATER DURING THE SAW CUTTING OPERATION OR BY WATER BLASTING AFTER SAWING.
- 5 JOINT WIDTH TOLERANCE IS +?" TO -?".
- $\begin{array}{c} \textcircled{6} \\ \ \mbox{Placing fixed form construction.} \\ \ \mbox{Placing fixed form construction.} \\ \ \mbox{Placing Slipform construction when } t \ge 10^{\circ}. \end{array}$

USE OF KEYWAY FOR ANY OTHER APPLICATION REQUIRES APPROVAL BY THE ENGINEER. OTHER KEYWAY SHAPES MAY BE USED WITH THE APPROVAL OF THE CONCRETE ENGINEER.

- (7) WHEN CURB AND GUTTER IS NOT CONSTRUCTED AT THE SAME DEPTH AS ADJACENT CONCRETE, PLACE TIE BAR MINIMUM OF 2" ABOVE THE CURB AND GUTTER GRADE.
- $\textcircled{\space{-1.5ex}8}$  provide no. 4 tie bar, 30" long, spaced at 3' on center.

APPROVED: 10-03-2022 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER		STANDARD PLAN 5-297.221		3 OF 4
	SHEET NO.	12	OF	120	SHEETS



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STATE PROJECT NO. 2102-77 (TH 29)

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MIN. — 5' 0''	< <u>→</u> 3" – 5"
CONCRETE PAVEMENT	FLEXIBLE PAVEMENT
	Y
(9)	
3' MIN.	└─ 18" MIN.
PERMANEN	NT HEADER
TERMINAL	HEADER (1)
CEMENT BARS IN ACCORDA	NCE WITH SPEC. 3301.
3ARS, 30" LONG, IH OF T/2 +/- 1".	(8) DRILL AND GROUT 18" LONG DOWEL OR REINFORCEMENT BARS SPACED AT 12" ON CENTER AT A DEPTH OF T/2 '1". DRILL THE HOLE
	AT A DEPTH OF T/2 '1". DRILL THE HOLE
N. REMOVE END OF BOARD SHAPED TO	1/8" GREATER THAN THE NOMINAL OUTSIDE DIAMETER OF THE BAR BEING PLACED TO A
SLOTTED OR DRILLED	DEPTH OF 9". INJECT A MnDOT-APPROVED
ERT THE REINFORCEMENT	EPOXY OR NON-SHRINK GROUT IN THE BACK OF
BEHIND THE BOARD.	THE DRILL HOLE IN ACCORDANCE WITH THE
PAVEMENT CROSS	MANUFACTURER'S RECOMMENDATIONS. - FOR DOWEL BAR HEADERS, USE DOWEL BARS
D FOR REINFORCEMENT	HAVING A DIAMETER IN ACCORDANCE WITH SPEC.
HIND THE BOARD AND	3302 AND THE CONTRACT.
S. CONSOLIDATE AND IE HEADER BOARD.	<ul> <li>FOR REINFORCEMENT BAR HEADERS, USE NO.</li> <li>4 REINFORCEMENT BARS.</li> </ul>
IL HLADEN DUARD.	T NEINI UNCEMIENT DANS.
ANCE WITH SPEC.	(9) PROVIDE NO. 7 REINFORCEMENT BARS, 5' LONG,
	SPACED 18" ON CENTER AT DEPTH OF t/2 '1".
AN THE DESIGNED	(1) USE PERMANENT HEADER WHEN LONG SECTIONS OF
ACCORDANCE WITH	CONCRETE (400' OR GREATER) ABUT BITUMINOUS.
	CONTACT THE CONCRETE UNIT WHEN FUTURE
ESIRED HEADER	CONCRETE IS BEING CONSTRUCTED ADJACENT TO AN EXISTING PERMANENT HEADER.
SHAPED TO PAVEMENT	AN EXISTING FERMANENT HEADEN.
OW THE DOWELS. PAVE	(1) USE TERMINAL HEADER WHEN SHORT SECTIONS OF
) FINISH CONCRETE IOROUGHLY REMOVE ALL	CONCRETE (LESS THAN 400') ABUT BITUMINOUS (ON SIDE STREETS FOR EXAMPLE)

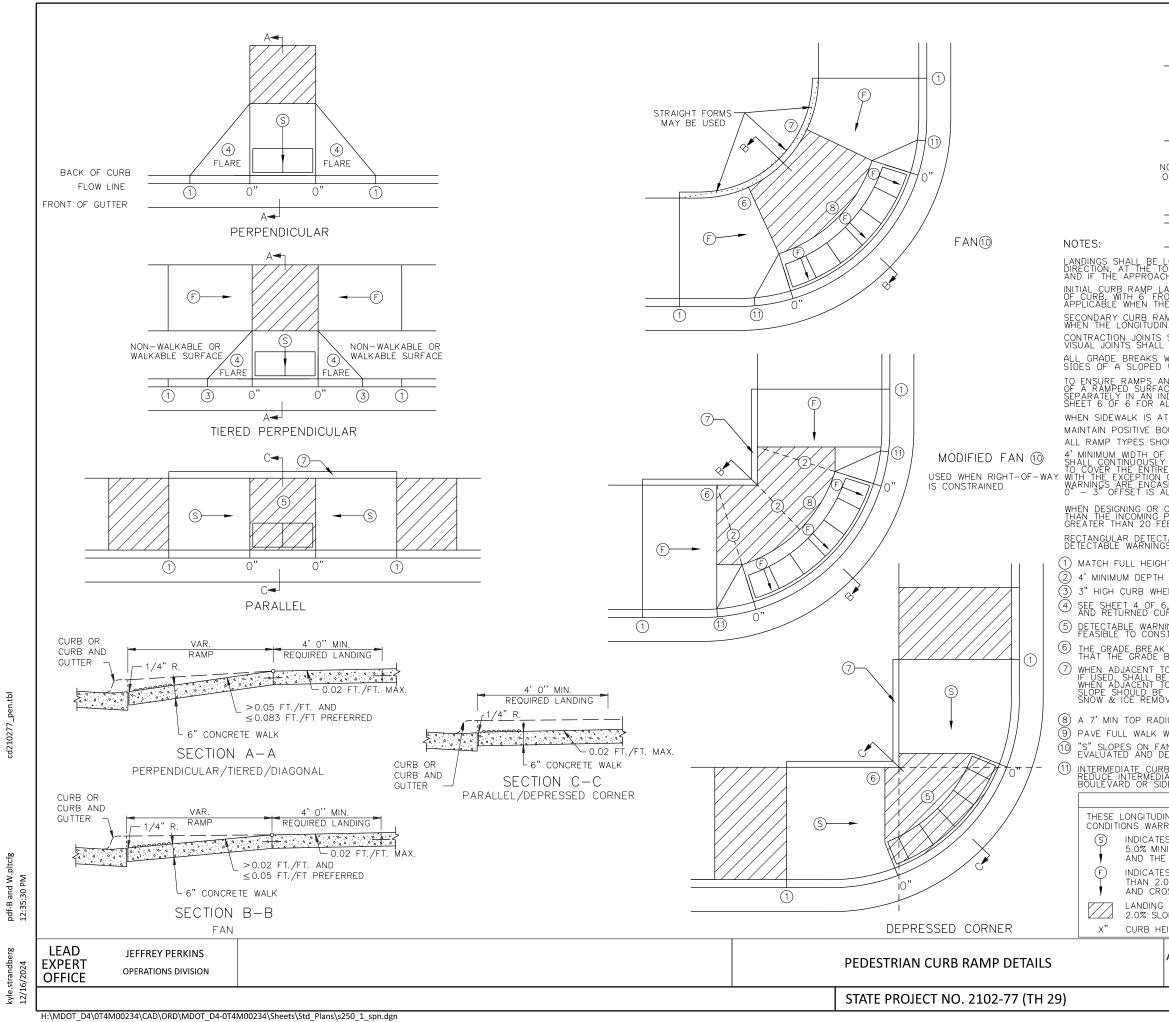
9"

9"

t –

ABOVE AND BELOW THE DOWELS. PLACE, CONSOLIDATE AND FINISH THE CONCRETE BEHIND THE HEADER BOARD STANDARD THOMAS STYRBICKI STATE DESIGN ENGINEER APPROVED: 10-03-2022 4 OF 4 PLAN **REVISED:** 5-297.221 SHEET NO. 13 OF 120 SHEETS

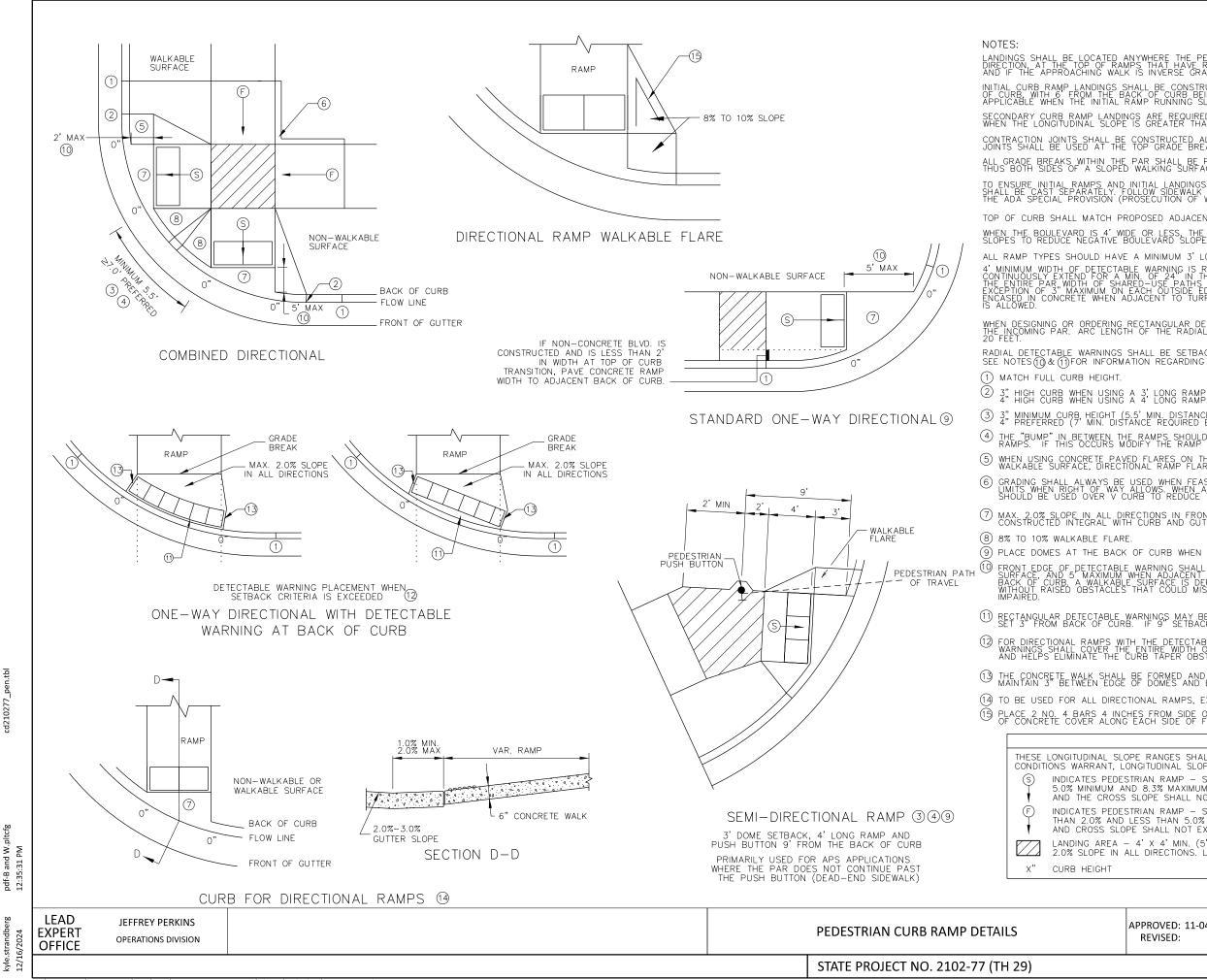
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P.C.	WALK	NON-WALKABLE OR WALKABLE SURFACE				
WALK	S.	9 2% MAX. 4				
NON-WALKABLE OR WALKABLE SURFACE	9 2% MAX.		DIAGC All Only be us fer curb ramp Aluated and de	ED AFTI TYPES	HAVE	
ANDINGS SHALL OM THE BACK C LE INITIAL RAMP ANAL RUNNING SL SHALL BE CONS SHALL BE CONS BE USED AT TI WITHIN THE PAF WALKING SURF WALKING SURF WALKING SURF WALKING SURF WALKING SURF WALKING SURF WALKING SURF WALKING SURF USEPARATELY T BACK OF CUR OULEVARD DRAIN OULD HAVE A MI DETECTABLE W CEXTEND FOR A E PAR. ARC LENG EAT. ARC LENG EET.	BE CONSTRUU F CURB BEIN RUNNING SLO RE REQUIRED OPE IS GREA STRUCTED ALC HE TOPS OF ( R SHALL BE ACE MUST BE RE PROPERLY OPE GREATER YORE TO TOP INIMUM 3' LOI ARNING IS RE MIN OF 24" SHARED - US I ON EACH OL E SHARED - US I ON EACH OL E WHEN ADJ/	ESTRIAN ACCESS R INNING SLOPES GRE E GREATER THAN 2 CTED WITHIN 15' FR G THE PREFERRED DPE IS OVER 5.0%. FOR EVERY 30" OI TER THAN 5.0%. FOR EVERY 30" OI TER THAN 5.0%. ONG ALL GRADE BR CONCRETE FLARES PERPENDICULAR TI EQUAL LENGTH. (I CONSTRUCTED, ALL REDUAL LENGTH. (I CONSTRUCTED, ALL REDUAL LENGTH. (I CONSTRUCTED, ALL REDUAL LENGTH. (I CONSTRUCTED, ALL REDUAL LENGTH. OF CURB. NG RAMP LENGTH. CONTRE PATH OF INTHE PATH OF INTHE PATH OF ADIAL DETECTABLE SETBACK 3", FROM	OM THE BACK DISTANCE, ONLY VERTICAL RISE EAKS WITHIN THE ADJACENT TO WA THE PATH OF XCEPT AS STAT INITIAL LANDING BE FORMED AND REINFORCEMENT PROPOSED ADJAN MMPS, DETECTAB RAVEL DETECTAB ENSURES THE DE ENSURES THE DE ENSURES THE DE EN ADJACENT TO SURFACES SHOUL WARNINGS SHOUL	E WAR BLE WAR CENT W E WAR BLE WAR BLE WAR DE CONC D BE C D BE C D D BE C	- THUS BEI A TOP D S ON ALK GR NINGS RRNING RELE RELE RETE F BE	BOTH LOW.
5. TYPICAL SIDE JRBS. MAY BE P. STRUCT THE LAN S SHALL BE PER BREAK IS PERPE O GRASS, GRADE PLACED OUTSIS O PARKING LOTS USED OVER V USED OVER V USED OVER V MAL. MUS GRADE BRE, MOTH. MS SHALL ONLY EEMED IMPRACTI	LONG RAMP, 4 TREATMENT ( ART OF THE 4 DING OUTSIDE PENDICULAR TO ING SHALL AL DE THE SIDEW CURB TO RED AK IS REQUIRI (BE USED WHICAL. ER SHALL RISI IT TO 2+ INC	TOP OF RAMP. 4" HIGH CURB WHE DPTIONS, FOR DETA 4' X 4' MIN. LANDIN C OF THE BACK OF W THE DIRECTION OF WAYS BE USED WHE OR BITUMINOUS TA UCE TRIPPING HAZ. ED TO BE CONSTRU- HEN ALL OTHER FE, E AT 8–10% TO A HES IF NECESSARY	LS ON FLARES IG AREA IF IT IS LE WARNING ARE ALK. THIS WILL TRAVEL. (TYPIC EN FEASIBLE. V SIGHT OF WAY AN PERS LESS THAN PERS LESS THAN NRDS AND FACILI CTIBLE. ASIBLE OPTIONS H	NOT A. ENSURI AL FOR CURB, LOWS, 5% RU TATE	E ALL) JNNING EEN	
RANT, LONGITUD ES PEDESTRIAN F VIMUM AND 8.3% E CROSS SLOPE ES PEDESTRIAN F 0% AND LESS T OSS SLOPE SHAL 5 AREA – 4' X 4	IGES SHALL B INAL SLOPES RAMP - SLOP MAXIMUM IN SHALL NOT E RAMP - SLOP HAN 5.0% IN LL NOT EXCEE 4' MIN. (5' X	E SHALL BE GREAT THE DIRECTION SHO	ATTER ARE ALLO EN DWN ER WN ) DIMENSIONS AN	ID MAX	ARS.	
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SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, E APPROACHING WALK IS INVERSE GRADE.

LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%. LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE SLOPE IS GREATER THAN 5.0%

CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL TOP GRADE BREAK OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL. THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH.

E INITIAL RAMPS AND INITIAL LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS STST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 AND SPECIAL PROVISION (PROSECUTION OF WORK).

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE

WHEN THE BOULEVARD IS 4' WIDE OR LESS, THE TOP OF CURB TAPER SHALL MATCH THE RAMP SLOPES TO REDUCE NEGATIVE BOULEVARD SLOPES FROM THE TOP BACK OF CURB TO THE PAR.

ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24' IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3' MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0' - 3' OFFSET IS ALLOWED.

WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.

RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB. SEE NOTES  $0 \pm 10^{\circ}$  FOR INFORMATION REGARDING RECTANGULAR DETECTABLE WARNING PLACEMENT.

(3) 3", MINIMUM CURB, HEIGHT (5.5' MIN. DISTANCE REQUIRED BETWEEN DOMES) 4" PREFERRED (7' MIN. DISTANCE REQUIRED BETWEEN DOMES).

(4) THE "BUMP" IN BETWEEN THE RAMPS SHOULD NOT BE IN THE PATH OF TRAVEL FOR COMBINED DIRECTIONAL RAMPS. IF THIS OCCURS MODIFY THE RAMP LOCATION OR SWITCH RAMP TO A FAN/DEPRESSED CORNER. (5) WHEN USING CONCRETE PAYED FLARES ON THE OUTSIDE OF DIRECTIONAL RAMPS, AND ADJACENT TO A WALKABLE SURFACE, DIRECTIONAL RAMP FLARES SHALL BE USED. SEE THE DETAIL ON THIS SHEET.

(6) GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.

(7) MAX. 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.

 $(\bar{9})$  place domes at the back of curb when allowable setback criteria is exceeded

FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJA SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE BACK OF CURB. A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WH IMPAIRED. IT TO WALKABLE RNER SET 3" FROM A CURB RAMP IS VISUALLY

(1) RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK UP TO 9" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB. IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.

(12) FOR DIRECTIONAL RAMPS WITH THE DETECTABLE WARNINGS PLACED AT THE BACK OF CURB. THE DETECTABLE WARNINGS SHALL COVER THE ENTIRE WIDTH OF THE WALK/PATH. THIS ENSURES A DETECTABLE EDGE AND HELPS ELIMINATE THE CURB TAPER OBSTRUCTING THE PATH OF PEDESTRIAN TRAVEL.

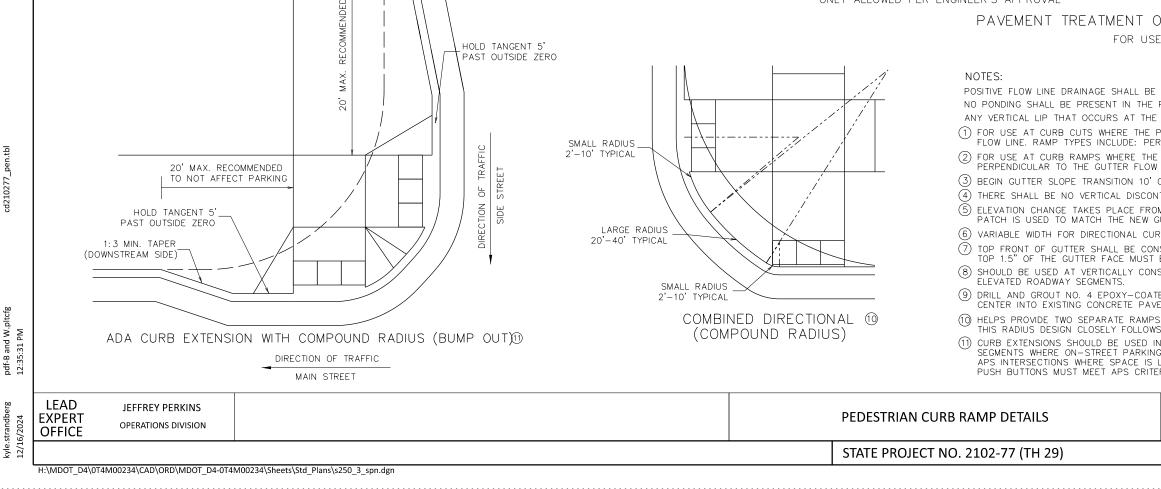
13 THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.

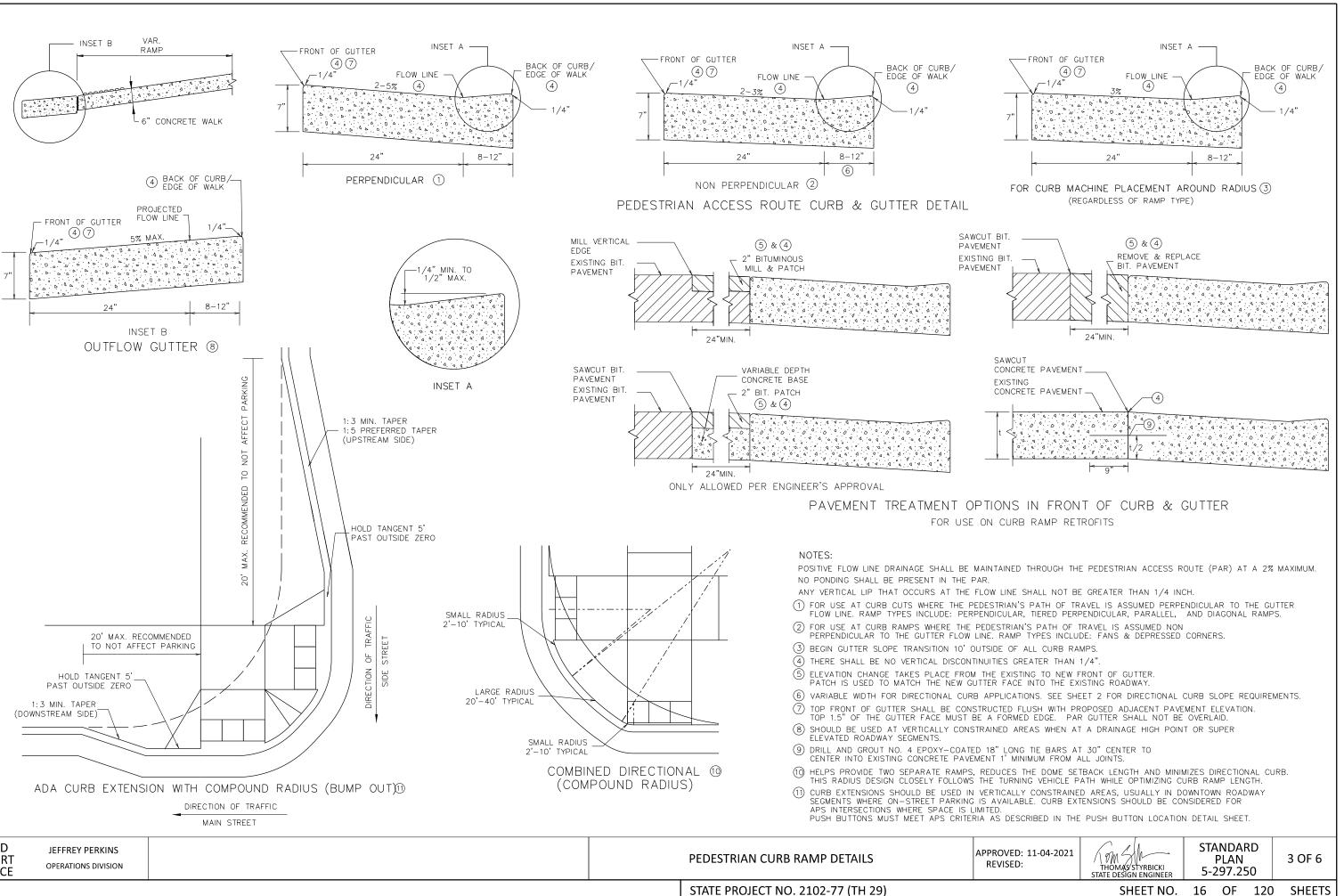
(14) TO BE USED FOR ALL DIRECTIONAL RAMPS, EXCEPT WHERE DOMES ARE PLACED ALONG THE BACK OF CURB. (15) PLACE 2 NO. 4 BARS 4 INCHES FROM SIDE OF FORMS WITH A MINIMUM 2 INCHES OF CONCRETE COVER ALONG EACH SIDE OF FLARE (INCIDENTAL).

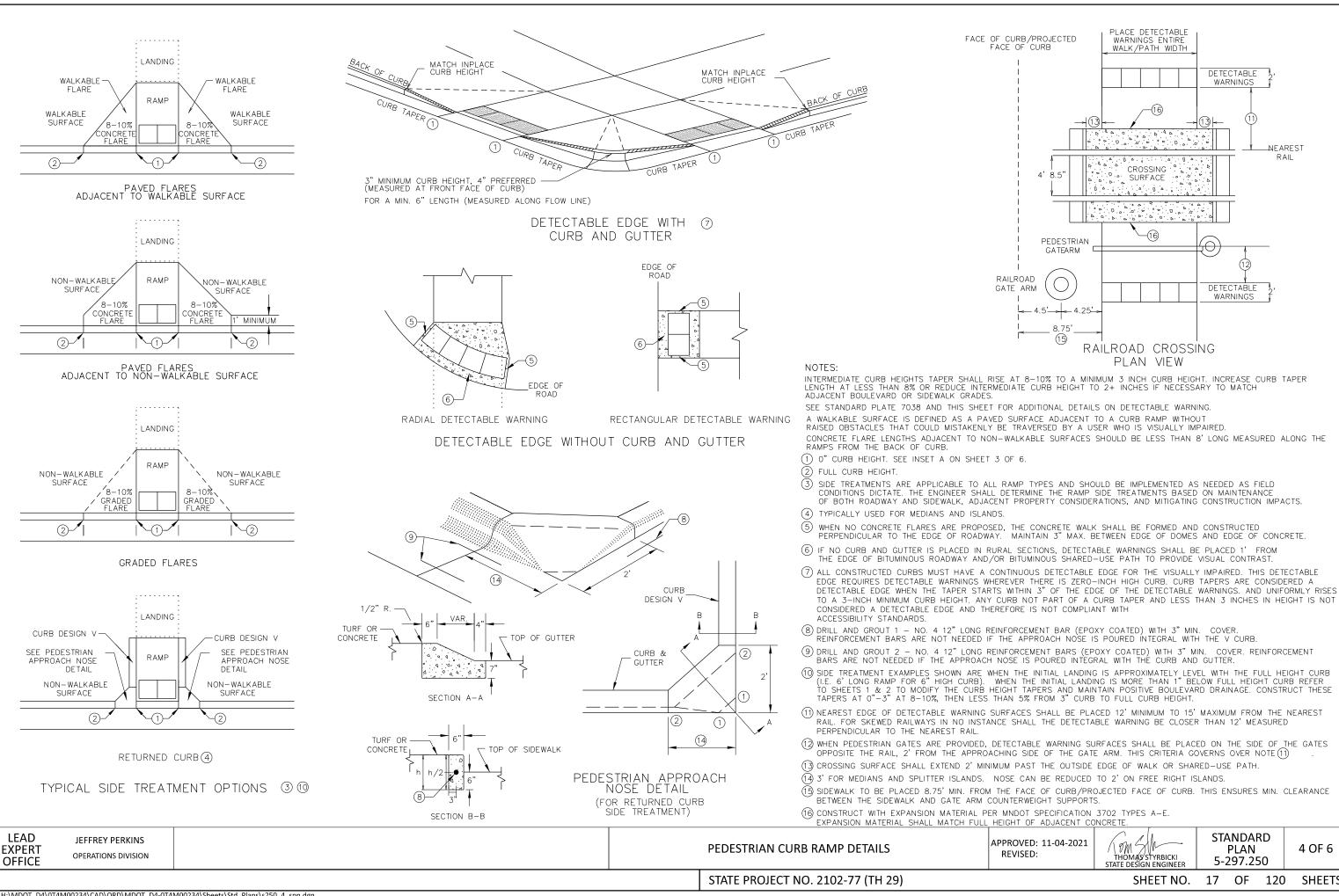
LEGEND THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%. INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%. LANDING AREA – 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.

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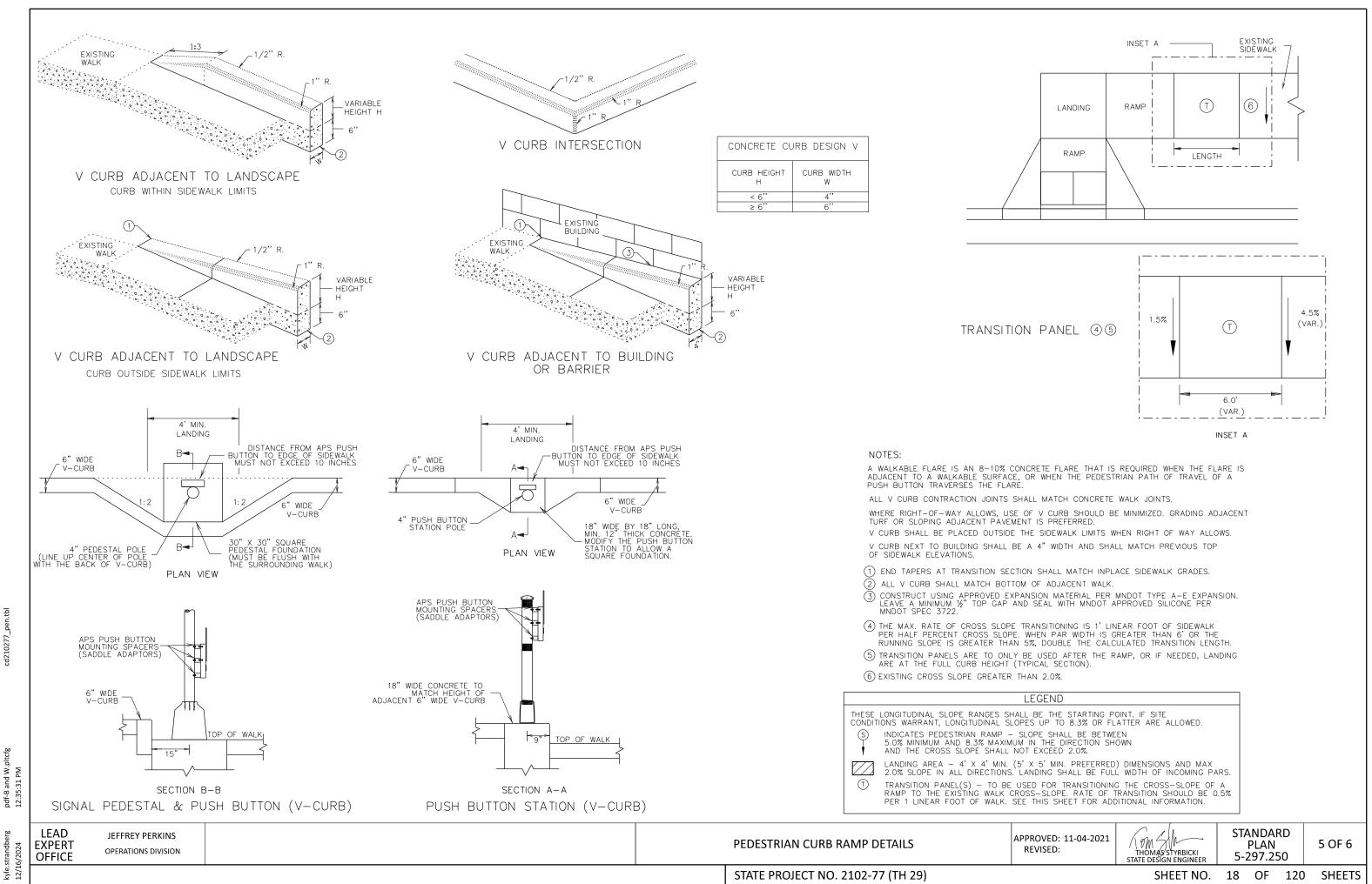


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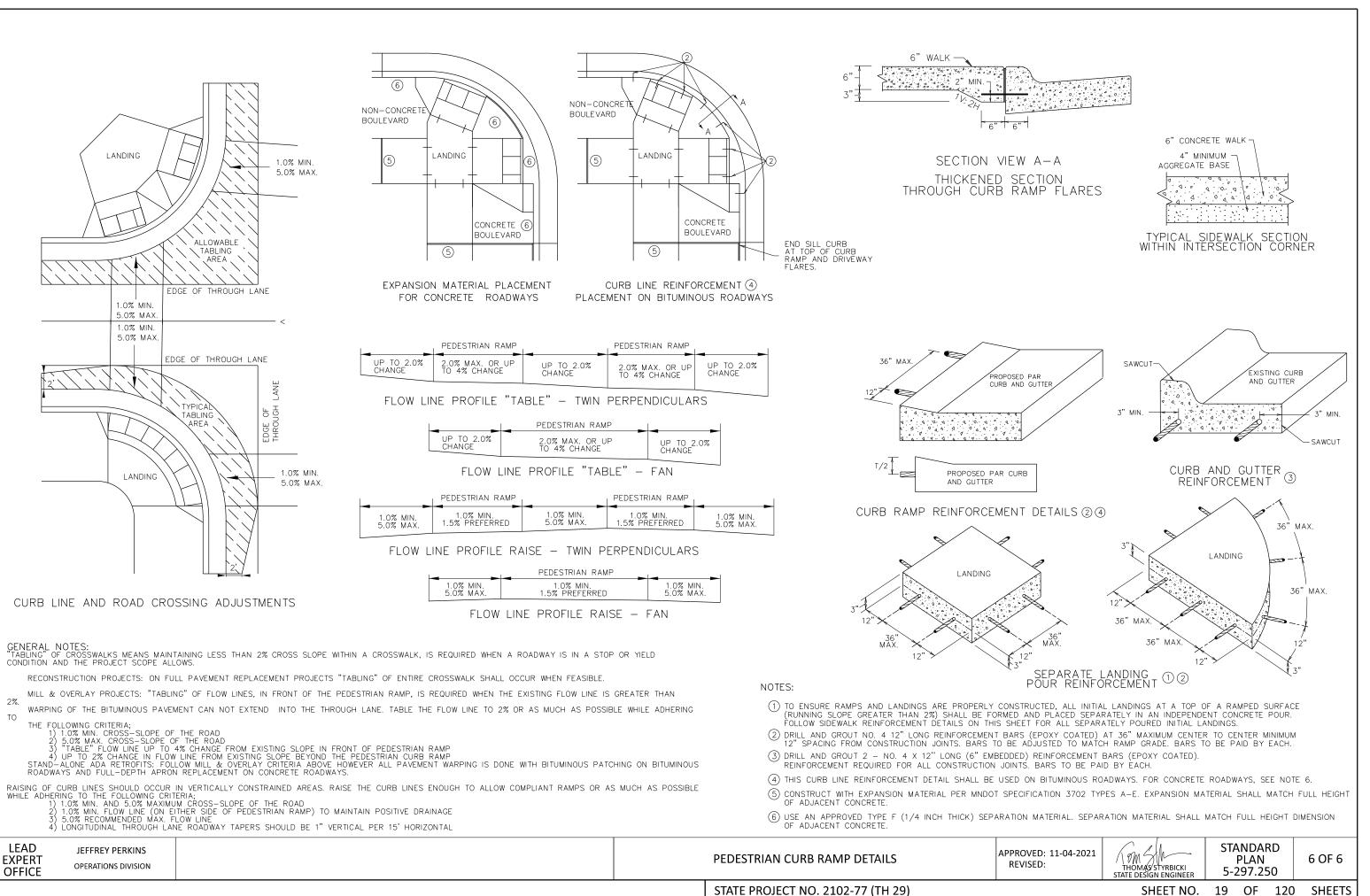
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HEIGHT OF ADJACENT CONCRETE.						
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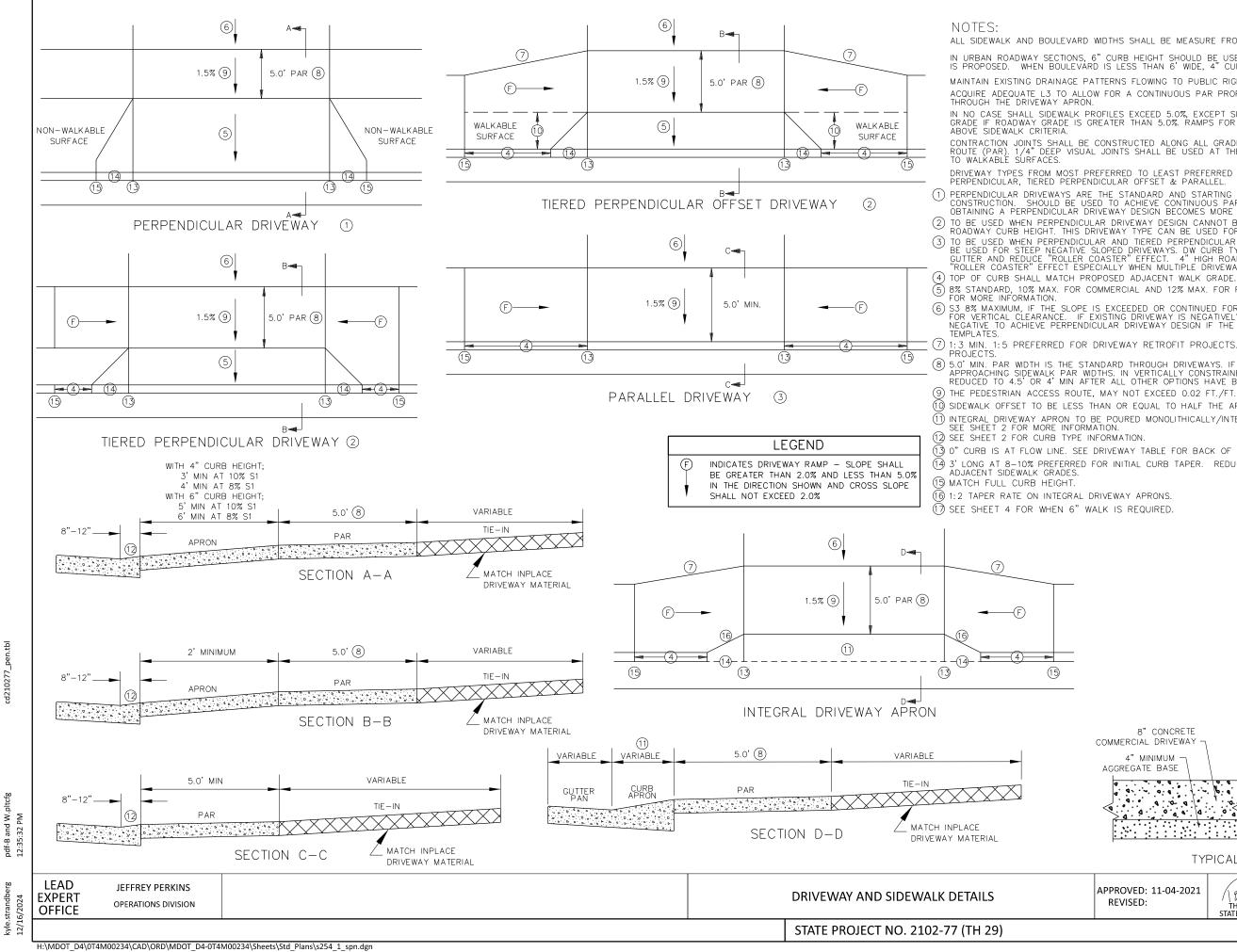


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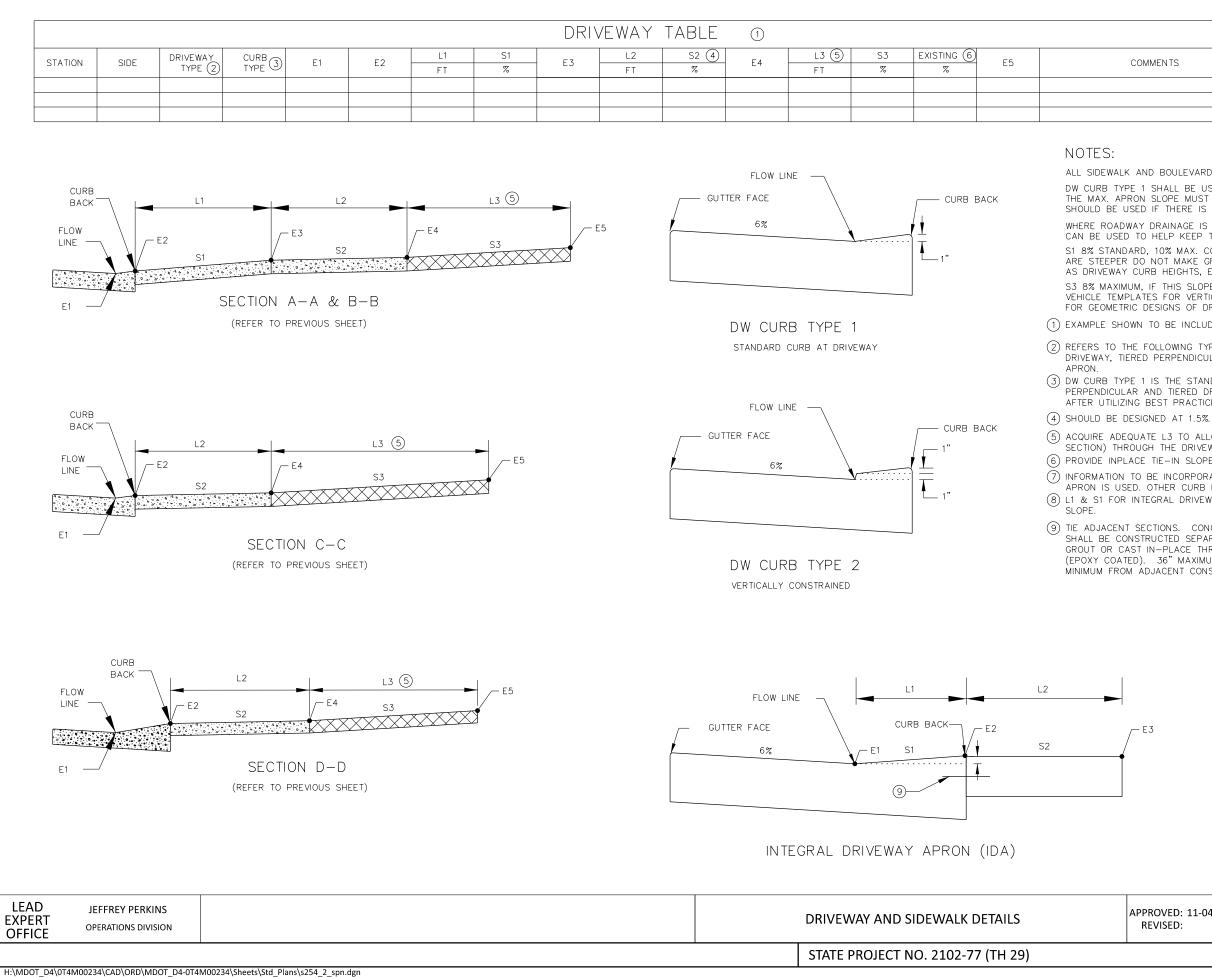
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ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURE FROM BACK OF CURB. IN URBAN ROADWAY SECTIONS, 6" CURB HEIGHT SHOULD BE USED WHEN 6' OR GREATER BOULEVARD WIDTH IS PROPOSED. WHEN BOULEVARD IS LESS THAN 6' WIDE, 4" CURB HEIGHT SHOULD BE USED. MAINTAIN EXISTING DRAINAGE PATTERNS FLOWING TO PUBLIC RIGHT OF WAY. ACQUIRE ADEQUATE L3 TO ALLOW FOR A CONTINUOUS PAR PROFILE (UNIFORM TYPICAL SIDEWALK SECTION) IN NO CASE SHALL SIDEWALK PROFILES EXCEED 5.0%, EXCEPT SIDEWALK PROFILES CAN MATCH ROADWAY GRADE IS GREATER THAN 5.0%. RAMPS FOR DRIVEWAYS ARE REQUIRED TO FOLLOW THE CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PEDESTRIAN ACCESS ROUTE (PAR). 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT DRIVEWAY TYPES FROM MOST PREFERRED TO LEAST PREFERRED ARE AS FOLLOWS: PERPENDICULAR, TIERED ) PERPENDICULAR DRIVEWAYS ARE THE STANDARD AND STARTING POINT FOR ALL DRIVEWAY DESIGN AND CONSTRUCTION. SHOULD BE USED TO ACHIEVE CONTINUOUS PAR PROFILE THROUGH THE DRIVEWAY. OBTAINING A PERPENDICULAR DRIVEWAY DESIGN BECOMES MORE CRITICAL WITH STEEP ROADWAY PROFILES. (2) TO BE USED WHEN PERPENDICULAR DRIVEWAY DESIGN CANNOT BE ACHIEVED, THE DRIVEWAY PAR IS BELOW ROADWAY CURB HEIGHT. THIS DRIVEWAY TYPE CAN BE USED FOR BOTH PAVED (AS SHOWN) AND GRASS BOULEVARDS (3) TO BE USED WHEN PERPENDICULAR AND TIERED PERPENDICULAR DRIVEWAY DESIGN CANNOT BE ACHIEVED. CAN BE USED FOR STEEP NEGATIVE SLOPED DRIVEWAYS. DW CURB TYPE 2 SHOULD BE USED TO RAISE PAR ABOVE GUTTER AND REDUCE "ROLLER COASTER" EFFECT. 4" HIGH ROADWAY CURB SHOULD BE USED TO REDUCE CAN ROLLER COASTER" EFFECT ESPECIALLY WHEN MULTIPLE DRIVEWAYS ARE PRESENT. (5) 8% STANDARD, 10% MAX. FOR COMMERCIAL AND 12% MAX. FOR RESIDENTIAL. SEE GENERAL NOTES ON SHEET 2 (6) S3 8% MAXIMUM, IF THE SLOPE IS EXCEEDED OR CONTINUED FOR MORE THAN 5', ANALYZE VEHICLE TEMPLATES FOR VERTICAL CLEARANCE. IF EXISTING DRIVEWAY IS NEGATIVELY DRAINING, S3 CAN BECOME SLIGHTLY MORE NEGATIVE TO ACHIEVE PERPENDICULAR DRIVEWAY DESIGN IF THE VERTICAL CLEARANCE IS ACHIEVED IN VEHICLE (7) 1:3 MIN. 1:5 PREFERRED FOR DRIVEWAY RETROFIT PROJECTS. 1:10 PREFERRED FOR SIDEWALK REPLACEMENT 8 5.0' MIN. PAR WIDTH IS THE STANDARD THROUGH DRIVEWAYS. IF FEASIBLE WIDEN DRIVEWAY PAR WIDTH TO MATCH APPROACHING SIDEWALK PAR WIDTHS. IN VERTICALLY CONSTRAINED AREAS PAR WIDTHS CAN INCREMENTALLY BE REDUCED TO 4.5' OR 4' MIN AFTER ALL OTHER OPTIONS HAVE BEEN APPLIED. (9) THE PEDESTRIAN ACCESS ROUTE, MAY NOT EXCEED 0.02 FT./FT. AS CONSTRUCTED  $(\overline{0})$  sidewalk offset to be less than or equal to half the approaching sidewalk width. (1) INTEGRAL DRIVEWAY APRON TO BE POURED MONOLITHICALLY/INTEGRAL WITH THE CURB AND GUTTER.  $\widehat{(3)}$  O" CURB IS AT FLOW LINE. SEE DRIVEWAY TABLE FOR BACK OF CURB HEIGHTS.  $^{(1)}$  3' long at 8–10% preferred for initial curb taper. Reduce curb taper slope if necessary to match

	6" CONCRETE 4" MINIMU AGGREGATE BA		< SEC		1 1
8" CONCRETE COMMERCIAL DRIVEWAY 4" MINIMUM AGGREGATE BASE		SIDENTIA 4" M AGGREGA	MINIMUM TE BASI	WAY -	
TYF	PICAL DRIVEWAY	SECTIC	)NS		
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COMMENTS	
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ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB. DW CURB TYPE 1 SHALL BE USED WHEN THE DRIVEWAY ACTS AS A PEDESTRIAN RAMP. THE MAX. APRON SLOPE MUST ADHERE TO ADA CRITERIA AS WELL. DW CURB TYPE 1 SHOULD BE USED IF THERE IS ON STREET PARKING.

WHERE ROADWAY DRAINAGE IS A CONCERN (NEGATIVE SLOPED APRON) DW CURB TYPE 2 CAN BE USED TO HELP KEEP THE WATER ON PUBLIC RIGHT OF WAY.

S1 8% STANDARD, 10% MAX. COMMERCIAL AND 12% MAX. RESIDENTIAL. IF EXISTING GRADES ARE STEEPER DO NOT MAKE GRADES APPRECIABLY WORSE BY USING BEST PRACTICES SUCH AS DRIVEWAY CURB HEIGHTS, EXTENDING L3 AND/OR STEEPEN S3.

S3 8% MAXIMUM, IF THIS SLOPE IS EXCEEDED OR CONTINUED FOR MORE THAN 5', ANALYZE VEHICLE TEMPLATES FOR VERTICAL CLEARANCE. SEE FACILITY DESIGN GUIDE, CHAPTER 6, FOR GEOMETRIC DESIGNS OF DRIVEWAYS.

(1) EXAMPLE SHOWN TO BE INCLUDED IN PLAN FOR EACH DRIVEWAY THAT HAS PAR THROUGH IT.

(2) REFERS TO THE FOLLOWING TYPES; PERPENDICULAR DRIVEWAY, TIERED PERPENDICULAR OFFSET DRIVEWAY, TIERED PERPENDICULAR DRIVEWAY, PARALLEL DRIVEWAY, AND INTEGRAL DRIVEWAY

(3) DW CURB TYPE 1 IS THE STANDARD AND SHALL BE THE STARTING POINT FOR ALL PERPENDICULAR AND TIERED DRIVEWAYS. DW CURB TYPE 2 SHALL ONLY BE USED AFTER UTILIZING BEST PRACTICES SUCH AS MAXIMIZING S1, S3, AND L3.

(5) ACQUIRE ADEQUATE L3 TO ALLOW FOR CONTINUOUS PAR PROFILE (UNIFORM SIDEWALK SECTION) THROUGH THE DRIVEWAY APRON.

(6) PROVIDE INPLACE TIE-IN SLOPE INFORMATION AT BACK OF PROPOSED WALK (S3 AREA). (7) INFORMATION TO BE INCORPORATED INTO DRIVEWAY TABLE WHEN INTEGRAL DRIVEWAY

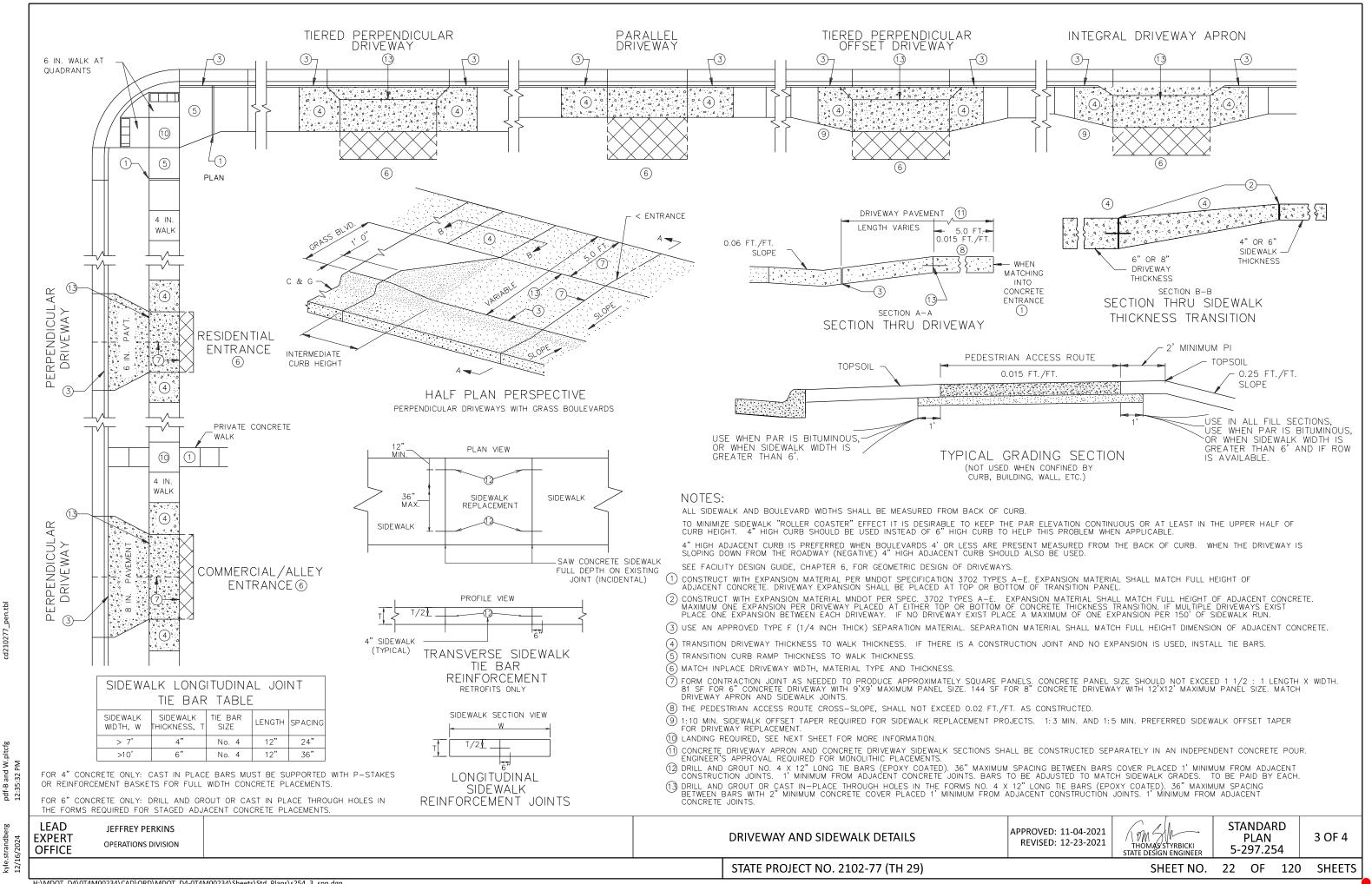
APRON IS USED. OTHER CURB HEIGHTS & CURB APRON LENGTHS CAN BE USED. 8 L1 & S1 FOR INTEGRAL DRIVEWAY APRON IS TO FLOWLINE. 12.5% IS MAXIMUM PREFERRED

(9) TIE ADJACENT SECTIONS. CONCRETE DRIVEWAY APRON AND CONCRETE DRIVEWAY SIDEWALK SHALL BE CONSTRUCTED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. DRILL AND GROUT OR CAST IN-PLACE THROUGH HOLES IN THE FORMS NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINT.

Typical integral driveway apron $\bigcirc$					
CURB	L1	F2	S1 (8)		
TYPE	FT	LZ	%		
IDA 216	1.33	+0.16	12.5		
IDA 220	1.67	+0.16	10		
IDA 324	2	+0.24	12.5		
IDA 432	2.67	+0.33	12.5		

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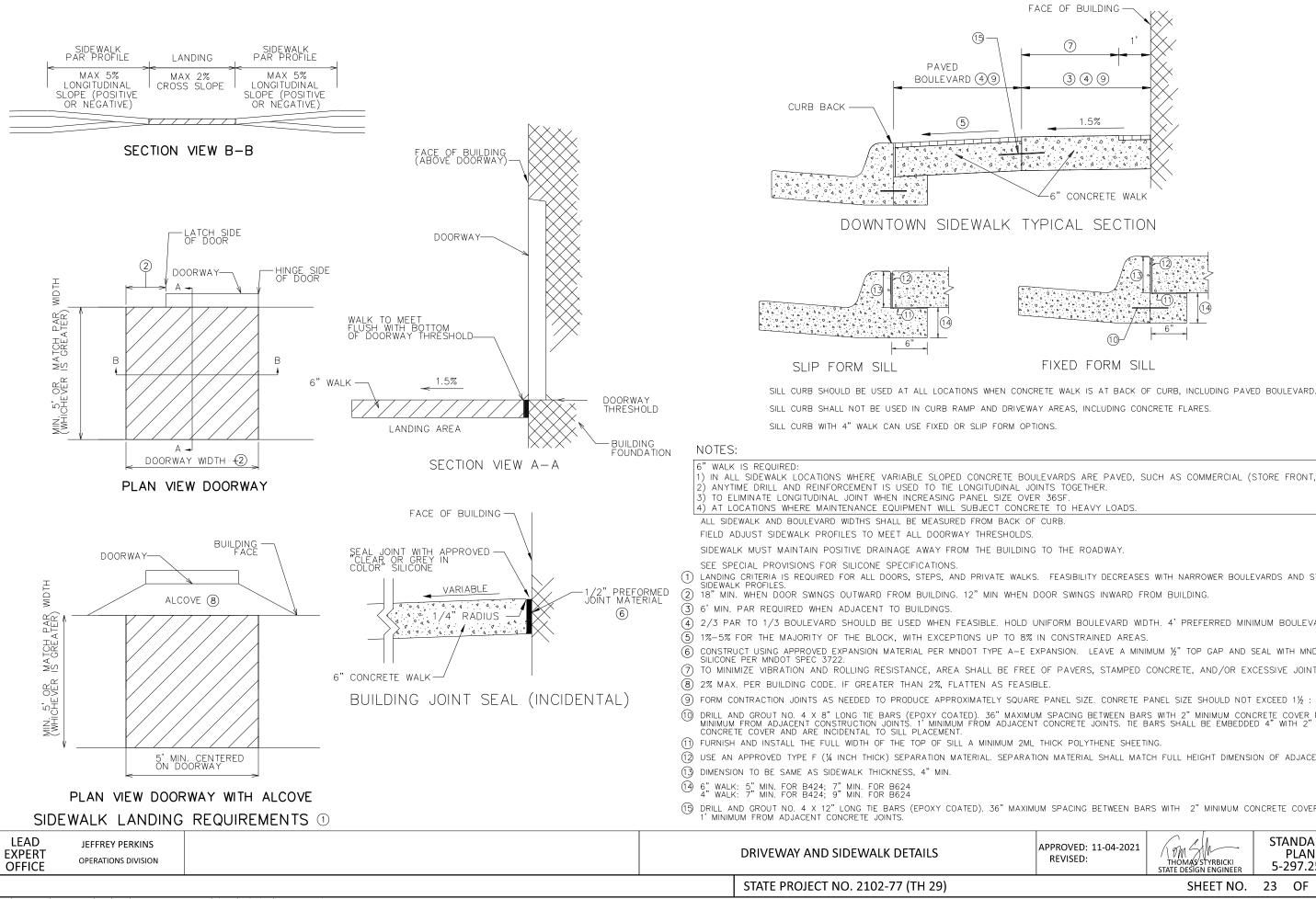
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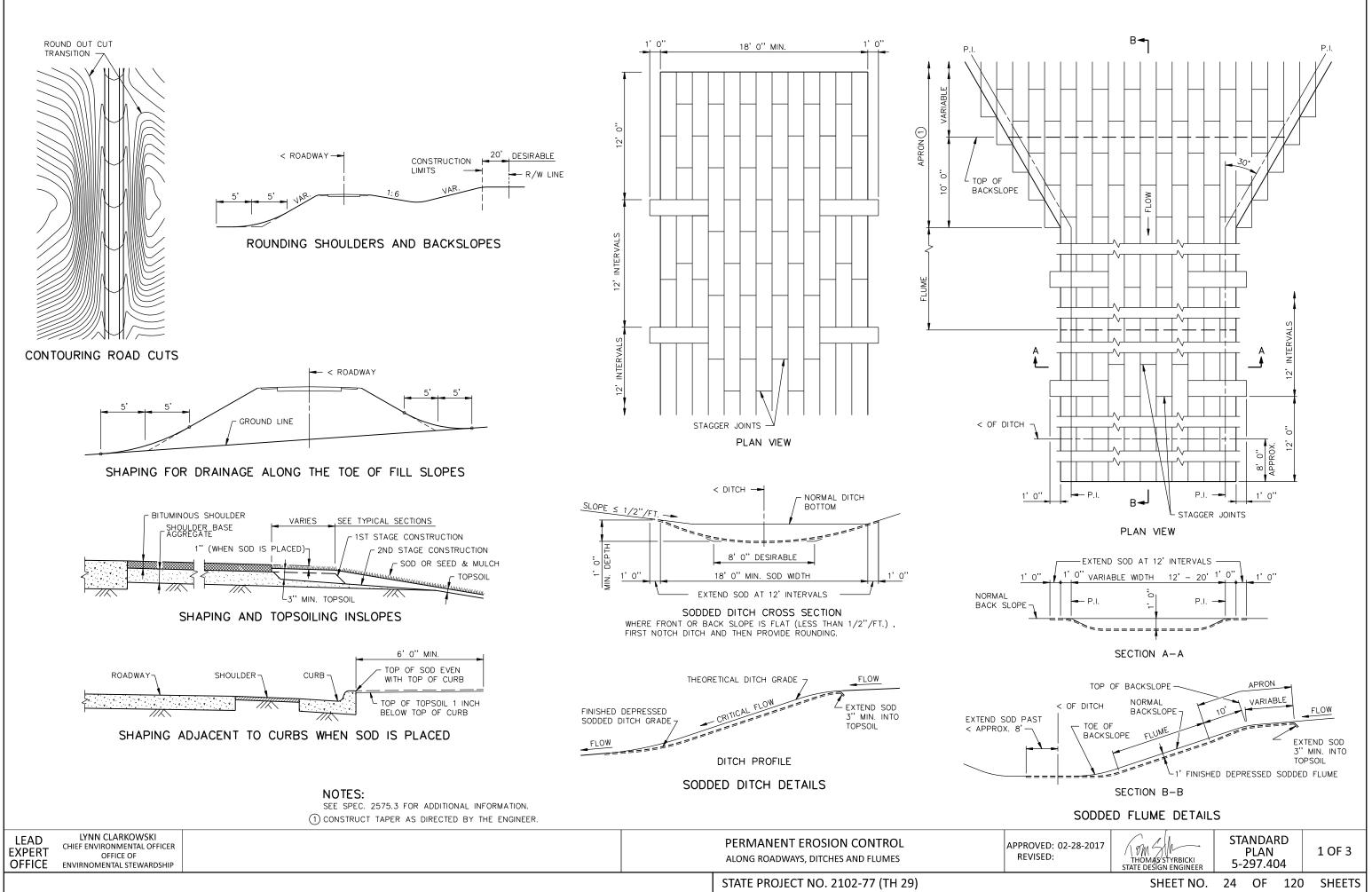
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LEVARDS ARE PAVED, SUCH INTS TOGETHER. R 36SF. ETE TO HEAVY LOADS.	AS COMMERCIAL (S	STORE FRONT, DOWN	TOWN) AREAS.
CURB.			
TO THE ROADWAY.			
5. FEASIBILITY DECREASES WI	TH NARROWER BOULE	VARDS AND STEEPER	
DOOR SWINGS INWARD FROM	BUILDING.		
JNIFORM BOULEVARD WIDTH.	4' PREFERRED MINI	MUM BOULEVARD.	
IN CONSTRAINED AREAS.			
XPANSION. LEAVE A MINIMUN	1 ½" TOP GAP AND S	SEAL WITH MNDOT APP	PROVED
OF PAVERS, STAMPED CON	CRETE, AND/OR EX	CESSIVE JOINTING.	
BLE.			
E PANEL SIZE. CONRETE PANE			
M SPACING BETWEEN BARS W T CONCRETE JOINTS. TIE BARS	1TH 2" MINIMUM CON( S SHALL BE EMBEDDE	CRETE COVER PLACED D 4" WITH 2" MINIMUI	1' M
THICK POLYTHENE SHEETING.			
ION MATERIAL SHALL MATCH	FULL HEIGHT DIMENSI	ON OF ADJACENT CON	NCRETE.
UM SPACING BETWEEN BARS	WITH 2" MINIMUM CC	NCRETE COVER PLAC	FD
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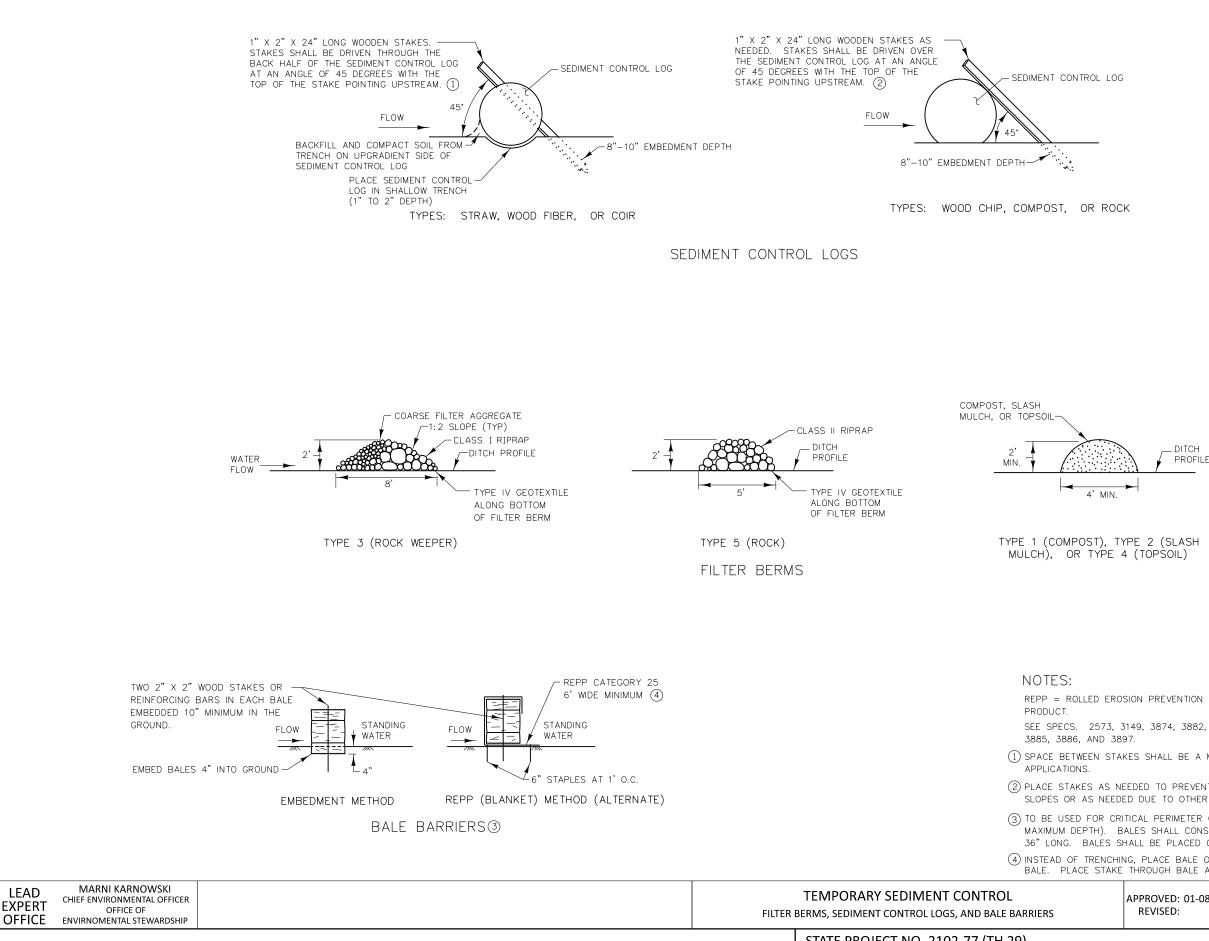
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STATE PROJECT NO. 2102-77 (TH 29)

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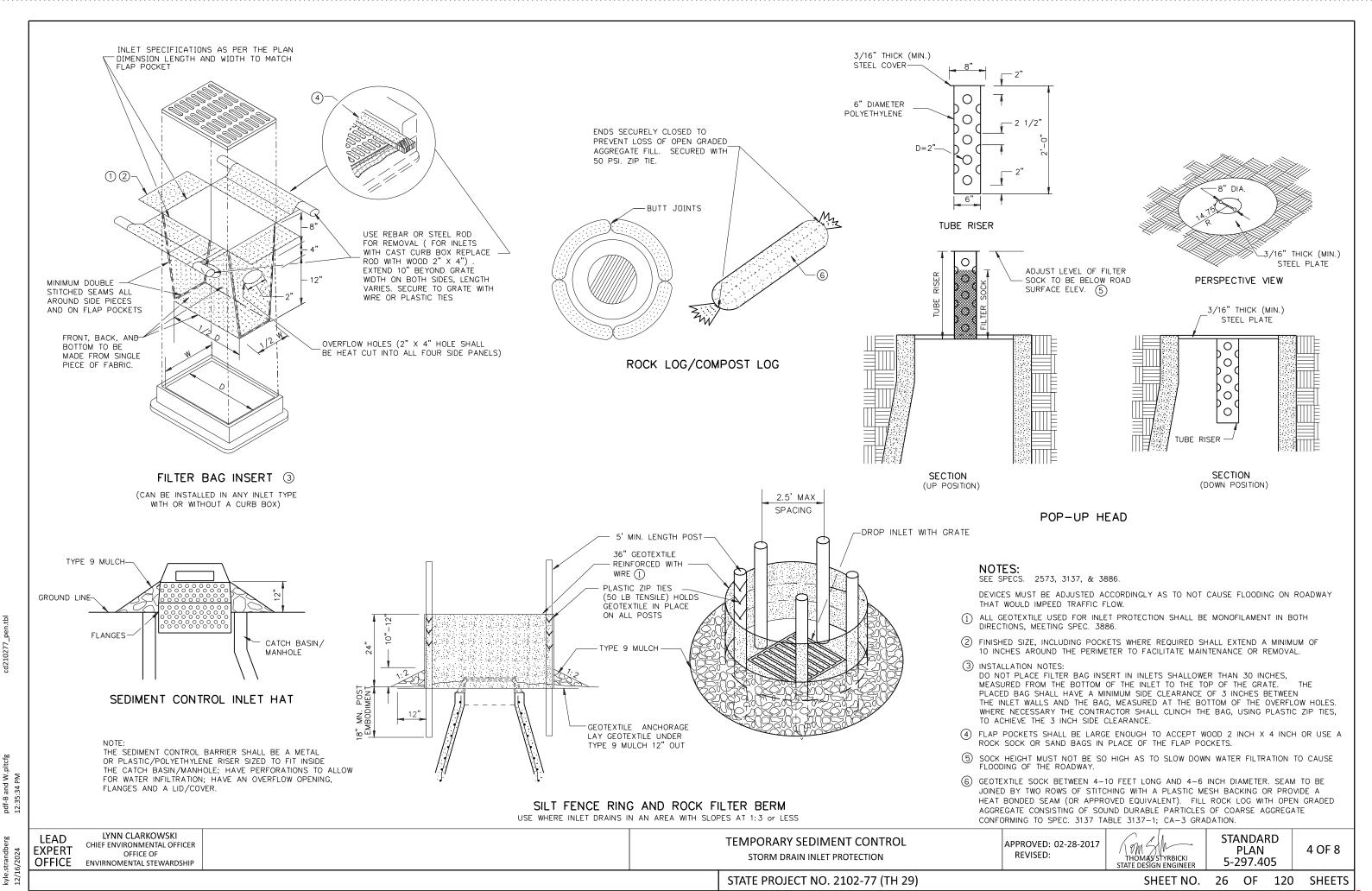
36" LONG. BALES SHALL BE PLACED ON EDGE AND BUTTED TIGHT TO ADJACENT BALES. (4) instead of trenching, place bale on the repp (blanket) and wrap blanket around the bale. Place stake through bale and blanket.

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

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.

(1) SPACE BETWEEN STAKES SHALL BE A MAXIMUM OF 1' FOR DITCH CHECKS OR 2' FOR OTHER

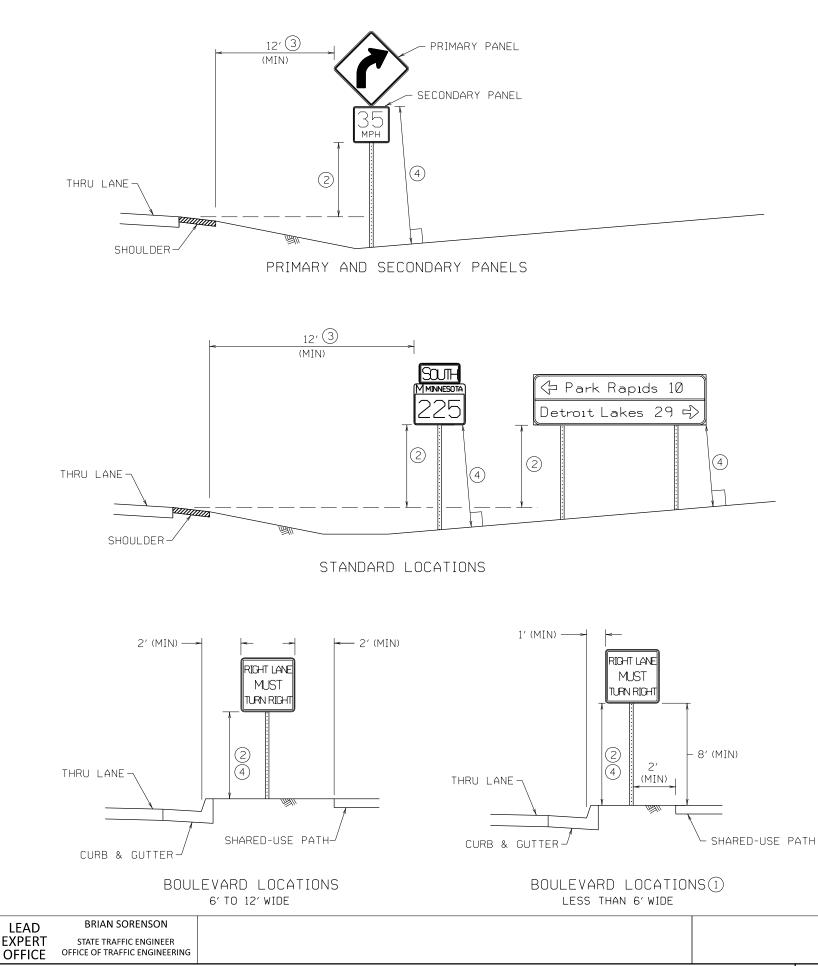
DITCH PROFILE



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### 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.

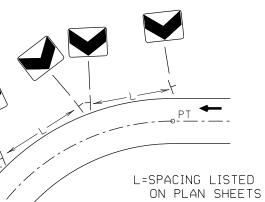
PLACE SIGNS SUCH THAT OBSTACLES DO NOT BLOCK THEM FROM BEING VIEWED BY THE APPROACHING TRAFFIC.

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.

- PAVEMENT. SEE SIGN TABULATIONS.
- LANE IF SITE CONDITIONS PROHIBIT A 12' OFFSET FROM SHOULDER.
- FOR CRASHWORTHY PURPOSES.

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ORIENTATION OF CHEVRON SIGNS

(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

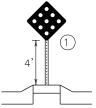
(3) MINIMUM OFFSET MAY BE REDUCED TO AT LEAST 6' FROM SHOULDER AND AT LEAST 12' FROM THRU

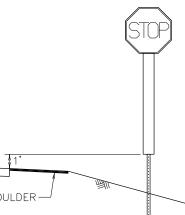
(4) CRASHWORTHY HEIGHT IS AT LEAST 7' FOR BREAKAWAY STRUCTURES AND AT LEAST 4' FOR BENDABLE STRUCTURES. SEE SPECIFIC SQUARE TUBE BASE STRUCTURE PLAN FOR CRASH RESPONSE TYPE. THE CRASHWORTHY HEIGHT IS MEASURED TO THE BOTTOM OF THE PRIMARY SIGN PANEL EXCLUDING ANY SECONDARY SIGN PANELS, MARKERS, DELINEATORS, AND REFERENCE LOCATION SIGN PANELS. ANY SECONDARY SIGN PANELS MOUNTED TO MORE THAN ONE POST ARE CONSIDERED PRIMARY SIGN PANELS

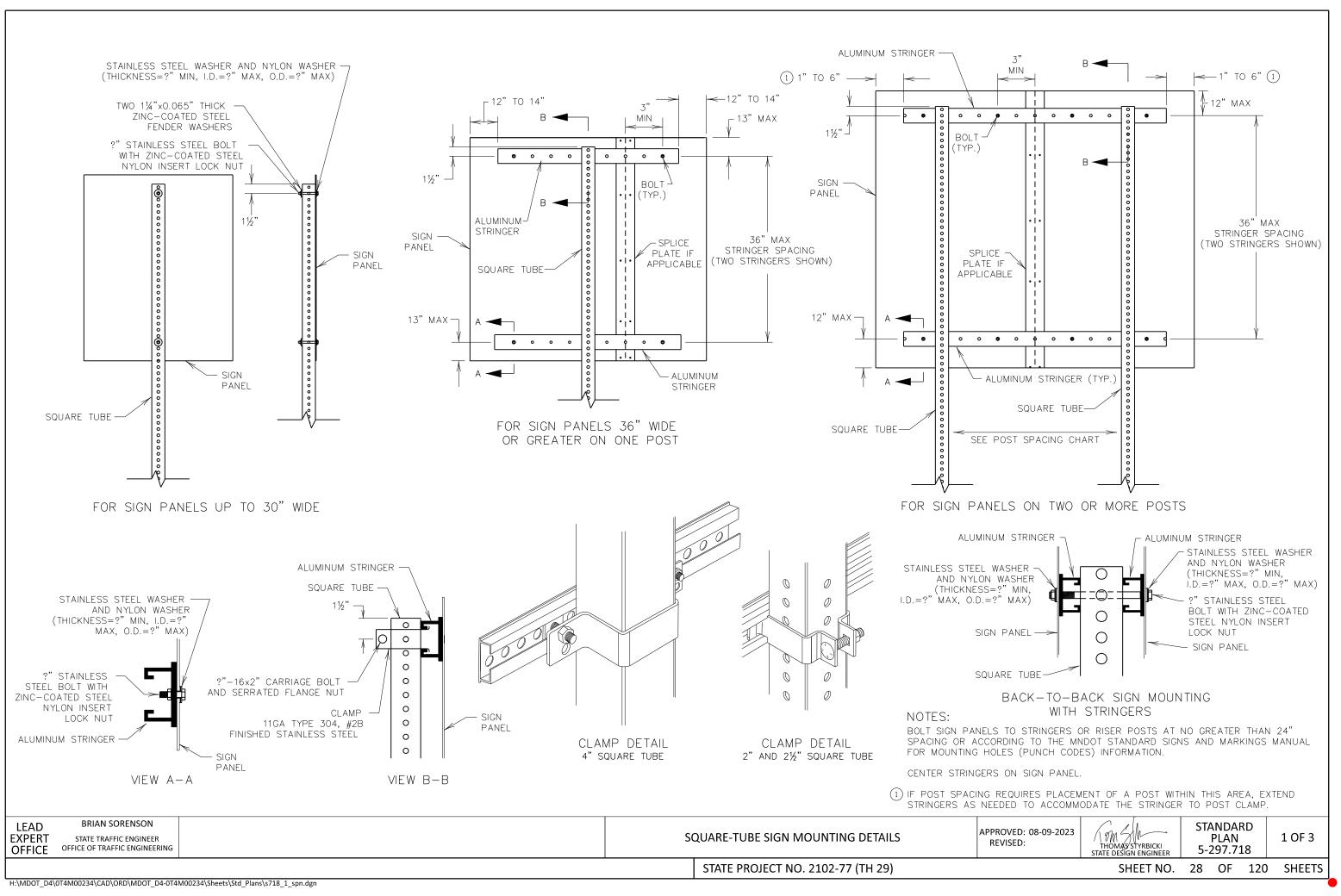
APPROVED: 08-09-2023 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER		STANDARD PLAN 5-297.701			1 OF 1
	SHEET NO	26	4	OF	120	SHEETS

Image: Set of the construction of t	
OBSTRUCTION TYPE 3 OBJECT WARKER       RASED ISLAND TYPE 3 OBJECT MARKER       RASED ISLAND TYPE 1 OBJECT MARKER         MARKER TYPICAL PLACEMENT       Image: Comparison of the com	
MARKER TYPICAL PLACEMENT WARKER TYPICAL PLACEMENT WITHOU LANE INCLASSE HULLANE INCLASSE HULLANE INCLASSE HULLANE INCLASSE HULLANE INCLASSE HULLANE INCLASSE HULLANE HULL	
THRU LANE HRU L	
NOTES: FOR DELINEATOR OFFSETS AT RAMP GORES, SEE STANDARD PLAN 5-297.70 1 PLACE MARKER AS CLOSE TO THE BEGINNING OF MEDIAN AS POSSIBLE.	
1) PLACE MARKER AS CLOSE TO THE BEGINNING OF MEDIAN AS POSSIBLE.	
DOWNWARD TOWARDS THE SIDE TRAFFIC IS TO DASS THE ORSTRUCTION	R
<ul> <li>3 THE CRASHWORTHY HEIGHT FROM THE GROUND TO ANY PORTION OF THE SIC IS AT LEAST 7' FOR BREAKAWAY STRUCTURES AND AT LEAST 4' FOR BENDA STRUCTURES. SEE SPECIFIC SQUARE TUBE BASE STRUCTURE PLAN FOR CRA RESPONSE TYPE.</li> <li>4 ADJUST OFFSET TO MATCH OTHER SIGN OFFSETS ALONG ROADWAY CORRIDOR NOT MORE THAN 12' NOR LESS THAN 2'.</li> </ul>	PANEL E
More more more more more more more more m	1 OF 1

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strandberg 6/2024		BRIAN SORENSON TATE TRAFFIC ENGINEER TE OF TRAFFIC ENGINEERING	SQUARE-TUBE SIGN MOUNTING DETAILS	APPROVED: 08-09-2023 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	P	NDARD PLAN 97.718		2 OF 3
kyle. 12/1			STATE PROJECT NO. 2102-77 (TH 29)		SHEET NO.	29	OF 1	20	SHEETS
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DISTANCES ARE CENTER-TO-CENTER OF POSTS

ZINC-COATED	AINLESS STEEL WASHER (TYP)
	- STAINLESS STEEL WASHER (TYP)
	?" STAINLESS STEEL BOLT (TYP)
	6"
SPLICE	
SFLICE	

PANEL		1	RE TU	1	1	_	
WIDTH	2 POSTS	3 POSTS	4 POSTS	5 POSTS	6 POSTS	7 POSTS	8 POST
(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	102	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	120	84	66	54	42		
252		84	66	54	42		
252		90	66	54	42	42	
264		90	66	54	48	42	
270		90	72	54	48	42	
276		90	72	60	48	42	
		96		60	48	42	
282 288		96	72	60	48	42	
294		102	78	60	54	42	10
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	1	114	84	72	60	48	42

INTERIOR POST STUD SHALL BE ONE SIZE SMALLER FOR TIGHT FIT. IF RISER POST IS 2½", INTERIOR POST IS 2?". IF RISER POST IS 2", INTERIOR POST IS 1?".

WHEN USED, THE SPLICE MUST BE PLACED AT LEAST 8' ABOVE GROUND. THE PREFERRED PLACEMENT LOCATION IS BEHIND THE SIGN PANEL.

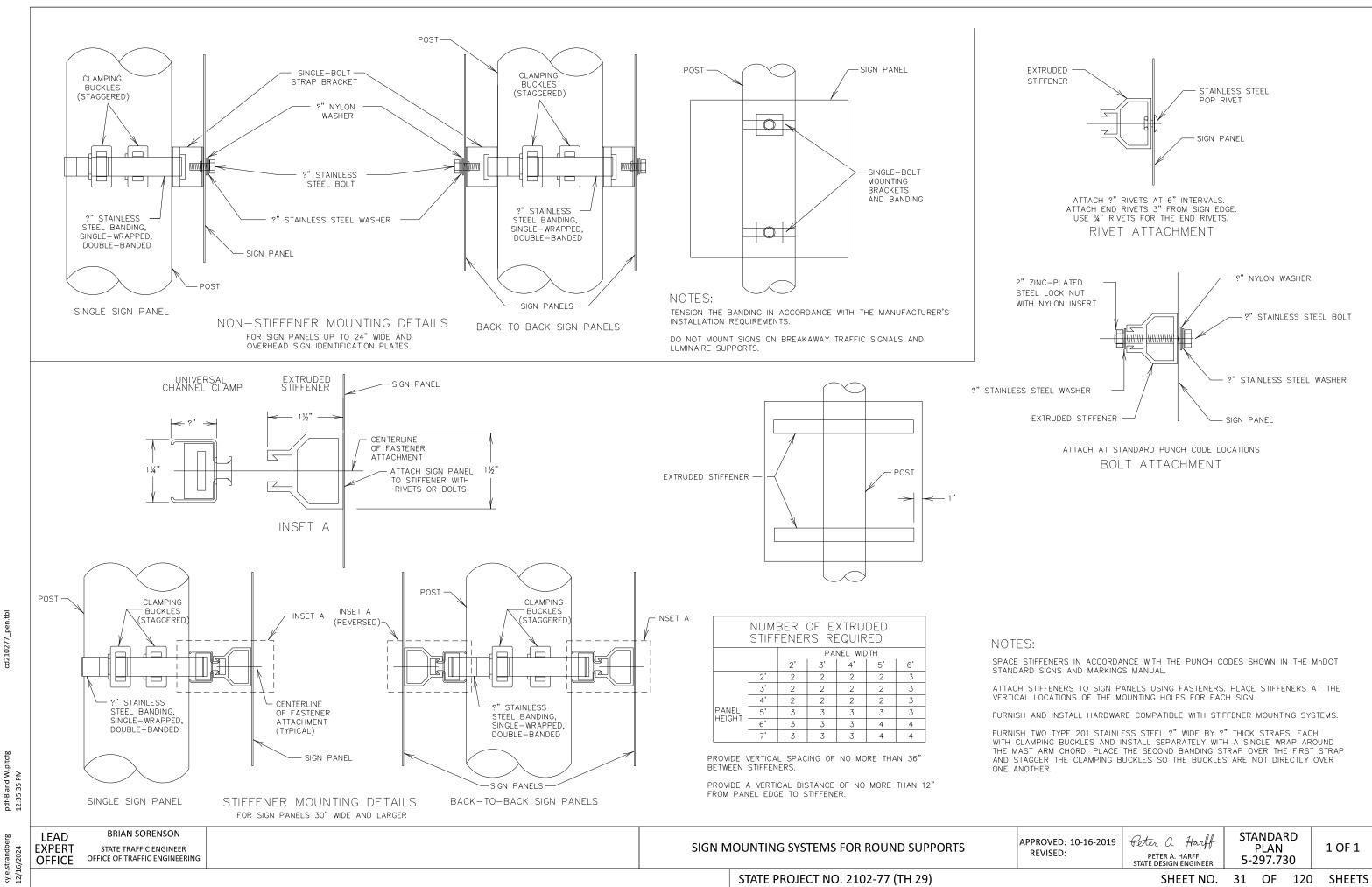
NO MORE THAN ONE SPLICE PER POST.

NOTES:

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		NUMBER OF ALUMINUI	M STRINGERS FOR 2 $\%$ " or smaller posts
		120 0 0 0 4 4 4 4 4 4	
		108       0       0       0       4	
		96 0 0 0 0 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	
		H       84       0       0       0       3	
		M       90       0       0       0       3	
		$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	
			2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
		42       0       0       0       2	
		36       0       0       0       2	2       2
		$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c} 144 \\ 156 \\ 168 \\ 180 \\ 192 \\ 192 \\ 192 \\ 204 \\ 216 \\ 228 \\ 228 \\ 240 \\ 252 \\ 252 \\ 252 \\ 264 \\ 276 \\ 288 \\ 192 \\ 192 \\ 288 \\ 192 $
		18 30 42 54 66 78 90 102 114 126 13 1 POST 2 POST	8 150 162 174 186 198 210 222 234 246 258 270 282 29 3 POST 4 POST 5 POST
			PANEL WIDTH (INCHES)
		NUMBER	OF STRINGERS FOR 4" POSTS
		144 5 5 5 5 6 6 5 5 5 5 5 6 6 6 7 5 5	
		138 5 5 5 5 6 6 7 5 5 5 5 5 6 6 7 7 5	
		132 4 4 4 5 5 6 7 7 4 4 5 5 5 6 6 7 7	5 5 5 5 6 6 6 6 7 7 7 5 6 6 6 6 6 6 7 7 7 7
		126       4       4       5       5       6       6       7       7       4       4       5       5       5       6       6       7         120       4       4       4       5       5       6       6       7       7       4       4       5       5       5       5       6       6       7         120       4       4       4       5       5       6       6       7       7       4       4       5       5       5       6       6       6       7	7       7       5       5       5       6       6       6       6       7       7       7       5       6       6       6       6       7       7       7         6       7       7       7       5       6       6       6       6       6       7       7       7       7       6       6       6       6       7       7       7         6       7       7       7       5       5       5       6       6       6       7       7       7       6       6       6       6       7       7       7
		120       4       4       4       5       5       6       6       7       7       4       4       5       5       6       6       6         114       4       4       4       5       5       6       6       7       7       8       4       5       5       5       6       6       6         114       4       4       4       5       5       6       6       7       7       8       4       5       5       5       6       6       6	
		M     102     4     4     4     5     5     6     6     7     7     8     4     5     5     5	6 6 6 6 6 7 7 7 7 8 5 5 6 6 6 6 6 6 6 7 7 7 7 7 7 7 7 7
		HO2       H	5 5 6 6 6 6 6 7 7 7 7 7 8 5 6 6 6 6 6 6 6 6 7 7 7 7 7
		Z       90       3       3       4       4       5       5       6       6       6       7       7       8       4       4       5       5         84       3       4       4       4       5       5       5       6       6       6       7       7       8       4       4       5	5       5       5       6       6       6       6       7       7       7       7       8       8       5       6
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tbl		78       3       3       4       4       5       5       6       6       7       7       4       4       4         72       3       3       4       4       4       5       5       5       6       6       6       4       4       4         66       3       4       4       4       4       5       5       5       5       6       6       6       4       4       4	
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cd21		H       H	
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		36     2     2     2     3     3     3     3     2     2     2	2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
		30 2 2 2 2 2 2 3 3 3 2 2 2	2 2 2 2 2 2 2 2 2 2 2 3 3 3 3 3 3 3 3 3
		24 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
50		18       2       1       1       1         12       2       2       2       2       2       2       2       2       2       2       2       1       1       1	1       1       1       2
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5 PM			$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
pdf-B and W.pltcfg 12:35:35 PM			2 POST 3 POS
		1	PANEL WIDTH (INCHES)
kyle.strandberg 12/16/2024	LEAD BRIAN SORENSON EXPERT STATE TRAFFIC ENGINEER OFFICE OF TRAFFIC ENGINEERING		SQUARE-TUBE SIGN MOUNTING DETAILS
kyle. 12/1			STATE PROJECT NO. 2102-77 (TH 29)

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APPROVED: 08-09-2023 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER SHEET NO.	STANDARD PLAN 5-297.718 30 OF 120	3 OF 3 SHEETS



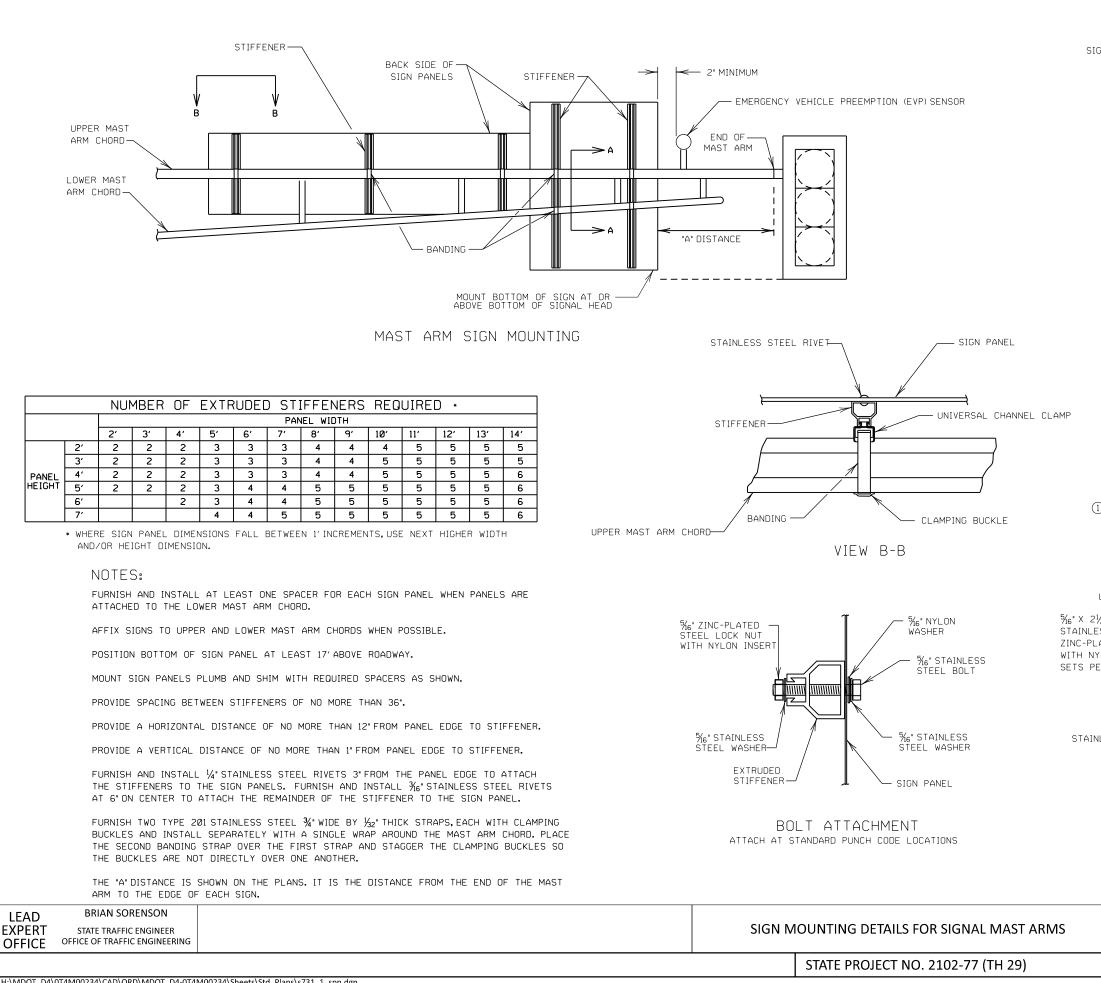
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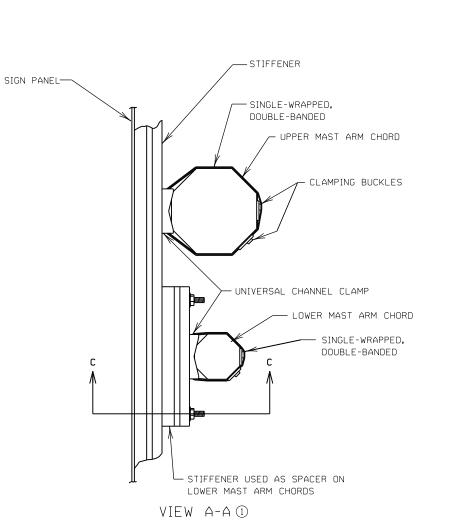
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REVISED:	PETER A. HARFF STATE DESIGN ENGINEER	A. HARFF 5 20			PLAN R 5-297.730		30	IOFI
	SHEET NO.	31	OF	120	SHEETS			

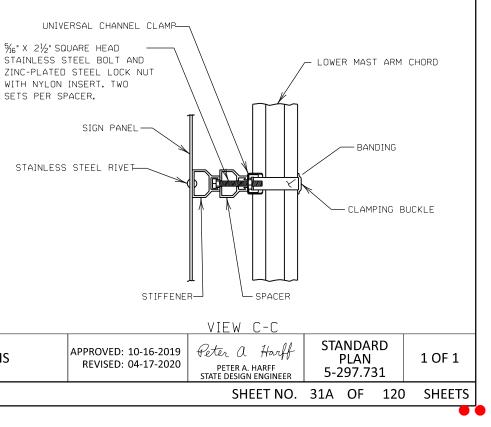


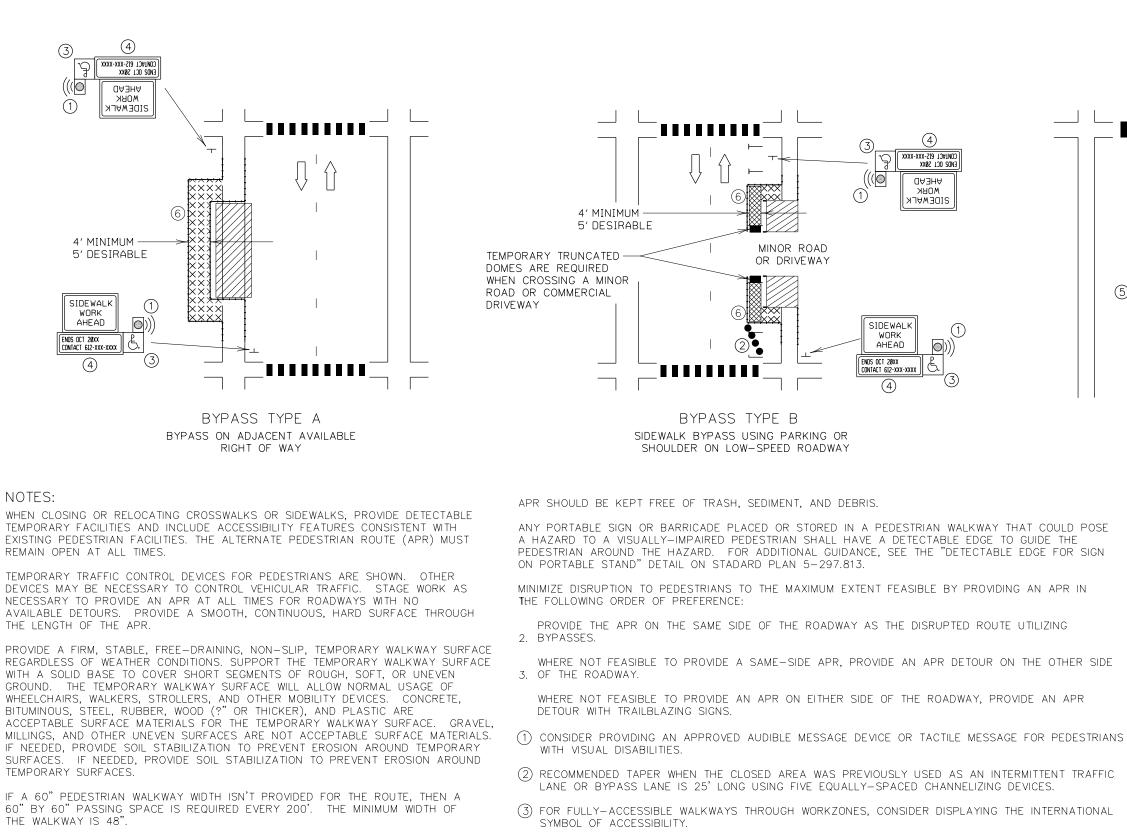
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(1) SIGN PANELS TALLER THAN 36" MUST BE BANDED TO THE LOWER MAST ARM CHORD AT A MINIMUM OF ONE LOCATION. SIGN PANEL SHALL BE BANDED TO THE LOWER MAST ARM AT A LOCATION THAT WILL PROVIDE THE CLOSEST TO PLUMB ALIGNMENT FOR THE SIGN PANEL.





COVER OR DEACTIVATE ANY PEDESTRIAN TRAFFIC SIGNALS CONTROLLING CLOSED CROSSWALKS.

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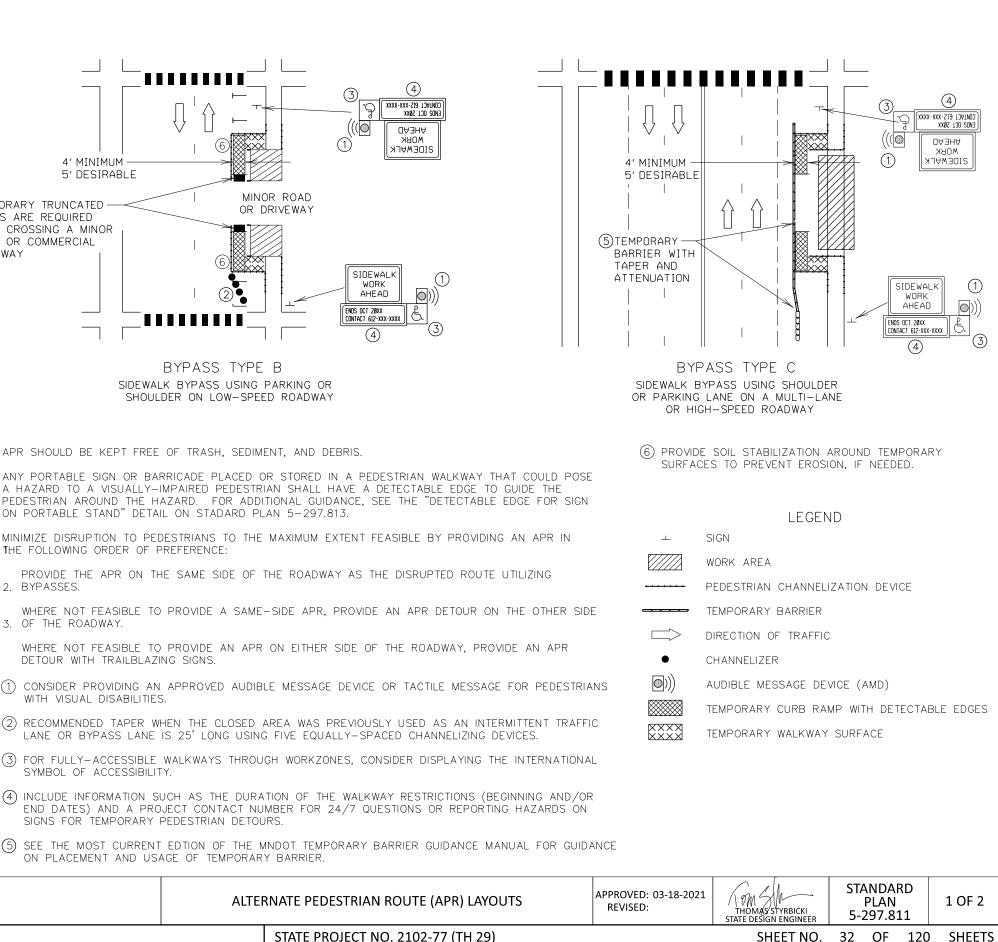
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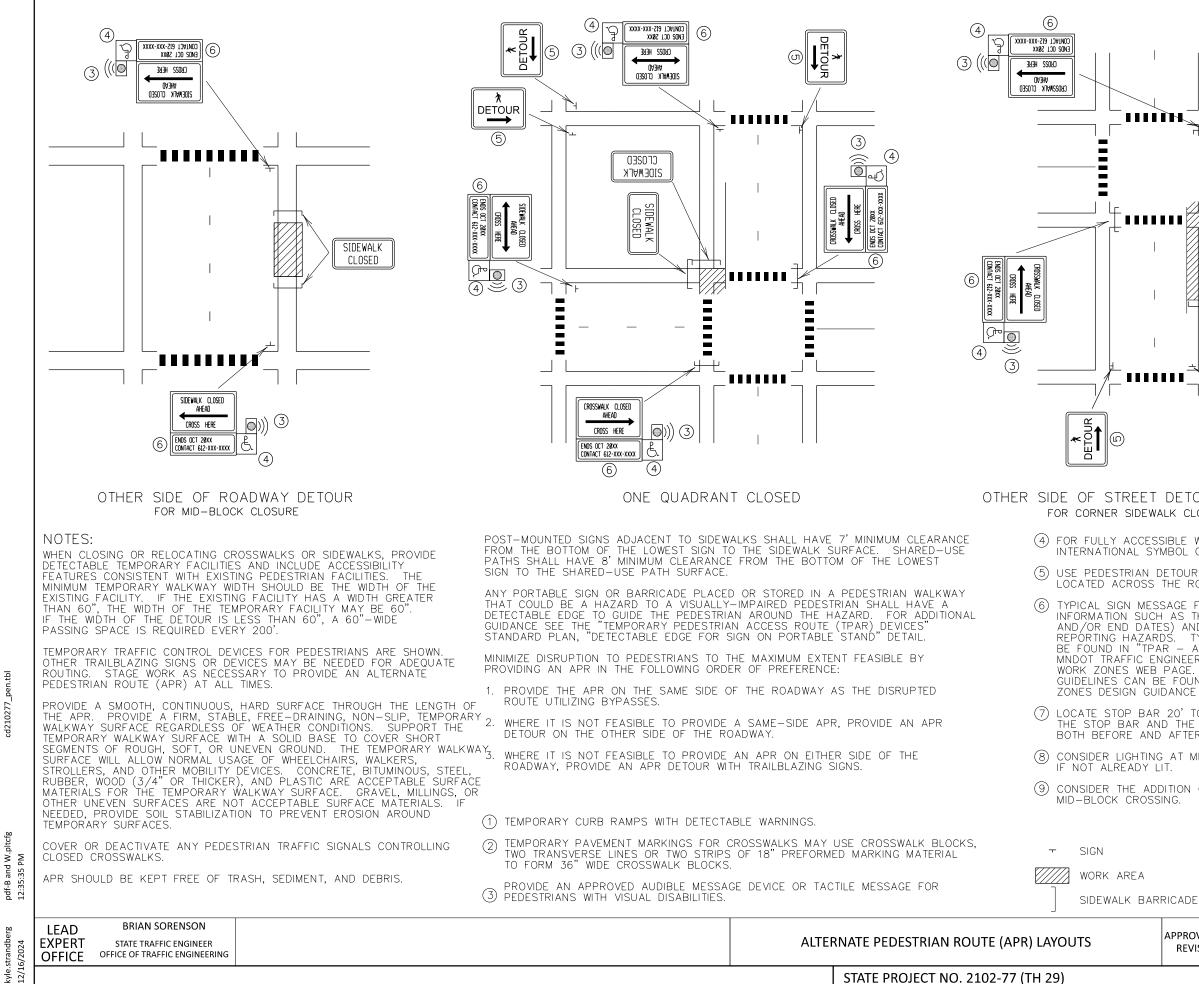
POST-MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7' MINIMUM CLEARANCE FROM THE BOTTOM OF THE LOWEST SIGN TO THE SIDEWALK SURFACE. SHARED-USE PATH SHALL HAVE 8' MINIMUM CLEARANCE FROM THE BOTTOM OF THE LOWEST SIGN TO THE SHARED LISE PATH SURFACE

END DATES) AND A PROJECT CONTACT NUMBER FOR 24/7 QUESTIONS OR REPORTING HAZARDS ON SIGNS FOR TEMPORARY PEDESTRIAN DETOURS.

(5)SEE THE MOST CURRENT EDTION OF THE MNDOT TEMPORARY BARRIER GUIDANCE MANUAL FOR GUIDANCE ON PLACEMENT AND USAGE OF TEMPORARY BARRIER.

		IT STORE TO THE SHARED C					
	LEAD	BRIAN SORENSON					
	EXPERT OFFICE	STATE TRAFFIC ENGINEER OFFICE OF TRAFFIC ENGINEERING		ALTERNATE PEDESTRIAN ROUTE (APR) LAYOUTS			
					STATE PROJECT NO. 2102-77 (TH 29)		
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## $\ll$ æ 8 -(2) 3 (a) $\overline{3}$ <u></u> SH N SIDENALK ( AHEA **↓** ENDS HERE 20XX 20XX CROSS ENDS OCT 2 CONTACT 61 SIDEWALK 5 SIDEWALK CLOSED SIDEWALK CLOSED AHEAD CROSS HERE Э∥ ретоџя 5 **(**))) (3) ¥ ENDS OCT 20XX CONTACT 612-XXX-XXXX 6 (4)

OTHER SIDE OF STREET DETOUR OR DETOUR WITH TRAILBLAZING SIGNS FOR CORNER SIDEWALK CLOSURE WITH OPTIONAL TEMPORARY CROSSWALK

(4) FOR FULLY ACCESSIBLE WALKWAYS THROUGH WORKZONES, CONSIDER DISPLAYING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY.

USE PEDESTRIAN DETOUR TRAILBLAZING SIGNS IF THE PEDESTRIAN DETOUR IS NOT LOCATED ACROSS THE ROADWAY FROM THE SIDEWALK CLOSURE.

TYPICAL SIGN MESSAGE FOR AN ALTERNATE PEDESTRIAN ROUTE SHOULD INCLUDE INFORMATION SUCH AS THE DURATION OF THE WALKWAY RESTRICTIONS (BEGINNING AND/OR END DATES) AND A PROJECT CONTACT NUMBER FOR 24/7 QUESTIONS OR REPÓRTING HAZARDS. TYPICAL INFORMATION INCLUDED IN AN AÚDIBLE MESSAGE CAN BE FOUND IN "TPAR - AUDIBLE MESSAGE CONTENT GUIDELINES" AVAILABLE ON THE MNDOT TRAFFIC ENGINEERING WEBSITE ON THE PEDESTRIAN ACCOMMODATIONS THROUGH WORK ZONES WEB PAGE. ADDITIONALLY, A SUMMARY OF THE MESSAGE CONTENT GUIDELINES CAN BE FOUND WITHIN THE PEDESTRIAN ACCOMMODATIONS THROUGH WORK ZONES DESIGN GUIDANCE DOCUMENT.

LOCATE STOP BAR 20' TO 50' BEFORE THE CROSSWALK. RESTRICT PARKING BETWEEN THE STOP BAR AND THE CROSSWALK. ON TWO-WAY ROADWAYS, RESTRICT PARKING BOTH BEFORE AND AFTER THE CROSSWALK FOR BOTH DIRECTIONS.

(8) CONSIDER LIGHTING AT MID-BLOCK CROSSINGS IN ORDER TO ILLUMINATE PEDESTRIANS,

CONSIDER THE ADDITION OF R1-60 SIGNS AS MOTORISTS ARE NOT EXPECTING

LEGEND

CROSSWAL R1-6a

DIRECTION OF TRAFFIC

 $\bigcirc))$ AUDIBLE MESSAGE DEVICE (AMD)

TEMPORARY CURB RAMP WITH DETECTABLE EDGES

APPROVED: 03-18-2021 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER		STANDARD PLAN 5-297.811		2 OF 2
	SHEET NO.	33	OF	120	SHEETS

### NOTES;

TPAR SHOULD BE KEPT FREE OF TRASH, SEDIMENT, AND DEBRIS.

RAILINGS OR OTHER OBJECTS MAY PROTRUDE A MAXIMUM OF 4" INTO THE WALKWAY CLEAR SPACE WHEN LOCATED A MINIMUM OF 27" ABOVE THE WALKWAY SURFACE.

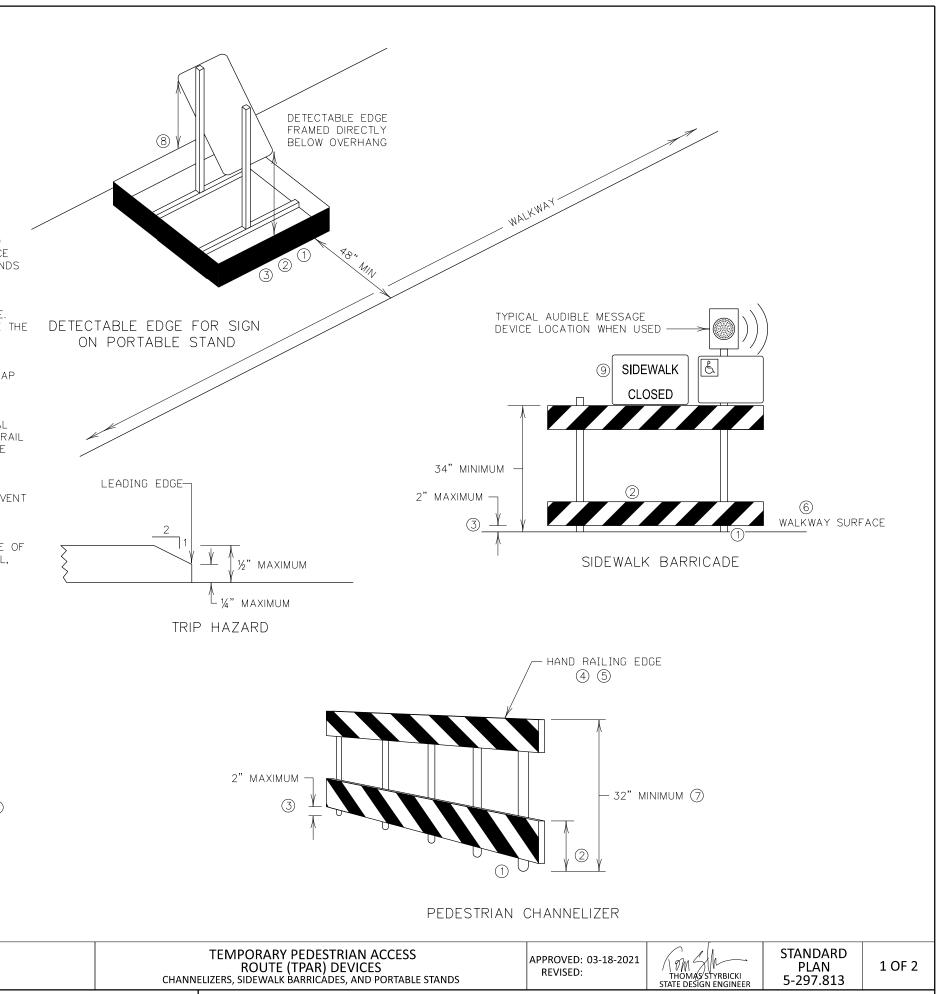
USE CRASHWORTHY TEMPORARY BARRIERS WHEN USED AS A PEDESTRIAN CHANNELIZERS.

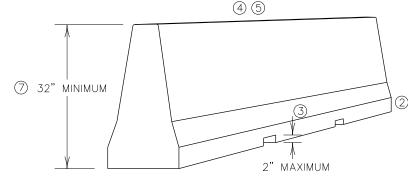
PLACE SIDEWALK BARRICADES ACROSS THE ENTIRE WIDTH OF THE WALKWAYSURFACE, WHEN USED

USE INTERLOCKING DEVICES TO CHANNELIZE PEDESTRIAN FLOW TO PREVENT GAPS THAT COULD ALLOW PEDESTRIANS TO STRAY FROM THE CHANNELIZED PATH.

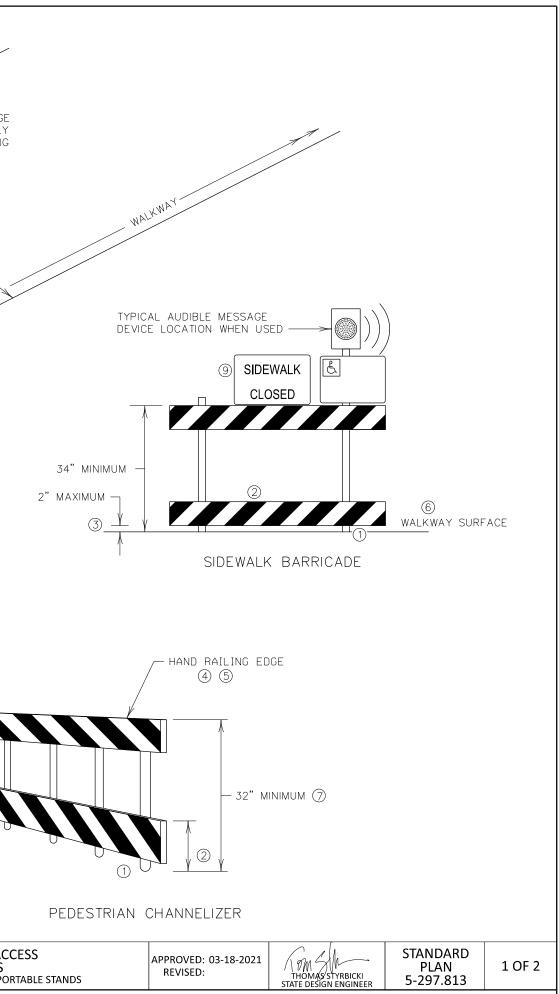
- (1)PROVIDE DETECTABLE EDGE TO ANY TRIPPING HAZARD IN THE WALKWAY. LOCATE BALLAST BEHIND THE DETECTABLE EDGE OR INTEGRAL TO THE DEVICE. ANY SUPPORT ON THE FRONT OF THE DEVICE SHOULD NOT EXTEND INTO THE 48" MINIMUM WALKWAY CLEAR SPACE. ANY SUPPORT THAT EXTENDS INTO THE WALKWAY SHALL NOT EXCEED 1/3" HEIGHT ABOVE THE WALKWAY SURFACE; IF GREATER THAN ¼", BEVEL AS SHOWN IN THE TRIP HAZARD DETAIL.
- PROVIDE CONTINUOUS DETECTABLE EDGES EXTENDING AT LEAST 6" ABOVE THE WALKWAY SURFACE. 2 MARK DETECTABLE EDGES WITH A COLOR THAT CONTRASTS WITH THE WALKWAY SURFACE. PLACE THE DETECTABLE EDGE AROUND ANY PORTABLE SIGN STAND IN THE WALKWAY AREA WHERE THE SIGN POSES A HAZARD TO A VISUALLY-IMPAIRED PEDESTRIAN.
- DEVICES AND DETECTABLE EDGES SHALL NOT BLOCK WATER DRAINAGE FROM THE WALKWAY. A GAP HEIGHT OR OPENING FROM THE WALKWAY SURFACE UP TO A MAXIMUM OF 2" IS ALLOWED FOR DRAINAGE PURPOSES.
- (4) USE HAND AND GUIDE RAILS WHEN REQUIRED. INSTALL TOP RAIL OR TOP SURFACE IN A VERTICAL PLANE PERPENDICULAR TO THE WALKWAY, ABOVE THE DETECTABLE EDGE. PROVIDE CONTINUOUS RAIL AT A HEIGHT OF 34" TO 38" ABOVE THE WALKWAY SURFACE. USE RAIL SUPPORTS THAT MINIMIZE CONTACT WITH PEDESTRIAN'S HANDS AND FINGERS. SEE "PUBLIC RIGHTS OF WAY ACCESSIBILITY GUIDELINES (PROWAG) 2005" FOR ADDITIONAL GUIDANCE ON USE OF HAND AND GUIDE RAILS.
- 5 USE DEVICES FREE OF SHARP OR ROUGH EDGES, AND USE ROUNDED FASTENERS (BOLTS) TO PREVENT HARM TO A PEDESTRIAN'S HANDS, ARMS, AND CLOTHING.
- REGARDLESS OF WEATHER CONDITIONS PROVIDE FIRM, STABLE, FREE-DRAINING, AND NON-SLIP (6) TEMPORARY WALKWAY SURFACES. TEMPORARY WALKWAY SURFACES SHALL ALLOW NORMAL USAGE OF WHEELCHAIRS, WALKERS, STROLLERS, OR OTHER MOBILITY DEVICES. CONCRETE, BITUMINOUS, STEEL, RUBBER, WOOD (?" OR THICKER), AND PLASTIC ARE ACCEPTABLE SURFACE MATERIALS FOR A TEMPORARY WALKWAY SURFACE. GRAVEL, MILLINGS, AND OTHER UNEVEN SURFACES ARE NOT ACCEPTABLE SURFACE MATERIALS.
- (7) PROVIDE 32" HIGH OR GREATER LONGITUDINAL CHANNELIZING DEVICES FOR PEDESTRIANS.
- (8) AN EDGE OF THE FRAMING MAY BE REMOVED IF IT IS NOT NEEDED FOR PEDESTRIAN GUIDANCE. STABILITY OF THE DETECTABLE EDGE SHOULD BE MAINTAINED.
- (9) TYPICAL. SEE SIGNING PLAN FOR DETAILS.

and W.







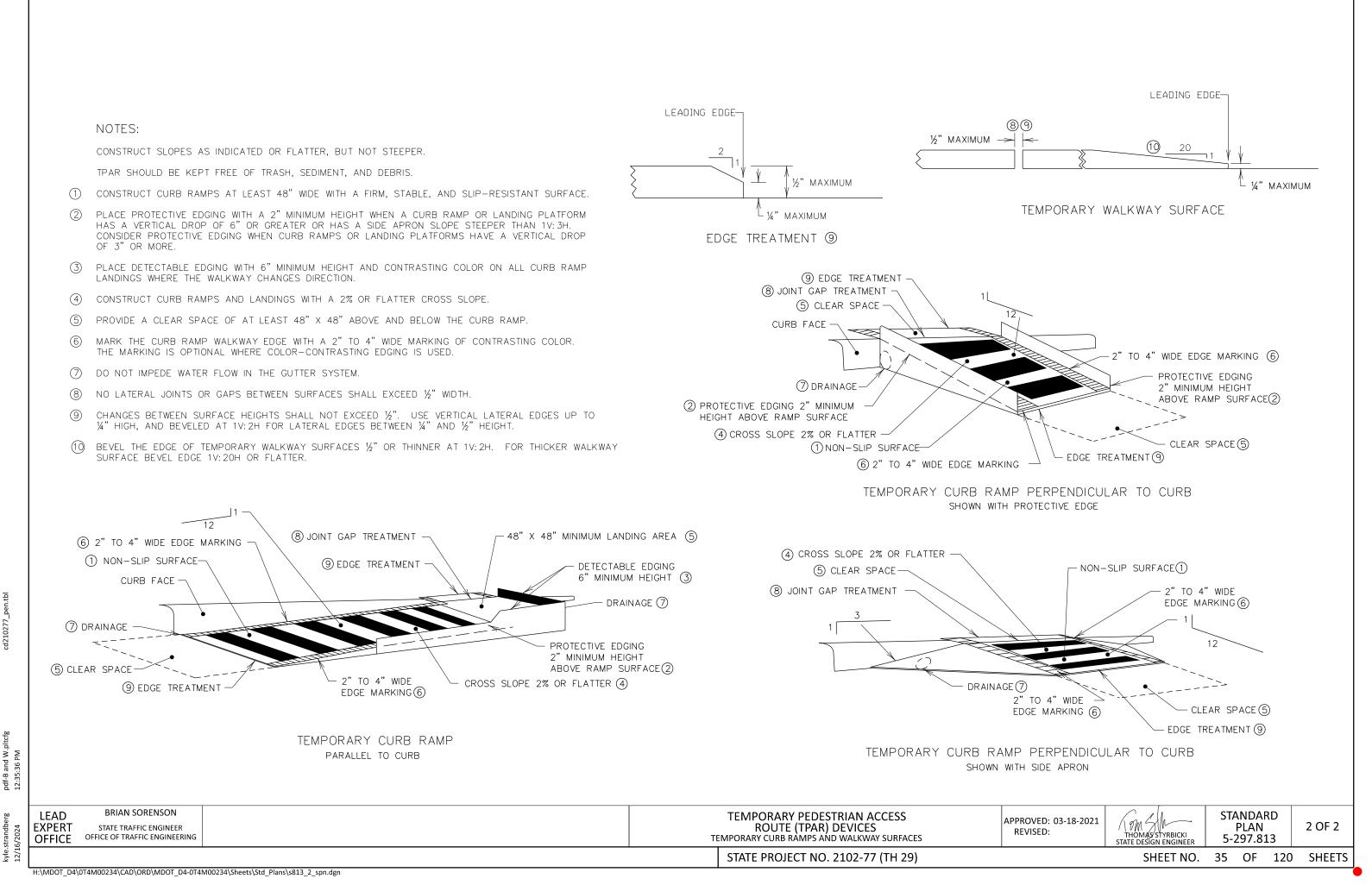


12: 12: **BRIAN SORENSON** LEAD 16/2024 EXPERT STATE TRAFFIC ENGINEER OFFICE OF TRAFFIC ENGINEERING OFFICE cyle 12/: STATE PROJECT NO. 2102-77 (TH 29)

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34 OF 120 SHEETS

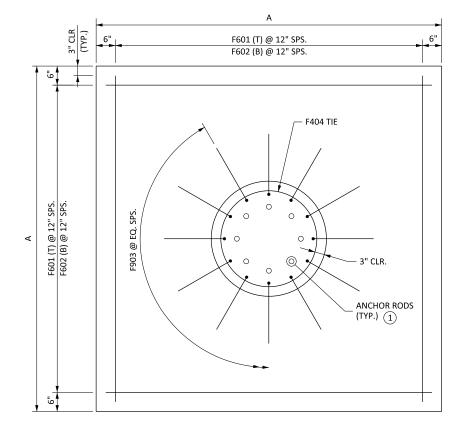
SHEET NO.



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SPREAD FOOTING FOUNDATION DATA									
POLE TYPE	MAST ARM LENGTH	SI	PREAD FOOTIN	IG DIMENSIO	NS				
	LENGIN	Α	В	с	D				
TS15-TS25	15' 0", 20' 0" & 25' 0"	8' 0"	2' 6"	3' 0"	7' 6"				
TS30-TS40	30' 0", 35' 0" & 40' 0"	9' 6"	3' 3"	3' 0"	9' 0"				
TS45-TS55 STANDARD	45' 0", 50' 0" & 55' 0"	10' 3"	3' 1½"	4' 0"	9' 9"				
TS45-TS55 HEAVY	45' 0", 50' 0" & 55' 0"	11' 0"	3' 6"	4' 0"	10' 6"				

	SPREAD FOOTING REINFORCEMENT										
	BAR	15'	TO 25'	30'	TO 40'		TO 55' NDARD		TO 55' EAVY	SHAPE	LOCATION
		NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH		
	F601	16	7' 6"	20	9' 0"	22	9' 9"	22	10' 6"		FOOTING TOP
	F602	16	9' 6"	20	11' 0"	22	11' 9"	22	12' 6"	<u> </u>	FOOTING BOTTOM
	F903	12	8' 0"	12	8' 0"	20	8' 0"	20	8' 0"	L	PEDESTAL VERTICAL
Ð	F404	7	9' 8"	7	9' 8"					0	PEDESTAL TIE
Ð	F405					7	12' 9"	7	12' 9"	$\Box$	PEDESTAL TIE



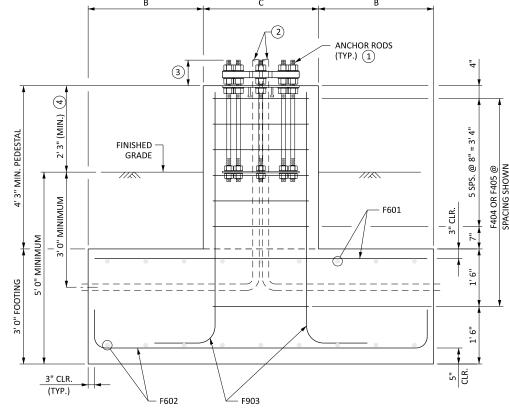
CONTACT MnDOT FOUNDATIONS UNIT FOR DETERMINATION OF SUBSURFACE INVESTIGATION REQUIREMENTS.

THE FOUNDATION DIMENSIONS SHOWN ON THIS SHEET ARE DESIGNED ASSUMING THE WATER TABLE IS BELOW THE BOTTOM OF FOOTING ELEVATION OR LOWER AND THE IN-SITU SOIL PROPERTIES MEET OR EXCEED THE FOLLOWING MINIMUM VALUES:

SANDY SOILS UNIT WEIGHT = 125 PCF FRICTION ANGLE = 30°

OF 2.50 KSF.





### SPREAD FOOTING ELEVATION



STATE PROJECT NO. 2102-77 (TH 29)

# BASED ON THE DETAIL DIMENSIONS SHOWN IN THE BAR BENDING DIAGRAMS. 6' 5" Г F602

BENT BAR DIMENSIONS GIVEN ARE OUT-TO-OUT. DETERMINE ACTUAL BAR LENGTHS

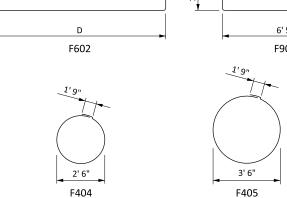
BAR BENDING DIAGRAMS

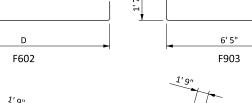
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OFFICE DIRECTOR

BRIDGE OFFICE

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### **GEOTECHNICAL PARAMETERS:**

CLAY SOILS UNIT WEIGHT = 125±10 PCF COHESION = 1000 PSF FRICTION ANGLE = 0°

A SPECIAL FOUNDATION DESIGN IS REQUIRED WHEN THE SPECIFIED VALUES, CONDITIONS, OR BOTH LISTED ABOVE ARE NOT MET.

SPREAD FOOTINGS ARE DESIGNED BASED ON AN ALLOWABLE BEARING PRESSURE

IF THE SOIL BEARING CAPACITY IS LESS THAN 2.50 KSF, OBTAIN APPROVAL FROM THE DISTRICT SOILS ENGINEER.

### NOTES:

FURNISH AND INSTALL PREFORMED JOINT FILLER IN ACCORDANCE WITH SPEC. 3702 BETWEEN THE FOUNDATION AND SIDEWALK OR OTHER CONCRETE AREAS. THEN SEAL THE JOINT BETWEEN THE FOUNDATION AND SIDEWALK OR CONCRETE AREA WITH SILICONE SEALANT IN ACCORDANCE WITH SPEC 3722.

FURNISH AND INSTALL 3G52 CONCRETE MIX IN ACCORDANCE WITH SPEC. 2461. CURE CONCRETE IN ACCORDANCE WITH SPEC. 2401.

PROVIDE ¾" CHAMFER ON THE EXPOSED TOP EDGE OF THE FOUNDATION.

EXCAVATE, BACKFILL, AND COMPACT AROUND THE FOUNDATION IN ACCORDANCE WITH SPEC. 2451.

POSITION FOUNDATION CONDUITS INSIDE THE ANCHOR ROD ASSEMBLY. CAP ENDS UNTIL CABLES ARE INSTALLED.

ALLOW THE FOUNDATION TO CURE FOR AT LEAST 7 DAYS AFTER CONCRETE POURING OPERATIONS BEFORE INSTALLING POLES.

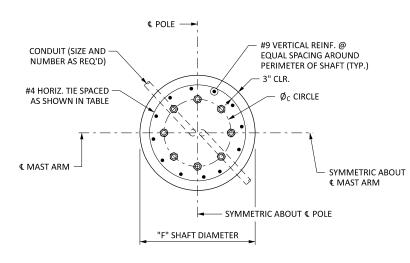
PROVIDE GRADE 60 DEFORMED BILLET REINFORCEMENT BARS IN ACCORDANCE WITH AASHTO M31 GRADE 60, SPEC. 2471, AND SPEC. 3301.

- (1) SEE STANDARD PLATE 8124 FOR ANCHOR ROD ASSEMBLY DETAILS.
- (2) SEE CONDUIT DETAIL ON SHEET 5 OF 5.
- (3) SEE ANCHOR ROD PLACEMENT DETAIL ON SHEET 5 OF 5.
- (4) INCREASE FOUNDATION PROJECTION AS REQUIRED TO PROVIDE A VERTICAL CLEARANCE FROM THE BOTTOM OF ALL SIGNS AND SIGNAL HEADS (INCLUDING BACKGROUND SHIELDS) TO THE PAVEMENT OF NOT LESS THAN 17.50' NOR MORE THAN 19.00'. INCREASE PEDESTAL LENGTH TO PROVIDE THE MINIMUM FOOTING BURIED DEPTH FOR FROST PROTECTION. INCREASE VERTICAL BAR LENGTH AND, IF NEEDED, ADD ADDITIONAL F404 OR F405 TO PROVIDE THE INDICATED COVER.

APPROVED: 02-21-2024 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER		ANDA PLAN 297.8		1 OF 5
	SHEET NO.	36	OF	120	SHEETS

		MAST ARM LENGTH				
DESCRIPTION	DIMENSION	15' TO 25'	30' TO 40'	45' TO 55' STANDARD	45' TO 55' HEAVY 4' 0" 14' 0" 1' 9"	
SHAFT DIAMETER	F	3' 0"	3' 0"	4' 0"	4' 0"	
FOUNDATION BURIED DEPTH	G	9' 0"	13' 0"	11' 0"	14' 0"	
BOLT CIRCLE DIAMETER	Øc	1' 9"	1' 9"	1' 9"	1' 9"	

DRIL	DRILLED SHAFT REINFORCEMENT									
		MAST ARM LENGTH								
DESCRIPTION	DIMENSION	15' TO 25'	30' TO 40'	45' TO 55' STANDARD	45' TO 55' HEAVY					
VERTICAL BAR MARK (#9)	-	D901	D902	D903	D904					
VERTICAL BAR LENGTH	Н	10' 10"	14' 10"	12' 10"	15' 10"					
NUMBER OF VERTICAL BARS	-	12	12	20	20					
HORIZONTAL TIE BAR MARK (#4)	-	D410	D410	D411	D411					
NUMBER OF HORIZONTAL TIES	-	12	19	14	17					
MAX. HORIZONTAL TIE SPACING	-	12"	10"	12"	12"					
HORIZONTAL TIE LENGTH	-	9' 8"	9' 8"	12' 9"	12' 9"					



SECTION A-A

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"F" SHAFT DIAMETER

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DRILLED SHAFT ELEVATION

FOUNDATION FOR 30' TO 40' MAST ARM SHOWN; OTHERS SIMILAR

3"

CLR.

3-

(4)

Α.

D901, D902, D903 OR D904 VERTICAL

BARS

1%"

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m 10

TABLE

- NI NMOH

ACED AS SH

TIES

D411 HORIZ.

D410 OR

H" VERTICAL BAR LENGTH

BURIED DEPTH

**COUNDATION** 

ΰ

FINISHED

GROUND LINE

Α

(MIN.) 5

## **GEOTECHNICAL PARAMETERS:**

CONTACT MNDOT FOUNDATIONS UNIT FOR DETERMINATION OF SUBSURFACE INVESTIGATION REQUIREMENTS.

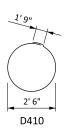
THE FOUNDATION DIMENSIONS SHOWN ON THIS SHEET ARE DESIGNED ASSUMING THE WATER TABLE IS 1.5' BELOW GRADE OR LOWER AND THE IN-SITU SOIL PROPERTIES MEET OR EXCEED THE FOLLOWING MINIMUM VALUES:

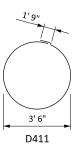
SANDY SOILS UNIT WEIGHT = 125 PCF FRICTION ANGLE = 30° <u>CLAY SOILS</u> UNIT WEIGHT = 125±10 PCF COHESION = 1000 PSF FRICTION ANGLE = 0°

A SPECIAL FOUNDATION DESIGN IS REQUIRED WHEN THE SPECIFIED VALUES, CONDITIONS, OR BOTH LISTED ABOVE ARE NOT MET.

### BAR BENDING DIAGRAMS

BENT BAR DIMENSIONS GIVEN ARE OUT-TO-OUT. DETERMINE ACTUAL BAR LENGTHS BASED ON THE DETAIL DIMENSIONS SHOWN IN THE BAR BENDING DIAGRAMS.





### NOTES:

COLD CONCRETE CONSTRUCTION JOINTS ARE NOT PERMITTED.

GALVANIZE STEEL COMPONENTS IN ACCORDANCE WITH SPEC. 3394.

FURNISH AND INSTALL PREFORMED JOINT FILLER IN ACCORDANCE WITH SPEC. 3702 BETWEEN THE FOUNDATION AND SIDEWALK OR OTHER CONCRETE AREAS. THEN SEAL THE JOINT BETWEEN THE FOUNDATION AND SIDEWALK OR CONCRETE AREA WITH SILICONE SEALANT IN ACCORDANCE WITH SPEC 3722.

FURNISH AND INSTALL 3G52 CONCRETE MIX IN ACCORDANCE WITH SPEC. 2461. CURE CONCRETE IN ACCORDANCE WITH SPEC. 2401.

PROVIDE ¾" CHAMFER ON THE EXPOSED TOP EDGE OF THE FOUNDATION.

EXCAVATE, BACKFILL, AND COMPACT AROUND THE FOUNDATION IN ACCORDANCE WITH SPEC. 2451.

POSITION FOUNDATION CONDUITS INSIDE THE ANCHOR ROD ASSEMBLY. CAP ENDS UNTIL CABLES ARE INSTALLED.

ALLOW THE FOUNDATION TO CURE FOR AT LEAST 7 DAYS AFTER CONCRETE POURING OPERATIONS BEFORE INSTALLING POLES.

PROVIDE GRADE 60 DEFORMED BILLET REINFORCEMENT BARS IN ACCORDANCE WITH AASHTO M31 GRADE 60, SPEC. 2471, AND SPEC. 3301.

DRILLED SHAFT FOUNDATIONS ARE DESIGNED FOR THE CAST-IN-PLACE CONCRETE TO BE POURED DIRECTLY AGAINST THE SOILS SURROUNDING THE DRILLED SHAFT. CONCRETE FORMS ARE REQUIRED FOR THE 27" ABOVE THE FINISHED GROUNDLINE OR SIDEWALK AND PERMANENT CASING MAY BE USED FOR NO MORE THAN 25 PERCENT OF THE TOTAL FOUNDATION DEPTH BELOW FINISHED GRADE OR SIDEWALK. DO NOT USE PERMANENT CASING FOR MORE THAN 25 PERCENT OF THE ENTIRE DEPTH OF THE DRILLED SHAFT.

SEE STANDARD PLATE 8124 FOR ANCHOR ROD ASSEMBLY DETAILS.

SEE CONDUIT DETAIL ON SHEET 5 OF 5.

EXCAVATE TO NEAT LINES AND PLACE CONCRETE AGAINST UNDISTURBED SOIL.

SEE ANCHOR ROD PLACEMENT DETAIL ON SHEET 5 OF 5.

INCREASE FOUNDATION PROJECTION AS REQUIRED TO PROVIDE A VERTICAL
CLEARANCE FROM THE BOTTOM OF ALL SIGNS AND SIGNAL HEADS (INCLUDING
BACKGROUND SHIELDS) TO THE PAVEMENT OF NOT LESS THAN 17.50' NOR MORE
THAN 19.00'. INCREASE OVERALL FOUNDATION LENGTH TO PROVIDE THE MINIMUM
FOUNDATION BURIED DEPTH. INCREASE LONGITUDINAL BAR LENGTH TO PROVIDE
THE INDICATED COVER.

APPROVED: 02-21-2024 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER		ANDA PLAN 297.8		2 OF 5
	SHEET NO.	37	OF	120	SHEETS

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EDWARD LUTGEN

OFFICE DIRECTOR

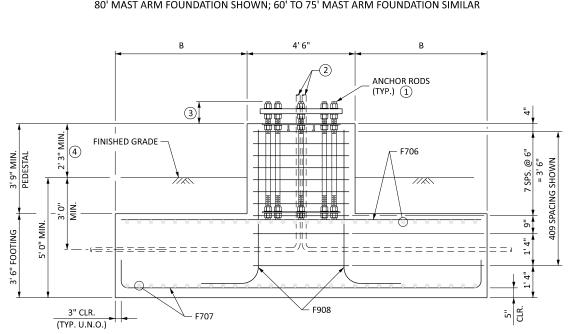
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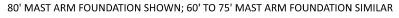
STATE PROJECT NO. 2102-77 (TH 29)

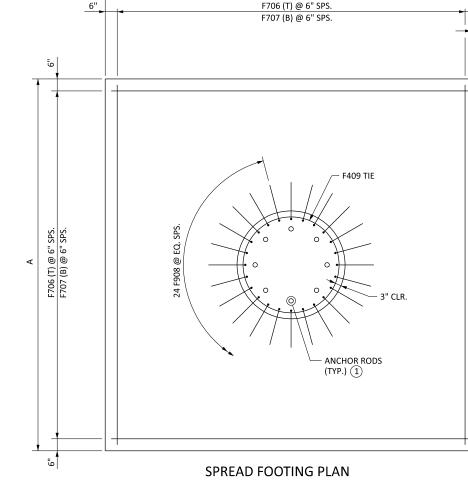
SPREAD FOOTING FOR 60' TO 80' MAST ARMS

POLE FOUNDATION TYPE TS









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SPREAD FOOTING FOUNDATION DATA								
POLE TYPE	MAST ARM LENGTH	SPREAD F		IENSIONS				
	LENGTH	А	В	с				
TS60	60' 0"	12' 6"	4' 0"	12' 0"				
TS65	65' 0"	13' 0"	4' 3"	12' 6"				
TS70	70' 0"	14' 0"	4' 9"	13' 6"				
TS75	75' 0"	15' 0"	5' 3"	14' 6"				
TS80	80' 0"	15' 6"	5' 6"	15' 0"				

	SPREAD FOOTING REINFORCEMENT											
				N	AAST A	RM LENGT	н					
BAR		60'		65'		70'		75'	80'		SHAPE	LOCATION
	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH		
F706	48	12' 0"	50	12' 6"	54	13' 6"	58	14' 6"	60	15' 0"		FOOTING TOP
F707	48	14' 4"	50	14' 10"	54	15' 10"	58	16' 10"	60	17' 4"		FOOTING BOTTOM
F908	24	8' 1"	24	8' 1"	24	8' 1"	24	8' 1"	24	8' 1"	L	PEDESTAL VERTICAL
F409	10	14' 4"	10	14' 4"	10	14' 4"	10	14' 4"	10	14' 4"	0	PEDESTAL TIE

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### **GEOTECHNICAL PARAMETERS:**

CONTACT MnDOT FOUNDATIONS UNIT FOR DETERMINATION OF SUBSURFACE INVESTIGATION REQUIREMENTS.

THE FOUNDATION DIMENSIONS SHOWN ON THIS SHEET ARE DESIGNED ASSUMING THE WATER TABLE IS BELOW THE BOTTOM OF FOOTING ELEVATION OR LOWER AND THE IN-SITU SOIL PROPERTIES MEET OR EXCEED THE FOLLOWING MINIMUM VALUES:

SANDY SOILS UNIT WEIGHT = 125 PCF FRICTION ANGLE = 30°

6"

3" CLR. (TYP.)

> CLAY SOILS UNIT WEIGHT = 125±10 PCF COHESION = 1000 PSF FRICTION ANGLE = 0°

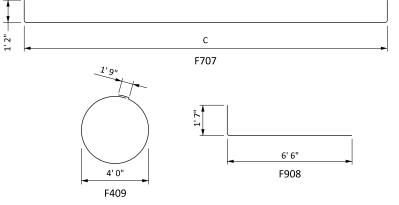
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SPREAD FOOTINGS ARE DESIGNED BASED ON AN ALLOWABLE BEARING PRESSURE OF 2.50 KSF.

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### BAR BENDING DIAGRAMS

BENT BAR DIMENSIONS GIVEN ARE OUT-TO-OUT. DETERMINE ACTUAL BAR LENGTHS BASED ON THE DETAIL DIMENSIONS SHOWN IN THE BAR BENDING DIAGRAMS.



### NOTES:

FURNISH AND INSTALL PREFORMED JOINT FILLER IN ACCORDANCE WITH SPEC. 3702 BETWEEN THE FOUNDATION AND SIDEWALK OR OTHER CONCRETE AREAS. THEN SEAL THE JOINT BETWEEN THE FOUNDATION AND SIDEWALK OR CONCRETE AREA WITH SILICONE SEALANT IN ACCORDANCE WITH SPEC 3722.

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PROVIDE ¾" CHAMFER ON THE EXPOSED TOP EDGE OF THE FOUNDATION.

EXCAVATE, BACKFILL, AND COMPACT AROUND THE FOUNDATION IN ACCORDANCE WITH SPEC. 2451.

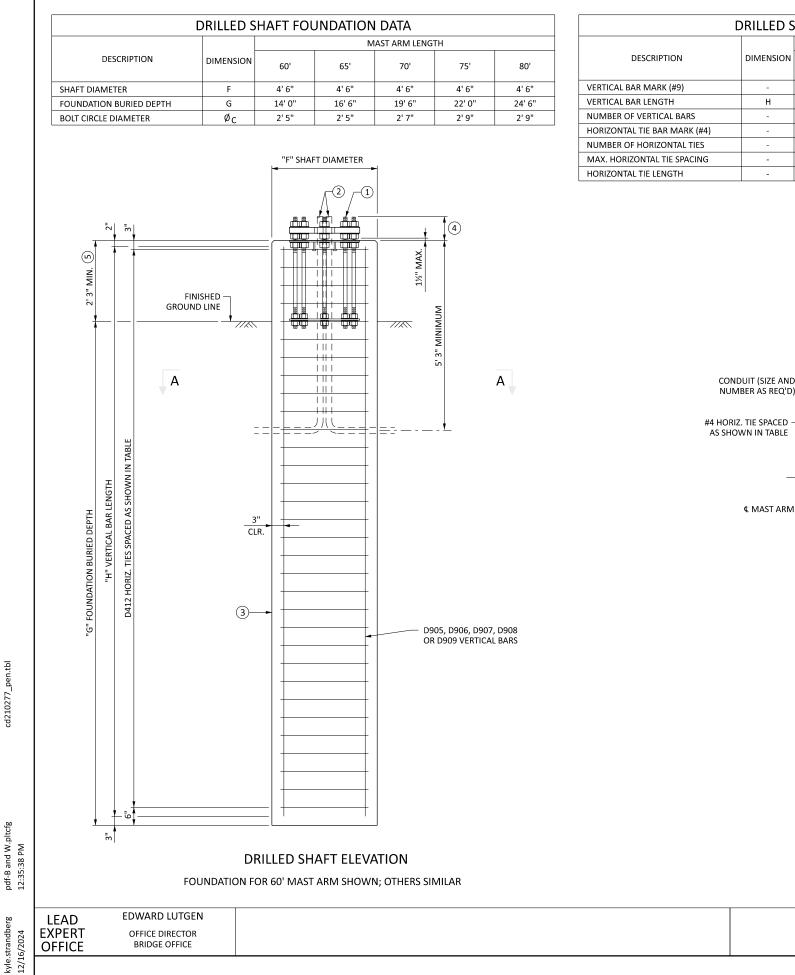
POSITION FOUNDATION CONDUITS INSIDE THE ANCHOR ROD ASSEMBLY. CAP ENDS UNTIL CABLES ARE INSTALLED.

ALLOW THE FOUNDATION TO CURE FOR AT LEAST 7 DAYS AFTER CONCRETE POURING OPERATIONS BEFORE INSTALLING POLES.

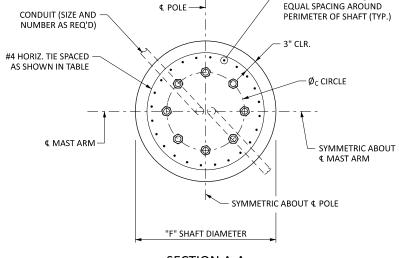
PROVIDE GRADE 60 DEFORMED BILLET REINFORCEMENT BARS IN ACCORDANCE WITH AASHTO M31 GRADE 60, SPEC. 2471, AND SPEC. 3301.

- (1) SEE STANDARD PLATE 8125 FOR ANCHOR ROD ASSEMBLY DETAILS.
- (2) SEE CONDUIT DETAIL ON SHEET 5 OF 5.
- (3) SEE ANCHOR ROD PLACEMENT DETAIL ON SHEET 5 OF 5.
- (4) INCREASE FOUNDATION PROJECTION AS REQUIRED TO PROVIDE A VERTICAL CLEARANCE FROM THE BOTTOM OF ALL SIGNS AND SIGNAL HEADS (INCLUDING BACKGROUND SHIELDS) TO THE PAVEMENT OF NOT LESS THAN 17.50 FEET NOR MORE THAN 19.00 FEET. INCREASE PEDESTAL LENGTH TO PROVIDE THE MINIMUM FOOTING BURIED DEPTH FOR FROST PROTECTION. INCREASE VERTICAL BAR LENGTH TO PROVIDE THE INDICATED COVER.

APPROVED: 02-21-2024 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER		ANDA PLAN 297.8		3 OF 5
	SHEET NO.	38	OF	120	SHEETS



DRILLED SHAFT REINFORCEMENT									
MAST ARM LENGTH									
DIMENSION	60'	65'	70'	75'	80'				
-	D905	D906	D907	D908	D909				
н	15' 10"	18' 4"	21' 4"	23' 10"	26' 4"				
-	24	24	24	24	24				
-	D412	D412	D412	D412	D412				
-	32	37	43	48	53				
-	6"	6"	6"	6"	6"				
-	14' 4"	14' 4"	14' 4"	14' 4"	14' 4"				
	DIMENSION	DIMENSION         60'           -         D905           H         15' 10"           -         24           -         D412           -         32           -         6"	DIMENSION         60'         65'           -         D905         D906           H         15' 10"         18' 4"           -         24         24           -         D412         D412           -         32         37           -         6"         6"	DIMENSION         60'         65'         70'           -         D905         D906         D907           H         15' 10''         18' 4''         21' 4''           -         24         24         24           -         D412         D412         D412           -         32         37         43           -         6''         6''         6''	DIMENSION         60'         65'         70'         75'           -         D905         D906         D907         D908           H         15' 10"         18' 4"         21' 4"         23' 10"           -         24         24         24         24           -         D412         D412         D412         D412           -         32         37         43         48           -         6"         6"         6"         6"				



#9 VERTICAL REINF. @

SECTION A-A

STATE PROJECT NO. 2102-77 (TH 29)

POLE FOUNDATION TYPE TS

DRILLED SHAFT FOUNDATIONS FOR 60' TO 80' MAST ARMS

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### **GEOTECHNICAL PARAMETERS:**

CONTACT MnDOT FOUNDATIONS UNIT FOR DETERMINATION OF SUBSURFACE INVESTIGATION REQUIREMENTS.

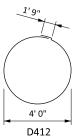
THE FOUNDATION DIMENSIONS SHOWN ON THIS SHEET ARE DESIGNED ASSUMING THE WATER TABLE IS 1.5' BELOW GRADE OR LOWER AND THE IN-SITU SOIL PROPERTIES MEET OR EXCEED THE FOLLOWING MINIMUM VALUES:

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### BAR BENDING DIAGRAMS

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### NOTES:

COLD CONCRETE CONSTRUCTION JOINTS ARE NOT PERMITTED FOR DRILLED SHAFTS.

GALVANIZE STEEL COMPONENTS IN ACCORDANCE WITH SPEC. 3394.

FURNISH AND INSTALL PREFORMED JOINT FILLER IN ACCORDANCE WITH SPEC. 3702 BETWEEN THE FOUNDATION AND SIDEWALK OR OTHER CONCRETE AREAS. THEN SEAL THE JOINT BETWEEN THE FOUNDATION AND SIDEWALK OR CONCRETE AREA WITH SILICONE SEALANT IN ACCORDANCE WITH SPEC 3722.

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PROVIDE ¾" CHAMFER ON THE EXPOSED TOP EDGE OF THE FOUNDATION.

EXCAVATE, BACKFILL, AND COMPACT AROUND THE FOUNDATION IN ACCORDANCE WITH SPEC. 2451.

POSITION FOUNDATION CONDUITS INSIDE THE ANCHOR ROD ASSEMBLY. CAP ENDS UNTIL CABLES ARE INSTALLED.

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(1) SEE STANDARD PLATE 8125 FOR ANCHOR ROD ASSEMBLY DETAILS.

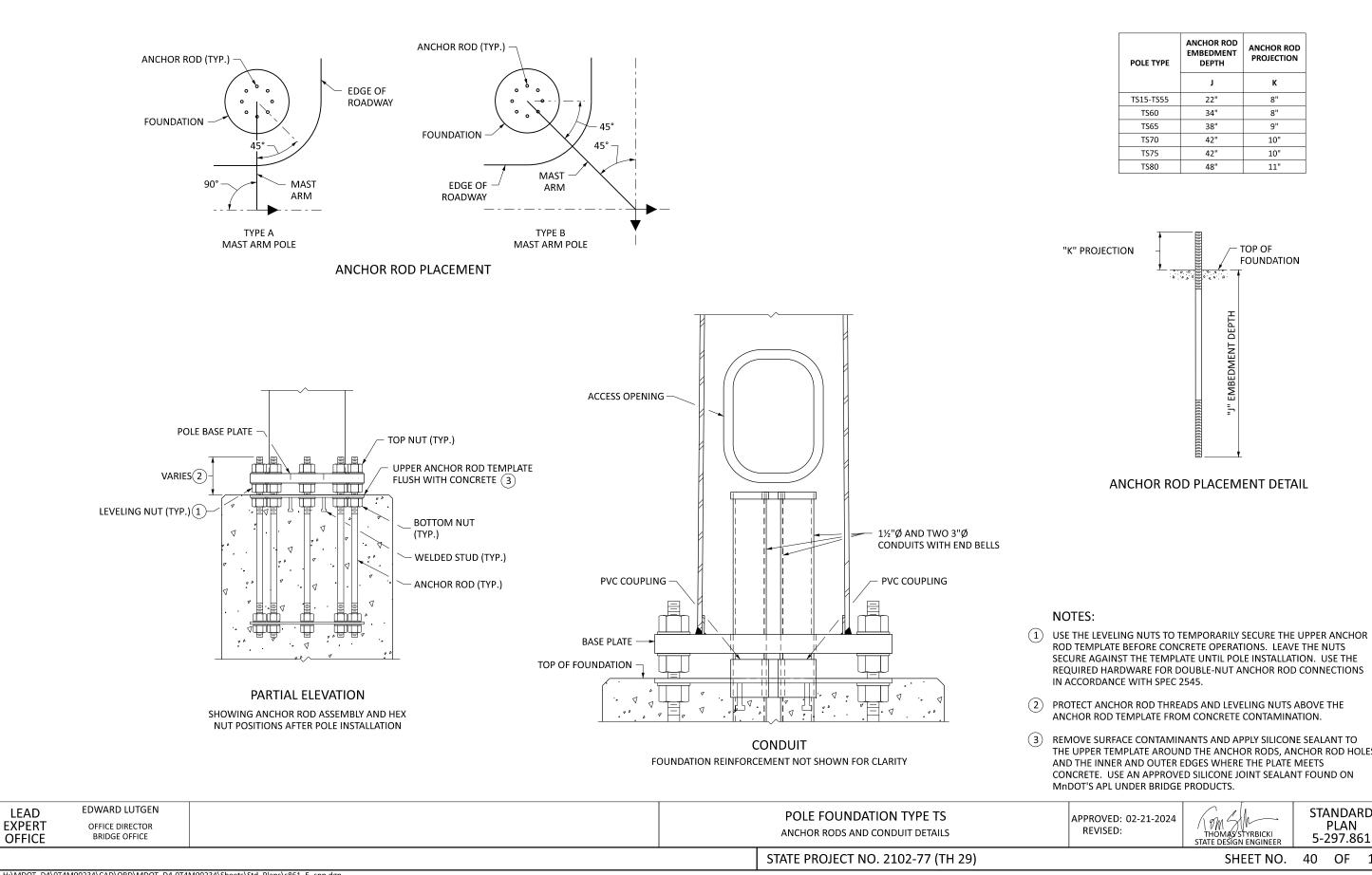
(2) SEE CONDUIT DETAIL ON SHEET 5 OF 5.

(3) EXCAVATE TO NEAT LINES AND PLACE CONCRETE AGAINST UNDISTURBED SOIL.

SEE ANCHOR ROD PLACEMENT DETAIL ON SHEET 5 OF 5.

INCREASE FOUNDATION PROJECTION AS REQUIRED TO PROVIDE A VERTICAL CLEARANCE FROM THE BOTTOM OF ALL SIGNS AND SIGNAL HEADS (INCLUDING BACKGROUND SHIELDS) TO THE PAVEMENT OF NOT LESS THAN 17.50' NOR MORE THAN 19.00'. INCREASE OVERALL FOUNDATION LENGTH TO PROVIDE THE MINIMUM FOUNDATION BURIED DEPTH. INCREASE LONGITUDINAL BAR LENGTH TO PROVIDE THE INDICATED COVER.

APPROVED: 02-21-2024 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	•	ANDA PLAN 297.8		4 OF 5
	SHEET NO.	39	OF	120	SHEETS



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POLE TYPE	ANCHOR ROD EMBEDMENT DEPTH	ANCHOR ROD PROJECTION
	J	к
TS15-TS55	22"	8"
TS60	34"	8"
TS65	38"	9"
TS70	42"	10"
TS75	42"	10"
TS80	48"	11"

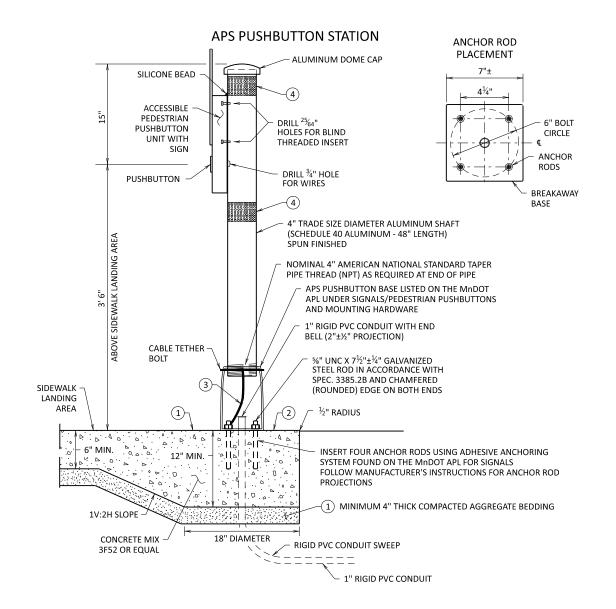
ROD TEMPLATE BEFORE CONCRETE OPERATIONS. LEAVE THE NUTS SECURE AGAINST THE TEMPLATE UNTIL POLE INSTALLATION. USE THE REQUIRED HARDWARE FOR DOUBLE-NUT ANCHOR ROD CONNECTIONS

ANCHOR ROD TEMPLATE FROM CONCRETE CONTAMINATION.

THE UPPER TEMPLATE AROUND THE ANCHOR RODS, ANCHOR ROD HOLES, AND THE INNER AND OUTER EDGES WHERE THE PLATE MEETS CONCRETE. USE AN APPROVED SILICONE JOINT SEALANT FOUND ON

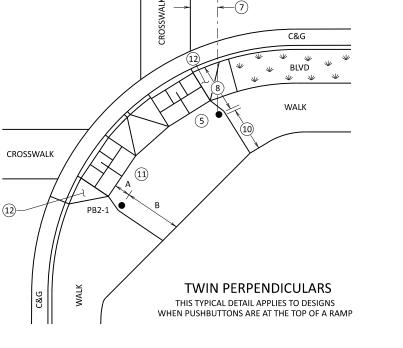
APPROVED: 02-21-2024 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER		ANDA PLAN 297.8		5 OF 5
	SHEET NO.	40	OF	120	SHEETS

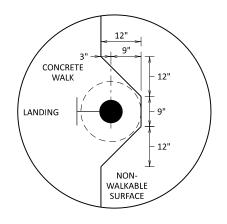
### APS PEDESTRIAN PUSHBUTTON LOCATION



### NOTES:

- 5 POSITION THE FACE OF THE PUSHBUTTON PARALLEL WITH THE OUTSIDE EDGE OF THE CROSSWALK.
- 6 CONSTRUCT A MINIMUM 4'x4' LANDING AREA ADJACENT TO EACH PUSHBUTTON, WITH A 2% MAXIMUM SLOPE IN ALL DIRECTIONS
- (7) POSITION PUSHBUTTONS WITHIN 5' OF THE OUTSIDE EDGE OF THE CROSSWALK. DISTANCE IS MEASURED PERPENDICULARLY FROM EXTENSION OF CROSSWALK.
- POSITION PUSHBUTTONS BETWEEN 1.5' AND 10' FROM THE BACK OF CURB OR EDGE OF ROADWAY, (8) MEASURED IN THE DIRECTION OF TRAVEL. STANDALONE PUSHBUTTON STATIONS SHOULD BE 4' MINIMUM FROM THE BACK OF CURB TO AVOID KNOCKDOWNS.
- (9) POSITION PUSHBUTTONS AT LEAST 10' APART (PUSHBUTTON FACE TO PUSHBUTTON FACE).
- (10) PROVIDE A MAINTENANCE ACCESS ROUTE (MAR) WHEREVER POSSIBLE FOR SNOW REMOVAL PURPOSES. A MAR REQUIRES A 6' MINIMUM CLEAR DISTANCE FOR SIDEWALKS (10' FOR SHARED-USE PATHS) BETWEEN A PUSHBUTTON AND ANY OBSTRUCTIONS, INCLUDING BUILDINGS, V-CURB, ELECTRICAL FOUNDATIONS, SIGNAL CABINETS, OR ANOTHER PUSHBUTTON.
- (1) POSITION PUSHBUTTON 2' MINIMUM FROM CURB RAMP GRADE BREAK AND BACK OF SIDEWALK.
- (12) CONSTRUCT AN 8%-10% WALKABLE CONCRETE FLARE WHEN THE PUSHBUTTON IS OFFSET FROM THE EDGE OF THE CROSSWALK SO USERS DEPARTING FROM THE PUSHBUTTON WILL TRAVERSE A CONCRETE SURFACE.





6" WIDE

V-CURB

(7)

18'

### PUSHBUTTON STATION FOUNDATION FORMING

ACCESSIBLE PEDESTRIAN SIGNAL (APS) PUSHBUTTON STATION AND LOCATION

STATE PROJECT NO. 2102-77 (TH 29)

# NOTES:

MOUNT THE BUTTON SO THAT THE FACE IS PARALLEL WITH THE ASSOCIATED CROSSWALK. SCREW IN SHAFT TO A TIGHTENED POSITION BEFORE MOUNTING ACCESSIBLE PEDESTRIAN PUSHBUTTON UNIT TO THE SHAFT.

ORIENT THE BASE ACCESS OPENING DIRECTLY BELOW THE APS BUTTON.

PLUMB AND LEVEL APS PUSHBUTTON STATIONS, AND TIGHTEN ANCHOR RODS IN ACCORDANCE WITH CONTRACT DOCUMENTS.

FURNISH AND INSTALL BLIND THREADED INSERTS USING MANUFACTURER'S SPECIFIC INSERTION TOOL

USE APS <sup>1</sup>/<sub>4</sub>"-20 STAINLESS STEEL MOUNTING BOLTS. APPLY BRUSH-ON ANTI-SEIZE COMPOUND TO BOLTS BEFORE ASSEMBLY.

APPLY A BEAD OF 100% SILICONE SEALANT ALONG THE TOP OF THE PUSHBUTTON UNIT WHERE IT CONTACTS THE 4" SHAFT.

- 1) THE PUSHBUTTON STATION FOUNDATION IS MONOLITHIC (POURED AT ONE TIME) WITH THE SIDEWALK. PROVIDE A 1V:2H SLOPE GRADE WHERE THE 6" MINIMUM SIDEWALK DEPTH TRANSITIONS TO THE 12" MINIMUM FOUNDATION DEPTH. MAINTAIN THE COMPACTED AGGREGATE BEDDING AND THICKNESS USED FOR THE SIDEWALK THROUGHOUT THE SLOPE AND FOUNDATION GRADING PROVIDE 1V:2H SLOPE GRADING 360 DEGREES FOR THE TRANSITION FROM THE SIDEWALK TO THE FOUNDATION WHEN THE FOUNDATION IS NOT LOCATED NEAR EDGE OF SIDEWALK AND IS SURROUNDED BY CONCRETE WALK.
- 2 ENSURE CONCRETE CONTROL JOINTS AND EDGE OF CONCRETE WALK ARE A MINIMUM OF 9" FROM THE CENTER OF THE PUSHBUTTON FOUNDATION.
- FURNISH AND INSTALL THE MANUFACTURER-PROVIDED CABLE TETHER ASSEMBLY IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS
- 4) FURNISH AND INSTALL 3" WIDE TUBULAR DELINEATOR/MARKER SHEETING FROM MnDOT'S APL FOR SIGNING/SHEETING MATERIALS THAT MATCHES THE COLOR OF THE NEAREST EDGE LINE

JEFF PERKINS EXPERT ASSISTANT DIVISION DIRECTOR **OPERATIONS DIVISION** 

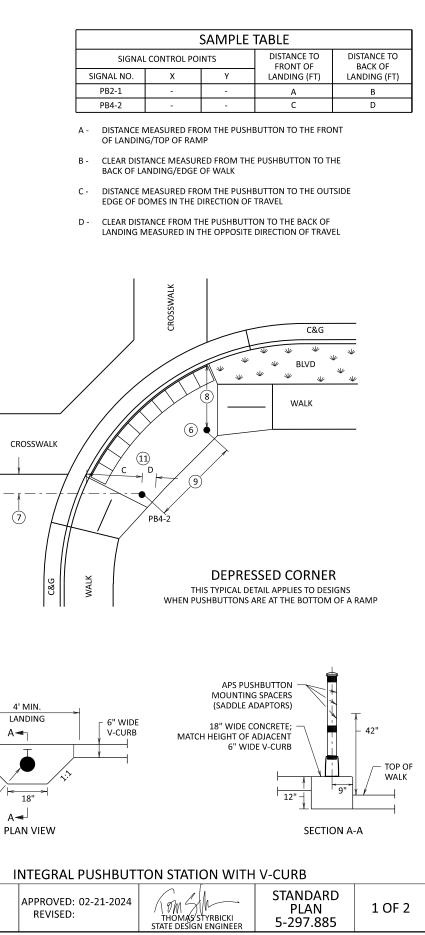
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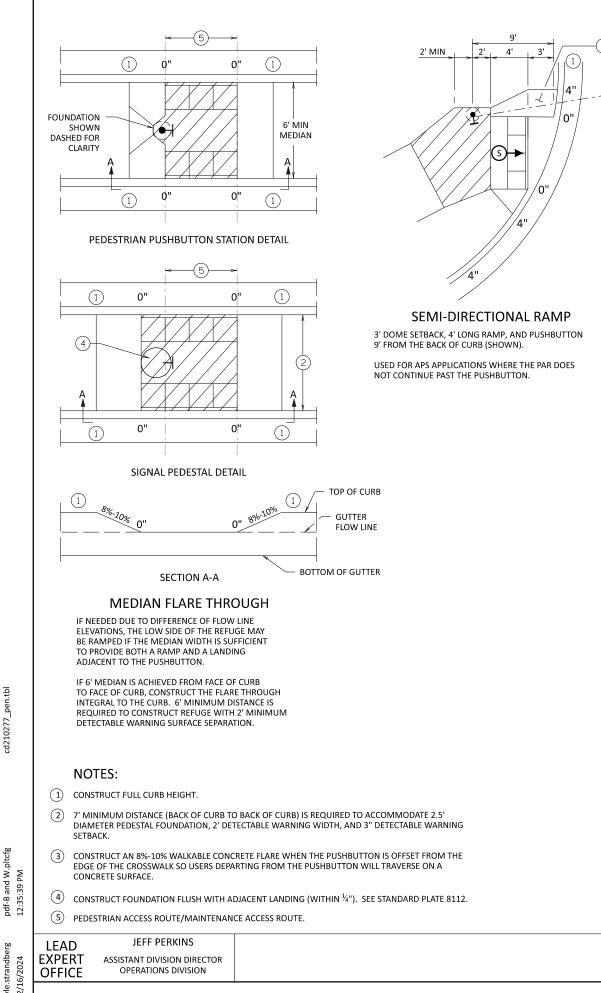
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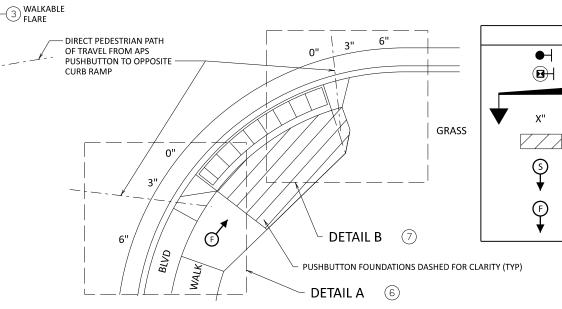


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SHEETS

SHEET NO.

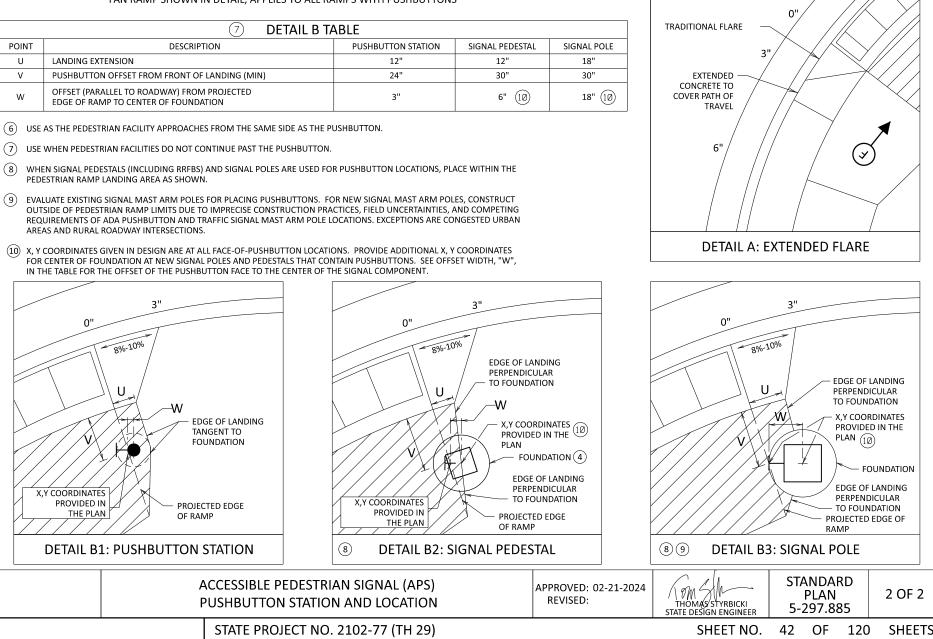




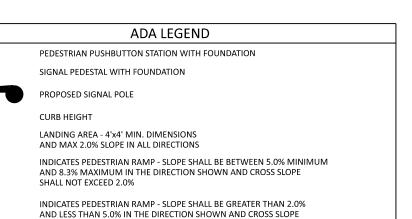
PUSHBUTTON LANDING AND EXTENDED WALKABLE FLARE REQUIREMENTS FAN RAMP SHOWN IN DETAIL, APPLIES TO ALL RAMPS WITH PUSHBUTTONS

	⑦ DETAIL B T	ABLE	
POINT	DESCRIPTION	PUSHBUTTON STATION	SIGNAL PEDESTAL
U	LANDING EXTENSION	12"	12"
V	PUSHBUTTON OFFSET FROM FRONT OF LANDING (MIN)	24"	30"
w	OFFSET (PARALLEL TO ROADWAY) FROM PROJECTED EDGE OF RAMP TO CENTER OF FOUNDATION	3"	6" (10)

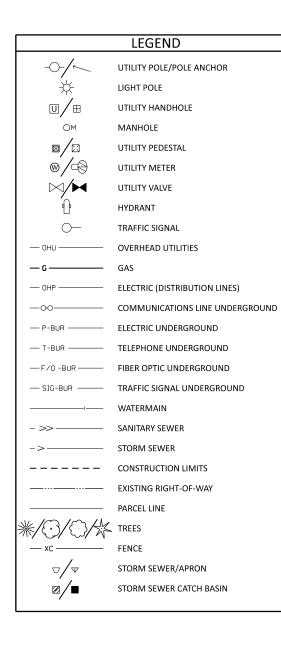
- PEDESTRIAN RAMP LANDING AREA AS SHOWN.
- (9) AREAS AND RURAL ROADWAY INTERSECTIONS
- IN THE TABLE FOR THE OFFSET OF THE PUSHBUTTON FACE TO THE CENTER OF THE SIGNAL COMPONENT.



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SHALL NOT EXCEED 2.0%



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UTILITY COMMUNICATIONS ELECTRIC, LIGHTING, AND WATERMAIN GAS SIGNALS STORM SEWER SANITARY SEWER

GENERAL NOTES:

ALL PRIVATE UTILITY WORK SHOWN ON THESE SHEETS SHALL BE DONE BY OTHERS UNLESS OTHERWISE NOTED.

SEE REMOVAL PLANS FOR WORK THAT SHALL BE COMPLETED BY THE CONTRACTOR.

ALL POWERLINES ARE DISTRIBUTION LINES, UNLESS OTHERWISE NOTED.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY 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".

THE CONTRACTOR IS ULTIMATELY RESPONSIBLE FOR ALL PRIVATE UTILITY RELOCATION COORDINATION.



3168 41st St S #2, Fargo (701) 556-5339 Email: Fargo@bolton-menk.com www.bolton-menk.com

REV.	ВҮ	DATE	BY ME OR UNDER MY DIRECT SUI	N, SPECIFICATION, OR REPORT WAS PREPARED PERVISION AND THAT I AM A DULY LICENSED R THE LAWS OF THE STATE OF MINNESOTA.
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			CHRIS DAHL	
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### THE FOLLOWING UTILITY COMPANIES ARE IMPACTED /ITH THIS PROJECT:

# **COMPANY/OWNERS**

CENTURYLINK (LUMEN), ARVIG COMMUNICATIONS SYSTEMS, CHARTER SPECTRUM MID-AMERICA, LLC GARDONVILLE COOPERATIVE TELEPHONE ASSOCIATION

ALEXANDRIA LIGHT AND POWER

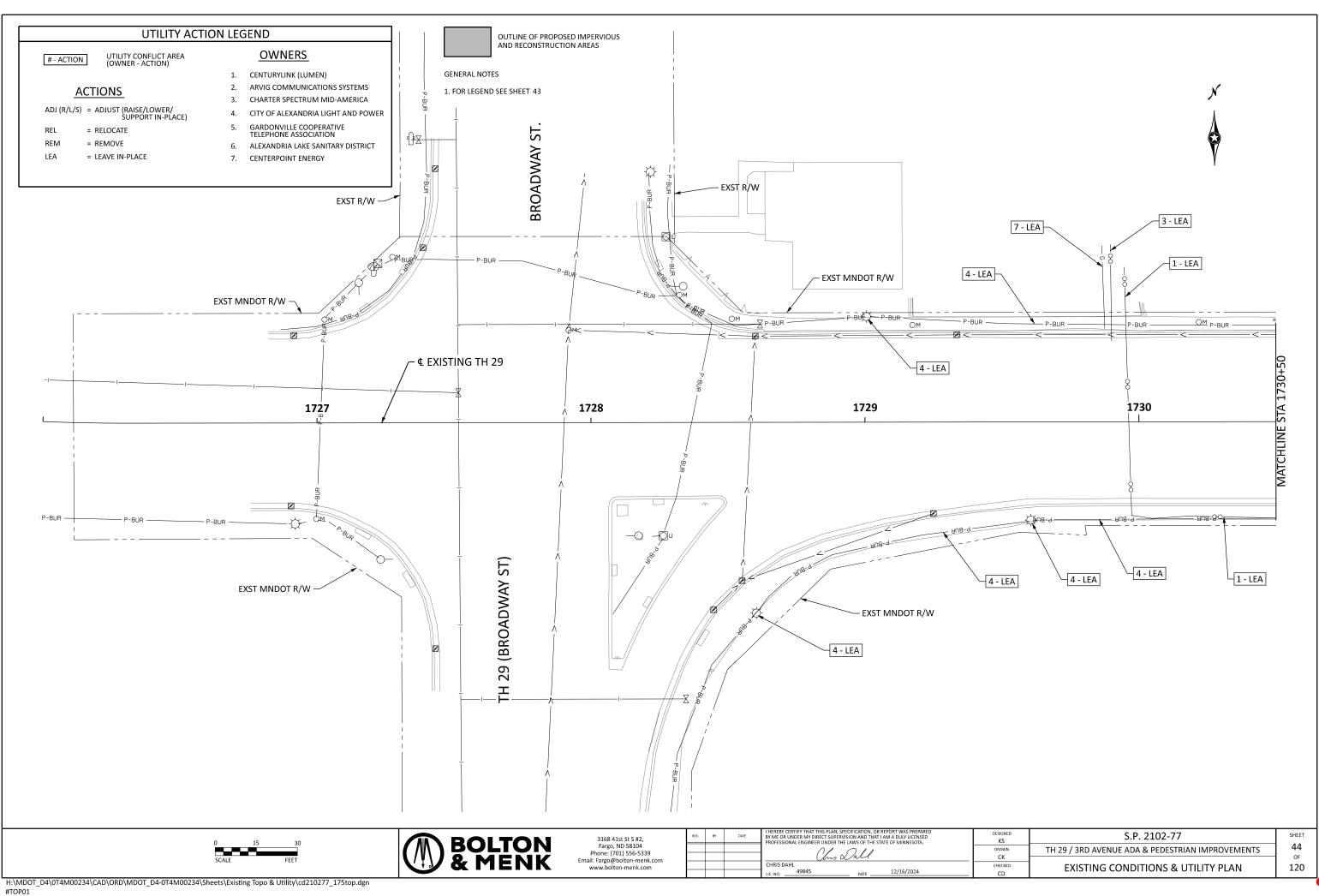
CENTERPOINT ENERGY MINNESOTA GAS

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ALEXANDRIA LAKES SANITARY DISTRICT

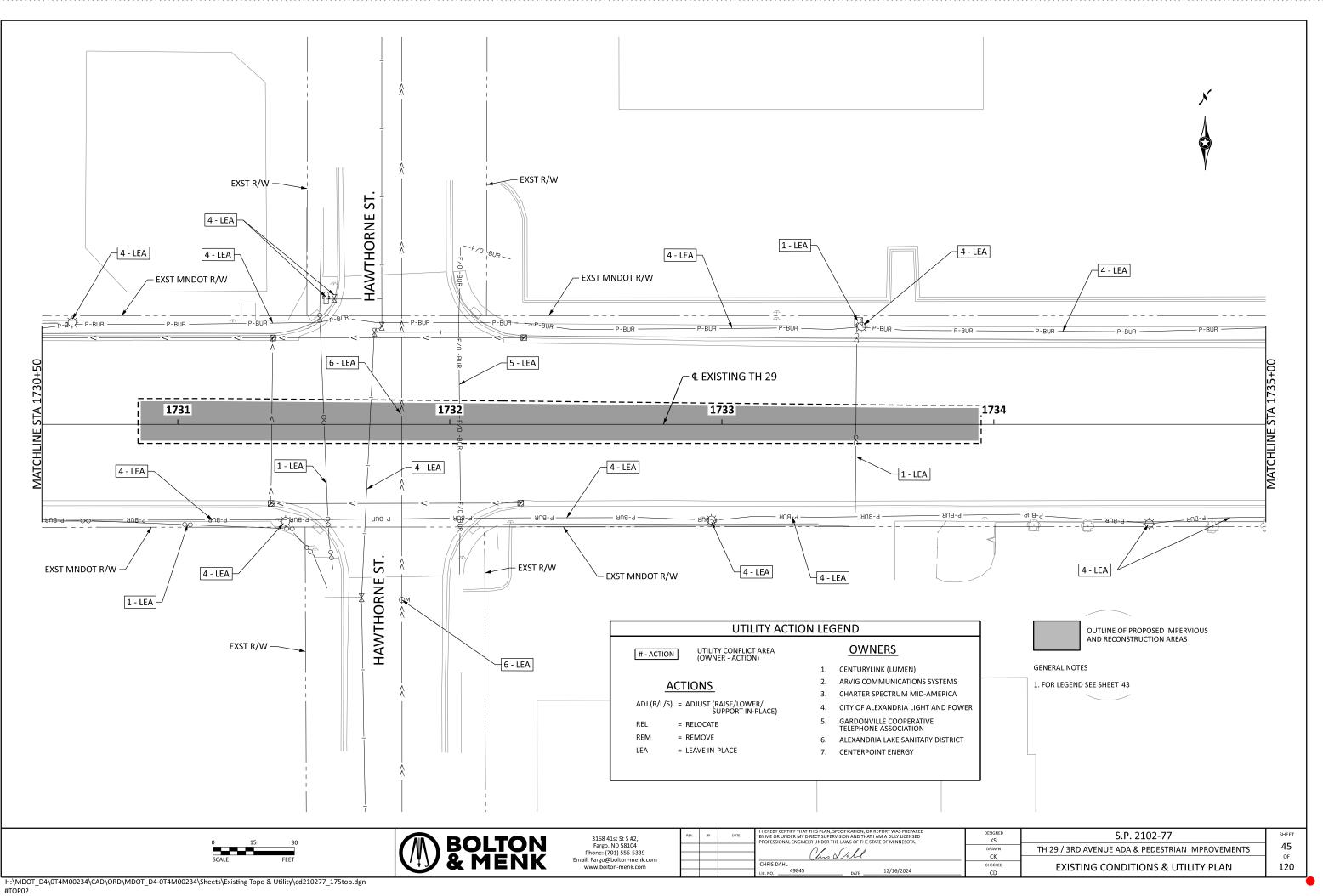
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	DRAWN	TH 29 / 3RD AVENUE ADA & PEDESTRIAN IMPROVEMENTS	43
_	CK CHECKED CD	EXISTING CONDITIONS & UTILITY PLAN	₀⊧ 120



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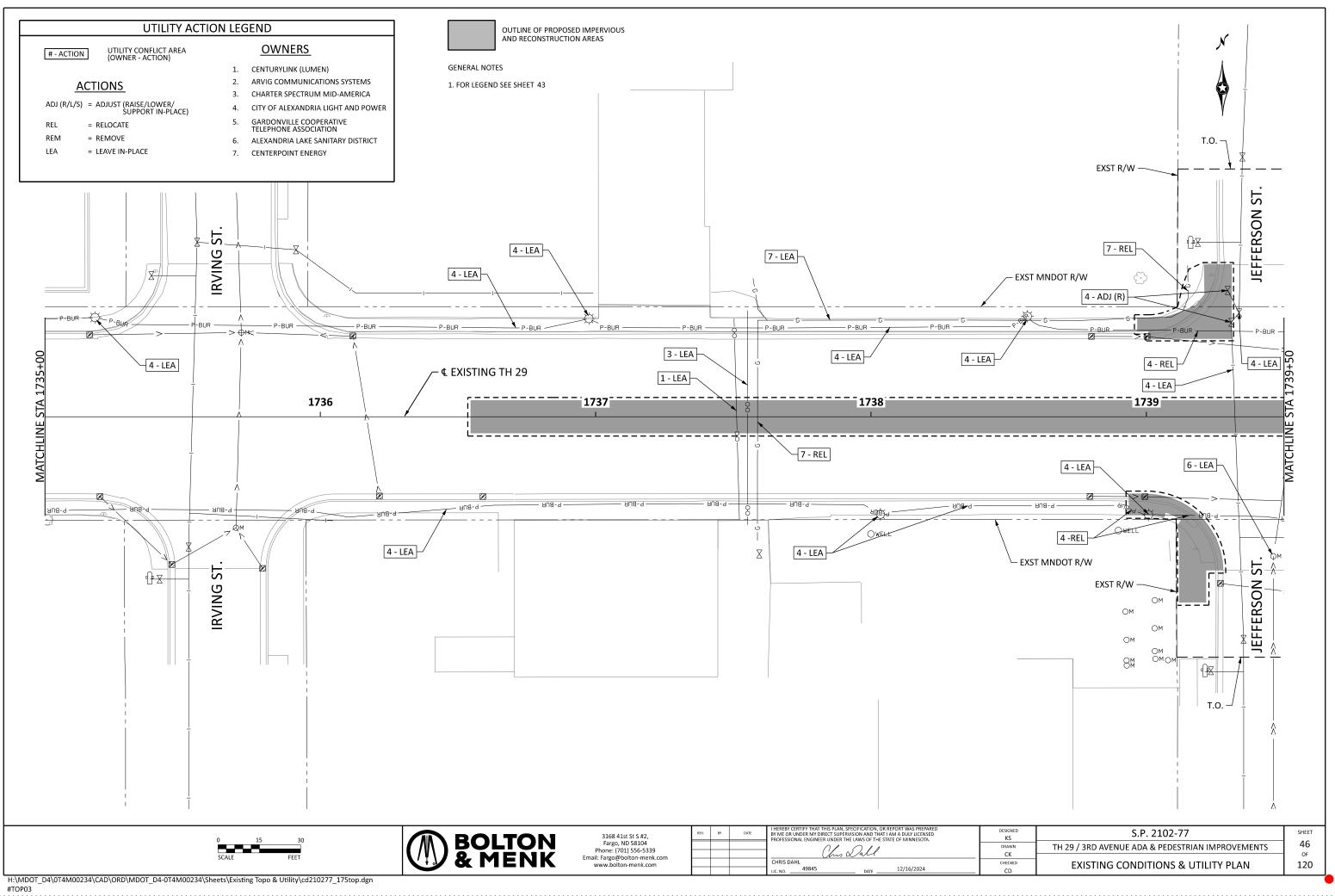


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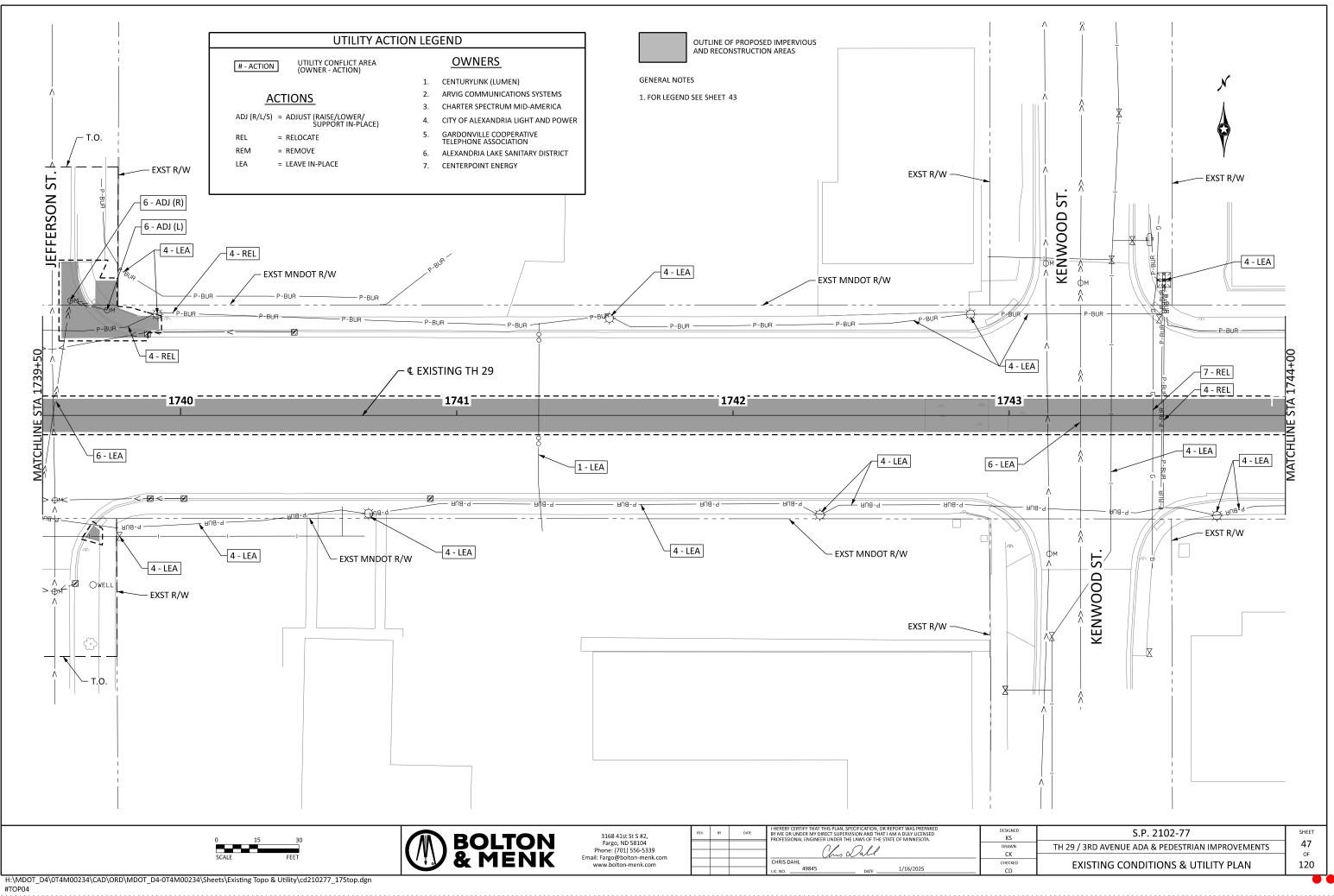
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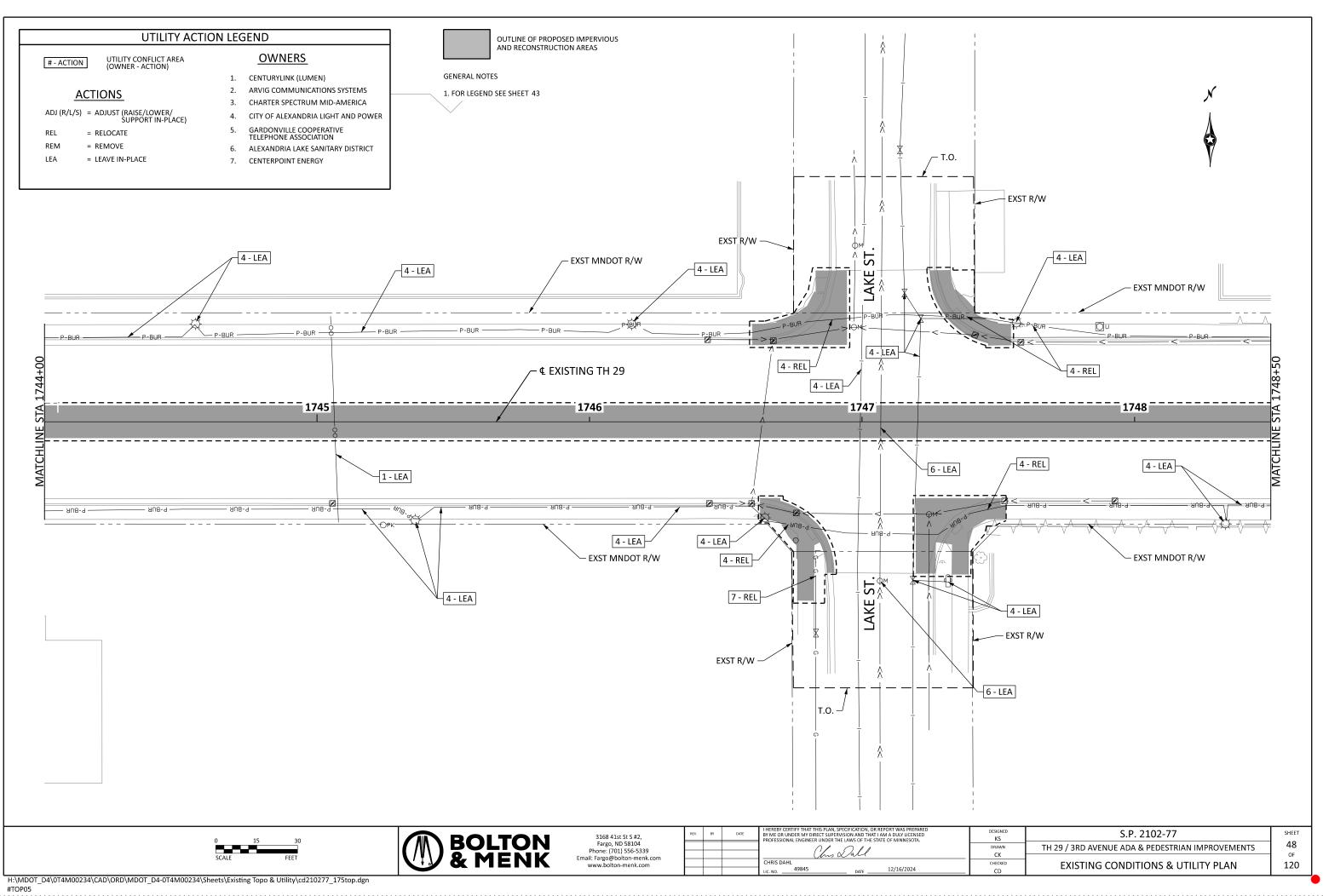
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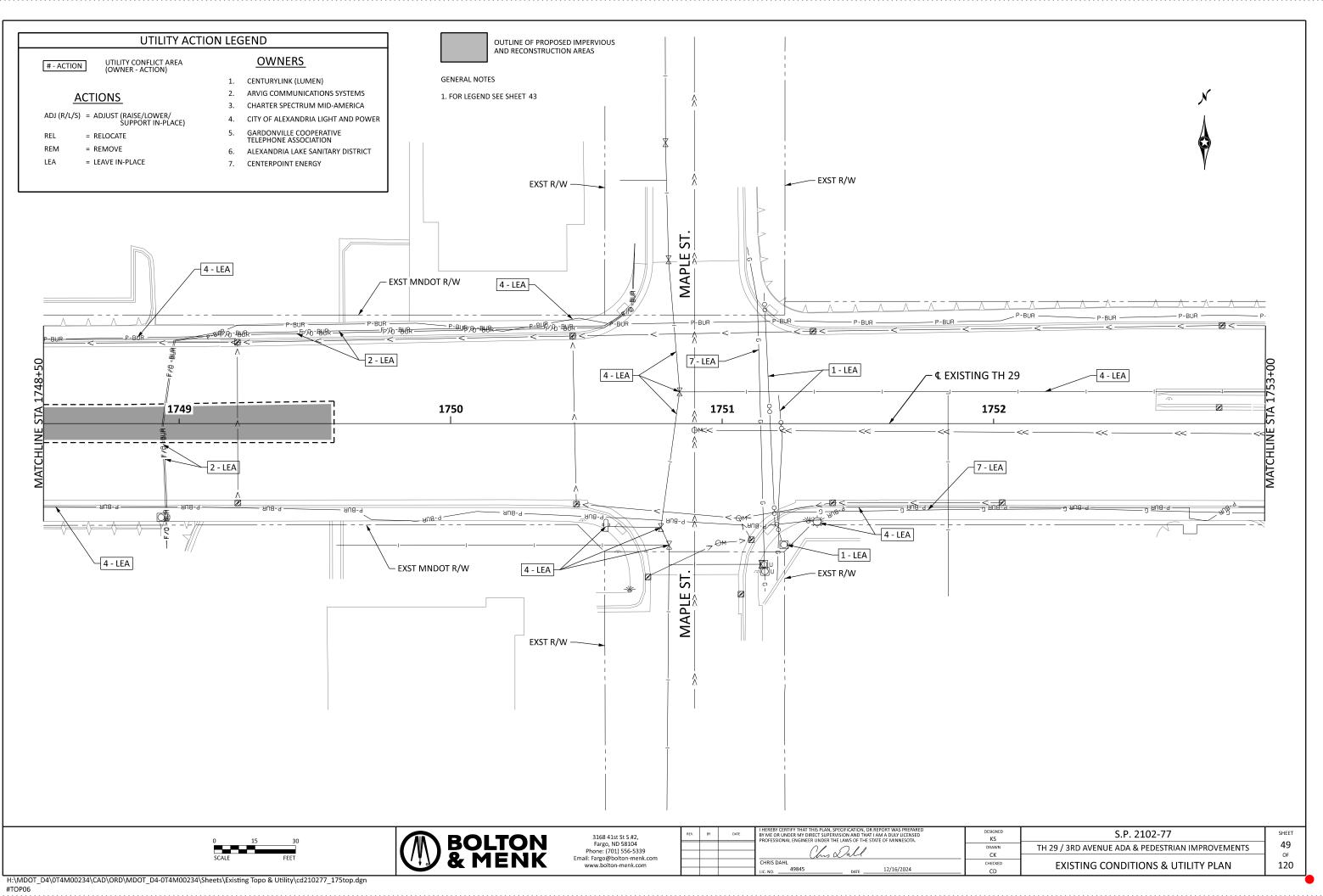
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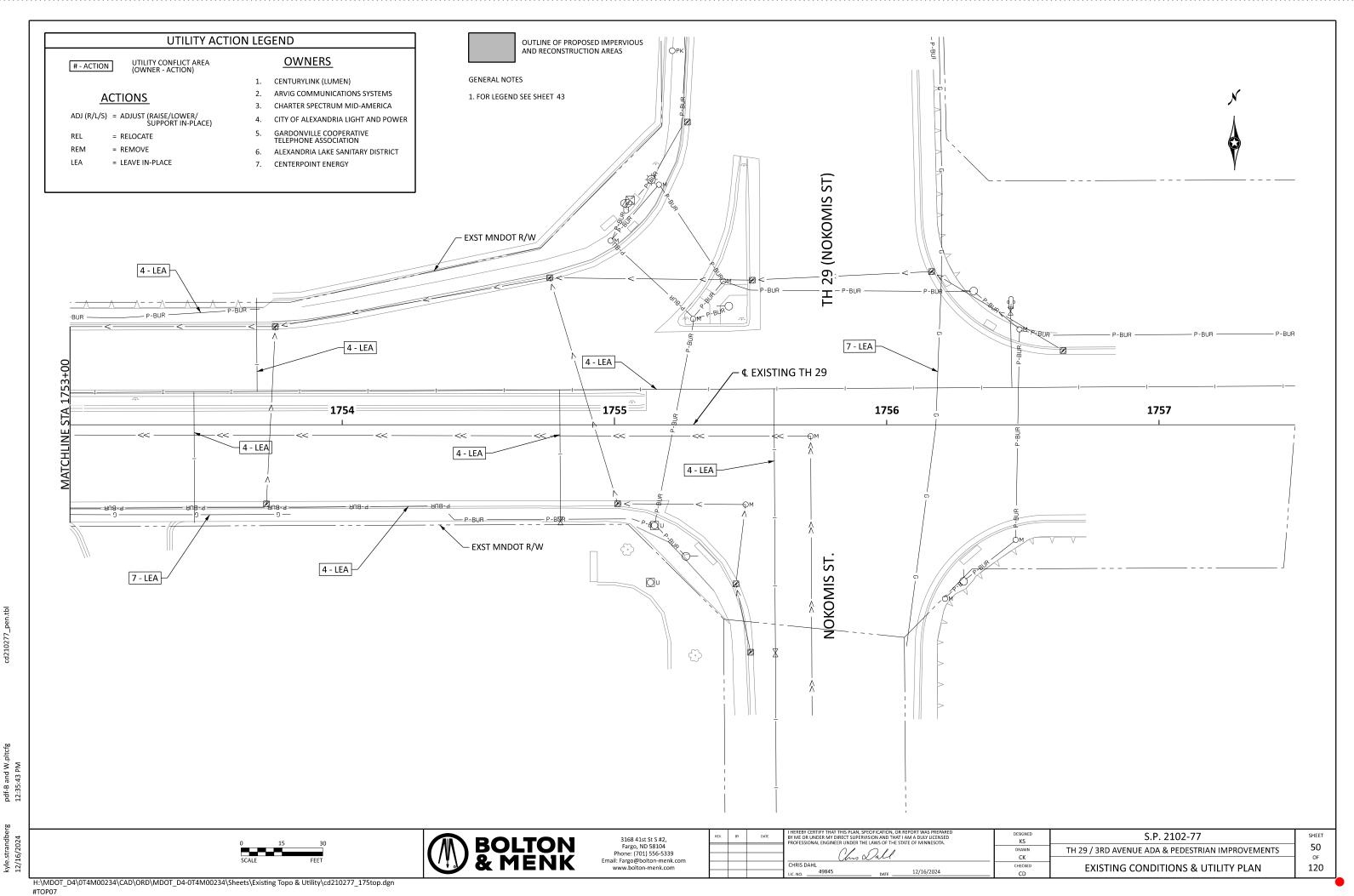
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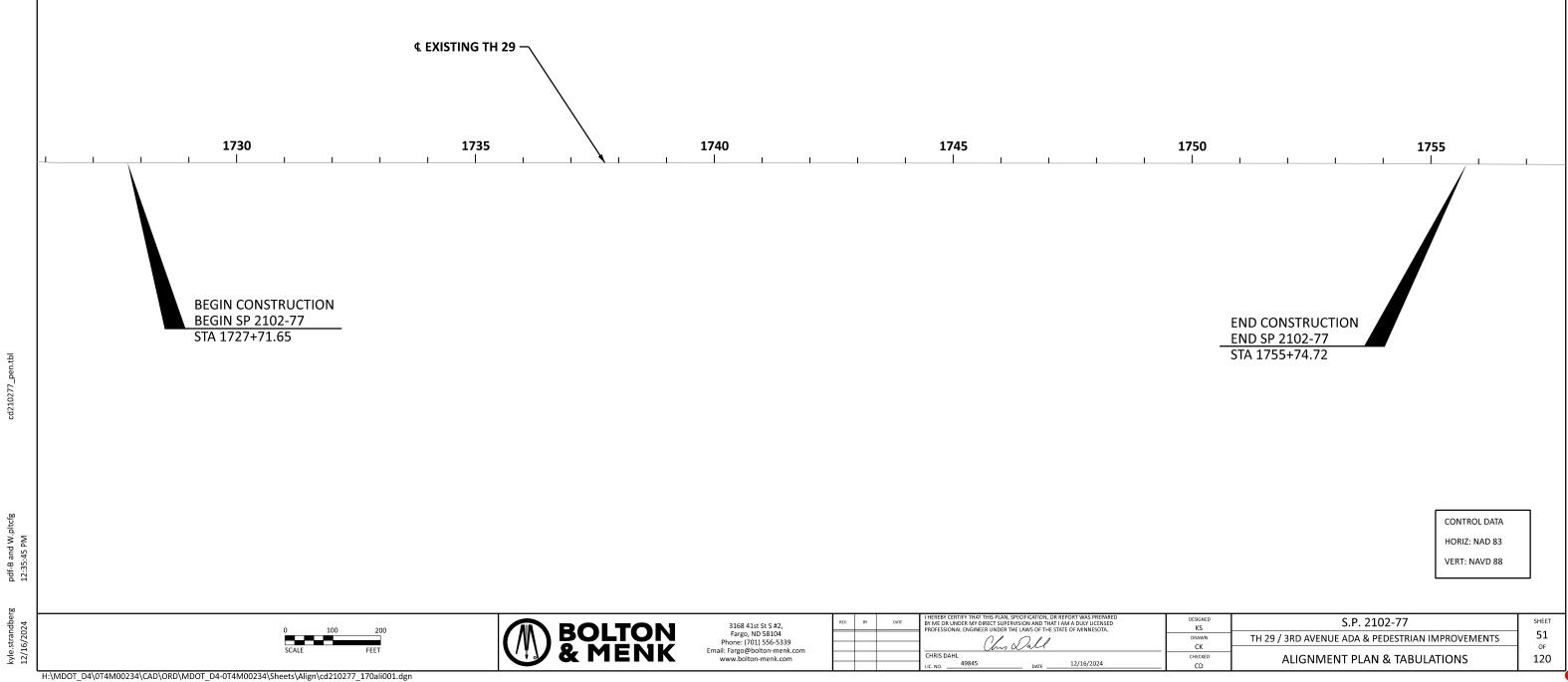
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POINT	STATION	DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORI	COORDINATES					
TYPE	STATION		SPIRA	L CURVE D	ATA		FACTING (V)	NORTHING (Y)	AZIMUTH				
		THETA	DEGREE	ST	LT	LS	EASTING (X)	NORTHING (1)					
				ALIGNME	NT: EXISTIN								
PT	172632.570 R1						671085.004	148338.914					
PI	173696.588 R1						672149.022	148338.2	89°57'43.2"				
PI	173696.588 R1						672149.022	148338.2	89°57'39.6"				
PI	174498.611 R1						672951.044	148337.661	89°57'39.6"				
PI	174498.611 R1						672951.044	148337.661	89°57'43.2"				
PI	175297.745 R1						673750.178	148337.125	89°57'43.2"				
PI	175297.745 R1						673750.178	148337.125	89°57'50.4"				
PI	176367.870 R1						674820.288	148331.407	89°57'50.4"				

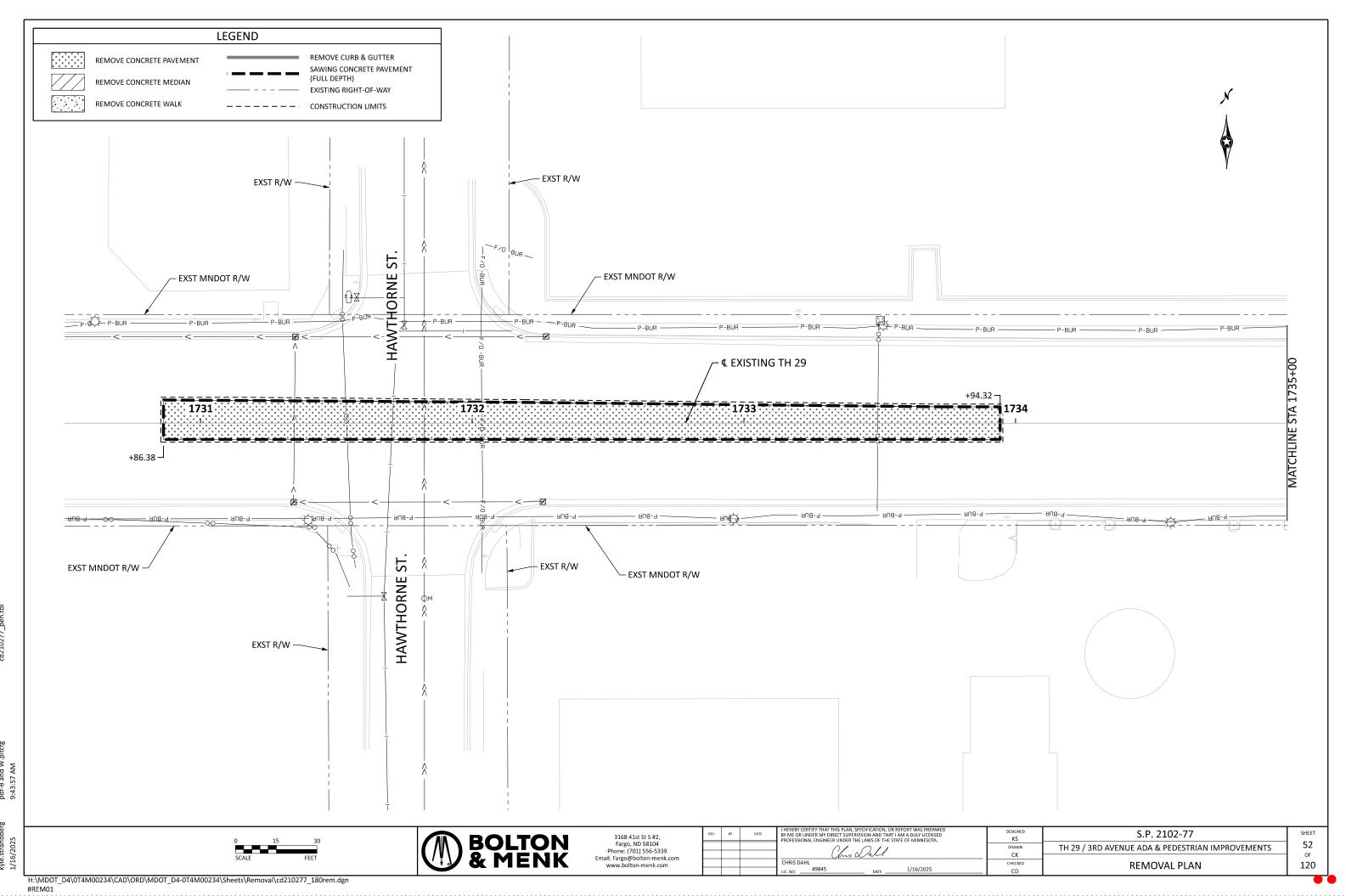


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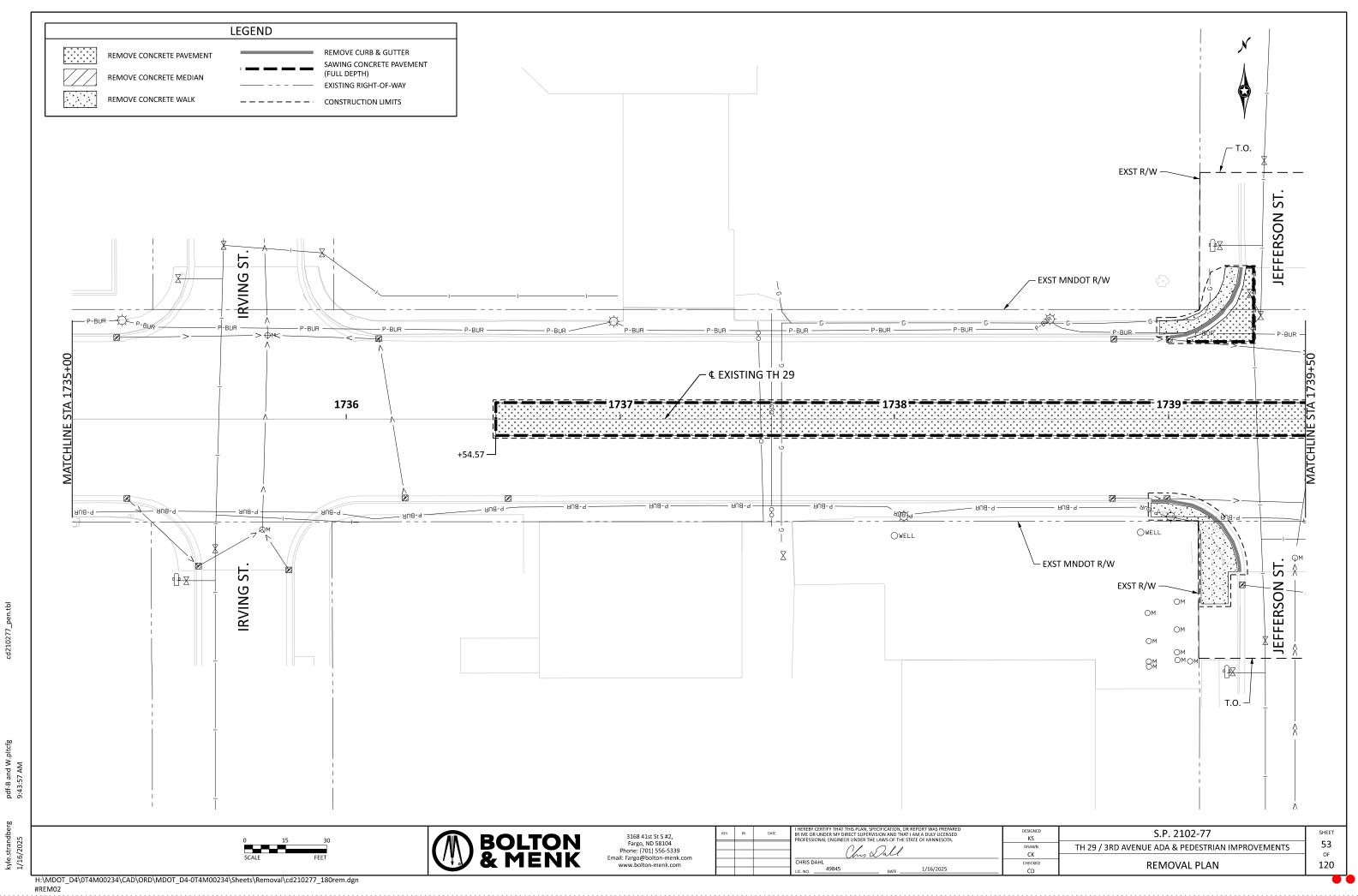


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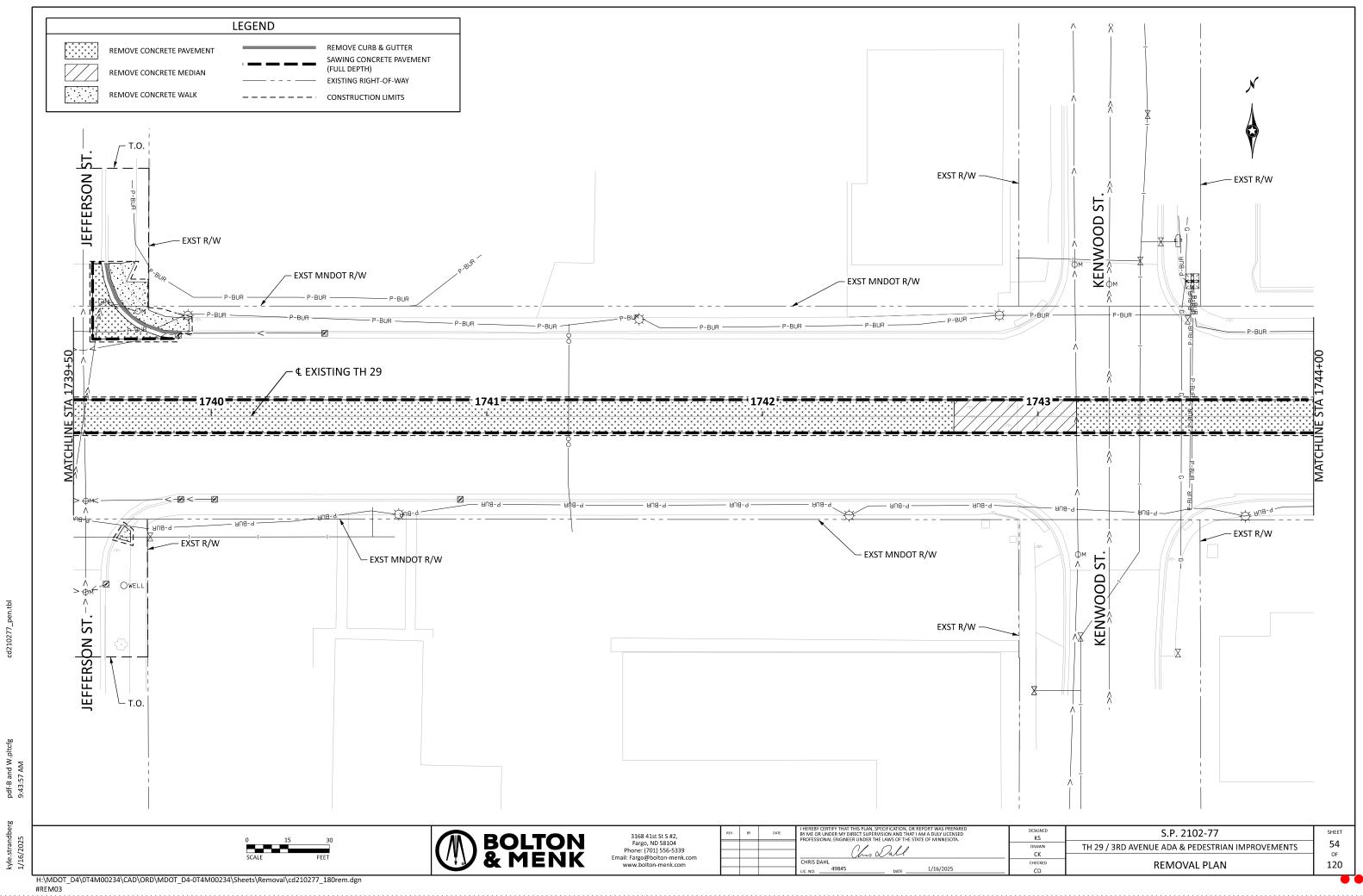
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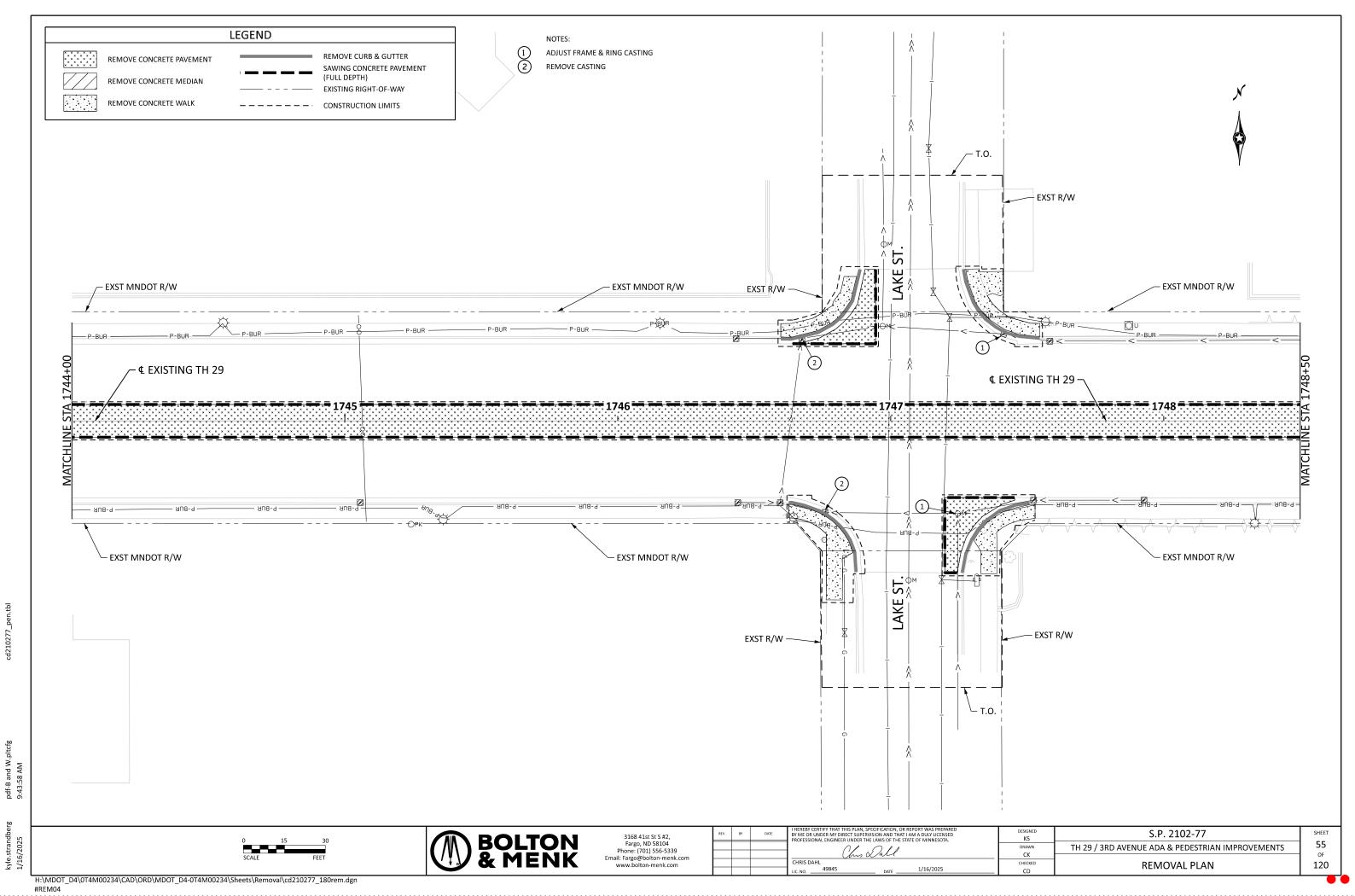
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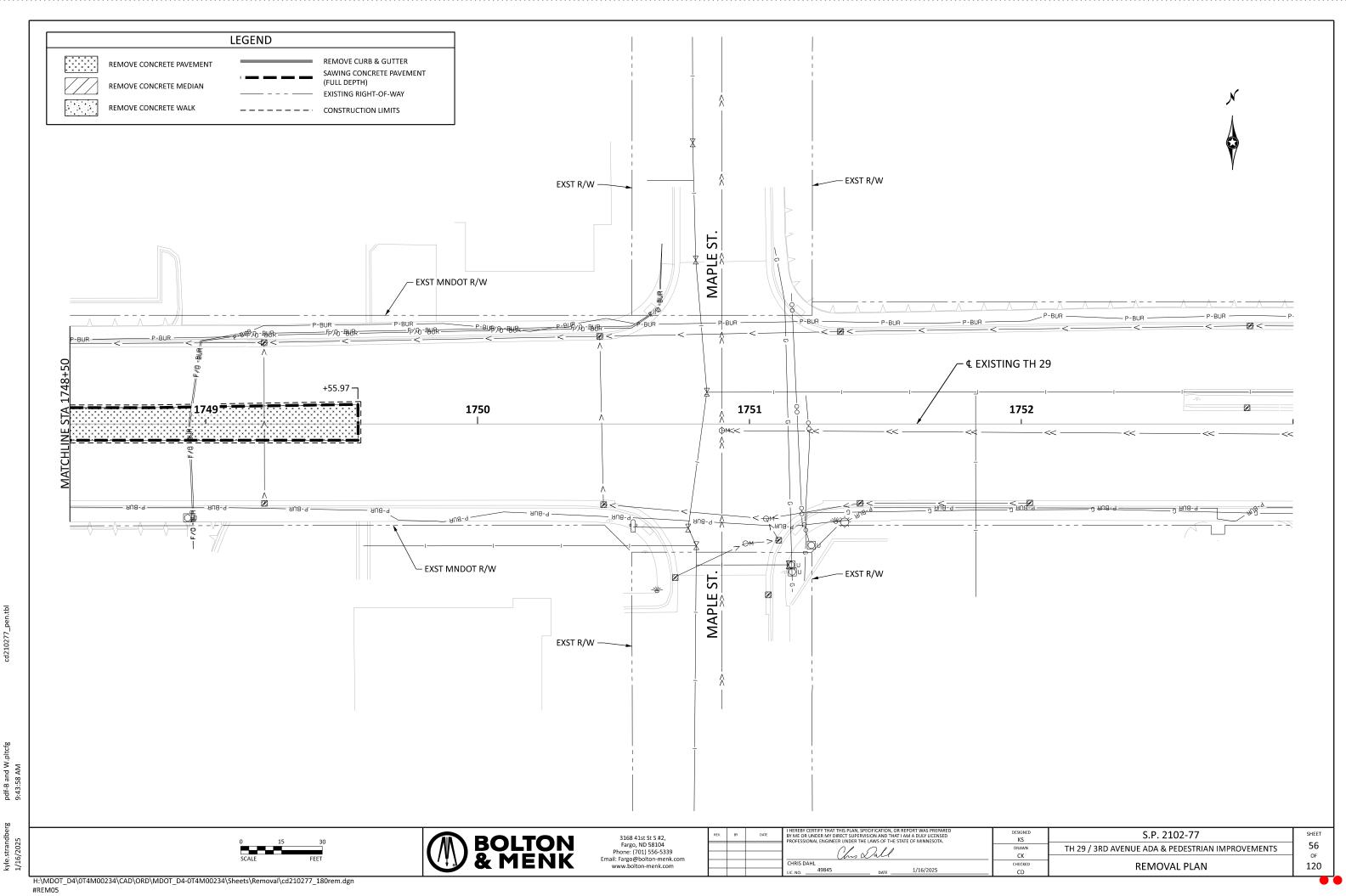
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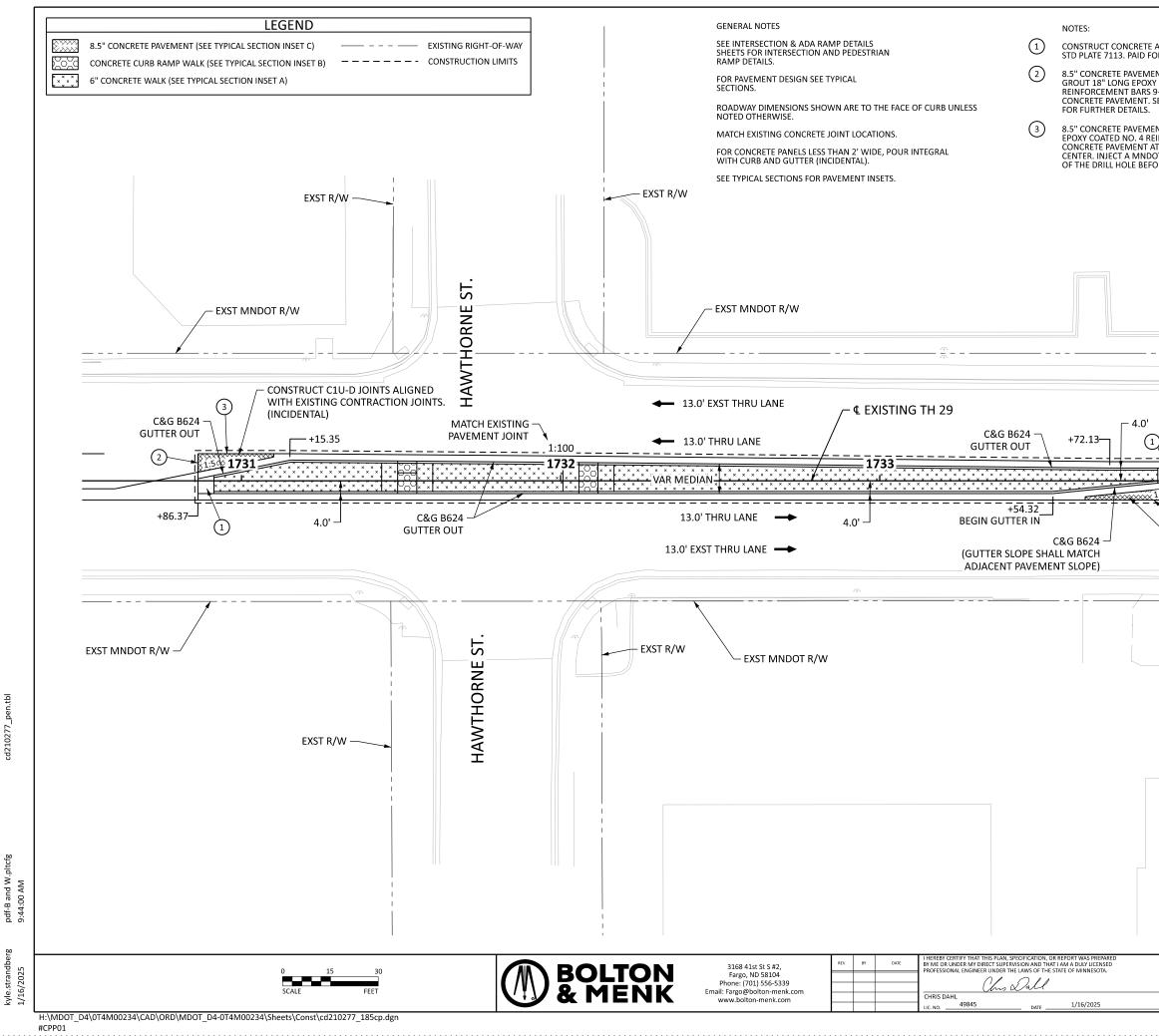
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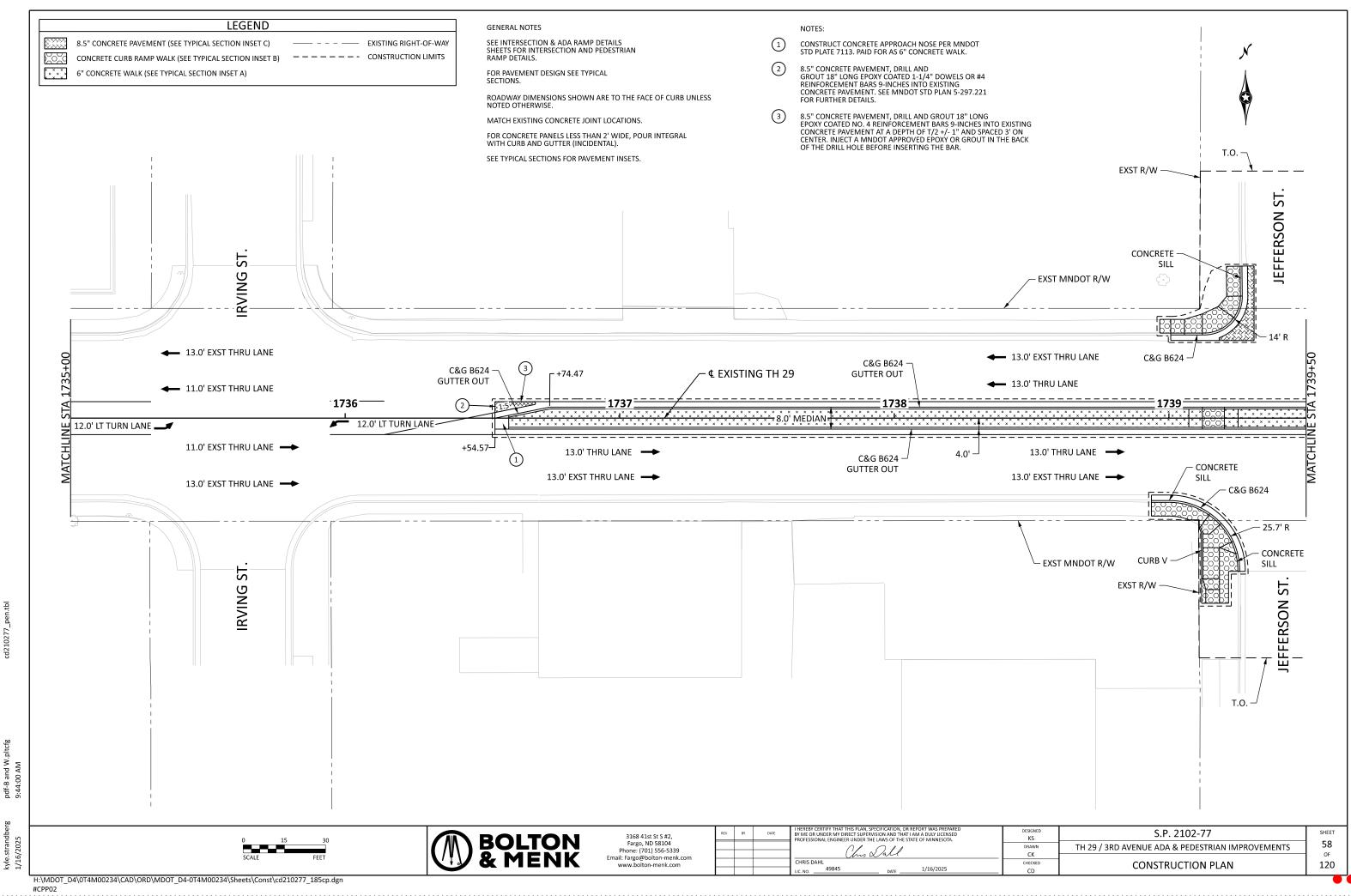
PROACH NOSE PE AS 6" CONCRETE	
r, drill and Oated 1-1/4" do Nches into exist	WELS OR #4
NCHES INTO EXIST MNDOT STD PLA	'ING IN 5-297.221
, DRILL AND GRO	
FORCEMENT BAR	/- 1" AND SPACED 3' ON Y OR GROUT IN THE BACK
APPROVED EPOX' E INSERTING THE	/ OR GROUT IN THE BACK BAR.
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F <sup>+94.32</sup>	173
<u>-</u> 1734 —	STA 1735+00
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CONSTRUCTION PLAN

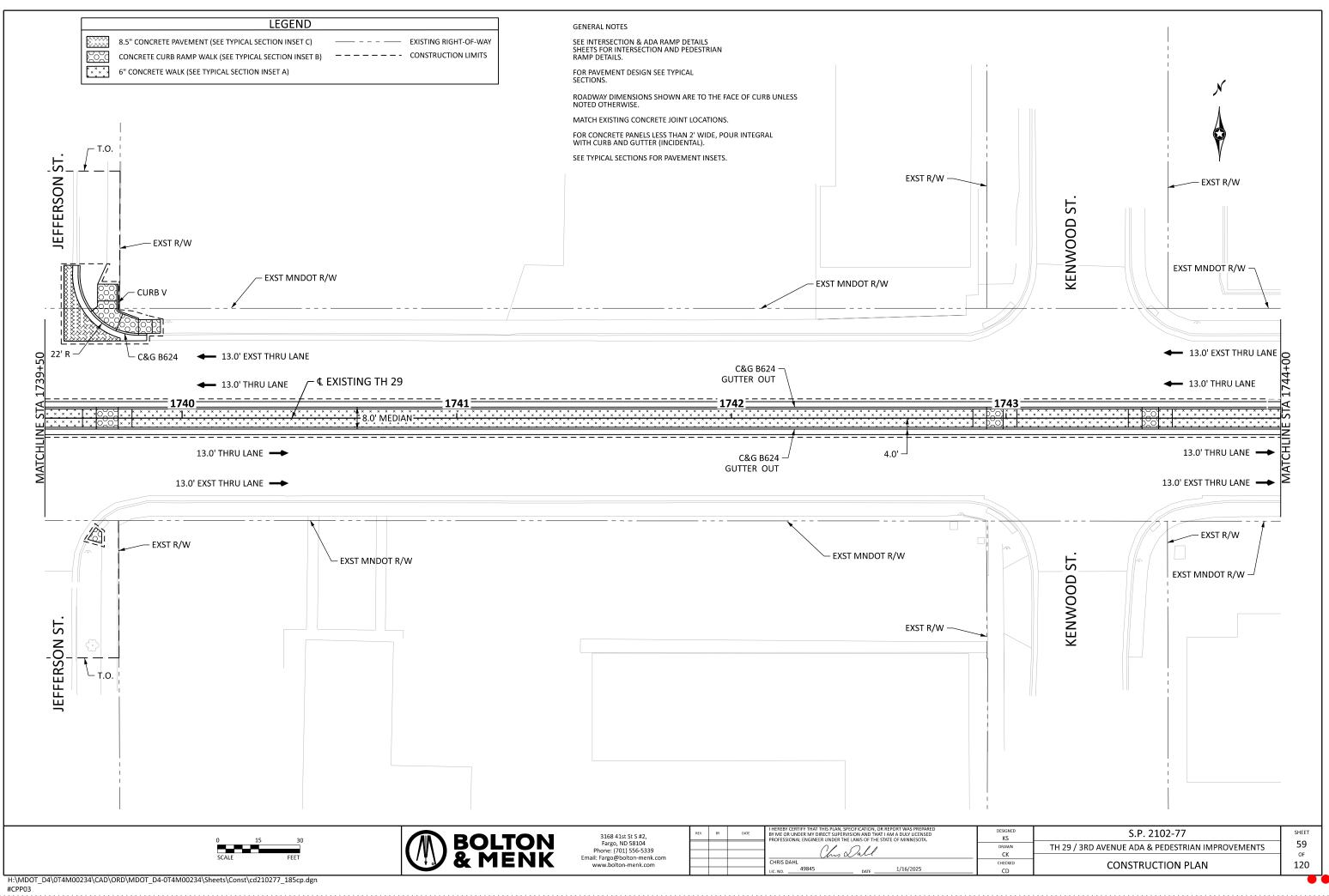
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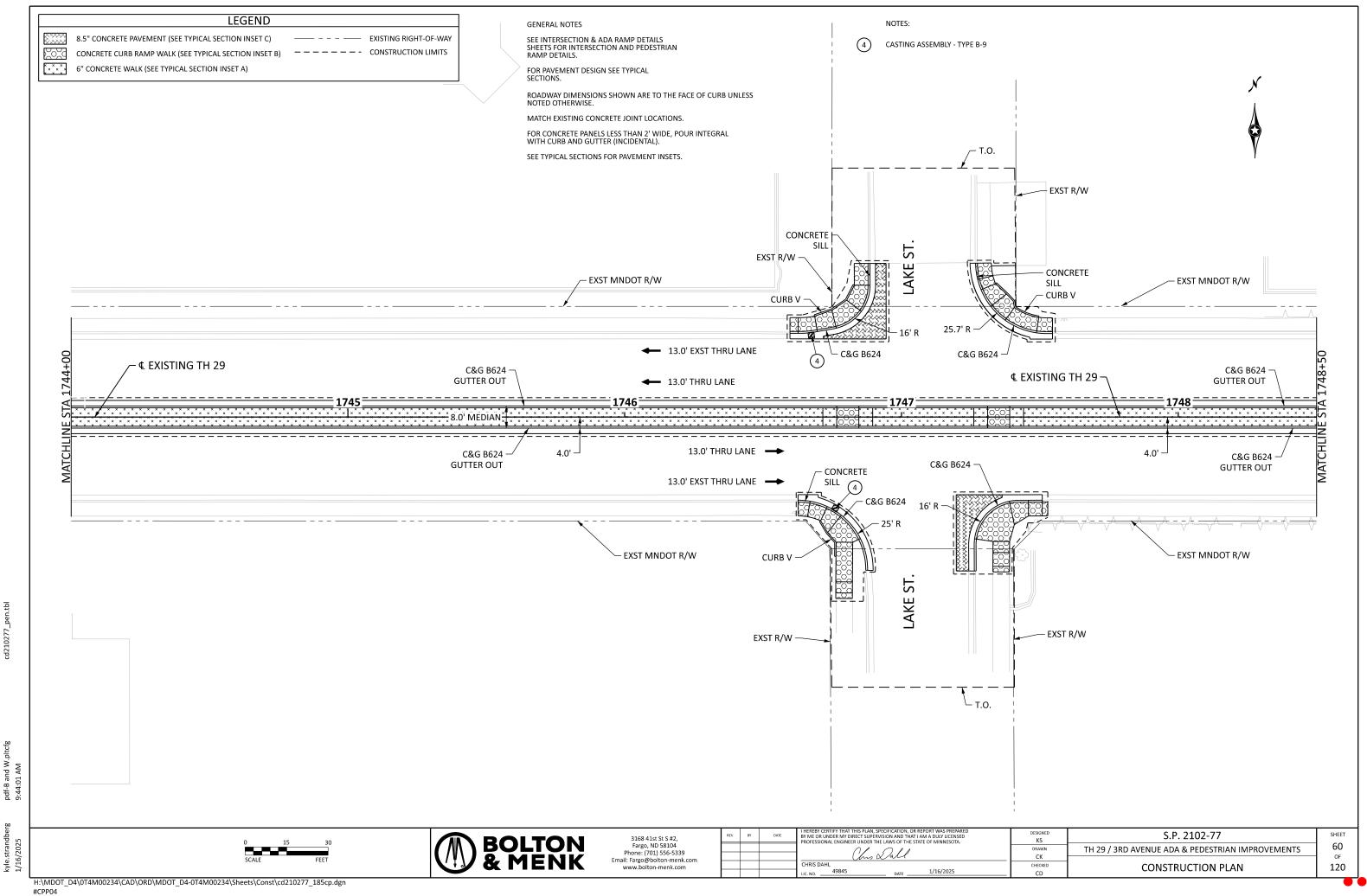
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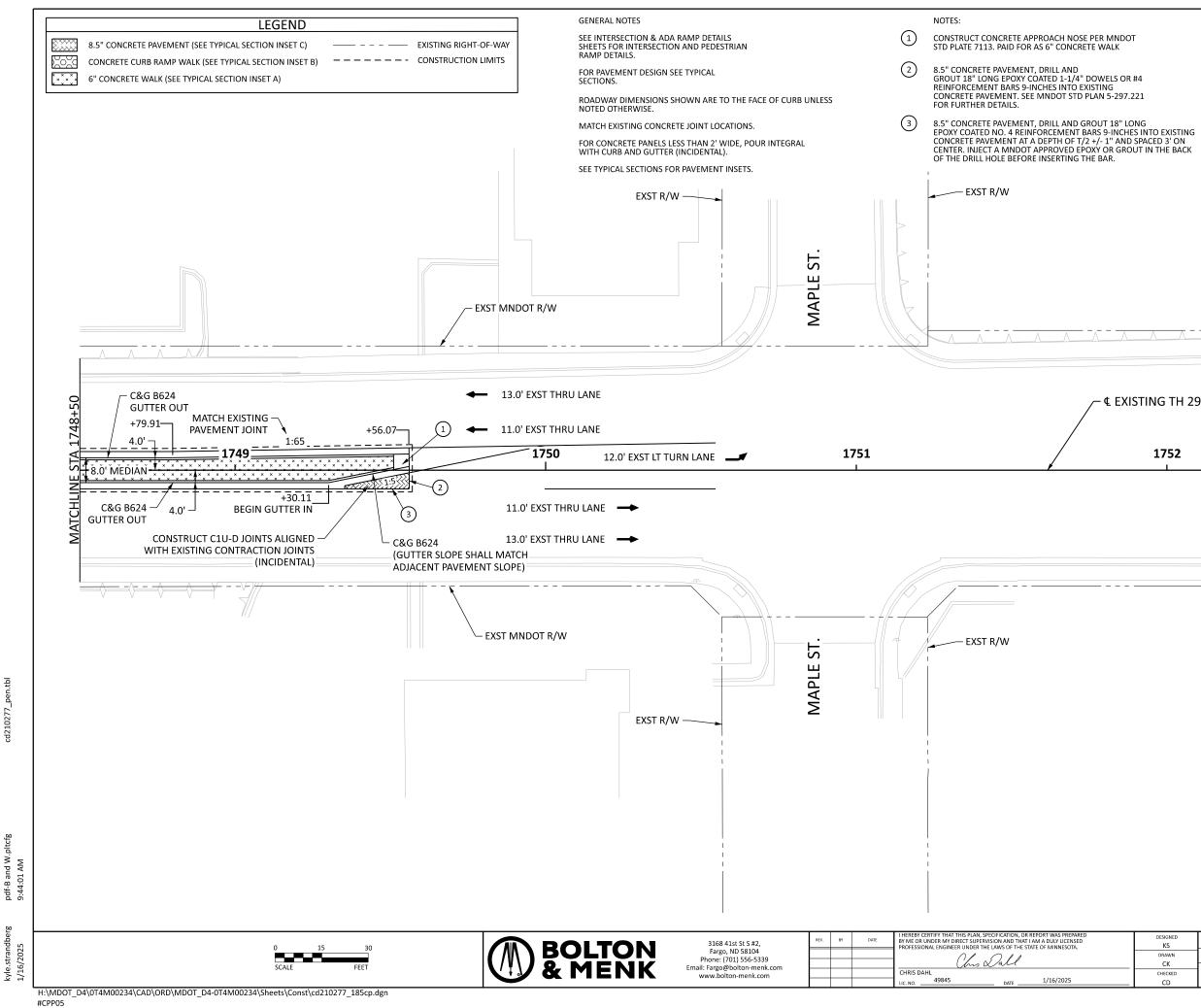
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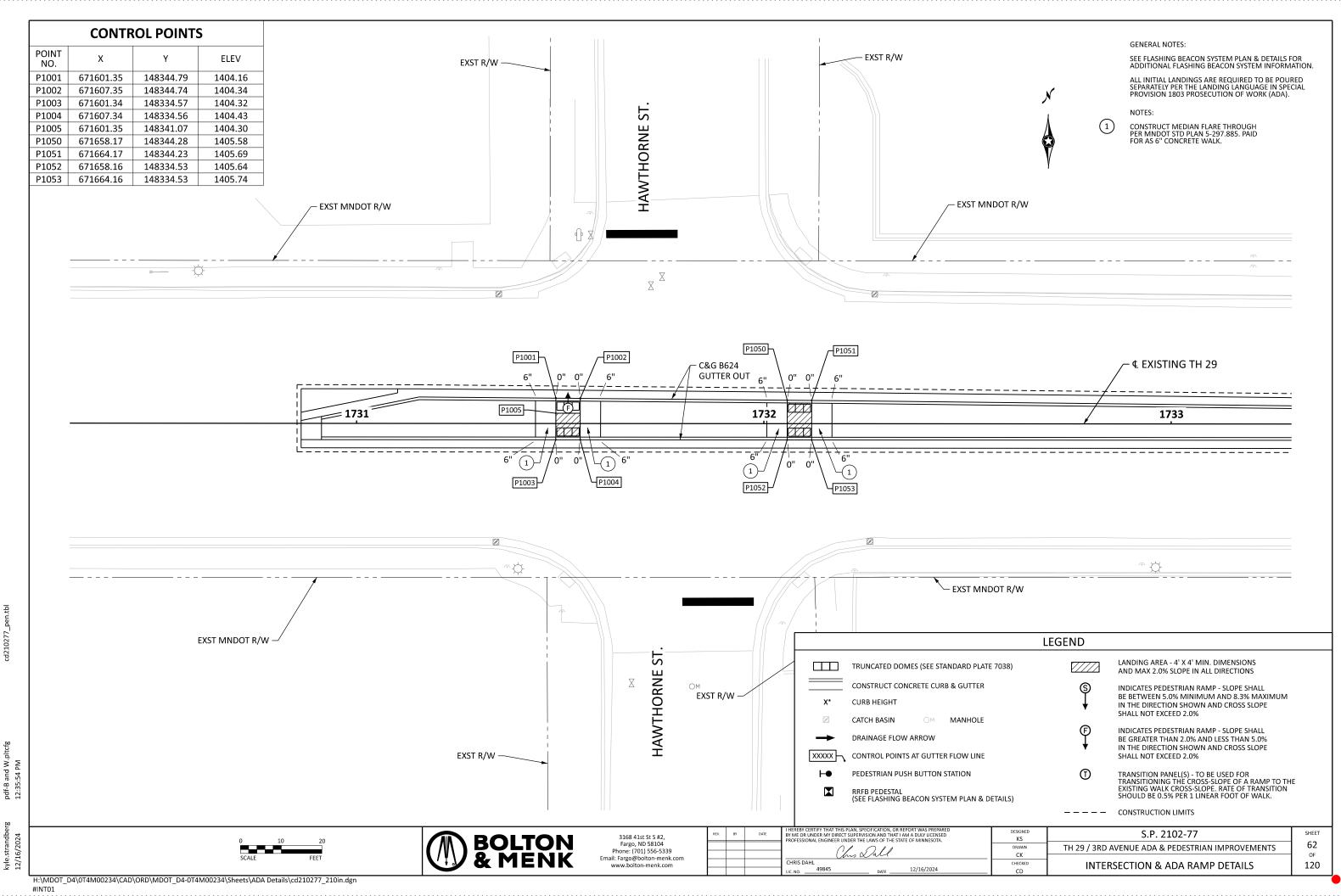


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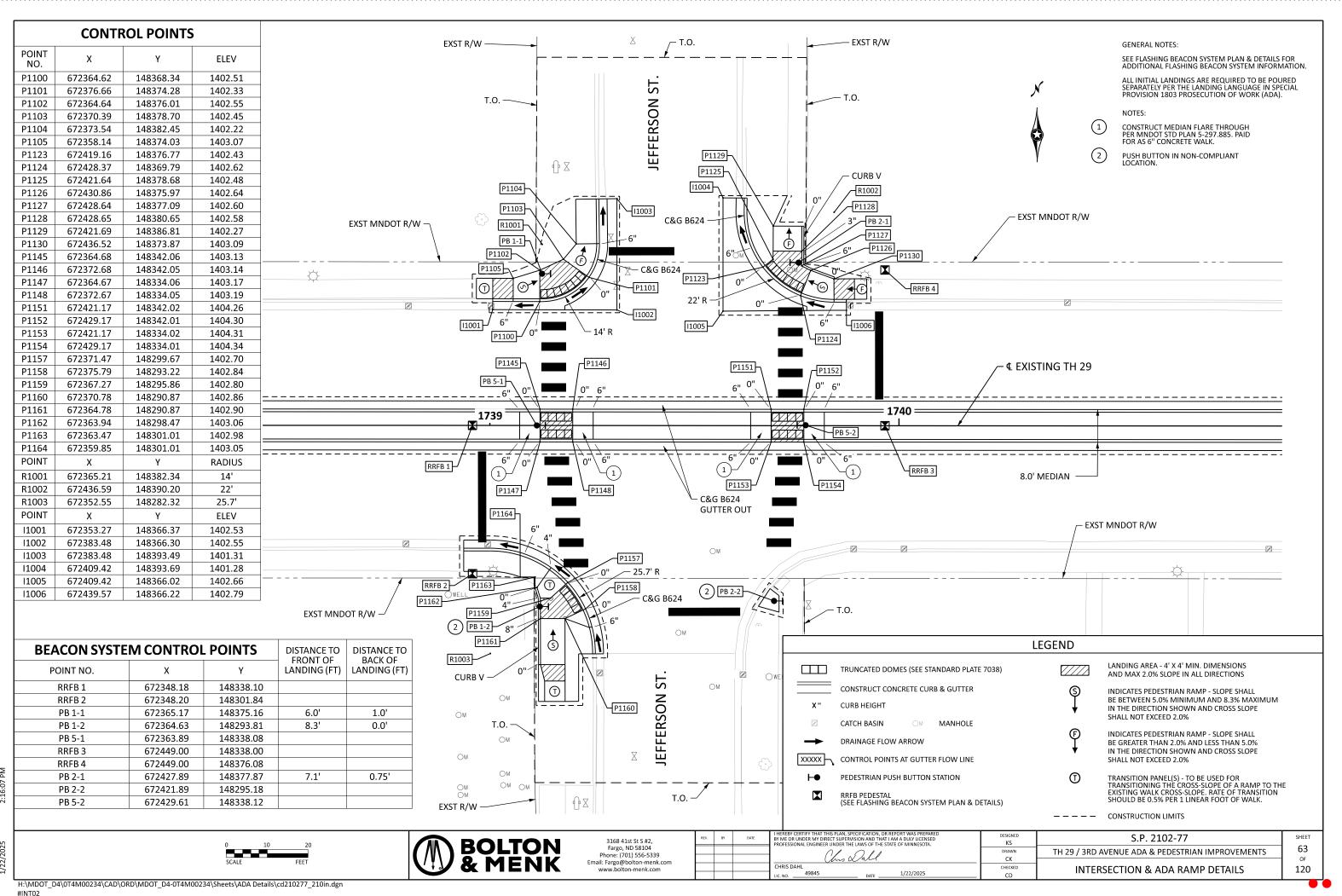
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	CHECKED	CONSTRUCTION PLAN	120



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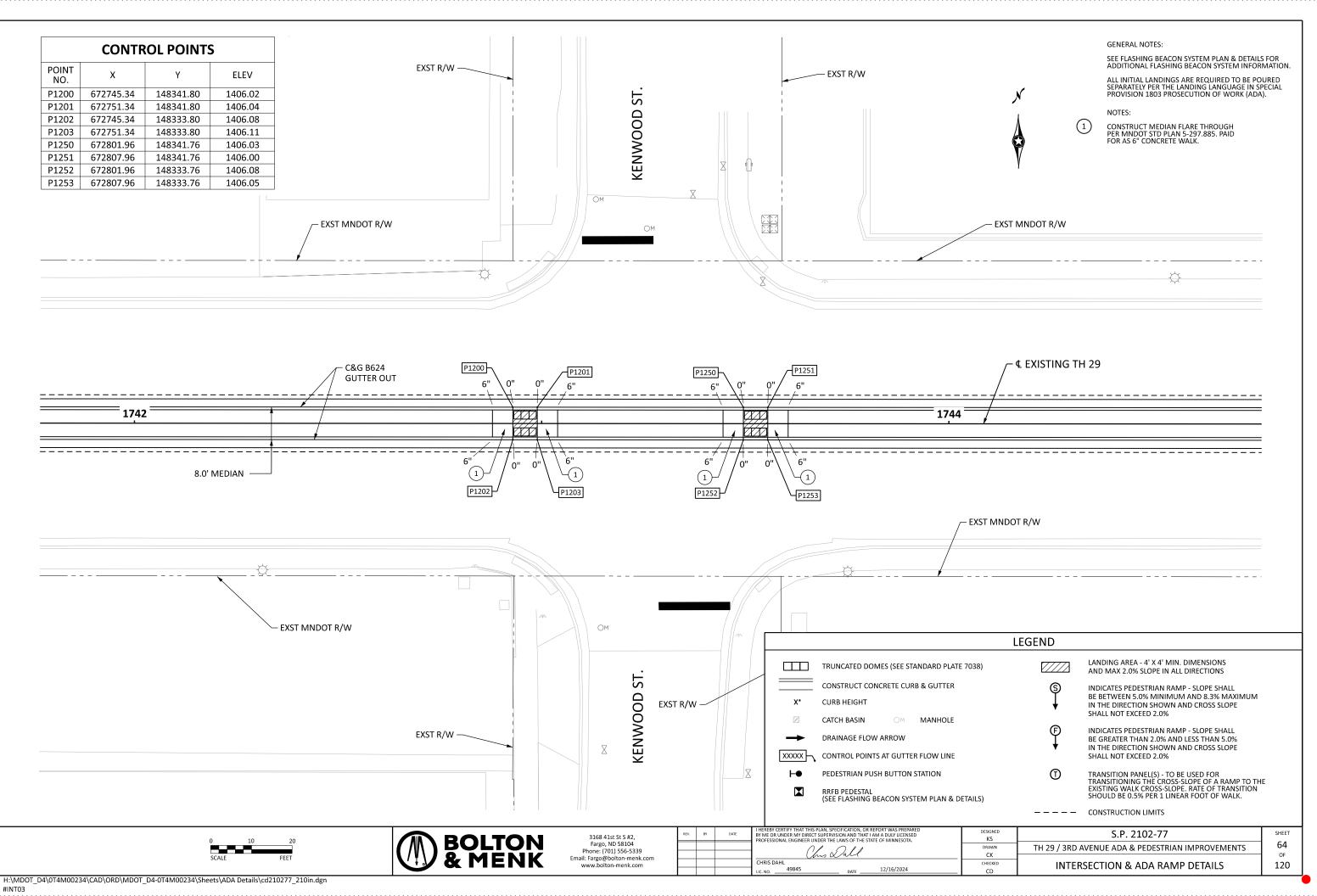


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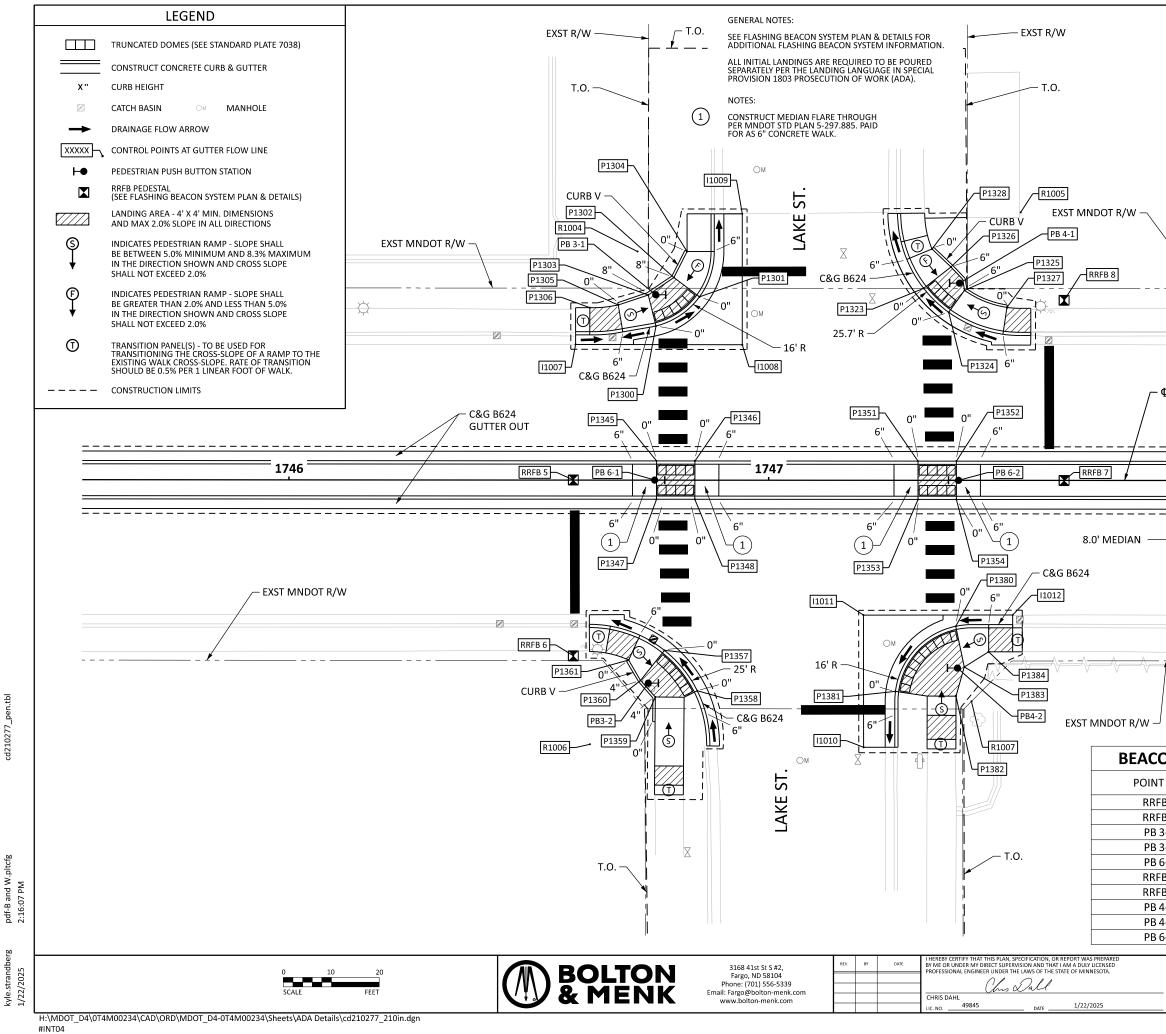
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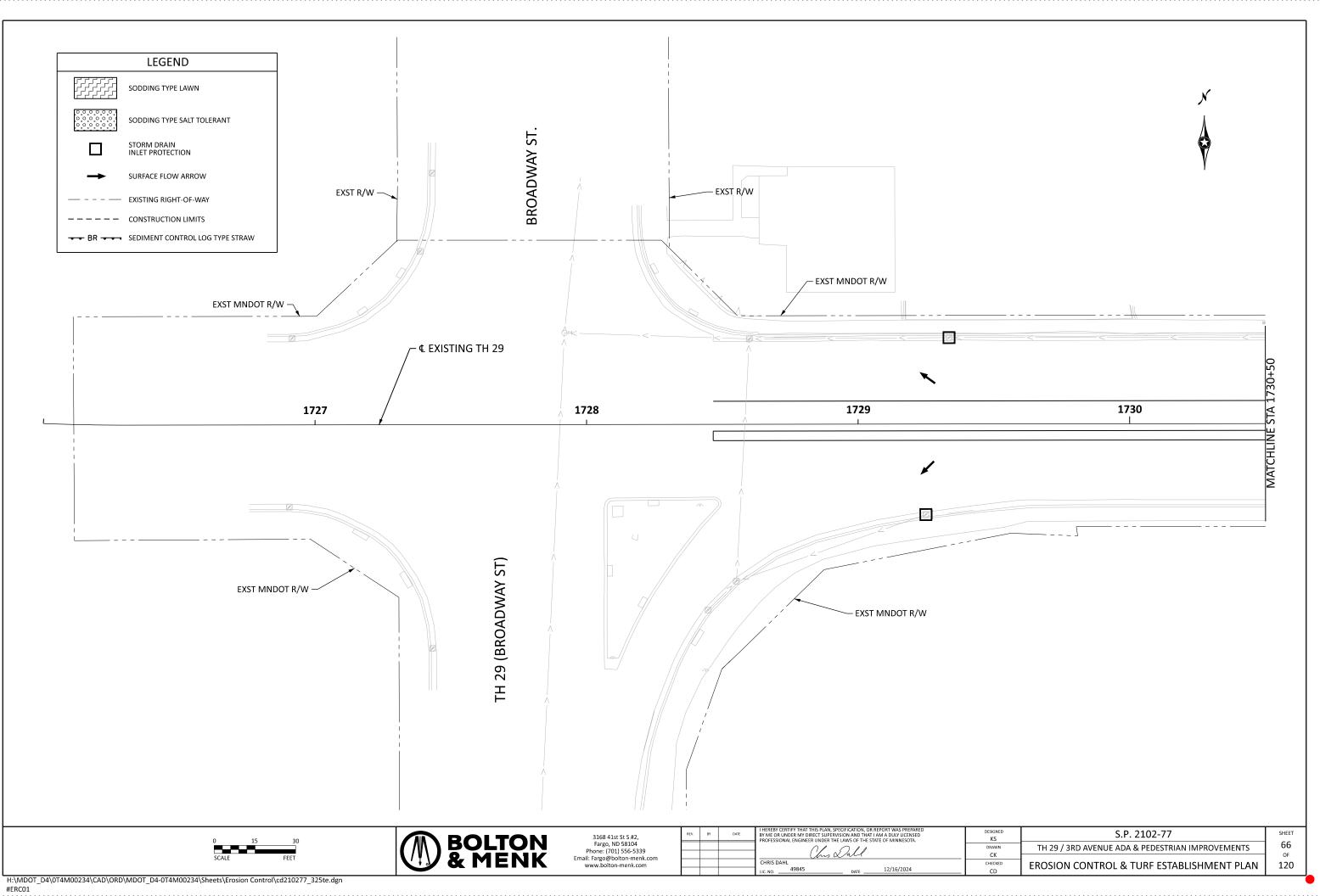
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		CONT	ROL POINTS	
	POINT NO.	х	Y	ELEV
	P1300	673128.93	148369.66	1403.50
N	P1301	673137.99	148375.72	1403.33
	P1302	673132.68	148379.75	1403.43
k.	P1303	673127.33	148376.13	1403.52
$\mathbf{A}$	P1304	673135.42	148385.19	1403.70
	P1305	673121.09	148374.03	1404.01
V	P1306	673115.15	148373.47	1404.12
Y	P1323	673184.73	148377.51	1403.55
	P1324	673189.94	148372.50	1403.68
	P1325	673193.25	148377.10	1403.68
	P1326	673190.41	148381.95	1403.66
	P1327	673202.07	148373.54	1404.46
$\backslash$	P1328	673186.45	148385.70	1403.90
	P1345	673129.05	148341.54	1404.21
	P1346	673137.05	148341.54	1404.23
	P1347	673129.04	148333.54	1404.29
Ou	P1348	673137.04	148333.54	1404.31
	P1351	673183.54	148341.51	1404.43
	P1352	673191.54	148341.50	1404.47
	P1353	673183.54	148333.51	1404.53
	P1354	673191.54	148333.50	1404.58
EXISTING TH 29	P1357	673130.71	148302.06	1403.59
EXISTING TH 29	P1358	673137.53	148293.65	1403.68
	P1359	673128.80	148292.33	1403.73
	P1360	673125.73	148295.80	1403.70
	P1361	673123.24	148300.05	1404.05
	P1380	673191.42	148307.08	1403.82
1748	P1381	673178.83	148293.51	1403.63
	P1382	673191.46	148292.52	1403.84
	P1383	673193.20	148298.60	1403.92
+	P1384	673198.28	148301.75	1404.38
	POINT	Х	Y	RADIUS
	R1004	673125.09	148385.19	16'
	R1005	673204.94	148393.33	25.7'
	R1006	673115.16	148282.48	25'
	R1007	673194.70	148291.42	16'
1773	POINT	Х	Y	ELEV
	11007	673112.18	148365.81	1403.69
	11007	673146.93	148365.74	1403.73
A A - A -	- 11009	673146.93	148393.05	1403.10
	11005	673172.21	148281.86	1403.65
	11010	673172.18	148309.41	1403.80
	11011	673203.27	148309.43	1403.95
	11012	0, 5205.27	140303.43	1-03.33

ON SYSTEM		M CONTROL POINTS		DISTANCE TO FRONT OF	DISTANCE TO BACK OF			
Τľ	NO.	Х	Y	LANDING (FT)	LANDING (FT)			
ΞВ	5	673111.70	148337.57					
ΞВ	6	673111.70	148301.41					
3-:	1	673128.88	148376.17	5.8'	1.0'			
3-2	2	673127.34	148295.23	7.0'	0.75'			
6-3	1	673128.67	148337.54					
₹В	7	673214.01	148337.46					
₹В	8	673214.01	148375.02					
4-:	1	673192.22	148378.59	5.5'	0.75'			
4-:	2	673191.78	148298.38	8.0'	1.3'			
6-3	2	673192.00	148337.50					
	DESIGNED KS		S.P. 2102-	77	SHEET			
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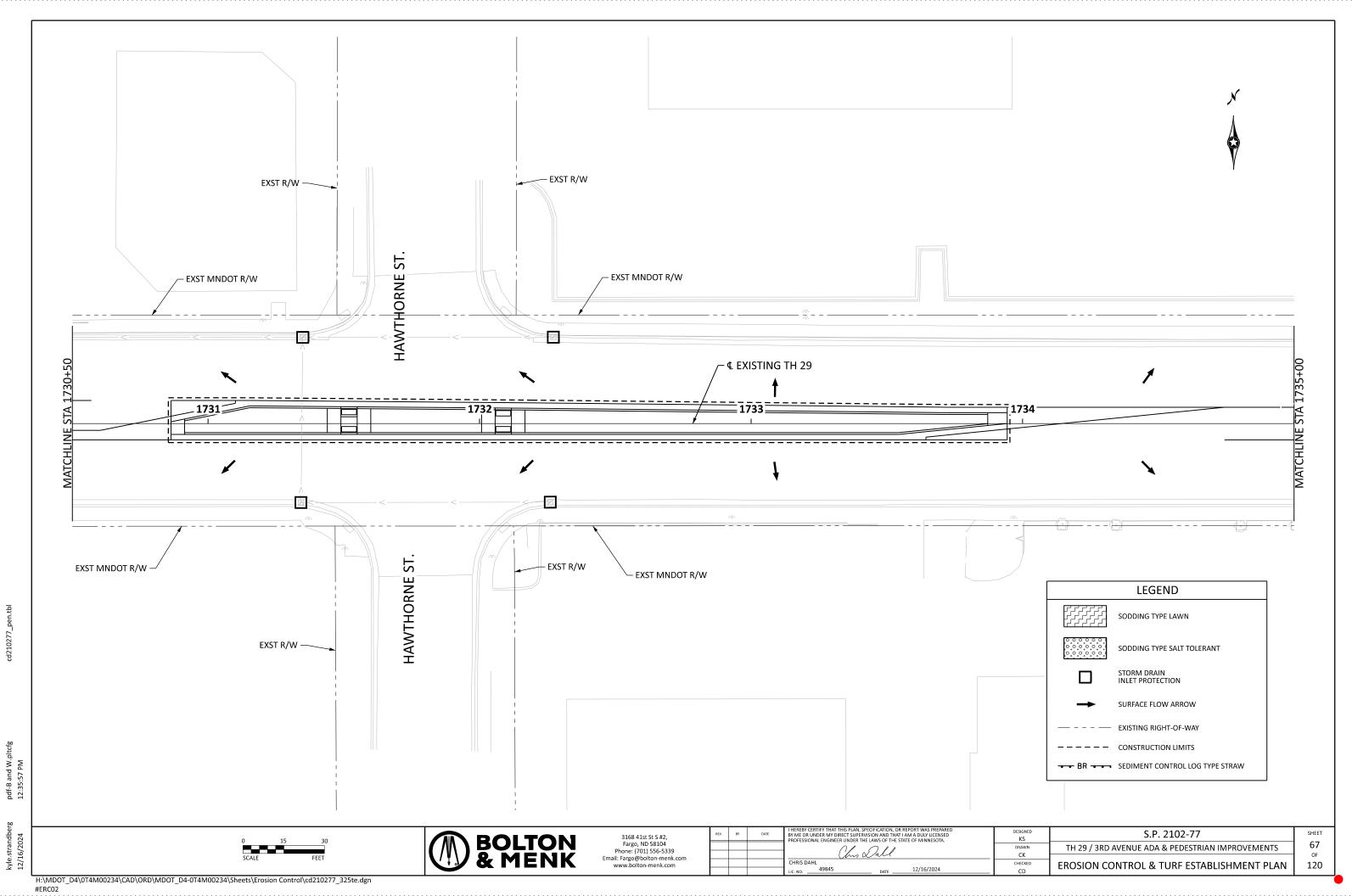
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	CHECKED	INTERSECTION & ADA RAMP DETAILS	120
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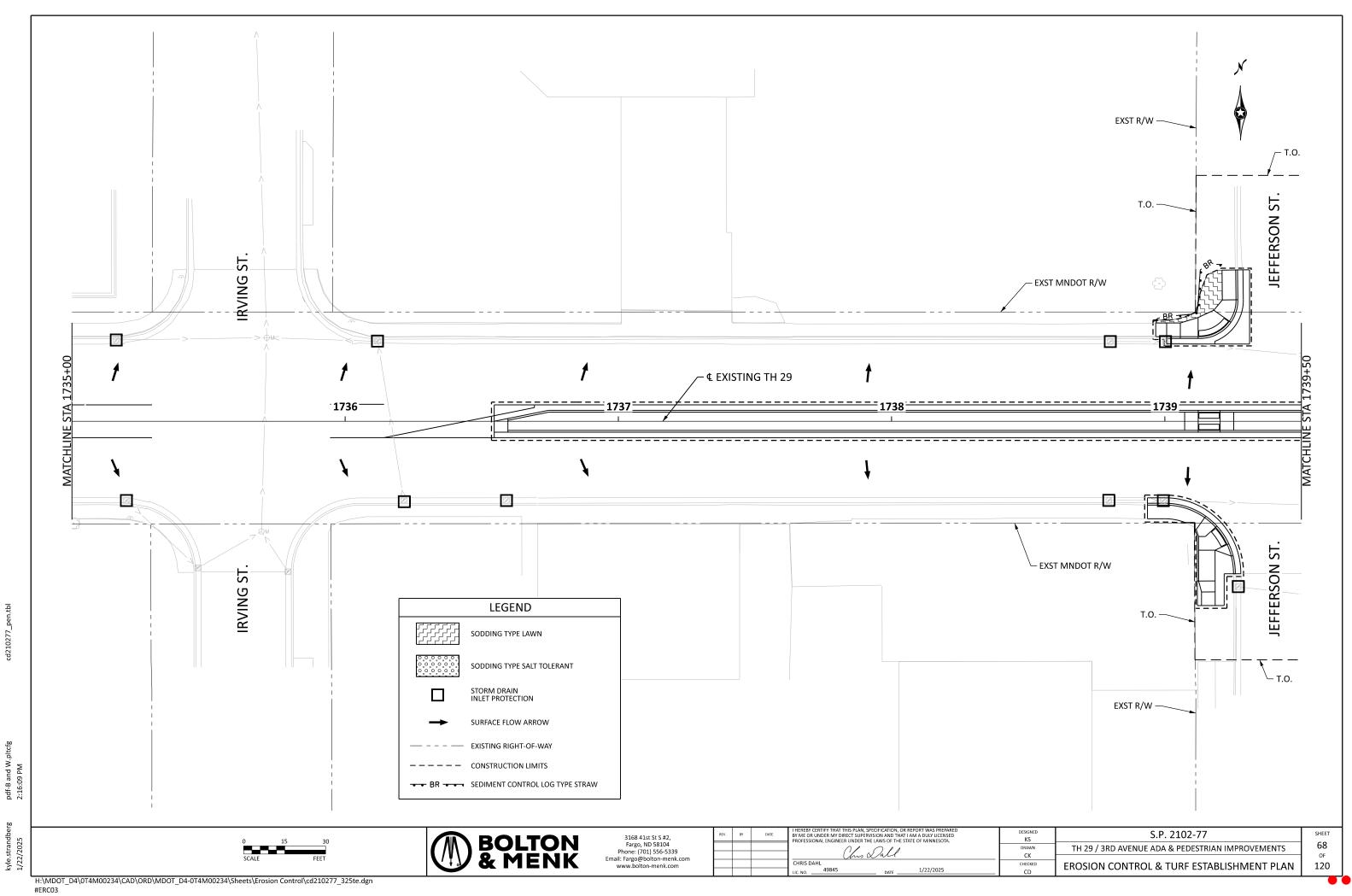


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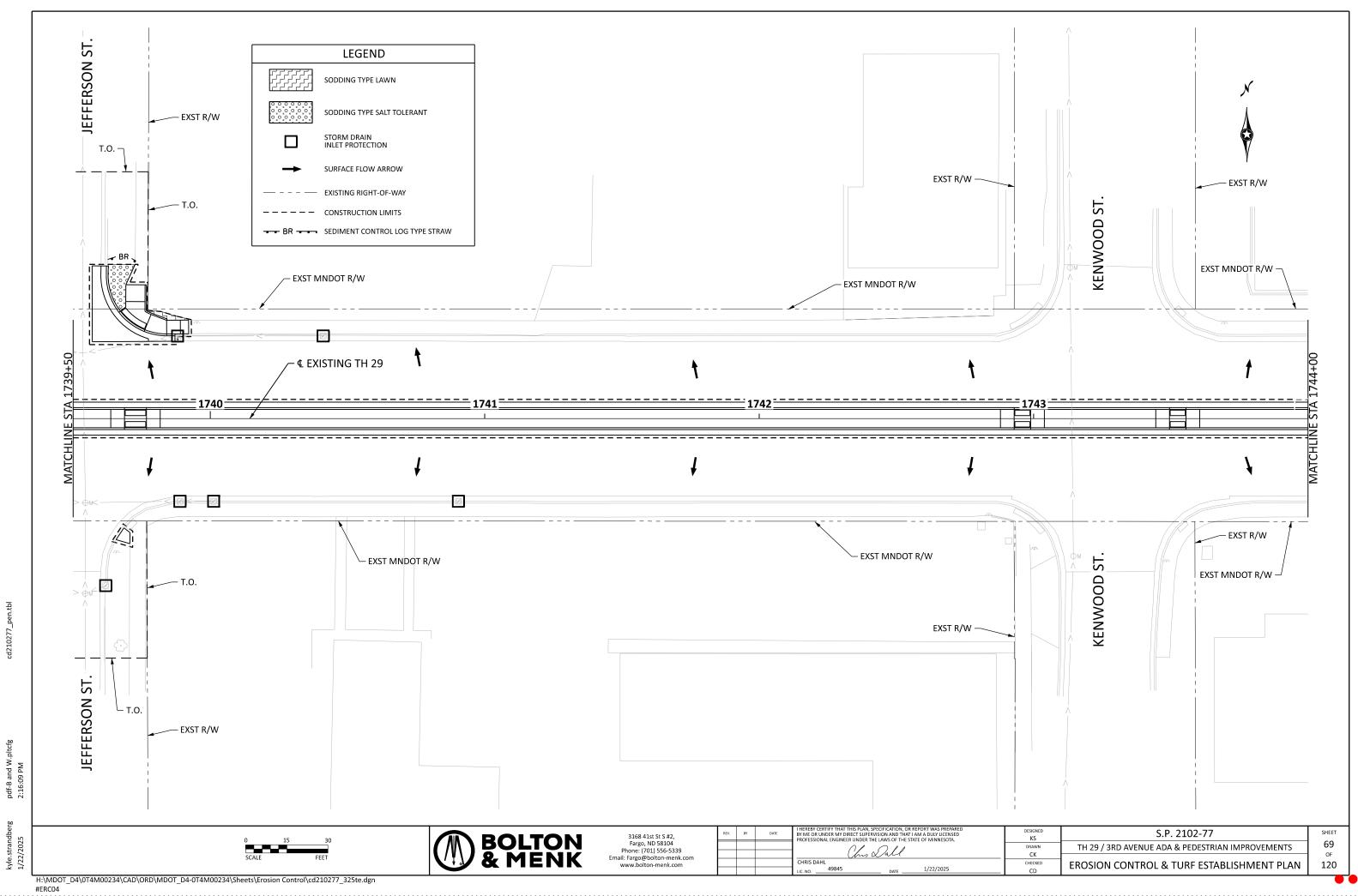
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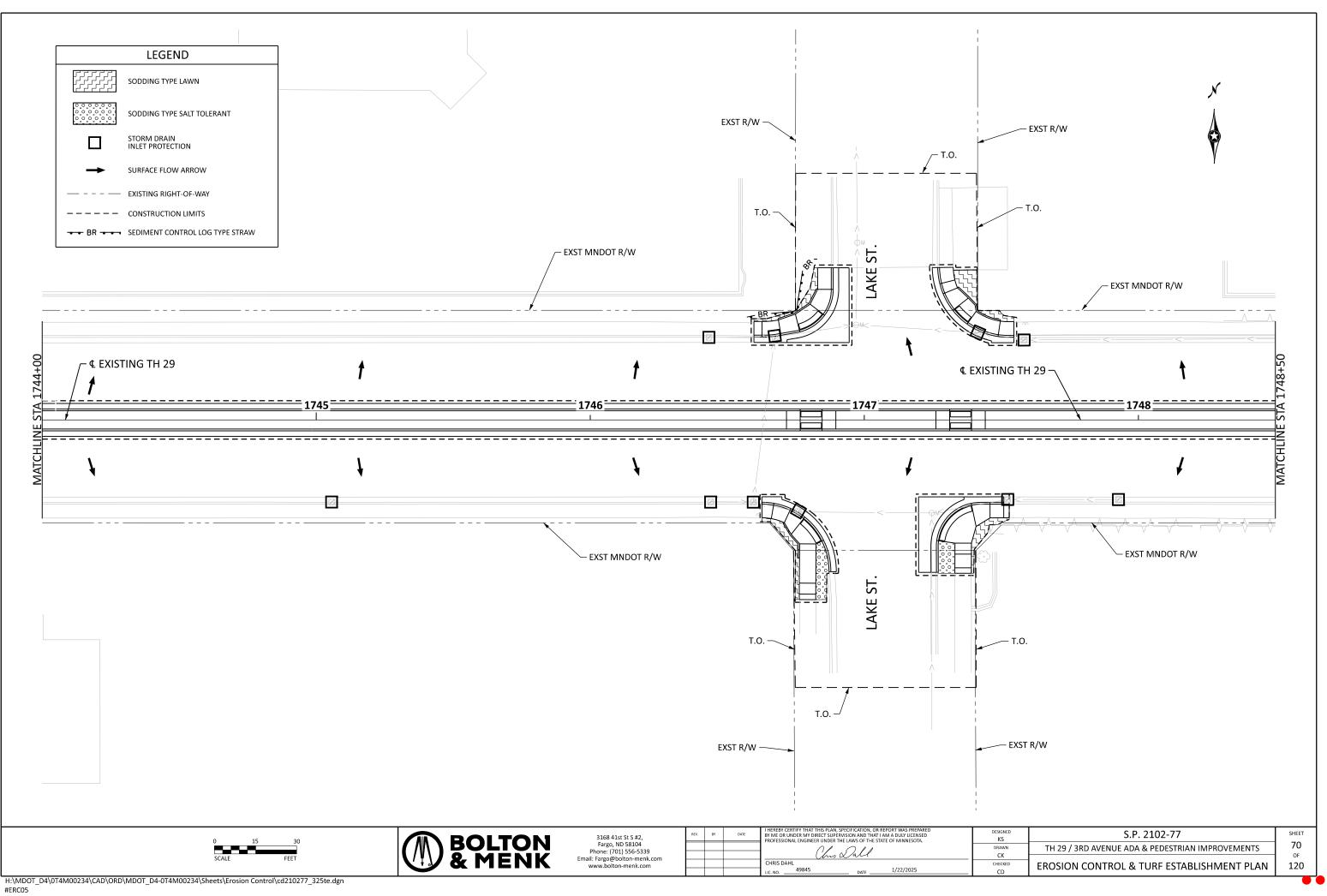
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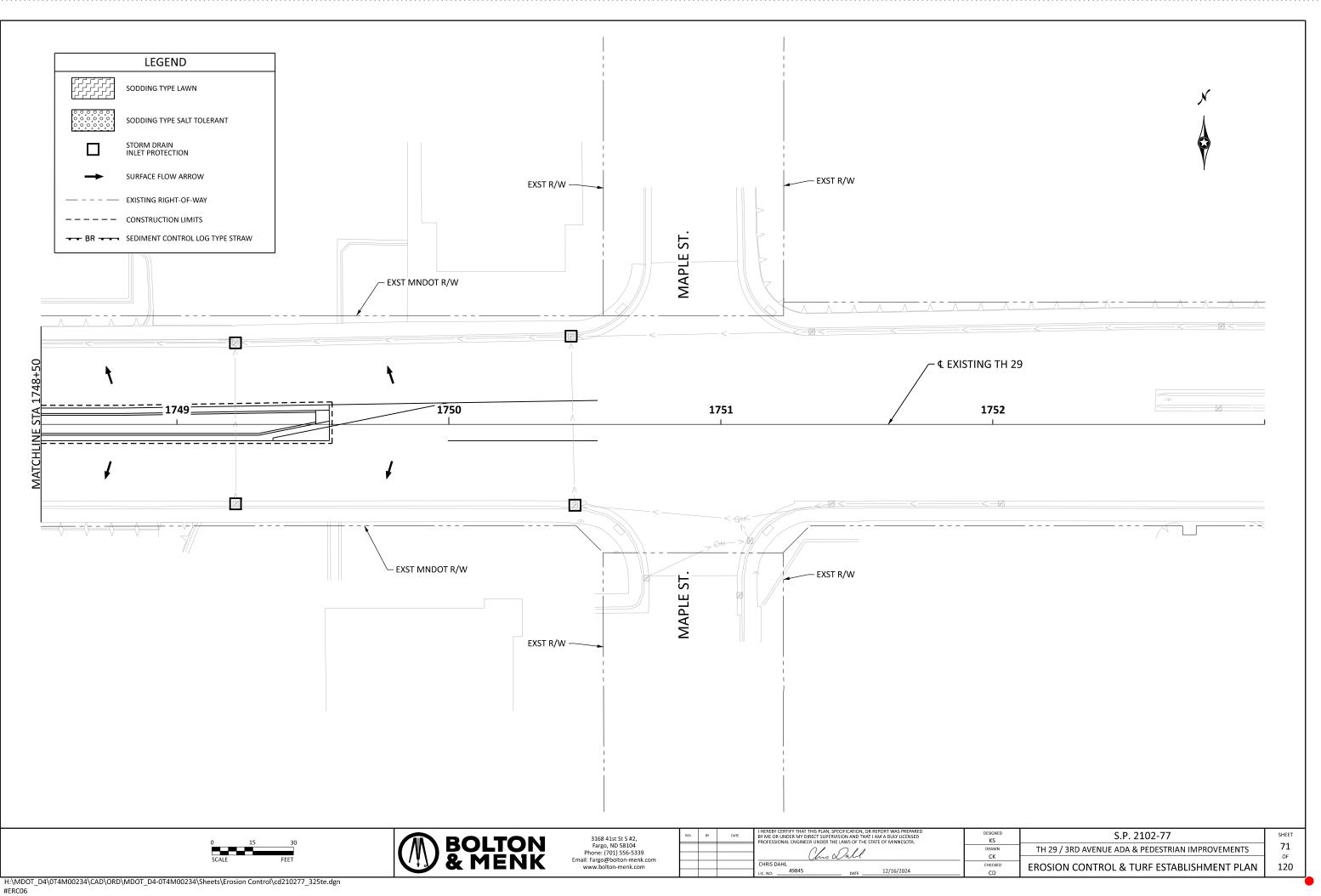


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# TRAFFIC CONTROL SYMBOLS



CLOSED TO TRAFFIC DURING CURRENT PHASE

- TRAFFIC CONTROL SIGN (SHOWN FACING LEFT)
- TYPE III BARRICADE =
- Ð TYPE A FLASHING WARNING LIGHTS
- DRUM CHANNELIZER (TYPE B) = •

INDEX			
TRAFFI	C CONTROL		
NO.	DESCRIPTION		

<u>SHEET NO.</u>	DESCRIPTION
72	TITLE SHEET
73	DETAILS
74	TRAFFIC CONTROL TABULATION SHEET
75 - 82	TRAFFIC CONTROL LAYOUTS

# **PROJECT STAGING NOTES**

- 1.
- 2. ATTACHED TO THIS PLAN.

# STAGING NARRATIVE:

## STAGE 1

## **CONSTRUCTION**

- CONSTRUCT PEDESTRIAN/ADA RAMPS AT THE INTERSECTION OF EXISTING TH 29 & JEFFERSON ST AND AT THE INTERSECTION OF EXISTING TH 29 & LAKE ST. <u>TRAFFIC</u>

- CLOSE EXISITING EB TH 29 OUTSIDE THROUGH LANE AND WB OUTSIDE THROUGH LANE.
- MAINTAIN TRAFFIC ON EXISITING EB TH 29 INSIDE THROUGH LANE, AND EXISITING WB TH 29 INSIDE THROUGH LANE.
- CLOSE INTERSECTION ACCESS AT JEFFERSON ST WHILE CONDUCTING PEDESTRIAN/ADA RAMP WORK AT JEFFERSON ST.
- CLOSE INTERSECTION ACCESS AT LAKE ST WHILE CONDUCTING PEDESTRIAN/ADA RAMP WORK AT LAKE ST. \_
- MAINTAIN LOCAL ACCESS ON JEFFERSON ST AND LAKE ST DURING CLOSURES. -

# STAGE 2

# **CONSTRUCTION**

- CONSTRUCT CENTER RAISED MEDIAN AND MEDIAN CUT-THROUGHS.
- CONSTRUCT FLASHING BEACON SYSTEM A. -
- CONSTRUCT FLASHING BEACON SYSTEM B.

# **TRAFFIC**

- CLOSE EXISITING TH 29 CENTER TWO-WAY LEFT TURN LANE, EB INSIDE THROUGH LANE, AND WB INSIDE THROUGH LANE. -
- MAINTAIN TRAFFIC ON EXISITNG EB TH 29 OUTSIDE THROUGH LANE, AND WB OUTSIDE THROUGH LANE.

# STAGE 3

# **CONSTRUCTION**

- REVISE SIGNAL SYSTEM A.
- REVISE SIGNAL SYSTEM B.

# TRAFFIC

- CONDUCT TEMPORARY LANE CLOSURES AS NEEDED.



3168 41st St S #2, Fargo, ND 58104 Phone: (701) 556-5339 Email: Fargo@bolton-menk.c
Email: Fargo@bolton-menk.c www.bolton-menk.com

BY	DATE	I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER WADER THE LAWS OF THE #TATE OF MINNESOTA.
		PROFESSIONAL ENGINEER ONDER THE EXCLUSION THE DATE OF MININESOTA.
		LNNU IZ XNNUU
		LUCAS SIMONSON
		LIC. NO

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THE CONTRACTOR SHALL FOLLOW THE MOST RECENT VERSION OF THE "TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS FIELD MANUAL" FOR ANY SHORT TERM LANE AND/OR SHOULDER CLOSURES NECESSARY TO COMPLETE THE WORK IN ADDITION TO THE TRAFFIC CONTROL PROVIDED IN THE PLAN.

THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN ACCESS AT ALL TIMES DURING CONSTRUCTION BY USING ALTERNATE PEDESTRIAN ROUTES. SEE THE DETAILS

	DESIGNED	S.P. 2102-77	SHEET
	HM		
	DRAWN	TH 29 / 3RD AVENUE ADA & PEDESTRIAN IMPROVEMENTS	72
	HM		OF
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	CHECKED	STAGING & TRAFFIC CONTROL PLAN	120
_	LS		120

# TRAFFIC CONTROL PLAN

NOTES & GUIDELINES

### **GENERAL INFORMATION:**

1. ALL DISTANCES ARE APPROXIMATE.

### 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-aj) THRU (6K-al) 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.

### PAVEMENT MARKING:

- 1. MASK OR REMOVE ANY CONFLICTING PAVEMENT MARKINGS AS SHOWN IN THE PLAN OR APPROVED BY THE ENGINEER.
- 2. ALL TEMPORARY PAVEMENT MARKINGS SHALL BE WET REFLECTIVE. ALL PAVEMENT MARKINGS IN TAPERS AND TRANSITIONS SHALL BE 6" IN WIDTH.
- 3. SEE 2582 IN THE SPECIAL PROVISIONS FOR PAVEMENT MARKING SPOTTING RESPONSIBILITIES.

### CONSTRUCTION INFORMATION SIGNING:

1. THE CONTRACTOR SHALL USE CONSTRUCTION INFORMATION SIGNING AS FOLLOWS:

PLACE G20-X1 WORK ZONE ADVANCE NOTICE SIGNS WITH THE CORRECT STARTING DATE DISPLAYED AT LEAST 14 DAYS IN ADVANCE OF BEGINNING CONSTRUCTION. ONCE WORK BEGINS, THE START DATE LEGEND SHALL BE COVERED BY A PLAQUE DISPLAYING FOLLOW DETOUR OR USE ALT ROUTES AS INDICATED IN PLAN.



3168 41st St S #2,
Fargo, ND 58104
Phone: (701) 556-5339
Email: Fargo@bolton-menk.
www.halton.monk.com

REV.	ВҮ	DATE	BY ME OR UNDER MY DIRECT SUPERVISION A PROFESSIONAL ENGINEER UNDER THE LAWS	ND THAT I AM A DULY LICENSED
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	DRAWN HM	TH 29 / 3RD AVENUE ADA & PEDESTRIAN IMPROVEMENTS	73 OF
_	CHECKED LS	STAGING & TRAFFIC CONTROL PLAN	120

# TRAFFIC CONTROL TABULATION SHEET

	"\	<b>N</b> " SERIES				NSTRUCTI
SIGN	SIGN NO.	COLOR	SIZE (IN. X IN.) (WxH)	NUMBER OF POSTS	1.	THE CONT APPROVEI
	W4-1R	BLACK ON ORANGE	48 X 48	2		PLACE (2) 300' IN AD
	W4-2L	BLACK ON ORANGE	48 X 48	2		PLACE (2) 300' IN AE PCMS MES
	W4-2R	BLACK ON ORANGE	48 X 48	2		1. 2. 3.
RDAD WÜRK AHEAD	W20-1	BLACK ON ORANGE	48 X 48	2		5.
MERGE	W20-X3R	BLACK ON ORANGE	48 X 48	2		1.
MERGE	W20-X3L	BLACK ON ORANGE	48 X 48	2		
LEFT LANE CLOSED	W20-X5	BLACK ON ORANGE	48 X 48	2		2.
RIGHT LANE CLOSED	W20-X5	BLACK ON ORANGE	48 X 48	2		
LEFT LANE LLOSED AME AD	W20-5	BLACK ON ORANGE	48 X 48	2		3.

3168 41st St S #2, Fargo, ND 58104 Phone: (701) 556-5339 Email: Fargo@bolton-menk.com www.bolton-menk.com

REV. BY

DATE

"R" SERIES					
SIGN	SIGN NO.	COLOR	SIZE (IN. X IN.) (WxH)	NUMBER OF POSTS	
ONL Y	R3-5R	BLACK ON WHITE	30 X 36	1	
	R6-1R	BLACK ON WHITE	54 X 18	1	
TIELD	R1-2	WHITE ON RED	48 X 48 X 48	2	

BA	BARRICADE MOUNTED SIGNS							
SIGN	SIGN NO.	COLOR	SIZE (IN. X IN.) (WxH)	NUMBER OF POSTS				
	R3-1	BLACK & RED ON WHITE	36 X 36	1				
	R3-2	BLACK & RED ON WHITE	36 X 36	1				
LANE CLOSED	R11-2M	BLACK ON WHITE	48 X 30	2				

	TEMPORARY PAVEMENT	MARKING	-	TC-A		
	ITEM DISCRIPTION	UNIT	STAGE	QUANTITY		
		LIN FT	1	80		
<b>~</b>	REMOVABLE PREFORMED PLASTIC MASK (BLACK)	LIN FT	2	345		
2102-7		SP 2102-77 TOTAL		425		
SP 21		LIN FT	1			
	24" REMOVABLE PREFORM PAVEMENT MARKING TAPE CONSTRAST	LIN FT	2	40		
		SP 2102-77 TOTAL		40		

**BOLTON** & MENK

ED BY ENGINEER:

2) PORTABLE CHANGEABLE MESSAGE SIGNS(PCMS) ALONG TH 29, NORTH AND SOUTH OF 3RD AVE, ADVANCE OF INTERSECTIONS OF TH 29 AND 3RD AVE.

2) PORTABLE CHANGEABLE MESSAGE SIGNS ALONG 3RD AVE, EAST AND WEST OF TH 29, ADVANCE OF INTERSECTIONS OF 3RD AVE AND TH 29.

14 DAYS PRIOR TO CONSTRUCTION START

AT CONSTRUCTION START DURING SIGNAL WORK

ſ	HWY 29	
	ROAD	
	WORK	

PCMS LANGUAGE

ROAD	
WORK	
AHEAD	

SIGNAL WORK

AHEAD

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## <u>I SIGNING</u>

ITRACTOR SHALL USE CONSTRUCTION INFORMATION AS DIRECTED BY THIS LANGUAGE OR

IESSAGES DISPLAYED, AS SHOWN BELOW, SHALL BE DEPLOYED ON THE FOLLOWING SCHEDULE:



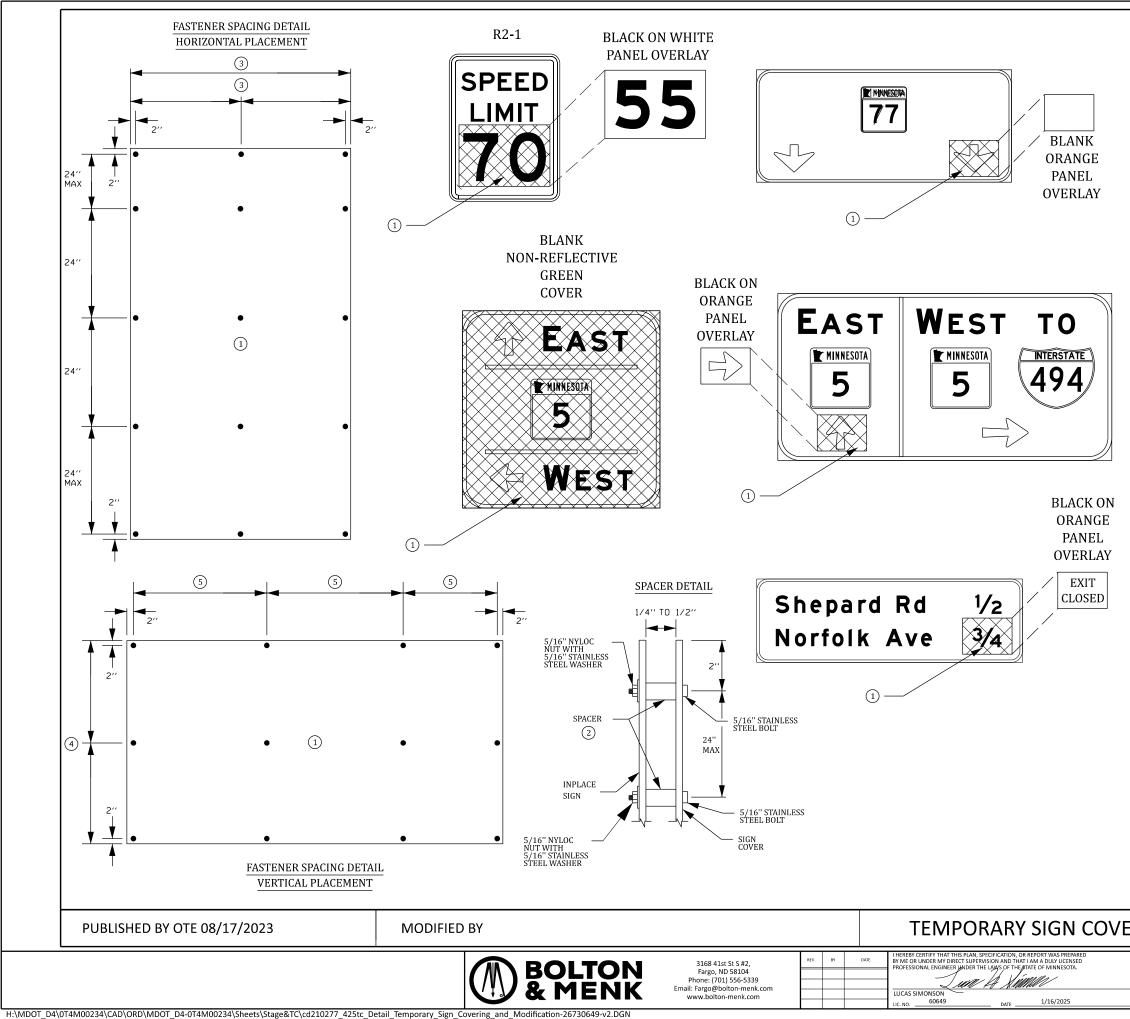


PCMS LANGUAGE



PCMS LANGUAGE

	DESIGNED HM	S.P. 2102-77	SHEET
	DRAWN	TH 29 / 3RD AVENUE ADA & PEDESTRIAN IMPROVEMENTS	74
-	HM CHECKED	STAGING & TRAFFIC CONTROL PLAN	0F 120
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### GENERAL NOTES:

- 1. 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.
- Incli de 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 for rigid temporary work zone signs apl. The message shall follow the requirements of the "mndot standard signs and markings manual" or the "find standard bigns and worklings 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.

- 3. MINIMIZE DAMAGE TO THE INPLACE SIGN PANEL. DO NOT APPLY TAPE TO THE INPLACE SIGN SHEETING.
- 4. SPACERS (SUCH AS PLASTIC OR RUBBER) SHALL BE A MATERIAL THAT WILL NOT HARM THE INPLACE SIGN SHEETING FACE.
- 5. ATTACH SIGN COVER PANEL OR PANEL OVERLAY USING HARDWARE SHOWN IN THE SPACER DETAIL.
- 6. 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
- 7. REMOVE ALL COVERING MATERIAL, MOUNTING HARDWARE, AND FASTENERS WHEN SIGN COVER PANEL OR PANEL OVERLAY IS REMOVED.
- 8. NO HANDLE OR OTHER LIFTING DEVICE SHALL BE LEFT ATTACHED TO ANY SIGN COVER PANEL AFTER PLACEMENT.

### SPECIFIC NOTES:

- 1 THE SIGN COVER OR PANEL OVERLY SHALL FULLY COVER THE MESSAGE BEING COVERED OR MODIFIED.
- (2) 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.
- (3) 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).
- (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)).
- (5) HORIZONTAL SPACING FOR FASTENERS SHALL NOT BE LESS THAN 15 IN OR MORE THAN 24 IN.

### ASSEMBLY NOTES:

- 1. DRILL 11/32 IN HOLES ON THE SIGN COVER OR PANEL OVERLAY IN ACCORDANCE WITHHELD FASTENER SPACING DETAILS.
- 2. ATTACH PLASTIC SPACERS TO SIGN COVER OR PANEL OVERLAY WITH DOUBLE FACED TAPE. CENTERED BEHIND EACH DRILLED HOLE.
- 3. POSITION THE COVER OR OVERLAY MATERIAL OVER THE SIGN OR MESSAGE TO BE MODIFIED.
- 4. DRILL ALL THE OUTSIDE HOLES THROUGH THE INPLACE SIGN PANEL AND ATTACH THE COVER OR OVERLAY MATERIAL WITH APPROPRIATE FASTENERS.
- 5. DRILL ALL THE INNER HOLES THROUGH THE INPLACE SIGN PANEL AND ATTACH WITH APPROPRIATE FASTENERS.

# TEMPORARY SIGN COVERING AND MODIFICATION DETAIL

	DESIGNED HM	S.P. 2102-77	SHEET
	DRAWN	TH 29 / 3RD AVENUE ADA & PEDESTRIAN IMPROVEMENTS	74A
-	HM CHECKED	STAGING & TRAFFIC CONTROL PLAN	<sub>0</sub> ہ 120
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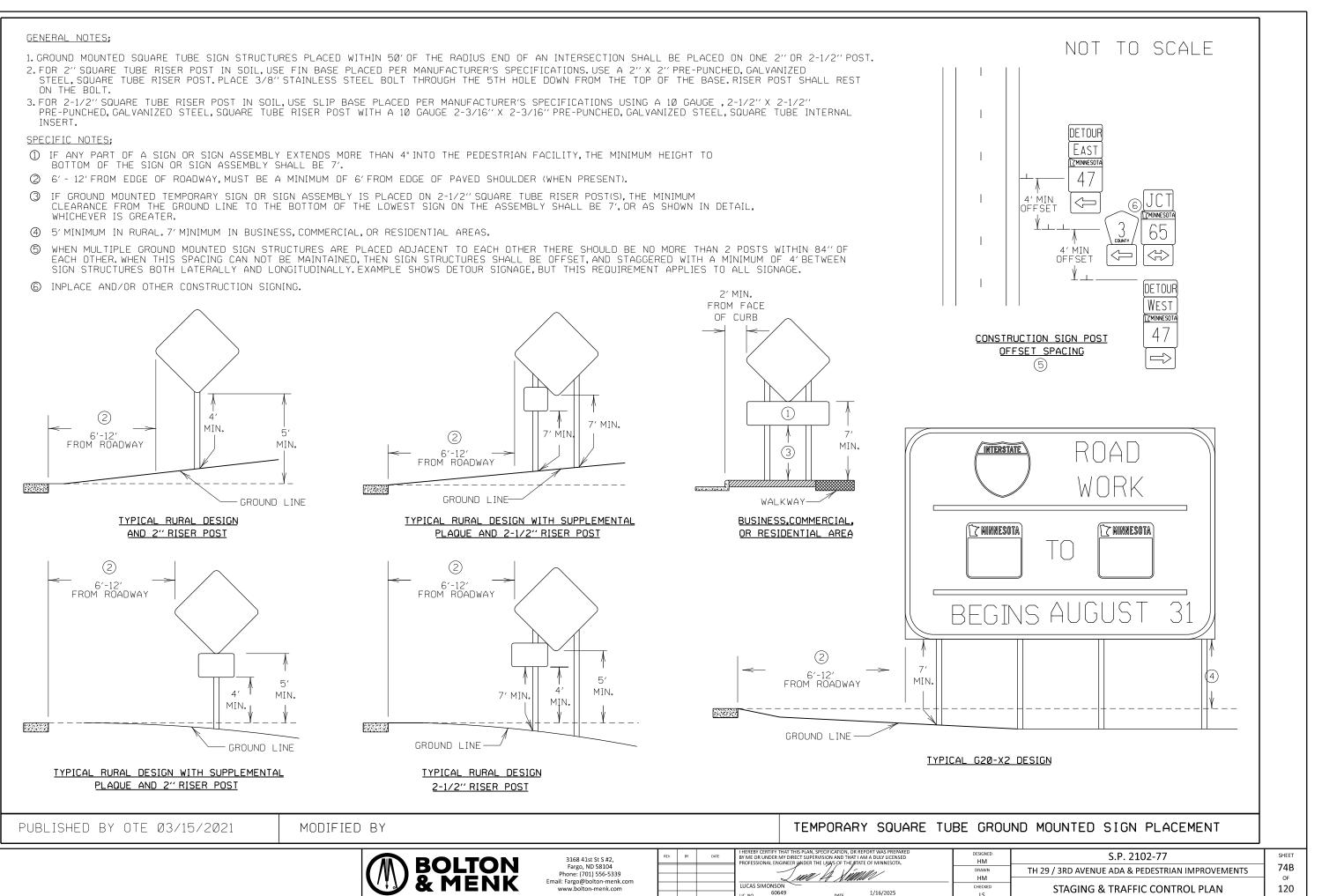
- STEEL, SQUARE TUBE RISER POST. PLACE 3/8" STAINLESS STEEL BOLT THROUGH THE 5TH HOLE DOWN FROM THE TOP OF THE BASE. RISER POST SHALL REST ON THE BOLT.
- INSERT.

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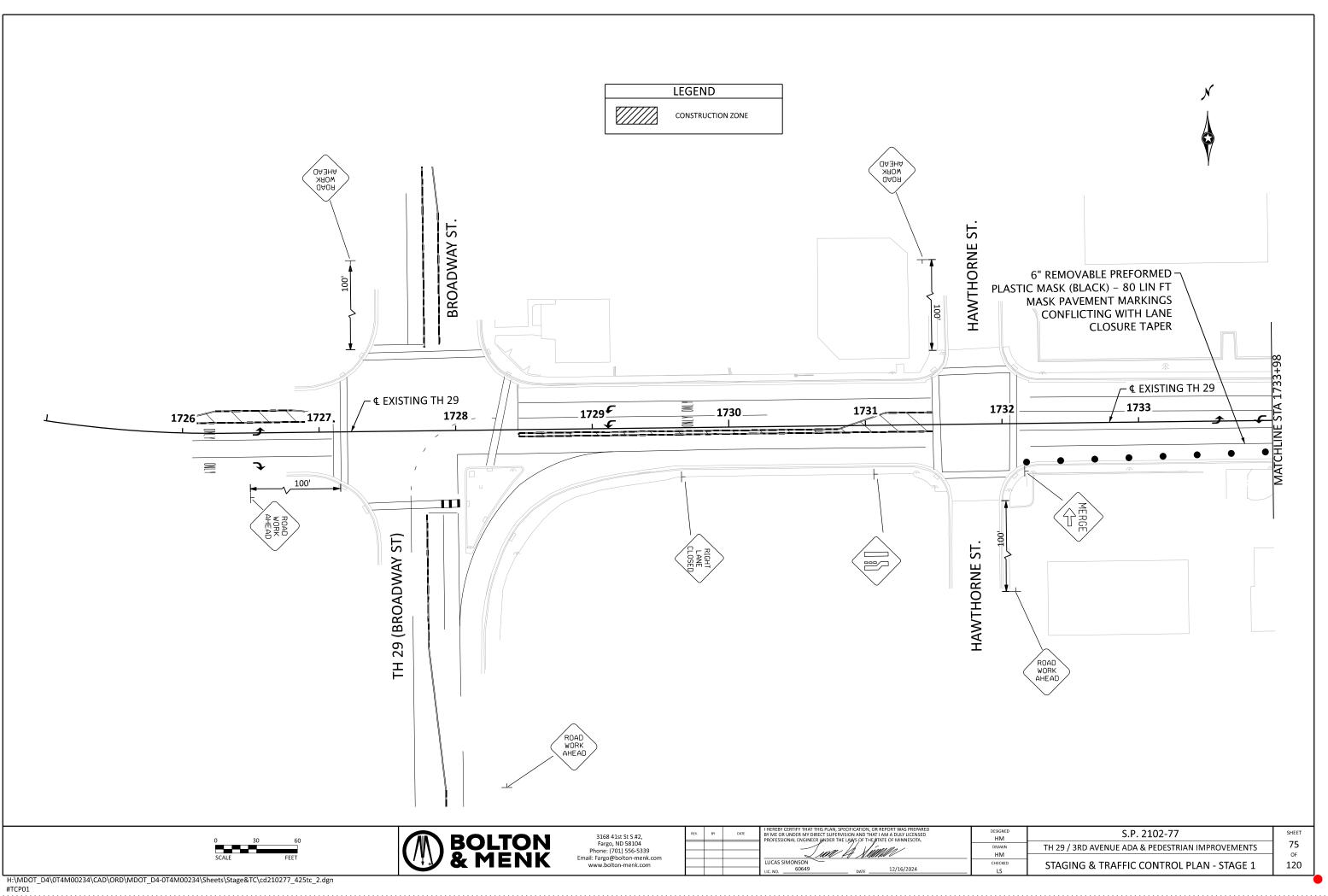
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- BOTTOM OF THE SIGN OR SIGN ASSEMBLY SHALL BE 7'.
- CLEARANCE FROM THE GROUND LINE TO THE BOTTOM OF THE LOWEST SIGN ON THE ASSEMBLY SHALL BE 7', OR AS SHOWN IN DETAIL, WHICHEVER IS GREATER.
- SIGN STRUCTURES BOTH LATERALLY AND LONGITUDINALLY. EXAMPLE SHOWS DETOUR SIGNAGE, BUT THIS REQUIREMENT APPLIES TO ALL SIGNAGE.



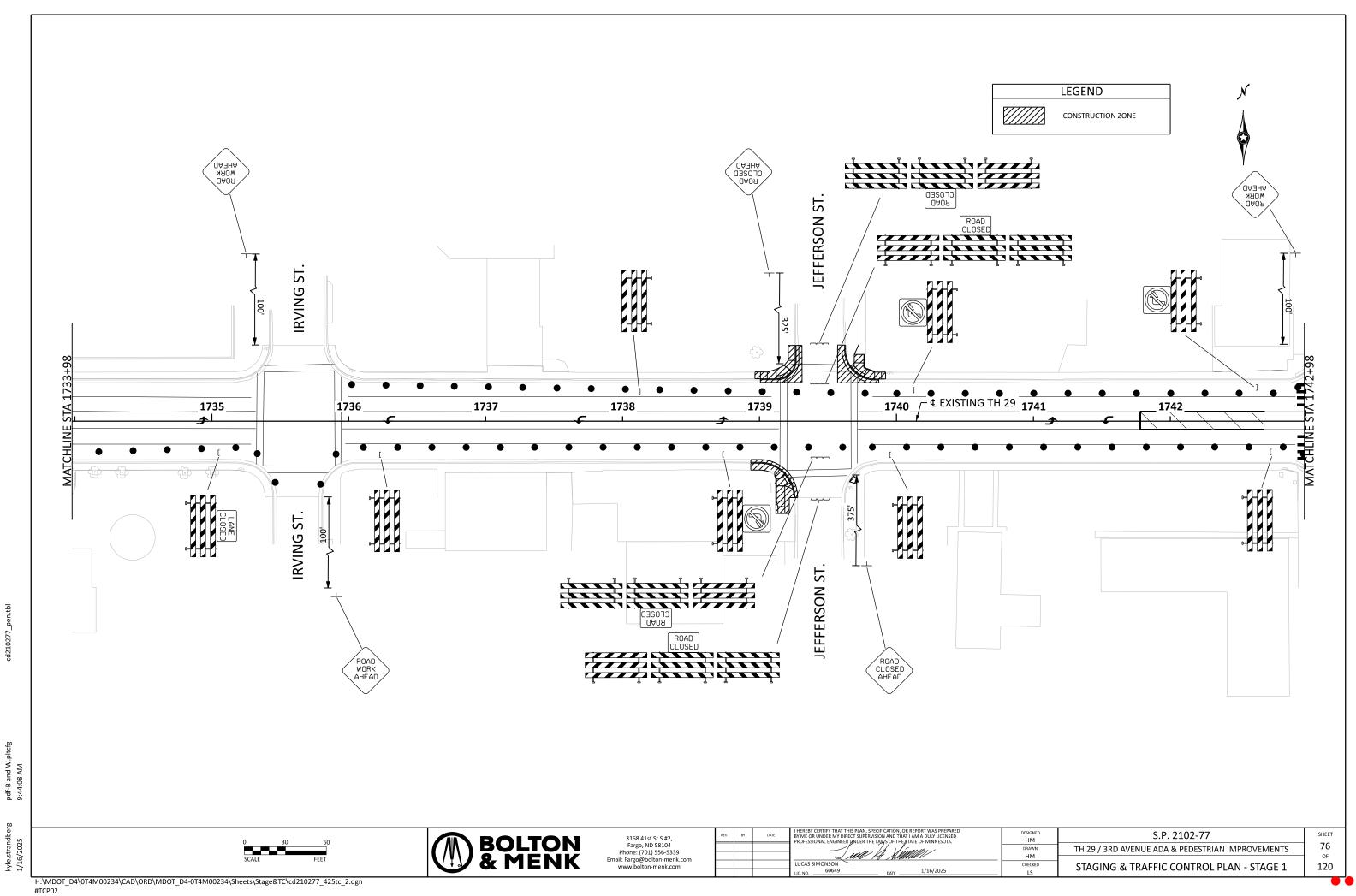
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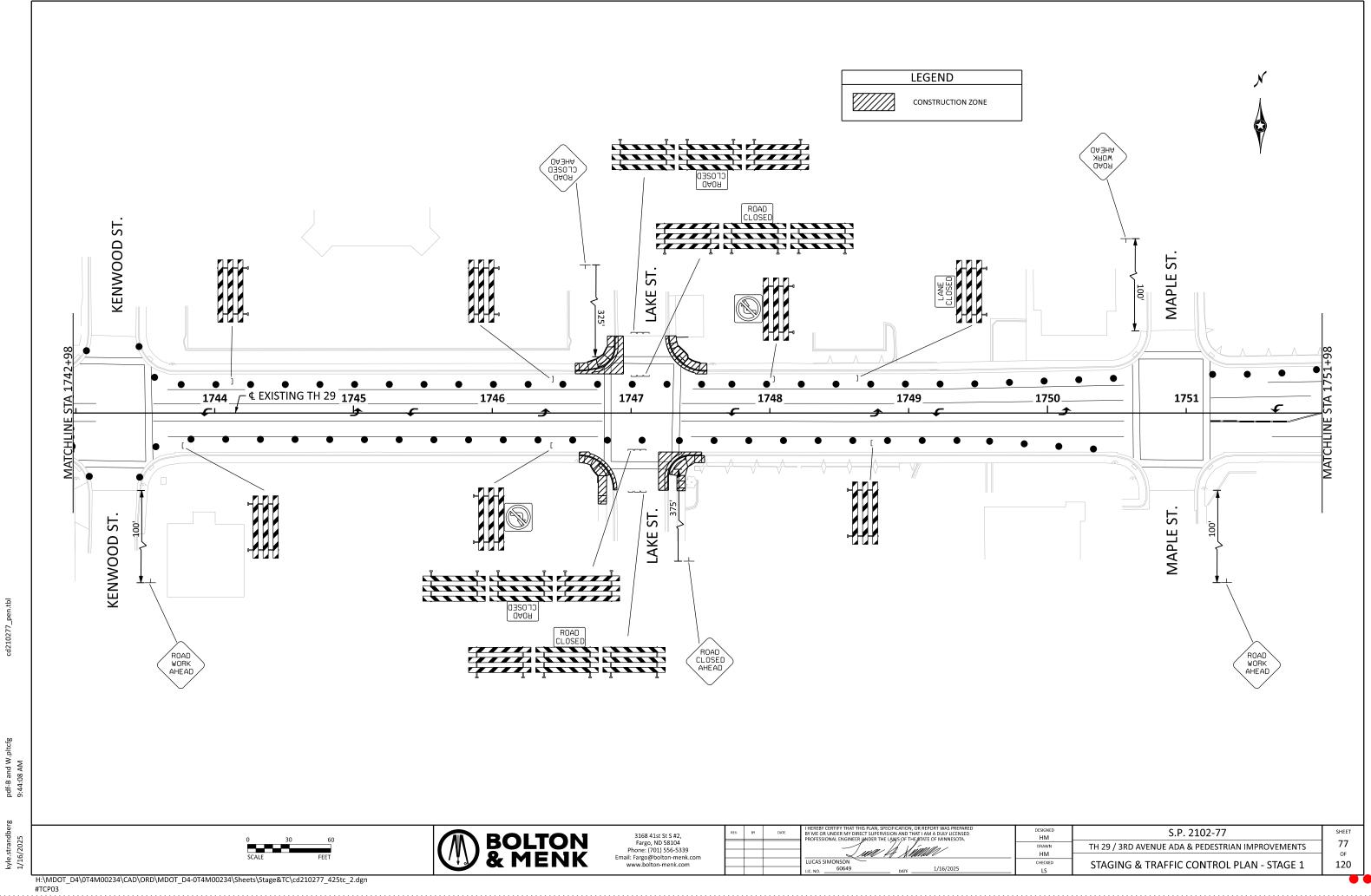
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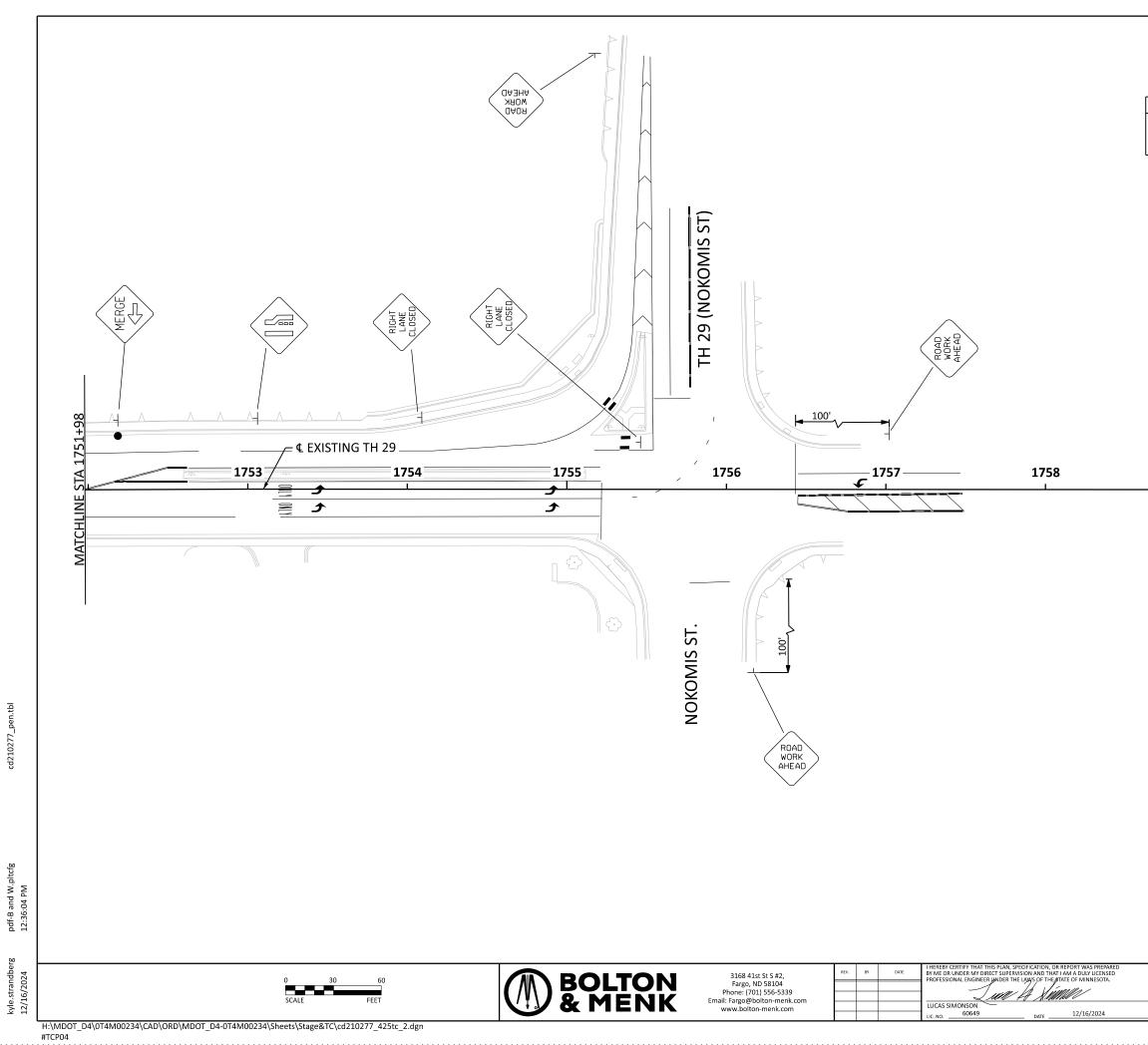
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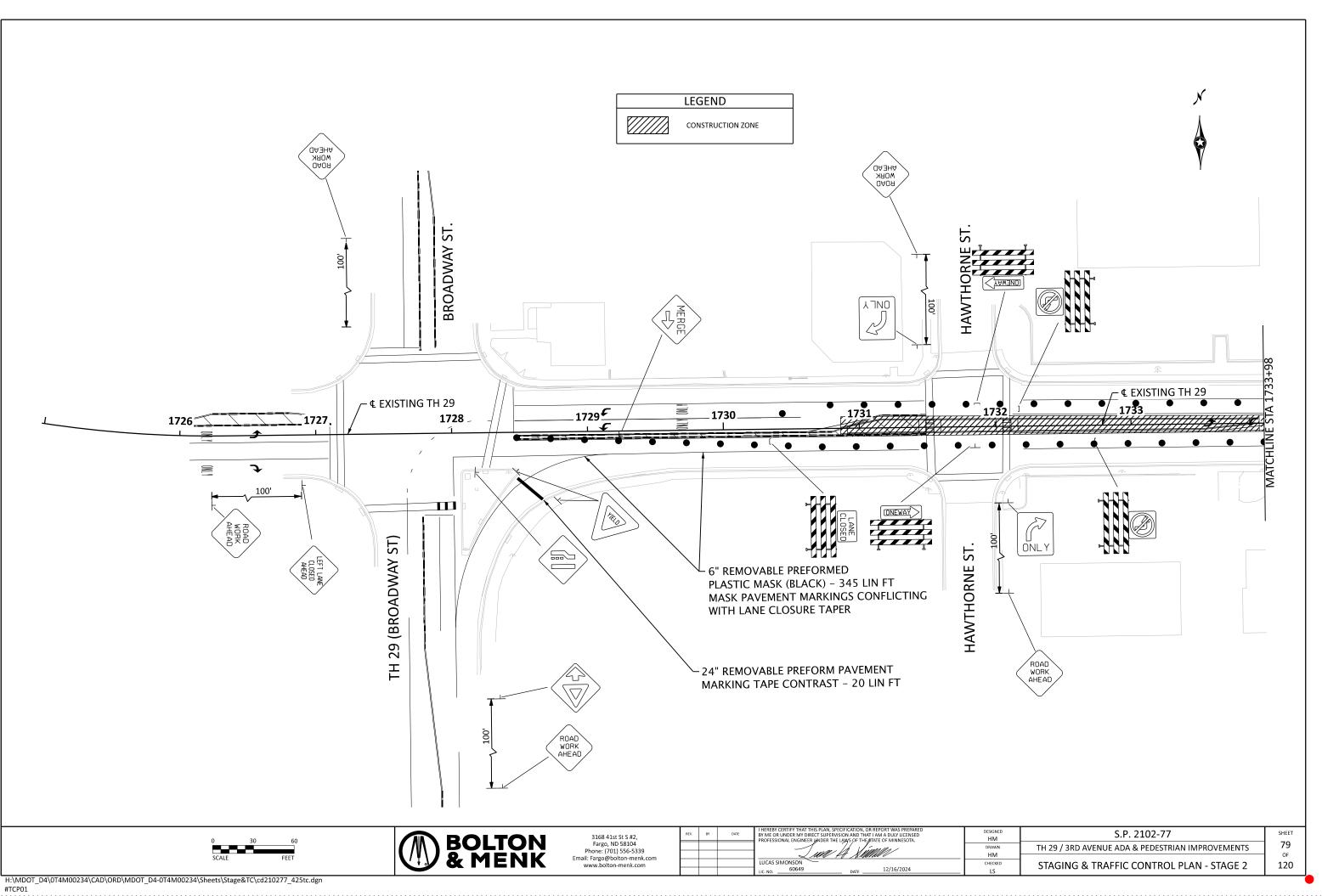
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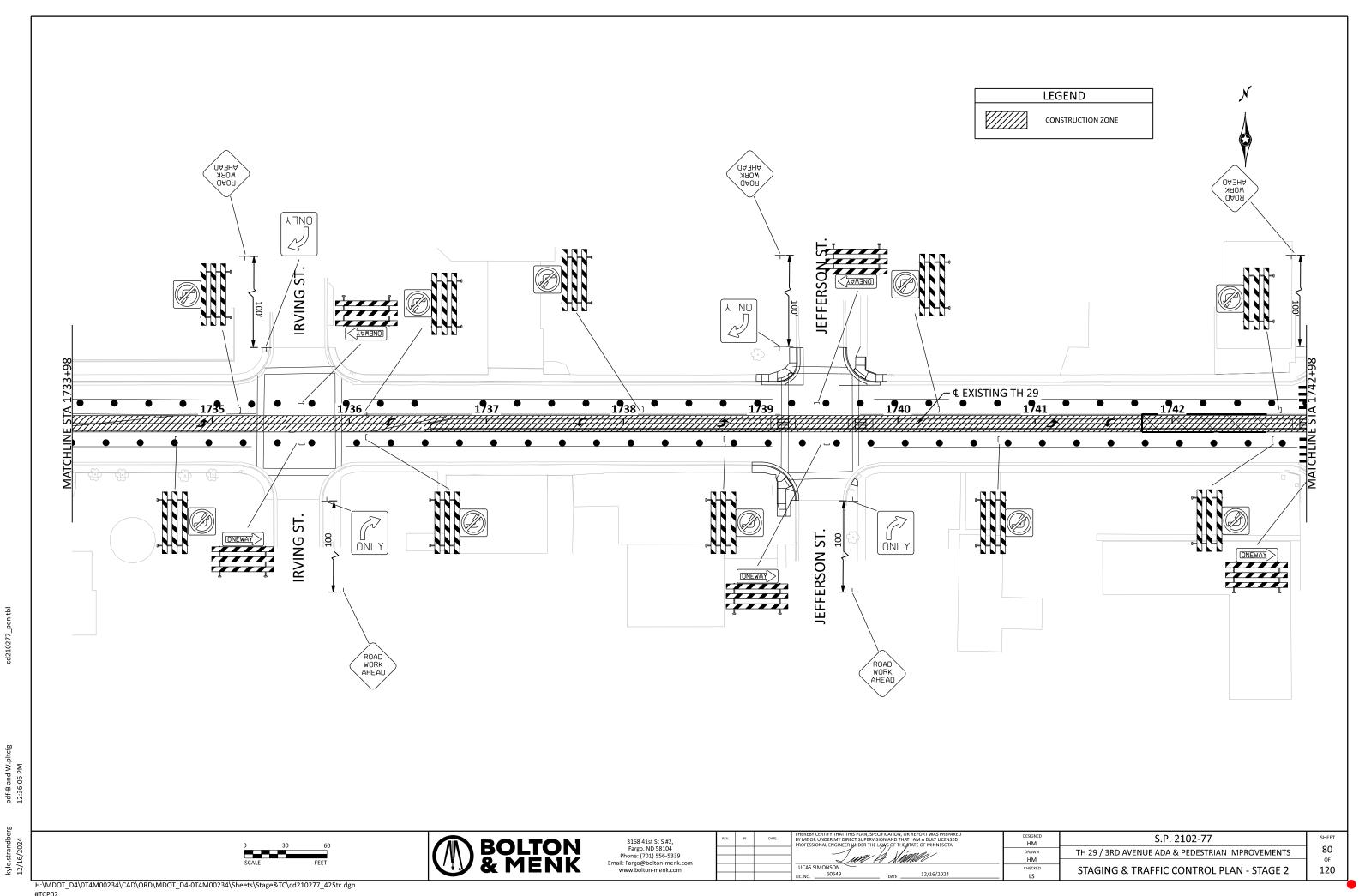
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	DESIGNED HM	S.P. 2102-77	SHEET
	DRAWN	TH 29 / 3RD AVENUE ADA & PEDESTRIAN IMPROVEMENTS	78
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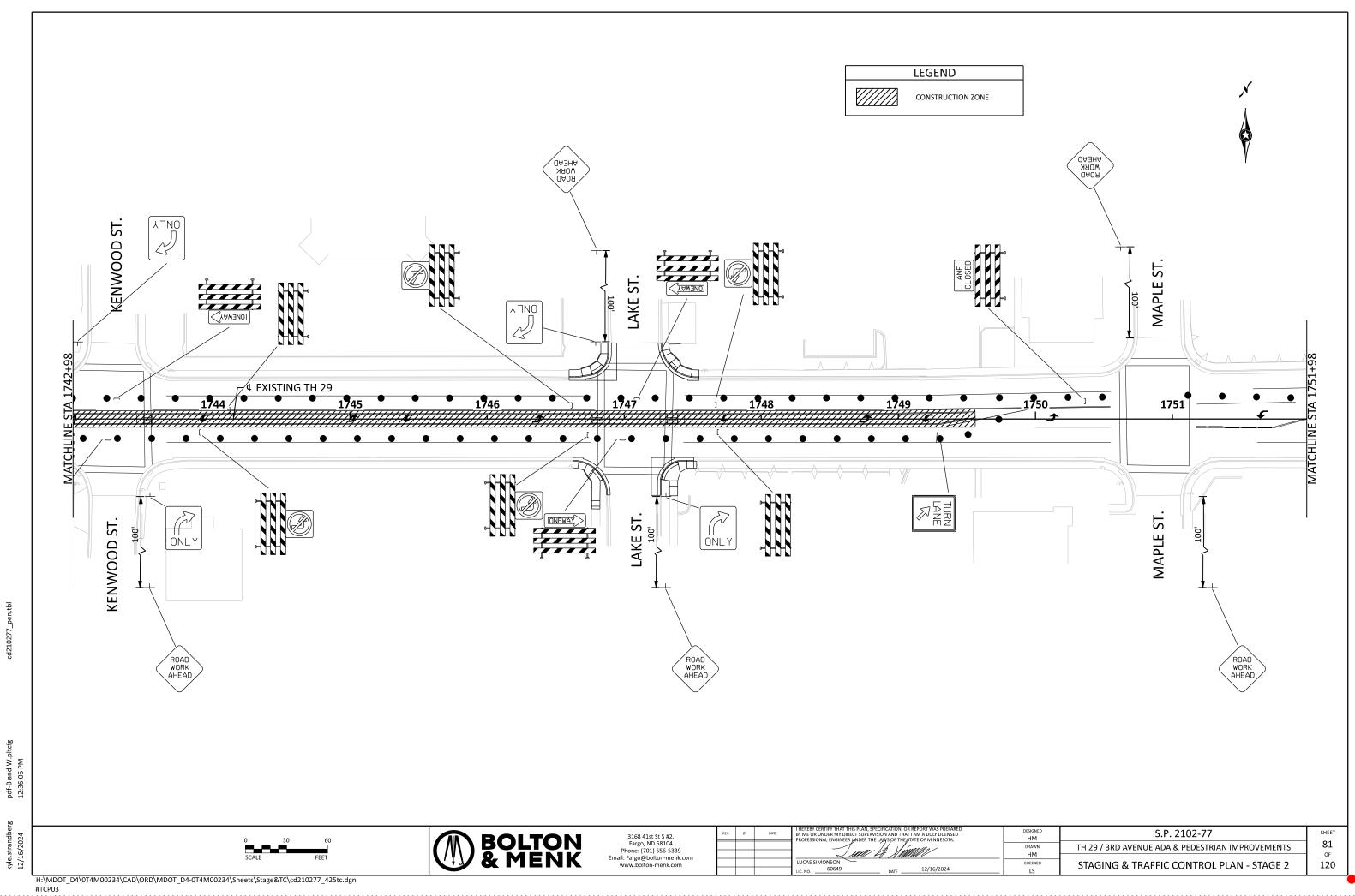
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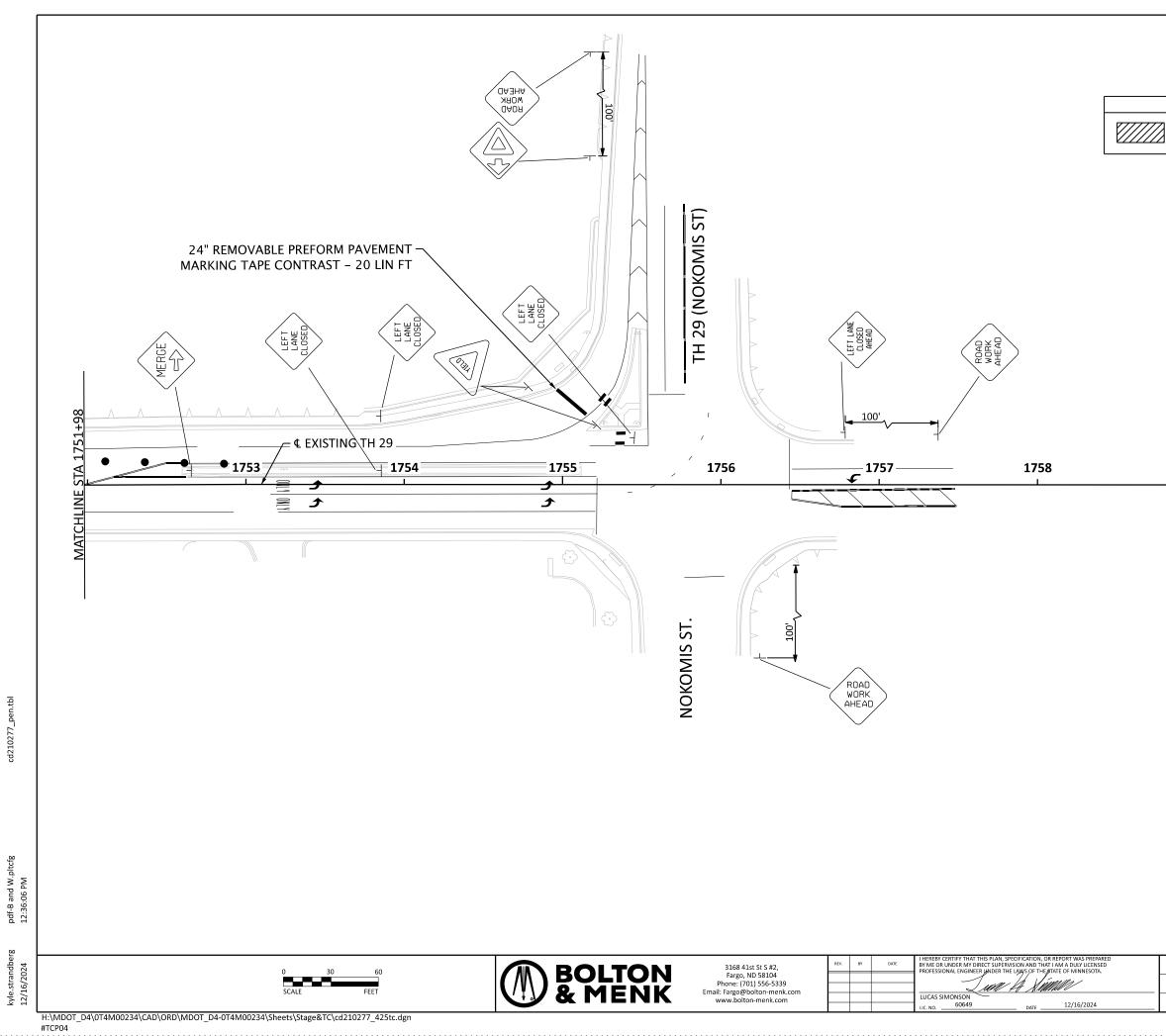
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## LEGEND

CONSTRUCTION ZONE



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DESIGNED HM	S.P. 2102-77	SHEET
DRAWN HM	TH 29 / 3RD AVENUE ADA & PEDESTRIAN IMPROVEMENTS	82 OF
CHECKED LS	STAGING & TRAFFIC CONTROL PLAN - STAGE 2	120

## GENERAL NOTES

### <u>SIGNING</u>

MOUNTING HEIGHT IS MINIMUM (WITH A + 6 INCH TOLERANCE).

SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR STANDARD SIGN DESIGNS, SPLICE PLATES, STRINGER AND PUNCHING CODES.

SEE STANDARD PLANS AND DETAILS FOR SIGN STRUCTURE INSTALLATION AND PLACEMENT.

STANDARD SIGN PANELS ARE LISTED IN THE TABULATIONS WITH TWO DIMENSIONS 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 TABULATIONS.

SIGNS TABULATIONS DISPLAY SIGN PANEL AND SUPPORT INFORMATION FOR NEW SIGNS. SIGNS BEING REMOVED OR SALVAGED MAY NOT INCLUDE PANEL OR SUPPORT INFORMATION IN THE TABULATION.

PLACE SIGNS AFTER FINAL GRADING IS COMPLETE.

PLACE NEW REFERENCE LOCATION SIGNS AT THE SAME LOCATION OF THE EXISTING REFERENCE LOCATION SIGN BEING REPLACED. IF LOCATION CAN NO LONGER BE USED CONTACT ENGINEER ON SITE FOR GUIDANCE ON PLACEMENT.

### **STRIPING**

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. THE CONTRACTOR WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS. LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A AGENCY PLACED YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 1/4 INCH UNDER OR 1/4 INCH OVER THE SPECIFIED WIDTH WILL BE ALLOWED FOR STRIPING PROVIDED THE VARIATION IS GRADUAL AND DOES NOT DETRACT FROM THE GENERAL APPEARANCE. BROKEN LINE SEGMENTS MAY VARY UP TO 3 INCHES FROM THE SPECIFIED LENGTHS PROVIDED THE OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE SHALL NOT EXCEED 1 INCH. MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINTS. ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY AS CLOSELY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.

JUST PRIOR TO THE PLACEMENT OF PAVEMENT MARKINGS THE ROAD SURFACE SHALL BE CLEANED AND FREE OF CONTAMINATION AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER. PORTLAND CEMENT CONCRETE SURFACES SHALL BE SANDBLAST CLEANED TO REMOVE ANY SURFACE TREATMENTS AND/OR LAITANCE.

APPLY ALL PAVEMENT MARKINGS AS RECOMMENDED BY THE MATERIAL MANUFACTURER.

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARE BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Chus Dall

1/16/2025

DATE

CHRIS DAHI

49845

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Fargo, ND 58104 Phone: (701) 556-5339

Email: Fargo@bolton-menk.com

www.bolton-menk.com

**BOLTON** 

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

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.

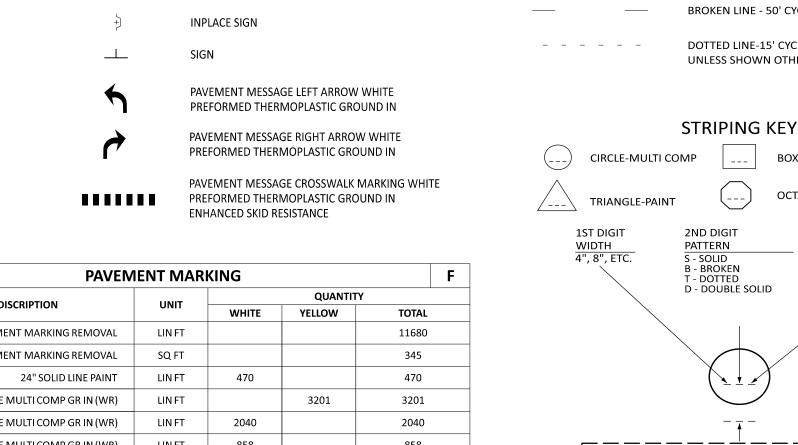
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	DRAWN	TH 29 / 3RD AVENUE ADA & PEDESTRIAN IMPROVEMENTS	83
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	CHECKED	SIGNING & STRIPING PLAN	120
-	CD		120

# SYMBOLS & MATERIALS LEGEND



	PAVEN	IENT MAR	KING		F
	ITEM DISCRIPTION	UNIT		QUANTI	ГҮ
	TEW DISCRIPTION	UNIT	WHITE	YELLOW	TOTAL
	PAVEMENT MARKING REMOVAL	LIN FT			11680
	PAVEMENT MARKING REMOVAL	SQ FT			345
	24" SOLID LINE PAINT	LIN FT	470		470
	4" SOLID LINE MULTI COMP GR IN (WR)	LIN FT		3201	3201
	6" SOLID LINE MULTI COMP GR IN (WR)	LIN FT	2040		2040
2102-77	4" BROKEN LINE MULTI COMP GR IN (WR)	LIN FT	858		858
SP 21	4" DOTTED LINE MULTI COMP GR IN (WR)	LIN FT	78		78
0,	4" DBLE SOLID LINE MULTI COMP GR IN (WR)	LIN FT		1131	1131
	24" SOLID LINE PREF THERMO GR IN	LIN FT	254	67	321
	CROSSWALK PREF THERMO GR IN ESR	SQ FT	1908		1908
	PAVT MSSG PREF THERMO GR IN	LEFT/R	IGHT TURN ARR	OW (F-1)	5
	FAVT WISSUPREF THERIMO GR IN	SQ FT	78		78

	ROUND IN	W=WET REFLECTIVE E=ENHANCED SKID RESIS
EXAMPLE:	(4SW) _ 4	SOLID LINE WHITE PREF THROUND IN, CONTRAST, WE
		INDEX

NOTES:

(F-1) LEFT/RIGHT TURN ARROW = 15.45 SQ FT.

tbl

3168 41st St S #2, Fargo, ND 58104 one: (701) 556-53 argo@bolton-me w.bolton-menk.c

St S #2,	REV.	ВҮ	DATE	I HEREBY CERTIFY THAT BY ME OR UNDER MY D PROFESSIONAL ENGINE
58104				
556-5339 :on-menk.com				
menk.com				CHRIS DAHL
incluicont.				LIC. NO49845

DATE	THEREBY CERTIFY THAT THIS PLAN, SPECIF BY ME OR UNDER MY DIRECT SUPERVISIO PROFESSIONAL ENGINEER UNDER THE LA	N AND THAT I AM	A DULY LICENSED
	0.1		or mininesora.
	Chus L	all	
	CHRIS DAHL		
	LIC. NO49845	DATE	1/16/2025

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85 - 87

88 - 94

95 - 101

102 - 103

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BROKEN LINE - 50' CYCLE (12.5' LINE, 37.5' GAP)

DOTTED LINE-15' CYCLE (3' LINE, 12' GAP), UNLESS SHOWN OTHERWISE STATED IN THE PLAN

BOX-PREF TAPE

OCTAGON-PREF THERMO

3RD DIGIT COLOR W - WHITE Y - YELLOW B - BLACK

ISTANCE

THERMO ET REFLECTIVE

DESCRIPTION

SIGNING & STRIPING GENERAL NOTES

SIGNING & STRIPING TABULATION SHEETS

EXISTING SIGNING AND STRIPING PLANS

PERMANENT SIGNING AND STRIPING PLANS

PERMANENT SIGNING AND STRIPING DETAIL SHEETS

	DESIGNED	S.P. 2102-77	SHEET
	DRAWN	TH 29 / 3RD AVENUE ADA & PEDESTRIAN IMPROVEMENTS	84
-	CK	SIGNING & STRIPING PLAN	₀⊧ 120

	REMOVE SIGN	ST-R
SIGN NUMBER	LEGEND	REMOVI SIGN
		EACH
E-1	PEDESTRIAN CROSSING	- 1
C-1	DOWN ARROW LEFT PLAQUE	1
E-2	BEGIN	1
L-2	CENTER LANE ONLY	
E-3	SPEED LIMIT 30	1
E-4	PEDESTRIAN CROSSING	1
L 4	DOWN ARROW LEFT PLAQUE	-
E-5	PEDESTRIAN CROSSING	1
2.5	DOWN ARROW LEFT PLAQUE	<u> </u>
E-6	PEDESTRIAN CROSSING	1
	DOWN ARROW LEFT PLAQUE	<u> </u>
E-7	PEDESTRIAN CROSSING	1
	DOWN ARROW LEFT PLAQUE	<u> </u>
E-8	PEDESTRIAN CROSSING	1
	DOWN ARROW LEFT PLAQUE	
E-9	PEDESTRIAN CROSSING	1
	DOWN ARROW RIGHT PLAQUE	
E-10	PEDESTRIAN CROSSING	1
	DOWN ARROW LEFT PLAQUE	
E-11	PEDESTRIAN CROSSING	1
	DOWN ARROW RIGHT PLAQUE	
E-12	PEDESTRIAN CROSSING	1
	DOWN ARROW LEFT PLAQUE	
E-13	TYPE 1 OBJECT MARKER	1
	KEEP RIGHT	
E-14	NO LEFT TURN	1
E-15	TYPE 1 OBJECT MARKER	1
	KEEP RIGHT	
E-16	PEDESTRIAN CROSSING	1
	DOWN ARROW LEFT PLAQUE	
E-17	PEDESTRIAN CROSSING	1
	DOWN ARROW LEFT PLAQUE	
E-18	BEGIN	1
	CENTER LANE ONLY	
E-19	PEDESTRIAN CROSSING	1
	DOWN ARROW LEFT PLAQUE	
E-20	STOP HERE FOR PED SYMBOL LEFT	1
E-21		1
E-22		1
	ARROW (WHITE)	
	SP 2102-77 TOTAL	22

3168 41st St S #2,	REV.	ВҮ	DATE	I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.
Fargo, ND 58104 Phone: (701) 556-5339 Email: Fargo@bolton-menk.com				Chis Dall
www.bolton-menk.com				CHRIS DAHL
				LIC. NO

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kyle.strandberg 1/16/2025

CK OF CD SIGNING & STRIPING PLAN 120		DESIGNED KS DRAWN	S.P. 2102-77 TH 29 / 3RD AVENUE ADA & PEDESTRIAN IMPROVEMENTS	sнеет <b>85</b>
	-	CHECKED	SIGNING & STRIPING PLAN	

|--|--|--|

				SIG	Ν									ST-A
		PANEL				SUPPORT							T	
SIGN NUMBER	PANEL CODE	LEGEND	SIZE (W x H)	MOUNTING HEIGHT	SURFACE TYPE	RISER POST SIZE	NUMBER OF POSTS	SIGN	SALVAGE SIGN	INSTALL SIGN	SALVAGE SIGN SPECIAL	INSTALL SIGN SPECIAL	REMOVE SIGN PANEL	SIGN PANEL
			INCHES	FEET		INCHES		SQ FT	EACH	EACH	EACH	EACH	EACH	SQ FT
S-1	OM1-2	TYPE 1 OBJECT MARKER	18 x 18	7	CONCRETE	2	1	2.25						
5-1	R4-7	KEEP RIGHT	24 x 30	/	CONCRETE	2	T	5.00						
S-2	W11-2	PEDESTRIAN CROSSING (FLUORESCENT YELLOW-GREEN)	36 x 36	7	CONCRETE	2-1/2	1	9.00						
5-2	W16-7PL	DOWN ARROW LEFT PLAQUE (FLUORESCENT YELLOW-GREEN)	30 x 18	/	CONCRETE	2-1/2	Ŧ	3.75						
S-3	W11-2	PEDESTRIAN CROSSING (FLUORESCENT YELLOW-GREEN)	36 x 36	7	CONCRETE	2-1/2	1	9.00						
5-5	W16-7PR	DOWN ARROW RIGHT PLAQUE (FLUORESCENT YELLOW GREEN)	30 x 18	/	CONCRETE	2-1/2	T	3.75						
S-4	W11-2	PEDESTRIAN CROSSING (FLUORESCENT YELLOW-GREEN)	36 x 36	7	CONCRETE	2-1/2	1	9.00						
5-4	W16-7PR	DOWN ARROW RIGHT PLAQUE (FLUORESCENT YELLOW-GREEN)	30 x 18	/	CONCRETE	2-1/2	-	3.75						
S-5	R6-1R	ONE WAY RIGHT	36 x 12	7	CONCRETE	2	1	3.00						
5-5	R6-1L	ONE WAY LEFT	36 x 12	/	CONCRETE	2	1	3.00						
S-6	W11-2	PEDESTRIAN CROSSING (FLUORESCENT YELLOW-GREEN)	36 x 36	7	SOIL	2-1/2	1	9.00						
3-0	W16-7PL	DOWN ARROW LEFT PLAQUE (FLUORESCENT YELOW-GREEN)	30 x 18	/	3012	2-1/2	Ţ	3.75						
S-7		STOP		7	SOIL	2	1		1	1				
S-8	OM1-2	TYPE 1 OBJECT MARKER	18 x 18	7	CONCRETE	2	1	2.25						
5-0	R4-7	KEEP RIGHT	24 x 30	/	CONCRETE	2	Ť	5.00						
S-9	R2-1	SPEED LIMIT 30	30 x 36 7		SOIL	2	1	7.50						
S-10	W11-2	PEDESTRIAN CROSSING (FLUORESCENT YELLOW-GREEN)	36 x 36		CONCRETE 2-1/2	2 1/2	1	9.00						
5-10	W16-7PL	DOWN ARROW LEFT PLAQUE (FLUORESCENT YELLOW-GREEN)	30 x 18		CONCRETE	2-1/2	Ţ	3.75						
S-11	W4-6	ADDED LANE ON CURVE	36 x 36	7	CONCRETE	2	1	9.00						
S-12	OM1-2	TYPE 1 OBJECT MARKER	18 x 18	7	CONCRETE	2	1	2.25						
	R4-7	KEEP RIGHT	24 x 30	/	CONCRETE	Z	Ţ	5.00						
S-13	R6-1R	ONE WAY RIGHT	36 x 12	7				3.00						
3-13	R6-1L	ONE WAY LEFT	36 x 12	/				3.00						
S-14	W11-2	PEDESTRIAN CROSSING (FLUORESCENT YELLOW-GREEN)	36 x 36	7	BITUMINOUS	2-1/2	1	9.00						
5-14	W16-7PL	DOWN ARROW LEFT PLAQUE (FLUORESCENT YELLOW-GREEN)	30 x 18	/	BITOMINOOS	2-1/2	L T	3.75						
S-15	W11-2	PEDESTRIAN CROSSING (FLUORESCENT YELLOW-GREEN)	36 x 36	7	CONCRETE	2-1/2	1	9.00						
3-13	W16-7PR	DOWN ARROW RIGHT PLAQUE (FLUORESCENT YELLOW-GREEN)	30 x 18	/	CONCRETE	2-1/2	Ţ	3.75						
S-16	W11-2	PEDESTRIAN CROSSING (FLUORESCENT YELLOW-GREEN)	36 x 36	7	CONCRETE	2-1/2	1	9.00						
3-10	W16-7PR	DOWN ARROW RIGHT PLAQUE (FLUORESCENT YELLOW-GREEN)	30 x 18	/	CONCRETE	2-1/2	T	3.75						
S-17	W11-2	PEDESTRIAN CROSSING (FLUORESCENT YELLOW-GREEN)	36 x 36	7	CONCRETE	2-1/2	1	9.00						
3-17	W16-7PL	DOWN ARROW LEFT PLAQUE (FLUORESCENT YELLOW-GREEN)	30 x 18	/	CONCRETE	2-1/2	1	3.75						
S-18	R6-1R	ONE WAY RIGHT	36 x 12	7	CONCRETE	2	1	3.00						
3-10	R6-1L	ONE WAY LEFT	36 x 12	/	CONCRETE	Z	Ţ	3.00						
S-19	R6-1R	ONE WAY RIGHT	36 x 12	7				3.00						
2-13	R6-1L	ONE WAY LEFT	36 x 12	/				3.00						
S-20	OM1-2	TYPE 1 OBJECT MARKER	18 x 18	- 7	CONCRETE	2	1	2.25						
3-20	R4-7	KEEP RIGHT	24 x 30	/	CUNCKETE	2		5.00						
C 21	M1-X119	GLACIAL RIDGE TRAIL	24 x 24	- 7	CONCRETE	2	1	4.00						
S-21	M6-1	ARROW (WHITE)	21 x 15	7 /	CONCRETE	2		2.19						
S-22	OM1-2	TYPE 1 OBJECT MARKER	18 x 18										1	2.25

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				Chrs Dall
.com I				CHRIS DAHL 49845 1/16/2025

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 S.P. 2102-77
 SHEET

 DRAWN CK
 TH 29 / 3RD AVENUE ADA & PEDESTRIAN IMPROVEMENTS OF
 86 OF

 CHCKKED CD
 SIGNING & STRIPING PLAN
 120

NOTES:

(1) MOUNT BACK TO BACK.

(2) MOUNT TO RRFB SIGNAL POLE PER MNDOT STD PLAN 5-297.730.

				SIG	N (CONTINU	JED)								ST-A
		PANEL				SUPPORT								
SIGN NUMBER	PANEL CODE	LEGEND	SIZE (W x H)	MOUNTING HEIGHT	SURFACE TYPE	RISER POST SIZE	NUMBER OF POSTS	SIGN	SALVAGE SIGN	INSTALL SIGN	SALVAGE SIGN SPECIAL	INSTALL SIGN SPECIAL	REMOVE SIGN PANEL	SIGN PANEL
			INCHES	FEET		INCHES		SQ FT	EACH	EACH	EACH	EACH	EACH	SQ FT
S-23	R6-1R	ONE WAY RIGHT	36 x 12										1	3.00
S-24	R2-1	SPEED LIMIT 30	30 x 36										1	7.50
S-25	M3-3	SOUTH (BLUE)	24 x 12										1	2.00
3-25	M1-5M	MINNESOTA HWY 29	24 x 24										1	4.00
S-26		STREET SIGNS			CONCRETE	2-1/2	1				1	1		
S-27		STREET SIGNS			SOIL	2-1/2	1				1	1		
S-28		STOP		7	SOIL	2	1		1	1				
S-29		STOP		7	SOIL	2	1		1	1				
S-30	R1-5BL	STOP HERE FOR PED SYMBOL LEFT	36 x 36	7	SOIL	2	1	9.00						
S-31	R1-5BL	STOP HERE FOR PED SYMBOL LEFT	36 x 36	7	CONCRETE	2	1	9.00						
S-32	R5-1	DO NOT ENTER	36 x 36	7	CONCRETE	2	1	9.00						
S-33	R5-1	DO NOT ENTER	36 x 36	7	CONCRETE	2	1	9.00						
S-34	R5-1	DO NOT ENTER	36 x 36	7	CONCRETE	2	1	9.00						
S-35	R5-1	DO NOT ENTER	36 x 36	7	CONCRETE	2	1	9.00						
S-36	R5-1	DO NOT ENTER	36 x 36	7	CONCRETE	2	1	9.00						
S-37	R5-1	DO NOT ENTER	36 x 36	7	CONCRETE	2	1	9.00						
S-38	R5-1	DO NOT ENTER	36 x 36	7	CONCRETE	2	1	9.00						
S-39	R5-1	DO NOT ENTER	36 x 36	7	CONCRETE	2	1	9.00						
						SP 210	2-77 TOTAL	280	3	3	2	2	5	19

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kyle.strandberg 1/16/2025	
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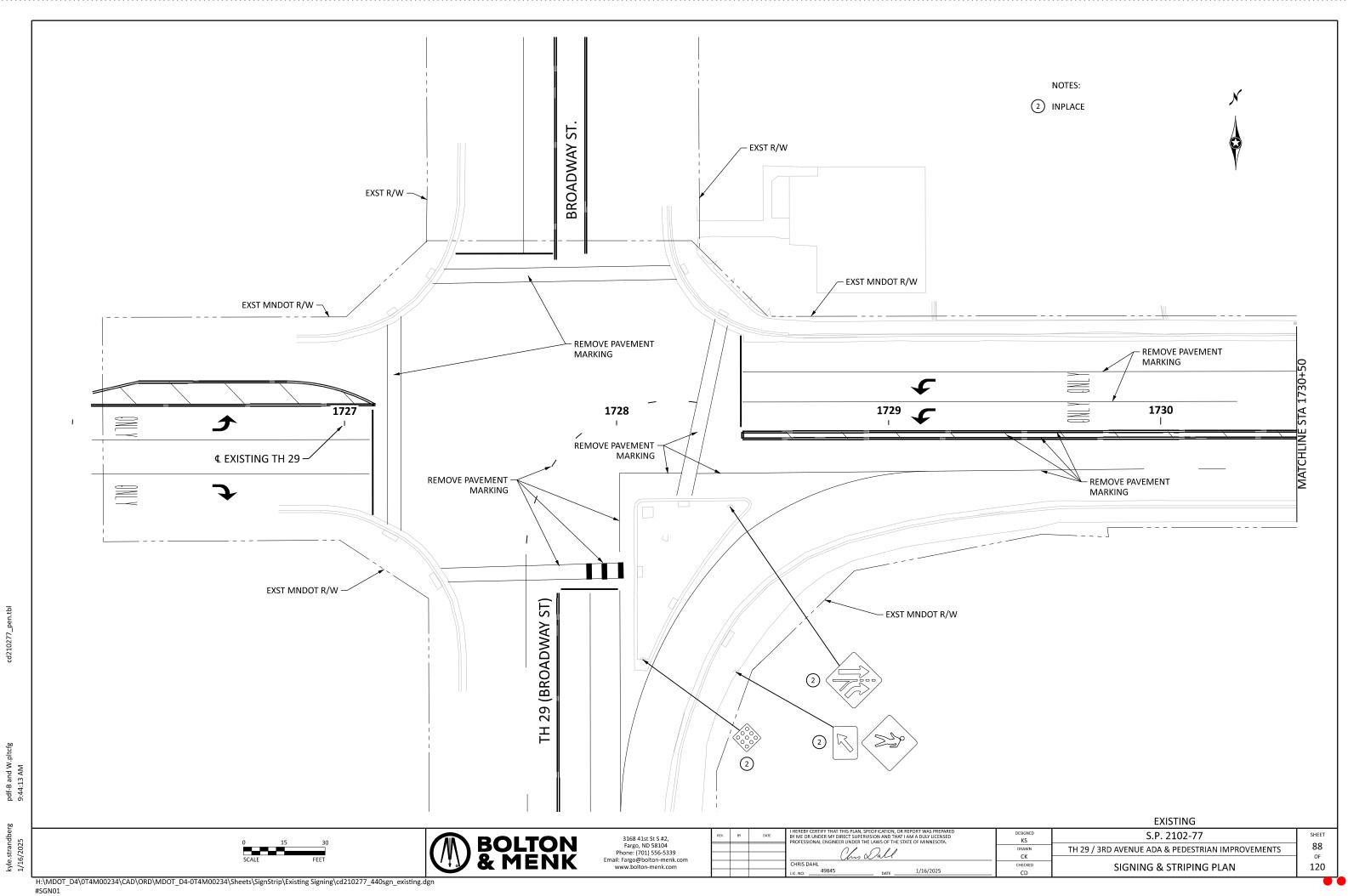
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Fargo, ND 58104
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Email: Fargo@bolton-menk.con
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				CHRIS DAHL	
				49845 DAT	r 1/16/2025

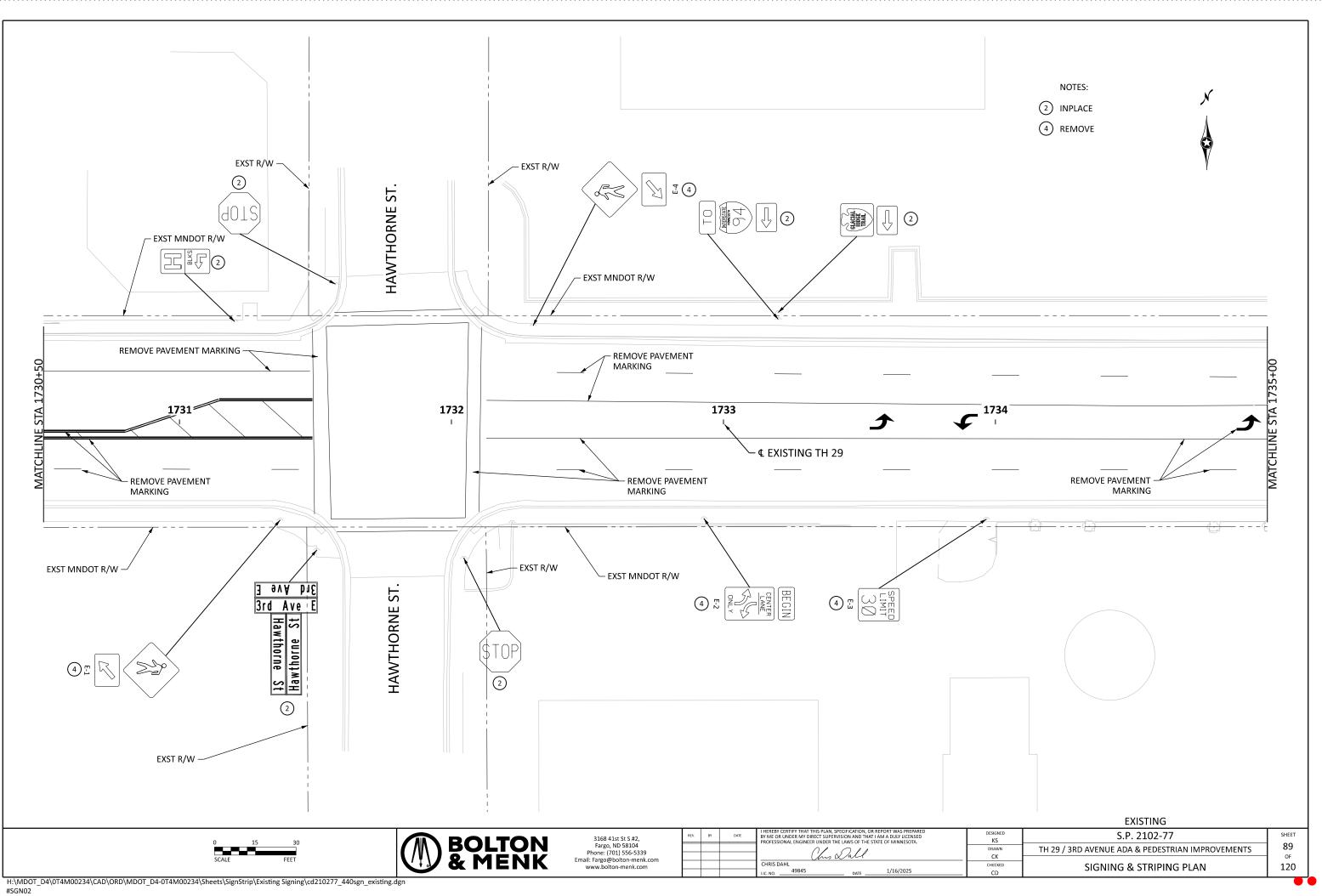
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	DESIGNED KS	S.P. 2102-77	SHEET
	DRAWN	TH 29 / 3RD AVENUE ADA & PEDESTRIAN IMPROVEMENTS	87
_	СК		OF
	CHECKED	SIGNING & STRIPING PLAN	120
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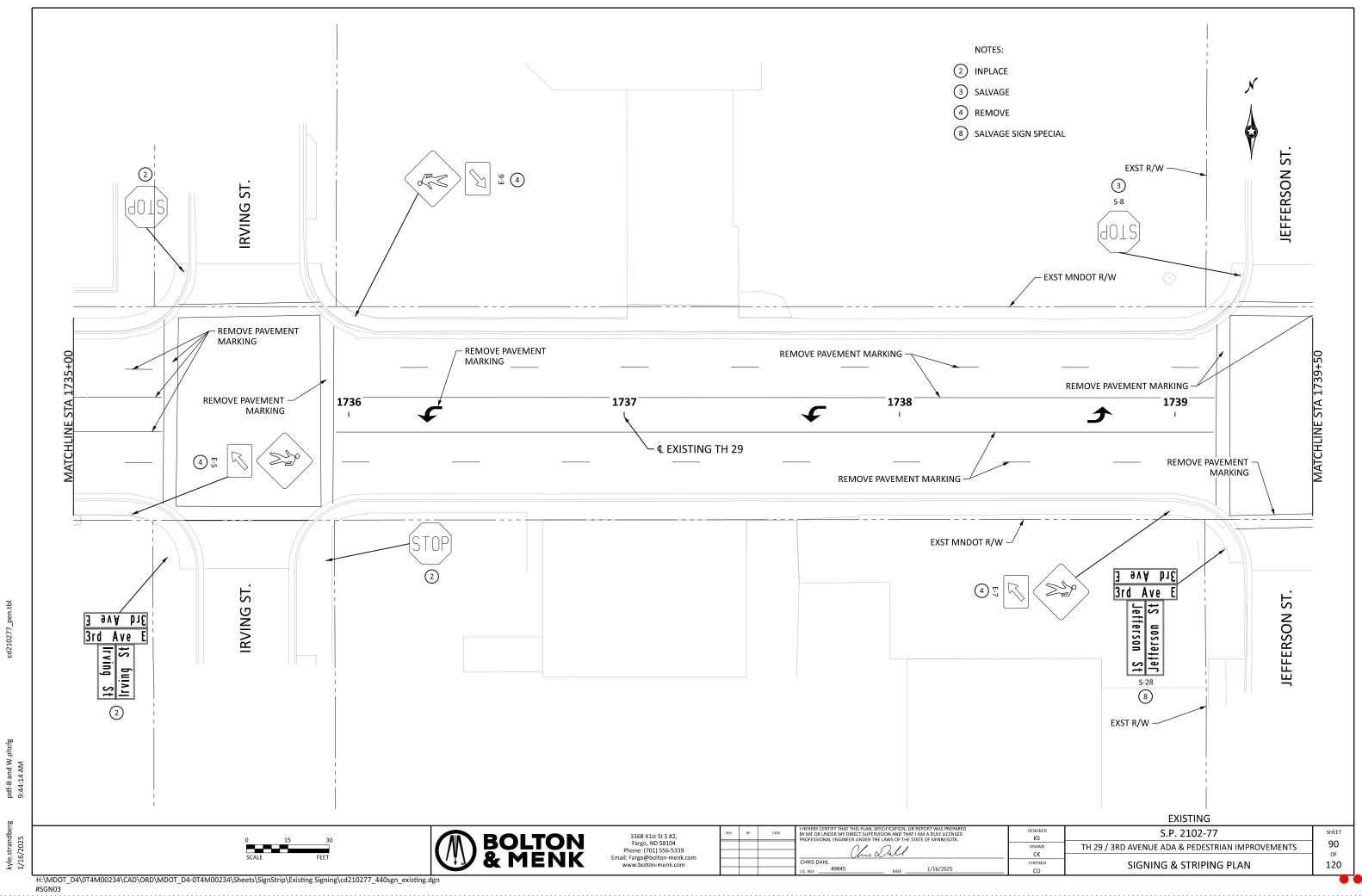


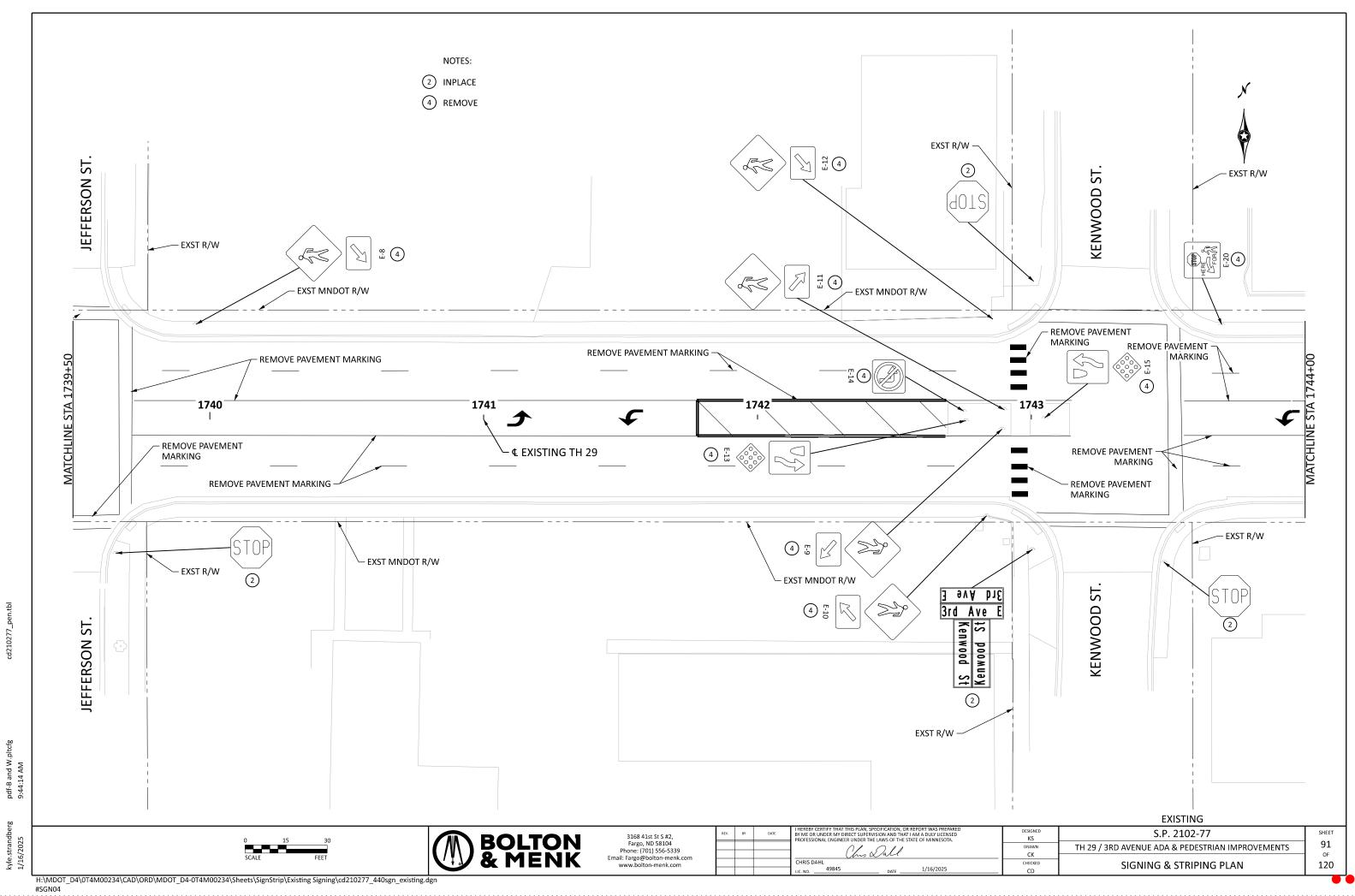
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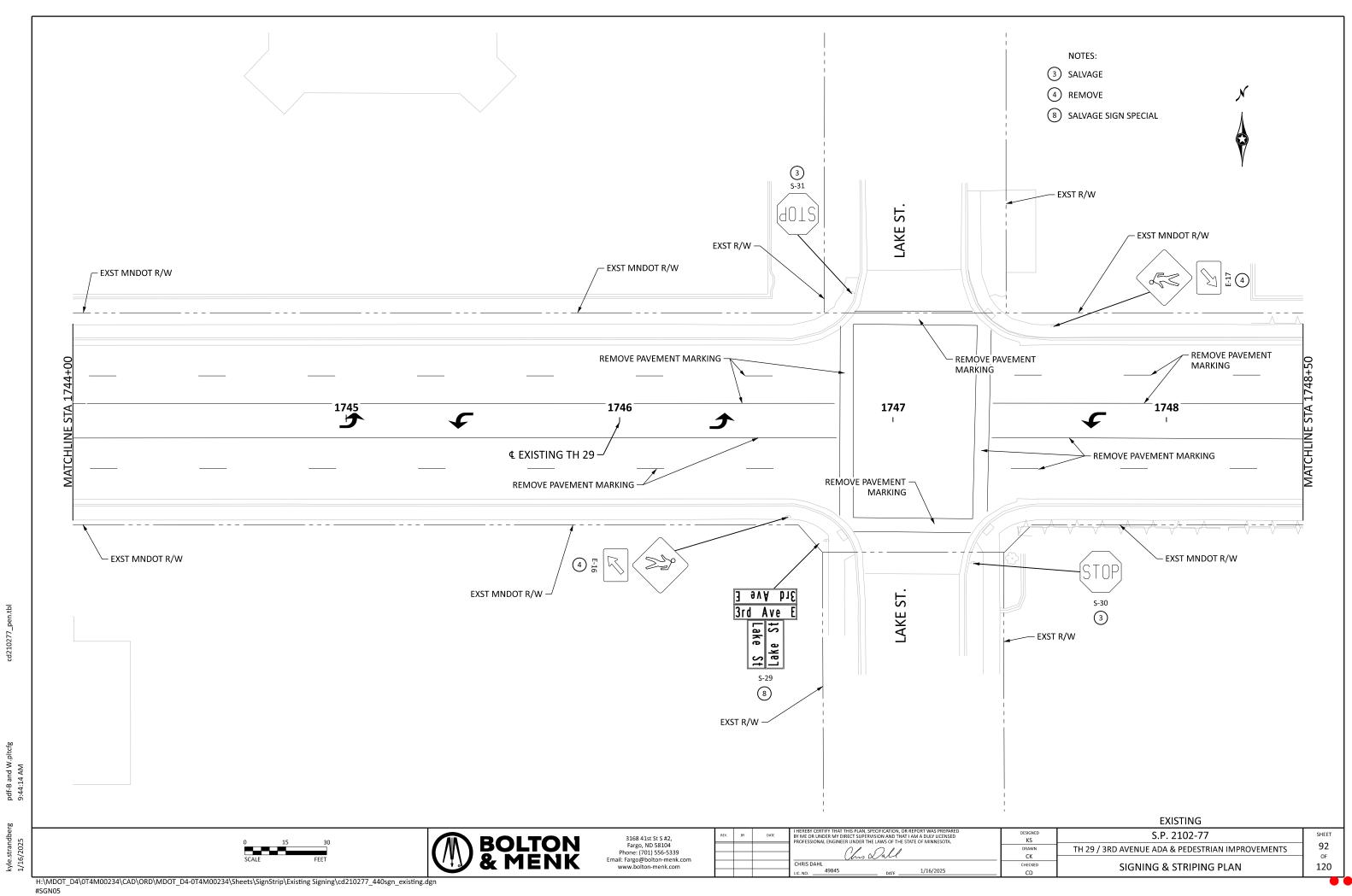


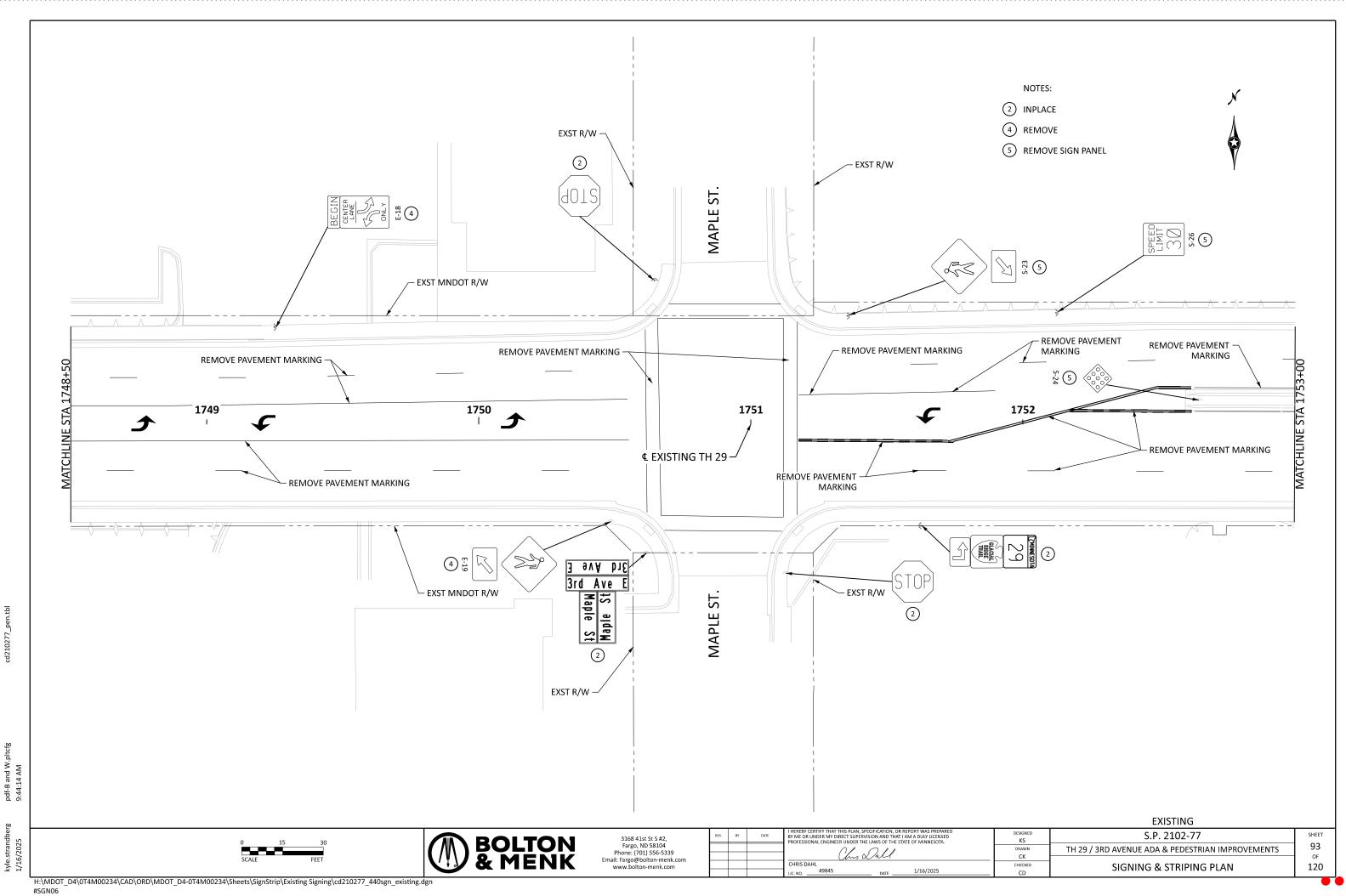
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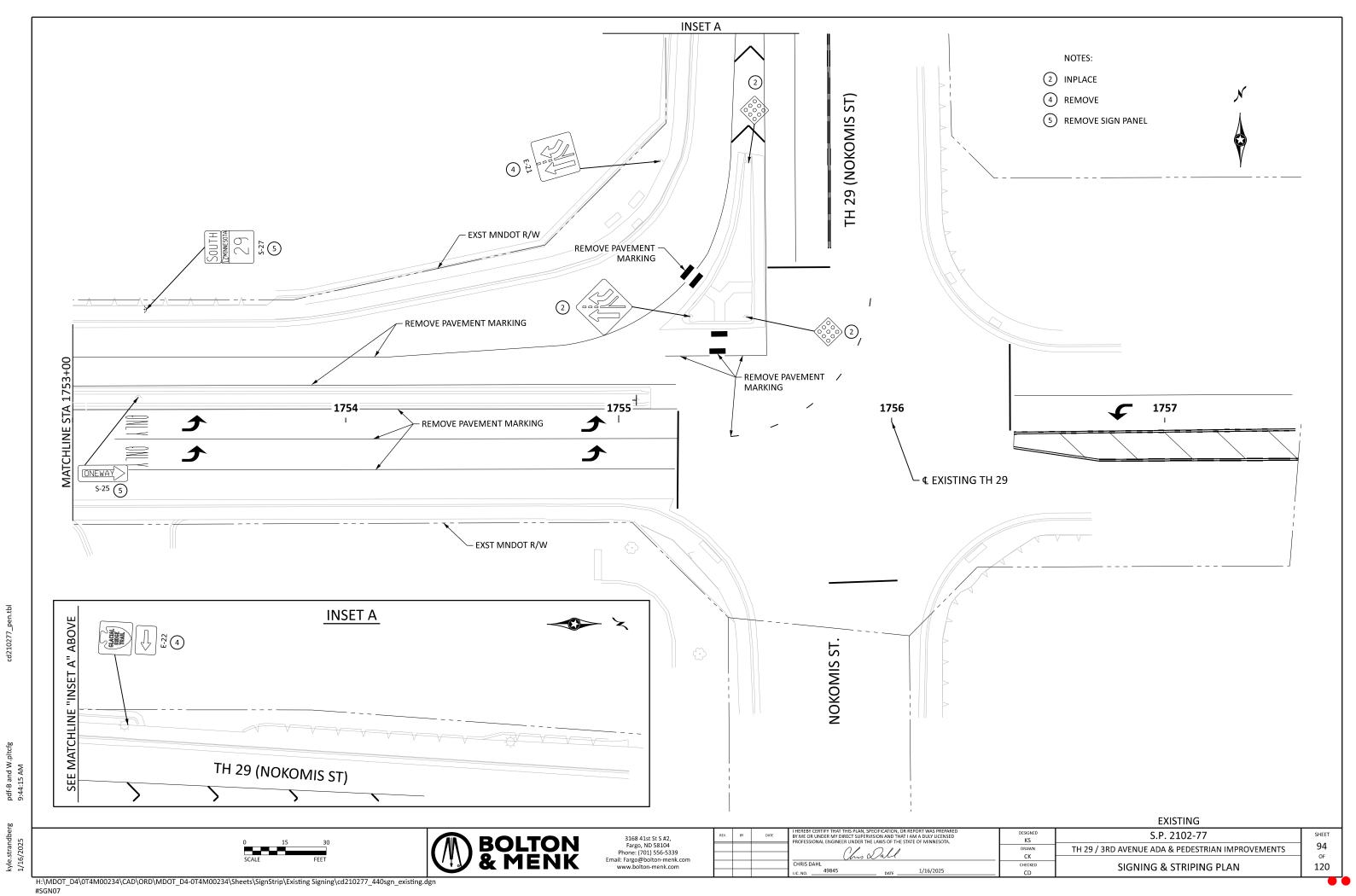
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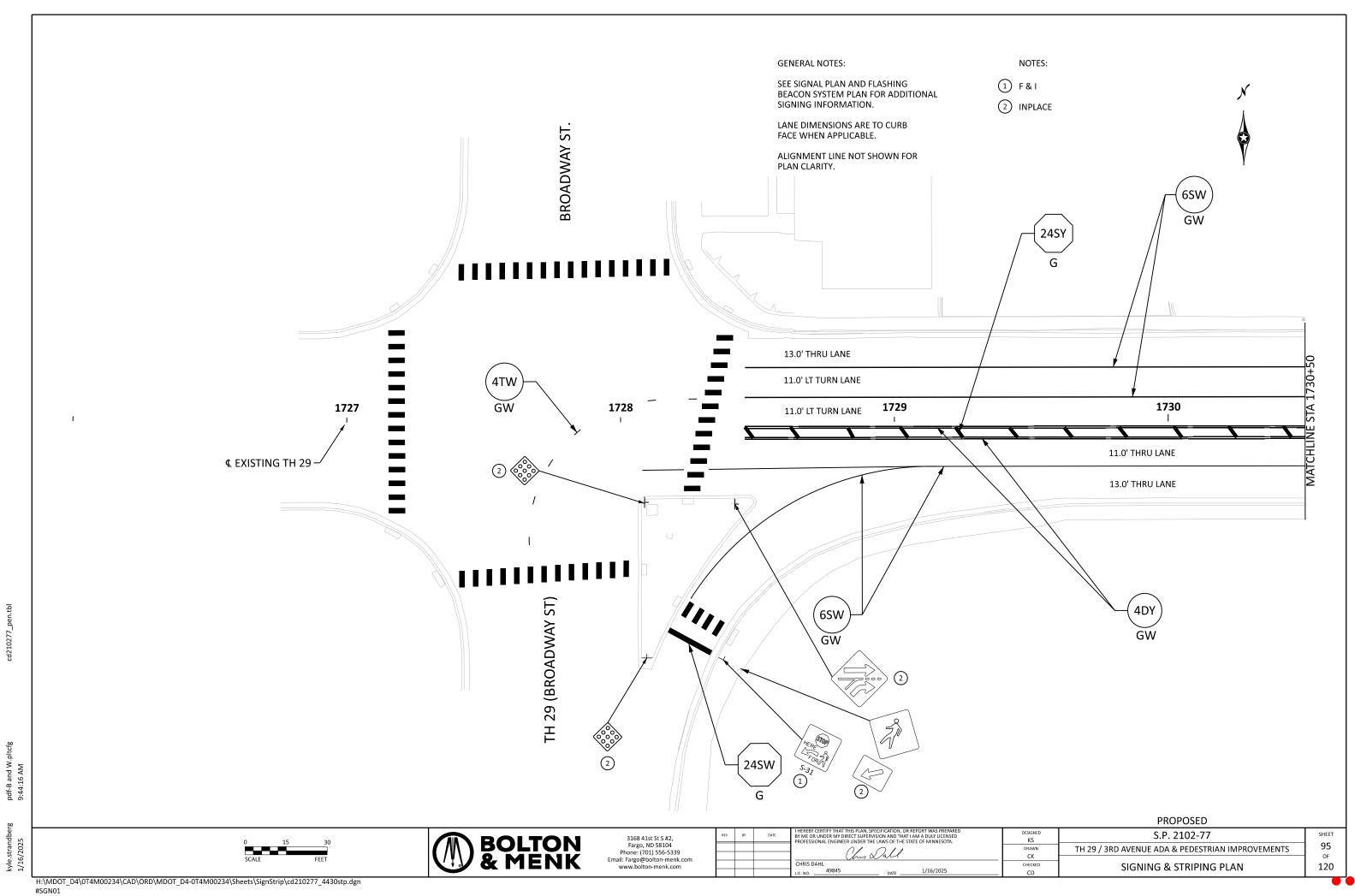




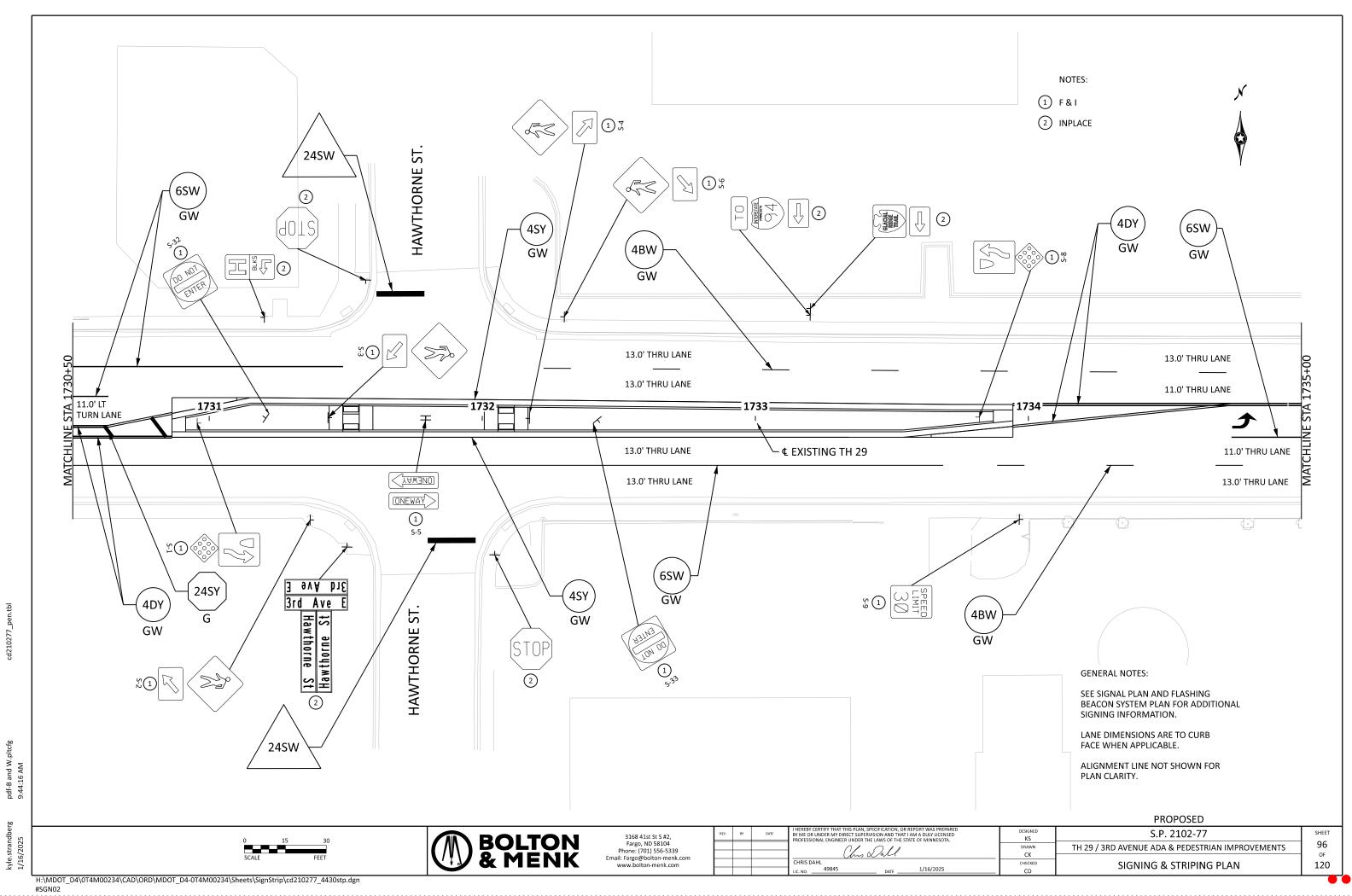
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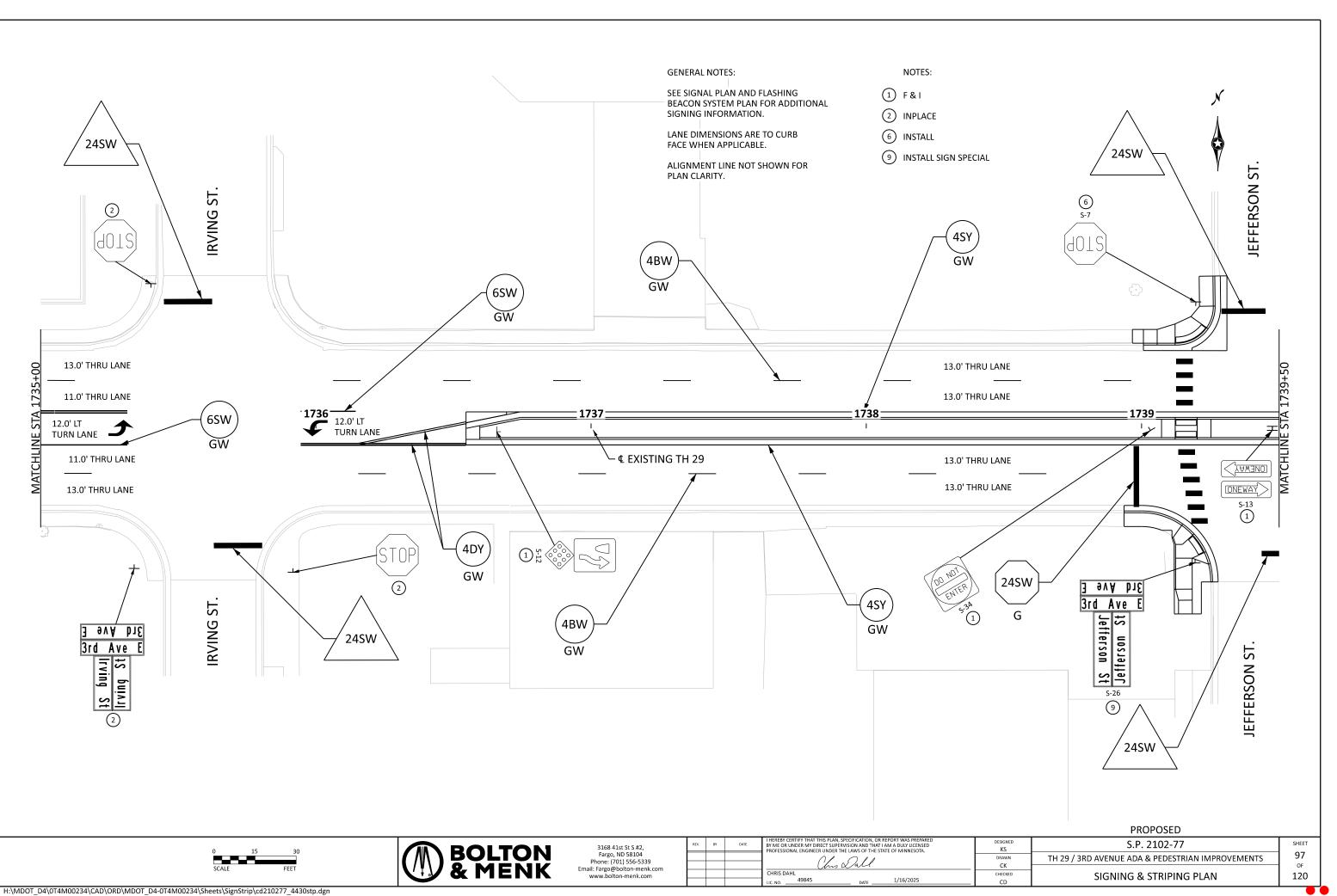


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	DRAWN	TH 29 / 3RD AVENUE ADA & PEDESTRIAN IMPROVEMENTS	95
-	CK		OF
_	CD	SIGNING & STRIPING PLAN	120



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	KS	S.P. 2102-77	SHEET
	DRAWN	TH 29 / 3RD AVENUE ADA & PEDESTRIAN IMPROVEMENTS	96
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	CHECKED	SIGNING & STRIPING PLAN	120
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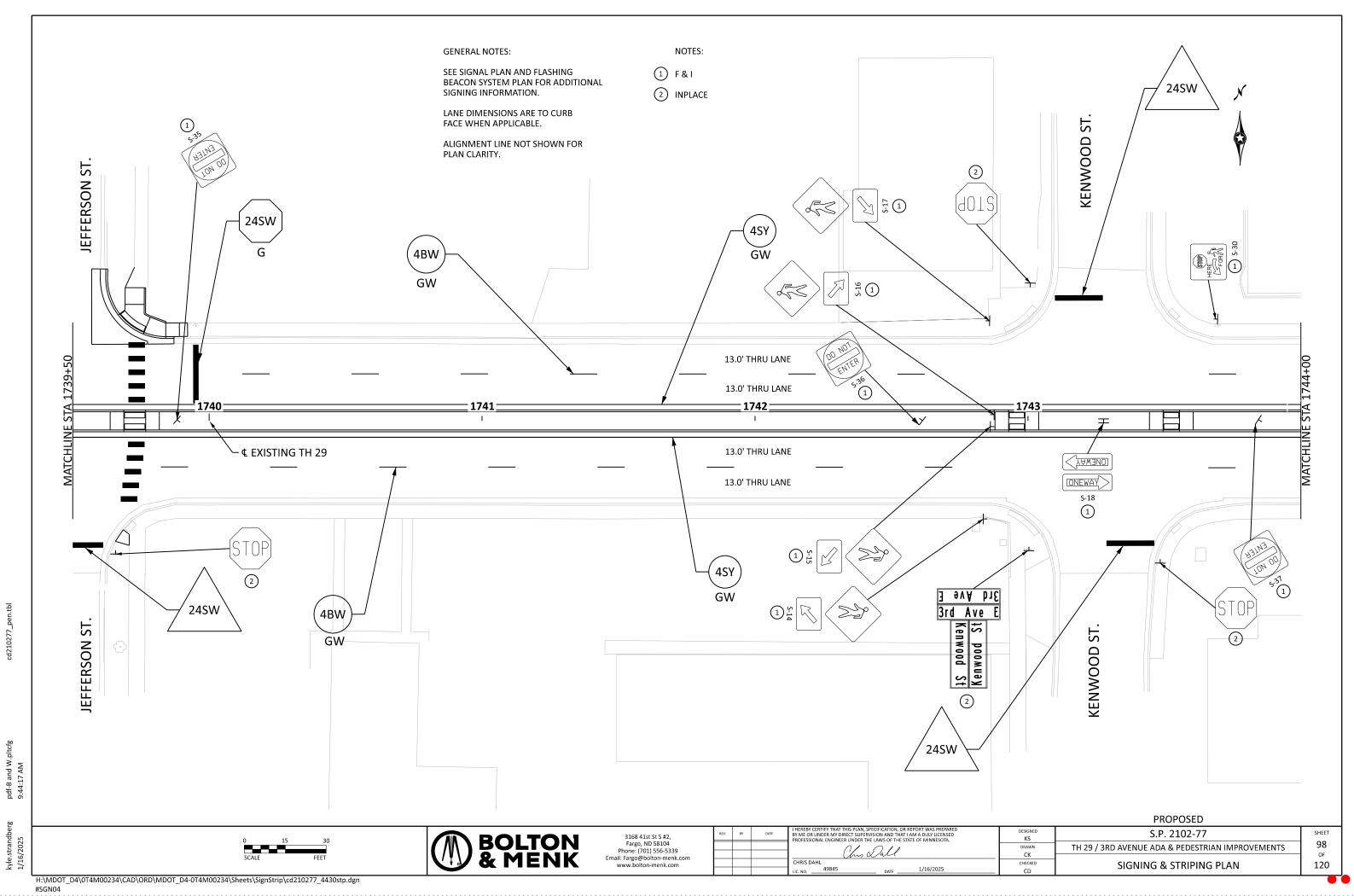
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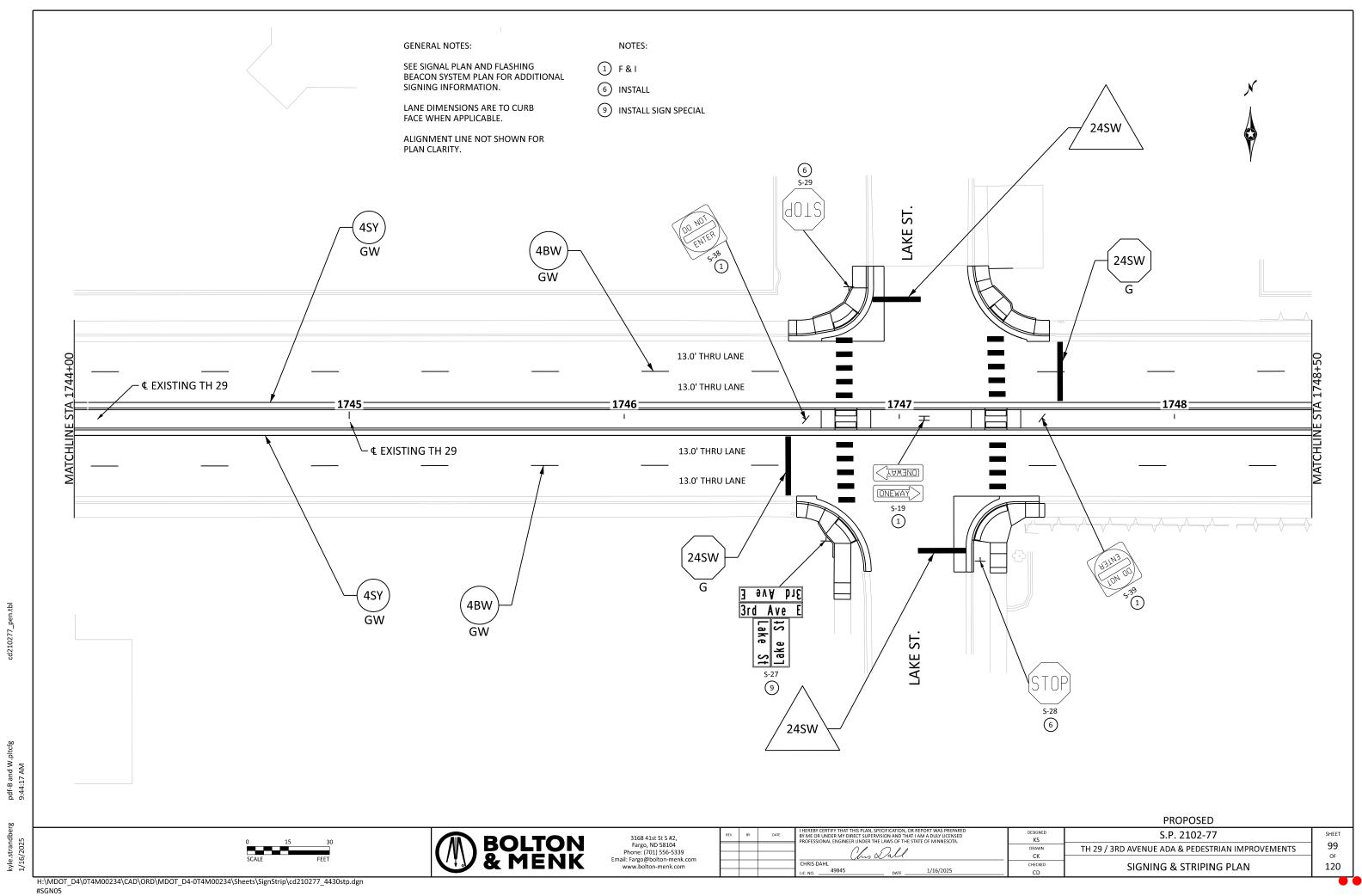
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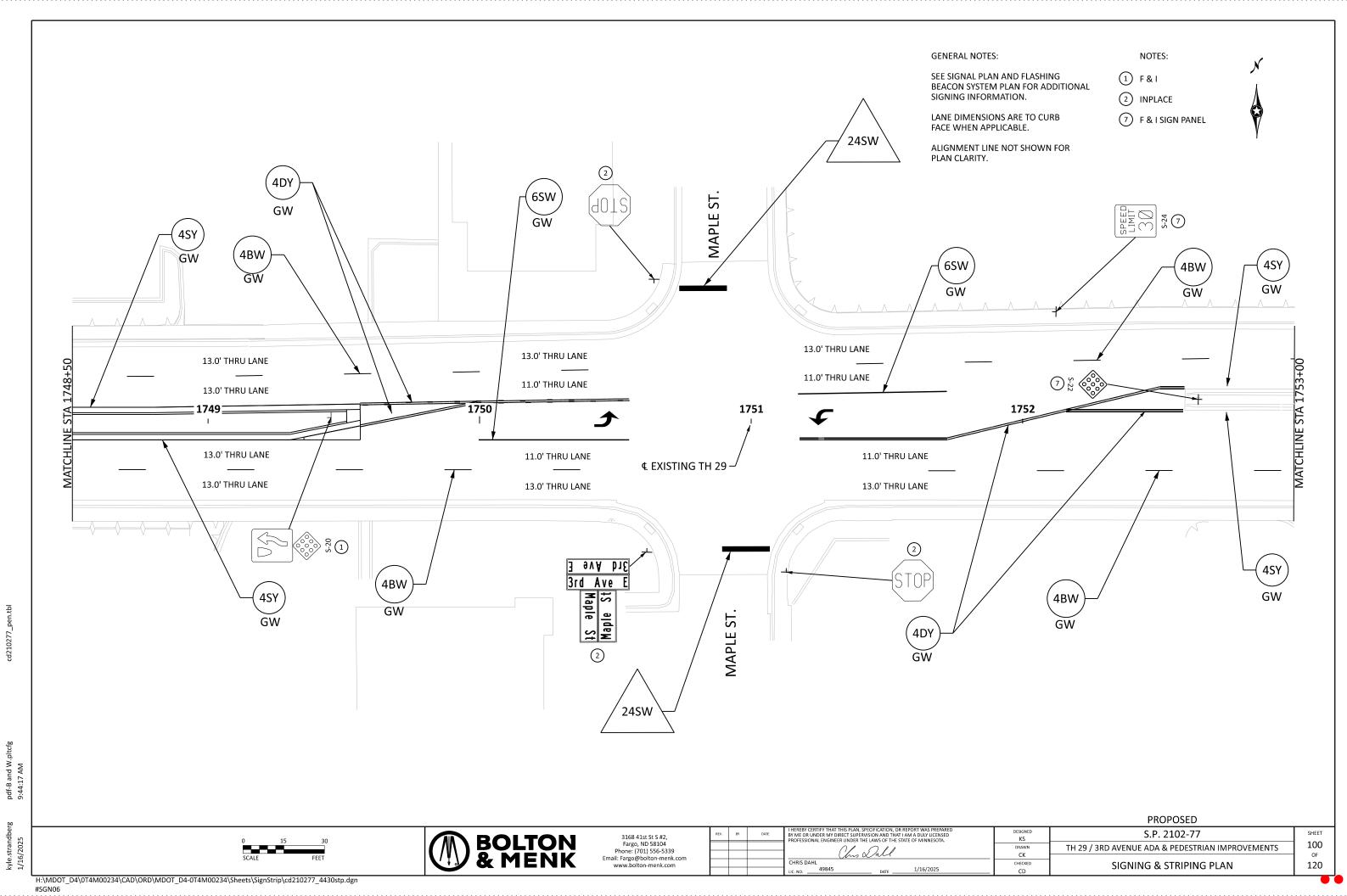


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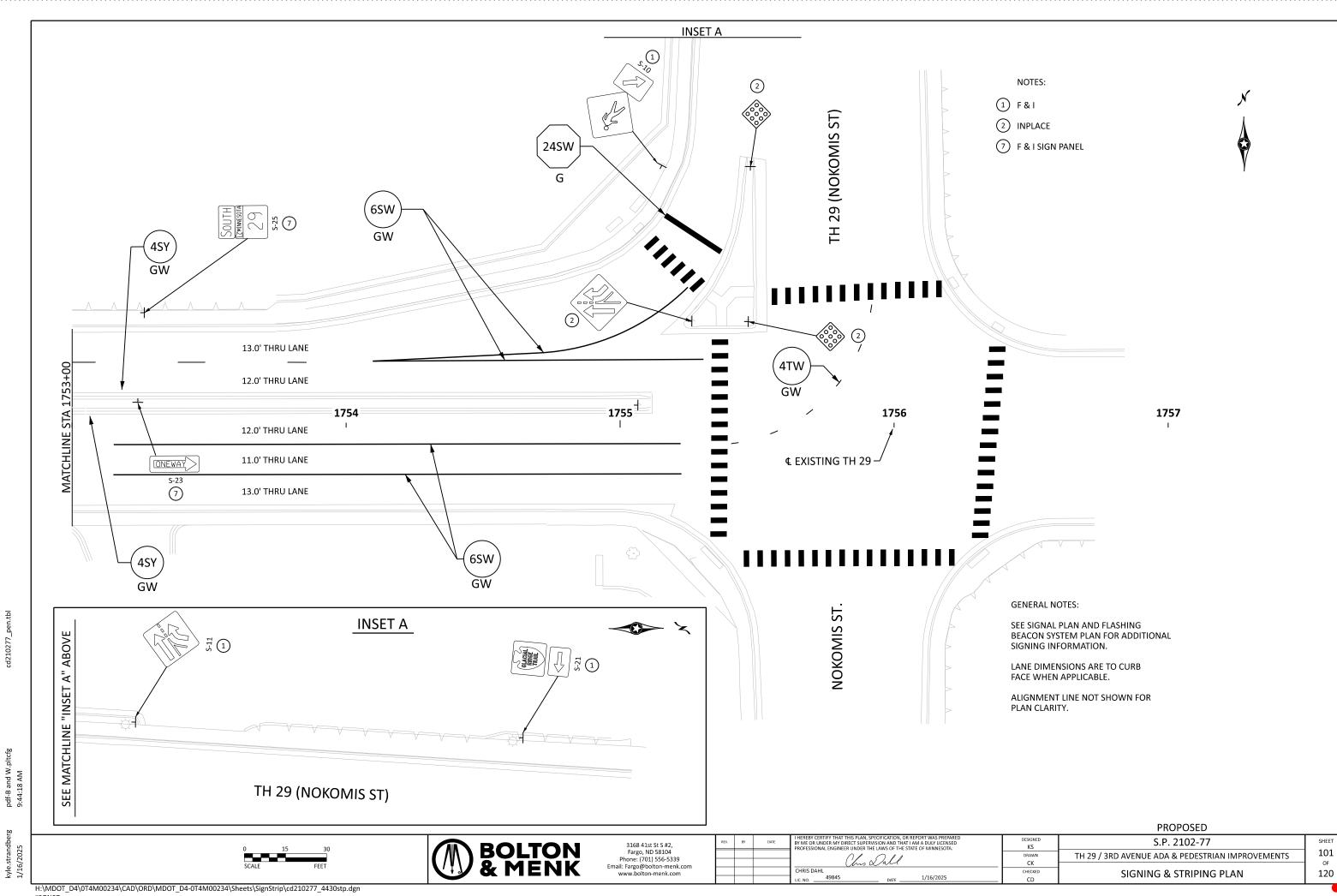


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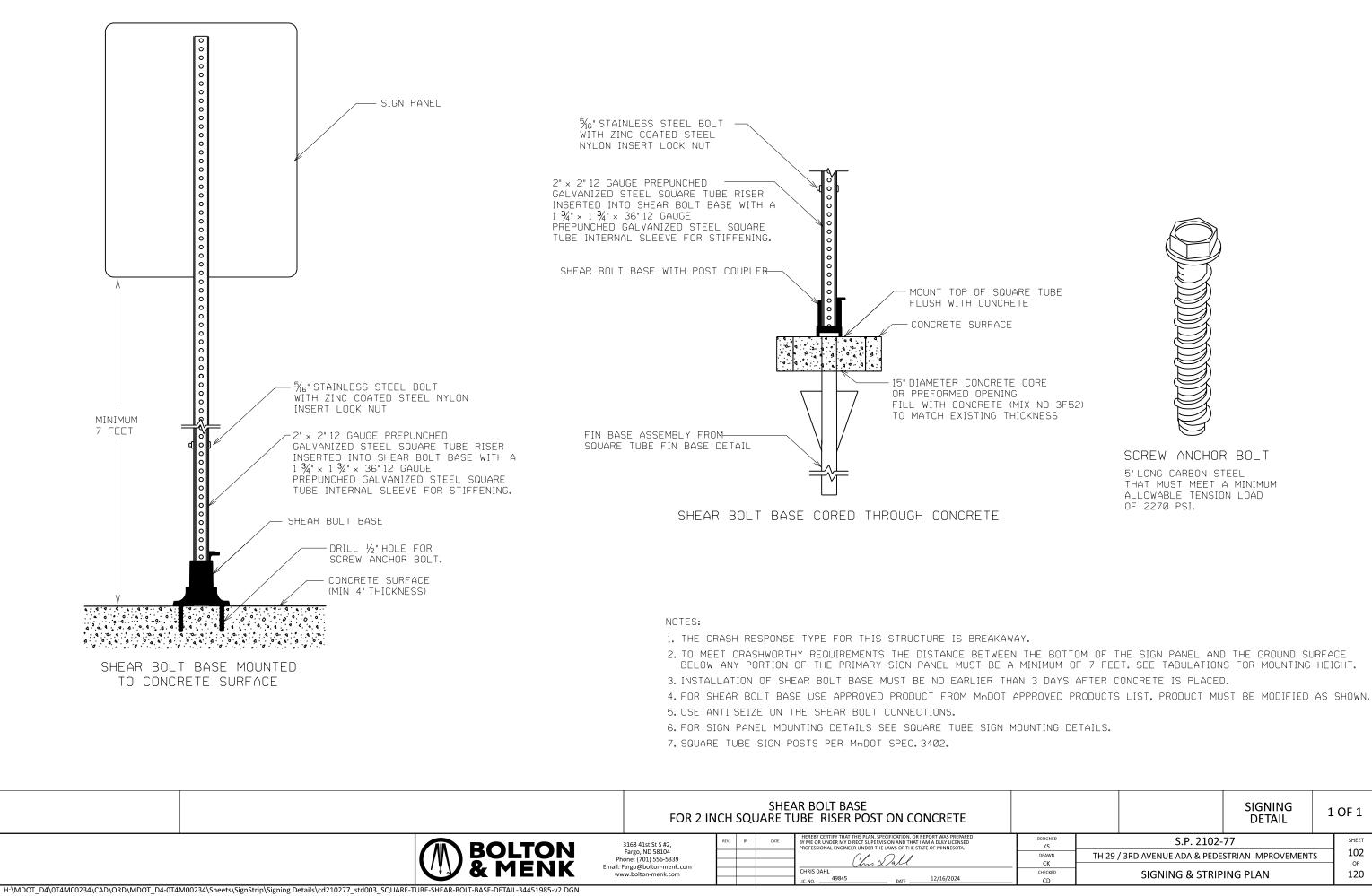


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	DRAWN	TH 29 / 3RD AVENUE ADA & PEDESTRIAN IMPROVEMENTS	101
	CK		OF
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	CHECKED	SIGNING & STRIPING PLAN	120
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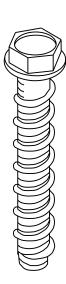
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				SIGNING DETAIL	1	OF 1
	DESIGNED KS		S.P. 2102-77			SHEET
	DRAWN	TH 29 / 3RD AVENUE ADA & PEDESTRIAN IMPROVEMENTS				
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_	CD					

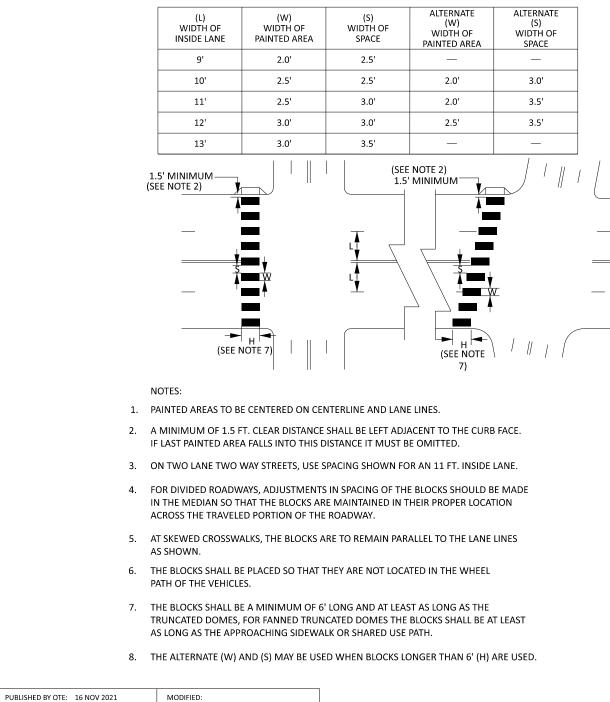
BELOW ANY PORTION OF THE PRIMARY SIGN PANEL MUST BE A MINIMUM OF 7 FEET. SEE TABULATIONS FOR MOUNTING HEIGHT.

5" LONG CARBON STEEL THAT MUST MEET A MINIMUM ALLOWABLE TENSION LOAD OF 2270 PSI.

SCREW ANCHOR BOLT



# PEDESTRIAN CROSSWALK MARKINGS



REV.	вү	DATE	BY ME OR UNDER MY DIRECT SUPER	SPECIFICATION, OR REPORT WAS PREPARED RVISION AND THAT I AM A DULY LICENSED HE LAWS OF THE STATE OF MINNESOTA.
			01	O I I
				Lall
			CHRIS DAHL	
			LIC. NO	DATE 12/16/2024

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kyle.strandbe 12/16/2024

#STPD01

	DESIGNED KS	S.P. 2102-77	SHEET
	KS		103
	DRAWN	TH 29 / 3RD AVENUE ADA & PEDESTRIAN IMPROVEMENTS	102
	СК		OF
- 1	CHECKED		120
	CITECRED	SIGNING & STRIPING PLAN	120
_	CD		

# REVISE SIGNAL SYSTEM "A" TH 29 (3RD AVE) & BROADWAY S

	ΤH	29 (3RD AVE) & BROADWAY ST		ΤH	29 (3RD A	VE) & NOKOMIS ST
		FOLLOWING IS A DETAILED RECORD OF ALL PROPOSED WORK TO BE COMPLETED ON THE IAL SYSTEM AT THE INTERSECTION OF TH 29 (3RD AVE) & BROADWAY ST.		THE FOLLOWING IS A DETAILED RECORD OF ALL PR SIGNAL SYSTEM AT THE INTERSECTION OF TH 29 (3		
	ALL	WORK SHALL BE PAID FOR UNDER THE LUMP SUM BID ITEM "REVISE SIGNAL SYSTEM A".		ALL	WORK SHALL BE F	AID FOR UNDER THE LUMP SUM
	FOR	RENCE AS-BUILT SHEETS FOR ALL AS-BUILT RECORDS. NOTE, THESE AS-BUILT SHEETS ARE REFERENCE ONLY, ALL WORK TO BE COMPLETED UNDER "REVISE SIGNAL SYSTEM A" IS ILED BELOW.		FOR		SHEETS FOR ALL AS-BUILT RECO , ALL WORK TO BE COMPLETED
	CO0	WORK INVOLVING THE SIGNAL CONTROLLER CABINET AND CONTROLLER SHALL BE RDINATED THROUGH MNDOT. OOT CONTACT: RESIDENT ENGINEER		COC	DRDINATED THROU	6 THE SIGNAL CONTROLLER CAB JGH MNDOT. SIDENT ENGINEER
1.	SIGN	AL REMOVALS	1.	SIGI	NAL REMOVALS	
	1.1	REMOVE EXISTING SIGNAL HEADS FROM THE FOLLOWING LOCATIONS:		1.1	REMOVE EXISTIN	IG SIGNAL HEADS FROM THE FOL
		MAST ARM 1SIGNAL HEAD 8-3 (R-Y-G-YLA-GLA)MAST ARM 2SIGNAL HEAD 8-2 (R-Y-G-YLA-GLA)MAST ARM 3SIGNAL HEAD 4-3 (R-Y-G-YLA-GLA)MAST ARM 4SIGNAL HEAD 4-2 (R-Y-G-YLA-GLA)			MAST ARM 1 MAST ARM 2 MAST ARM 3 MAST ARM 4	SIGNAL HEAD 8-3 (R-Y-G-YLA-G SIGNAL HEAD 8-2 (R-Y-G-YLA-G SIGNAL HEAD 4-3 (R-Y-G-YLA-G SIGNAL HEAD 4-2 (R-Y-G-YLA-G
		PROTECT ALL EXISTING WIRING AND LEAVE REMOVED HEAD WIRING IN PLACE.			PROTECT ALL EX	ISTING WIRING AND LEAVE REMO
	1.2	REMOVE EXISTING R10-12 SIGNS AT THE FOLLOWING LOCATIONS:		1.2	REMOVE EXISTIN	IG R10-12 SIGNS AT THE FOLLOW
		MAST ARM 2 MAST ARM 4			MAST ARM 2 MAST ARM 4	
2.	SIGN	AL REVISIONS	2.	SIG	NAL REVISIONS	
	2.1	SALVAGE EXISTING "CR 82 / TH 29" AND "3RD AVE" SIGNS ON MAST ARM 2 AND MAST ARM 4, AND INSTALL AT THE FOLLOWING LOCATIONS:		2.1	SALVAGE EXISTIN	IG "CR 82 / TH 29" AND "3RD AVE
		MAST ARM 2 INSTALL "CR 82 / TH 29" AND "3RD AVE" SIGNS 5 FEET CLOSER TO POLE 2. MAST ARM 4 INSTALL " 3RD AVE" AND "TH 29 / CR 82" SIGNS 5 FEET CLOSER TO POLE 4.			MAST ARM 4 LOCATIONS SHAI	INSTALL "CR 82 / TH 29" AND " LL BE APPROVED BY ENGINEER IN
		LOCATIONS SHALL BE APPROVED BY ENGINEER IN THE FIELD PRIOR TO INSTALLATION.		2.2	FURNISH & INST	ALL 4/C 14 CABLE INTO INPLACE (
	2.2	FURNISH & INSTALL 4/C 14 CABLE INTO INPLACE CONDUIT:			NEW SIGNAL HE	AD 4-2 CONTROLLER CABINET T
		NEW SIGNAL HEAD 8-2 CONTROLLER CABINET TO HH 1, HH 1 TO HH 2, HH2 TO POLE 2 NEW SIGNAL HEAD 4-2 CONTROLLER CABINET TO HH 8, HH 8 TO HH 6, HH 6 TO POLE 4		2.3	FURNISH & INST	ALL NEW SIGNAL HEADS AT THE F
	2.3	FURNISH & INSTALL NEW SIGNAL HEADS AT THE FOLLOWING LOCATIONS:			NEW SIGNAL HE	ADS REPLACING EXISTING SIGNAI
		NEW SIGNAL HEADS REPLACING EXISTING SIGNAL HEADS ON POLES SHALL BE RETROFITTED TO FIT TYPE 10B MOUNTS. MAST ARM 1 NEW SIGNAL HEAD 3-2 (RLA-YLA-FYLA-GLA), REPLACES EXISTING 8-3 MAST ARM 2 NEW SIGNAL HEAD 3-1 (RLA-YLA-FYLA-GLA), REPLACES EXISTING 8-2 NEW SIGNAL HEAD 8-2 (R-Y-G) 2 FEET TO THE INSIDE OF EXISTING EVP DETECTOR			MAST ARM 1 MAST ARM 2 MAST ARM 3 MAST ARM 4	NEW SIGNAL HEAD 3-2 (RLA-YI NEW SIGNAL HEAD 3-1 (RLA-YI NEW SIGNAL HEAD 7-2 (RLA-YI NEW SIGNAL HEAD 7-1 (RLA-YI NEW SIGNAL HEAD 4-2 (R-Y-G)
		MAST ARM 3 NEW SIGNAL HEAD 7-2 (RLA-YLA-FYLA-GLA), REPLACES EXISTING 4-3 MAST ARM 4 NEW SIGNAL HEAD 7-1 (RLA-YLA-FYLA-GLA), REPLACES EXISTING 4-2 NEW SIGNAL HEAD 4-2 (R-Y-G) 2 FEET TO THE INSIDE OF EXISTING EVP DETECTOR		2.4		ALL 2/C 14 FROM SIGNAL CABINE TO BE USED FOR FUTURE WORK

2.4 FURNISH & INSTALL 2/C 14 FROM SIGNAL CABINET TO EACH POLE BASE(1,2,3,4). PROVIDE 10 FEET OF EXCESS WIRE AT EACH POLE BASE. TO BE USED FOR FUTURE WORK BY OTHERS.

1/16/2025

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			Sum A Shill	
			LUCAS SIMONSON	1/16/2025

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# ST

REVISE SIGNAL SYSTEM "B"

ROPOSED WORK TO BE COMPLETED ON THE (3RD AVE) & NOKOMIS ST.

SUM BID ITEM "REVISE SIGNAL SYSTEM B".

ECORDS. NOTE, THESE AS-BUILT SHEETS ARE TED UNDER "REVISE SIGNAL SYSTEM B" IS

CABINET AND CONTROLLER SHALL BE

FOLLOWING LOCATIONS:

LA-GLA) LA-GLA) LA-GLA) LA-GLA)

EMOVED HEAD WIRING IN PLACE.

OWING LOCATIONS:

AVE" SIGNS ON MAST ARM 4, AND INSTALL AT THE FOLLOWING LOCATIONS:

ND "3RD AVE" SIGNS 4 FEET CLOSER TO POLE 4. R IN THE FIELD PRIOR TO INSTALLATION.

CE CONDUIT:

ET TO HH 11, HH 11 TO HH 10, HH 10 TO HH 7, HH 7 TO POLE 4

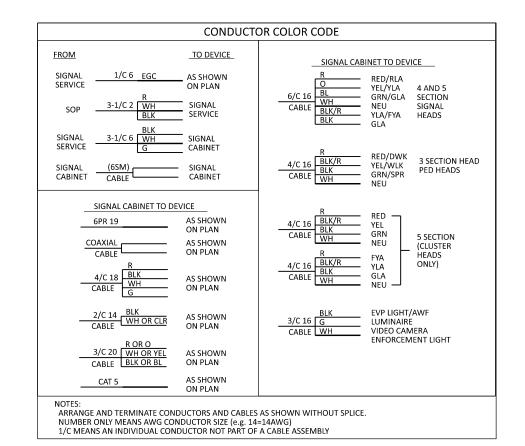
HE FOLLOWING LOCATIONS:

SNAL HEADS ON POLES SHALL BE RETROFITTED TO FIT TYPE 10B MOUNTS.

A-YLA-FYLA-GLA), REPLACES EXISTING 8-3 A-YLA-FYLA-GLA), REPLACES EXISTING 8-2 A-YLA-FYLA-GLA), REPLACES EXISTING 4-3 A-YLA-FYLA-GLA), REPLACES EXISTING 4-2 Y-G) 2 FEET TO THE INSIDE OF EXISTING EVP DETECTOR

BINET TO EACH POLE BASE(1,2,3,4). PROVIDE 10 FEET OF EXCESS WIRE AT /ORK BY OTHERS.

	DESIGNED	S.P. 2102-77	SHEET
	HM	5.1.2102 //	104
	DRAWN	TH 29 / 3RD AVENUE ADA & PEDESTRIAN IMPROVEMENTS	104
_	HM		OF
	CHECKED	SIGNAL PLAN & DETAILS	120
_	LS	STORVAET EAR & DE TAIES	120



ABBREVIATION	LABEL REFERENCE DSISCRIPTION & EXAMPLE	COMPONENT			
X-Y	INDICATION NUMBER 2-1	SIGNAL HEAD			
X-Y	LOOP NUMBER D2-1	DETECTOR			
X-Y	PUSH BUTTON NUMBER PB2-1	PUSH BUTTON			
X-Y	PED INDICATION NUMBER P2-1	PED INDICATION			
X-Y	LUMINAIRE NUMBER L1	LUMINAIRE			
X-Y	EVP PHASE NUMBER EVP 2+5	EVP DETECTOR			
X-Y	EVP LIGHT PHASE NUMBER EVPL 2+5	EVP CON. LIGHT			
X-Y	VIDEO DETECTION				
X-Y	RADAR DETECTION PHASE RD2-1				
SS	SIGNAL SERVICE	SERVICE WIRE			
CC	CABINET COMMS	COMMS CABLE			
FO	FIBER OPTIC	FIBER CABLE			
SPARE Y	SPARE WIRE TO POLE NUMB. SPARE1	SPARE WIRE			
ELYZ *	ENFORC. LIGHT POLE & DIRECTION	ENFORCEMENT LIGHT			
PTZ1	PTZ CAMERA POLE NUMBER PTZ1	PTZ CAMERA			
IC	INTERCONNECT CABLE	INTERCONNECT			
EGC	EQUIPMENT GROUNDING CONDUCTOR	GROUND			
X = SIGNAL SYSTEM PHASE NUMBER; REFER TO THE PLAN Y = SIGNAL SYSTEM ASSIGNED COMPONENT NUMBER; REFER TO THE PLAN Z * = DIRECTION FURNISH AND INSTALL LABELS ON CABLES WITH ABBREVIATIONS SHOWN ON THIS TABLE AND IN ACCORDANCE WITH THE WIRING DIAGRAM.					

WIRE COLOR CODE KEY					
R	Red				
0	Orange				
BL	Blue				
WH	White				
BLK	Black				
BRN	Brown				
CL	Clear				
G	Green				
R/BLK	Red with Black Stripe				
O/BLK	Orange with Black Stripe				
BL/BLK	Blue with Black Stripe				
WH/BLK	White with Black Stripe				
WH/R	White with Red Stripe				
BLK/WH	Black with White Stripe				
BLK/R	Black with Red Stripe				

CONDUCTOR AND CABLE SPECIFICATION CHART						
NUMBER OF CONDUCTORS & AWG SIZE	Specification Number					
1/C 2	INDIVIDUAL SERVICE CONDUCTORS	3815.2B.1				
1/C 6	FEEDER AND BRANCH CONDUCTORS	3815.2B.1				
1/C 6 INS.GR.	Grounding Conductors	3815.2B.5				
2/C 14	Loop Detector Lead-In Cable	3815.2C.4				
3/C 16	Signal Control Cable	SPEC. PROV.				
4/C 16	Signal Control Cable	SPEC. PROV.				
6/C 16	Signal Control Cable	SPEC. PROV.				
4PR 24	ETHERNET CABLE	3815.2C.6.d				
6PR 19	Telephone Cables Outdoor	3815.2C.6.b				
3/C 20	EVP Detector Cable	3815.2C.5				

POLE FOUNDATION TYP
(SEE STANDARD PLAN 5- ① FOUNDATION TYPE TS ② DS=DRILLED SHAFT, SF= ③ BLANK=DOES NOT APPL
Р
① ② ③ ④ TYPE TS-A-45-D40-9
(SEE STANDARD PLATE 8 (SEE STANDARD PLATE 8

tbl

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kyle.strandb 1/16/2025

#SID02

H:\MDOT\_D4\0T4M00234\CAD\ORD\MDOT\_D4-0T4M00234\Sheets\Signal\cd210277\_500sid.dgn

**BOLTON** & MENK

3168 41st St S #2, Fargo, ND 58104 Phone: (701) 556-5339 Email: Fargo@bolton-menk.com www.bolton-menk.com

REV.	ВҮ	DATE	I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER WADER THE LAWS OF THE #ATATE OF MINNESOTA.
			June 4 Similar
			LUCAS SIMONSON
			LIC. NO

## FOUNDATION DESIGNATION

0 2 3 POLE FOUNDATION TYPE TS45-55 - DS - S

5-297.861)

=SPREAD FOOTING PLY TO POLE TYPE, S=STANDARD, H=HEAVY

## POLE DESIGNATION

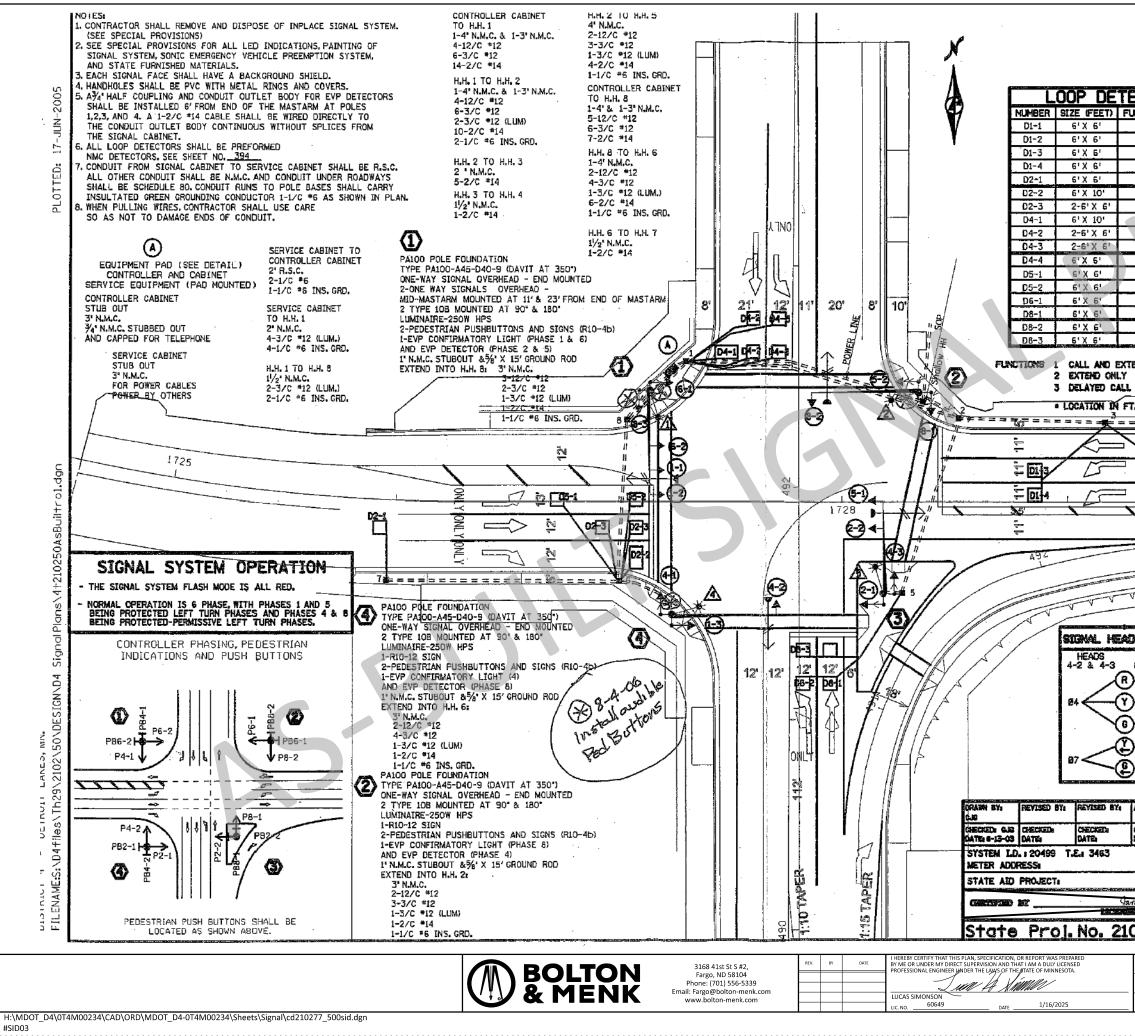
(5)

8124 15' TO 55' MAST ARMS) 8125 60' TO 80' MAST ARMS)

POLE TYPE TS
 MAST ARM ORIENTATION WITH RESPECT TO C OF ROADWAY (TYPE A=90° B=45°)

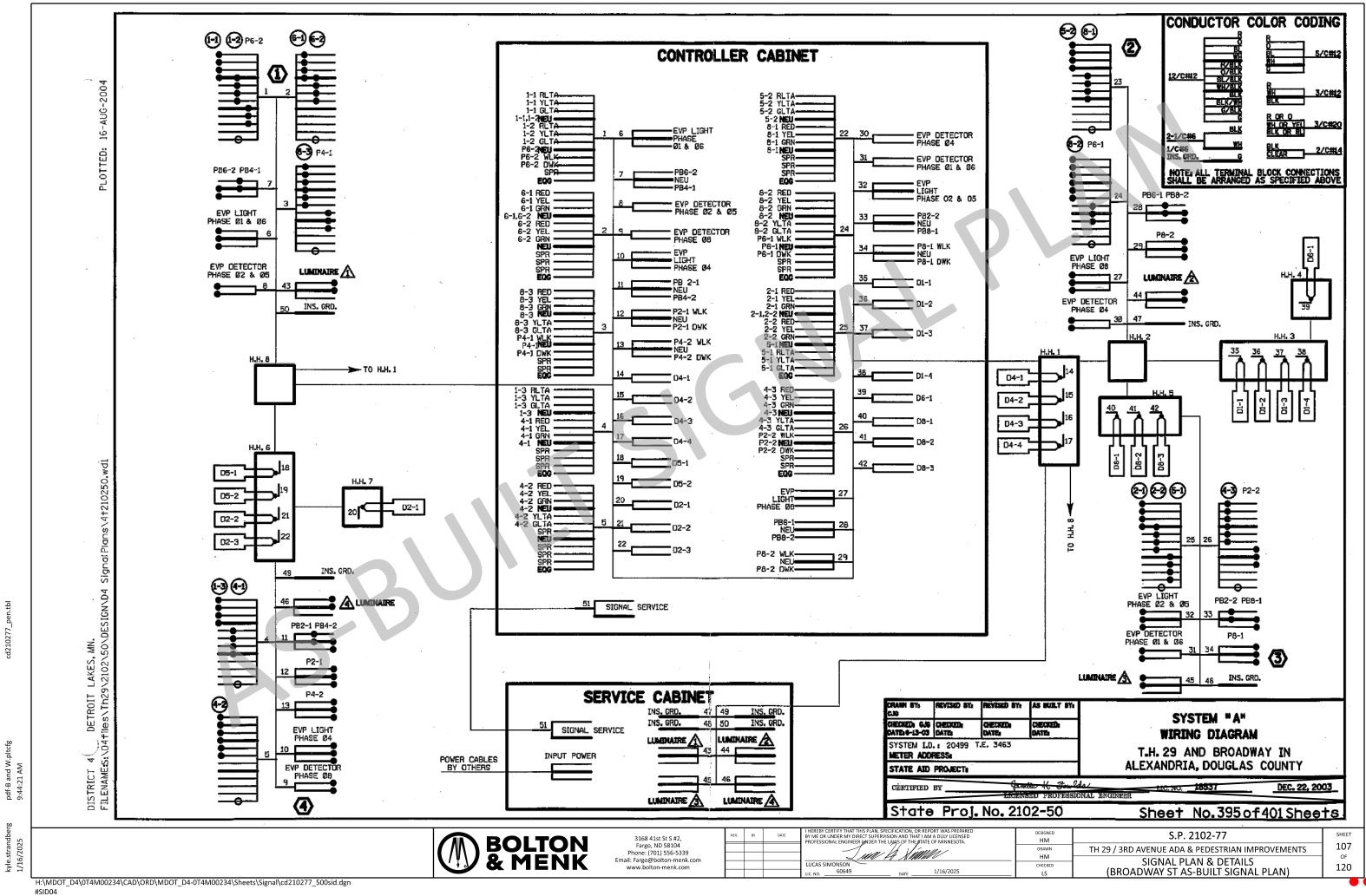
(a) SIGNAL MAST ARM LENGTH
 (b) D=DAVIT, NUMBER REPRESENTS MOUNTING HEIGHT
 (c) LUMINAIRE MAST ARM LENGTH

	designed HM	S.P. 2102-77	SHEET
	DRAWN	TH 29 / 3RD AVENUE ADA & PEDESTRIAN IMPROVEMENTS	105 OF
_	HM CHECKED LS	SIGNAL PLAN & DETAILS	120



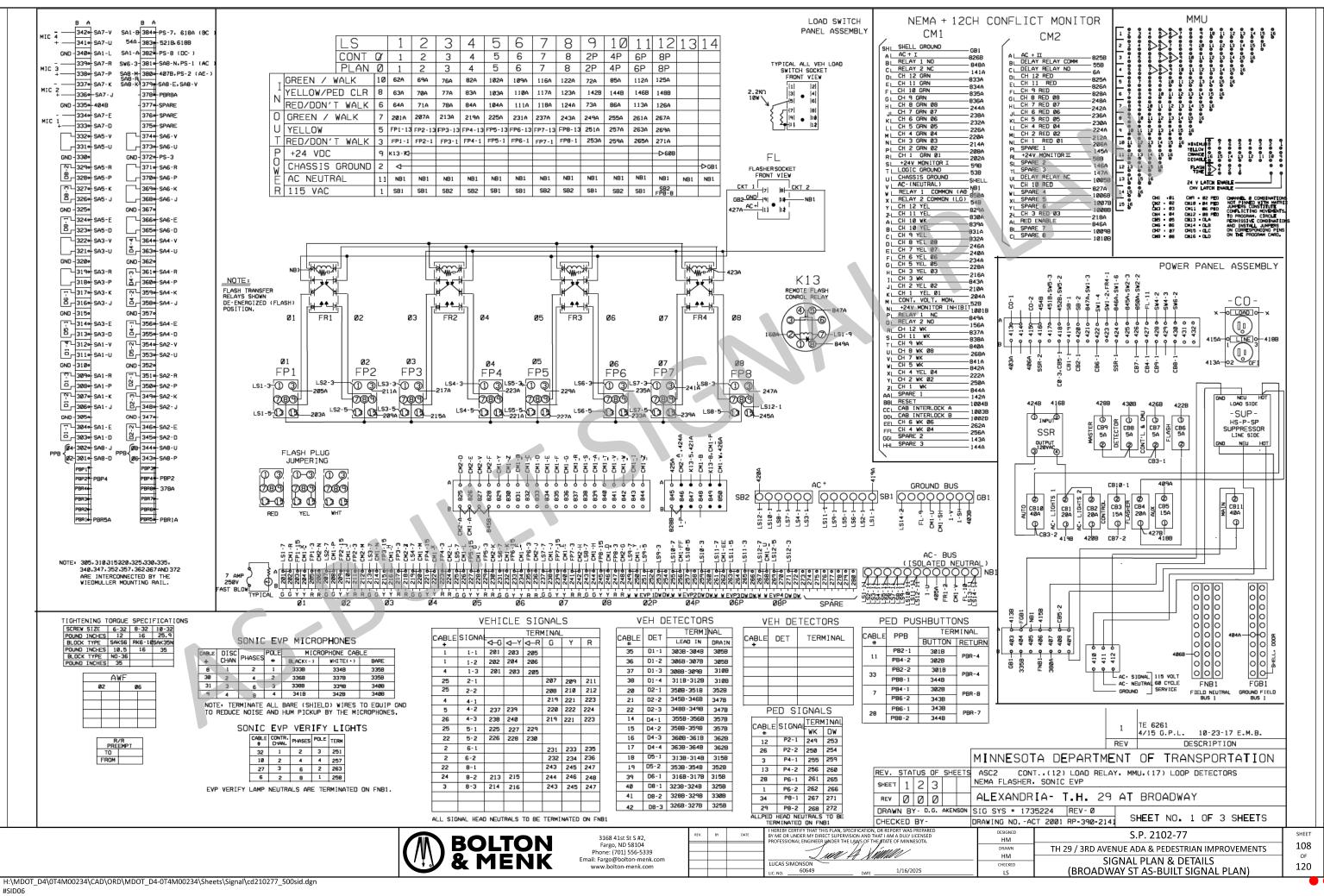
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	T.H. 29 AT BROADWAY SIG
	3168 41st st 5 #2,     REV.     BY     Date     BY ME OR UNDER MY DIRECT SUPERVISION AND THAT IAM A DULY LICENSED       Fargo, ND 58104     PROFESSIONAL ENGINEER WIDER THE LAWS OF THE TATE OF MINNESOTA.       Phone: (701) 556-5339     Image: Comparison of the target of target of the target of

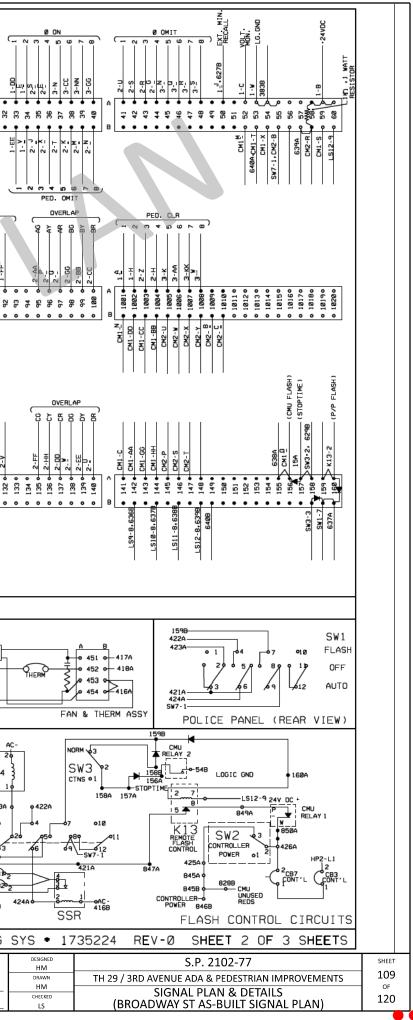
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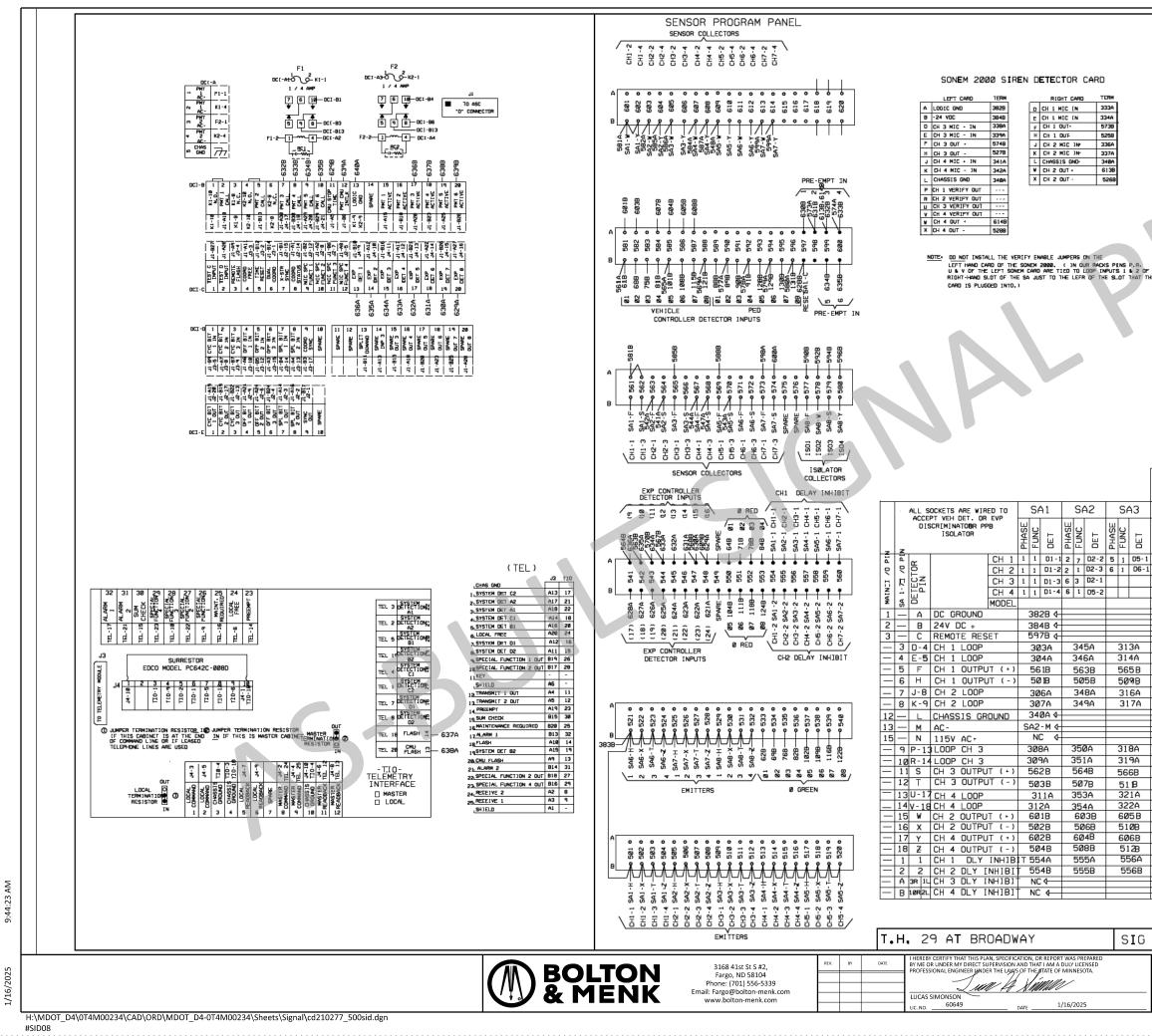
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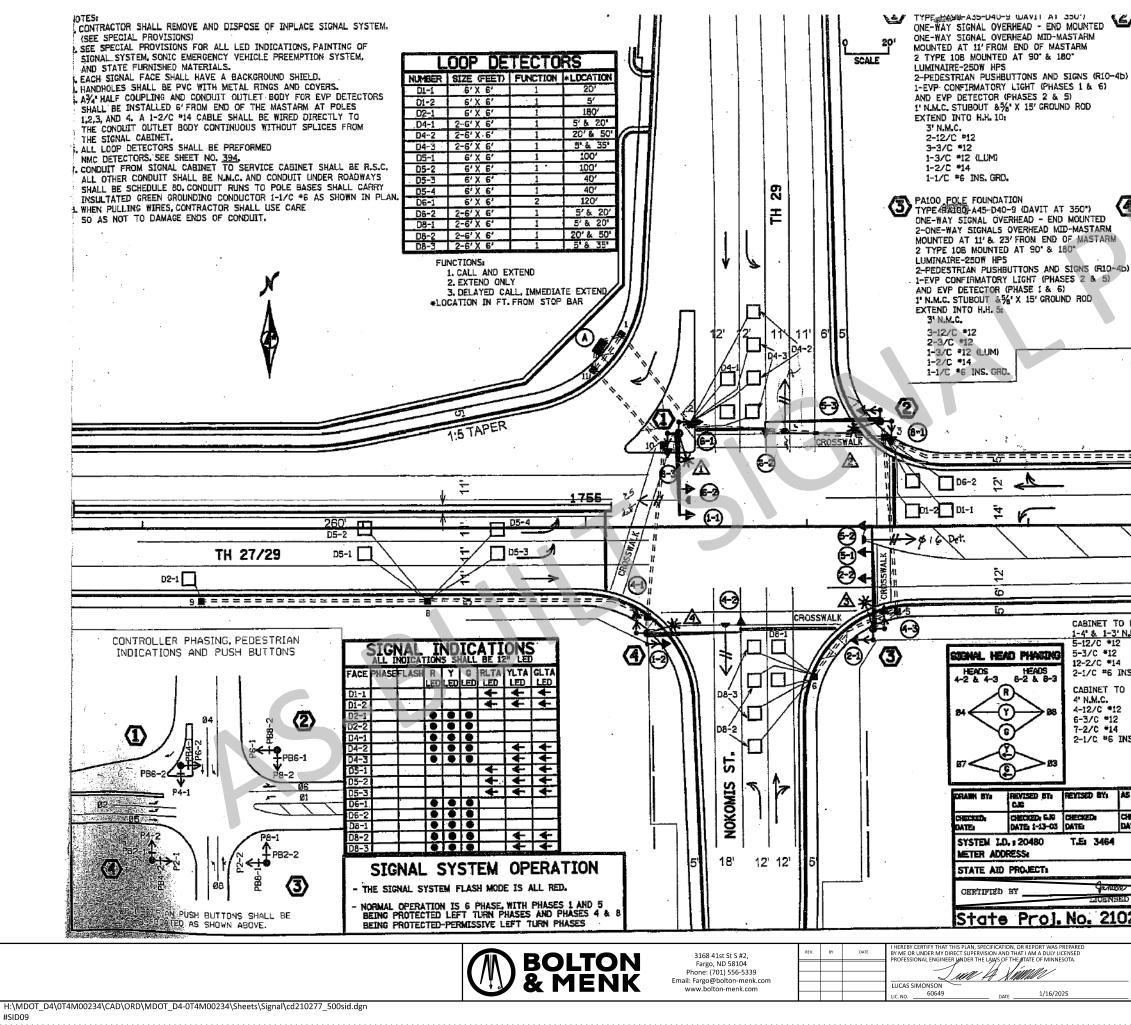
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	7 1 04-4				8 11 4 SONEM 2000	8 T-400A	CH 4 11-EVP II 12-C/E/XSWITCH	
					→ →	NC NC	SPARE A SPARE B	
	355A	32	3A	365A	333A	NC 301A	SPARE C INPUT CH 1 D	
	356A 567B	32	24A 98	366A 571B	334A 573 B	379A 577B	INPUT COMMON E OUTPUT CH 1 (+) F	
	513B	51	17B	521B	525 B	529B	OUTPUT CH 1 (-) H	
1	358A 359A	_	26A 27A	368A 369A	336A 337A	302A 379B	INPUT CH 2 J INPUT COMMON K	
						> > 38ØB	CHASSIS GROUND L AC-(NEUTRAL) M	
	36ØA	32	8A	370A	338A	→ 381B 343A	115V AG+ N INPUT CH 3 P	
	361A	32	9A	371A	339A	379B	INPUT COMMON R	
	568B 515B	51	70/B 19B	572B 523B	574B 527B	579B 531B	OUTPUT CH 3 (-) T	
	363A 364A	33	31A 32A	373A 374A	341A 342A	344A 379A	INPUT CH 4 U INPUT COMMON V	
}	607B 514B	60	19B 18B	61 B 522B	613B 526B	578B 530B	OUTPUT CH 2 (+) W OUTPUT CH 2 (-) X	
	608B 516B	61	108 2018	612B 524B	614B 528B	58ØB 532B	OUTPUT CH 4 (+) Y OUTPUT CH 4 (-) <del>Z</del>	
4 3	557A 557B	55	58A 58B	559A 559B	560A 560B		SPARE SPARE	
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3	SYS		7352	224 R	≀EV-Ø	SHEET	3 OF 3 SHEETS	
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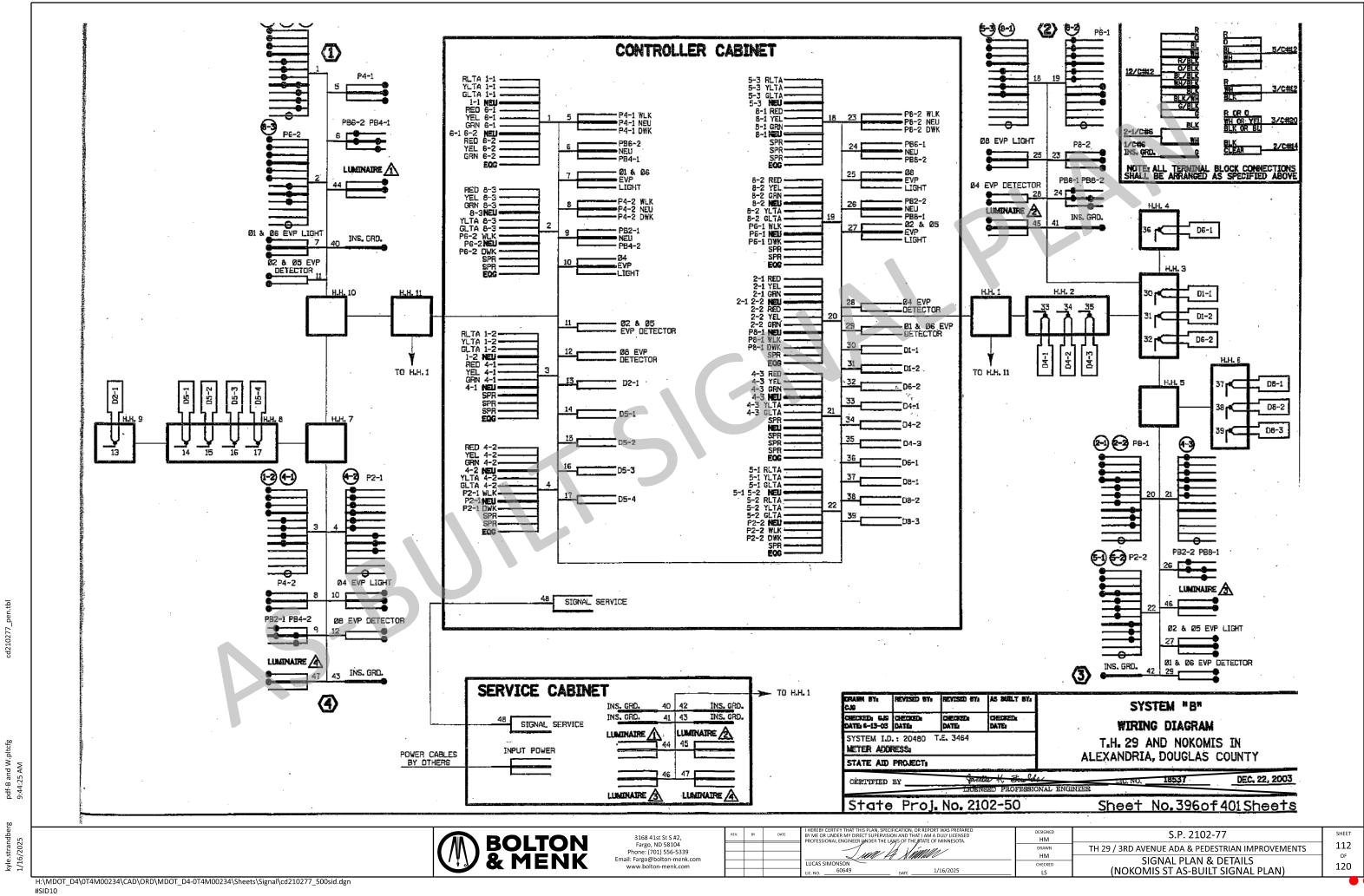
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#SID09

- 5							
1	TYPE N	4100-4	50~D40-9 ((	AVIT AT 350"	).	<b>~</b>	
_	2 TYPE	*10B N	IOUNTED AT	D - END MOUN 90 & 180	160	EQUIPMENT PAD (SEE DETAIL)	
	1 R10-12 LUMINAÌ	2 SIGN	OW HPS?			CONTROLLER AND	
	-2-PEDES	STRIAN	I PUSHBUTTO	INS AND		CABINET SERVICE EQUIPMENT	
)	SIGNS ( 1-EVP C			HT (PHASE 8)		(PAD MOUNTED)	
	AND EV	P DET	ECTOR (PHAS			SERVICE CABINET TO CONTROLLER CABINET	
	EXTEND	INTO	н.н. 3:			2' N.M.C.	
	3" N.M 2-12/	M.C. /C *12	,			2-1/C #6 1-1/C #6 INS.GRD.	
	3-3/1	C *12				CONTROLLER CABINET	
	1-2/0	: <b>*1</b> 2 : *14				STUB OUT 3' N.M.C.	
	1-1/0	; #6 I	NS. GRD.			% N.M.C. STUBBED OUT	
7						AND CAPPED FOR TELEPHONE	
9			FOUNDATION 440-040-9 (	DAVIT AT 350"	'}	SERVICE CABINET	
				40 - END MOLIN 90" & 180"	TED	STUB DUT	
	1 R10-1	2 SIG	1	30 0 100		3" N.M.C. FOR POWER CABLES	
			ION HPS	ONS AND SIGNS	(R10-46)	POWER BY OTHERS	
3)	1-EVP 0	CONFIF	MATORY LIG	HT (PHASE 4)		SERVICE CABINET	
	1 N.M.C	P DET . STUP	ECTOR (PHA: OUT &%'X	15' GROUND RDI	D	2" N.M.C. 4-3/C #12 (LUM.)	
	EXTEND	INTO N.M.C.	H.H. 7:			4-1/C #6	1
	2-	12/C	*12			H.H. 1 TO H.H.11	
	3- 1-	3/C * 3/C *	12 12 (LUM)			11/2" N.M.C.	
	1-	2/C *	14 6 INS. GRU.		-	2-3/C #12 (LUM.) 2 1/C #6 INS. ORB.	•
	1-		6 ING. 010.				
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н. ч.м		1-4	1 TO H.H.2 & 1-3' N.M.C 2/C #12	4 N.M. 3-12/0	C. *12	3' N.M.C. 2-12/C *12	
		1-4' 5-12 5-3	& 1-3" N.M.C 2/C #12 /C #12	4" N.M. 3-12/0 2-3/0 1 1-3/0	C. : *12 *12 *12 (LUM.)	3' N.M.C. 2-12/C *12 3-3/C *12 1-3/C *12 (LUM.)	
<u>1.</u> M.		1-4 5-12 5-3 2-3 12-2	& 1-3° N.M.C 2/C #12 /C #12 /C #12 (LUM 2/C #14	4" N.M. 3-12/0 2-3/0 1-3/0 4-2/0	C. *12 *12 *12 (LUM.) *14	3' N.M.C. 2-12/C *12 3-3/C *12 1-3/C *12 (LUM.) 6-2/C *14	
<u>1.M</u> . (5.	.C.	1-4" 5-12 5-3 2-3 12-2 2-1 H.H.	& 1-3" N.M.C 2/C #12 /C #12 /C #12 (LUM 2/C #14 /C #6 INS.G 2 TO H.H.3	4" N.M. 3-12/0 2-3/0 1-3/0 4-2/0 RD. 1-1/0 H.H.5	C. *12 *12 *12 (LUM.) *14 *6 INS. GRD TO H.H.5	3' N.M.C. 2-12/C *12 3-3/C #12 1-3/C *12 (LUM.) 6-2/C #14 1-1/C*6 INS. GRD.	
<u>1.M</u> . (5.	GRD.	1-4 5-12 5-3 2-3 12-2 2-1 H.H. 1-4	& 1-3" N.M.C 2/C #12 /C #12 /C #12 (LUM 2/C #14 /C #6 INS.G 2 TO H.H.3 & 1-3" N.M.(	4" N.M. 3-12/0 2-3/0 1-3/0 4-2/0 RD. 1-1/0 H.H.5	C. *12 *12 *12 (LUM.) *14 *6 INS, GRD TO H.H.6 M.C.	3' N.M.C. 2-12/C *12 3-3/C *12 1-3/C *12 (LUM.) 6-2/C *14 1-1/C*6 INS. GRD. H.H.7 TO H.H.8 1/2' N.M.C.	
<u>1.M</u> . (5.	GRD.	1-4' 5-12 5-3 2-3 12-2 2-1 H.L 1-4' 5-1 5-3	& 1-3" N.M.C 2/C #12 /C #12 (LUM 2/C #14 /C #6 INS.G 2 TO H.H.3 & 1-3" N.M.C 2/C #12 /C #12	4" N.M. 3-12/C 2-3/C 1-3/C 4-2/C RD. 1-1/C H.H.5 3-2/C H.H.11	C. *12 *12 *14 *14 *14 *6 INS. GRD TO H.H.5 M.C. *14 TO H.H.10	3' N.M.C. 2-12/C *12 3-3/C *12 1-3/C *12 (LUM.) 6-2/C *14 1-1/C*6 INS. GRD. N.H.7 TO H.H.8 1/2' N.M.C. 5-2/C *14	
<u>ч.</u> м. (S. H.	C. GRD. H. 11	1-4" 5-12 5-3 2-3 12-2 2-1 H.H. 1-4" 5-1 5-3 2-3	& 1-3" N.M.C 2/C #12 /C #12 (LUM 2/C #12 (LUM 2/C #14 /C #6 INS.G 2 TO H.H.3 & 1-3" N.M.6 2/C #12 /C #12 /C #12 (LUM	4" N.M. 3-12/C 2-3/C 1-3/C 4-2/C RD. 1-1/C H.H.5 3-2/C H.H.11	C. = #12 #12 14. = 6 INS, GRD - 6 INS, GRD - 10 H.H.6 M.C. = 14 TO H.H.10 C.	3' N.M.C. 2+12/C *12 3-3/C *12 1-3/C *12 (LUM.) 6-2/C *14 1-1/C*6 INS. GRD. H.H.7 TO H.H.8 1/2' N.M.C. 5-2/C *14 H.H.8 TO H.H.9	
<u>ч.</u> м. (S. H.	GRD.	1-4" 5-13 5-3 2-3 2-1 2-1 H.L 1-4" 5-3 5-3 2-3 2-1 2-1	& 1-3" N.M.C /C #12 /C #12 /C #12 /C #12 /C #14 /C #14 /C #14 /C #14 /C #14 /C #12 /C #12 /C #12 /C #14 /C #16 INS.G	4" N.M. 3-12/C 2-3/C 1-3/C 4-2/C RD. 1-1/C H.H.5 5-2/C H.H.11 J. 4" N.M. 4-1/C RD. 6-3/C RD. 6-3/C	C. *12 *12 *14 *14 *6 INS, GRD TO H.H.6 M.C. *14 TO H.H.10 C. *12 *12	3' N.M.C. 2-12/C *12 3-3/C *12 1-3/C *12 (LUM.) 6-2/C *14 1-1/C*6 INS. GRD. N.H.7 TO H.H.8 1/2' N.M.C. 5-2/C *14	
<u>ч.</u> м. (S. H.	C. GRD. H. 11	1-4" 5-13 5-3 2-2 12-1 1-1 5-3 5-3 2-3 2-1 1-1 5-3 2-3 2-1 1/2 1/2	& 1-3" N.M.C //C #12 //C #12 //C #12 //C #12 //C #14 //C #14 & 1-3" N.M.C //C #12 //C #14 //C //C	4" N.M. 3-12/C 2-3/C 1-3/C 4-2/C RD. 1-1/C H.H.5 1/2" N.I 3-2/C H.H.11 .) 4" N.M. 4-12/( RD. 6-3/C 2-3/C 7-2/C	C. *12 *12 *14 *14 *14 *14 *14 TO H.H.5 M.C. *14 TO H.H.10 C. *12 *12 *12 *12 *14	3' N.M.C. 2-12/C *12 3-3/C *12 1-3/C *12 1-3/C *12 (LUM.) 6-2/C *14 1-1/C*6 INS. GRD. H.H.7 TO H.H.8 1/2' N.M.C. 5-2/C *14 H.H.8 TO H.H.9 1/2' N.M.C. 1-2/C *14	
1.M. (5. (1)	C. GRD. H. 11 GRD.	1-4" 5-13 5-3 2-2 12-1 1-1 5-3 5-3 2-3 2-1 1-1 5-3 2-3 2-1 1/2 1/2	& 1-3" N.M.C /C #12 /C #12 /C #12 /C #12 /C #12 /C #14 /C #14 /C #14 /C #17 /C #12 /C #12 /C #12 /C #14 /C #14 /C #15.C 3 TO H.H.4	4" N.M. 3-12/C 2-3/C 1-3/C 4-2/C RD. 1-1/C H.H.5 1/2" N.I 3-2/C H.H.11 .) 4" N.M. 4-12/( RD. 6-3/C 2-3/C 7-2/C	C. *12 *12 *14 *14 *14 *14 *14 *14 *14 *14	3' N.M.C. 2-12/C *12 3-3/C *12 1-3/C *12 1-3/C *12 (LUM.) 6-2/C *14 1-1/C*6 INS. GRD. H.H.7 TO H.H.8 1/2' N.M.C. 5-2/C *14 H.H.8 TO H.H.9 1/2' N.M.C. 1-2/C *14	
1.M. (5. (1)	C. GRD. H. 11	1-4" 5-13 5-3 2-2 12-1 1-1 5-3 5-3 2-3 2-1 1-1 5-3 2-3 2-1 1/2 1/2	& 1-3" N.M.C //C #12 //C #12 //C #12 //C #12 //C #14 //C #14 & 1-3" N.M.C //C #12 //C #14 //C //C	4" N.M. 3-12/C 2-3/C 1-3/C 4-2/C RD. 1-1/C H.H.5 1/2" N.I 3-2/C H.H.11 .) 4" N.M. 4-12/( RD. 6-3/C 2-3/C 7-2/C	C. *12 *12 *12 *14 *14 *6 INS, GRD M.C. *14 TO H.H.10 C. *14 TO H.H.10 C. *12 *12 *12 *12 *12 *12 *12 *12	3' N.M.C. 2-12/C *12 3-3/C *12 1-3/C *12 1-3/C *12 (LUM.) 6-2/C *14 1-1/C*6 INS. GRD. H.H.7 TO H.H.8 1/2' N.M.C. 5-2/C *14 H.H.8 TO H.H.9 1/2' N.M.C. 1-2/C *14	
1.44. (S. H. (S. B (S. B)	C. GRD. H. 11 GRD. UR.T BY:	1-4" 5-13 5-3 2-2 12-1 1-1 5-3 5-3 2-3 2-1 1-1 5-3 2-3 2-1 1/2 1/2	& 1-3" N.M.C //C #12 //C #12 //C #12 //C #12 //C #14 //C #14 & 1-3" N.M.C //C #12 //C #14 //C //C	4 N.M. 3-12/C 2-3/C 1-3/C 4-2/C H.H.5 1/2 N. 3-2/C H.H.11 J 4 N.M. 4-12/C RD. 6-3/C 2-3/C 7-2/C 2-1/C	C. *12 *12 *12 *14 *6 INS, GRD TO H.H.6 M.C. *14 TO H.H.10 C. C. *12 *12 *12 *12 *14 *6 INS, GRD TEM "B"	3' N.M.C. 2-12/C *12 3-3/C *12 1-3/C *12 (LUM.) 6-2/C *14 1-1/C*6 INS. GRD. H.H.7 TO H.H.8 1/2' N.M.C. 5-2/C *14 H.H.8 TO H.H.9 1/2' N.M.C. 1-2/C *14	
(5. H. VS.	C. GRD. H. 11 GRD. UR.T BY:	1-4" 5-13 5-3 2-2 12-1 1-1 5-3 5-3 2-3 2-1 1-1 5-3 2-3 2-1 1/2 1/2	& 1-3* N.M.C //C #12 //C #12 //C #12 //C #12 //C #14 //C #14 //C #15 INS. 6 //C #12 //C #12 //C #12 //C #12 //C #12 //C #12 //C #12 //C #14 //C #14 //C #14 //C #14	4' N.M. 3-12/C 2-3/C 1-3/C 4-2/C H.H.5 1'/2' N. 3-2/C H.H.1 .) 4' N.M. 4-12/C RD. 6-3/C 2-3/C 2-1/C SYST INTERSEC	C. *12 *12 *12 *14 *6 INS, GRD TO H.H.5 M.C. *14 TO H.H.10 C. *12 *12 *12 *12 *12 *12 *12 *12	3' N.M.C. 2-12/C *12 3-3/C *12 1-3/C *12 (LUM.) 6-2/C *14 1-1/C*6 INS. GRD. H.H.7 TO H.H.8 1/2' N.M.C. 5-2/C *14 H.H.B TO H.H.9 1/2' N.M.C. 1-2/C *14	
1.44. (S. H. (S. B (S. B)	C. GRD. H. 11 GRD. UR.T BY:	1-4' 5-11 5-3.3-2-1. 2-1. H.H.4' 5-11 5-3 3-2 2-1 2-1. H.H.1/2' 1-2	& 1-3" N.M.C /C #12 /C #12 /C #12 /C #12 /C #12 /C #12 /C #14 /C #14 /C #14 /C #12 /C #14 /C  4 N.M. 3-12/C 2-3/C 1-3/C 4-2/C H.H.5 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 SYST INTERSEC 29 AN	C. *12 *12 *12 *14 *6 INS, GRD TO H.H.6 M.C. *14 TO H.H.10 C. *12 *12 *12 *12 *12 *14 *6 INS, GRD TEM "B" TION LA D NO	3' N.M.C. 2-12/C *12 3-3/C *12 1-3/C *12 (LUM.) 6-2/C *14 1-1/C*6 INS. GRD. H.H.7 TO H.H.8 1/2' N.M.C. 5-2/C *14 H.H.8 TO H.H.9 1/2' N.M.C. 1-2/C *14 2. YOUT XOUT XOUT		
1.44. (S. H. (S. B (S. B)	C. GRD. H. 11 GRD. UR.T BY:	1-4' 5-11 5-3.3-2-1. 2-1. H.H.4' 5-11 5-3 3-2 2-1 2-1. H.H.1/2' 1-2	& 1-3" N.M.C /C #12 /C #12 /C #12 /C #12 /C #12 /C #12 /C #14 /C #14 /C #14 /C #12 /C #14 /C  4 N.M. 3-12/C 2-3/C 1-3/C 4-2/C H.H.5 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 SYST INTERSEC 29 AN	C. *12 *12 *12 *14 *6 INS, GRD TO H.H.6 M.C. *14 TO H.H.10 C. *12 *12 *12 *12 *12 *14 *6 INS, GRD TEM "B" TION LA D NO	3' N.M.C. 2-12/C *12 3-3/C *12 1-3/C *12 (LUM.) 6-2/C *14 1-1/C*6 INS. GRD. H.H.7 TO H.H.8 1/2' N.M.C. 5-2/C *14 H.H.B TO H.H.9 1/2' N.M.C. 1-2/C *14		
	C. GRD. H. 11 GRD. UR.T BY KED.	1-4' 5-11 5-3.2 2-3.2 12-7 2-1.1 1-4' 5-13 2-3 2-1.1 1-4' 5-3 2-3 2-1.1 1-4' 1-4' 1-4' 1-4' 1-4' 1-4' 1-4' 1-4	& 1-3" N.M.C //C #12 //C #14 //C #14 //C #14 //C #14 //C #14 //C #14 //C #14	4 N.M. 3-12/C 2-3/C 1-3/C 4-2/C H.H.5 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 SYST INTERSEC 29 AN	C. *12 *12 *12 *14 *6 INS, GRD TO H.H.6 M.C. *14 TO H.H.10 C. *12 *12 *12 *12 *12 *14 *6 INS, GRD TEM "B" TION LA D NO	3' N.M.C. 2-12/C *12 3-3/C *12 1-3/C *12 (LUM.) 6-2/C *14 1-1/C*6 INS. GRD. H.H.7 TO H.H.8 1/2' N.M.C. 5-2/C *14 H.H.8 TO H.H.9 1/2' N.M.C. 1-2/C *14 2. YOUT XOUT XOUT	
	C. GRD. H. 11 GRD. UR.T BY:	1-4' 5-11 5-3.2 2-3.2 12-7 2-1.1 1-4' 5-13 2-3 2-1.1 1-4' 5-3 2-3 2-1.1 1-4' 1-4' 1-4' 1-4' 1-4' 1-4' 1-4' 1-4	& 1-3" N.M.( //C #12 //C #14 //C #14	4 N.M. 3-12/C 2-3/C 1-3/C 4-2/C RD. 1-1/C H.H.5 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C 2-3/C 2-1/C SYST INTERSEC 29 AN IDRIA,	C. *12 *12 *12 *14 *6 INS, GRD TO H.H.6 M.C. *14 TO H.H.10 C. *14 *15 *12 *12 *12 *12 *12 *12 *12 *12	3' N.M.C. 2-12/C *12 3-3/C *12 1-3/C *12 (LUM.) 6-2/C *14 1-1/C*6 INS. GRD. H.H.7 TO H.H.8 1/2 N.M.C. 5-2/C *14 H.H.B TO H.H.9 1/2 N.M.C. 1-2/C *14 H.H.B TO H.H.9 1/2 N.M.C. 1-2/C *14 M.H.S TO H.H.9 1/2 N.M.C. 1-2/C *14 DEC. 22, 2003	
	C. GRD. H. 11 GRD. UR.T BY KED.	1-4' 5-11 5-3.2 2-3.2 12-7 2-1.1 1-4' 5-13 2-3 2-1.1 1-4' 5-3 2-3 2-1.1 1-4' 1-4' 1-4' 1-4' 1-4' 1-4' 1-4' 1-4	& 1-3" N.M.( //C #12 //C #14 //C #14	4 N.M. 3-12/C 2-3/C 1-3/C 4-2/C RD. 1-1/C H.H.5 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C 2-3/C 2-1/C SYST INTERSEC 29 AN IDRIA,	C. *12 *12 *12 *14 *6 INS, GRD TO H.H.6 M.C. *14 TO H.H.10 C. *14 *15 *12 *12 *12 *12 *12 *12 *12 *12	3' N.M.C. 2-12/C *12 3-3/C *12 1-3/C *12 (LUM.) 6-2/C *14 1-1/C*6 INS. GRD. H.H.7 TO H.H.8 1/2' N.M.C. 5-2/C *14 H.H.B TO H.H.9 1/2' N.M.C. 1-2/C *14 2. YOUT KOMIS IN AS COUNTY	
	C. GRD. H. 11 GRD. UR. 7 BY:	1-4' 5-11 5-3.2 2-3.2 12-7 2-1.1 1-4' 5-13 2-3 2-1.1 1-4' 5-3 2-3 2-1.1 1-4' 1-4' 1-4' 1-4' 1-4' 1-4' 1-4' 1-4	& 1-3" N.M.( //C #12 //C #14 //C #14	4 N.M. 3-12/C 2-3/C 1-3/C 4-2/C RD. 1-1/C H.H.5 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C H.H.1 3-2/C 2-3/C 2-1/C SYST INTERSEC 29 AN IDRIA,	C. *12 *12 *12 *14 *6 INS, GRD TO H.H.6 M.C. *14 TO H.H.10 C. *14 *15 *12 *12 *12 *12 *12 *12 *12 *12	3' N.M.C. 2-12/C *12 3-3/C *12 1-3/C *12 (LUM.) 6-2/C *14 1-1/C*6 INS. GRD. H.H.7 TO H.H.8 1/2 N.M.C. 5-2/C *14 H.H.B TO H.H.9 1/2 N.M.C. 1-2/C *14 H.H.B TO H.H.9 1/2 N.M.C. 1-2/C *14 M.H.S TO H.H.9 1/2 N.M.C. 1-2/C *14 DEC. 22, 2003	
	C. GRD. H. 11 GRD. UR. 7 BY:	1-4' 5-11 5-3.3 2-3.3 12-7 2-1.1 1-4' 5-13 2-3 2-3 2-1.1 1-4' 5-13 2-3 2-1 1-4' 1-4' 1-4' 1-4' 1-4' 1-4' 1-4' 1-	& 1-3" N.M.( //C #12 //C #14 //C #14	4 N.M. 3-12/C 2-3/C 1-3/C 4-2/C RD. 1-1/C H.H.5 3-2/C H.H.11 3-2/C H.H.11 3-2/C H.H.11 3-2/C H.H.11 3-2/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-1/C SYST INTERSEC 29 AN INTERSEC 29 AN INTERSEC 29 AN INTERSEC 29 AN INTERSEC 29 AN	C. *12 *12 *12 *14 *6 INS, GRD TO H.H.6 M.C. *14 TO H.H.10 C. *14 *15 *12 *12 *12 *12 *12 *12 *12 *12	3' N.M.C. 2-12/C *12 3-3/C *12 1-3/C *12 (LUM.) 6-2/C *14 1-1/C*6 INS. GRD. H.H.7 TO H.H.8 1/2' N.M.C. 5-2/C *14 H.H.B TO H.H.9 1/2' N.M.C. 1-2/C *14 H.H.B TO H.H.9 1/2' N.M.C. 1-2/C *14 M.H.B TO H.H.9 1/2' N.M.C. 1-2/C *14 D. YOUT (OMIS IN AS COUNTY DEC. 22, 2003 <b>f 401 Sheets</b>	SHEET
	C. GRD. H, 11 GRD. ULT BY: XED. ROFESSIO -50	1-4' 5-11 5-3.12-7 2-1.1 1-4' 5-3 2-3 2-3 2-1 1-4' 5-3 2-3 2-3 2-1 1-4' 5-3 2-3 2-3 2-1 1-4' 1-4' 5-11 5-3 2-3 2-3 2-1 2-1.1 H.H.H. 1-4' 5-3 2-3 2-1 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 2-1.2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	& 1-3* N.M.( //C *12 //C *12 //C *12 //C *12 //C *12 //C *14 //C *12 //C *14 //C *15 //C *14 //C *15 //C *14 //C *14	4 N.M. 3-12/C 2-3/C 1-3/C 1-3/C 4-2/C RD. 1-1/C H.H.5 3-2/C H.H.15 3-2/C H.H.11 3-2/C H.H.11 3-2/C H.H.11 3-2/C H.H.11 3-2/C H.H.11 3-2/C H.H.11 3-2/C H.H.11 3-2/C 1/2 N.M. 3-2/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C 2-3/C	c. *12 *12 *12 *12 *14 *6 INS, GRD TO H.H.10 C. *14 *14 TO H.H.10 C. *12 *12 *12 *12 *12 *12 *12 *12	3' N.M.C. 2-12/C *12 3-3/C *12 1-3/C *12 (LUM.) 6-2/C *14 1-1/C*6 INS. GRD. H.H.7 TO H.H.8 1/2' N.M.C. 5-2/C *14 H.H.B TO H.H.9 1/2' N.M.C. 1-2/C *14 N.M.C. 1-2/C *14 D. YOUT KOMIS IN AS COUNTY DEC. 22, 2003 <b>f 401 Sheets</b> -77 STRIAN IMPROVEMENTS	SHEET 111 OF



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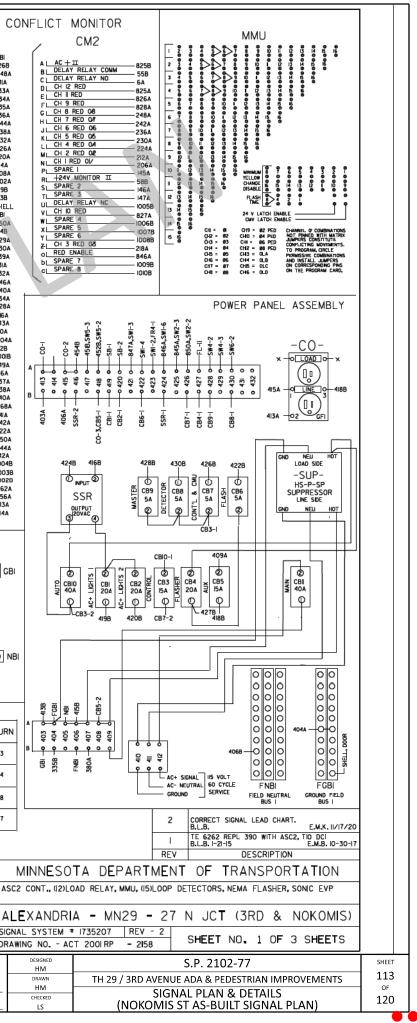
B A B A MIC 4 342 - SA7-V SAI-B - 384 - PS-7, 618A (DC # MIC 4 341 - SA7-U 54A - 383 + 5218, 618B		2 3 4 5 6 7 8 9	10   11   12   13   14	LOAD SWITCH PANEL ASSEMBLY	NEMA + 12CH C
CND         340 = SAI-L         SAI-A         382 = PS-8         COC +           MIC         3339 = SA7-R         SW6-3         381 = SA8-N,PS-1(AC +           MIC         3338 = SA7-R         SW6-3         380 = 4078,PS-2         (AC +           MIC         3337 = SA7-R         SA8-R         379 = SA8-L,SA8-V         380 = 4078,PS-2         (AC +           MIC         2         336 = SA7-D         SA8-R         379 = SA8-E,SA8-V           MIC         2         336 = SA7-D         -378 = PBR8A         GND - 335 = 4048         -377 = SPARE           MIC         3334 = SA7-E         376 = SPARE         373 = SPARE         373 = SPARE         -374 = SA6-V           332 = SA5-V         371 = SA6-V         371 = SA6-U         -372 = PS-3         -370 = SA6-P           GND         329 = SA5-R         371 = SA6-R         -370 = SA6-P         -370 = SA6-P	CONT         O'         I           PLAN         Ø'         I           PLAN         Ø'         I           Image: State of the state of	Z         J         H         J         G         I         G         J           2         3         4         5         6         7         8         2P           2         3         4         5         6         7         8         2P           39A         76A         82A         102A         109A         116A         122A         72A           0A         77A         83A         103A         100A         117A         123A         142B           7IA         78A         84A         104A         11A         18A         124A         73A           07A         213A         219A         225A         23IA         237A         243A         249A           22-13         FP3-13         FP4-13         FP5-13         FP6-13         FP7-13         FP8-13         251A           P2-1         FP3-1         FP4-13         FP5-1         FP6-1         FP7-1         FP8-1         253A           P2-1         FP3-1         FP4-13         FP5-1         FP6-1         FP7-1         FP8-1         253A           P3-14         P4         P3         P3         P3         P3         P3	IO         II         IZ         IJ         IH           4P         6P         8P         -           4P         6P         8P         -           85A         II2A         I25A         -           144B         146B         148B         -           86A         II3A         I26A         -           255A         26IA         267A         -           257A         263A         269A         -           259A         265A         27IA         -	TYPICAL ALL VEH LOAD SWITCH SOCKET FRONT VIEW	SH         SHELL GROUND         CBI           A         AC + I         266B           B         RELAY INO         848A           C         RELAY INO         848A           C         IELAY INO         848A           C         IELAY INO         848A           C         IELAY INO         848A           C         IERIAY INO         848A           C         IERIAY INO         848A           C         IERIN         837A           C         IERIN         837A           C         IERIN         837A           C         IERIN 06         232A           L         CH 6 GRN 06         232A           L         CH 5 GRN 06         232A           L         CH 3 GRN 06         232A           L         CH 3 GRN 08         204A           P         CH 2 GRN 02         208A           R         CH 1 GRN 04//         202A           S         124Y MONITOR I         598           T         LOGIC GROUND         538           U         CHASSIS GROUND         5401
327 - SA5-K       369 - SA6-K         326 - SA5-J       368 - SA6-J         GND - 325 - GND - 367 - 3       324 - SA5-E         323 - SA5-C       366 - SA6-E         323 - SA5-C       366 - SA6-E         323 - SA5-D       365 - SA6-D         323 - SA5-D       365 - SA6-D         323 - SA5-D       365 - SA6-D         9 - 322 - SA3-V       364 - SA4-V         329 - SA3-U       363 - SA4-V         319 - SA3-R       9 - 360 - SA4-R         319 - SA3-R       9 - 360 - SA4-R         319 - SA3-R       9 - 360 - SA4-R         319 - SA3-L       359 - SA4-K         318 - SA3-J       8 - 358 - SA4-J         GND - 355 - GND - 357 - 356 - SA4-L       314 - SA3-E         314 - SA3-E       335 - SA4-D         313 - SA3-D       8 - 356 - SA4-E				$\begin{array}{c c c c c c c c c c c c c c c c c c c $	↓         AC- (NEUTRAL)         Solution           w         RELAY I COMMON (AC ) +         850           X         RELAY I COMMON (AC ) +         850           X         RELAY I COMMON (AC ) +         850           Y         CH 12 YEL         830           2         CH 11 YEL         830           4         CH 0 YEL         834           4         CH 0 YEL         834           4         CH 0 YEL         832           4         CH 10 YEL         832           4         CH 5 YEL 06         246           4         CH 5 YEL 06         246           1         CH 3 YEL 06         246           1         CH 3 YEL 06         246           1         CH 2 YEL 06         240           1         CH 2 YEL 07         204           1         CH 2 YEL 07         204           1         CH 2 YEL 07         204           1         CH 2 YEL 07         849
N-132       SAI-V       -354       SA2-V         B-311       SAI-U       -353       SA2-U         GND -300       GND -300       GND -332       -353         T-309       SAI-R       -351       -SA2-R         B-308       SAI-P       -350       SA2-Z         GND -300       SAI-R       -331       -SA2-R         B-308       SAI-P       -331       SA2-Z         GND -305       SAI-P       -347       -348         GND -305       - 00       -347       -346         GND -305       - 00       -347       -345         GND -305       - 00       -345       SA2-D         FBB       - 301       - 303       SA8-D         FBB       - 301       - 345       SA2-D         FBB       - 301       - 345       SA2-D         FBB       - 301       - 345       SA8-D         FBB       - 301       - 345       SA8-D         FBB       - 301       - 345       SA8-D         FBB       - 301       - 305       - 305         FBB       - 301       - 305       - 305         FBB       - 305       - 305       - 30	Øl     Ø2     Ø3       FPI     LS2-3     Ø2     Ø3       LSI-3     Ø3     LS2-3     Ø3     Ø3       LSI-5     Ø5     205A     Ø89     Ø89       LSI-5     Ø5     203A     D89     Ø89       LSI-5     Ø5     203A     D89     Ø89       JUMPERING     Ø3     Ø-3     Ø3     Ø5       Ø89     Ø89     Ø89     Ø89     Ø89       JUMPERING     Ø89     Ø89     Ø89       Ø89     Ø89     Ø89     Ø89       Ø5     Ø5     Ø89     Ø89       Ø5     Ø5     Ø69     Ø5       Ø5     Ø5     Ø69     Ø5       Ø5     Ø5     Ø5     Ø5	217A 217A 229A 229A 229A 229A	FP6 FP7 2414 LS8-3 C (2) LS7-3 C (2) LS7-5 C (2) LS7-5 C (2) LS8-5 C (2) LS8-		Image: Characteristic form         Image: Characteristic form         Barrier         Barrier           Image: Characteristic form         Image: Characteristic form         Barrier         Barrier           Image: Characteristic form         Image: Characteristic form         Barrier         Barrier           Image: Characteristic form         Image: Characteristic form         Barrier         Barrier         Barrier           Image: Characteristic form         Image: Characteristic form         Image: Characteristic form         Barrier         Barrier           Image: Characteristic form         Image: Characteristic form         Image: Characteristic form         Barrier         Image: Characteristic form           Image: Characteristic form         Image: Characteristic form         Image: Characteristic form         Image: Characteristic form         Image: Characteristic form           Image: Characteristic form         Image: Characteristic form         Image: Characteristic form         Image: Characteristic form         Image: Characteristic form         Image: Characteristic form         Image: Characteristic form         Image: Characteristic form         Image: Characteristic form         Image: Characteristic form         Image: Characteristic form         Image: Characteristic form         Image: Characteristic form         Image: Characteristic form         Image: Characteristic form         Image: Characteristic form         Image:
PBRI 4 PBR5A PBRIA NOTE: 305, 310, 315, 320, 325, 330, 335, 340, 347, 352, 357, 362, 367 AND 372 ARE INTERCONNECTED BY THE WIEDMULLER MOUNTING RAIL.	7 AMP 7	Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here         Here <td><u>↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ </u></td> <td></td> <td></td>	<u>↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ </u>		
TIGHTENING         TORQUE         SPECIFICATIONS           SCREW         SIZE         6-32         8-32         10-32           POUND INCHES         12         16         25.9           BLOCK         TYPE         SAKS6         RK6-10         SAK35N           POUND INCHES         10.5         16         35           BLOCK         TYPE         NO-36         9           POUND INCHES         35         10         10	SONIC EVP SENSORS           CABLE DISCR. PHASES POLE         # MICROPHONE CABLE TERMINAL           II         1         28.5         1         3338         334B         335B           28         2         4         2         336B         337B         335B           29         3         166         3         338B         339B         340B           12         4         8         4         341B         342B         340B           EVP VERIFY LIGHTS           EVP VERIFY LIGHTS	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	VEH DETECTORS           TERMINAL LEAD IN DRAIN           30         DI-1         3038-304B         305B           31         DI-2         306B-307B         305B           33         DI-2         306B-307B         305B           33         D2-1         313B-314B         315B           33         D4-1         316B-317B         315B           34         O4-2         318B-319B         3200B           35         D4-3         321B-322B         320B           14         D5-1         346B-347B         347B           15         D5-2         348B-349B         347B           16         D5-3         350B-351B         352B           17         D5-4         353B-354B         352B	VEH DETECTORS	PED         PUSHBUTTONS           ABLE         PPB         TERMINAL         RETURN           6         PB6-2         3438         PBR3           9         PB2-1         3018         PBR4           24         PB6-2         3438         PBR8           26         PB2-2         3018         PBR7
	27     I     285     3     251       10     2     4     4     257       7     3     186     1     263       25     2     8     2     258	I         6-I         23I         233         235           I         6-2         232         234         236           I8         8-I         243         245         247           I9         8-2         2I3         2I5         244         246         248           2         8-3         2I4         2I6         243         245         247           -         -         -         -         -         -         -         -           ALL<	36         06-1         308B-309B         310B           32         06-2         3IIB-312B         310B           37         08-1         355B-356B         357B           38         08-2         358B-359B         357B           39         08-3         360B-36IB         362B           ALL         LOOP         LEAD         IN         DREN           ALL         LOOP         LEAD         IN         ORAIN	22         P2-2         253         254           5         P4-1         255         256           8         P4-2         259         260           19         P6-1         261         262           2         P6-2         265         266           20         P8-1         267         268           23         P8-2         271         272           ALLPED HEAD NEUTRALS TO BE TERMINATED ON FNB         TO BE         TO BE	REV. STATUS OF SHEETS     ASC       SHEET     2     3       REV     2     1     1       DRAWN BY-     D.G. AKENSON     SIGN       CHECKED BY-     DRAWN
	Q		168 41st St S #2,         PV           argo, ND 58104         Image: Comparison of the second se	DATE IHEREBY CERTIFY THAT TIHIS PLAN, SPECIFICAT WIE OR UNDER MY DIRECT SUPERVISION AN PROFESSIONAL ENGINEER UNDER THE LAWS C LUCAS SIMONSON U.C. NO. <u>60649</u> D/	
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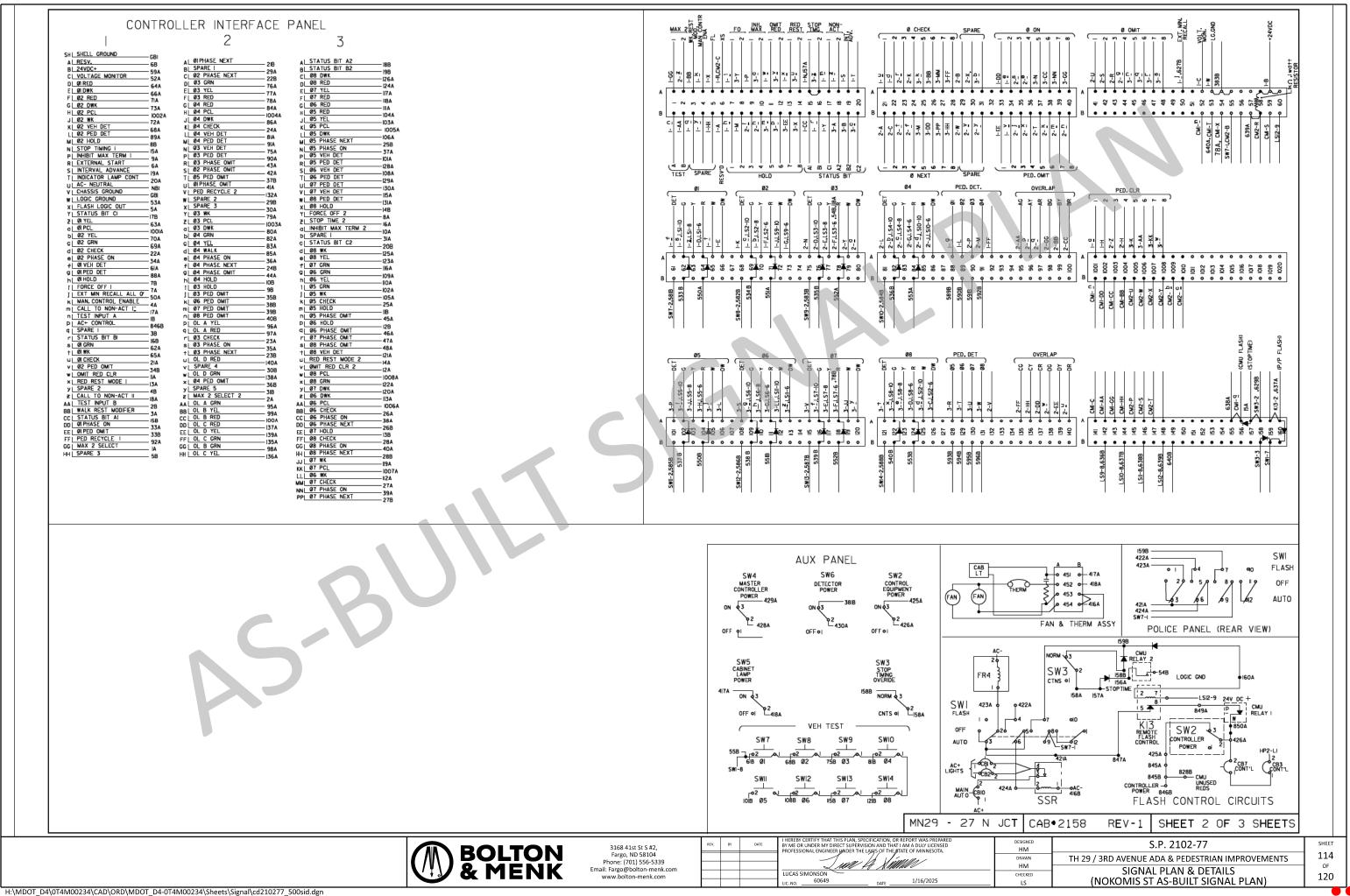
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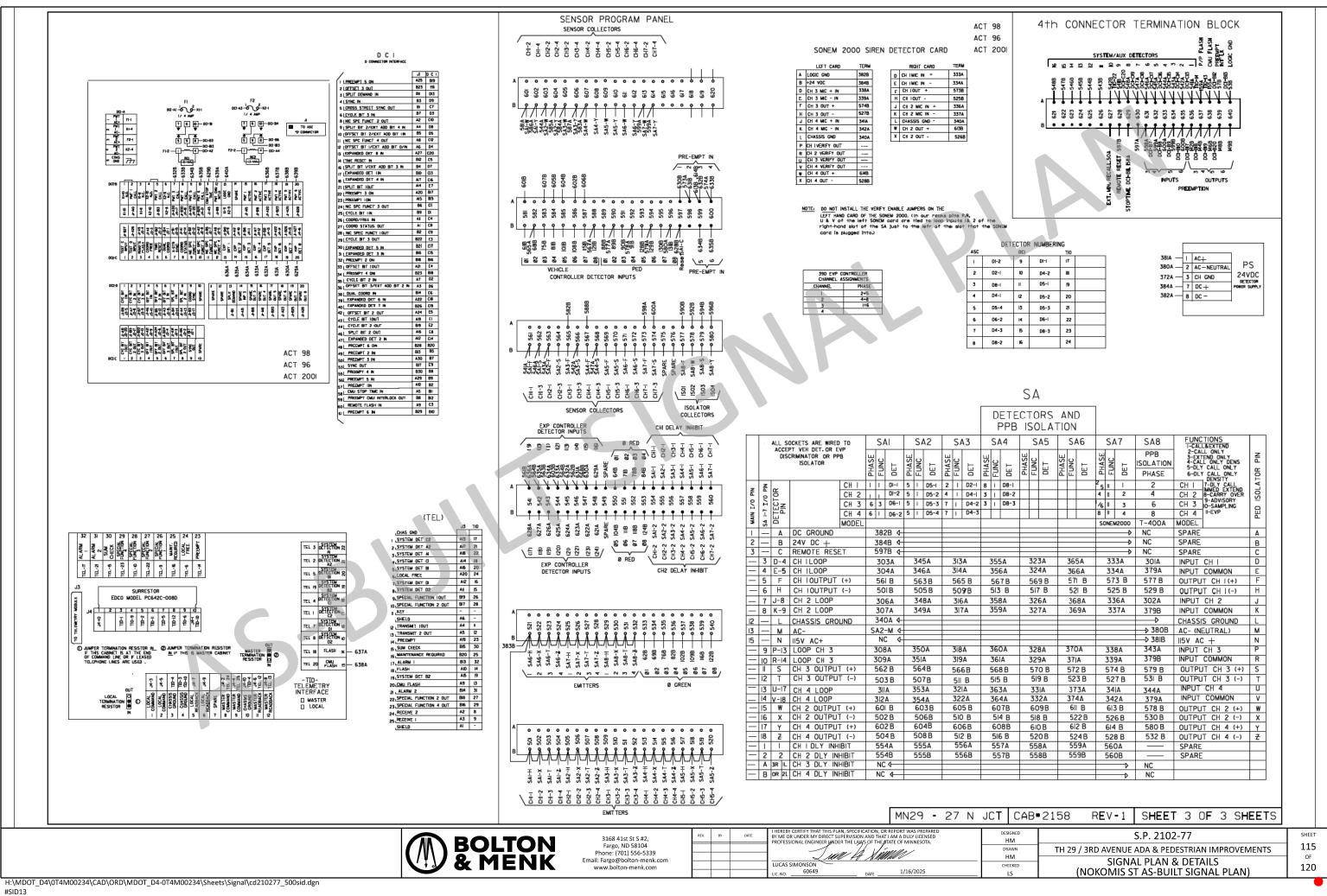


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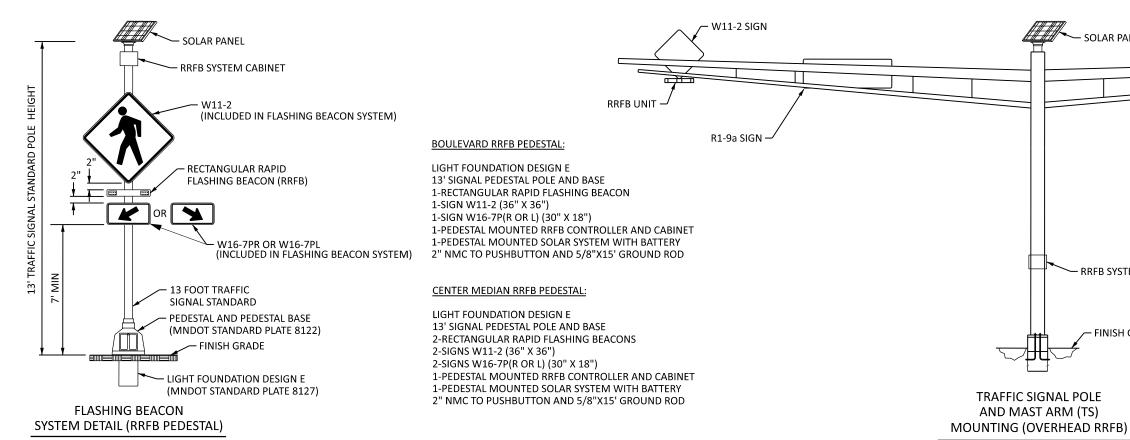
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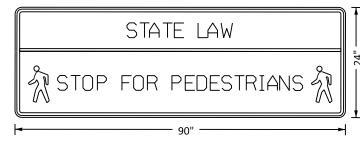
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NOT TO SCALE



W11-2 36"X36" 36.0" ACROSS SIDES, BLACK ON FLUORESCENT YELLOW GREEN



R1-9a 90"X24" BLACK ON WHITE AND FLORESCENT YELLOW GREEN NOT TO SCALE

	SIGN	PANELS	<b>ON FLASHING BEACON SYS</b>	<b>TEM</b> (1)
	ПАЦ		PANEL	
POLE NUMBER	"A" DISTANCE (FEET)	CODE NUMBER	LEGEND	SIZE (INCHES)
SYSTEM "A"	0.5	W11-2	PEDESTRIAN CROSSING	90 x 24
SYSTEM "A"	5	R1-9a	STOP FOR PEDESTRIAN	36 x 36
SYSTEM "A"	0.5	W11-2	PEDESTRIAN CROSSING	90 x 24
SYSTEM "A"	5	R1-9a	STOP FOR PEDESTRIAN	36 x 36
SYSTEM "B"	0.5	W11-2	PEDESTRIAN CROSSING	90 x 24
SYSTEM "B"	5	R1-9a	STOP FOR PEDESTRIAN	36 x 36
SYSTEM "B"	0.5	W11-2	PEDESTRIAN CROSSING	90 x 24
SYSTEM "B"	5	R1-9a	STOP FOR PEDESTRIAN	36 x 36

SPECIFIC NOTE(S):

(1) SIGNS IDENTIFIED IN THIS TABLE ARE INCLUDED IN FLASHING BEACON SYSTEM "A" AND FLASHING BEACON SYSTEM "B".

## GENERAL NOTE(S):

- 1. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR STANDARD SIGN DESIGNS, ARROW DETAILS AND SPLICE PLATE DETAILS.
- 2. SIGN PANEL DIMENSIONS ARE IN INCHES.
- 3. SEE STANDARD PLAN 5-297.731 FOR SIGN MOUNTING TO MAST ARM.
- 4. SEE STANDARD PLAN 5-297.730 FOR SIGN MOUNTING TO ROUND POST.
- MOUNTING HEIGHT OF POLE MOUNTED SIGN PANELS MUST BE 7 FOOT MINIMUM. MOUNTING HEIGHT IS MEASURED FROM BOTTOM OF SIGN PANEL TO SURFACE IMMEDIATELY BELOW THE SIGN PANEL.
- 6. "A" DISTANCE = DISTANCE FROM THE END OF THE MAST ARM TO THE EDGE OF EACH SIGN PANEL.
- 7. SEE SIGNING PLANS FOR SIGN PLACEMENT OF POLE MOUNTED SIGNS NOT SHOWN IN ABOVE TABLE. ADDITIONAL SIGNS PLACED ON SIGNAL POLE IN SIGNING PLAN ARE NOT INCLUDED IN FLASHING BEACON SYSTEM "A" OR FLASHING BEACON SYSTEM "B".

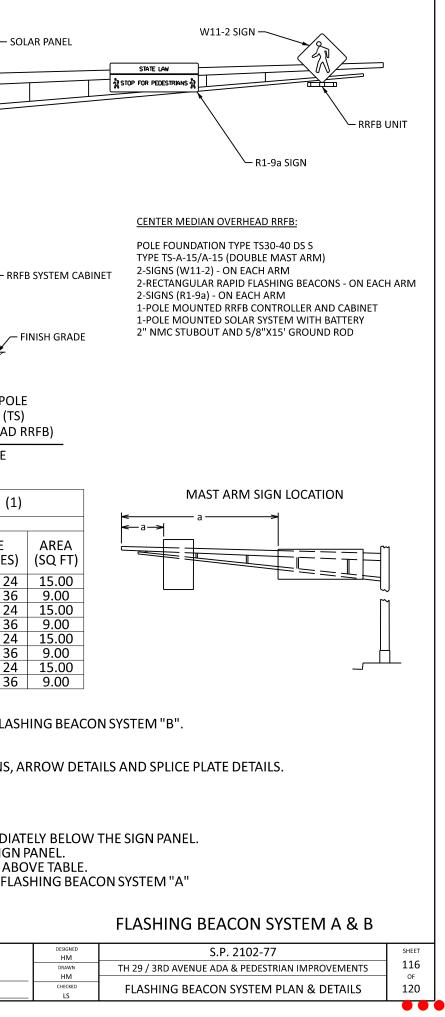


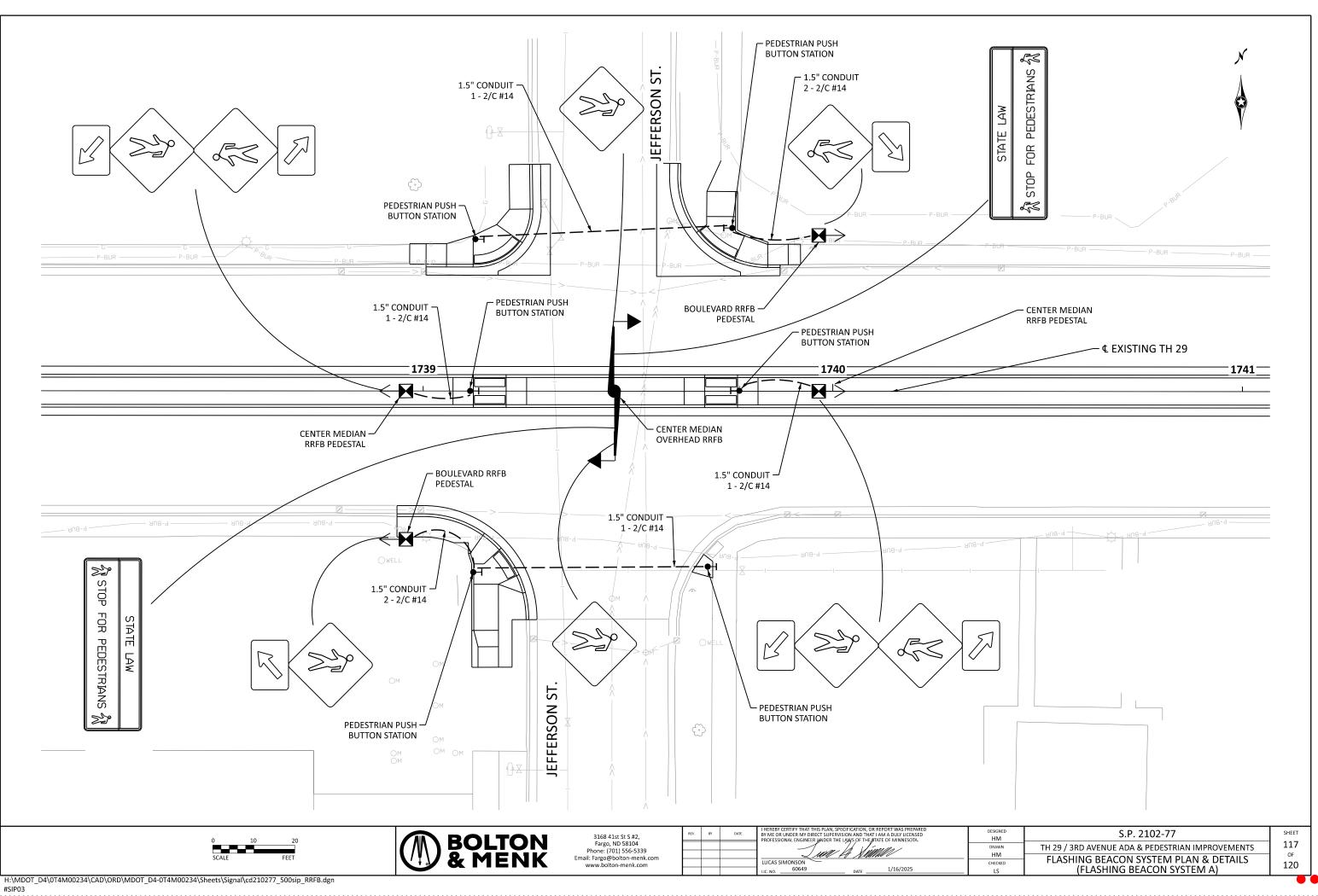
3168 41st St S #2,	
Fargo, ND 58104	Г
Phone: (701) 556-5339	⊢
nail: Fargo@bolton-menk.com	⊢
www.bolton-menk.com	⊢

ВҮ	DATE	I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER LANDER THE LAWS OF THEZATAE OF MINNESOTA.
		MAI I XMMM
		LUCAS SIMONSON
		LIC. NO DATE 1/16/2025

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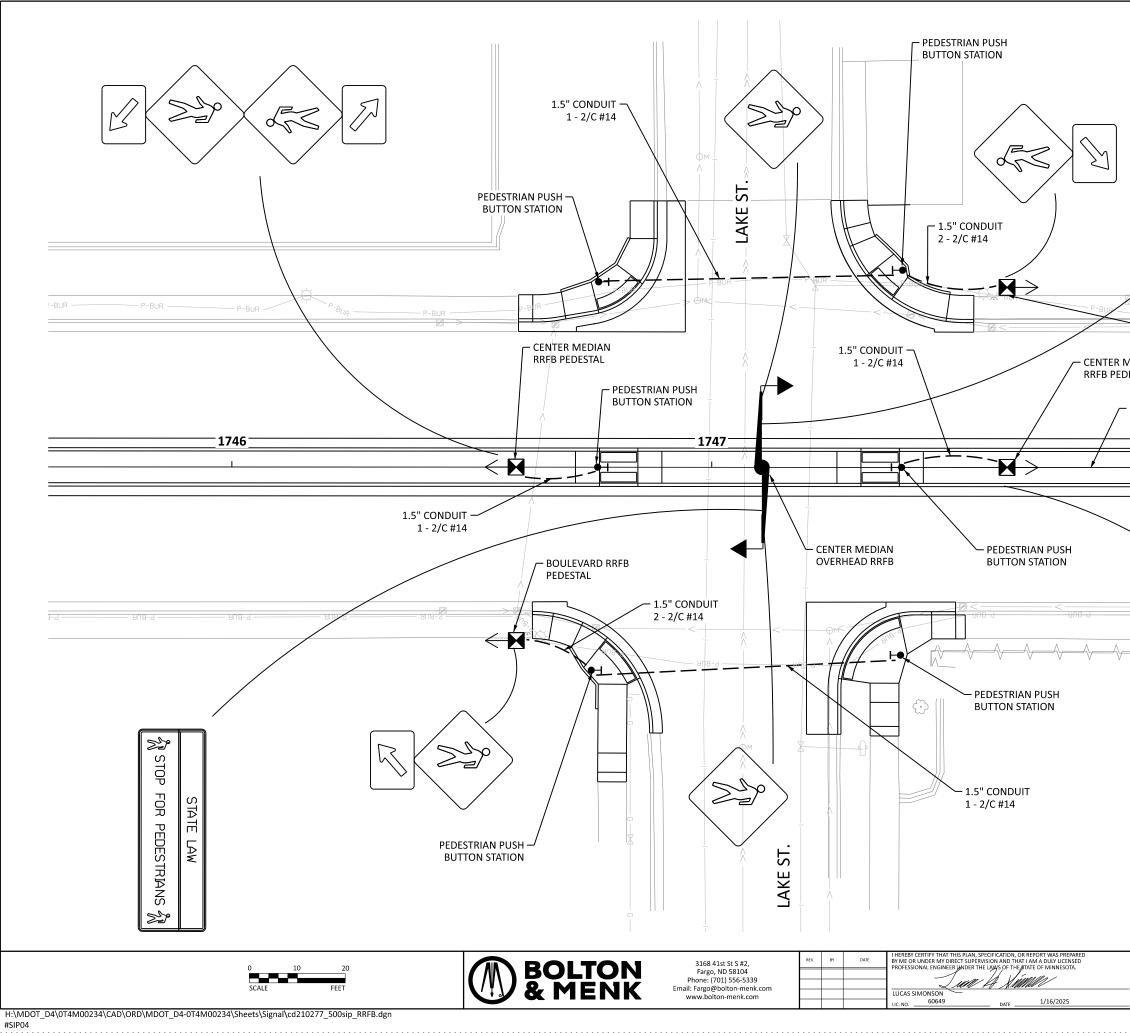


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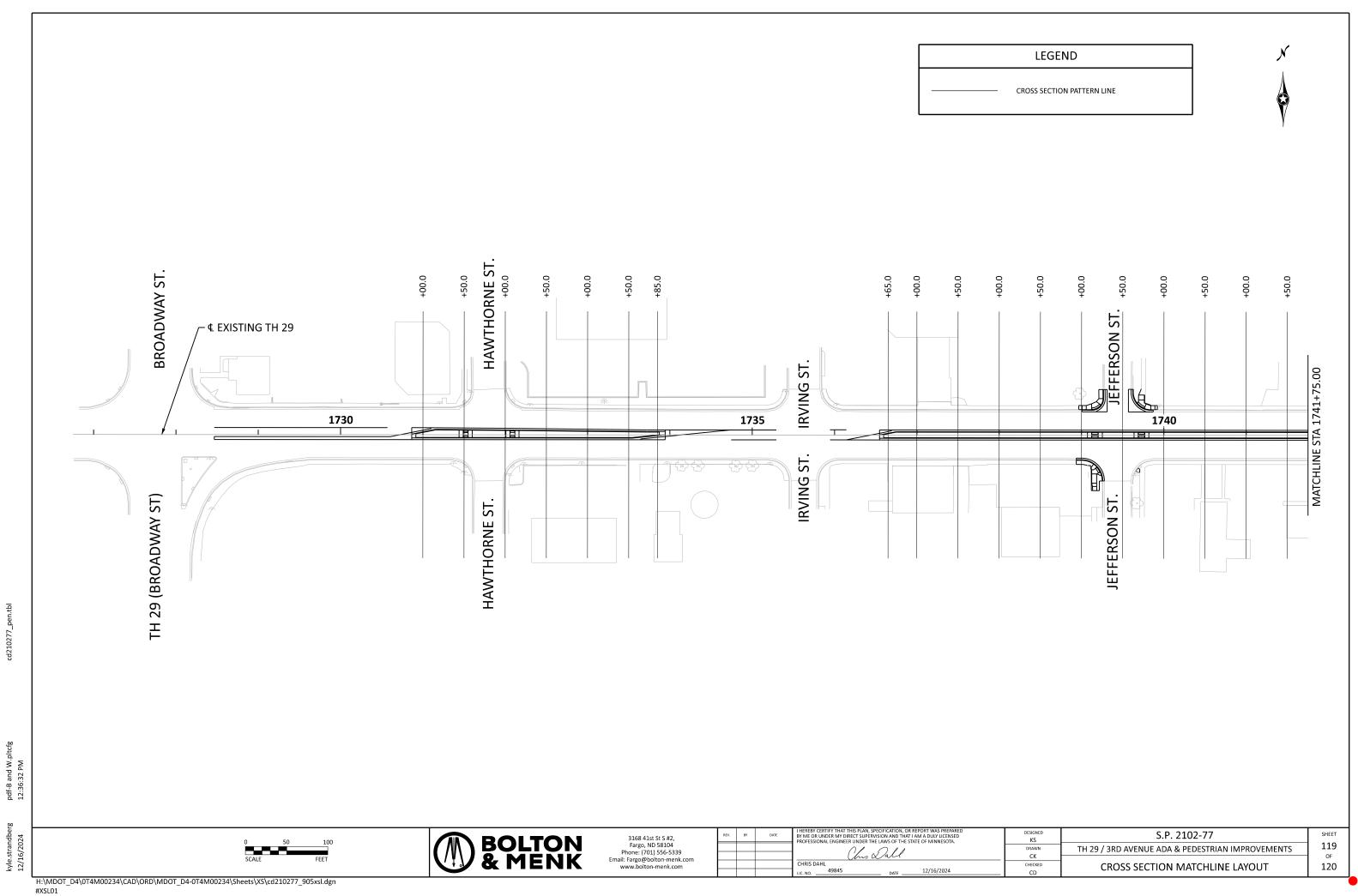
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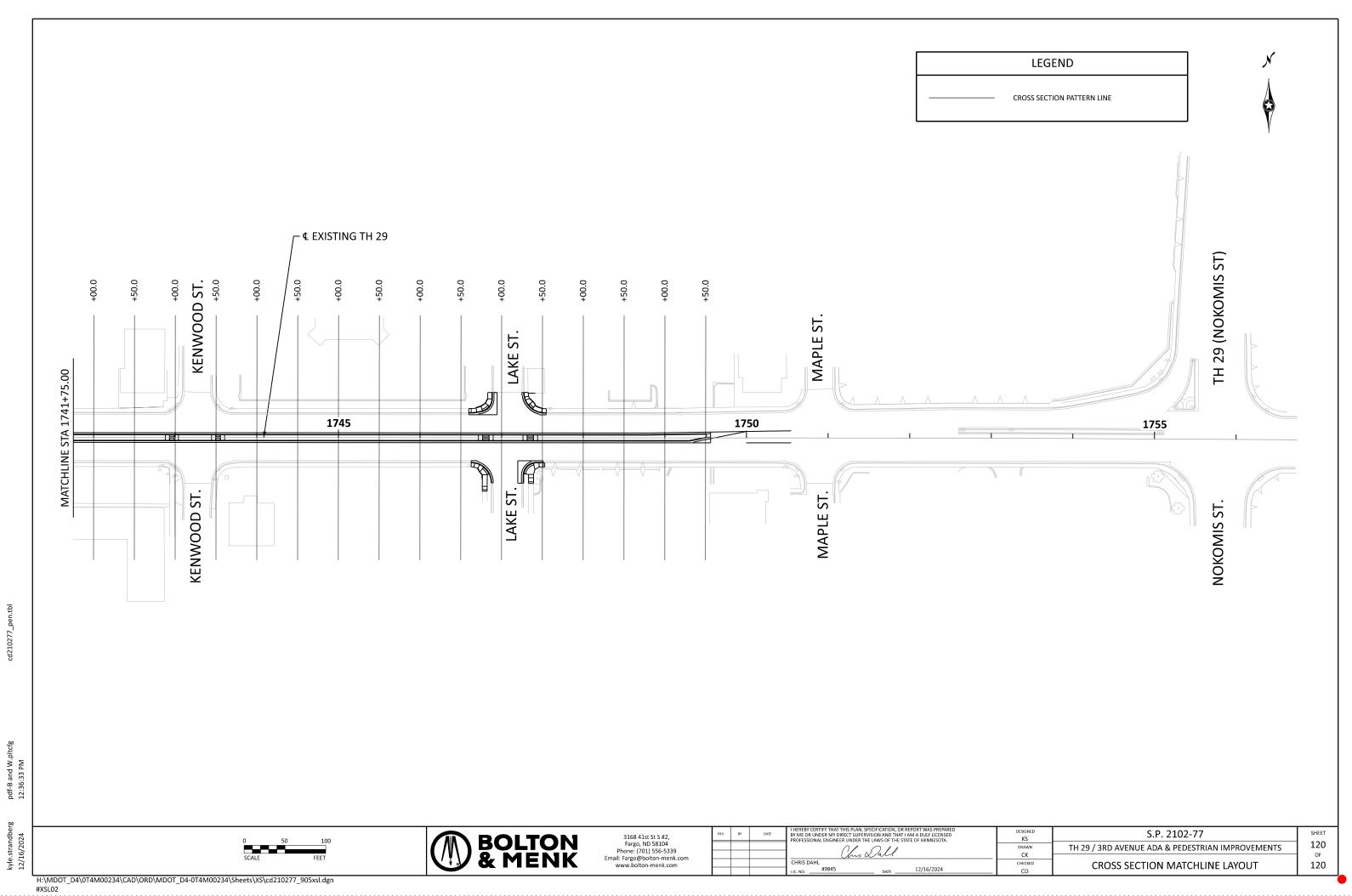
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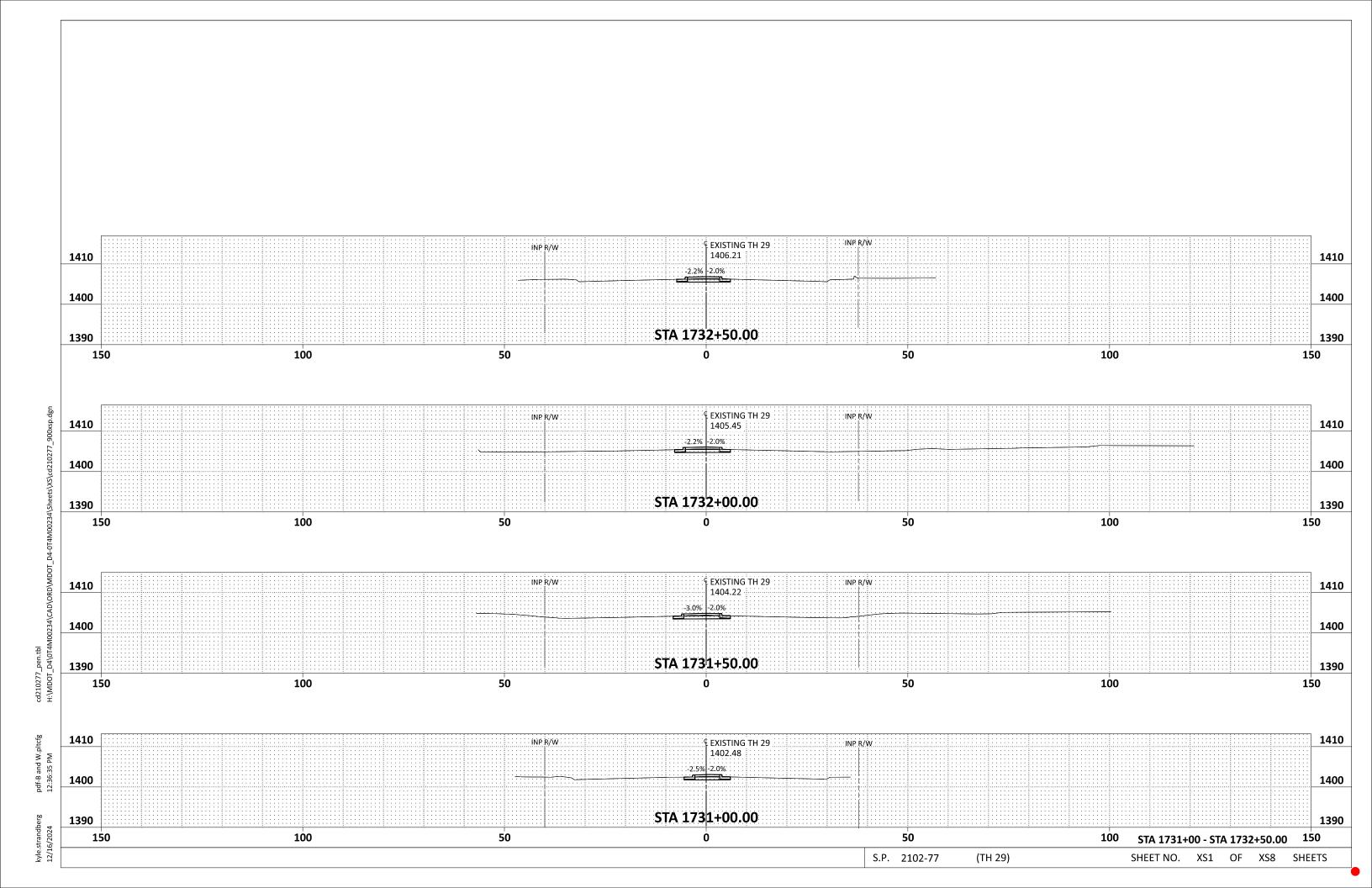
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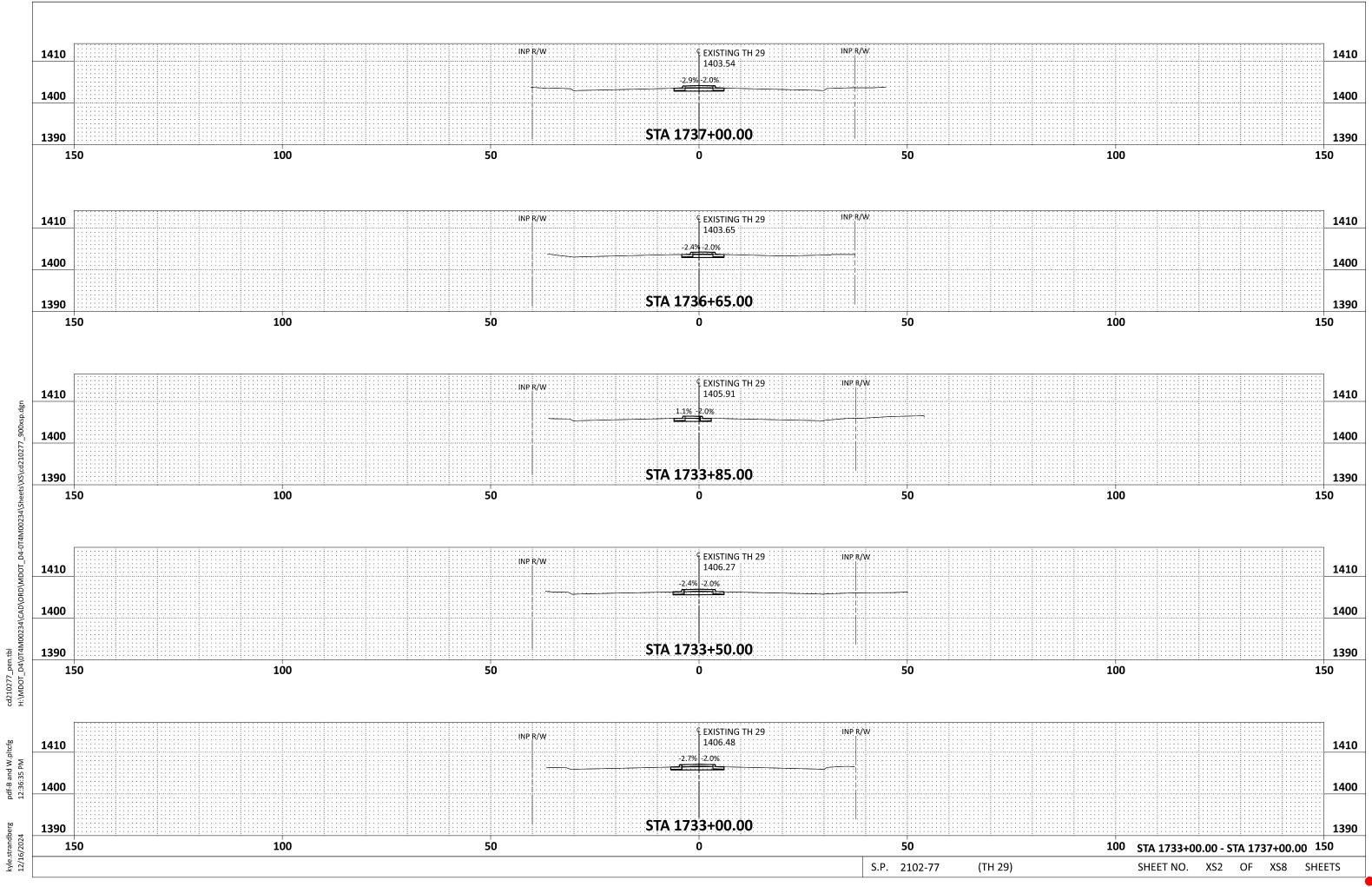
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STATE LAW A STOP FOR PEDESTRIANS A
P-RUR P-BUR P-BUR P-BUR
BOULEVARD RRFB MEDIAN PEDESTAL DESTAL
€ EXISTING TH 29
1748
DESIGNED HM     S.P. 2102-77     SHEET       DRAWN     TH 29 / 3RD AVENUE ADA & PEDESTRIAN IMPROVEMENTS     118       HM     FLASHING BEACON SYSTEM PLAN & DETAILS     OF       LS     (FLASHING BEACON SYSTEM B)     120









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kyle.strandberg 12/16/2024

