



# Wisconsin Department of Transportation

April 30, 2018

## Division of Transportation Systems Development

Bureau of Project Development  
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### NOTICE TO ALL CONTRACTORS:

**Proposal #34: 1198-00-78, WISC 2018 256**  
**Minong - Superior**  
**CTH L Intersection**  
**USH 53**  
**Douglas County**

**1198-02-82, WISC 2018 257**  
**Solon Springs - Superior**  
**WI Central LTD RR To Kent Road (NB)**  
**USH 53**  
**Douglas County**

**1198-02-83, WISC 2018 258**  
**Solon Springs - Superior**  
**WI Central LTD RR To**  
**Kent Road (SB)**  
**USH 53**  
**Douglas County**

### Letting of May 8, 2018

This is Addendum No. 01, which provides for the following:

#### Special Provisions:

Added Special Provisions	
Article No.	Description
21	Asphaltic Surface, Item 465.0105
22	HMA Pavement Percent Within Limits (PWL) QMP
23	HMA Percent Within Limits (PWL) Test Strip Volumetrics, Item SPV.0060.01; HMA Percent Within Limits (PWL) Test Strip Density Item SPV.0060.02

#### Schedule of Items:

Revised Bid Item Quantities					
Bid Item	Item Description	Unit	Old Quantity	Revised Quantity	Proposal Total
205.0100	Excavation Common	CY	10,080	-1,530	8,555
460.2000	Incentive Density HMA Pavement	DOL	22,280	4,630	26,910
460.8644	HMA Pavement 4 SMA 58-34 V	TON	35,648	-636	35,012
465.0105	Asphaltic Surface	TON	16,402	-7,006	9,396

<b>Added Bid Item Quantities</b>					
Bid Item	Item Description	Unit	Old Quantity	Revised Quantity	Proposal Total
460.2005	Incentive Density PWL HMA Pavement	DOL	0	19,350	19,350
460.2010	Incentive Air Voids HMA Pavement	DOL	0	20,580	20,580
460.6444	HMA Pavement 4 MT 58-34 H	TON	0	7,874	7,874
SPV.0060.01	HMA Percent Within Limits (PWL) Test Strip Volumetrics, Item SPV.0060.01.	EACH	0	1	1
SPV.0060.02	HMA Percent Within Limits (PWL) Test Strip Density Item SPV.0060.02.	EACH	0	1	1

<b>Deleted Bid Item Quantities</b>					
Bid Item	Item Description	Unit	Old Quantity	Revised Quantity	Proposal Total
465.0110	Asphaltic Surface Patching	TON	300	-300	0

**Plan Sheets:**

1198-00-78

<b>Revised Plan Sheets</b>	
Plan Sheet	Plan Sheet Title (brief description of changes to sheet)
6	Typical Section Sheet – Revised HMA Pavement Type Upper Layer : 4 MT 58-34 H
7	Typical Section Sheet – Revised HMA Pavement Type Upper Layer : 4 MT 58-34 H
25	MQ Sheet – Revised HMA Pavement Column for revised pavement 4 MT 58-34 H

1198-02-82

<b>Revised Plan Sheets</b>	
Plan Sheet	Plan Sheet Title (brief description of changes to sheet)
4	Typical Section Sheet - Revised HMA Pavement Type Upper Layer : 4 MT 58-34 H
6	Construction Detail Sheet – Revised Pavement Types on Detail
59	MQ Sheet – Revised Table – 3 columns revised with new pavement types
61	MQ Sheet – Revised Table – Excavation Common for information only

1198-02-83

<b>Revised Plan Sheets</b>	
Plan Sheet	Plan Sheet Title (brief description of changes to sheet)
4	Typical Section Sheet - Revised HMA Pavement Type Upper Layer : 4 MT 58-34 H
9	Construction Detail Sheet – Revised Pavement Types on Detail
59	MQ Sheet – Revised HMA Pavement Test Strip Table, Excavation for information only
60	MQ Sheet – Revised Table - 3 columns revised with new pavement types
66	MQ Sheet - Added PWL Mixture Use Table

The responsibility for notifying potential subcontractors and suppliers of these changes remains with the prime contractor.

Sincerely,

*Mike Coleman*

Proposal Development Specialist  
Proposal Management Section

**ADDENDUM NO. 01**  
**1198-00-78, 1198-02-82, 1198-02-83**  
**April 30, 2018**

**Special Provisions**

**21. Asphaltic Surface, Item 465.0105.**

*Replace standard spec 465.2 (1) with the following:*

Under the Asphaltic Surface bid item submit a mix design. Furnish asphaltic mixture meeting the requirements specified for HMA Pavement 4 LT 58-34 S under 460.2; except the engineer will not require the contractor to conform to the quality management program specified under 460.2.8.

**22. HMA Pavement Percent Within Limits (PWL) QMP.**

**A Description**

This special provision describes percent within limits (PWL) pay determination, providing and maintaining a contractor Quality Control (QC) Program, department Quality Verification (QV) Program, required sampling and testing, dispute resolution, corrective action, pavement density, and payment for HMA pavements. Pay is determined by statistical analysis performed on contractor and department test results conducted according to the Quality Management Program (QMP) as specified in standard spec 460, except as required below.

**B Materials**

Conform to the requirements of standard specs 450, 455, and 460 except where superseded by this special provision. The department will allow only one mix design for each HMA mixture type per layer required for the project, unless approved by the engineer. The use of more than one mix design for each HMA pavement layer will require the contractor to construct a new test strip in accordance with HMA Pavement Percent Within Limits (PWL) QMP Test Strip Volumetrics and HMA Pavement Percent Within Limits (PWL) QMP Test Strip Density articles at no additional cost to the Department.

*Replace standard spec 460.2.8.2.1.3.1 for contracts with 5000 Tons of Mixture or Greater with the following:*

**460.2.8.2.1.3.1 Contracts under Percent within Limits**

- (1) Furnish and maintain a laboratory at the plant site fully equipped for performing contractor QC testing. Have the laboratory on-site and operational before beginning mixture production.
- (2) Obtain random samples and perform tests according to Appendix A Test Methods & Sampling for HMA Pavement PWL QMP. Obtain HMA mixture samples from trucks at the plant. For the subplot in which a QV sample is collected, the QC sample shall be discarded, and the QC team shall test a split of the QV sample.
- (3) Sample size must be adequate to run the appropriate required tests in addition to one set of duplicate tests that may be required for dispute resolution (i.e., retained). This requires sample sizes which yield three splits for all random sampling per subplot. All QC samples shall provide the following: QC, QV, and Retained. The contractor shall take possession and test the QC portions. The department will observe the splitting and take possession of the samples intended for QV testing (i.e., QV portion from each sample) and the Retained portions. Additional sampling details are found in Appendix A. Samples shall be labeled in accordance with Appendix A. Additional handling instructions for retained samples are found in CMM 8-36.
- (4) Use the test methods identified below to perform the following tests at a frequency greater than or equal to that indicated:
  - Blended aggregate gradations in accordance with AASHTO T 30

- Asphalt content (AC) in percent according to AASHTO T 308 (ignition oven) or AASHTO T 164 (chemical extraction)
- Bulk specific gravity (Gmb) of the compacted mixture according to AASHTO T 166.
- Maximum specific gravity (Gmm) according to AASHTO T 209.
- Air voids (V<sub>a</sub>) by calculation according to AASHTO T 269.
- Voids in Mineral Aggregate (VMA) by calculation according to AASHTO R35.

<sup>(5)</sup> Lot size shall consist of 3750 tons with sublots of 750 tons. Test each design mixture at a frequency of 1 test per 750 tons of mixture type produced and placed on the project. Add a random sample for any fraction of 750 tons at the end of a project. Partial lots with less than three subplot tests will be included into the previous lot for data analysis/acceptance and pay. Volumetric lots will include all tonnage of mixture type under specified bid item unless otherwise specified in the plan.

<sup>(6)</sup> Conduct field tensile strength ratio tests according to AASHTO T283, without freeze-thaw conditioning cycles, on each qualifying mixture in accordance with CMM 8-36.6.14. Test each full 50,000 ton production increment, or fraction of an increment, after the first 5,000 tons of production. Perform required increment testing in the first week of production of that increment. If field tensile strength ratio values are below the spec limit, notify the engineer. The engineer and contractor will jointly determine a corrective action.

Delete standard spec 460.2.8.2.1.5 and 460.2.8.2.1.6

Replace standard spec 460.2.8.2.1.7 Corrective Action with the following:

**460.2.8.2.1.7 Corrective Action**

<sup>(1)</sup> Material must conform to the following action and conformance limits based on individual QC and QV test results (tolerances relative to JMF):

ITEM	ACTION LIMITS	CONFORMANCE LIMITS
Percent passing given sieve:		
37.5-mm	+/- 8.0	
25.0-mm	+/- 8.0	
19.0-mm	+/- 7.5	
12.5-mm	+/- 7.5	
9.5-mm	+/- 7.5	
2.36-mm	+/- 7.0	
75-µm	+/- 3.0	
AC in percent	- 0.5	
Va		- 1.5 & +2.0
VMA in percent <sup>[1]</sup>	- 0.5	-1.0

<sup>[1]</sup> VMA limits based on minimum requirement for mix design nominal maximum aggregate size in table 460-1.

<sup>(2)</sup> QV samples will be tested for air voids, VMA, Gmm, Gmb, and AC.

<sup>(3)</sup> Notify the engineer if any individual test result falls outside the action limits, investigate the cause and take corrective action to return to within action limits. If two consecutive test results fall outside the action limits, stop production. Production may not resume until approved by the engineer. Additional QV samples may be collected upon resuming production, at the discretion of the engineer. Additional QV tests must meet action limits or be subject to production stop and/or remove and replace.

(4) For any additional tests outside the random number testing conducted for volumetrics, the data collected will not be entered into PWL calculations. However, additional QV testing shall meet the tolerances for material acceptance as specified in the Standard Specification and this document.

(5) Remove and replace nonconforming material at no additional expense to the department. The engineer may allow nonconforming material to remain in place with a price reduction. The department will pay for the nonconforming HMA Pavement allowed to remain in place at 50 percent of the contract unit price. Nonconforming material is defined as any individual QC or QV tests results outside the conformance limits or a PWL value < 50.

*Replace standard spec 460.2.8.3.1.2 Personnel Requirements with the following:*

#### **460.2.8.3.1.2 Personnel Requirements**

(1) The department will provide at least one HTCP-certified HMA technician, certified at a level appropriate for sampling and mixture production control testing, to observe QV sampling of project mixtures.

(2) Under departmental observation, a contractor HMA technician certified at a level appropriate for sampling and mixture production control testing will collect and split samples.

(3) A department HMA technician certified at a level appropriate for sampling and mixture production control testing will ensure that all sampling is performed correctly and conduct testing, analyze test results, and report resulting data.

(4) The department will provide an organizational chart to the contractor before mixture production begins. The organizational chart will include names, telephone numbers, and current certifications of all QV testing personnel. The department will update the chart with appropriate changes, as they become effective.

*Replace standard spec 460.2.8.3.1.4 Department Verification Testing Requirements with the following:*

#### **460.2.8.3.1.4 Department Verification Testing Requirements**

(1) HTCP-certified department personnel will obtain QV random samples by directly supervising HTCP-certified contractor personnel sampling from trucks at the plant. Sample size must be adequate to run the appropriate required tests in addition to one set of duplicate tests that may be required for dispute resolution (i.e., retained). This requires sample sizes which yield three splits for all random sampling per subplot. All QV samples shall provide the following: QC, QV, and Retained. The department will observe the splitting and take possession of the samples intended for QV testing (i.e., QV portion from each sample) and the Retained portions. The department will take possession of retained samples accumulated to date each day QV samples are collected. Retention of samples will be provided until surpassing the analysis window of up to 5 lots, as defined in 460.2.8.3.1.7(2) of this document. Additional sampling details are found in Appendix A.

(2) The department will verify product quality using the test methods specified here in 460.2.8.3.1.4(3). The department will identify test methods before construction starts and use only those methods during production of that material unless the engineer and contractor mutually agree otherwise.

(3) The department will perform all testing conforming to the following standards:

- Bulk specific gravity (Gmb) of the compacted mixture according to AASHTO T 166.
- Maximum specific gravity (Gmm) according to AASHTO T 209.
- Air voids (Va) by calculation according to AASHTO T 269.
- Voids in Mineral Aggregate (VMA) by calculation according to AASHTO R 35.
- Asphalt Content (AC) in percent by ignition oven according to AASHTO T 308 or by chemical extraction according to AASHTO T 164

(4) The department will randomly test each design mixture at the minimum frequency of one test for each lot.

*Delete standard spec 460.2.8.3.1.6*

*Replace standard spec 460.2.8.3.1.7 Dispute Resolution with the following:*

#### 460.2.8.3.1.7 Data Acceptance for Volumetrics

<sup>(1)</sup> Acceptance of test data for pay determination will be contingent upon QC and QV test results. Statistical analysis will be conducted on Gmm and Gmb test results for calculation of Va. If either Gmm or Gmb analysis results in non-comparable data as described in 460.2.8.3.1.7(2), subsequent testing will be performed for both parameters as detailed in the following paragraph.

<sup>(2)</sup> The engineer, upon completion of the first 3 lots, will compare the variances (F-test) and the means (t-test) of the QV test results with the QC test results. Additional comparisons incorporating the first 3 lots of data will be performed following completion of the 4<sup>th</sup> and 5<sup>th</sup> lots (i.e., lots 1-3, 1-4, and 1-5). A rolling window of 5 lots will be used to conduct F & t comparison for the remainder of the project (i.e., lots 2-6, then lots 3-7, etc.), reporting comparison results for each individual lot. Analysis will use a set alpha value of 0.025. If the F- and t-tests report comparable data, the QC and QV data sets are determined to be statistically similar and QC data will be used to calculate the Va used in PWL and pay adjustment calculations. If the F- and t-tests result in non-comparable data, proceed to the *dispute resolution* steps found below. Dispute resolution via further investigation is as follows:

<sup>[1]</sup> The Retained portion of the split from the most recent lot in the analysis window (specifically the subplot identifying that variances or means do not compare) shall be referee tested by the bureau's AASHTO accredited laboratory and certified personnel. If the non-comparison occurs following Lot 3, 4, or 5, all previous lots are subject to referee testing. Referee test results will replace the QV data of the subplot(s).

<sup>[2]</sup> Statistical analysis will be conducted with referee test results replacing QV results.

- i. If the F- and t-tests indicate variances and means compare, no further testing is required for the lot and QC data will be used for PWL and pay factor/adjustment calculations.
- ii. If the F- and t-tests indicate non-comparable variances or means, the QV portion of the random QC sample will be tested by the department's regional lab for the remaining 4 sublots of the lot which the F- and t- tests report not comparing. The department's region lab and the referee test results will be used for PWL and pay factor/adjustment calculations.

<sup>[3]</sup> The contractor may choose to *dispute* the regional test results on a lot basis. In this event, the retained portion of each subplot will be referee tested by the department's AASHTO accredited laboratory and certified personnel. The referee Gmm and Gmb test results will supersede the regional lab results for the disputed lot.

- i. If referee testing results in an increased calculated pay factor, the department will absorb the cost of the additional referee testing.
- ii. If referee testing of a disputed lot results in an equal or lower calculated pay factor, the contractor pays for the additional referee testing at \$2,000/lot.

<sup>(3)</sup> The department will notify the contractor of the referee test results within 3 working days after receipt of the samples by the department's AASHTO accredited laboratory. The intent is to provide referee test results within 7 calendar days from completion of the lot.

<sup>(4)</sup> The department will determine mixture conformance and acceptability by analyzing referee test results, reviewing mixture project data, and inspecting the completed pavement according to Standard Spec, this special provision, and accompanying Appendix A.

<sup>(5)</sup> Nonconforming mix (i.e., resulting in a PWL value less than 50 or not meeting the requirements of 460.2.8.2.1.7 as modified here within) may be subject to remove and replace, at the discretion of the engineer. Replacement may be conducted on a subplot basis. If an entire PWL subplot is removed and replaced, the test results of the newly placed material shall replace the original data for the subplot. Any remove and replace shall be performed at no additional cost to the department. Testing of replaced material must include a minimum of one QV result. [Note: If the removed and replaced material does not result in replacement of original QV data, an additional QV test will be conducted and under such circumstances will be entered into the data analysis and pay determination.] If the engineer approves the nonconforming material to remain in place, it will be paid at 50% of the HMA Pavement contract unit price. The extent of nonconforming mix shall be determined by following the dispute resolution process detailed in

460.2.8.3.1.7(2) of this document. The quantity of material paid at 50% the contract unit price will be deducted from PWL pay adjustments, along with accompanying data of this nonconforming material.  
*Delete standard spec 460.2.8.3.1.8 Corrective Action.*

## **C Construction**

*Replace standard spec 460.3.3.2 Pavement Density Determination with the following:*

### **460.3.3.2 Pavement Density Determination**

- (1) The engineer will determine the target maximum density using department procedures described in CMM 8-15. The engineer will determine density as soon as practicable after compaction and before placement of subsequent layers or before opening to traffic.
- (2) Do not re-roll compacted mixtures with deficient density test results. Do not operate continuously below the specified minimum density. Stop production, identify the source of the problem, and make corrections to produce work meeting the specification requirements.
- (3) A lot is defined as 7500 lane feet with sublots of 1500 lane feet (excluding shoulder, even if paved integrally) and placed within a single layer for each location and target maximum density category indicated in table 460-3. The contractor is required to complete 3 tests randomly per subplot and the department will randomly conduct one (1) QV test per subplot. A partial quantity less than 1500 lane feet will be included with the previous subplot. Partial lots with less than three sublots will be included into the previous lot for data analysis/acceptance and pay, by the engineer. If density lots/sublots are determined prior to construction of the test strip, any random locations within the test strip shall be omitted. Exclusions such as shoulders and appurtenances shall be tested in accordance with CMM 8-15. However, all acceptance testing of shoulders and appurtenances will be conducted by the department, and average lot (daily) densities must conform to Table 460-3.
- (4) The three QC locations per subplot will represent the outside, middle, and inside of the paving lane. Each location will be measured with two one-minute gauge readings oriented 180 degrees from one another, in the same footprint as detailed in Appendix A. Each location will be the average of the two readings. If the two readings exceed 1.0 lb/ft<sup>3</sup> of one another, a third reading shall be conducted in the same orientation as the first reading. In this event, all three readings shall be averaged, the initial of the three readings which falls farthest from the average value discarded, and the remaining two values averaged to represent the location for the gauge. Multiple locations are not to be averaged together.
- (5) QV nuclear testing will consist of a randomly selected location per subplot. The QV is also comprised of two one-minute readings, averaged as described in 460.3.3.2(4) above.
- (6) A certified nuclear density technician shall identify random locations and perform the testing. The responsible certified technician shall ensure that sample location and testing is performed correctly, analyze test results, and provide density results to the contractor weekly, or at the completion of each lot.
- (7) For any additional tests outside the random number testing conducted for density, the data collected will not be entered into PWL calculations. However, additional QV testing must meet the tolerances for material acceptance as specified in the Standard Specification and this document. If additional density data identifies nonconforming material, proceed in accordance with CMM 8-15.11.

*Replace standard spec 460.3.3.3 Waiving Density Testing with Acceptance of Density Data with the following:*

### **460.3.3.3 Acceptance of Density Data**

- (1) Acceptance of test data for pay determination will be contingent upon test results from both the contractor (QC) and the department (QV).
- (2) As random density locations are paved, the data shall be recorded in the PWL spreadsheet for analysis in chronological order. The engineer, upon completion of the analysis lot, will compare the variances (F-test) and the means (t-test) of the QV test results with the QC test results. Analysis will use a set alpha value of 0.025.

- i. If the F- and t-tests indicate variances and means compare, the QC and QV data sets are determined to be statistically similar and QC data will be used for PWL and pay adjustment calculations.
- ii. If the F- and t-tests indicate variances or means do not compare, the QV data will be used for subsequent calculations.

<sup>(3)</sup> The department will determine mixture density conformance and acceptability by analyzing test results, reviewing mixture project data, and inspecting the completed pavement according to Standard Spec, this document, and accompanying Appendix.

<sup>(4)</sup> Density resulting in a PWL value less than 50 or not meeting the requirements of 460.3.3.1 is non-conforming and may be subject to remove and replace at no additional cost to the department, at the discretion of the engineer.

- i. Replacement may be conducted on a subplot basis. If an entire PWL subplot is removed and replaced, the test results of the newly placed material shall replace the original data for the subplot.
- ii. Testing of replaced material must include a minimum of one QV result. [Note: If the removed and replaced material does not result in replacement of original QV data, an additional QV test must be conducted and under such circumstances will be entered into the data analysis and pay determination.]
- iii. If the engineer approves the nonconforming material to remain in place, it will be paid for at 50% of the HMA Pavement contract unit price. The extent of nonconforming density is addressed in accordance with CMM 8-15.11. The quantity of material paid at 50% the contract unit price will be deducted from PWL pay adjustments, along with accompanying data of this nonconforming material.

#### **D Measurement**

The department will measure the HMA Pavement bid items acceptably completed by the ton as specified in standard spec 450.4 and as follows in standard spec 460.5 as modified here within.

#### **E Payment**

*Replace standard spec 460.5.2 HMA Pavement with the following:*

#### **460.5.2 HMA Pavement**

##### **460.5.2.1 General**

<sup>(1)</sup> Payment for HMA Pavement Type LT, MT, and HT mixes is full compensation for providing HMA mixture designs; for preparing foundation; for furnishing, preparing, hauling, mixing, placing, and compacting mixture; for HMA PWL QMP testing and aggregate source testing; for warm mix asphalt additives or processes; for stabilizer, hydrated lime and liquid antistripping agent, if required; and for all materials including asphaltic materials.

<sup>(2)</sup> If provided for in the plan quantities, the department will pay for a leveling layer, placed to correct irregularities in an existing paved surface before overlaying, under the pertinent paving bid item. Absent a plan quantity, the department will pay for a leveling layer as extra work.

##### **460.5.2.2 Calculation of Pay Adjustment for HMA Pavement using PWL**

<sup>(1)</sup> Pay adjustments will be calculated using 65 dollars per ton of HMA pavement. The analysis template, including data, will be provided to the contractor by the department as soon as practicable upon completion of each lot. The department will pay for measured quantities of mix based on this price multiplied by the following pay adjustment calculated in accordance with the *Calculations* worksheet of the WisDOT PWL Analysis Template:



**PAY FACTOR FOR HMA PAVEMENT AIR VOIDS & DENSITY**

<i>PERCENT WITHIN LIMITS (PWL)</i>	<i>PAYMENT FACTOR, PF (percent of \$65/ton)</i>
> 90 to 100	$PF = ((PWL - 90) * 0.4) + 100$
≥ 50 to 90	$(PWL * 0.5) + 55$
<50	50% <sup>[1]</sup>

where PF is calculated per air voids and density, denoted PF<sub>air voids</sub> & PF<sub>density</sub>

<sup>[1]</sup> Any material resulting in PWL value of 50 or less shall be removed and replaced unless the engineer allows for such material to remain in place. In the event the material remains in place, it will be paid at 50% of the contract unit price of HMA pavement.

For air voids, PWL values will be calculated using lower and upper specification limits of 2.0 and 4.3 percent, respectively. Lower specification limits for density shall be in accordance with Table 460-3. Pay adjustment will be determined on a lot basis and will be computed as shown in the following equation.

$$\text{Pay Adjustment} = (PF-100)/100 \times (WP) \times (\text{tonnage}) \times (\$65/\text{ton})^*$$

\*Note: If Pay Factor <50, the contract unit price will be used in lieu of \$65/ton

The following weighted percentage (WP) values will be used for the corresponding parameter:

<u>Parameter</u>	<u>WP</u>
Air Voids	0.5
Density	0.5

Individual Pay Factors for each air voids (PF<sub>air voids</sub>) and density (PF<sub>density</sub>) will be determined. PF<sub>air voids</sub> will be multiplied by the total tonnage placed (i.e., from truck tickets), and PF<sub>density</sub> will be multiplied by the calculated tonnage used to pave the mainline only (i.e., travel lane) as determined in accordance with CMM 8-15.

The department will pay incentive for air voids and density under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
460.2005	Incentive Density PWL HMA Pavement	DOL
460.2010	Incentive Air Voids HMA Pavement	DOL

The department will administer disincentives under the Disincentive Density HMA Pavement and the Disincentive Air Voids HMA Pavement administrative items.

Note: PWL value determination is further detailed in the *Calculations* worksheet of the WisDOT PWL Analysis Template.

bts-HMA PWL QMP (20171002)

**23. HMA Percent Within Limits (PWL) Test Strip Volumetrics, Item SPV.0060.01; HMA Percent Within Limits (PWL) Test Strip Density Item SPV.0060.02.**

**A Description**

This special provision describes the Hot Mix Asphalt (HMA) density and volumetric testing tolerances required for an HMA test strip. An HMA test strip is required for projects constructed under HMA Percent Within Limits (PWL) QMP. A test strip is required for each pavement layer placed over a specific, uniform underlying material, unless specified otherwise in the plans. Each project is restricted to a single mix design for each mix type required (e.g., upper layer and lower layer may have different mix type specified).

Perform work according to standard spec 460 and as hereinafter modified.

**B Materials**

Use materials conforming to HMA Pavement Percent Within Limits (PWL) QMP special provision.

**C Construction**

**C.1 Test Strip**

Notify the department at least 5 calendar days in advance of construction of the test strip. On the first day of production for a test strip, produce approximately 750 tons of HMA. (Note: tonnage shall be adjusted to accommodate natural break points in the project.) Test strips shall be located in a section of the roadway to allow a representative rolling pattern (i.e. not a ramp or shoulder, etc.).

**C.1.1 Sampling and Testing Intervals**

**C.1.1.1 Volumetrics**

Laboratory testing will be conducted from a split sample yielding three components, with portions designated for QC (quality control), QV (quality verification), and retained.

During production for the test strip, HMA mixture samples shall be obtained from trucks prior to departure from the plant. Three split samples shall be collected during the production of test strip material. Sampling and splitting shall be in accordance with Appendix A: *Sampling for WisDOT PWL QMP*. These three samples will be randomly selected by the engineer from each *third* of the test strip tonnage (T), excluding the first 50 tons:

<u>Sample Number</u>	<u>Production Interval (tons)</u>
<u>1</u>	50 to $\frac{T}{3}$
<u>2</u>	$\frac{T}{3}$ to $\frac{2T}{3}$
<u>3</u>	$\frac{2T}{3}$ to T

**C.1.1.2 Density**

Required field tests include contractor QC and department QV nuclear density gauge tests and pavement coring.

The engineer will identify two zones in which gauge/core correlation is to be performed. These two zones will be randomly selected within each *half* of the test strip length. (Note: Density zones shall not overlap and must have a minimum of 100 feet between the two zones; therefore random numbers may be shifted (evenly) in order to meet these criteria.) Each zone shall consist of five locations across the mat as identified in Appendix A. The following shall be determined at each of the five locations within both zones:

- two one-minute nuclear density gauge readings for QC team\*
- two one-minute nuclear density gauge readings for QV team\*
- pavement core sample

\*If the two readings exceed 1.0 lb/ft<sup>3</sup> of one another, a third reading shall be conducted in the same orientation as the first reading. [In this event, the engineer will average all three readings, discard the initial of the three readings which falls farthest from the average value and then average the remaining two values to represent the location for the gauge.]

Both QV and QC teams shall have two nuclear density gauges present for correlation at the time the test strip is constructed. The above testing shall be conducted in accordance with Appendix A: *Test Methods & Sampling for PWL QMP HMA Pavements*.

All test reports shall be submitted to the department upon completion, and approved before paving resumes.

## **C.1.2 Field Tests**

### **C.1.2.1 Density**

Daily standardization of gauges on reference blocks and a project reference site shall be performed in accordance with CMM 8-15. A standard count shall be performed for each gauge on the material placed for the test strip, prior to any additional data collection. Nuclear gauge readings and pavement cores shall be used to determine nuclear gauge correlation in accordance with Appendix A. The two to three readings for the five locations across the mat for each of two zones shall be provided to the engineer. The engineer will analyze the readings of each gauge relative to the densities of the cores taken at each location. The engineer will determine the average difference between the nuclear gauge density readings and the measured core densities to be used as a constant offset value. This offset will be used to adjust raw density readings of the specific gauge for the remainder of the project and shall appear on the density data sheet along with gauge and project identification. An offset is specific to the mix and layer, therefore a separate value shall be determined for each layer of each mix placed over a differing underlying material for the project. This constitutes correlation of that individual gauge for the given layer. Two gauges per team are not required to be onsite daily after completion of the test strip. Any data collected without a correlated gauge will not be accepted.

The contractor is responsible for coring the pavement from the footprint of the density tests. Coring and filling of pavement core holes must be approved by the engineer. The QV team is responsible for the labeling and safe transport of the cores from the field to the QC laboratory. Testing of cores shall be conducted by the contractor and witnessed by department personnel. The contractor is responsible for drying the cores following testing. The department will take possession of cores following laboratory testing and will be responsible for any verification testing at the discretion of the engineer.

Each core 150 mm (6 inches) in diameter shall be taken at locations identified in Section C.1.1.2 Each random core shall be full thickness of the layer placed. Core densities shall be determined in accordance with AASHTO T 166. Thoroughly dry pavement cores in accordance with ASTM D 7227. The target maximum density to be used in determining core density is the average of the three volumetric/mix Gmm values from the test strip multiplied by 62.24 lb/ft<sup>3</sup>. (In the event mix and density portions of the test strip procedure are separated, the mix portion must be conducted prior to density determination. The target maximum density to determine core densities shall then be the Gmm four-test running average from the end of the previous day's production multiplied by 62.24 lb/ft<sup>3</sup>.)

Fill all core holes with non-shrink rapid-hardening grout, mortar or concrete, or with HMA. When using grout, mortar or concrete, remove all water from the core holes prior to filling. Mix the mortar or concrete in a separate container prior to placement in the hole. If HMA is used, fill all core holes with hot-mix matching the same day's production mix type at same day compaction temperature +/- 20 F. The core holes shall be dry and coated with tack before filling, filled with a top layer no thicker than 2.25 inches, lower layers not to exceed 4 inches, and compacted with a Marshall hammer or similar tamping device using approximately 50 blows per layer. The finished surface shall be flush with the pavement surface. Any deviation in the surface

of the filled core holes greater than 1/4 inch at the time of final inspection will require removal of the fill material to the depth of the layer thickness and replacement.

All applicable laboratory and field testing associated with a test strip shall be completed prior to any additional mainline placement of the mix for the associated test strip. All test reports shall be submitted to the department upon completion, and approved before paving resumes. The department will notify the contractor within 24 hours from start of test strip regarding approval to proceed with paving, unless an alternate time frame is agreed upon in writing with the department.

[Exclusions such as shoulders and appurtenances shall be tested in accordance with CMM 8-15. However, all acceptance testing of shoulders and appurtenances will be conducted by the department, and average lot (daily) densities must conform to Table 460-3.]

### **C.1.3 Laboratory Tests**

#### **C.1.3.1 Volumetrics**

Obtain random samples according to Appendix A. Obtain HMA mixture samples from trucks at the plant. Perform tests the same day as taking the sample.

Bulk specific gravities shall be determined for cores in accordance with AASHTO T 166. The bulk specific gravity values determined from field cores shall be used to calculate a correction factor (i.e., offset) for each QC and QV nuclear density gauge. The correction factor will be used throughout the remainder of the layer. QC and QV teams may wish to scan with additional gauges at the locations detailed in C.1.1 above, as only gauges used during the test strip correlation phase will be allowed on the remainder of the project.

## **C.2 Acceptance**

### **C.2.1 Volumetrics**

Conform to the following limits based on individual QC and QV test results (tolerances based on initial JMF/mix design):

ITEM	CONFORMANCE LIMITS
Percent passing given sieve:	
37.5-mm	+/- 8.0
25.0-mm	+/- 8.0
19.0-mm	+/- 7.5
12.5-mm	+/- 7.5
9.5-mm	+/- 7.5
2.36-mm	+/- 7.0
75-µm	+/- 3.0
Asphaltic content in percent	- 0.5
Air Voids	-1.5 & +2.0
VMA in percent <sup>[1]</sup>	- 1.0
Maximum specific gravity	+/- 0.024

<sup>[1]</sup> VMA limits based on minimum requirement for mix design nominal maximum aggregate size in [table 460-1](#).

QV test results will be determined for air voids and VMA, Gmm, and Gmb, and AC.

Calculation of air voids shall use either the QC, QV, or retained split sample test results, as identified by conducting the paired t-test with the WisDOT PWL Analysis Template.

If QC and QV test results do not correlate as determined by the paired t-test, the retained split sample will be tested by the department's AASHTO accredited laboratory and HTCP certified personnel as a referee test. Additional investigation shall be conducted to identify the source of the difference between QC and QV data. Referee data will be used to determine material acceptance and pay.

### C.2.2 Density

Compact all layers of test strip HMA mixture to the applicable density shown in the following table:

TABLE 460-3 MINIMUM REQUIRED DENSITY<sup>[1]</sup>

LAYER	MIXTURE TYPE	
	LT & MT	HT
LOWER	93.0 <sup>[2]</sup>	93.0 <sup>[3]</sup>
UPPER	93.0	93.0

<sup>[1]</sup> If any individual core density test result falls more than 3.0 percent below the minimum required target maximum density, the engineer may investigate the acceptability of that material per CMM 8-15.11.

<sup>[2]</sup> Minimum reduced by 2.0 percent for a lower layer constructed directly on crushed aggregate or recycled base courses.

<sup>[3]</sup> Minimum reduced by 1.0 percent for lower layer constructed directly on crushed aggregate or recycled base courses.

Nuclear density gauges are acceptable for use on the project only if correlation is completed for that gauge during the time of the test strip and the department issues documentation of acceptance stating the correlation offset value specific to the gauge and mix design. The offset is not to be entered into any nuclear density gauge as it will be applied by the department-provided Field Density Worksheet.

### C.2.3 Test Strip Acceptance

The department will evaluate material acceptance and make pay adjustments based on the PWL value of air voids and density for the test strip. The QC core densities and QC and QV mix results will be used to determine the PWL values as calculated in accordance with Appendix A.

The PWL values for air voids and density shall be calculated after determining core densities. An acceptable test strip is defined as the individual PWL value for air voids and density both above 75, and an acceptable gauge-to-core correlation.

If either PWL value for the test strip is below 50, the material is nonconforming and the test strip is unacceptable. Material allowed to remain in place requires another test strip prior to additional paving. If material is removed, a new test strip shall replace the previous one at no additional cost to the department. For simultaneously conducted density and volumetric test strip components, the following must be achieved:

- i. Passing/Resolution of Split Sample Comparison
- ii. Volumetrics/mix PWL value > 75
- iii. Density PWL value > 75
- iv. Acceptable correlation

If not conducted simultaneously, the mix portion of a test strip must accomplish (i) & (ii), while density must accomplish (iii) & (iv). If any applicable criteria are not achieved for a given test strip, the engineer, with authorization from the Department's Bureau of Technical Services, will direct an additional test strip (or alternate plan approved by the Department) be conducted to prove the criteria can be met prior to additional

paving of that mix. For a density-only test strip, mix acceptance will be according to main production, i.e., HMA Pavement Percent Within Limits (PWL) QMP special provision.

**D Measurement**

The department will measure HMA Percent Within Limits (PWL) Test Strip as each unit of work, acceptably completed as passing the required air void, VMA, asphalt content, gradation, and density correlation for a Test Strip. Material quantities shall be determined in accordance with standard spec 450.4 and detailed here within.

**E Payment**

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.01	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH
SPV.0060.02	HMA Percent Within Limits (PWL) Test Strip Density	EACH

These items are intended to compensate the contractor for the construction of the test strip for projects paved under the HMA Pavement Percent Within Limits QMP article.

Payment for HMA Percent Within Limits (PWL) Test Strip Volumetrics is full compensation for volumetric sampling, splitting, and testing; for proper labeling, handling, and retention of split samples.

Payment for HMA Percent Within Limits (PWL) Test Strip Density is full compensation for collecting and measuring of pavement cores, acceptably filling core holes, providing of nuclear gauges and operator(s), and all other work associated with completion of a core-to-gauge correlation, as directed by the engineer.

Acceptable HMA mixture placed on the project as part of a volumetric or density test strip will be compensated by the appropriate HMA Pavement bid item with any applicable pay adjustments.

Pay adjustment will be calculated using 65 dollars per ton of HMA pavement. The department will pay for measured quantities of mix based on \$65/ton multiplied by the following pay adjustment calculated in accordance with Appendix A.

The department will adjust pay for each test strip as follows:

<b>PAY ADJUSTMENT FOR HMA PAVEMENT AIR VOIDS &amp; DENSITY</b>	
<i>PERCENT WITHIN LIMITS</i>	<i>PAYMENT FACTOR, PF</i>
<i>(PWL)</i>	<i>(percent of \$65/ton)</i>
> 90 to 100	$PF = ((PWL - 90) * 0.4) + 100$
≥ 50 to 90	$(PWL * 0.5) + 55$
<50	50% <sup>[1]</sup>

where,

PF is calculated per air voids and density, denoted PF<sub>air voids</sub> & PF<sub>density</sub>

<sup>[1]</sup> Material resulting in PWL value of 50 or less shall be removed and replaced, unless the engineer allows for such material to remain in place. In the event the material remains in place, it will be paid at 50% of the contract unit price of HMA pavement.

For air voids, PWL values will be calculated using lower and upper specification limits of 2.0 and 4.3 percent, respectively. Lower specification limits for density will be in accordance with Table 460-3 as modified here within. Pay adjustment will be determined for an acceptably completed test strip and will be computed as shown in the following equation.

$$\text{Pay Adjustment} = (PF-100)/100 \times (WP) \times (\text{tonnage}) \times (\$65/\text{ton})^*$$

\*Note: If Pay Factor <50, the contract unit price will be used in lieu of \$65/ton

The following weighted percentage (WP) values will be used for the corresponding parameter:

<u>Parameter</u>	<u>WP</u>
Air Voids	0.5
Density	0.5

Individual Pay Factors for each air voids ( $PF_{\text{air voids}}$ ) and density ( $PF_{\text{density}}$ ) will be determined.  $PF_{\text{air voids}}$  will be multiplied by the total tonnage produced (i.e., from truck tickets), and  $PF_{\text{density}}$  will be multiplied by the calculated tonnage used to pave the mainline only (i.e., excluding shoulder) as determined in accordance with CMM 8-15.

The department will pay incentive for air voids under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
460.2005	Incentive Density PWL HMA Pavement	DOL
460.2010	Incentive Air Voids HMA Pavement	DOL

The department will administer disincentives under the Disincentive Density HMA Pavement and the Disincentive Air Voids HMA Pavement administrative items.

bts-PWL Test Strip (20171002)

### **Schedule of Items**

Attached, dated April 30, 2018, are the revised Schedule of Items Pages 1 – 10.

### **Plan Sheets**

The following 8½ x 11-inch sheets are attached and made part of the plans for this proposal:

Revised:

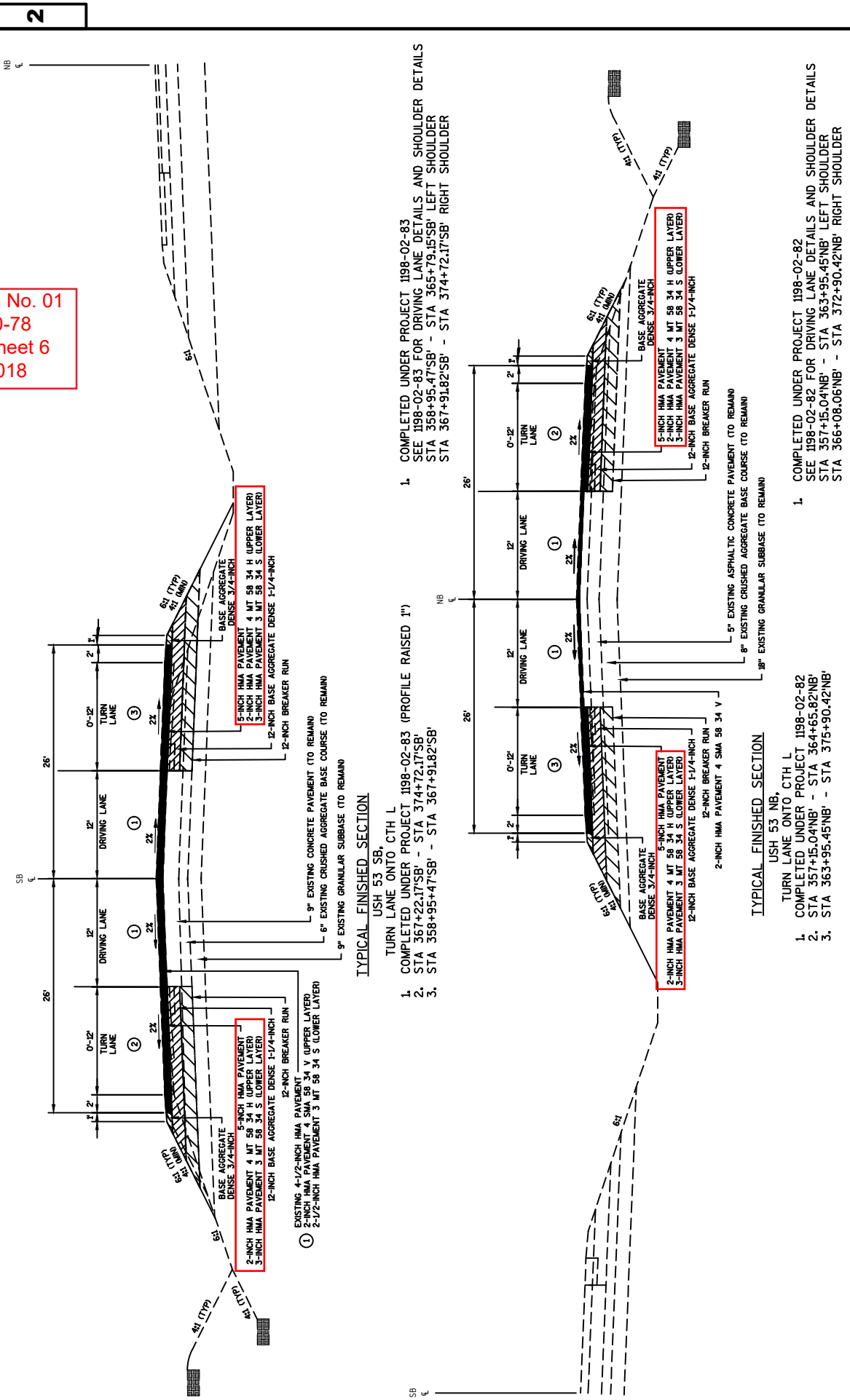
1198-00-78: Revised: 6, 7 and 25.

1198-02-82: Revised: 4, 6, 59 and 61.

1198-02-83: Revised: 4, 9, 59, 60 and 66.

END OF ADDENDUM

Addendum No. 01  
 ID 1198-00-78  
 Revised Sheet 6  
 April 30, 2018



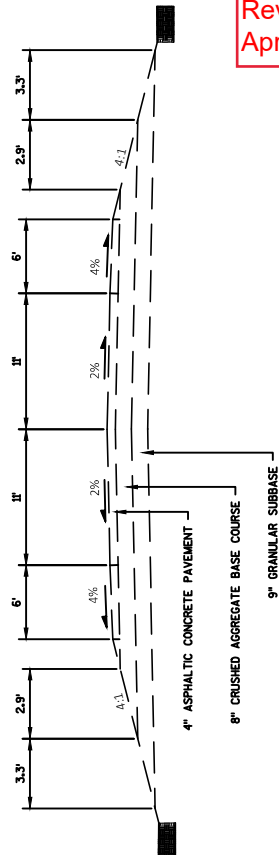
TYPICAL FINISHED SECTION  
 USH 53 SB,  
 TURN LANE ONTO CTH L

1. COMPLETED UNDER PROJECT 1198-02-83 (PROFILE RAISED 1")  
 STA 367+22.17'SB' - STA 374+72.17'SB'
2. STA 358+95.47'SB' - STA 367+91.82'SB'
3. STA 367+91.82'SB' - STA 374+72.17'SB'

TYPICAL FINISHED SECTION  
 USH 53 NB,  
 TURN LANE ONTO CTH L

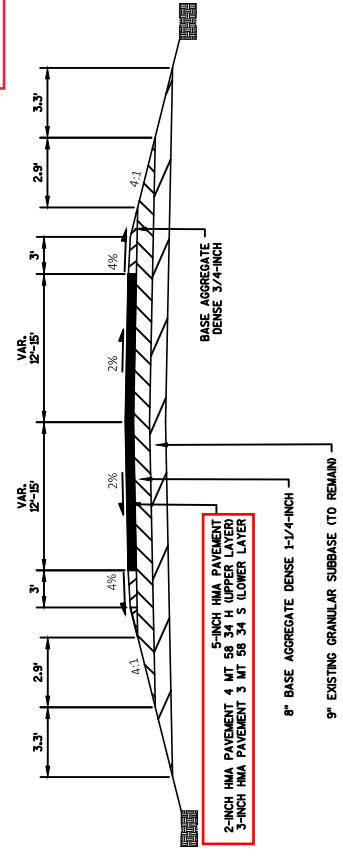
1. COMPLETED UNDER PROJECT 1198-02-82  
 STA 357+15.04'NB' - STA 364+65.82'NB'
2. STA 363+95.45'NB' - STA 375+90.42'NB'
3. STA 366+08.06'NB' - STA 372+90.42'NB'





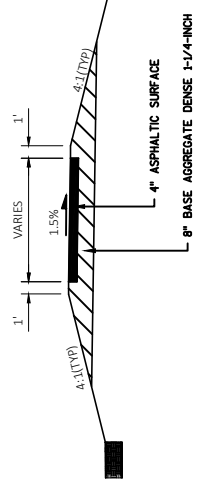
Addendum No. 01  
 ID 1198-00-78  
 Revised Sheet 7  
 April 30, 2018

TYPICAL EXISTING SECTION  
 CTH L  
 STA 53+40.00 - STA 54+76.00  
 STA 56+24.00 - STA 57+60.00

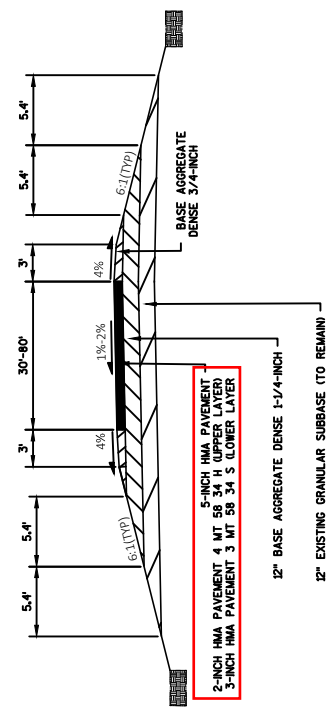


TYPICAL FINISHED SECTION  
 CTH L  
 STA 53+40.00 - STA 54+76.00\*  
 STA 56+24.00 - STA 57+60.00\*

\* SEE INTERSECTION DETAIL  
 STA 54+00 - STA 54+76  
 STA 56+24 - STA 56+99.2



TYPICAL PEDESTRIAN PATH SECTION  
 MEDIAN AT CTH L & USH 53



TYPICAL FINISHED RESTRICTED U-TURN CROSSOVER SECTION

Addendum No. 01  
 ID 1198-00-78  
 Revised Sheet 25  
 April 30, 2018

REMOVING				REMOVING CURB & GUTTER			
STATION	STATION	LOCATION	SY	STATION-STATION	LOCATION	LF	
204.0115 ASPHALTIC SURFACE BUTT JOINTS							
CTHL				US 53			
53+40	53+65	LT & RT	71	304+87 NB - 306+60 NB	MEDIAN	271	
57+55	57+80	LT & RT	71	CTHL - WEST	LT	100	
				53+90 - 54+77	RT	49	
				CTHL - EAST	LT	69	
				50+22 - 50+67	LT	88	
				50+22 - 50+91	RT	88	
			142	ITEM TOTAL		577	

EXCAVATION COMMON				REMARKS	
LOCATION	AIR FILL CY	EXPAND. FILL CY	-BORROW WASTE CY		
US 53 NB				INCLUDES REMOVAL OF EXISTING PAVEMENT	
357+15 - 372+90	183	229	-3346		
US 53 SB				INCLUDES REMOVAL OF EXISTING PAVEMENT	
358+95 - 374+72	106	133	-3603		
CTHL				INCLUDES REMOVAL OF EXISTING PAVEMENT	
53+40 - 54+76	400	166	-193		
55+24 - 57+60	395	125	-239		
CROSSOVERS					
359+00	95	240	205		
365+75	265	150	188		
372+50	85	360	365		
TOTALS	8550	1330	-6888		

BASE AGGREGATE AND BREAKER RUN					REMARKS
STATION-LOCATION	LOCATION	DENSE 3/4-INCH AGR.	BRK 1 1/4-INCH RUN	WATER	
US 53 NB					
357+15.04 - 372+00.18	LT/RT SHOULDERS	177			
372+00.18 - 372+90.42	LT MEDIAN CROSSING	63			
US 53 SB					
358+95.48 - 359+81.47	RT MEDIAN CROSSING	62			
359+81.47 - 374+72.17	LT/RT SHOULDERS	161			
CTHL					
53+40.00 - 54+76.00	LT SIDE STREET SHOULDERS	54			
56+24.00 - 57+60.00	RT SIDE STREET SHOULDERS	48			
ITEM TOTALS		565	7450	3940	160

EXPANSION COMMON				
STATION	LOCATION	EXPANSION FACTOR	REMARKS	
NOTE: EXPANSION FACTOR = 1.25				
SALVAGED/JUNK/USABLE PAVEMENT IS INCLUDED IN CUT.				
ANY FILL EXCAVATION TO BE BACKFILLED WITH BORROW OR CUT MATERIAL				
*FOR INFORMATION ONLY				

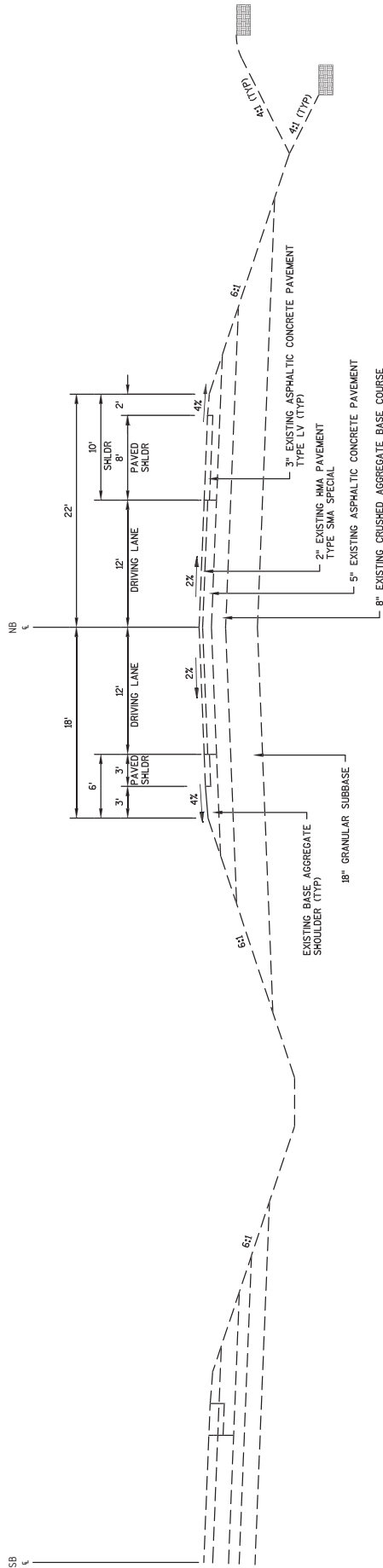
REMOVING PAVEMENT ITEMS				ASPHALTIC FURNISH	
STATION - STATION	LOCATION	TON	ITEM TOTAL	STATION	LOCATION
ASPHALTIC FURNISH					
US 53 NB				455.0605	460.5243
357+15.04 - 367+48.06	RT RIGHT TURN LANE	0			
	RT RIGHT TURN LANE	71	198		
	L7/RT SHOULDERS	0			
	L7/RT SHOULDERS	13	36		
363+95.40 - 372+00.18	LT LEFT TURN LANE	0			
	LT LEFT TURN LANE	58	164		
	L7/RT SHOULDERS	11	31		
372+00.18 - 372+90.42	LT MEDIAN CROSSING	0			
	LT MEDIAN CROSSING	32	90		
	L7/RT SHOULDERS	6	16		
ASPHALTIC FURNISH					
US 53 SB				480.6444	485.0105
358+95.48 - 359+81.47	RT MEDIAN CROSSING	0			
	RT MEDIAN CROSSING	29	80		
	L7/RT SHOULDERS	0			
	L7/RT SHOULDERS	5	14		
359+81.47 - 367+49.82	RT LEFT TURN LANE	0			
	RT LEFT TURN LANE	59	165		
	L7/RT SHOULDERS	11	32		
364+79.15 - 374+72.17	LT RIGHT TURN LANE	0			
	LT RIGHT TURN LANE	71	198		
	L7/RT SHOULDERS	13	36		
ASPHALTIC FURNISH					
CTHL				460	1262
53+40.00 - 54+76.00	LT SIDE STREET	0			
	LT SIDE STREET	36	101		
56+24.00 - 57+60.00	RT SIDE STREET	0			
	RT SIDE STREET	37	101		
	LT/RT PEDESTRIAN CROSSING	8			
ITEM TOTALS		460	1262		
		843	30		

FINISHING ROADWAY				
STATION	PROJECT EACH	ITEM TOTAL	ITEM TOTAL	ITEM TOTAL
US 53	213.0100			
US 53	1.0			
ITEM TOTAL	1.0			

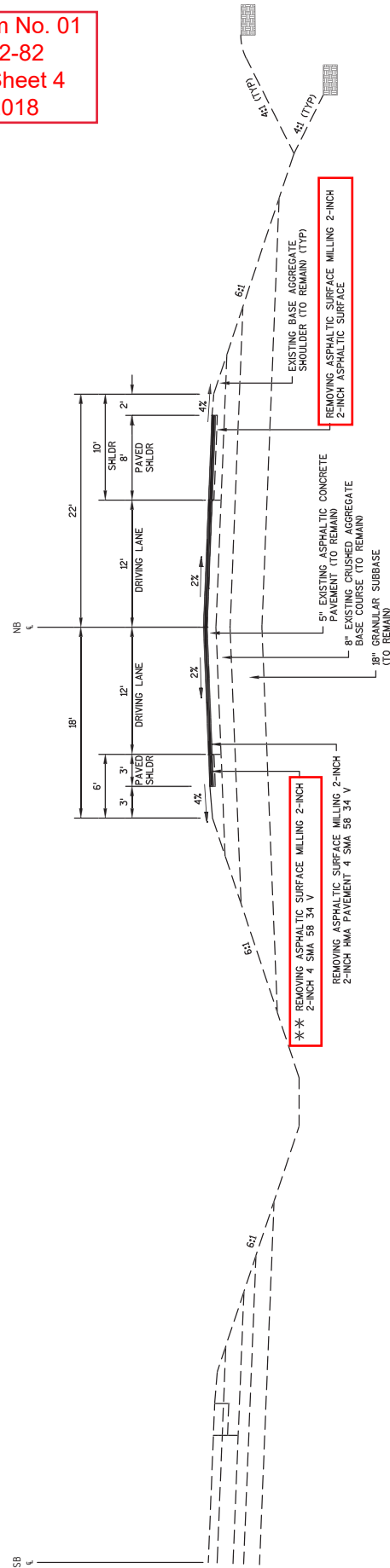
  

ASPHALTIC FURNISH				
STATION	LOCATION	ITEM TOTAL	ITEM TOTAL	ITEM TOTAL
US 53 SB	465.0315			
359+95.48	MEDIAN RT	12.5		
372+85.48	MEDIAN RT	12.5		
ITEM TOTAL		25.0		



Addendum No. 01  
ID 1198-02-82  
Revised Sheet 4  
April 30, 2018

TYPICAL EXISTING SECTION  
USH 53 NB  
STA 184+68 TO STA 710+20

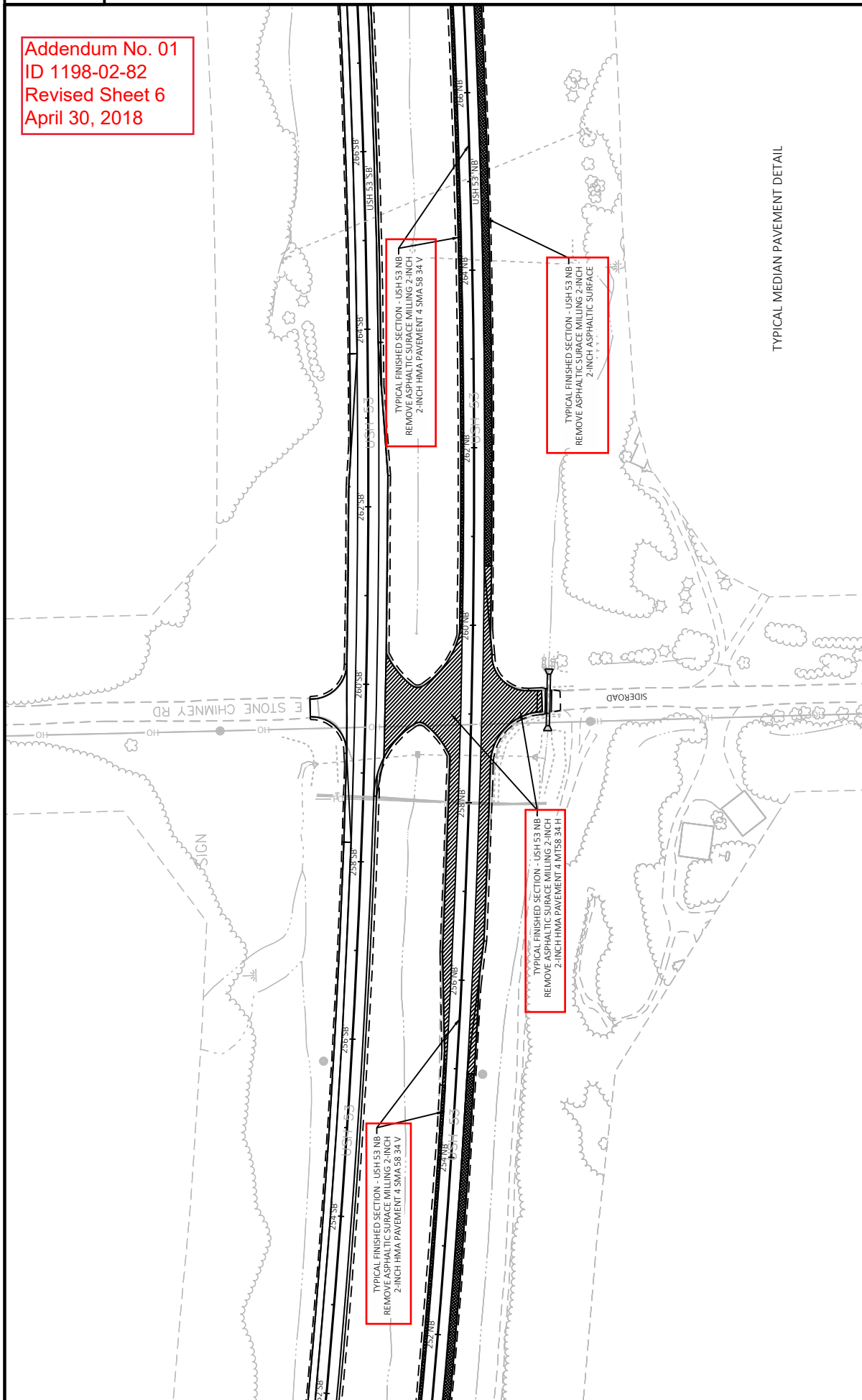


\* SEE PROJECT 1198-00-78 TYPICALS BETWEEN STA 357-15 - STA 375+90  
\*\* ASPHALTIC SURFACE- MINIMUM MIX OF A 4LT 58-34-S WILL BE USED

TYPICAL FINISHED SECTION  
USH 53 NB  
STA 184+68 TO STA 710+20

PROJECT NO: 1198-02-82	COUNTY: DOUGLAS	SHEET 4	E
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PLOT BY: JARROD STARRIN			
PLOT NAME: USH 53 NB STA 184+68 TO STA 710+20			
PLOT SCALE: 1:1 IN=10 FT			
WISDOT/CADD SHEET 42			

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Revised Sheet 6  
April 30, 2018



2

2

PROJECT NO: 1198-02-82

HWY: USH 53 NB

COUNTY: DOUGLAS

CONSTRUCTION DETAIL

SHEET 6

E

FILE NAME: P:\ZOO\W\1198\1198-02\1198-02-82\1198-02-82-06\PAVEMENT DETAIL.DWG

DATE: 4/25/2018 8:10 PM

BY: NICK ENIGH

SCALE: 1:100 FT

WBDOT/CADDIS SHEET 42



3

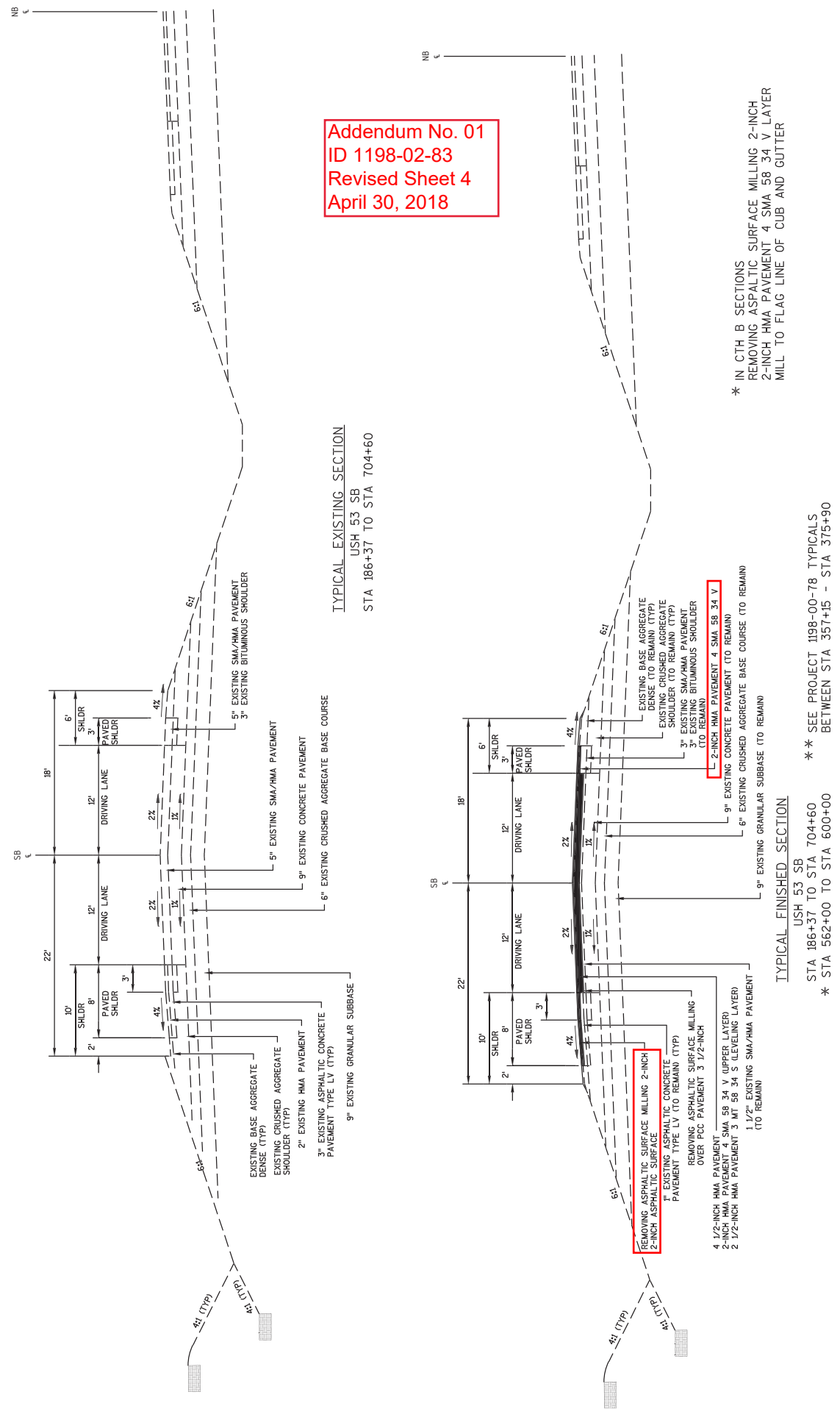
Addendum No. 01  
ID 1198-02-82  
Revised Sheet 61  
April 30, 2018

CULVERT INSTALLATION ITEMS

STATION	LOCATION	PIPEID	EXCAVATION COMMON	BACKFILL GRANULAR GRADE 2	AGGREGATE DENSE 1 1/4-INCH	WATER MGAL	TACK COAT GAL	ASPHALTIC SURFACE TON	INCENTIVE PAVEMENT DOL	SALVAGED TOPSOIL SY	MULCHING SY	SILT FENCE LF	EROSION MAT CLASS 1 SY	FERTILIZER TYPEB CWT	SEEDING MIXTURE NO.20 LB	SEEDING TEMPORARY LB	SAWING ASPHALT LF
205.0100	LT	3	80	60	27	1	4	13.5	9	75	75	100	75	0.05	2.0	2.0	680.0150
204+82	RT	4	75	58	22	0	3	11.3	7	77	77	102	77	0.05	2.1	2.1	71
205+16	RT	8	220	196	33	1	1	3.5	2	75	75	100	75	0.05	2.0	2.0	24
259+18	LT/RT	10								30	30	34	30	0.02	0.8	0.8	
271+92	LT	22	53	41	16	0	3	8.2	5	77	77	102	77	0.05	2.1	2.1	50
391+00	RT	25	56	41	20	0	3	10.0	6	77	77	102	77	0.05	2.1	2.1	64
418+20	RT	26	47	28	25	1				75	75	100	75	0.05	2.0	2.0	
418+42	LT/RT	31	44	33	15	0	2	7.6	5	75	75	100	75	0.05	2.0	2.0	55
471+45	LT/RT	32	87	66	27	1	4	13.9	9	75	75	100	75	0.05	2.0	2.0	86
471+74	LT/RT	38								30	30	34	30	0.02	0.8	0.8	
549+54	LT/RT	39								30	30	34	30	0.02	0.8	0.8	
560+14	RT	142								30	30	34	30	0.02	0.8	0.8	
578+59	RT	50	200	171	38	1				75	75	100	75	0.05	2.0	2.0	
658+71	LT/RT	144								60	60	68	60	0.04	1.6	1.6	
659+04	LT/RT	51								30	30	34	30	0.02	0.8	0.8	
665+86	LT/RT	54								30	30	34	30	0.02	0.8	0.8	
714+57	RT		218	136	27	3				229	229	286	229	0.39	6.3	6.3	18
UNDISTRIBUTED																	
ITEM TOTALS			1080	830	250	8	20	68.0	43.0	1150	1150	1430	1150	1.00	31.0	31.0	460

\* QUANTITIES ALSO SHOWN ELSEWHERE.  
\*\* FOR INFORMATION ONLY, EXCAVATION COMMON IS INCIDENTAL TO THE PIPE INSTALLATION  
\*\*\* SALVAGED TOPSOIL, MULCHING, SEED AND FERTILIZER IF REQUIRED AT DITCH CLEANING AREAS ARE INCIDENTAL TO THE DITCH CLEANING ITEM.

3

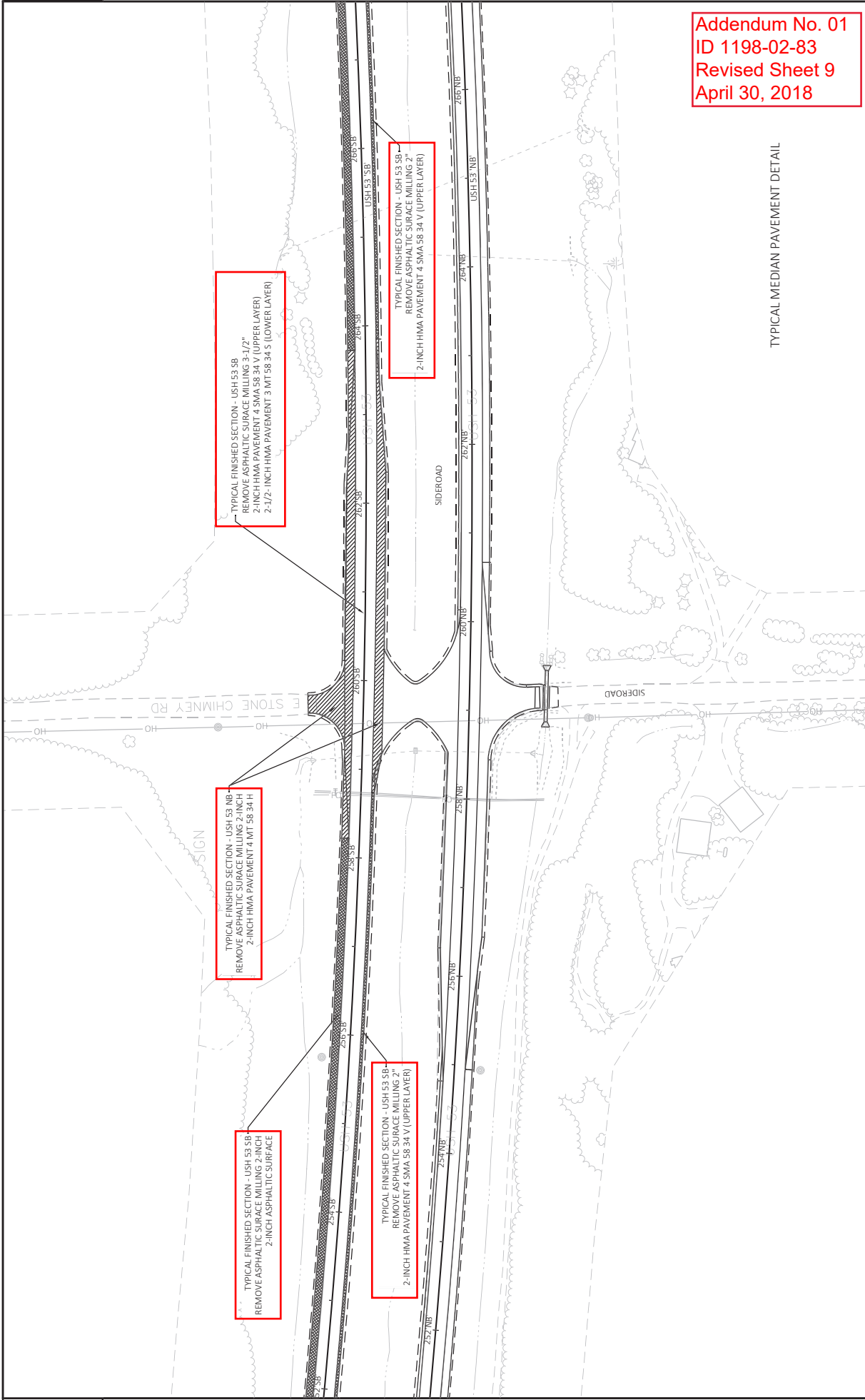


Addendum No. 01  
 ID 1198-02-83  
 Revised Sheet 4  
 April 30, 2018

\* IN CTH B SECTIONS  
 REMOVING ASPHALTIC SURFACE MILLING 2-INCH  
 2-INCH HMA PAVEMENT 4 SMA 58 34 V LAYER  
 MILL TO FLAG LINE OF CURB AND GUTTER

\*\* SEE PROJECT 1198-00-78 TYPICALS  
 BETWEEN STA 375+90  
 AND STA 562+00

Addendum No. 01  
 ID 1198-02-83  
 Revised Sheet 9  
 April 30, 2018



TYPICAL MEDIAN PAVEMENT DETAIL

PROJECT NO: 1198-02-83	COUNTY: DOUGLAS	CONSTRUCTION DETAIL	SHEET 9	E
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LAYOUT NAME: PAVEMENT DETAIL		PILOT DATE: 4/26/2018 3:41 AM		





Addendum No. 01  
ID 1198-02-83  
Revised Sheet 60  
April 30, 2018

ASPHALTIC PAVEMENT ITEMS

STATION-LOCATION	204.0120 ASPHALTIC SURFACE MILLING	455.0605 TACK COAT	460.6248 HMA PAVEMENT 3 MIT 58-34 S	460.6444 HMA PAVEMENT 4 SMA 58-24 V	465.0105 ASPHALTIC SURFACE	460.6444 PAVEMENT 4 MTS 58-24 H	REMARKS
US 53 SB							
186+37-205+61	5131	308	718			460.6444	PROJECT BEGIN - CTH E
186+37-205+61		98					PROJECT BEGIN - CTH E
186+37-197+21		98					WEDGING/LEVELING
186+46-203+69	1553	93				184	UPPER LAYER
186+26-204+86	619	37				174	UPPER LAYER
204+93-209+45	878	105	123			98	UPPER/LOWER LAYERS
204+86-209+96	465	56	65			52	UPPER/LOWER LAYERS
205+61-259+75	14437	866	2021				CTH E - E STONE CHIMNEY RD
205+61-259+75		866					CTH E - E STONE CHIMNEY RD
209+45-258+21	4330	260				485	UPPER LAYER
209+96-258+21	1628	98				182	UPPER LAYER
258+21-263+73	726	87	101			81	UPPER/LOWER LAYERS
258+75-263+85	465	56	65			52	UPPER/LOWER LAYERS
259+75-312+86	14163	850	1893				STONE CHIMNEY RD - E HAGMAN RD
259+75-312+86		850				1586	UPPER LAYER
263+73-312+23	4308	258				482	UPPER LAYER
263+85-311+60	1595	96				179	UPPER LAYER
312+23-317+15	691	76	89			71	UPPER/LOWER LAYERS
312+60-317+15	595	64	75			60	UPPER/LOWER LAYERS
312+85-365+42	14283	857	2000			1600	E HAGMAN RD - CTH L
312+85-365+42		857				474	UPPER LAYER
317+15-368+09	4235	234				156	UPPER LAYER
317+15-368+09		234					UPPER LAYER
368+46-391+34	6645	389	990			744	CTH L - KARRAS RD
368+46-391+34		389				17	UPPER LAYER
367+99-372+43	150	86				160	UPPER LAYER
374+72-390+80	1429	86				63	UPPER LAYER
374+28-390+21	564	34	101			81	UPPER/LOWER LAYERS
390+80-395+62	719	86	101			94	UPPER/LOWER LAYERS
390+21-395+94	841	101	118			25	UPPER LAYER
394+24-419+24	7440	446	1042			833	KARRAS RD - E BENNETT RD
394+24-419+24		446				80	UPPER LAYER
395+93-417+86	221	119	1976			221	UPPER LAYER
395+93-417+86		119					UPPER LAYER
395+94-417+39	715	43				87	UPPER/LOWER LAYERS
417+86-423+40	775	93	109			87	UPPER/LOWER LAYERS
417+40-423+26	876	105	123			22	UPPER LAYER
419+04	14075	845	1971			1576	E BENNETT RD - E TOWN LINE RD
419+24-472+02		845				468	UPPER LAYER
423+40-470+44	4181	251				177	UPPER LAYER
423+40-470+44		251					UPPER/LOWER LAYERS
470+44-476+05	825	99	115			92	UPPER/LOWER LAYERS
470+75-476+24	507	61	71			57	E TOWN LINE RD - CTH B
472+02-580+72	28587	1739	4058			3247	E TOWN LINE RD - CTH B
472+02-580+72		1739				1008	UPPER LAYER
476+34-570+26	8996	440				500	UPPER LAYER
476+34-570+26		440					UPPER/LOWER LAYERS
569+25	4461	26				54	UPPER/LOWER LAYERS
572+26-587+70	486	29				311	UPPER/LOWER LAYERS
572+26-587+70		29				132	UPPER/LOWER LAYERS
579+37-589+69	1175	333				2220	CTH B - 18TH ST
580+72-658+41	20717	1243	2900			1163	UPPER LAYER
580+72-658+41		1243				320	UPPER LAYER
587+70-704+60	10386	623				59	UPPER LAYER
589+69-657+29	2859	172				182	18TH ST - END PROJECT
589+69-657+29		172				156	UPPER LAYER
657+29-662+83	511	30	75			356	WEDGING/LEVELING
658+41-704+60	12333	739	1727			150	MINOR REPAIRS/POP OUTS
658+41-704+60		739				2216	
662+83-704+60	1394	84					
695+85-704+60		193					
UNDISTRIBUTED							
ITEM TOTALS	210775	21925	20580	17379	4635		

\* ASPHALTIC SURFACE - MINIMUM OF 4 LT 58-34 S MIX TO BE USED.  
\* QUANTITIES ALSO SHOWN ELSEWHERE.

ASPHALTIC SHOULDER RUMBLE STRIPS

STATION	STATION	LOCATION	IF	REMARKS
US 53 SB				
186+73	203+93	LT	1720	PROJECT BEGIN - WASKO RD
186+47	204+84	RT	1817	PROJECT BEGIN - WASKO RD
209+45	258+21	LT	4876	WASKO RD - E STONE CHIMNEY RD
209+96	258+74	RT	4878	WASKO RD - E STONE CHIMNEY RD
263+72	312+21	LT	4859	E STONE CHIMNEY RD - HAGMAN RD
263+85	311+60	RT	4775	E STONE CHIMNEY RD - HAGMAN RD
317+15	364+79	LT	4764	E HAGMAN RD - CTH L
317+15	368+95	RT	4180	E HAGMAN RD - CTH L
374+72	390+80	LT	1608	CTH L - KARRAS RD
367+42	372+42	RT	450	CTH L - KARRAS RD
373+28	390+21	RT	1693	KARRAS RD - E BENNETT RD
395+62	417+86	LT	2224	KARRAS RD - E BENNETT RD
395+94	417+38	RT	2144	KARRAS RD - E BENNETT RD
423+40	470+43	LT	4703	E BENNETT RD - E TOWN LINE RD
423+26	470+75	RT	4759	E BENNETT RD - E TOWN LINE RD
476+05	578+78	LT	10273	E TOWN LINE RD - CTH B
476+24	562+65	RT	8641	E TOWN LINE RD - CTH B
563+82	579+20	RT	1538	E TOWN LINE RD - CTH B
587+99	704+60	LT	11661	CTH B - END PROJECT
589+60	597+10	RT	750	CTH B - END PROJECT
599+18	704+60	RT	10542	CTH B - END PROJECT
ITEM TOTAL			92835	

MOBILIZATIONS EROSION CONTROL

STATION-LOCATION	LOCATION	CONTROL	EACH
US 53 SB			
186+37-704+60	LT/RT	2	2
ITEM TOTALS		2	2

DELINEATORS

STATION	LOCATION	EACH	COMMENTS
638.0100			
DELINEATOR		638.0500	
POSTS			
REFLECTORS			
STEEL			
EACH			
US 53 SB			
186+37-205+61	LT	4	BEGIN PROJECT - WASKO RD
206+61-259+75	LT	13	E WASKO RD - E STONE CHIMNEY RD
212+25-266+41	LT	13	E STONE CHIMNEY RD - HAGMAN RD
317+15-366+41	LT	4	E HAGMAN RD - CTH L
366+42-381+34	LT	6	CTH L - KARRAS RD
391+34-419+24	LT	7	KARRAS RD - E BENNETT RD
419+24-472+02	LT	13	E BENNETT RD - TOWN LINE RD
472+02-580+72	LT	22	TOWN LINE RD - CTH B
580+72-658+41	LT	20	CTH B - 18TH ST
658+41-714+00	LT	13	18TH ST - KENT RD
UNDISTRIBUTED	LT	5	
ITEM TOTALS		130	136

\* DELINEATORS IN MEDIAN AT CTH L INCLUDED IN PROJECT 1198-00-78

**SAMINGS**

STATION - LOCATION	LOCATION	LF
US 53 SB - 186+37	USH E3	40
204+00 SB - 210+00 SB	CUL	35
210+00 SB - 259+00 SB	CUL B	50
259+00 SB - 263+80 SB	USH E3	40
263+80 SB - 311+80 SB		
311+80 SB - 317+20 SB		
317+20 SB - 365+10 SB		
365+10 SB - 368+70 SB		
368+70 SB - 390+20 SB		
390+20 SB - 394+00 SB		
394+00 SB - 417+40 SB		
417+40 SB - 423+20 SB		
423+20 SB - 470+70 SB		
470+70 SB - 476+30 SB		
476+30 SB - 563+00 SB		
563+00 SB - 598+80 SB		
598+80 SB - 657+30 SB		
657+30 SB - 662+80 SB		
662+80 SB - 704+60 SB		
710+20 SB - ADVANCED AREA SE		
<b>ITEM TOTALS</b>		<b>155</b>

\* QUANTITIES SHOWN ELSEWHERE

**TRAFFIC CONTROL**

STATION - LOCATION	LOCATION	DAY	643.0300 DRUMS	643.0420 BARRICADES TYPE III	643.0705 WARNING LIGHTS TYPE A	643.0715 WARNING LIGHTS TYPE C	643.0800 ARROW BOARD	643.0900 SIGNS PCMS	643.1050 SIGNS PCMS	643.1051 SIGNS WITH CELLULAR COMMUNICATION
END AREA SB - 186+37 SB	LT & RT	0	0	0	0	0	0	200	0	0
186+37 SB - 204+00 SB	LT & RT	900	50	100	0	0	0	50	0	0
204+00 SB - 210+00 SB	LT & RT	1900	50	100	0	0	0	150	0	0
210+00 SB - 259+00 SB	LT & RT	2400	200	400	0	0	0	200	0	0
259+00 SB - 263+80 SB	LT & RT	1500	50	100	0	0	0	150	0	0
263+80 SB - 311+80 SB	LT & RT	2400	200	400	0	0	0	200	0	0
311+80 SB - 317+20 SB	LT & RT	1700	50	100	0	0	0	150	0	0
317+20 SB - 365+10 SB	LT & RT	2400	200	400	0	0	0	200	0	0
365+10 SB - 368+70 SB	LT & RT	1050	50	100	0	0	0	150	0	0
368+70 SB - 390+20 SB	LT & RT	1000	100	200	0	0	0	100	0	0
390+20 SB - 394+00 SB	LT & RT	1300	50	100	0	0	0	150	0	0
394+00 SB - 417+40 SB	LT & RT	1150	100	200	0	0	0	100	0	0
417+40 SB - 423+20 SB	LT & RT	2000	50	100	0	0	0	150	0	0
423+20 SB - 470+70 SB	LT & RT	2400	200	400	0	0	0	200	0	0
470+70 SB - 476+30 SB	LT & RT	1750	50	100	0	0	0	150	0	0
476+30 SB - 563+00 SB	LT & RT	4350	350	700	0	0	0	350	0	0
563+00 SB - 598+80 SB	LT & RT	650	50	100	0	0	0	150	0	0
598+80 SB - 657+30 SB	LT & RT	2950	200	400	0	0	0	200	0	0
657+30 SB - 662+80 SB	LT & RT	1700	50	100	0	0	0	150	0	0
662+80 SB - 704+60 SB	LT & RT	2100	150	300	0	0	0	150	0	0
710+20 SB - ADVANCED AREA SE	LT & RT	1150	100	200	650	100	100	1000	50	50
<b>STAGE 1 SUBTOTALS</b>		<b>36800</b>	<b>2300</b>	<b>4600</b>	<b>650</b>	<b>100</b>	<b>100</b>	<b>4300</b>	<b>50</b>	<b>50</b>
END AREA SB - 186+37 SB	LT & RT	0	0	0	0	0	0	324	0	0
186+37 SB - 204+00 SB	LT & RT	1458	81	162	0	0	0	81	0	0
204+00 SB - 210+00 SB	LT & RT	2997	81	162	0	0	0	324	0	0
210+00 SB - 259+00 SB	LT & RT	3888	324	648	0	0	0	324	0	0
259+00 SB - 263+70 SB	LT & RT	2835	81	162	0	0	0	324	0	0
263+70 SB - 311+80 SB	LT & RT	3888	324	648	0	0	0	324	0	0
311+80 SB - 317+20 SB	LT & RT	2592	81	162	0	0	0	324	0	0
317+20 SB - 364+80 SB	LT & RT	3888	324	648	0	0	0	324	0	0
364+80 SB - 368+70 SB	LT & RT	2187	81	162	0	0	0	324	0	0
368+70 SB - 390+80 SB	LT & RT	1782	162	324	0	0	0	162	0	0
390+80 SB - 393+60 SB	LT & RT	1539	81	162	0	0	0	324	0	0
393+60 SB - 417+80 SB	LT & RT	1944	162	324	0	0	0	162	0	0
417+80 SB - 423+40 SB	LT & RT	2997	81	162	0	0	0	324	0	0
423+40 SB - 470+40 SB	LT & RT	3807	324	648	0	0	0	324	0	0
470+40 SB - 476+10 SB	LT & RT	2997	81	162	0	0	0	324	0	0
476+10 SB - 577+20 SB	LT & RT	8181	648	1296	0	0	0	648	0	0
577+20 SB - 590+00 SB	LT & RT	6642	81	162	0	0	0	324	0	0
590+00 SB - 704+60 SB	LT & RT	9515	729	1458	0	0	0	729	0	0
704+60 SB - ADVANCED AREA SE	LT & RT	1863	162	324	1053	162	162	1620	81	81
<b>STAGE 2 SUBTOTALS</b>		<b>64800</b>	<b>3888</b>	<b>7776</b>	<b>1053</b>	<b>162</b>	<b>162</b>	<b>7614</b>	<b>81</b>	<b>81</b>
<b>TOTALS</b>		<b>101600</b>	<b>6188</b>	<b>12376</b>	<b>1703</b>	<b>262</b>	<b>262</b>	<b>11914</b>	<b>131</b>	<b>131</b>

**PWL MIXTURE USE TABLE**

LOCATION	STATION	MIXTURE USE	BID ITEM	TONS	THICKNESS	QUALITY MANAGEMENT PROGRAM TO BE USED FOR:
DRIVING LANES	186+37 - 704+60	MILLED EXISTING HMA SURFACE	3 MT 58-34 S	20,580	2-1/2"	MIXTURE ACCEPTANCE PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010
DRIVING LANES AND PASSING LANE SHOULDERS	186+37 - 704+60	MILLED EXISTING HMA SURFACE	4 SMA 58-34 V	17,379	2"	INCENTIVE DENSITY HMA PAVEMENT 460.2000
DRIVING LANE SHOULDERS	186+37 - 704+60	MILLED EXISTING HMA SURFACE	465.0105	4,655	2"	QMP AS PER SS 465 ACCEPTANCE BY ORDINARY COMPACTION
INTERSECTIONS AND CROSSOVERS	186+37 - 704+60	MILLED EXISTING HMA SURFACE	4 MT 58-34 H	2,216	2"	QMP AS PER SS 460 HMA PAVEMENT 460.2000

**MATERIAL TRANSFER VEHICLE**

STATION - STATION	LS
US 53 SB - 184+67 - 710+20	1
<b>ITEM TOTALS</b>	<b>1</b>

**Addendum No. 01**  
**ID 1198-02-83**  
**Revised Sheet 66**  
**April 30, 2018**



Proposal Schedule of Items

Proposal ID: 20180508034 Project(s): 1198-00-78, 1198-02-82, 1198-02-83

Federal ID(s): WISC 2018257, WISC 2018258, WISC 2018256

SECTION: 0001 ROADWAY CONSTRUCTION: SAFETY

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0002	203.0100 Removing Small Pipe Culverts	12.000 EACH	_____.	_____.
0004	204.0115 Removing Asphaltic Surface Butt Joints	6,850.000 SY	_____.	_____.
0006	204.0120 Removing Asphaltic Surface Milling	430,515.000 SY	_____.	_____.
0008	204.0150 Removing Curb & Gutter	577.000 LF	_____.	_____.
0010	204.0180 Removing Delineators and Markers	292.000 EACH	_____.	_____.
0012	205.0100 Excavation Common	8,550.000 CY	_____.	_____.
0014	209.2100 Backfill Granular Grade 2	1,155.000 CY	_____.	_____.
0016	211.0100 Prepare Foundation for Asphaltic Paving (project) 01. 1198-02-82	LS	LUMP SUM	_____.
0018	211.0100 Prepare Foundation for Asphaltic Paving (project) 01. 1198-02-83	LS	LUMP SUM	_____.
0020	211.0400 Prepare Foundation for Asphaltic Shoulders	2,095.000 STA	_____.	_____.
0022	213.0100 Finishing Roadway (project) 01. 1198-00-78	1.000 EACH	_____.	_____.
0024	213.0100 Finishing Roadway (project) 01. 1198-02-82	1.000 EACH	_____.	_____.
0026	213.0100 Finishing Roadway (project) 01. 1198-02-83	1.000 EACH	_____.	_____.
0028	305.0110 Base Aggregate Dense 3/4-Inch	9,500.000 TON	_____.	_____.
0030	305.0120 Base Aggregate Dense 1 1/4-Inch	7,800.000 TON	_____.	_____.



Proposal Schedule of Items

Proposal ID: 20180508034 Project(s): 1198-00-78, 1198-02-82, 1198-02-83

Federal ID(s): WISC 2018257, WISC 2018258, WISC 2018256

SECTION: 0001 ROADWAY CONSTRUCTION: SAFETY

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0032	305.0500 Shaping Shoulders	2,095.000 STA	_____.	_____.
0034	311.0115 Breaker Run	3,940.000 CY	_____.	_____.
0036	440.4410 Incentive IRI Ride	79,200.000 DOL	1.00000	79,200.00
0038	450.4000 HMA Cold Weather Paving	7,850.000 TON	_____.	_____.
0040	455.0605 Tack Coat	36,915.000 GAL	_____.	_____.
0042	460.0100.S HMA Pavement Test Strip	2.000 EACH	_____.	_____.
0044	460.2000 Incentive Density HMA Pavement	26,910.000 DOL	1.00000	26,910.00
0046	460.4110.S Reheating HMA Pavement Longitudinal Joints	104,376.000 LF	_____.	_____.
0048	460.6243 HMA Pavement 3 MT 58-34 S	21,842.000 TON	_____.	_____.
0050	460.8644 HMA Pavement 4 SMA 58-34 V	35,012.000 TON	_____.	_____.
0052	465.0105 Asphaltic Surface	9,396.000 TON	_____.	_____.
0056	465.0315 Asphaltic Flumes	25.000 SY	_____.	_____.
0058	465.0400 Asphaltic Shoulder Rumble Strips	186,755.000 LF	_____.	_____.
0060	520.8700 Cleaning Culvert Pipes	71.000 EACH	_____.	_____.
0062	520.9700.S Culvert Pipe Liners (size) 01. 24-Inch	102.000 LF	_____.	_____.
0064	520.9750.S Cleaning Culvert Pipes for Liner Verification	1.000 EACH	_____.	_____.



Proposal Schedule of Items

Proposal ID: 20180508034 Project(s): 1198-00-78, 1198-02-82, 1198-02-83

Federal ID(s): WISC 2018257, WISC 2018258, WISC 2018256

SECTION: 0001 ROADWAY CONSTRUCTION: SAFETY

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0066	521.1018 Apron Endwalls for Culvert Pipe Steel 18-Inch	4.000 EACH	_____.	_____.
0068	521.1024 Apron Endwalls for Culvert Pipe Steel 24-Inch	15.000 EACH	_____.	_____.
0070	521.1030 Apron Endwalls for Culvert Pipe Steel 30-Inch	1.000 EACH	_____.	_____.
0072	521.1042 Apron Endwalls for Culvert Pipe Steel 42-Inch	2.000 EACH	_____.	_____.
0074	521.1228 Apron Endwalls for Pipe Arch Steel 28x20-Inch	6.000 EACH	_____.	_____.
0076	521.3118 Culvert Pipe Corrugated Steel 18-Inch	118.000 LF	_____.	_____.
0078	521.3124 Culvert Pipe Corrugated Steel 24-Inch	442.000 LF	_____.	_____.
0080	521.3130 Culvert Pipe Corrugated Steel 30-Inch	20.000 LF	_____.	_____.
0082	521.3142 Culvert Pipe Corrugated Steel 42-Inch	58.000 LF	_____.	_____.
0084	521.3728 Pipe Arch Corrugated Steel 28x20-Inch	216.000 LF	_____.	_____.
0086	522.0418 Culvert Pipe Reinforced Concrete Class IV 18-Inch	76.000 LF	_____.	_____.
0088	522.0424 Culvert Pipe Reinforced Concrete Class IV 24-Inch	76.000 LF	_____.	_____.
0090	522.1018 Apron Endwalls for Culvert Pipe Reinforced Concrete 18-Inch	2.000 EACH	_____.	_____.
0092	522.1024 Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	5.000 EACH	_____.	_____.



Proposal Schedule of Items

Proposal ID: 20180508034 Project(s): 1198-00-78, 1198-02-82, 1198-02-83

Federal ID(s): WISC 2018257, WISC 2018258, WISC 2018256

SECTION: 0001 ROADWAY CONSTRUCTION: SAFETY

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0094	524.0624 Apron Endwalls for Culvert Pipe Salvaged 24-Inch	1.000 EACH	_____.	_____.
0096	524.0630 Apron Endwalls for Culvert Pipe Salvaged 30-Inch	2.000 EACH	_____.	_____.
0098	524.0636 Apron Endwalls for Culvert Pipe Salvaged 36-Inch	2.000 EACH	_____.	_____.
0100	601.0557 Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	346.000 LF	_____.	_____.
0102	606.0200 Riprap Medium	44.000 CY	_____.	_____.
0104	611.0430 Reconstructing Inlets	1.000 EACH	_____.	_____.
0106	614.0400 Adjusting Steel Plate Beam Guard	1,952.000 LF	_____.	_____.
0108	618.0100 Maintenance And Repair of Haul Roads (project) 01. 1198-00-78	1.000 EACH	_____.	_____.
0110	618.0100 Maintenance And Repair of Haul Roads (project) 01. 1198-02-82	1.000 EACH	_____.	_____.
0112	618.0100 Maintenance And Repair of Haul Roads (project) 01. 1198-02-83	1.000 EACH	_____.	_____.
0114	619.1000 Mobilization	1.000 EACH	_____.	_____.
0116	624.0100 Water	355.000 MGAL	_____.	_____.
0118	625.0500 Salvaged Topsoil	15,265.000 SY	_____.	_____.
0120	627.0200 Mulching	17,180.000 SY	_____.	_____.
0122	628.1504 Silt Fence	6,680.000 LF	_____.	_____.



Proposal Schedule of Items

Proposal ID: 20180508034 Project(s): 1198-00-78, 1198-02-82, 1198-02-83

Federal ID(s): WISC 2018257, WISC 2018258, WISC 2018256

SECTION: 0001 ROADWAY CONSTRUCTION: SAFETY

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0124	628.1520 Silt Fence Maintenance	11,430.000 LF	_____.	_____.
0126	628.1905 Mobilizations Erosion Control	5.000 EACH	_____.	_____.
0128	628.1910 Mobilizations Emergency Erosion Control	5.000 EACH	_____.	_____.
0130	628.2004 Erosion Mat Class I Type B	11,110.000 SY	_____.	_____.
0132	628.7555 Culvert Pipe Checks	23.000 EACH	_____.	_____.
0134	628.7560 Tracking Pads	2.000 EACH	_____.	_____.
0136	629.0210 Fertilizer Type B	13.000 CWT	_____.	_____.
0138	630.0120 Seeding Mixture No. 20	434.000 LB	_____.	_____.
0140	630.0200 Seeding Temporary	464.000 LB	_____.	_____.
0142	633.0100 Delineator Posts Steel	332.000 EACH	_____.	_____.
0144	633.0500 Delineator Reflectors	386.000 EACH	_____.	_____.
0146	633.5200 Markers Culvert End	104.000 EACH	_____.	_____.
0148	634.0614 Posts Wood 4x6-Inch X 14-FT	26.000 EACH	_____.	_____.
0150	634.0616 Posts Wood 4x6-Inch X 16-FT	128.000 EACH	_____.	_____.
0152	634.0618 Posts Wood 4x6-Inch X 18-FT	102.000 EACH	_____.	_____.
0154	634.0620 Posts Wood 4x6-Inch X 20-FT	72.000 EACH	_____.	_____.
0156	637.2210 Signs Type II Reflective H	3,565.320 SF	_____.	_____.





Proposal Schedule of Items

Proposal ID: 20180508034 Project(s): 1198-00-78, 1198-02-82, 1198-02-83

Federal ID(s): WISC 2018257, WISC 2018258, WISC 2018256

SECTION: 0001 ROADWAY CONSTRUCTION: SAFETY

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0158	637.2230 Signs Type II Reflective F	643.500 SF	_____.	_____.
0160	638.2601 Removing Signs Type I	4.000 EACH	_____.	_____.
0162	638.2602 Removing Signs Type II	223.000 EACH	_____.	_____.
0164	638.3000 Removing Small Sign Supports	290.000 EACH	_____.	_____.
0166	638.3100 Removing Structural Steel Sign Supports	8.000 EACH	_____.	_____.
0168	642.5201 Field Office Type C	1.000 EACH	_____.	_____.
0170	643.0300 Traffic Control Drums	204,453.000 DAY	_____.	_____.
0172	643.0310.S Temporary Portable Rumble Strips	1.000 LS	_____.	_____.
0174	643.0420 Traffic Control Barricades Type III	12,507.000 DAY	_____.	_____.
0176	643.0705 Traffic Control Warning Lights Type A	25,014.000 DAY	_____.	_____.
0178	643.0715 Traffic Control Warning Lights Type C	3,406.000 DAY	_____.	_____.
0180	643.0800 Traffic Control Arrow Boards	524.000 DAY	_____.	_____.
0182	643.0900 Traffic Control Signs	23,940.000 DAY	_____.	_____.
0184	643.1050 Traffic Control Signs PCMS	262.000 DAY	_____.	_____.
0186	643.1051 Traffic Control Signs PCMS with Cellular Communications	262.000 DAY	_____.	_____.
0188	643.5000 Traffic Control	3.000 EACH	_____.	_____.



Proposal Schedule of Items

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SECTION: 0001

ROADWAY CONSTRUCTION: SAFETY

Alt Set ID:

Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0190	645.0120 Geotextile Type HR	107.000 SY	_____.	_____.
0192	646.1020 Marking Line Epoxy 4-Inch	241,061.000 LF	_____.	_____.
0194	646.3020 Marking Line Epoxy 8-Inch	943.000 LF	_____.	_____.
0196	646.3545 Marking Line Grooved Wet Ref Contrast Epoxy 8-Inch	13,218.000 LF	_____.	_____.
0198	646.5020 Marking Arrow Epoxy	4.000 EACH	_____.	_____.
0200	646.5120 Marking Word Epoxy	2.000 EACH	_____.	_____.
0202	646.6120 Marking Stop Line Epoxy 18-Inch	468.000 LF	_____.	_____.
0204	646.6220 Marking Yield Line Epoxy 18-Inch	92.000 EACH	_____.	_____.
0206	646.7120 Marking Diagonal Epoxy 12-Inch	470.000 LF	_____.	_____.
0208	646.7220 Marking Chevron Epoxy 24-Inch	1,550.000 LF	_____.	_____.
0210	646.9000 Marking Removal Line 4-Inch	350.000 LF	_____.	_____.
0212	649.0150 Temporary Marking Line Removable Tape 4-Inch	1,320.000 LF	_____.	_____.
0214	650.4500 Construction Staking Subgrade	3,760.000 LF	_____.	_____.
0216	650.5000 Construction Staking Base	3,760.000 LF	_____.	_____.
0218	650.5500 Construction Staking Curb Gutter and Curb & Gutter	346.000 LF	_____.	_____.
0220	650.6000 Construction Staking Pipe Culverts	14.000 EACH	_____.	_____.



Proposal Schedule of Items

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SECTION: 0001

ROADWAY CONSTRUCTION: SAFETY

Alt Set ID:

Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0222	650.8500 Construction Staking Electrical Installations (project) 01. 1198-00-78	LS	LUMP SUM	_____.
0224	650.9910 Construction Staking Supplemental Control (project) 01. 1198-00-78	LS	LUMP SUM	_____.
0226	650.9910 Construction Staking Supplemental Control (project) 01. 1198-02-82	LS	LUMP SUM	_____.
0228	650.9910 Construction Staking Supplemental Control (project) 01. 1198-02-83	LS	LUMP SUM	_____.
0230	650.9920 Construction Staking Slope Stakes	3,760.000 LF	_____.	_____.
0232	652.0225 Conduit Rigid Nonmetallic Schedule 40 2-Inch	1,819.000 LF	_____.	_____.
0234	652.0235 Conduit Rigid Nonmetallic Schedule 40 3-Inch	18.000 LF	_____.	_____.
0236	652.0605 Conduit Special 2-Inch	205.000 LF	_____.	_____.
0238	653.0154 Pull Boxes Non-Conductive 24x36-Inch	7.000 EACH	_____.	_____.
0240	653.0164 Pull Boxes Non-Conductive 24x42-Inch	5.000 EACH	_____.	_____.
0242	654.0106 Concrete Bases Type 6	8.000 EACH	_____.	_____.
0244	654.0224 Concrete Control Cabinet Bases Type L24	1.000 EACH	_____.	_____.
0246	655.0610 Electrical Wire Lighting 12 AWG	1,440.000 LF	_____.	_____.
0248	655.0620 Electrical Wire Lighting 8 AWG	8,142.000 LF	_____.	_____.
0250	656.0200 Electrical Service Meter Breaker Pedestal (location) 01. 52+10,26.6' RT	LS	LUMP SUM	_____.



Proposal Schedule of Items

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SECTION: 0001

ROADWAY CONSTRUCTION: SAFETY

Alt Set ID:

Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0252	657.0255 Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	8.000 EACH	_____.	_____.
0254	657.0327 Poles Type 6-Aluminum	8.000 EACH	_____.	_____.
0256	657.0715 Luminaire Arms Truss Type 4 1/2-Inch Clamp 15-FT	8.000 EACH	_____.	_____.
0258	659.1120 Luminaires Utility LED B	8.000 EACH	_____.	_____.
0260	659.2124 Lighting Control Cabinets 120/240 24-Inch	1.000 EACH	_____.	_____.
0262	690.0150 Sawing Asphalt	4,890.000 LF	_____.	_____.
0264	ASP.1T0A On-the-Job Training Apprentice at \$5.00/HR	2,400.000 HRS	5.00000	12,000.00
0266	ASP.1T0G On-the-Job Training Graduate at \$5.00/HR	1,900.000 HRS	5.00000	9,500.00
0268	SPV.0090 Special 01. Cure and Seal Treatment Curb & Gutter	346.000 LF	_____.	_____.
0270	SPV.0090 Special 02. Ditch Cleaning	3,300.000 LF	_____.	_____.
0272	SPV.0105 Special 01. Material Transfer Vehicle, Project 1198-02-82	LS	LUMP SUM	_____.
0274	SPV.0105 Special 02. Material Transfer Vehicle, Project 1198-02-83	LS	LUMP SUM	_____.
0276	460.2005 Incentive Density PWL HMA Pavement	19,350.000 DOL	1.00000	19,350.00
0278	460.2010 Incentive Air Voids HMA Pavement	20,580.000 DOL	1.00000	20,580.00
0280	460.6444 HMA Pavement 4 MT 58-34 H	7,874.000 TON	_____.	_____.



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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0282	SPV.0060 Special 01. HMA Percent Within Limits (PWL) Test Strip Volumetrics	1.000 EACH	_____.	_____.
0284	SPV.0060 Special 02. HMA Percent Within Limits (PWL) Test Strip Density	1.000 EACH	_____.	_____.
<b>Section: 0001</b>			<b>Total:</b>	_____.
			<b>Total Bid:</b>	_____.

