

2013 Work
Pavement Restoration for
Pheasant Run Roadway Maintenance Association (PRRMA)
Canton, Michigan

2013 Contract Documents
SDA Job Number: NP13013.0C

FOR:

Mr. William Serchak and Ms. Debra Bilbrey-Honsowetz
Township Engineer Director of Leisure Services

Canton Township
Pheasant Run Roadway Maintenance Association (PRRMA)
1150 Canton Center Road South
Canton, MI 48188

PREPARED BY:

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INSTRUCTIONS TO BIDDERS

1. DEFINED TERMS

Terms used in these Instructions to Bidders have the meanings assigned to them in the General Conditions. The term "Bidder" means one who submits a Bid directly to OWNER as distinct from a sub-bidder who submits a Bid to a Bidder. The term "Successful Bidder" means the lowest, qualified, responsible Bidder to whom Owner makes an award. The terms "OWNER" and "ENGINEER" are defined in the Supplemental Instructions to Bidders.

2. SCOPE OF WORK

The scope and location of Work are set forth in Plans and Specifications.

3. BIDDERS QUALIFICATIONS

No Bid will be considered from any bidder unless known to be skilled and regularly engaged in work of a character similar to that covered by the Contract documents. In order to aid the OWNER in determining the responsibility of any bidder, the bidder, within forty-eight (48) hours after being requested in writing by the OWNER so to do, shall furnish evidence, satisfactory to the OWNER, of the bidder's experience and familiarity with Work of the character specified, and his financial ability to properly prosecute the proposed Work to completion within the specified time. The evidence requested may, without being limited thereto, include the following:

- 3.1 The address and description of the Bidder's plant or permanent place of business.
- 3.2 The Bidder's performance records for all Work awarded to, or started by him within the past three years.
- 3.3 An itemized list of the Bidder's equipment available for use on the proposed Contract.
- 3.4 The Bidder's financial statement, including statement of ownership of equipment necessary to be used in executing Work under Contract.
- 3.5 Evidence that the Bidder is licensed to do business in the State in which the project is located, in case of a corporation organized under the laws of any other state; and
- 3.6 Such additional information as will satisfy the OWNER that the Bidder is adequately prepared to fulfill the Contract.

4. EXAMINATION OF CONTRACT DOCUMENT and SITE

- 4.1 It is the responsibility of each Bidder before submitting a Bid, to (a) examine the Contract Documents thoroughly, (b) visit the site to familiarize himself with local conditions that may in any manner affect cost, progress or performance of the Work, (c) consider federal, state and local laws and regulations that may affect cost, progress, performance, or furnishing of the Work; and (d) study and carefully correlate Bidder's observation with the Contract Documents.
- 4.2 Reference is made to the Supplemental General Conditions for the identification of those reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work which have been relied upon by ENGINEER in preparing the Plans and Specifications.

If such reports are not included as appendices to the Contract Documents, OWNER will make copies available to any Bidder requesting them. These reports are not guaranteed as to accuracy or completeness, nor are they part of the Contract Documents. Before submitting his Bid each Bidder will, at his own expense, make such additional investigations and tests as the Bidder may deem necessary to determine his Bid for performance of the Work in accordance with the time, price and other terms and conditions of the Contract Documents.
- 4.3 On request OWNER will provide each Bidder access to the site to conduct such investigations and tests as each Bidder deems necessary for submission of his Bid.
- 4.4 The lands upon which the Work is to be performed, rights-of-way for access thereto and other lands designated for use by CONTRACTOR in performing the Work are identified in the Plans and Specifications.
- 4.5 The locations of public utilities as are shown on the Plans are taken from sources believed to be reliable. Neither the OWNER nor the ENGINEER will be responsible for any omissions of, or variations from, the indicated location of existing utilities which may be encountered in the Work.
- 4.6 The submission of a Bid will constitute an incontrovertible representation by the Bidder that he has complied with every requirement of this Article 4 and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of the Work.

5. INTERPRETATIONS - ADDENDA

Should any prospective bidder find discrepancies in, or omissions from the Plans, Specifications or other parts of the Contract Documents, they may submit a written request to the ENGINEER for an interpretation thereof. The person submitting the request will be held responsible for its prompt delivery at least three days prior to the date for opening of Bids. Questions received less than three days prior to the date for opening of bids will not be answered. Any interpretation of inquiry will be made by Bulletin or Addendum duly issued to all prospective bidders. Any change in or addition to the Contract Documents deemed necessary by the OWNER shall be made in the form of an Addendum issued to all prospective bidders, and all such Addenda shall become a part of the Contract Documents as though same were incorporated into same originally. Oral explanations and information do not constitute official notification and are not binding.

6. BID SECURITY

6.1

Bid Security shall be made payable to OWNER, in an amount of five percent of the Bidder's maximum Bid price. Bid Bonds shall be issued on the form included in the Contract Documents by a Surety meeting the requirements of paragraph 5.1 of the General Conditions.

6.2

The Bid Security of the Successful Bidder will be retained until such Bidder has executed the Agreement and furnished the required Contract Security, whereupon it will be returned; if the successful

Bidder fails to execute and deliver the Agreement and furnish the required Contract Security within 15 days of the Notice of Award, OWNER may annul the Notice of Award and the Bid Security of any Bidder whom OWNER believes to have a reasonable chance of receiving the award may be retained by OWNER until the earlier of the seventh day after the "effective date of the Agreement" (which term is defined in the General Conditions) or the expiration of the hold period on the Bids. Bid Security of other Bidders will be returned within fourteen days of the Bid opening.

7. CONTRACT TIME

The number of days within which, or the date by which, the Work is to be substantially completed, if applicable, and also completed and ready for final payment (the Contract Time) are set forth in the Proposal and will be included in the Agreement.

8. RECEIPT AND FORM OF BID

Bids shall be submitted at the time and place indicated by the ENGINEER and shall be included via email or in an opaque sealed envelope, marked with the Project title and name and address of the Bidder and accompanied by the Bid Security and other required documents. If the Bid is sent through the mail or other delivery system, the sealed envelope shall be enclosed in a separate envelope with the notation "BID ENCLOSED" on the face thereof. Any Bid received after the scheduled time and place indicated by the ENGINEER shall be returned unopened.

8.1

The OWNER invites bids on the forms attached hereto. Bids will be received at the time and place indicated by the ENGINEER. An abstract of the amounts of the base Bids and any major alternates will be made available.

8.2

The OWNER may consider as informal any bid on which there is an alteration of, or departure from the Proposal Form attached hereto.

8.3

The CONTRACTOR shall submit the entire book of Contract Documents when submitting his Bid to the OWNER.

8.4

The Proposal shall be legibly prepared, with ink or typewriter, on the form included in these Contract Documents. All blank spaces in the proposal forms must be correctly filled in where indicated for each and every item for which a quantity is given. Proposals will be compared on basis of lump sum items, if any, and on product of the quantities of items listed at the respective unit prices bid.

8.5

Erasures or other changes in the Bids must be explained or noted over the signature of the Bidder.

8.6

All names must be typed or printed below the signature.

8.7

The quantities as shown in the Proposal are approximate only and will be used as a basis of comparison of bids, and award of Contracts. Payment will be made on basis of actual quantities of Work performed in accordance with the Contract Documents Except for Lump Sum Amounts.

8.8

The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Proposal Form.

8.9

The Legal Status of Bidder Form contained in the Contract Documents must be submitted with each Proposal and must clearly state the legal position of a Bidder. In the case of a corporation, the home address, name and title of all officers must be given. In the case of a partnership, show names and home addresses of all partners. If an individual, so state. Any individual bid not signed by the individual must have attached thereto a power of attorney evidencing authority to sign.

8.10

Other documents to be attached to the Proposal and made a condition thereof are identified in the Proposal. The same individual signing the Proposal shall sign these other documents.

9. MODIFICATION AND WITHDRAWAL OF BIDS

Bids may be modified or withdrawn by an appropriate document duly executed (in the manner that a Bid must be executed) and delivered to the place where Bids are to be submitted at any time prior to the opening of Bids. If, within twenty-four hours after Bids are opened, any Bidder files a duly signed written notice with OWNER and promptly thereafter demonstrates to the reasonable satisfaction of OWNER that there was a material and substantial mistake in the preparation of his Bid, that Bidder may withdraw his Bid and the Bid Security will be returned.

10. AWARD OF CONTRACT

10.1

OWNER reserves the right to reject any and all Bids, to waive any and all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder, and the right to disregard all nonconforming, nonresponsive, unbalanced, or conditional Bids. Discrepancies between words and figures will be resolved in favor of words. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

10.2

In evaluating Bids, OWNER shall consider the qualifications of the Bidders, whether or not the bids comply with the prescribed requirements, and alternates and unit prices if requested in the Proposal. It is OWNER's intent to accept alternates (if any are accepted) in the order in which they are listed in the Proposal but OWNER may accept them in any order or combination.

10.3

Subject to the approval of the OWNER, the Contract will be awarded to the lowest responsive and responsible bidder. Responsibility of Bidder will be determined on basis of past performance and Work of similar character, equipment and labor available to do the Work and financial status. The Contract shall be considered to have been awarded after the approval of the OWNER has been duly obtained and a formal Notice of Award duly served on the intended awardee by the OWNER. The Contract shall not be binding upon the OWNER until the Contract Agreement has been duly executed by the Bidder and the duly authorized officials of the OWNER.

10.4

If the Contract is to be awarded, OWNER will give the successful Bidder a Notice of Award within sixty days after the day of the Bid opening.

11. SIGNING OF AGREEMENT

Within fourteen days after OWNER gives a Noticed of Award to the successful Bidder, the CONTRACTOR shall sign and deliver the specified number of counterparts of the Agreement to OWNER with all other Contract Documents attached. Within ten days thereafter OWNER will deliver one fully signed counterpart to CONTRACTOR. ENGINEER will identify those portions of the Contract Documents not fully signed by OWNER and CONTRACTOR and such identification shall be binding on all parties.

Proposal

Charter Township of Canton
1150 S. Canton Center Road
Canton, MI 48188

Re: Pheasant Run Roadway Maintenance Association (PRRMA) – 2013 Pavement Repair Plan

Work Areas include Fairways, Fairway Pines, and Pheasant View Subdivisions and miscellaneous locations on Summit Parkway.

Prospective Bidders:

The undersigned Bidder proposes and agrees, if this Proposal is accepted, to enter into an Agreement with Pheasant Run Roadway Maintenance Association in the form included in the Contract Documents to complete all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the Contract Documents. Bids are due Wednesday, June 19, 2013 @ 3:00 PM. Bids will be submitted to:

Spalding Dedecker Associates
905 South Blvd. East
Rochester Hills, MI 48307

Or email: jensley@sda-eng.com

Estimated days to complete the project: _____ Days

In submitting this Proposal, Bidder represents, as more fully set forth in the Agreement, that;

a) Bidder has examined copies of all Contract Documents which the prospective bidder understands and accepts as sufficient for the purpose, including any and all Addenda officially issued, the receipt of which is hereby acknowledged.

ADDENDUM NO.	DATE OF RELEASE	SIGNATURE
_____	_____	_____
_____	_____	_____

b) Bidder has examined the surface and subsurface conditions where the Work is to be performed, the legal requirements and local conditions affecting cost, progress, furnishing or performance of the Work and has made such independent investigations as Bidder deems necessary.

c) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any Agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person, firm or a corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for himself any advantage over any other Bidder or over OWNER.

The Bidder agrees to complete the Work, in accordance with descriptions contained in Drawings and Specifications, for the following Contract Price:

Bid Item No.	Item Description (Basis of payment)	Bid Quantity	Basis of Measure (Unit)	Unit Price	Bid Price
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2013 BASE BID

BASE BID

01	Pothole Patching Includes all labor, material, and equipment to patch existing potholes in accordance with drawings and specifications. Cost includes cleaning existing surface within potholes, placing tack coat, and placing and compacting hot-mix asphalt in pothole to provide smooth surface.	10	TON	\$ _____	\$ _____
02	Cut and Patch Includes all labor, material, and equipment to cut and patch the existing asphalt pavement in accordance with drawings and specifications. Cost includes sawcutting, full-depth removal of the existing pavement, removal of existing or addition of new aggregate base as required to provide the proposed asphalt cross-section, compaction of the final aggregate base layer, placing two lifts of asphalt pavement for a total of 5" compacted thickness and tack coat.	537	SF	\$ _____	\$ _____
03	2.0" Mill and Replace Includes all labor, material, and equipment to mill and replace a specified depth of the existing asphalt in accordance with drawings and specifications. Cost includes milling asphalt pavement to the specified depth (2.0"), disposal of the milled pavement, cleaning the remaining asphalt surface, placing and compacting the 2.0" compacted asphalt layer including tack coat.	19,850	SF	\$ _____	\$ _____
04	2.5" Mill and Replace Includes all labor, material, and equipment to mill and replace a specified depth of the existing asphalt in accordance with drawings and specifications. Cost includes milling asphalt pavement to the specified depth (2.5"), disposal of the milled pavement, cleaning the remaining asphalt surface, placing and compacting the 2.5" compacted asphalt layer including tack coat.	64,117	SF	\$ _____	\$ _____
05	1.0" Incremental Mill and Replace (Allowance) Includes all labor, material, and equipment to provide incremental milling and replacement at 1.0" depths until Engineer determines a suitable asphalt base. Cost includes milling at incremental 1.0" depths, disposal of milled pavement, cleaning milled surface, and placing and compacting a replacement course of asphalt in 1.0" increments to provide a smooth surface prior to final paving covered in other Asphalt Mill and Replace Items. Any unused portion of the allowed shall be credited back to the Owner using the provided unit cost.	8,397	SF	\$ _____	\$ _____
06	Sidewalk Ramp Removal and Replacement Includes all labor, material, and equipment to replace existing sidewalk ramp in accordance with drawings and specifications. Cost includes sawcutting, removing and disposing of existing concrete ramp, removal or addition of base material required to install the ramp, preparing and compacting the final base layer, and constructing a concrete ramp in compliance with ADA standards, including detectable warning surfaces, curing compound, and expansion joint material. If removal of adjacent sidewalk flags to the existing ramp is required to meet the proposed slope requirements, the additional removal and replacement will be paid for as the "Sidewalk Removal and Replacement" item	2	EA	\$ _____	\$ _____
07	Sidewalk Removal and Replacement Includes all labor, material, and equipment to remove existing concrete sidewalk and install new concrete sidewalk in accordance with drawings and specifications. Cost includes removal and disposal of existing pavement, base material, and subgrade required to install the proposed concrete sidewalk section, compaction of existing subgrade, placement and compaction of new 4" aggregate base, and placement and finishing of the 4" thick concrete sidewalk accommodate grade and slope requirements of adjacent sidewalk ramp. Cost also includes curing materials, expansion joints, joint filler and joint sealer.	172	SF	\$ _____	\$ _____
08	Curb and Gutter Removal and Replacement Includes all labor, material, and equipment to install concrete curb and gutter in accordance with drawings and specifications. Cost includes removal and disposal of existing material, compaction of existing subgrade, placement and compaction of new aggregate base, and forming, placement and finishing of concrete curb and gutter. Additional materials in this cost include reinforcement, mortar, curing compound, joint fillers and sealants. Cost also includes sawcutting the asphalt pavement one foot past the concrete curb and gutter to be removed, removing the asphalt, and replacing with new asphalt to match the depth of the existing pavement (including tack coat).	413	LF	\$ _____	\$ _____

TOTAL BASE BID

\$ _____

Insert Word Description of Base Bid

Bid Item No.	Item Description (Basis of payment)	Bid Quantity	Basis of Measure (Unit)	Unit Price	Bid Price
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2013 ALTERNATE BIDS

ALTERNATE #1A

A1A-01 **Alternate #1A - 2.0" Mill and Replace** 12,593 SF \$ _____ \$ _____
 Includes all labor, material, and equipment to mill and replace a specified depth of the existing asphalt in accordance with drawings and specifications. Cost includes milling asphalt pavement to the specified depth (2.0"), disposal of the milled pavement, cleaning the remaining asphalt surface, placing and compacting the 2.0" asphalt layer including tack coat per drawings. Cost also includes additional asphalt required to accommodate re-grading work and provide smooth transitions and positive drainage for the work areas included in Alternate #1A as specified on the Drawings.

A1A-02 **Alternate #1A - Sidewalk Ramp Removal and Replacement** 1 EA \$ _____ \$ _____
 Includes all labor, material, and equipment to replace existing sidewalk ramp in accordance with drawings and specifications. Cost includes sawcutting, removing and disposing of existing concrete ramp, removal or addition of base material required to install the ramp, preparing and compacting the final base layer, and constructing a concrete ramp in compliance with ADA standards, including detectable warning surfaces, curing compound, and expansion joint material. If removal of adjacent sidewalk flags to the existing ramp is required to meet the proposed slope requirements, the additional removal and replacement will be paid for as the "Sidewalk Removal and Replacement" item

A1A-03 **Alternate #1A - Sidewalk Removal and Replacement** 108 SF \$ _____ \$ _____
 Includes all labor, material, and equipment to remove existing concrete sidewalk and install new concrete sidewalk in accordance with drawings and specifications. Cost includes removal and disposal of existing pavement, base material, and subgrade required to install the proposed concrete sidewalk section, compaction of existing subgrade, placement and compaction of new 4" aggregate base, and placement and finishing of the 4" thick concrete sidewalk accommodate grade and slope requirements of adjacent sidewalk ramp. Cost also includes curing materials, expansion joints, joint filler and joint sealer.

A1A-04 **Alternate #1A - Curb and Gutter Removal and Replacement** 115 LF \$ _____ \$ _____
 Includes all labor, material, and equipment to install concrete curb and gutter in accordance with drawings and specifications. Cost includes removal and disposal of existing material, compaction of existing subgrade, placement and compaction of new aggregate base, and forming, placement and finishing of concrete curb and gutter. Additional materials in this cost include reinforcement, mortar, curing compound, joint fillers and sealants. Cost also includes sawcutting the asphalt pavement one foot past the concrete curb and gutter to be removed, removing the asphalt, and replacing with new asphalt to match the depth of the existing pavement (including tack coat).

A1A-05 **Alternate #1A - Structure Adjustment** 1 EA \$ _____ \$ _____
 Includes all labor, material, and equipment to raise the utility structure casting to the specified level and create flush transition with adjacent pavement in accordance with drawings and specifications. Cost includes removing the castings from the structure, installing adjustment rings or adding concrete bricks to bring the top of casting to the required elevation, and tuck pointing with mortar to attach the casting to the existing structure. Cost also includes 1/8" fiber board between concrete curb and gutter and structure frame surfaces.

TOTAL ALTERNATE #1A (Inclusive of Items A1A-01 thru A1A-05)				\$	
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A1A-06 **Alternate #1A - Remove Dry Well Structure** 1 EA \$ _____ \$ _____
 Includes all labor, material, and equipment to excavate and remove existing dry well structure, back-fill area, and prep area for asphalt paving, and provide new asphalt pavement. Cost includes removing asphalt pavement surrounding existing dry well (minimum 10'x10' area), excavation around structure, removal and disposal of structure, backfill with class II sand or suitable engineered fill, compaction of backfill in maximum 12" lifts, placement of minimum 8" of MDOT 21AA Aggregate Base, and placement of a minimum of 3.0" of HMA prior to placement of proposed 2.0" overlay covered under separate item in this location.

TOTAL ALTERNATE #1A (Inclusive of Items A1A-01 thru A1A-06)				\$	
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Bid Item No.	Item Description (Basis of payment)	Bid Quantity	Basis of Measure (Unit)	Unit Price	Bid Price
ALTERNATE #1B					
A1B-01	Alternate #1B - Cut and Patch Includes all labor, material, and equipment to cut and patch the existing asphalt pavement in accordance with drawings and specifications. Cost includes sawcutting, full-depth removal of the existing pavement, removal of existing or addition of new aggregate base as required to provide the proposed asphalt cross-section, compaction of the final aggregate base layer, placing two lifts of asphalt pavement for a total of 5" compacted thickness and tack coat.	472	SF	\$ _____	\$ _____
A1B-02	Alternate #1B - 2.0" Mill and Replace Includes all labor, material, and equipment to mill and replace a specified depth of the existing asphalt in accordance with drawings and specifications. Cost includes milling asphalt pavement to the specified depth (2.0"), disposal of the milled pavement, cleaning the remaining asphalt surface, placing and compacting the 2.0" asphalt layer including tack coat per drawings.	12,121	SF	\$ _____	\$ _____
A1B-03	Alternate #1B - Sidewalk Ramp Removal and Replacement Includes all labor, material, and equipment to remove existing concrete sidewalk and install new concrete sidewalk in accordance with drawings and specifications. Cost includes removal and disposal of existing pavement, base material, and subgrade required to install the proposed concrete sidewalk section, compaction of existing subgrade, placement and compaction of new 4" aggregate base, and placement and finishing of the 4" thick concrete sidewalk accommodate grade and slope requirements of adjacent sidewalk ramp. Cost also includes curing materials, expansion joints, joint filler and joint sealer.	1	EA	\$ _____	\$ _____
A1B-04	Alternate #1B - Sidewalk Removal and Replacement Includes all labor, material, and equipment to remove existing concrete sidewalk and install new concrete sidewalk in accordance with drawings and specifications. Cost includes removal and disposal of existing pavement, base material, and subgrade required to install the proposed concrete sidewalk section, compaction of existing subgrade, placement and compaction of new 4" aggregate base, and placement and finishing of the 4" thick concrete sidewalk accommodate grade and slope requirements of adjacent sidewalk ramp. Cost also includes curing materials, expansion joints, joint filler and joint sealer.	108	SF	\$ _____	\$ _____
A1B-05	Alternate #1B - Curb and Gutter Removal and Replacement Includes all labor, material, and equipment to install concrete curb and gutter in accordance with drawings and specifications. Cost includes removal and disposal of existing material, compaction of existing subgrade, placement and compaction of new aggregate base, and forming, placement and finishing of concrete curb and gutter. Additional materials in this cost include reinforcement, mortar, curing compound, joint fillers and sealants. Cost also includes sawcutting the asphalt pavement one foot past the concrete curb and gutter to be removed, removing the asphalt, and replacing with new asphalt to match the depth of the existing pavement (including tack coat).	90	LF	\$ _____	\$ _____
A1B-06	Alternate #1B - Install 4' Diameter Pre-Cast Catch Basin Includes all labor, material, and equipment to install pre-cast catch basin in accordance with drawings and specifications. All work shall conform with Charter Township of Canton requirements. Cost includes excavation and disposal of soil material, bedding, placement of structure at correct elevation, pipe connections, backfill, underdrain installation, compaction, tuck pointing of pipe and structure joints, adjustment ring installation, and casting installation. Contractor shall submit shop drawings for all materials used to the Engineer for approval.	2	EA	\$ _____	\$ _____
A1B-07	Alternate #1B - Install 12" Storm Sewer Pipe Includes all labor, material, and equipment to remove with 12" RCP storm sewer pipe in accordance with the drawings and specifications. All work shall conform with Charter Township of Canton requirements. Cost includes excavation and disposal material required to install new pipe, bedding and backfill of new pipe, connection of pipe sections, connections to new or existing structures, and compaction of backfill material to bottom of proposed pavement elevation. Contractor shall submit shop drawings for all materials used to the Engineer for approval.	198	LF	\$ _____	\$ _____
A1B-08	Alternate #1B - Replace Driveway Approach Includes all labor, material, and equipment to remove and replace residential concrete driveway approach. Cost includes removal of existing approach, replacement of approach with concrete pavement to match existing thickness, with a minimum thickness of 6", and match existing dimensions and jointing pattern. Cost also includes finishing and curing materials.	2	EA	\$ _____	\$ _____
TOTAL ALTERNATE #1B				\$	

Bid Item No.	Item Description (Basis of payment)	Bid Quantity	Basis of Measure (Unit)	Unit Price	Bid Price
ALTERNATE #2					
A2-01	Alternate #2 - Crack Sealing Includes all labor, material, and equipment to install crack sealant material for cracks less than 1/2" in accordance with drawings and specifications. Also includes all labor, material, and equipment to install crack sealant material for cracks between 1/2" and 1" in accordance with drawings and specifications. Cost includes equipment and labor for routing cracks where required, removing vegetation, and cleaning cracks with compressed air free of oil prior to installation of crack sealant material.	9,500	LF	\$ _____	\$ _____
TOTAL ALTERNATE #2				\$ _____	

ALTERNATE #3					
A3-01	Alternate #3 - 2.5" Mill and Replace Includes all labor, material, and equipment to mill and replace a specified depth of the existing asphalt in accordance with drawings and specifications. Cost includes milling asphalt pavement to the specified depth (2.5"), disposal of the milled pavement, cleaning the remaining asphalt surface, placing and compacting the 2.5" compacted asphalt layer including tack coat.	12,259	SF	\$ _____	\$ _____
A3-02	Alternate #3 - 1.0" Incremental Mill and Replace (Allowance) Includes all labor, material, and equipment to provide incremental milling and replacement at 1.0" depths until Engineer determines a suitable asphalt base. Cost includes milling at incremental 1.0" depths, disposal of milled pavement, cleaning milled surface, and placing and compacting a replacement course of asphalt in 1.0" increments to provide a smooth surface prior to final paving covered in other Asphalt Mill and Replace Items. Any unused portion of the allowed shall be credited back to the Owner using the provided unit cost.	1,226	SF	\$ _____	\$ _____
TOTAL ALTERNATE #3				\$ _____	

ALTERNATE #4					
A4-01	Alternate #4 - Additional Sidewalk Removal and Replacement Allowance Allowance for work that shall include all labor, material, and equipment to remove existing concrete sidewalk and install new concrete sidewalk in accordance with drawings and specifications. Cost includes removal and disposal of existing pavement, base material, and subgrade required to install the proposed concrete sidewalk section, compaction of existing subgrade, placement and compaction of new 4" aggregate base, and placement and finishing of the 4" thick concrete sidewalk accommodate grade and slope requirements of adjacent sidewalk ramp. Cost also includes curing materials, expansion joints, joint filler and joint sealer.	1	LS	\$ 15,000.00	\$ 15,000.00
TOTAL ALTERNATE #4				\$ _____	

UNIT PRICING - Bidder shall include unit costs for items to be added or subtracted in the following quantities:
--

UP-01	Crack Sealing Includes all labor, material, and equipment to install crack sealant material for cracks less than 1/2" in accordance with drawings and specifications. Also includes all labor, material, and equipment to install crack sealant material for cracks between 1/2" and 1" in accordance with drawings and specifications. Cost includes equipment and labor for routing cracks where required, removing vegetation, and cleaning cracks with compressed air free of oil prior to installation of crack sealant material.	1	LF	\$ _____	\$ _____
UP-02	Cut and Patch Includes all labor, material, and equipment to cut and patch the existing asphalt pavement in accordance with drawings and specifications. Cost includes sawcutting, full-depth removal of the existing pavement, removal of existing or addition of new aggregate base as required to provide the proposed asphalt cross-section, compaction of the final aggregate base layer, placing two lifts of asphalt pavement for a total of 5" compacted thickness and tack coat.	1	SF	\$ _____	\$ _____
UP-03	1.5" Mill and Replace Includes all labor, material, and equipment to mill and replace a specified depth of the existing asphalt in accordance with drawings and specifications. Cost includes milling asphalt pavement to the specified depth (1.5"), disposal of the milled pavement, cleaning the remaining asphalt surface, placing and compacting the 1.5" compacted asphalt layer including tack coat.	1	SF	\$ _____	\$ _____
UP-04	2.0" Mill and Replace Includes all labor, material, and equipment to mill and replace a specified depth of the existing asphalt in accordance with drawings and specifications. Cost includes milling asphalt pavement to the specified depth (2.0"), disposal of the milled pavement, cleaning the remaining asphalt surface, placing and compacting the 2.0" compacted asphalt layer including tack coat.	1	SF	\$ _____	\$ _____

Bid		Basis of	Unit	Bid
Item No.	Item Description	(Basis of payment)	Measure (Unit)	Quantity
			Price	Price
UP-05	2.5" Mill and Replace Includes all labor, material, and equipment to mill and replace a specified depth of the existing asphalt in accordance with drawings and specifications. Cost includes milling asphalt pavement to the specified depth (2.5"), disposal of the milled pavement, cleaning the remaining asphalt surface, placing and compacting the 2.5" compacted asphalt layer including tack coat.		SF	1
			\$ _____	\$ _____
UP-06	Pothole Patching Includes all labor, material, and equipment to patch existing potholes in accordance with drawings and specifications. Cost includes cleaning existing surface within potholes, placing tack coat, and placing and compacting hot-mix asphalt in pothole to provide smooth surface.		TON	1
			\$ _____	\$ _____
UP-07	Sidewalk Ramp Removal and Replacement Includes all labor, material, and equipment to replace existing sidewalk ramp in accordance with drawings and specifications. Cost includes sawcutting, removing and disposing of existing concrete ramp, removal or addition of base material required to install the ramp, preparing and compacting the final base layer, and constructing a concrete ramp in compliance with ADA standards, including detectable warning surfaces, curing compound, and expansion joint material. If removal of adjacent sidewalk flags to the existing ramp is required to meet the proposed slope requirements, the additional removal and replacement will be paid for as the "Sidewalk Removal and Replacement" item.		EA	1
			\$ _____	\$ _____
UP-08	Sidewalk Removal and Replacement Includes all labor, material, and equipment to remove existing concrete sidewalk and install new concrete sidewalk in accordance with drawings and specifications. Cost includes removal and disposal of existing pavement, base material, and subgrade required to install the proposed concrete sidewalk section, compaction of existing subgrade, placement and compaction of new 4" aggregate base, and placement and finishing of the 4" thick concrete sidewalk accommodate grade and slope requirements of adjacent sidewalk ramp. Cost also includes curing materials, expansion joints, joint filler and joint sealer.		SF	1
			\$ _____	\$ _____
UP-09	Curb and Gutter Removal and Replacement Includes all labor, material, and equipment to install concrete curb and gutter in accordance with drawings and specifications. Cost includes removal and disposal of existing material, compaction of existing subgrade, placement and compaction of new aggregate base, and forming, placement and finishing of concrete curb and gutter. Additional materials in this cost include reinforcement, mortar, curing compound, joint fillers and sealants. Cost also includes sawcutting the asphalt pavement one foot past the concrete curb and gutter to be removed, removing the asphalt, and replacing with new asphalt to match the depth of the existing pavement (including tack coat).		LF	1
			\$ _____	\$ _____
UP-10	Structure Adjustment Includes all labor, material, and equipment to raise the utility structure casting to the specified level and create flush transition with adjacent pavement in accordance with drawings and specifications. Cost includes removing the castings from the structure, installing adjustment rings or adding concrete bricks to bring the top of casting to the required elevation, and tuck pointing with mortar to attach the casting to the existing structure. Cost also includes 1/8" fiber board between concrete curb and gutter and structure frame surfaces.		EA	1
			\$ _____	\$ _____
UP-11	Install 4' Diameter Pre-Cast Catch Basin Includes all labor, material, and equipment to install pre-cast catch basin in accordance with drawings and specifications. All work shall conform with Charter Township of Canton requirements. Cost includes excavation and disposal of soil material, bedding, placement of structure at correct elevation, pipe connections, backfill, underdrain installation, compaction, tuck pointing of pipe and structure joints, adjustment ring installation, and casting installation. Contractor shall submit shop drawings for all materials used to the Engineer for approval.		EA	1
			\$ _____	\$ _____
UP-12	Install 12" Storm Sewer Pipe Includes all labor, material, and equipment to remove with 12" RCP storm sewer pipe in accordance with the drawings and specifications. All work shall conform with Charter Township of Canton requirements. Cost includes excavation and disposal material required to install new pipe, bedding and backfill of new pipe, connection of pipe sections, connections to new or existing structures, and compaction of backfill material to bottom of proposed pavement elevation. Contractor shall submit shop drawings for all materials used to the Engineer for approval.		LF	1
			\$ _____	\$ _____
UP-13	Replace Driveway Approach Includes all labor, material, and equipment to remove and replace residential concrete driveway approach. Cost includes removal of existing approach, replacement of approach with concrete pavement to match existing thickness, with a minimum thickness of 6", and match existing dimensions and jointing pattern. Cost also includes finishing and curing materials.		EA	1
			\$ _____	\$ _____

Bid		Basis of			
Item No.	Item Description	(Basis of payment)	Bid	Measure	Unit
			Quantity	(Unit)	Price
					Bid
					Price
UP-14	Base or Subgrade Undercutting Includes all labor, material, and equipment to undercut, replace, and compact aggregate base or subgrade material upon inspection of areas where asphalt was removed. Includes replacement in accordance with drawings and specifications. Cost includes removing and disposing in 2 inch incremental lifts as identified by Engineer to specified depth upon inspection of proofrolling activities after asphalt removal. Upon asphalt removal activities, Contractor shall not disturb the existing base or subgrade without Engineer's prior approval.		1	CY	\$ _____ \$ _____
UP-15	1.0" Incremental Mill and Replace Includes all labor, material, and equipment to provide incremental milling and replacement at 1.0" depths until Engineer determines a suitable asphalt base. Cost includes milling at incremental 1.0" depths, disposal of milled pavement, cleaning milled surface, and placing and compacting a replacement course of asphalt in 1.0" increments to provide a smooth surface prior to final paving covered in other Asphalt Mill and Replace Items.		1	SF	\$ _____ \$ _____

Other notes for all base or alternate bid items:

- 1) As part of their cost, contractor shall include in the above Base and Alternate Bid Items provisions for: Project start-up, mobilization, demobilization, soil erosion and sedimentation controls, pavement striping, landscaping restoration, general conditions, labor, material, disposal, handling fees, equipment, Bonds, Insurance, site supervision, administrative provision expenses, testing, shop drawing details, operation and maintenance documentation, meetings, and any other general requirements not listed in other line items for implementing project.

- 2) Additional quantities and areas of work for allowances per the unit cost rates are intended for work outside the identified construction areas on plans and will be identified by the Owner at pre-construction meeting or as extra work items during construction.

The undersigned, as Bidder, hereby certifies that he or a qualified designated person in his employment has examined the Contract Documents provided by the OWNER for bidding purposes. Further, the undersigned certifies that he or his qualified employee has reviewed the Bidder's proposed construction methods and finds them compatible with the conditions which he anticipates from the information provided for Bidding.

The undersigned, as Bidder, shall complete the Work under any job circumstances or field conditions present and/or ascertainable prior to bidding. In addition, he shall also complete the Work under whatever conditions he may create by his own sequence of construction, construction methods, or other conditions he may create, at no additional cost to the OWNER.

The undersigned, as Bidder, declares that he has familiarized himself with the location of the proposed Work and the conditions under which it must be constructed. Also, that he has carefully examined the Plans, the Specifications, and the Contract Documents, which he understands and accepts as sufficient for the purpose, and agrees that he will Contract with the OWNER to furnish all labor, material, tools, and equipment necessary to do all Work specified and prescribed for the completion of the Project.

The undersigned agrees, if awarded Contract, to sign the Agreement and submit satisfactory bonds and certificates of insurance coverage and other evidence of insurance required by the Contract Documents within 15 days after the date of OWNER'S Notice of Award.

The undersigned agrees that time is of the essence and, if awarded Contract, that the Work shall start within 14 calendar days from notice of award and will be substantially completed within 45 calendar days and finished within 60 calendar days.

Liquidated damages, as specified in the Supplemental General Conditions and Agreement, shall also apply to the above Substantial Completion date, unless weather causes this schedule to increase, for which CONTRACTOR shall make claim in writing to ENGINEER and shall be approved by OWNER.

All engineering and inspection costs incurred after the above final completion date shall be paid by the CONTRACTOR to the OWNER as specified in the Conditions of the Contract and Agreement.

Proposals may not be withdrawn for a period of 60 days after bid opening.

The following documents are attached to and made a condition of this Proposal:

a) Required Bid security in the form checked below:

___ Bid Bond

b) Legal Status of Bidder.

Bidder's Name _____

By _____

Address _____

Phone No. _____

Fax No _____

LEGAL STATUS
OF BIDDER

This Proposal is submitted in the name of:

(Print)

The undersigned hereby designates below his business address to which all notices, directions or other communications may be served or mailed:

Street

City

State _____ Zip Code

The undersigned hereby declares that he has legal status checked below:

INDIVIDUAL

INDIVIDUAL DOING BUSINESS UNDER AN ASSUMED NAME

CO-PARTNERSHIP

The Assumed Name of the Co-Partnership is registered in the County of _____, _____ Michigan.

CORPORATION INCORPORATED UNDER THE LAWS OF THE STATE OF _____ . The Corporation is

LICENSED TO DO BUSINESS IN MICHIGAN

NOT NOW LICENSED TO DO BUSINESS IN MICHIGAN

The name, titles and home addresses of all persons who are officers or Partners in the organization are as follows:

NAME AND TITLE

HOME ADDRESS

Signed and Sealed this _____ day of _____, 20____.

By _____
(Signature)

(Printed Name of Signature)

(Title)

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, _____ as Principal, hereinafter caused the Principal, and _____ a corporation duly organized under the laws of the State of _____ as Surety, hereinafter called the Surety, are held and firmly bound unto _____ as OWNER, hereinafter called the OWNER, in the sum of _____ Dollars (\$ _____), for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for _____

NOW, THEREFORE, if the OWNER shall accept the bid of the Principal and the Principal shall enter into a Contract with the OWNER in accordance with the terms of such bid, and give such bond or bonds as may be specified in the Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such Contract and give such bond or bonds, if the Principal shall pay to the OWNER the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the OWNER may in good faith contract with another party to perform the Work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this _____ day of _____, 20__

	-		
		(Principal)	(Seal)
(Witness)	-		
	-	(Title)	
	-		
		(Surety)	
(Witness)	-		
	-	(Title)	

Agreement

This Agreement, made and entered into this _____ day of _____ in the year 20__ by and between the Pheasant Run Roadway Maintenance Association (PRRMA) hereinafter called OWNER, and _____ hereinafter called CONTRACTOR, in consideration of the mutual covenants hereinafter sent forth, agree as follows:

ARTICLE 1. WORK

CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents.

ARTICLE 2. CONTRACT TIME

2.1 The Work will be substantially completed on or before _____ and completed and ready for final payment in accordance with paragraph 14.13 of the General Conditions on or before _____.

2.2 All engineering and inspection costs incurred after the specified final completion date shall be paid by the CONTRACTOR to the OWNER prior to final payment authorization. Charges shall be made at such times and in such amounts as the ENGINEER shall invoice the OWNER, provided however said charges shall be in accordance with the ENGINEER's current rate schedule at the time the costs are incurred. The engineering and inspection costs incurred after the specified final completion date shall be deducted from the CONTRACTOR's progress payments.

2.3 Liquidated Damages. OWNER and CONTRACTOR recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not Substantially Complete within the time specified in paragraph 2.1 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. They also recognize the delays, expense and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by OWNER if the Work is not Substantially Complete on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as penalty) CONTRACTOR shall pay OWNER Five Hundred Twenty Five Dollars (\$525.00) for each day that expires after the time specified in paragraph 2.1 for Substantial Completion until the Work is Substantially Complete. OWNER has to field calls from residents regarding complaints such as damaged sprinkler heads, existing concrete sidewalk damaged during the installation, improper restoration, ruts, and newly poured sidewalk damaged. These items will be logged and given to the CONTRACTOR and INSPECTOR on a daily basis. These items shall be repaired within three (3) working days. It is suggested that the CONTRACTOR have a crew to address these items before reaching OWNER. The CONTRACTOR shall notify the INSPECTOR of any known damage before leaving the site and repair it promptly. For legitimate complaint(s) that are not addressed within three (3) working days, the CONTRACTOR will be assessed one (1) inspector day at the cost of Five Hundred and Twenty Five (\$525) dollars. Legitimate complaints will be determined by the ENGINEER / OWNER Representative and UTILITY INSPECTOR. Liquidated damages charged shall be deducted from the CONTRACTOR's progress payment.

ARTICLE 3. CONTRACT PRICE

3.1 OWNER shall pay CONTRACTOR as provided in the attached Proposal for

performance of the Work in accordance with the Contract Documents.

ARTICLE 4. PAYMENT PROCEDURES

"Progress payments and retainage under this Contract are governed by the provisions of PA 1980, No. 524 (MCLA 125.1561 et seq.). That Act is incorporated herein by reference and made a part of this Contract. Without excluding any provisions of the Act from this Contract, but in order to comply therewith and summarize certain provisions, the following shall apply:

4.1 The person representing the CONTRACTOR who will submit written requests for progress payments shall be:

4.2 The person representing the OWNER to whom requests for progress payments are to be submitted shall be:

4.3 The CONTRACTOR's representative, listed above, shall submit Applications for Payment on the form provided in the Contract Documents in accordance with Article 14 of the General Conditions. Applications for Payment will be processed as provided in the General Conditions.

ARTICLE 5. CONTRACTOR'S REPRESENTATIONS

In order to induce OWNER to enter into this Agreement, CONTRACTOR makes the following representations:

5.1 CONTRACTOR has considered the nature and extent of the Contract Documents, Work, locality, and all local conditions and federal, state and local laws, and regulations that may affect cost, progress, performance, or furnishing of the Work.

5.2 CONTRACTOR has studied carefully all reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the work which were relied upon in the preparation of the Plans and Specifications and which have been identified in the Supplemental General Conditions.

5.3 CONTRACTOR has made or caused to be made examinations, investigations and tests and studies of such reports and related data in addition to those referred to in paragraph 5.2 as he deems necessary for the performance of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents; and no additional examinations, investigations, tests, reports or similar data are or will be required by CONTRACTOR for such purposes.

5.4 CONTRACTOR has correlated the results of all such observations, examinations, investigations, tests, reports and data with the terms and conditions of the Contract Documents.

5.5 CONTRACTOR has given ENGINEER written notice of all conflicts, errors or discrepancies that he has discovered in the Contract documents and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.

ARTICLE 6. CONTRACT DOCUMENTS

The Contract Documents which comprise the entire Contract between OWNER and CONTRACTOR are attached to this Agreement, made a part hereof and consists of the following:

6.1 Bidding Requirements (including the, Instructions to Bidders, Proposal, Legal Status of Bidder, and other Documents listed in the Table of Contents thereof).

6.2 This Agreement

6.3 Performance and other Bonds

6.4 Notice of Award

6.5 Notice to Proceed (if issued)

6.6 Conditions of the Contract (including General Conditions and Supplemental General Conditions, if any)

6.7 Specifications

6.8 Plans consisting of notes, details, and summary of work locations

6.9 Addenda numbers ____ to ____, inclusive

6.10 Documentation submitted by CONTRACTOR prior to Notice of Award

6.11 Any Modification, including Change Orders, duly delivered after execution of Agreement.

ARTICLE 7. MISCELLANEOUS

7.1 Terms used in this Agreement which are defined in Article 1 of the General Conditions shall have the meanings indicated in the General Conditions.

7.2 No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on any other party without the written consent of the party sought to be bound; and specifically but without limitation, monies that may become due and monies that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

7.3 OWNER and CONTRACTOR each binds himself, his partners, successors, assigns and legal representatives to the other party hereto, his partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.

7.4 Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon OWNER and CONTRACTOR, who

agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

IN WITNESS WHEREOF, the parties hereto have signed this Agreement in five (5) counterparts. Two (2) counterparts each has been delivered to OWNER and CONTRACTOR, one counterpart has been delivered to the ENGINEER. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR.

This Agreement will be effective on _____, 20__.

OWNER _____

CONTRACTOR _____

By _____
(Corporate Seal)

By _____
(Corporate Seal)

Attest _____

Attest _____

Address for giving notices

Address for giving notices

1150 S. Canton Center
Canton, MI, 48188

Phone: (734) 394-5158

Phone:

PERFORMANCE BOND

Bond No.

KNOW ALL MEN BY THESE PRESENTS, That we _____, a corporation organized and existing under the laws of the State of _____, and duly authorized to transact business in the State of Michigan, hereinafter called the "Principal," and _____, a corporation organized and existing under the laws of the State of _____, and duly authorized to transact business in the State of Michigan, as Surety, hereinafter called "Surety," are held and firmly bound unto _____, as Obligee, and hereinafter called "Obligee," in the just and full sum of _____ Dollars, lawful money of the United States of America, to be paid to the said Obligee, to which payment well and truly to be made, we bind ourselves, our heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that, WHEREAS, the above Principal has entered into a contract with the said Obligee, dated the _____ day of _____ 20____ for _____ which contract is herein referred to and made a part hereof as fully and to the same extent as if the same were entirely written herein, and

WHEREAS, it was one of the conditions of the award of the said Obligee, pursuant to which said contract was entered into, that these presents should be executed.

AND THE SAID SURETY, for value received, hereby stipulates and agrees that no change, extension of time, or any other forbearance, alteration or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in anywise affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, or any other forbearance, alteration or addition to the terms of the contract or to the work or to the specifications.

NOW, THEREFORE, if the above Principal shall in all respects comply with the terms and conditions of said contract, and his (their or its) obligations thereunder, including the specifications therein referred to and made a part thereof, and such alteration as may be made in such contract or specifications, as herein or therein provided for, then this obligation shall be void; otherwise, this bond and obligation shall be and remain in full force and effect.

Signed and sealed this _____ day of _____, 20____

Signed, sealed and delivered
in the presence of:

(Principal)

(Title)

_____ By

(Surety)

(Title)

_____ By
Attorney-In-Fact

Address

Address of Surety

City Zip Code

City Zip Code

Telephone

Telephone

NOTICE OF AWARD

DATE: _____

To:

Attention: _____

Project: _____

Pursuant to the provisions of Article 10 of the Instructions to Bidders, you are hereby notified that the PHEASANT RUN ROADWAY MAINTENANCE ASSOCIATION, during a Regular Meeting held _____, has directed the acceptance of your Bid for the above referenced Project in the amount of \$_____.

This Project shall consist of work identified in project specifications, drawing and other bid documents delineating your Bid submitted to the PHEASANT RUN ROADWAY MAINTENANCE ASSOCIATION on_____.

You must comply with the following conditions precedent within fifteen (15) days of the date of this Notice of Award, that is by_____.

1. You must deliver to the ENGINEER five (5) fully executed Counterparts of the Agreement including all the Contract Documents, see attached.
2. You must deliver with the executed Agreement the Contract Security (Bonds) as specified in the General Conditions (Paragraph 5.1) and Supplementary General Conditions.
3. You must deliver with the executed Agreement the Insurance Certificates (and other evidence of insurance) as specified in General Conditions (Article 5) or the Supplemental General Conditions (Article SGC-5).
4. Do not date Agreement and Contract Security (Bonds), as these will be dated by OWNER when executed by him.

Failure to comply with these conditions within the time specified will entitle OWNER to consider your bid abandoned, to annul this Notice of Award and to declare your Bid Security forfeited.

Within ten (10) days after you comply with those conditions, OWNER will return to you one fully signed counterpart of the Agreement with the Contract Documents attached.

(OWNER/ENGINEER)

By

(AUTHORIZED SIGNATURE)

(TITLE)

NOTICE TO PROCEED

DATED _____, 20

To:

Attention:

Project:

You are notified that the Contract Time under the above Contract will commence to run on _____, 20____. Within ten (10) days of this date you are to start performing the Work and your other obligations under the Contract Documents.

In accordance with paragraph 2.5 of the General Conditions, your office shall request a Preconstruction Meeting from the ENGINEER prior to delivery of any materials or start of any construction. A minimum of two full working days notice shall be required to set up the Preconstruction Meeting. Also, the ENGINEER shall be notified by your office three full working days in advance of any activity on the Project.

Work at the site must be started by _____, 20_____.

PHEASANT RUN ROADWAY MAINTENANCE ASSOCIATION

(OWNER/ENGINEER)

By

(AUTHORIZED SIGNATURE)

(TITLE)

CERTIFICATE OF SUBSTANTIAL COMPLETION

PROJECT:

OWNER:

CONTRACTOR:

CONTRACT DATE: _____ PROJECT NO:

DATE OF ISSUANCE:

PROJECT OR DESIGNATED PORTION SHALL INCLUDE:

The Work performed under this Contract has been reviewed and found to be substantially complete. The Date of Substantial Completion of the Project or portion thereof designated above is hereby established as _____ which is also the date of commencement of applicable warranties required by the Contract Documents except as stated below.

DEFINITION OF DATE OF SUBSTANTIAL COMPLETION:

The Date of Substantial Completion of the Work or designated portion thereof is the Date certified by the ENGINEER when construction is sufficiently complete, in accordance with the Contract Documents, so the OWNER can occupy or utilize the Work or designated portion thereof for the use for which it is intended, as expressed in the Contract Documents.

A list of items to be completed or corrected, prepared by the ENGINEER is attached hereto. The failure to include any items on such list does not alter the responsibility of the CONTRACTOR to complete all Work in accordance with the Contract Documents. The date of commencement of warranties for items on the attached list will be the date of final payment unless otherwise agreed to in writing.

The responsibilities of the OWNER and the CONTRACTOR for security, maintenance, heat, utilities, damage to the Work and insurance shall be as follows:

(Note - OWNER'S and CONTRACTOR'S legal and insurance counsel should determine and review insurance requirements and coverage; CONTRACTOR shall secure consent of surety company, if any.)

OWNER shall have forty five (45) days after receipt of this certificate during which he may make written objection to ENGINEER and CONTRACTOR as to any provisions of the certificate or attached list. Such objection may be cause for this Certificate of Substantial Completion to be null and void.

ENGINEER

By _____ Date _____, 20__

CONTRACTOR'S DECLARATION

I hereby declare that I have not, during the period _____ to _____, A.D. 20_____, performed any work, furnished any material, and sustained any loss, damage or delay for any reason, including soil conditions encountered or created, or otherwise done anything for which I shall ask, demand, sue for, or claim compensation from the Pheasant Run Roadway Maintenance Association, the Owner, or its agents, in addition to the regular items set forth in the contract numbered _____, and dated _____,

A.D.,20_____,for_____, executed between myself and the Pheasant Run Roadway Maintenance Association, and in the Change Orders for work issued by the Pheasant Run Roadway Maintenance Association in writing as provided hereunder, except as I hereby make claim for additional compensation and/or extension of time, as set forth on the itemized statement attached hereto.

There is/is not (circle one) an itemized statement attached.

The Contractor further certifies that all his indebtedness for labor and material incorporated in the work covered by this estimate has been fully paid and/or satisfactory arrangements with material supplies have been made.

Contractor

By _____

Title _____

Date: _____

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GENERAL CONDITIONS

ARTICLE 1--DEFINITIONS

Wherever used in these General Conditions or in the other Contract Documents, the following terms have the meanings indicated which are applicable to both the singular and plural thereof:

Addenda--Written or graphic instruments issued prior to the opening of bids which clarify, correct or change the Contract Documents.

Agreement--The written Agreement between OWNER and CONTRACTOR covering the Work to be performed; other Contract Documents are attached to the Agreement and made a part thereof as provide therein.

Application and Certificate for Payment--The form included in the Contract Documents which is to be used by CONTRACTOR in requesting progress or final payment and which is to include such supporting documentation as is required by the Contract Documents.

Bonds--Bid, performance and payment bonds and other instruments of security.

Bulletin--A written directive issued by the ENGINEER which clarifies or interprets the Contract Documents or requests a change in the Work and may initiate a Change Order. In no circumstances shall a Bulletin be construed as an order to proceed with the Work.

Change Order--A written order to the CONTRACTOR signed by the OWNER and the ENGINEER, issued after execution of the Contract, authorizing a change in the Work or an adjustment in the Contract Price or the Contract Time. The Contract Price and Contract Time may be changed only by Change Order. A Change Order signed by the CONTRACTOR indicates his agreement therewith, including the adjustment in the Contract Price or Contract Time.

Contract Documents--The Bidding Requirements, Agreement, Performance and other Bonds, Notice of Award, Notice to Proceed, Conditions of the Contract, Specifications, Plans, Addenda, Documentation submitted by CONTRACTOR prior to Notice of Award and any Modification, including Change Orders, duly delivered after execution of Agreement.

Contract Price--The moneys payable by OWNER to CONTRACTOR under the Contract Documents as stated in the Agreement.

Contract Time--The number of days or the date stated in the Agreement

CONTRACTOR--The person, firm or corporation with whom OWNER has entered into the Agreement.

Day--A calendar day of twenty-four hours measured from midnight to the next midnight.

Defective--An adjective which when modifying the word Work refers to Work that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents or does not meet the requirements of any inspection, test or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER's recommendation of final payment.

ENGINEER--The firm identified in the Supplemental Instructions to Bidders

Field Order--A written order issued by ENGINEER which clarifies or interprets the Contract Documents or orders minor changes in the Work in accordance with paragraph 10.2 but which does not involve a change in the Contract Price or the Contract Time.

General Requirements--Sections of Division 1 of the Specifications.

Laws and Regulations; Laws or Regulations--Laws, rules regulations, ordinances, codes and/or orders.

Modification--(a) A written amendment of the Contract Documents signed by both parties, (b) a Change Order, or (c) a Field Order. A modification may only be issued after the effective date of the Agreement.

Notice of Award--The written notice by OWNER to the successful Bidder stating that upon compliance by the apparent successful Bidder with the conditions precedent enumerated therein, within the time specified, OWNER will sign and deliver the Agreement.

Notice to Proceed--A written notice given by OWNER to CONTRACTOR (with a copy to ENGINEER) fixing the date on which the Contract Time will commence to run and on which CONTRACTOR shall start to perform his obligation under the Contract Documents.

OWNER--The public body or authority, public agency as defined by Act 254 of PA 1980 (MCLA 125.1651 et seq.), corporation, association, partnership, or individual with whom CONTRACTOR has entered into the Agreement and for whom the Work is to be provided and as identified in the Supplemental Instructions to Bidders.

Partial Utilization--Placing a portion of the Work in service for the purpose for which it is intended (or a related purpose) before reaching Substantial Completion for all the Work.

Plans--The Drawings which show the character and Scope of the Work to be performed and which have been prepared or approved by the ENGINEER or OWNER.

Project--The total construction of which the Work to be provided under the Contract Documents may be the whole or a part as indicated elsewhere in the Contract Documents.

Proposal--The offer or bid of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

Resident Project Representative--The authorized representative of ENGINEER who is assigned to the site or any part thereof.

Shop Drawing--All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by CONTRACTOR, a Subcontractor, manufacturer, fabricator, supplier or distributor to illustrate some portion of the Work and all illustrations brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a manufacturer, fabricator, supplier or distributor and submitted by CONTRACTOR to illustrate material or equipment for some portion of the Work.

Specifications--Part IV of the Contract Documents which consist of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto. Project Specifications are those portions of Part IV of the Contract Documents which have been prepared specifically for this Project and which are identified by the fob number in the lower right hand corner of each page. Standard Specifications are all other portions of Part IV of the Contract Documents.

Subcontractor--An individual, firm or corporation having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the site.

Substantial Completion--The Work or a specified part thereof has progressed to the point where, in opinion of ENGINEER as evidenced by his definitive Certificate of Substantial Completion, it is sufficiently complete, in accordance with the Contract Documents, so that the Work (or specified part) can be utilized for the purposes for which it was intended; or if there be no such certificate issued, when final payment is due in accordance with paragraph 14.13. The terms "substantially complete" and "substantially completed" as applied to any Work refer to Substantial Completion thereof.

Supplemental General Conditions--The part of the Contract Documents which amends or supplements these General Conditions.

Supplier--A manufacturer, fabricator supplier, distributor, materialman or vendor.

Work--the entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work is the result of performing services, furnishing labor and furnishing and incorporating materials and equipment into the construction, all as required by the Contract Documents.

ARTICLE 2--PRELIMINARY MATTERS

DELIVERY OF BONDS AND INSURANCE

2.1 When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds and Insurance Certificates and other evidence of Insurance requested as CONTRACTOR may be required to furnish in accordance with ARTICLE 5.

COPIES OF DOCUMENTS

2.2 OWNER shall furnish to CONTRACTOR up to ten copies of the Contract Documents as are reasonable necessary for the execution of the Work. Additional copies will be furnished, upon request, at the cost of reproduction.

COMMENCEMENT OF CONTRACT TIME; NOTICE TO PROCEED

2.3. Time is of the essence in the performance of the Work. The Contract Time will commence to run on the thirtieth day after the effective date of the Agreement, or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. The effective date of the Agreement is the date indicated in the Agreement, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

STARTING THE PROJECT

2.4. CONTRACTOR shall start to perform the Work within ten days of when the Contract Time commences to run, but no Work shall be done at the site prior to the date on which the Contract Time commences to run. The CONTRACTOR shall notify the ENGINEER at least two working days in advance of the time he intends to start Work.

PRECONSTRUCTION MEETING

2.5. Prior to the delivery of materials or the start of any construction, the CONTRACTOR shall request a Preconstruction Meeting from the ENGINEER. A minimum of two full working days notice shall be required.

2.6. Prior to the Preconstruction Meeting, the CONTRACTOR shall submit an estimated progress schedule indicating the starting and completion dates of the various stages of the Work, a preliminary schedule of Shop Drawing submissions, an estimated monthly payment schedule, and a preliminary schedule of values of the Work.

2.7. The Meeting will be held for review and acceptance of the schedules referred to in Paragraph 2.6., to establish procedures for handling Shop Drawings and other submittals and for processing Applications for Payment, and to establish a working understanding among the parties as to the Work.

ARTICLE 3--CONTRACT DOCUMENTS INTENT AND REUSE

3.1. The Contract Documents comprise the entire Contract between OWNER and CONTRACTOR concerning the Work. They may be altered only by a Modification.

3.2. The Contract Documents are complementary; what is called for by one is as binding as if called for by all. If, before or during the performance of the Work, CONTRACTOR finds a conflict, error or discrepancy in the Contract Documents, he shall report it to ENGINEER in writing at once and before proceeding with the Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error or discrepancy in the Specifications or Plans unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof.

3.3. In resolving conflicts, errors or discrepancies between Plans and Specifications, figured dimensions shall govern over scaled dimensions; Plans shall govern over Standard Specifications; and Project Specifications shall govern over Standard Specifications and Plans.

3.4. It is the intent of the Specifications and Plans to describe a complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work that may reasonably be inferred from the Specifications or Plans as being required to produce the intended result shall be supplied whether or not it is specifically called for.

3.5. Reference to specifications, manuals or codes of any technical society, organization or association, or to the code of any governmental authority, whether such reference be specific or by implication, shall mean the latest specification, manual or code in effect at the time of opening of Bids or, on the effective date of the Agreement if there were no Bids, except as may be otherwise specifically stated. However, no provision of any referenced specification, manual or code whether or not specifically incorporated by reference in the Contract Documents shall change the duties and responsibilities of Documents shall change the duties and responsibilities of OWNER, CONTRACTOR or ENGINEER, or any of their agents or employees from those set forth in the Contract Documents.

3.6. The Contract Documents will be governed by the Laws and Regulations of the place of the Project.

3.7. The Divisions and Sections of the Specifications and the identification of any plans shall not control CONTRACTOR in dividing the Work among Subcontractors or delineating the Work to be performed by any specific trade.

3.8. Reuse of Documents: Neither CONTRACTOR nor any subcontractor, manufacturer, fabricator, supplier or distributor shall

have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER; and they shall not reuse any of them on extensions of the Project or any other Project without written consent of OWNER and ENGINEER and specific written verification or adaptation by ENGINEER.

ARTICLE 4--AVAILABILITY OF LANDS; PHYSICAL CONDITIONS; REFERENCE POINTS

AVAILABILITY OF LANDS

4.1. OWNER shall furnish, as indicated in the Contract Documents and not later than the established Work Starting Date, the lands upon which the Work is to be performed, rights-of-way for access thereto, and such other lands which are designated for the use of CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by OWNER, unless otherwise provided in the Contract Documents. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment unless otherwise provided in the Contract Documents.

PHYSICAL CONDITIONS--INVESTIGATIONS AND REPORTS

4.2. Reference is made to the Supplemental General Conditions for identification of those reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work which have been relied upon in preparation of the Plans and Specifications. Such reports are not guaranteed as to accuracy or completeness and are not part of the Contract Documents.

The locations of public utilities as are shown on the Plans are taken from sources believed to be reliable. Neither the OWNER nor the ENGINEER will be responsible for any omissions of, or variations from, the indicated location of existing utilities which may be encountered in the Work.

UNFORSEEN PHYSICAL CONDITIONS

4.3. CONTRACTOR shall promptly notify OWNER and ENGINEER in writing of any subsurface or latent physical conditions at the site or in an existing structure differing materially from those indicated or referred to in the Contract Documents. ENGINEER will promptly review those conditions and advise OWNER in writing if further investigation or tests are necessary. Promptly thereafter, OWNER shall obtain the necessary additional investigations and tests and furnish copies to ENGINEER and CONTRACTOR. If ENGINEER finds that the results of such investigations or tests indicate that there are subsurface or latent physical conditions which differ materially from those intended in the Contract Documents, and which could not reasonably have been anticipated by CONTRACTOR, a Change Order shall be issued incorporating the necessary revisions.

REFERENCE POINTS

4.4. OWNER shall provide engineering surveys for construction to establish property corners, monuments, bend marks and similar reference points which in his judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for the preservation of established reference points and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to ENGINEER whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations. Reference points destroyed by negligence of CONTRACTOR will be replaced by OWNER at the expense of CONTRACTOR. Construction stakes will be furnished by OWNER as provided in Section 1.07.

ARTICLE 5--BONDS AND INSURANCE

PERFORMANCE AND OTHER BONDS

5.1. CONTRACTOR shall furnish performance and payment Bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract Documents. These Bonds shall remain in effect at least until one year after the date of final payment, except as otherwise provided by Laws and Regulations or as specified in the Bond. CONTRACTOR shall also furnish such other Bonds as are required by the Supplemental General Conditions. All Bonds shall be in the forms prescribed by the bidding documents or Supplemental General Conditions. All Bonds shall be in the forms prescribed by the bidding documents or Supplemental General Conditions and be executed by such Sureties as (i) are licensed to conduct business in the state where the Project is located, and (ii) are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as

published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, U.S. Treasury Department. All Bonds signed by an agent must be accompanied by a certified copy of the authority to act.

5.2. If the Surety on any Bond furnished by CONTRACTOR is declared as bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of clauses (i) and (ii) of paragraph 5.1., CONTRACTOR shall within five days thereafter substitute another Bond and Surety, both of which shall be acceptable to OWNER.

INSURANCE

5.3. Insurance Required of the CONTRACTOR

Prior to commencement of the Work, the CONTRACTOR shall purchase and maintain during the term of the project such insurance as will protect his, the OWNER(s) and the ENGINEER(s) from claims arising out of the Work described in this Contract and performed by the CONTRACTOR, Subcontractor(s) consisting of:

5.3.1.

Workers' Compensation Insurance including Employer's Liability to cover employee injuries or disease compensable under the Workers' Compensation Statutes of the states in which Work is conducted under this Contract; disability benefit laws, if any; or Federal compensation acts such as U.S. Longshoremen or Harbor Workers', Maritime Employment, or Railroad Compensation Act(s), if applicable Self-insurance plans approved by the regulatory authorities in the state in which Work on this Project is performed are acceptable.

5.3.2.

A Comprehensive General Liability policy to cover bodily injury to persons other than employees and for damage to tangible property, including loss of use thereof, including the following exposures:

- a. All premises and operations.
- b. Explosion, collapse and underground damage.
- c. CONTRACTOR's Protective coverage for independent contractors or subcontractors employed by him.
- d. Contractual Liability for the obligation assumed in the Indemnification or Hold Harmless agreement found in the General Conditions section of this Contract.
- e. The usual Personal Injury Liability endorsement with no exclusions pertaining to employment.
- f. Products and Completed Operations coverage. This coverage shall extend through the Contract guarantee period.

5.3.3.

A Comprehensive Automobile Liability policy to cover bodily injury and property damage arising out of the ownership, maintenance or use of any motor vehicle, including owned, non-owned and hired vehicles. The Comprehensive General Liability and the Comprehensive Auto Liability shall be written by the same insurance carrier, though not necessarily in one policy.

5.3.4.

The CONTRACTOR will purchase for the OWNER an OWNER's Protective Liability policy to protect the OWNER, the ENGINEER, their consultants, agents, employees and such public corporations in whose jurisdiction the Work is located for their liability for Work performed by the CONTRACTOR, the Subcontractor(s) or the Sub-subcontractor(s) under this Contract.

5.3.5.

When called for in the Supplemental General Conditions, the CONTRACTOR shall purchase a Builder's Risk-Installation Floater in a form acceptable to the OWNER covering property of the Project of the full cost of replacement as of the time of any loss which shall include, as name insures, (a) the CONTRACTOR, (b) all Subcontractors, (c) all Sub-subcontractors, (d) the OWNER, the ENGINEER(s) or Architect(s), as their respective interests may prove to be at the time of loss, covering insurable property which is the subject of this Contract, whether in place, stored at the job site, stored elsewhere, or in transit at the risk of the insured(s). Coverage shall be effected on an "All Risk" form including, but not limited to, the perils of fire, wind, vandalism, collapse, theft and earthquake, with exclusions normal to the cover. The CONTRACTOR may arrange for such deductibles as he deems to be within his ability of self-assume, but he will be held solely responsible for the amount of such deductible and for any coinsurance penalties. Any insured loss shall be adjusted with the OWNER and the CONTRACTOR and paid to the OWNER and CONTRACTOR as Trustee for the other insures.

5.3.6. Umbrella or Excess Liability

The OWNER or its representative may, for certain Projects, require limits higher than those stated in paragraph 5.4 which follows. The CONTRACTOR is granted the option of arranging coverage under a single policy for the full limit required or by a combination of underlying policies with the balance provided by an Excess or Umbrella Liability policy equal to the total limit(s) requested. Umbrella or Excess policy wording shall be at least as broad as the primary or underlying policy(ies) and shall apply both to the CONTRACTOR's general liability and to his automobile liability insurance.

5.3.7. Railroad Protective Liability

Where such an exposure exists, the CONTRACTOR will provide coverage in the name of each rail road company having jurisdiction over rights-of-way across which Work under the Contract is to be performed. The form of policy and the limits of liability shall be determined by the railroad company(ies) involved. See the Supplemental General Conditions for limits and coverage requested.

5.4. Limits of Liability

The required limits of liability for insurance coverages requested in Section 5.3 shall be not less than those specified in the Supplemental General Conditions.

5.5. Insurance-Other Requirements

- 5.5.1. Notice of Cancellation or Intent Not to Renew Policies will be endorsed to provide that at least 30 days written notice shall be given to the OWNER and to the ENGINEER of cancellation or of intent not to renew.

5.5.2. Evidence of Coverage.

Prior to commencement of the Work, the CONTRACTOR shall furnish to the OWNER, Certificates of Insurance in force on the OWNER's Form of Certificate provided in the Contract Documents. Other forms of Certificate are acceptable only if (1) they include all of the items prescribed in the OWNER's Form of Certificate, including agreement to cancellation provisions outlined in paragraph 5.5.1. above and (2) they have written approval of the OWNER and the ENGINEER.

Prior to the commencement of the Work, the CONTRACTOR shall furnish to the OWNER five complete "originally signed" copies of the Owner's Protective Liability Policy. The OWNER reserves the right of request complete copies of other policies if deemed necessary to ascertain details of coverage not provided by the certificates. Such policy copies shall be "Originally Signed Copies," and so designated.

A. Insurance Required for the CONTRACTOR

1. Workers' Compensation and Employers' Liability Comprehensive General Liability-including

- a. All premises and operations.
 - b. Explosion, collapse and underground damage.
 - c. CONTRACTOR's Protective
 - d. Contractual Liability for obligations assumed in the Indemnification-Hold Harmless agreement of this Contract.
 - e. Personal Injury Liability
 - f. Products and Completed Operations.
2. Comprehensive Automobile Liability-including owned, non-owned and hired vehicles.

3. Umbrella or Excess Liability.

B. Insurance Required for the OWNER

1. OWNERS' Protective Liability which names as insured(s) the OWNER, the ENGINEER(s), their consultants, agents, employees and such public corporations in whose jurisdiction the Work is located.

C. Insurance Required for the CONTRACTOR and the OWNER

1. Builders Risk-Installation Floater which names as insured(s) the OWNER; the ENGINEER(s); their consultants, agents, and employees; the CONTRACTOR and all Subcontractors.

5.5.3. Qualification of Insurers

In order to determine financial strength and reputation of insurance carriers, all companies providing the coverages required shall be licensed or approved by the Insurance Bureau of the State of Michigan and shall have a financial rating not lower than XI and a policyholder's service rating not lower than B+ as listed in A.M. Best's Key Rating Guide, current edition. Companies with ratings lower than B+:XI will be acceptable only upon written consent of the OWNER.

ARTICLE 6--CONTRACTOR'S RESPONSIBILITIES

SUPERVISION AND SUPERINTENDENCE

6.1. CONTRACTOR shall supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction. CONTRACTOR shall be responsible to see that the finished Work complies accurately with the Contract Documents.

6.2. CONTRACTOR shall keep on the Work at all times during its progress a competent superintendent, who shall not be replaced without written notice to OWNER and ENGINEER except under extraordinary circumstances. Any superintendent or foreman who neglects to have Work done in accordance with the Plans and Specifications shall be removed from the Project. The superintendent will be CONTRACTOR's representative at the site and shall have authority to act on behalf of CONTRACTOR. All communications given to the superintendent shall be as binding as if given to CONTRACTOR.

LABOR, MATERIALS AND EQUIPMENT

6.3. CONTRACTOR shall provide competent, suitable qualified personnel in their various duties. CONTRACTOR shall at all times maintain good discipline and order at the site. Except in connection with the safety or protection of persons or the Work or property at the site or adjacent thereto, all Work at the site shall be performed during regular working hours, and CONTRACTOR will not permit the performance of Work on Sunday or any legal holiday without OWNER's written consent given after prior written notice to ENGINEER.

6.4. Unless otherwise specified in Section 1.02, CONTRACTOR shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance testing, start-up and completion of the Work.

6.5. All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence, including reports of required tests, as to the kind and quality of materials and equipment. The CONTRACTOR shall not use material in the Work until the necessary sampling and testing has been performed. All materials which do not meet the requirements of the Specifications at the time they are to be used will be rejected, and unless time they are to be used will be rejected, and unless otherwise permitted by the ENGINEER, shall be plainly marked and removed immediately from the Work.

6.6 All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacturer, fabricator, supplier or distributor, except as otherwise provided in the Contract Documents.

EQUIVALENT MATERIALS AND EQUIPMENT

6.7. Whenever materials or equipment are specified or described in the Specifications or Plans for installation in the Work by using the name of a proprietary item or the name of a particular manufacturer, fabricator, supplier or distributor, the naming of the item is intended to establish the type, function and quality required. Unless the name is followed by words indicating that no substitution is permitted, materials or equipment of other manufacturers, fabricators, suppliers or distributors may be accepted by ENGINEER if sufficient information is submitted by CONTRACTOR to allow ENGINEER to determine that the material or equipment proposed is equal to that named. The procedure for review by ENGINEER will be as set forth in paragraphs 6.7.1 and 6.7.2 below.

6.7.1.

Requests for review of substitute items of material and equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR. If CONTRACTOR wishes to furnish or use a substitute item of material or equipment CONTRACTOR shall make

written application to ENGINEER for acceptance thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified and be suited to the same function as that specified. The application will state whether or not acceptance of the proposed substitute for use in the Work will require a change in the Specifications or Plans to adapt the design to the substitute and whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified shall be identified in the application and available maintenance, repair and replacement service shall be indicated. The application shall also contain an itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which shall be considered by ENGINEER in evaluating the proposed substitute. ENGINEER may require CONTRACTOR to furnish at CONTRACTOR's expense additional data about the proposed substitute. ENGINEER will be the sole judge of acceptability, and no substitute shall be ordered or installed without ENGINEER's prior written acceptance. OWNER may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety with respect to any substitute.

6.7.2.

ENGINEER will record time record time required by ENGINEER and ENGINEER's consultants in evaluating substitutions proposed by CONTRACTOR and in making changes in the Specifications or Plans occasioned thereby. Whether or not ENGINEER accepts a proposed substitute, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER's consultants for evaluating any proposed substitute and in making any changes in the Specifications or Plans.

CONCERNING SUBCONTRACTORS

6.8. CONTRACTOR shall not employ any Subcontractor, supplier or other person or organizations, including those who are to furnish the principal items of materials or equipment, whether initially or as a substitute, against whom OWNER or ENGINEER may have reasonable objection. The CONTRACTOR shall furnish the ENGINEER a complete list of any Subcontractor, supplier or other person or organization furnishing principal items of material or equipment within four days of request. Failure to object to any Subcontractor, other person or organization by OWNER or ENGINEER shall not constitute a waiver of any right of OWNER or ENGINEER to reject defective Work. If OWNER or ENGINEER after due investigation has reasonable objection to any Subcontractor, other person or organization proposed by CONTRACTOR after the Notice of Award, CONTRACTOR shall submit an acceptable substitute and the Contract Price shall be increased or decreased by the difference in cost occasioned by such substitution, and an appropriate Change Order shall be issued. CONTRACTOR shall not be required to employ any Subcontractor, supplier, other person or organization against whom CONTRACTOR has reasonable objection. The CONTRACTOR shall not award Work to Subcontractor(s), in excess of fifty (50%) percent of the Contract Price, without prior written approval of the OWNER.

6.9. CONTRACTOR shall be fully responsible for all acts and omissions of his Subcontractors, Suppliers and of persons and organizations directly or indirectly employed by them and of persons and organizations for whose acts any of them may be liable to the same extent that CONTRACTOR is responsible for the acts and omissions of persons directly employed by CONTRACTOR. Nothing in the Contract Documents shall create any contractual relationship between OWNER or ENGINEER and any Subcontractor, Supplier or other person or organization having a direct contact with CONTRACTOR, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any Subcontractor or other person or organization, except as may otherwise be required by Laws and Regulations. OWNER or ENGINEER may furnish to any Subcontractor, Supplier or other person or organization, to the extent practicable, evidence of amounts paid to CONTRACTOR on account of specific Work done.

6.10. If the amount of the subcontract or the nature of the Work to be performed thereunder warrants, the OWNER may require the Subcontractor to furnish, for the benefit of the CONTRACTOR, Bonds in an amount proportioned to the amount of his subcontract, and for the same purpose and under the same specifications as those of the general contract. The Surety on the general contract shall not be eligible to furnish such Subcontract Bonds.

6.11. All Work performed for CONTRACTOR by a Subcontractor will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor which specifically binds the Subcontractor to the applicable terms and conditions of the Contract Documents for the

benefit of OWNER and ENGINEER. The CONTRACTOR shall file a true copy of such agreement with the OWNER.

PATENT FEES AND ROYALTIES

6.12. CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of OWNER or ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be shall indemnify and hold harmless OWNER and ENGINEER damages, losses and expenses (including attorneys' fees) and anyone directly or indirectly employed by either of them from and against all claims, damages, losses and expenses (including attorneys' fees) and anyone directly or indirectly employed by either of them from and against all claims, damages, losses and expenses (including attorneys' fees) and court and/or arbitration costs, if applicable) arising out of any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product or device not specified in the Contract Documents, and shall defend all such claims in connection with any alleged infringement of such rights.

PERMITS AND LICENSES

6.13. CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution to the Work, which are applicable at the time of opening of Bids. CONTRACTOR shall pay all charges of utility owners for connections to the Work.

LAWS AND REGULATIONS

6.14. CONTRACTOR shall give all notices and comply with all laws, ordinances, rules, and regulations applicable to the Work. If CONTRACTOR observes that the Specifications or Plans are at variance therewith, CONTRACTOR shall give ENGINEER prompt written notice thereof. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to such laws, ordinances, rules and regulations, and without such notice to ENGINEER, CONTRACTOR shall bear all costs arising therefrom; however, it shall not be CONTRACTOR's primary responsibility to make certain that the Specifications and Plans are in accordance with such laws, ordinances, rules and regulations.

TAXES

6.15. CONTRACTOR shall pay all sales, consumer, use and other similar taxes required to be paid by his in accordance with laws and Regulations of the place of the Project.

USE OF PREMISES

6.16. CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workers to the Project Site and land and areas identified in and permitted by the Contract Documents and other land and areas permitted by laws and Regulations, rights-of-way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area or to the owner or occupant thereof or of any land or areas contiguous thereto, resulting from the performance of the Work. Should any claim be made against OWNER or ENGINEER by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly attempt to settle with any such other party by agreement or otherwise resolve the claim by arbitration or at law. CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold OWNER and ENGINEER harmless from and against all claims, damages, losses and expenses (including, but not limited to, fees of engineers, architects, attorneys and other professionals and court and arbitration costs, if applicable, arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any such other party against OWNER or ENGINEER to the extent based on a claim arising out of CONTRACTOR's performance of the Work.

6.17 During the progress of the Work, CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the Work CONTRACTOR shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery, and surplus materials, and shall leave the site and other structures affected by his operations

whether within or outside of to their original condition those portions of the site Work. At the completion of the Work CONTRACTOR shall not designate for alteration by the Contract Documents. If the CONTRACTOR shall fail to keep the above noted areas cleaned of dust or debris resulting from his operations, he shall be so notified in writing by the ENGINEER. If within 24 hours after receipt of such notice the CONTRACTOR shall fail to clean such areas satisfactorily, the ENGINEER may have such other agency as he shall designate, perform the work and all costs of such cleaning shall be paid for by the CONTRACTOR.

6.18. CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it. When it is possible for construction operations to endanger any public or private utility owner of this possibility, and to safeguard and support such utilities, conduits, or structures. Where it is the policy of any utility owner to make its own repairs to damaged conduit or other structures, the CONTRACTOR shall cooperate to the fullest extent with the utility, and he shall see that his operations interfere as little as possible with these operations, and the CONTRACTOR shall assume the cost of any charge against the OWNER therefor. In cases where existing sewers, drains and water service connections are encountered, the CONTRACTOR shall perform his operations in such a manner that service will be uninterrupted, and the cost thereof shall be at the CONTRACTOR's expense, unless otherwise provided.

RECORD DOCUMENTS

6.19. CONTRACTOR shall keep one record copy of all Specifications, Plans, Addenda, Shop Drawings and samples at the site, in good order and annotated to show all changes made during the construction process. These shall be available to ENGINEER for examination and shall be delivered to ENGINEER for OWNER upon completion of the Work.

SAFETY AND PROTECTION

6.20. CONTRACTOR shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

- 6.20.1. all employees on the Work and other persons who may be affected thereby.
- 6.20.2.all the Work and all materials or equipment to be incorporated therein, whether in storage on or off the site, and
- 6.20.3. other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

CONTRACTOR shall comply with all applicable Laws and Regulations and orders of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and utilities when prosecution of the Work may affect them. The CONTRACTOR shall restore, at his own expense, any public or private property damaged or injured in consequence of any act or omission on his part, or on the part of his employees or agents, to a condition equal or better than that existing before such injury or damage was done. If the CONTRACTOR the OWNER may upon 48 hour notice, proceed to restore or make good such damage or injury and to order the cost thereof deducted from any monies that are due or may become due the CONTRACTOR for this Work. CONTRACTOR's duties and responsibilities for the safety and protection of the Work shall continue until such time as all the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.14 that the Work is Acceptable.

6.21. CONTRACTOR shall designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This person shall be CONTRACTOR's superintendent unless otherwise designated in writing by CONTRACTOR to OWNER.

EMERGENCIES

6.22. In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, CONTRACTOR, without special instruction or authorization from ENGINEER or OWNER, is obligated to act to prevent threatened damage, injury or

loss. CONTRACTOR shall give ENGINEER prompt written notice of any significant changes in the Work or deviations from the Contract Documents caused thereby.

SHOP DRAWINGS AND SAMPLES

6.23. After checking and verifying all field measurements, CONTRACTOR shall submit all Shop Drawings to ENGINEER for review, in accordance with an accepted schedule. Shop Drawing shall have been checked by and stamped with the approval of CONTRACTOR and identified as specified in the General Requirements. The data shown on the Shop Drawings will be complete with respect to dimensions, design criteria, materials of construction and like information to enable ENGINEER to review the information as required.

6.24. CONTRACTOR shall also submit to ENGINEER for review with such promptness as to cause no delay in Work, all samples required by the Contract Documents. All samples will have been checked by and stamped with the approval of CONTRACTOR, identified clearly as to material, manufacturer, any pertinent catalog numbers and the use for which intended.

6.25. At the time of each submission, CONTRACTOR shall in writing call ENGINEER's attention to any deviations that the Shop Drawings or samples may have from the requirements of the Contract Documents.

6.26. ENGINEER will review Shop Drawings and samples with reasonable promptness, but ENGINEER's review shall be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, sequences, techniques or procedures of construction or to safety precautions or programs incident thereto. The review of a separate item as such will not indicate review of the assembly in which the item functions. CONTRACTOR shall make any corrections required by ENGINEER and shall return the required number of corrected copies of Shop Drawings and resubmit new samples for review. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous submittals. CONTRACTOR's stamp of approval on any Shop Drawing or sample shall constitute a representation to OWNER and ENGINEER that CONTRACTOR has either determined and verified all quantities, dimensions, field construction criteria, materials, catalog numbers, and similar data or assumes full responsibility for doing so, and that CONTRACTOR has reviewed or coordinated each Shop Drawing or sample with the requirements of the Work and the Contract Documents.

6.27. Where a Shop Drawing or sample is required by the Specifications, no related Work shall be commenced until the submittal has been reviewed by ENGINEER.

6.28. ENGINEER's review of Shop Drawings and samples shall not relieve CONTRACTOR from responsibility for any deviations from the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to such deviation at the time of submission and ENGINEER has given written concurrence to the specific deviation, nor shall any concurrence by ENGINEER relieve CONTRACTOR from responsibility for errors or omissions in the Shop Drawings.

CONTINUING THE WORK

6.29. CONTRACTOR shall carry on the Work and maintain the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as CONTRACTOR and OWNER may otherwise agree in writing.

INDEMNIFICATION

6.30. The CONTRACTOR agrees to indemnify, defend, and save harmless the OWNER and the ENGINEER, their consultants, agents, and employees, from and against all loss or expense (including, but not limited to fees and charges of engineers, architects, attorneys, and other professionals and court and arbitration costs, if applicable) by reason of any liability asserted or imposed upon the OWNER and/or the ENGINEER, their consultants, agents, and employees for damages because of bodily injury, including death at any time resulting therefrom, sustained by any person or persons or on account of damage to property, including loss of use thereof, arising out of or in consequence of the performance of this Work, whether such injuries to persons or damage to property is due, or claimed to be due, to the negligence of the CONTRACTOR, his Subcontractors, and employees, except only such injury or damage as shall have been occasioned by the sole negligence of the OWNER, the ENGINEER, and their agents and/or consultants.

ARTICLE 7--WORK BY OTHERS

7.1. OWNER may perform additional Work related to the Project by himself, or have additional Work performed by utility owner, or let other direct contracts therefore which shall contain General Conditions similar to these. CONTRACTOR shall afford the utility owner and the other Contractors who are parties to such direct contracts or OWNER, if OWNER is performing the additional Work with OWNER's employees reasonable opportunity for the introduction and storage of materials and equipment and the execution of additional Work, and shall properly connect and coordinate his Work with theirs.

7.2. If any part of CONTRACTOR's Work depends for proper execution or results upon the Work of any such other contractor or utility owner, CONTRACTOR shall inspect and promptly report to ENGINEER in writing any patent or apparent defects or deficiencies in such Work that render it unsuitable for such proper execution and results. CONTRACTOR's failure so to report shall constitute an acceptance of the other Work as fit and proper for integration with CONTRACTOR's Work except for latent or non-apparent defects and deficiencies in the other Work.

7.3. CONTRACTOR shall do all cutting, fitting and patching of his Work that may be required to make its several parts come together properly and integrate with such other Work. CONTRACTOR shall not endanger any Work of others by cutting, excavating or otherwise altering their Work and will only cut or alter their Work with the written consent of ENGINEER and the others whose Work will be affected.

7.4. If the performance of additional Work by other contractors or utility owner or OWNER was not noted in the Contract Documents, written notice thereof shall be given to CONTRACTOR prior to starting any such additional Work. If CONTRACTOR believes that the performance of such additional Work by OWNER or others involves additional expense to CONTRACTOR or requires an extension of the Contract Time, CONTRACTOR may make a claim therefore as provided in ARTICLES 11 and 12. Claims for delay or inconveniences due to operations of such other parties for Work noted in the Contract Documents will not be allowed.

ARTICLE 8--OWNER'S RESPONSIBILITIES

8.1. OWNER shall issue all communications to CONTRACTOR through ENGINEER.

8.2. In case of termination of the employment of ENGINEER, OWNER shall appoint an engineer against whom CONTRACTOR makes no reasonable objection, whose status under the Contract Documents shall be that of the former ENGINEER.

8.3. OWNER shall furnish the data required of OWNER under the Contract Documents promptly after they are due as provided in paragraphs 14.4 and 14.13.

8.4. OWNER's duties in respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.1 and 4.4. Paragraph 4.2 refers to OWNER's identifying and making available to CONTRACTOR copies of reports of investigations and tests of subsurface and latent physical conditions at the site.

8.5. OWNER's responsibilities in respect of purchasing and maintaining insurance are set forth in paragraphs 8.5.1 and 8.5.2 below:

8.5.1.

The OWNER shall assume responsibility for such boiler and machinery insurance as may be required or considered to be necessary by the OWNER in the course of construction, testing or after completion.

8.5.2.

The OWNER shall assume responsibility for such insurance as will protect the OWNER against any loss of use of the OWNER's property due to those perils insured pursuant to paragraphs 5.3.5 and 8.5.1.

8.6. In connection with OWNER's rights to request changes in the Work in accordance with ARTICLE 10, OWNER (especially in certain instances as provided in paragraph 10.4) is obligated to execute Change Orders.

8.7. OWNER's responsibility in respect of certain inspections, tests and approvals is set forth in paragraph 13.4.

8.8. OWNER's right to stop Work or suspend Work are set forth in paragraphs 13.10 and 15.1. Paragraph 15.2 deals with OWNER's right to terminate services of CONTRACTOR under certain circumstances.

ARTICLE 9--ENGINEER'S STATUS DURING CONSTRUCTION

OWNER'S REPRESENTATIVE

9.1. ENGINEER will be OWNER's representative during the construction period. The duties and responsibilities and the limitations of authority of ENGINEER as OWNER's representative during construction shall be as set forth in the Contract Documents.

VISITS TO SITE

9.2. ENGINEER may make visits to the various stages of construction to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in accordance with the Contract Documents. It will not be the responsibility of the ENGINEER to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work.

CLARIFICATIONS AND INTERPRETATIONS

9.3. ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the Contract Documents as ENGINEER may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents.

REJECTING DEFECTIVE WORK

9.4. ENGINEER will have authority to disapprove or reject executed Work which is defective, and will also have authority to require special inspection or testing of the Work as provided in paragraph 13.9, whether or not the Work is fabricated, installed or completed.

SHOP DRAWINGS, CHANGE ORDERS AND PAYMENTS

9.5. ENGINEER's responsibility for Shop Drawings and samples are set forth in paragraphs 6.23 through 6.29 inclusive.

9.6. ENGINEER's responsibilities as to Change Orders are set forth in ARTICLES 10,11 and 12.

9.7. ENGINEER's responsibilities in respect of Applications for Payment are set forth in ARTICLE 14.

PROJECT REPRESENTATION

9.8. A Resident Project Representative will act as directed by and under the supervision of ENGINEER, and will confer with ENGINEER regarding his actions. Resident Project Representative's dealings in matters pertaining to the on-site Work shall in general be only with ENGINEER and CONTRACTOR, and dealings with subcontractors shall only be through or with the full contractor shall only be through or with the full knowledge of CONTRACTOR. The Resident Project Representative's duties and responsibilities include:

9.8.1. Schedules

Review the progress schedule, schedule of Shop Drawing submissions and schedule of values prepared by CONTRACTOR.

9.8.2. Conferences

Arrange a schedule of progress meetings and other job conferences as required in consultation with ENGINEER and notify those expected to attend in advance.

9.8.3. Liaison

Serve as ENGINEER's liaison with CONTRACTOR, working principally through CONTRACTOR's superintendent and assist him in understanding the intent of the Contract Documents. Assist ENGINEER in serving as OWNER's liaison with CONTRACTOR when CONTRACTOR's operations affect OWNER's on-site operations.

9.8.4. Shop Drawings and Samples

Advise ENGINEER and CONTRACTOR or its superintendent immediately of the commencement of any Work requiring a Shop Drawing or sample submission if the submission identified on the schedule and has not been reviewed by ENGINEER.

9.8.5. Review of Work, Rejection of Defective Work, Inspections and Tests

- a. Conduct on-site observations of the Work and report to ENGINEER whenever he believes that any executed Work is unsatisfactory, faulty or defective or does not meet the requirements of any inspections, tests or approval required to be made or has

been damaged prior to final payment; and advise ENGINEER when he believes Work should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.

- b. Observe, record and report to ENGINEER appropriate details relative to test procedures and startups.

- c. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project, record the outcome of these inspection and report to ENGINEER.

9.8.6. Modifications

Consider CONTRACTOR's suggestions for modifications in Plans or Specifications and report them with recommendations to ENGINEER.

9.8.7. Reports

Prepare periodic reports as required of progress of the Work and CONTRACTOR's compliance with the approved progress schedule and schedule of Shop Drawing submissions.

9.8.8. Completion

Verify that all items on final list of items requiring completion or correction have been completed or corrected and make recommendations to ENGINEER concerning acceptance.

9.8.9. Exceptions

Resident Project Representative:

- a. Shall not authorize any deviation from the Contract Documents or approve any substitute materials or equipment.
- b. Shall not approve or accept any portion of the completed Work.
- c. Shall not undertake any of the responsibilities of CONTRACTOR, Subcontractors or CONTRACTOR's superintendent, or expedite the Work.
- d. Shall not advise on or issue directions relative to any aspect of the means, methods, techniques, sequences or procedures of construction unless such is specifically called for in the Contract Documents.
- e. Shall not advise on or issue directions as to safety precautions and programs in connection with the Work.

DECISIONS ON DISAGREEMENTS

9.9. ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work performed thereunder. Claims, disputes and other matter relating to the acceptability of the Work or the interpretation of the requirements of the Contract Documents pertaining to the execution and progress of the Work shall be referred initially to ENGINEER in writing with a request for a formal decision in accordance with this paragraph, which ENGINEER will render in writing within a reasonable time. Written notice of each such claim, dispute and other matter shall be delivered by the claimant to ENGINEER and the other party to the Agreement within fifteen days of the occurrence of the event giving rise thereto, and written supporting data will be submitted to ENGINEER and the other party within forty-five days of such occurrence unless ENGINEER allows an additional period of time to ascertain more accurate data. In this capacity ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.10. The rendering of a decision by ENGINEER pursuant to paragraph 9.9 with respect to any such claim, dispute or other matter, except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.16, will be a condition precedent to any exercise by OWNER or CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or at law in respect of any such claim, dispute or other matter.

LIMITATIONS ON ENGINEER'S RESPONSIBILITIES

9.11. Neither ENGINEER's authority to act under this Article 9 or elsewhere in the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of ENGINEER to CONTRACTOR, any Subcontractor, any manufacturer, fabricator, supplier or distributor, or any of their agents or employees or any other person performing any of the Work or to any surety for any of them.

9.12. Whenever in the Contract Documents the terms "as ordered," "as directed," "as required," "as allowed" or terms of like effect or import are used, or the adjectives "reasonable," "suitable," "acceptable," "proper" or "satisfactory" or adjectives of like effect or import are used, to describe requirement, direction, review or judgement of ENGINEER as to the Work, it is intended that such requirement, direction, review or judgment will be solely to evaluate the executed Work for compliance with the Contract Documents unless there is a specific statement indicating otherwise. The use of any such term or adjective never indicates that ENGINEER shall have authority to supervise or direct performance of the Work or authority to undertake responsibility contrary to the provisions of paragraph 9.13 or 9.14.

9.13. ENGINEER will not be responsible for CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, and ENGINEER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

9.14. ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractors, Suppliers, or of the agents or employees of any CONTRACTOR or Subcontractor, or of any other persons at the site or otherwise performing any of the Work.

ARTICLE 10--CHANGES IN THE WORK

10.1. Without invalidating the Agreement, OWNER may at any time or from time to time, order additions, deletions or revisions in the Work. These will be authorized by Change Orders. Upon receipt of a Change Order, CONTRACTOR shall proceed with the Work involved. All such Work shall be executed under the applicable conditions of the Contract Documents. If any Change Order causes an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, an equitable adjustment will be made as provided made by either party.

10.2. ENGINEER may authorize minor adjustments of alignment and profile of the Work to avoid obstructions whose presence or exact locations are not known and which do not involve an adjustment in the Contract Price or the Contract Time, and which are consistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order and shall be binding on OWNER, and also on CONTRACTOR who shall perform the change promptly.

10.3. Additional Work performed without authorization of a Change Order will not entitle CONTRACTOR to an increase in the Contract Price or an extension of the Contract Time, except in the case of an emergency as provided in paragraph 6.22 and except as provided in paragraph 13.9.

10.4. Changes in the Work which are required by OWNER, or emergencies, or because of uncovering Work found not to be defective, or as provided in paragraphs 11.9 or 11.10, or, or because of any other claim if CONTRACTOR for a change in the Contract Time or the Contract Price shall be accomplished by means of a Change Order recommended by the ENGINEER and duly executed by the OWNER and CONTRACTOR.

10.5. If notice of any change affecting the general scope of the Work or change in the Contract Price is required by the provisions of any Bond to be given to the Surety, it shall be CONTRACTOR's responsibility to so notify the Surety, and the amount of each applicable Bond shall be adjusted accordingly. CONTRACTOR shall furnish proof of such adjustment to OWNER.

ARTICLE 11--CHANGE OF CONTRACT PRICE

11.1. The Contract Price constitutes the total compensation, subject to authorized adjustments, payable to CONTRACTOR for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by CONTRACTOR shall be at his expense without change in the Contract Price.

11.2. The Contract Price may only be changed by a Change Order. Any claim for an increase in the Contract Price shall be based on written notice delivered to OWNER and ENGINEER within ten days of the occurrence of the event giving rise to the claim. Where a Change Order diminishes the quantity of Work to be done, this shall not constitute a basis for a claim for damages or anticipated profits on the Work that may be dispensed with.

11.3. The value of any Work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:

11.3.1. Where the Work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved subject to the provisions of paragraph 11.5.

11.3.2. By a supplemental schedule of prices contained in the CONTRACTOR's original bid and incorporated in the Contract.

11.3.3. By mutual acceptance of a lump sum or unit price proposal from the CONTRACTOR.

11.3.4. If none of the above methods is agreed upon, the value shall be determined on the basis of the Cost of the change in Work and a percentage for overhead and profit. Cost of the Change in Work shall be determined as provided in paragraphs 11.4 and 11.5. The CONTRACTOR's fee shall be determined as provided in paragraph 11.6.

COST OF THE CHANGE IN WORK

11.4 The term Cost of the Change in Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items and shall not include any of the costs itemized in paragraph 11.5:

11.4.1. Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workers' or workmen's compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. Such employees shall include superintendents and foremen at the site.

11.4.2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and manufacturers' field services required in connection therewith.

11.4.3. Payments made by CONTRACTOR to the Subcontractors for Work performed by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from Subcontractors acceptable to CONTRACTOR and shall deliver such bids to OWNER who will then determine, with the advice of ENGINEER, which bids will be accepted.

11.4.4. Costs of special consultants including, but not limited to, engineers, architect, testing laboratories, surveyors, lawyers and accountants employed for services specifically related to the Work.

11.4.5 Supplemental costs including the following:

11.4.5.1. The proportion of necessary transportation, travel and subsistence expenses of CONTRACTOR's employees incurred in discharge of duties connected with the Work.

11.4.5.2. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workmen which are consumed in the performance of the Work, and cost less market value of such items used but not consumed which remain the property of CONTRACTOR.

11.4.5.3. Rentals of all construction equipment and machinery and the parts thereof whether rented from CONTRACTOR or others. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the Work.

11.4.5.4. Sales, consumer use or similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by any governmental authority.

11.4.5.5. Deposits lost for causes other than CONTRACTOR's negligence, any Subcontractor or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

11.4.5.6. Losses and damages not compensated by insurance or otherwise to the Work or otherwise sustained by CONTRACTOR in

connection with the performance and furnishing of the Work (except losses and damages within the deductible amounts of property insurance established by OWNER in accordance with paragraph 5.3 provided they have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor or anyone directly or indirectly employed by an of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages, and expenses shall be included in the Cost of the Change in Work for the purpose of determining CONTRACTOR's Fee. If, however, any such loss or damage requires reconstruction and CONTRACTOR is placed in charge thereof, CONTRACTOR shall be paid for services a fee proportionate to that stated in paragraph 11.6.2.

- 11.4.5.7 The cost of utilities, fuel, and sanitary facilities at the site.
- 11.4.5.8 Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage, and similar petty cash items in connection with the Work.
- 11.4.5.9 Cost of premiums for additional Bonds and insurance required because of changes in the Work and premiums for property insurance coverage within the limits of the deductible amounts established by OWNER in accordance with paragraph 5.3.
- 11.5. The term Cost of the Change in Work shall not include any of the following:
- 11.5.1 Payroll costs and other compensation of CONTRACTOR's officers, executives, principals, general managers, engineers, executives, principals, general managers, engineers, architects, estimators, lawyers, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the site or in his principal or a branch office for general administration of the Work.
- 11.5.2 Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the site.
- 11.5.3 Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.
- 11.5.4 Cost of premiums for all Bonds and for all insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same except for additional Bonds and insurance required because of changes in the Work.
- 11.5.5 Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied and making good any damage to property.
- 11.5.6 Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 11.4.

CONTRACTOR'S FEE

- 11.6 The CONTRACTOR's Fee allowed to CONTRACTOR for overhead and profit shall be determined as follows:
- 11.6.1 A mutually acceptable fixed fee; or if none can be agreed upon,
- 11.6.2 a fee based on the following percentages of the various portions of the Cost of the Change in Work:
- 11.6.2.1 for costs incurred under paragraphs 11.4.1 and 11.4.2, the CONTRACTOR's Fee shall be fifteen percent,
- 11.6.2.2 for costs incurred under paragraph 11.4.3., the CONTRACTOR's Fee shall be five percent; and if a Subcontract is on the basis of the Cost of the Change in Work plus a fee, the maximum allowable to

the Subcontractor as a fee for overhead and profit shall be fifteen percent, and

- 11.6.2.3 no fee shall be payable on the basis of costs itemized under paragraphs 11.4.4, 11.4.5, and 11.5.
- 11.7.1 The amount of credit to be allowed by CONTRACTOR to OWNER for any such change which results in a net decrease in cost will be the amount of the actual net decrease plus a deduction in CONTRACTOR's Fee by an amount equal to ten percent of the net decrease, and
- 11.7.2 when both additions and credits are involved in any one change, the adjustment in CONTRACTOR's Fee shall be computed on the basis of the new change in accordance with paragraphs 11.6.2.1 through 11.7.2.1, inclusive.

ADJUSTMENT OF UNIT PRICES

- 11.8. Whenever the cost of any Work is to be determined pursuant to paragraph 11.3.4, CONTRACTOR will submit in form acceptable to ENGINEER an itemized cost breakdown together with supporting data.
- 11.9. Where the quantity of Work with respect to any item that is covered by a unit price differs by more than 25 percent from the quantity of such Work indicated in the Contract Documents, an adjustment in unit price shall be considered and if appropriate a Change Order will be issued.

CASH ALLOWANCES

- 11.10. It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be done by such Subcontractors or Suppliers and for such sums within the limit of the allowances as may be acceptable to ENGINEER. CONTRACTOR agrees that:
- 11.10.1 The allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the site, and all applicable taxes, and
- 11.10.2 CONTRACTOR's costs for unloading and handling on the site, labor, installation costs, overhead, profit, and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances. No demand for additional payment on account of any thereof will be valid.
- Prior to final payment, an appropriate Change Order will be issued as recommended by ENGINEER to reflect actual amounts due CONTRACTOR on account of work covered by allowances and the Contract Price shall be correspondingly adjusted.

ARTICLE 12--CHANGE OF THE CONTRACT TIME

- 12.1. The Contract Time may only be changed by a Change Order. Any claim for any extension in the Contract time shall be based on written notice delivered to OWNER and ENGINEER within ten days of the occurrence of the event giving rise to the claim. The CONTRACTOR shall file with the ENGINEER an itemized statement of the details and amounts of the loss, damage, or delay. Unless the statement shall be made as thus required, the CONTRACTOR's claim for compensation or extension of time shall be forfeited and invalidated, and he shall not be entitled to payment or extension of time on account of any such loss, damage or delay.
- 12.2. The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of CONTRACTOR if a claim is made therefor as provided in paragraph 12.1. Such delays shall include, but not be limited to, acts or neglect by OWNER or others performing additional Work as contemplated by ARTICLE 7, or to fires, floods, labor disputes, epidemics, abnormal weather conditions, or acts of God.
- 12.3. All time limits stated in the Contract Documents are of the essence of the Agreement. The provisions of this Article 12 shall not exclude recovery for damages (including, but not limited to, fees and charges of engineers, architects, attorneys and other professionals and court and/or arbitration costs, if applicable) for delay by either party.

ARTICLE 13--WARRANTY AND GUARANTEE; TESTS AND INSPECTION; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

WARRANTY AND GUARANTEE

13.1. CONTRACTOR warrants and guarantees to OWNER and ENGINEER that all Work will be in accordance with the contract Documents and will not be defective. Prompt notice of all defect shall be given to CONTRACTOR. All defective Work, whether or not in place, may be rejected, corrected or accepted as provided in this ARTICLE 13.

ACCESS TO WORK

13.2. ENGINEER and ENGINEER's representatives, other representatives of OWNER, testing agencies and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspection and testing. CONTRACTOR shall provide proper and safe conditions for such access.

TESTS AND INSPECTIONS

13.3. CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests or approvals.

13.4. If any Law and Regulation, code, or order of any public body having jurisdiction requires any Work or part thereof to specifically be inspected, tested or approved, CONTRACTOR shall assume full responsibility therefor, pay all costs in connection therewith and furnish ENGINEER the required certificates of inspection, testing or approval. CONTRACTOR shall also be responsible for and shall pay all costs in connection with any inspection or testing required in connection with OWNER's or ENGINEER's acceptance of a manufacturer, fabricator, supplier or distributor of materials or equipment proposed to be incorporated in the Work, or of materials or equipment submitted for approval prior to CONTRACTOR's purchase thereof for incorporation in the Work. The cost of all other inspections, tests and approvals required by the Contract Documents shall be paid by OWNER unless otherwise specified.

13.5. All inspections, tests or approvals other than those required by law, ordinance, rule, regulation, code or order of any public body having jurisdiction shall be performed by organizations acceptable to OWNER and CONTRACTOR or by ENGINEER if so specified.

13.6. Cost of materials to be used in inspection and transportation costs shall be paid for by the CONTRACTOR.

13.7. Neither observations by ENGINEER nor inspections, tests or approvals by others shall relieve CONTRACTOR from his obligations to perform the Work in accordance with the Contract Documents.

UNCOVERING WORK

13.8. If any Work is covered without written concurrence of ENGINEER, or contrary to the written request of ENGINEER, it shall, if requested by ENGINEER, be uncovered for ENGINEER's observation. Such uncovering shall be at CONTRACTOR's expense unless CONTRACTOR has given ENGINEER timely written notice of his intention to cover such Work and ENGINEER has not acted with reasonable promptness in response to such notice.

13.9. If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER's request, shall uncover, expose or otherwise make available for observation, inspection or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment. Except as hereinbefore specified in paragraph 13.8, the cost of Work shall be paid for as follows: If it is found that such Work shall be paid for as follows: If it is found that such Work is defective, CONTRACTOR shall bear all the expenses of such uncovering, exposure, observation, inspection and testing, and of satisfactory reconstruction, (including, but not limited to, fees and charges of engineers, architects, attorneys, and other professionals) and an appropriate deductive Change Order shall be issued. If, however, such Work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time or both, directly attributable to such uncovering, exposure, observation, inspection, testing, and reconstruction if the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a claim therefor as provided in ARTICLES 11 and 12.

OWNER MAY STOP THE WORK

13.10. If the Work is defective or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR or any other party.

CORRECTION OR REMOVAL OF DEFECTIVE WORK

13.11. If required by ENGINEER, CONTRACTOR shall promptly, as directed, either correct all defective Work, whether or not fabricated, installed or completed, or if the Work has been rejected by ENGINEER, remove it from the site and replace it with nondefective Work. CONTRACTOR shall bear all direct, indirect and consequential costs of such correction or removal (including, but not limited to, fees and charges of engineers, architects, attorneys, and other professionals) made necessary thereby.

ONE YEAR GUARANTEE PERIOD

13.12. If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER's written instruction, either correct such defective Work, or, if it has been rejected by OWNER, remove it from the site and replace it with nondefective Work. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or the rejected Work removed and replaced, and all direct and indirect costs of such removal and replacement, including but not limited to fees and charges of engineers, architects, attorneys, and other professional services, shall be paid by CONTRACTOR. Repair or replacements made under the guarantee shall bear an additional one year guarantee dated from the acceptance of repair or replacement.

ACCEPTANCE OF DEFECTIVE WORK

13.13. If, instead of requiring correction or removal and replacement of defective Work, OWNER (and, prior to ENGINEER's recommendation of final payment, also ENGINEER) prefers to accept it, OWNER may do so. In such case, if acceptance occurs prior to ENGINEER's recommendation of final payment, a Change Order shall be issued incorporating the necessary revisions in the Contract Documents, including appropriate reduction in the Contract Price; or, if the acceptance occurs after such recommendation, an appropriate amount shall be paid by CONTRACTOR to OWNER.

OWNER MAY CORRECT DEFECTIVE

13.14. If CONTRACTOR fails within a reasonable time after written notice of ENGINEER to proceed to correct and to correct defective Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 13.11, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents (including any requirements of the progress schedule), OWNER may, after 48 hours written notice to CONTRACTOR and his Surety without prejudice to any other remedy he may have, correct and remedy any such deficiency. In exercising his rights under this paragraph OWNER shall proceed expeditiously. To the extent necessary to complete corrective and remedial extent necessary to complete corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the site, take possession of all or part of the site, take possession of all or part of the Work, and suspend CONTRACTOR's services related thereto, take possession of CONTRACTOR's tools, appliances, construction equipment and machinery at the site and incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER's representatives, agents and employees such access to the site as may be necessary to enable OWNER to exercise his rights under this paragraph. All direct and indirect costs of OWNER in exercising such rights shall be charged against CONTRACTOR in an amount verified by ENGINEER, and a Change Order shall be issued incorporating the necessary revisions in the Contract Documents and a reduction in the contract Price. Such direct, indirect, and consequential costs shall include, but without limitation, to fees and charges of engineers, architects, attorneys,

and other professionals, all court and/or arbitration costs, if applicable, and all costs of repair and replacement of work of others destroyed or damaged by correction, removal or replacement of CONTRACTOR's defective Work. CONTRACTOR shall not be allowed an extension of the Contract Time because of allowed an extension of the Contract Time because of any delay in performance of the Work attributable to the exercise by OWNER of OWNER's rights hereunder.

ARTICLE 14--PAYMENTS TO CONTRACTOR AND COMPLETION SCHEDULES

14.1. At least ten days prior to submitting the first Application for a progress payment, CONTRACTOR shall submit to ENGINEER a final schedule of Shop Drawing submission and where applicable a schedule of values of the Work. These schedules shall be satisfactory in form and substance to ENGINEER. The schedule of values shall include quantities and unit prices aggregating the Contract Price, and shall subdivide the Work into component parts. Each unit cost so established shall include its proportionate share or the CONTRACTOR's general operating charges such as profit, overhead, supervision, insurance, bond premiums, interest, equipment cost, depreciation and rental, contingencies, expendable tools, equipment and supplies. The total cost of the items and quantities the CONTRACTOR lists in the schedule of values shall equal the lump sum Contract Price established in the Proposal.

The schedule of values shall include a complete set of detailed work sheets on bid take off and bid summary covering estimated general conditions expense (field overhead), overhead, profit mark ups and revisions leading to the final bid amount.

When the schedule of values is approved by the ENGINEER, it shall become part of the Agreement and shall be used as the basis for CONTRACTOR progress payments, and to establish unit prices at which extra work may be authorized or deducted from the original Agreement.

APPLICATION FOR PROGRESS PAYMENT

14.2. At least ten days before each progress payment falls due (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment, CONTRACTOR's Declaration, Payment Schedule, and updated Progress Schedules indicating the anticipated completion dates of the various stages of the Work and estimated payments during the next three months. The CONTRACTOR's Application for Payment and CONTRACTOR's Declaration shall be filled out on the forms provided in the Contract Documents and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents and also as ENGINEER may reasonably require. The Payment Schedule shall be on the form provided in the Contract Documents or in a format acceptable to the ENGINEER. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the site or at another location agreed to in writing, the Application for Payment shall also be accompanied by such data, satisfactory to OWNER, as will establish OWNER's title to the material and equipment and protect OWNER's interest therein, including applicable insurance. A receipted vendor's invoice showing the quantities of materials and the amounts paid will be required. Retainage with respect to progress payments will be in accordance with subparagraphs 14.2.1 and 14.2.2, and it will be retained until after completion of the entire Work and its final acceptance. When the amount to be retained is reduced to less than ten percent, the CONTRACTOR shall file with the OWNER the written consent of the Surety to such reduction and shall furnish an affidavit that all his indebtedness by reason of the Contract has been paid.

14.2.1. Progress payments and retainage under this Contract are governed by the provisions of PA 1980, No. 524 (MCLA 125.1561 et seq.). That Act is incorporated herein by reference and made a part of this Contract. Without excluding any provisions of the Act from this Contract, but in order to comply therewith and summarize certain provisions, unless otherwise determined by the public agency or its representative, when that portion of the Act applies, retainage shall be 10% of the dollar value of all Work in place until Work is 50% in place, as certified by the ENGINEER. After the Work is 50% in place, no additional retainage shall be withheld unless the public agency determines that the CONTRACTOR is not making satisfactory progress, or for other specific cause relating to the CONTRACTOR'S performance. If such a determination is made, additional retentions may be withheld, up to 10% of the dollar value of Work more than 50% in place, as determined by the

ENGINEER. In the event a dispute arises relative to progress payments or retentions, the provisions of Section 4 of Act No. 524 PA 1980 shall apply, and the public agency/OWNER shall designate an agent to resolve any such dispute, pursuant to the provisions of said Act.

14.2.2. When the above retainage provisions do not apply, retainage shall be 10%, or such part as the OWNER deems necessary.

CONTRACTOR'S WARRANTY OF TITLE

14.3. CONTRACTOR warrants and guarantees that title to all Work, materials and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER at the time of payment free and clear of all liens, claims, security interests and encumbrances (hereafter in these General Conditions referred to as "Liens").

REVIEW OF APPLICATIONS FOR PROGRESS PAYMENT

14.4.1. ENGINEER will, within ten days after receipt of each Contractor's Application for Payment, Contractor's Declaration and Payment Schedule, either indicate in writing a recommendation of payment and present a ENGINEER's Certificate for Payment to the OWNER, or may return the Application to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application. OWNER shall, within thirty days of presentation to him of the Application for Payment with ENGINEER's recommendation pay CONTRACTOR the amount recommended or the OWNER may reject the Application in writing stating the appropriate sections of the Contract Documents upon which the rejection is based. The CONTRACTOR may take the necessary remedial actions and resubmit the Application.

14.4.2. OWNER shall accept the Contractor's Application for Payment as recommended by the ENGINEER and proceed with payment or reject the Application with a written response stating the appropriate sections of the Contract Documents upon which the necessary remedial actions and resubmit the Application. OWNER shall pay CONTRACTOR this amount as recommended by the ENGINEER within thirty days of presentation of the Application for Payment or only if OWNER is a public agency, within fifteen days after OWNER receives the funds which are to be provided by a department or agency of the federal or state government, whichever is later.

14.5. ENGINEER's recommendation of any payment requested in an Application for Payment will constitute a representation by ENGINEER to OWNER, based on ENGINEER's on-site observations of the Work in progress as an experienced and qualified design professional and on ENGINEER's review of the Application and Certificate for Payment and the accompanying data and schedules that the Work has progressed to the point indicated; that, to the best of ENGINEER's knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents subject to an evaluation of the Work as a functioning Project upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents and any qualifications stated in the recommendation; that CONTRACTOR is entitled to payment of the amount recommended. However, by recommending any such payment ENGINEER will not thereby be deemed to have represented that exhaustive or continuous on-site inspections have been made to check the quality or the quantity of the Work, or that the means, methods, techniques, sequences, and procedures of construction have been reviewed or that any examination has been made to ascertain how or for what purpose CONTRACTOR has used the moneys paid or to be paid to CONTRACTOR on account of the Contract Price, or that title to any Work, materials or equipment has passed to OWNER free and clear of any liens.

14.6. ENGINEER's recommendation of final payment will constitute an additional representation by ENGINEER to owner that the conditions precedent to CONTRACTOR'S being entitled to final payment as set forth in paragraph 14.14 have been fulfilled.

14.7. ENGINEER may refuse to recommend the whole or any part of any payment if, in his opinion, it would be incorrect to make such representations to OWNER. He may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended to such extent as may be necessary in ENGINEER's opinion to protect OWNER from loss because:

- 14.7.1. the Work is defective, or completed Work has been damaged requiring correction or replacement,
- 14.7.2. written claims have been made against OWNER or Liens have been filed in connection with the Work,
- 14.7.3. the Contract Price has been reduced because of Modifications,
- 14.7.4. OWNER has been required to correct defective Work or complete the Work in accordance with paragraph 13.14,
- 14.7.5. of CONTRACTOR's unsatisfactory prosecution of the Work in accordance with the Contract Documents, or
- 14.7.6. CONTRACTOR's failure to make payment to Subcontractors, or for labor, materials or equipment.

SUBSTANTIAL COMPLETION

- 14.8. When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall, in writing to OWNER and ENGINEER, certify that the entire Work is substantially complete and request that ENGINEER issue a certificate of Substantial Completion. Within a reasonable time thereafter, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving his reasons therefor. If ENGINEER considers the Work the Work substantially complete, ENGINEER will prepare and deliver to OWNER a certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a list of items to be completed or corrected before final payment. OWNER shall give forty five (45) days after receipt of the certificate or attached list. Such objection will be cause for the certificate of Substantial Completion to be null and void. As a part of delivery of the tentative certificate of Substantial Completion ENGINEER will deliver to OWNER and CONTRACTOR with respect to security, operation, safety, maintenance heat, utilities and insurance.
- 14.9. OWNER shall have the right to exclude CONTRACTOR from the Work after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the list of items to be completed.

PARTIAL UTILIZATION

- 14.10. Use by OWNER of completed portions of the Work may be accomplished prior to Substantial Completion of all the Work subject to the following:
 - 14.10.1. OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any part of the Work which OWNER believes to be substantially complete and which may be so used without significant interference with construction of the other parts of the Work. If CONTRACTOR agrees, CONTRACTOR will certify to OWNER and ENGINEER that said part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time thereafter OWNER, CONTRACTOR and ENGINEER shall make an inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving his reasons therefor. If ENGINEER considers that part of the Work to be substantially complete, ENGINEER will execute and deliver to OWNER and CONTRACTOR a certificate to that effect, fixing the date of Substantial Completion as to that part of the Work, attaching thereto a list of items to be completed or corrected before final payment. Prior to issuing a certificate of Substantial Completion as to part of the Work ENGINEER will deliver to OWNER and CONTRACTOR a written recommendation as to the division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, maintenance, utilities and insurance for that part of the Work which shall become binding upon OWNER and CONTRACTOR at the time of issuing the definitive certificate of Substantial Completion as to that part of the work unless OWNER and CONTRACTOR shall have otherwise agreed in writing and so informed ENGINEER. OWNER shall have the right to exclude CONTRACTOR from any part of the Work which ENGINEER has

so certified to be substantially complete, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

- 14.10.2. In lieu of the issuance of a certificate of Substantial Completion as to part of the Work, OWNER may take over operation of a facility constituting part of the Work whether or not is substantially complete if such facility is functionally and separately usable; provided that prior to any such takeover, OWNER and CONTRACTOR have agreed as to the division of responsibilities between OWNER and CONTRACTOR for security, operation, safety, maintenance, correction period, heat, utilities and insurance with respect to such facility.

FINAL INSPECTION

- 14.11. Upon written notice from CONTRACTOR that the Work is complete, ENGINEER will make a final inspection with OWNER and CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to remedy such deficiencies.

FINAL APPLICATION FOR PAYMENT

- 14.12. After CONTRACTOR has completed all such corrections to the satisfaction of ENGINEER and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, marked-up record documents and other documents--all as required by the Contract Documents, and after ENGINEER has indicated that the Work is acceptable, subject to the provisions of paragraph 14.16, CONTRACTOR may make application of final payment following the procedure for progress payments. The final Application for Payment shall be accompanied by all documentation called for in the Contract Documents and such other data and schedules as ENGINEER may reasonably require, together with complete and legally effective releases or waivers, satisfactory to OWNER, of all Liens arising out of or filed in connection with the Work. In lieu thereof and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full; an affidavit of CONTRACTOR that the releases and receipts include all labor, services, material and equipment for which a Lien could be filed, and that all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or his property might in any way be responsible, have been paid or otherwise satisfied, and consent of Surety, if any, to final payment. If any Subcontractor, manufacturer, fabricator, supplier or distributor fails to furnish a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

FINAL PAYMENT AND ACCEPTANCE

- 14.13. If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final Application for Payment and accompanying documentation--all as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR has fulfilled all of his obligations under the Contract Documents, ENGINEER will, within ten days after receipt of the final Application for Payment, indicate in writing his recommendation of payment and present the Application to OWNER for payment. Thereupon ENGINEER will give written notice to OWNER and CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.16. Otherwise, ENGINEER will return the Application to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application. If the Application and accompanying documentation are appropriate as to form and substance, OWNER shall, within forty-five days after receipt thereof pay CONTRACTOR the amount recommended by ENGINEER. If the OWNER rejects the Application, he shall do so in writing stating the appropriate sections of the Contract Documents upon which the refection is based. The CONTRACTOR may take the necessary remedial actions and resubmit the Application.
- 14.14. If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed thereof and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.1, the written consent of the Surety to the payment of the balance due for that portion of the Work fully completed and

accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

CONTRACTOR'S CONTINUING OBLIGATION

14.15. CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by ENGINEER, nor the issuance of a certificate of Substantial Completion, nor any payment by OWNER to CONTRACTOR under the Contract Documents, nor any use or occupancy of the Work or any part thereof by OWNER, nor any act of acceptance by OWNER nor any failure to do so, nor any review of a shop drawing or sample submission, nor the issuance of a notice of acceptability by ENGINEER pursuant to paragraph 14.13, nor any correction of defective Work by OWNER shall constitute an acceptance of Work not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents, or the surety's obligation under its bond.

WAIVER OF CLAIMS

14.16. The making and acceptance of final payment shall constitute:

14.16.1. a waiver of all claims by OWNER against CONTRACTOR, except claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to paragraph 14.11 or from failure to comply with the Contract Documents or the terms of any special guarantees specified therein; however, it shall not constitute a waiver by OWNER of any rights in respect of CONTRACTOR's continuing obligations under the Contract Documents; and

14.16.2. a waiver of all claims by CONTRACTOR against OWNER other than those previously made in writing and still unsettled.

LATE PAYMENTS

14.17 All monies not paid when due hereunder, except monies involving federal and/or State Loans or Grants or other sources which are delinquent because of no fault of the OWNER, shall bear interest at the maximum rate allowed by law at the place of the Project.

ARTICLE 15--SUSPENSION OF WORK AND TERMINATION

OWNER MAY SUSPEND WORK

15.1. OWNER may, at any time and without cause suspend the Work or any portion thereof for a period as he may deem necessary by notice in writing to CONTRACTOR and ENGINEER. If it should become necessary to stop work for an indefinite period, the CONTRACTOR shall store all materials in such manner that they will not become an obstruction, nor become damaged in any way, and he shall take every precaution to prevent damage or deterioration of the Work performed; provide suitable drainage by opening ditches and shoulder drains, and erect temporary structures where necessary. CONTRACTOR may request an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if he makes a claim therefor as provided in ARTICLES 11 and 12.

OWNER MAY TERMINATE

15.2. Upon the occurrence of any one or more of the following events:

15.2.1. if CONTRACTOR commences a voluntary case under any chapter of the Bankruptcy Code (Title 11, United States Code), as now or hereafter in effect, or if CONTRACTOR takes any equivalent or similar action by filing a petition or otherwise under any other federal or state law in effect at such time relating to the bankruptcy or insolvency;

15.2.2. If a petition is filed against CONTRACTOR under any chapter of the Bankruptcy Code as now or hereinafter in effect at the time of filing, or if a petition is filed seeking any such equivalent or similar relief against CONTRACTOR under any other federal or state law in effect at the time relating to bankruptcy or insolvency;

15.2.3. If CONTRACTOR makes a general assignment for the benefit of creditors;

15.2.4. if a trustee, receiver, custodian or agent of CONTRACTOR is appointed under applicable law or under contract, whose appointment or authority to take charge of property of CONTRACTOR is for the purpose of enforcing a Lien against such property or for the purpose of general administration of such property for the benefit of CONTRACTOR's creditors;

15.2.5. if CONTRACTOR admits in writing an inability to pay its debts generally as they become due;

15.2.6. if CONTRACTOR persistently fails to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.6 as revised from time to time);

15.2.7. if CONTRACTOR disregards Laws and Regulations of any public body having jurisdiction;

15.2.8. if CONTRACTOR disregards the authority of ENGINEER; or

15.2.9. if CONTRACTOR otherwise violates in any substantial way any provisions of the Contract Documents;

OWNER may, after giving CONTRACTOR (and the surety, if there be one) seven days' written notice and to the extent permitted by Laws and Regulations, terminate the services of CONTRACTOR, exclude CONTRACTOR from the site and take possession of the Work and of all CONTRACTOR'S tools, appliances, construction equipment, and machinery at the site and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case, CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct, indirect, and consequential costs of completing the Work (including, but not limited to, fees and charges of engineers, architects, attorneys, and other professionals and court and/or arbitrations costs, if applicable) such excess will be paid to CONTRACTOR. If such costs exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such costs incurred by OWNER will be approved as to reasonableness by ENGINEER and incorporated in a Change Order, but when exercising any rights or remedies under this paragraph, OWNER shall not be required to obtain the lowest price for the Work Performed.

15.3. Where CONTRACTOR's services have been so terminated by OWNER, the termination shall not affect any rights or remedies of OWNER against CONTRACTOR or its Surety then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

15.4. Upon seven days' written notice to CONTRACTOR and ENGINEER, OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the Work and terminate the Agreement. In such case, CONTRACTOR shall be paid for all Work executed and any expense sustained plus reasonable termination expenses which will include, but not be limited to, direct, indirect, and consequential costs (including, but not limited to, fees and charges of engineers, architects, attorneys, and other professionals and court and arbitration costs).

CONTRACTOR MAY STOP WORK OR TERMINATE

15.5. If ENGINEER has failed to act on an Application for Payment or OWNER has failed to pay CONTRACTOR any sum finally determined to be due in accordance with the time limits specified in paragraph 14.4, CONTRACTOR may upon seven days notice to OWNER and ENGINEER, stop the Work until payment of all amounts then due.

If through no act or fault of CONTRACTOR, the Work is suspended for a period of more than ninety days by OWNER or under an order of court or other public authority, then CONTRACTOR may, upon seven days' written notice to OWNER and ENGINEER, terminate the Agreement and recover from OWNER payment for all Work executed and any expense sustained plus reasonable termination expenses.

The provisions of this paragraph shall not relieve CONTRACTOR of his obligations under paragraph 6.29 to carry on the Work in accordance with the progress schedule and without delay during disputes and disagreements with OWNER.

ARTICLE 16--MISCELLANEOUS

GIVING NOTICE

16.1. Whenever any provision of the Contract Documents requires the giving of written notice it shall be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

COMPUTATION OF TIME

16.2. When any period of time is referred to in the Contract Documents by days, it shall be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day shall be omitted from the computation.

GENERAL

16.3. Should OWNER or CONTRACTOR suffer injury or damage to his person or property because of any error, omission or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, claim shall be made in writing to the other party within a reasonable time of the first observance of such injury or damage. The provisions of this paragraph 16.3 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or repose.

16.4. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon CONTRACTOR by paragraphs 6.30, 13.1, 13.11, 13.14, 14.3 and 15.2 and all of the rights and remedies available to OWNER and ENGINEER thereunder, shall be in addition to, and shall not be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by law or contract, by special warranty or guarantee or by other provision of the Contract Documents, and the provisions of this paragraph shall be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right and remedy to which they apply. All representations, warranties and guarantees made in the Contract Documents shall survive final payment and termination or completion of this Agreement.

NONDISCRIMINATION OF EMPLOYMENT

16.5. The CONTRACTOR shall covenant not to discriminate against any employee or applicant for employment, to be employed in the performance of this Contract, with respect to his hire, tenure, terms, conditions or privileges of employment, or any matter directly, or indirectly related to employment, because of his race, color, sex, age, religion, national origin or ancestry, height, weight, or marital status, or any other classification protected by law, and to require a similar covenant on the part of any Subcontractor employed in the performance of the Contract.

POST COMPLETION DATE ENGINEERING AND INSPECTION COSTS

16.6. All engineering and inspection costs incurred after the specified completion date shall be paid by the CONTRACTOR to the OWNER prior to final payment authorization. However, the CONTRACTOR shall not be charged with any post completion date engineering and inspection costs when the delay in completion of the Work is due to the following and the CONTRACTOR has promptly given written notice of such delay to the OWNER or ENGINEER.

16.6.1. to any preference, priority or allocation order duly issued by the OWNER.

16.6.2. to unforeseeable causes beyond the control and without the fault or negligence of the CONTRACTOR, including but not restricted to, acts of God, or of the public enemy, acts of the OWNER, acts of another contractor in the performance of a Contract with the OWNER, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and abnormal and unforeseeable weather; and

16.6.3. to any delays of subcontractors occasioned by any of the causes specified in items 1 and 2 of this article.

Charges after the specified completion date shall be made at such times and in such amounts as the ENGINEER shall invoice the OWNER, provided, however said charges shall be in accordance with the ENGINEER's current rate schedule at the time the costs are incurred. The engineering and inspection costs so incurred shall be deducted from the CONTRACTOR's progress payments.

SUPPLEMENTAL GENERAL CONDITIONS

These Supplemental General Conditions amend or supplement the General Conditions as indicated below. All provisions which are not amended or supplemented remain in full force and effect. The terms used in these Supplemental General Conditions have the meanings assigned to them in the General Conditions.

These Supplemental General Conditions also include supplemental specifications and conditions regarding work within MDOT Right-of-Way.

SGC 5.3.4 Insurance

Add the following language at the end of Paragraph 5.3.4 of the General Conditions:

The Contractor is advised that an Owner's protective liability insurance policy in an amount not less than \$1,500,000.00 is required which shall have the Charter Township of Canton as named insured and Canton Township shall be named as an additional insured as shown on the following policy along with the following named additional insured.

1. Wayne County Department of Public Services
2. Michigan Department of Transportation

SGC 5.4 Insurance Limits of Liability

The required limits of liability for insurance coverage requested in Section 5.3 shall be not less than the following:

SGC-5.4.1. Worker's Compensation

Coverage A - Compensation	Statutory
Coverage B - Employer's Liability	\$100,000

SGC-5.4.2. Comprehensive General Liability

Bodily Injury - Each Occurrence	\$ 500,000
Bodily Injury - Aggregate (Completed Operations)	\$ 500,000
Property Damage - Each Occurrence	\$ 200,000
Property Damage - Aggregate or combined single limit	\$ 500,000 \$1,000,000

SGC-5.4.3. Comprehensive Automobile Liability

Bodily Injury	\$ 500,000
property Damage	\$ 200,000

or combined single limit \$1,000,000

SGC-5.4.4. Owner's Protective

Bodily Injury - Each Occurrence	\$1,000,000
Property Damage - Each Occurrence	\$ 250,000
Property Damage - Aggregate	\$ 500,000
or combined single limit	\$1,500,000

SGC-5.4.5. Builder's Risk-Installation Floater Cost To Replace At Time of Loss

SGC-5.4.6. Umbrella or Excess Liability \$2,000,000

SGC-6.13. Permits, Authorizations and Easements

Add the following language at the end of Paragraph 6.13 of the General Conditions:

The following permits, authorization and easements will be obtained by the Contractor.

1. Wayne County Department of Public Services Right-of-way Permit
2. Wayne County Department of Environment Soil Erosion Permit
3. Michigan Department of Transportation

The Contractor shall comply and perform all work in accordance with the stipulations and requirements of each permit, authorization or easement document. The cost of performing all work in compliance with all stipulations and requirements of each permit, authorization or easement document shall be considered incidental to the project. This price shall include, but not be limited to applying for, paying for and securing additional permits (other than those obtained by the Owner), paying for review fees, inspection fees, and any other fees, supplying bonds, insurances, employee expenses, construction items shown on the permit, authorization or easement documents not specifically shown on the Plans, etc., but required by the agency or person issuing the permit, authorization or easement.

SGC-17

Add a new Article 17 entitled Liquidated Damages to the General Conditions which is to read as follows:

17. Liquidated Damages

If the Contractor fails to complete the work within the Contract Time as described in the Proposal and in the Agreement, then the Contractor shall pay to the Owner the amount for liquidated damages in the amount of five hundred dollars (\$525) per day for each additional calendar day that

the Contractor shall fail to complete the work. The liquidated damages charges shall be deducted from the Contractor's Progress Payments.

The Contractor shall not be charged with liquidated damages or any excess cost when the delay in completion of the work is due to the following and the Contractor has promptly (within seven calendar days) given written notice of such delay to the Owner and Engineer.

1. To any preference priority or allocation order duly issued by the Owner.
2. To unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including but not restricted to acts of God, or of the public enemy, acts of the Owner, acts of another Contractor in the performance of a contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and abnormal and unforeseeable weather.
3. To any delays of subcontractors occasioned by any of the causes specified in Items 1 and 2 of this Article.

In addition to liquidated damages, all engineering and inspection costs incurred after the specified completion date shall be paid by the Contractor to the Owner prior to final payment authorization. Charges shall be made at such times and in such amounts as the Engineer shall invoice the Owner, provided, however, said charges shall be in accordance with the Engineer's current rate schedule at the time the costs are incurred. The engineering and inspection cost incurred after the specified completion date shall be deducted from the Contractor's Progress Payments.

SECTION 01010**ADMINISTRATIVE PROVISIONS****PART 1 – GENERAL**

1.1 SCOPE. This section details general contract administrative and work performance provisions applicable to all Work. Where conflicts develop in specification sections, the more stringent requirement shall govern.

1.2 SPECIFICATIONS AND DRAWINGS. Contractor shall bring any conflict to the attention of the Engineer immediately and shall bid the more stringent requirement unless otherwise specifically noted by Engineer.

1.3 COORDINATION. All proposed interruptions or tie-ins to existing roadways or utilities or other activities affecting the operations shall be scheduled. If shutdown or partial shutdown of an existing road or utility is required, requests must be submitted for shutdown in writing to the Owner or Engineer at least 5 days in advance, unless otherwise specified. A request for shutdown is required for public utilities as well as private utilities.

The Contractor must cooperate with the Owner in scheduling construction activities to minimize any conflicts with the construction activities of other Contractors on the site, and to enable the Owner to maximize the utilization and the occupancy of the site for his normal, as well as special, maintenance and operation activities. The Engineer shall approve the scheduling of all such activities.

1.4 PROPERTY AND SURVEY MONUMENTS. All precautions shall be taken to avoid disturbance of permanent survey monuments of any governmental authority, and when any of these are disturbed or destroyed, the Contractor shall restore them to the satisfaction of such authority, and shall pay all costs incurred by such authority in connection therewith.

1.5 CLEANLINESS OF THE WORK AND STREETS. The Contractor shall control dust to the satisfaction of the Owner and to meet the requirements of the jurisdictional authorities. Control measures shall include, but are not limited to, sprinkling, wheel washing, street sweeping, street washing, and load covering.

1.6 REGULATORY REQUIREMENTS. The requirements of this Article shall be made a part of any sub-contracts entered into. All rules, regulations, orders, and permits, of any governmental agency applicable to the Work under this Contract shall be met. It is the Contractor's responsibility to be informed of all applicable governmental rules, regulations, orders, and permits. The Contractor shall cooperate with the Engineer to promptly furnish any information required by such agencies.

Final payment will not be made under the terms of this Contract until written approval of the final conditions of the Work is obtained by the Contractor from all public authorities or agencies having jurisdiction over any portion of the Work included in the Contract.

1.7 SAFETY PRECAUTIONS. In addition to the Contractor's responsibilities outlined in the General Conditions section, the Contractor shall be responsible for the following actions:

The Contractor shall comply with such safety regulations as may be prescribed by the Engineer, Owner, or local authorities having jurisdiction and shall, when so directed, properly correct any unsafe conditions created by, or unsafe practices on the part of, employees or subcontractors. In the event of the Contractor's failure to comply, the Engineer or Owner may take the necessary measures to correct the conditions or practices, and all costs thereof will be charged to the Contractor, and will be deducted from any monies due the Contractor. Failure of the Engineer to direct the correction of unsafe conditions or practices shall not relieve the Contractor of his responsibility hereunder.

1.8 LICENSES, PERMITS, AND INSPECTIONS. All necessary licenses and permits including building permit required for the Work, shall be secured by Contractor at no cost to the Owner.

The Contractor shall apply for inspection of the Work to any and all local, state, or national authorities having jurisdiction, and shall deliver to the Engineer all required certificates of approval of such authorities.

1.9 COOPERATION. Each Contractor shall cooperate fully with the Owner, the Engineer, and all other Contractors employed in the Work, to effect proper coordination and progress to complete the project on schedule and in proper sequence. Insofar as possible, decisions of all kinds required from the Engineer shall be anticipated by the Contractor to provide ample time for inspection, or the preparation of instructions.

Each Contractor shall assume full responsibility for the coordination and integration of all parts of his Work with that of other Contractors. Each Contractor's Superintendent shall coordinate all Work with other Contractors. Each Contractor shall layout his own Work in accordance with the Contract Drawings, specifications and instructions of the latest issue, and with due regard to the Work of other Contractors.

1.10 PROTECTION OF PROPERTY. In the event of any claims for damage or alleged damage to property as a result of Work under this Contract, the Contractor shall be responsible for all costs in connection with the settlement of or defense against, such claims. Prior to the commencement of Work in the vicinity of property adjacent to the Work site, the Contractor, at his own expense, shall take such surveys as may be necessary to establish the existing condition of the property.

Contractor shall be responsible for the protection of his own storage area.

1.11 FIRE PROTECTION. All Contractors shall take all necessary precautions to prevent fires, and shall provide adequate equipment for extinguishing fires. No burning of trash or debris will be permitted.

When fire or explosive hazards are created in the vicinity of the Work as a result of the locations of fuel tanks, or similar hazardous utilities or devices, the Contractor shall immediately alert the local Fire Marshal, the Engineer, and the Owner. The Contractor shall exercise all safety precautions, and shall comply with all instructions issued by the Fire Marshal and will cooperate with the Owner to prevent the occurrence of a fire or an explosion.

1.12 EXISTING UTILITIES AND STRUCTURES. The term existing utilities shall be deemed to refer to publicly-owned and privately-owned utilities such as electric power, conduits, and lighting, telephone, water, gas, drains, storm drains, sanitary sewers, raceway, and all appurtenant structures.

Where existing utilities and structures are indicated on the Contract Drawings, it shall be understood that all of the existing utilities and structures affecting the work may not be shown, and that the locations of those shown are approximate only. It shall be the responsibility of the Contractor to ascertain the actual extent and exact location of existing utilities and structures. In every instance, the Contractor shall notify the proper authority having jurisdiction and obtain all necessary directions and approvals before performing any Work in the vicinity of existing utilities. The Contractor shall be responsible for all costs thereof.

1.13 CONSTRUCTION PARKING CONTROL. Monitor construction parking to prevent interference with access by emergency vehicles and to make the best use of limited parking areas. Access to fire hydrants, control structures, existing facilities, and water and gas valves shall not be obstructed. Do not allow parking in non-designated areas by construction personnel.

1.14 TRAFFIC REGULATION FOR SAFETY. If the Contractor fails to promptly provide or neglects to maintain traffic, or fails to carry out specific instructions from the Engineer, the Owner may, with or without notice to the Contractor, take such remedial measures deemed necessary and charge the Contractor with any costs incurred. Any such action shall in no way serve to release the Contractor from its general or particular liability for safety.

1.15 REMOVAL. Remove all signs, cones, drums, and barricades when traffic regulation is no longer required. Repair existing roads damaged during construction and remove any temporary pavements prior to final completion. Restore facilities damaged by construction usage to original condition as determined by the Engineer.

1.16 EASEMENT AND/OR RIGHT-OF-WAY ACROSS PRIVATE PROPERTY. Any damage caused by the Contractor's operation to private property adjacent to the right-of-way shall be either satisfactorily restored or payment made therefore at no additional cost to Owner.

In addition to the specific requirements on the Contract Drawings and/or as specified in these Specifications, the Contractor, where required, shall install temporary fences and/or barricades at the work site for the protection of the public and the property Owner (and his interest, such as children, livestock, pets, and automobiles). The type and placement of fences and/or barricades shall be to the satisfaction of the Owner and/or as directed by the Engineer.

1.17 CLAIMS BY ONE CONTRACTOR FROM DAMAGE BY ANOTHER CONTRACTOR. Each Contractor, in signing his Contract, agrees that if another Contractor working on this project makes a claim against the Owner for money damages due to loss of time, non-payment, or other reasons caused or occasioned by the method of operation or lack of progress of the Contractor, and the allegations are substantiated in the opinion of the Owner, the Owner may assess in turn such money damages and withhold from progress payment against the offending Contractor.

1.18 SHOP DRAWING AND SUBMITTAL INFORMATION REQUIREMENTS. Contractor shall coordinate and submit shop drawings or other submittal information a minimum of two (2) weeks prior to work for approval by Owner or Engineer. Contractor shall modify their schedule if a re-submittal is requested or if a rejection is documented by the Owner or Engineer.

Submittals are reviewed to verify conformance with the contractual requirements and check the accuracy of documentation to prevent costly mistakes and delays to construction. Approval of Contractor's documents by Consultant shall not relieve the Contractor of the responsibility to meet all of the requirements of the Contract.

Engineer will return documents to Contractor stamped "No Exceptions Taken", "Make Corrections as Noted", "Amend and Resubmit", or "Rejected".

- **No Exceptions Taken.** The document may proceed with the work covered by the drawings or document.
- **Make Corrections as Noted.** The Contractor may proceed with work after making change marked on returned drawing or documents.
- **Amend and Resubmit.** The Contractor may not proceed with work until drawing or document is resubmitted to the Engineer and returned to the Contractor with approved stamp. Any drawing marked "amend and resubmit" must be resubmitted or letter written explaining why document was not resubmitted.
- **Rejected.** The Contractor must not proceed with any construction relating to any "rejected" document. Any drawing marked "rejected" must have new document resubmitted or letter written explaining why document was not resubmitted.

1.19 TESTING AND COORDINATION. Construction markings, dimensional control, testing and related construction engineering for all phases of the Work shall be coordinated by Contractor with a minimum 7 day notification to Engineer. The Engineer will provide observation of various phases of the work and may request contractor to provide proofrolling, re-compaction or other field quality control measures for visual observation of the work for conformance with the plans and specifications. If a conflict results or upon special request by Engineer, Contractor shall cooperate with Engineer to coordinate specified or required tests by Engineer to verify that work is adequate to provide a product which conforms to contract requirements at no additional costs to the project.

Contractor shall provide and coordinate through the Engineer the proofrolling of any exposed aggregate base or soil subgrade or visual observation of asphalt surface upon which pavements are to be constructed. Should unstable areas be identified, contractor shall re-compact, undercut or mill an additional depth to the specification requirements. Thickness, gradations, and compactions of base course and surface course may be tested as requested by Engineer without any additional cost from the Contractor.

Asphalt plant mix designs shall also be provided by Contractor to Engineer for approval a minimum of 7 days prior to installation.

The Contractor is responsible for compliance with the Contract Documents. Observation, monitoring and testing requested by the Engineer does not infer acceptance of responsibility by the Engineer, nor the Owner until substantial completion of the work. If work already completed is damaged prior to substantial completion or the conditions change where construction does not meet Specification requirements, the Contractor shall correct deficient work to the satisfaction of the Owner.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 SERVICE CONDITIONS. Work shall conform to applicable portions of the Department of Transportation Standard Specifications where they apply.

Contractor shall schedule and coordinate work with the Owner and Engineer so that adverse weather conditions do not cause an increase to the cost of the work. Costs of corrective work, repairing items damaged during construction, or materials that need to be replaced due to adverse weather conditions shall be incurred by Contractor without any additional cost to Owner.

End of Section

SECTION 01140**SOIL EROSION AND SEDIMENTATION CONTROL****PART 1 – GENERAL**

1.1 SCOPE. This work includes the installation and maintenance of soil erosion and sedimentation controls required by local agencies.

1.2 GENERAL. Contractor shall obtain and implement all soil erosion permits required by local agency having jurisdiction. The Contractor shall conduct the work so that all soil, fuels, oils, bituminous materials, chemicals, sanitary sewage, debris and other unsuitable materials, resulting from the construction of the project, are confined within the right-of-way and project limits. These materials shall be properly disposed of to prevent them from leaving the project site and from entering watercourses, rivers, lakes, streams, reservoirs, wetlands or ground water. Contractor shall remove materials at end of job.

1.3 QUALITY ASSURANCE. Soil Erosion and Sedimentation Control measures shall be installed and maintained in accordance with the requirements of all Federal, State and Local laws and regulations regarding soil erosion and sedimentation control by Contractor. Failure by the Contractor to install and maintain adequate soil erosion controls may result in project shutdown and/or possible fines. When conflict exists the more stringent requirement shall govern unless it adversely conflicts with agency having jurisdiction for which Engineer shall make the final determination.

1.4 SUBMITTALS. The soil erosion and sedimentation control plan shall be implemented prior to commencing construction and shall contain a map showing the site location, physical limits of each earth change activity, predominant land features including lakes, streams and wetlands, and contour intervals or slope information. The Soil Erosion and Sediment Control Plan shall be in accordance with both the Michigan Department of Transportation (MDOT) Standard Specifications for Construction and requirements of Agency having jurisdiction.

PART 2 – PRODUCTS

2.1 MATERIALS. Acceptable materials as specified in the MDOT 2012 Standard Specifications Section 208 include but are not limited to silt fencing materials and inlet protection fabrics.

PART 3 – EXECUTION

3.1 SERVICE CONDITIONS. Construction operations shall be conducted to prevent or minimize erosion and sedimentation. Temporary or permanent erosion and sedimentation controls shall be constructed and maintained as specified by

agency having jurisdiction prior to commencing any construction operations including clearing. Grading operations shall be performed as soon as possible after clearing operations. Steps shall be taken to minimize erosive loss and resultant offsite sedimentation from stored piles of excavated spoils, topsoil, sand, gravel, and aggregate. Provide suitable sedimentation control measures at affected connections to existing or new storm drains, to minimize deposition of sediment in the storm drains during the construction period. Sedimentation control measures shall be provided prior to any significant clearing, grading or surface disruption of the tributary areas.

Time Limitations. All graded areas shall be brought to final grade as soon as possible. Permanent soil erosion controls and stabilization for all slopes, channels, ditches and other disturbed areas shall be completed within the timeframes established by the local agency having jurisdiction.

Area Limitations. The surface area of erodible earth material exposed at any one time will be limited to the minimum amount required for execution of the work. The Engineer may reduce or increase the limits of exposed surface area dependent on the Contractor's capability to keep current the finish grading, top soiling, seeding, mulching, and other temporary or permanent erosion and sedimentation control operations. When the Contractor has completed the permanent restoration on a cut slope or embankment slope, or portions thereof, the completed slope will be approved by the Engineer. The Contractor shall not disturb lands and waters outside the grading limits unless such work is found necessary and is approved by the Engineer. Restoration of areas that are disturbed beyond the plan or approved limits will be at the Contractor's expense.

3.2 MAINTENANCE OF EROSION AND SEDIMENTATION CONTROLS. The Contractor shall maintain all temporary erosion and sedimentation controls during the period that the temporary controls are required and all permanent erosion controls until the contract has been completed and accepted. Such maintenance shall consist of the repair of all damaged areas, replacement of lost facilities and periodic removal of sediment. Sediment traps and basins shall be cleaned out when they are half full or as directed. Sediment or debris shall be removed from in front of silt fence when it has accumulated to one half of the fence height.

End of Section

SECTION 02500**STORM SEWER****PART 1 – GENERAL**

1.1 **SCOPE.** Provide all labor, materials, equipment, and services, necessary and incidental to complete all of the Storm Sewer Work as shown on the Drawings and specified herein. Work includes, but is not limited to:

- Trenching, bedding, filter material and backfill for storm sewers, sub-surface drains and drainage structures.
- Complete installation of storm sewers, manholes, including all related fittings, joints, covers, grates, frames, rungs and end sections.

1.2 **GENERAL.** Rules, regulations or laws of any controlling government agency shall govern, when they are more stringent than the requirements of this Section. Reference specifications where applicable to work under this section are referred to by abbreviation, as follows:

- Charter Township of Canton
- Michigan Department of Transportation (MDOT)
- American Society for Testing Materials (ASTM)

1.3 **SUBMITTALS.** Submit to the Engineer, a copy of all material certificates for review and approval prior to construction. Certificates shall state that each material item meets specified requirements. Material submittals shall be provided for approval a minimum of seven (7) days prior to installation.

1.4 **PRODUCT DELIVERY AND STORAGE.** Proper implements, tools and facilities shall be provided and used for unloading and distributing materials along the line of Work. Any pipe or fitting damaged in transportation or handling shall be rejected and immediately removed from the job Site. The Contractor shall be responsible for the safe storage of all material intended for the Work. He shall take all necessary precautions to prevent damage to materials, equipment and Work.

1.5 **JOB CONDITIONS.** All required excavation and trenching Work shall be based upon "unclassified" soil material and the Contractor shall assume sole responsibility for the completion of the works herein regardless of the nature of materials encountered during the course of the Work. The Owner or Engineer will not be liable for any costs whatsoever associated with, but not limited to, the presence of rock, peat, subterranean streams or other difficult or unanticipated sub-surface phenomena.

Restore to their present conditions any pavement or public right-of-way that is disturbed by the Work under this Section. All pavement restoration Work in public right-of-way shall be performed to the proper satisfaction of the governmental agencies having jurisdiction there over.

Contractor shall maintain vehicle and pedestrian traffic during sewer and repair operations in such a manner as to not disrupt normal activities of adjacent enterprises and shall obtain any permits required by agencies having jurisdiction over the work.

1.6 PROTECTION AND SHORING. All excavations that are to remain open overnight or for more than one day shall be properly enclosed to prevent access to the excavation by the general public.

PART 2 – PRODUCTS

2.1 MATERIALS.

2.1.01 AGGREGATES. Bedding material shall conform to MDOT requirements for Type 6A angular aggregate, and shall be placed to the spring-line of the pipe. Backfill material shall conform to MDOT requirements for Class II granular. Suitable material other than wet, unstable clay excavated from sewer trench may be used upon Engineer approval where trench is a minimum 3 feet from the back of curb or edge of pavement. Trenches under the influence of pavement within 3 feet of the back of curb or edge of pavement shall be backfilled with Class II granular material only.

Where ground is found unsuitable to support pipe, provide cradles of 2500 psi concrete full width of trench with two No. 4 reinforcing bars continuously along the bottom of the pipe.

2.1.02 PIPE. Storm sewer piping and fittings shall be size and type indicated on the Drawings and shall conform to the following:

- Polyvinyl chloride (PVC) solid wall pipe shall conform to ASTM D2665. PVC pipe shall have a minimum pipe stiffness of 46 psi. Joints shall be glued joints per ASTM 2564.
- Reinforced concrete pipe shall conform to ASTM C-76 Class IV with premium joints.
- Reinforced Concrete Pipe Apron Sections shall be a minimum of Class III and manufactured in accordance with applicable sections of ASTM C76 and MDOT standards.
- Underdrain pipe shall be perforated high density polyethylene pipe with geotextile wrap, a minimum of 6" in diameter.

2.1.03 STRUCTURES. Structures shall be size and type indicated on the Drawings and shall be constructed of the following:

- Reinforced pre-cast concrete manhole and catch basin sections including concentric or eccentric cones and grade rings shall be 4000 psi concrete, 5" wall thickness, and conform to ASTM C-478.
- Block and brick shall be sound, hard-burned throughout and of uniform size and quality and shall be in accordance with ASTM C-32, Grade MS.

- Concrete masonry shall be solid pre-cast segmental units conforming to ASTM C-139.
- Castings shall conform to requirements from the governing agency having jurisdiction.

2.1.04 MISCELLANEOUS. Materials for miscellaneous items shall conform to the following:

- Geotextile fabric used to wrap underdrain trench shall be a non-woven material. Use Mirafi 140-n or approved equal.
- Gray Cast Iron castings shall conform to ASTM A-48, Class 35. Bearing surfaces between cast iron frames, covers and grates shall be machined, fitted together and match-marked to prevent rocking. System identifying letters 2" high shall be stamped or cast into all covers so that they may be plainly visible.
- Structure steps shall be polypropylene encased steel and shall comply with ASTM C478.
- Concrete and masonry materials for construction of storm drainage structures shall consist of the following:
 - Portland cement shall be standard brand of Portland cement conforming to ASTM C-150, Type I or Type III when specified.
 - Fine and coarse aggregates for concrete shall be per ASTM C-33.
 - Aggregate for cement mortar shall be clean, sharp sand conforming to ASTM C-144.
 - Hydrated lime shall comply with ASTM C-207, Type S.
 - Water shall be clean and free from deleterious materials.
 - Reinforcing steel for concrete shall be intermediate-grade new billet steel conforming to ASTM A-615, Grade 60.

2.2 CONCRETE, MORTAR AND GROUT. Concrete fill below grade may be 2500 psi at 28 days. Concrete, where exposed to the weather, shall be air-entrained. Air entrainment shall be accomplished by the use of additives conforming to ASTM C-260. Air content shall be 6% + 1%. Additive shall be used strictly in accordance with Manufacturer's printed directions. Ready-Mix Concrete shall conform to the requirements of ASTM C-94.

Mortar shall be as specified hereinafter. Use method of mixing mortar at job so that specified proportions of mortar materials can be controlled and accurately maintained during Work progress. Mortar shall not be mixed in greater quantities than required for immediate use. Use amount of water consistent with satisfactory workability. Re-tempering of mortar is not permitted. Mortar for laying brick or concrete masonry units shall conform to ASTM C-270, Type M, average compressive strength 2500 psi minimum at 28 days. Mortar mix shall be proportioned by volume. Cement mortar shall consist of 10 parts Type I Portland cement, 20 parts mortar sand, and 3/4 to 1 part lime, hydrated.

2.3 RIP RAP. Rip rap shall conform to MDOT size requirements. Rip rap shall consist of sound and durable limestone, dolomite, or quartzite in accordance with AASHTO T96. Broken concrete or rubble is not acceptable. Filter fabric shall be composed of a non-woven material, conforming to MDOT standards.

PART 3 – EXECUTION

3.1 TRENCHING. Perform all trenching to dimensions and elevations indicated on Drawings. The maximum width of trench at top of pipe shall be as follows:

<u>Type of Pipe</u>	<u>Trench Width</u>
RCP	1.25*O.D. Plus 12" or 54"
PVC or HDPE	1.25*O.D. Plus 12" or O.D. Plus 18"

If the maximum trench width specified above is exceeded, the Contractor shall, at his own expense, construct a concrete cradle or other type of approved bedding to provide support for the additional load.

Open no more trench in advance of pipe laying than is necessary to expedite the Work. Care shall be taken not to excavate below the depths indicated on Drawings. Where excessive or unauthorized excavation takes place, the overdepth shall be backfilled to the proper grade with compacted bedding material, at no expense to the Owner or Engineer. Where unstable soil is encountered, Contractor shall not place pipe until a solid bed has been provided. Excavation for drainage structures shall extend a sufficient distance from the walls and footings to allow for forms, construction of walls, connections and for inspection.

Provide required timber sheeting, bracing and shoring to protect sides of excavation. Do not brace sheeting against pipe. Provide suitable ladders for safe entry to and exit from excavation.

During excavation, material suitable for backfilling shall be piled in an orderly manner a sufficient distance from the banks of trenches to avoid overloading, and to prevent slides or cave-ins. Excavated material shall be piled on one side of the trenches in such a manner as to keep surface drainage of adjoining areas unobstructed.

Excavated material not required or unsuitable for backfill shall be removed from the job Site and disposed of legally, at no expense to the Owner or Engineer. When wet excavation is encountered, the trench shall be de-watered until the pipe has been laid and backfilled to a point at least 1 foot above top of pipe. Provide adequate pumps, well points, hoses, strainers and other appurtenances required, including all power, labor and maintenance.

3.2 STORM SEWER. Storm sewers shall be installed in locations and of sizes indicated on Drawings. Each section of pipe shall be inspected before being lowered

into the trench. Defective, damaged or unsound pipe shall be rejected and removed from the Site.

Excavate trench to required depth. Prepare a firm stable foundation. When trench has been excavated to required depth, the bottom shall be tested to determine its suitability for pipe support. If trench bottom is not found suitable, provide concrete cradle support.

Lay pipe, embed it firmly to required line and grade with bells or groove end up-grade. Fit ends together, excavate bell holes so that sewer will have smooth and uniform invert throughout its length. RCP, PVC, and HDPE Pipe shall be placed in a flat-bottom trench on a minimum of 3" of bedding material. Storm sewer crossing within 18" vertical clearance of another utility shall be made without placing point loads on either pipe. Construct saddles, or place protective concrete cap to prevent damage.

As pipe laying progresses, clear pipe interior of dirt, joint compound or other superfluous materials. During Work stoppage periods, provide effective plugs or covers for open ends of pipe to prevent foreign matter from entering.

Clean joint contact surfaces immediately prior to jointing. Use lubricants, primers or adhesives as recommended by joint manufacturer.

3.3 STRUCTURES. Provide poured concrete foundations or pre-cast concrete base for drainage structures. Pre-cast concrete base shall be set level on granular bedding of not less than 8".

Manholes and catch basins shall be constructed of brick, concrete masonry units or pre-cast concrete with cast iron frames and covers, and polypropylene encased steel manhole steps, as indicated on Drawings and specified herein.

Fill pre-cast concrete joints with bituminous mastic jointing compound, or joints shall be made with cement mortar with inside pointing and outside rubber wrap. Use rubber joints, ASTM C-478 when required by governing authority.

Lay concrete masonry units or brick in mortar so as to form full bed, with end and side joints in one operation, with joints not more than 3/8" wide except when concrete masonry units or bricks are laid radially, in which case narrowest part of joint shall not exceed 1/4". Lay in true line and, whenever practical, joints shall be carefully struck and pointed on inside.

Protect fresh brick Work from freezing, from drying effects of sun and wind, and for such time as directed by the Soils Engineer. In freezing weather, heat sufficiently to remove ice and frost from brick Work.

Concrete shall be maintained in moist condition for at least 7 days after placement.

The wall thickness of manholes and catch basins constructed of various materials and set at various depths shall meet these minimums. Adhere to requirements of the governing agency if they exceed these thicknesses:

<u>Depth</u>	<u>Brick</u>	<u>Concrete Block</u>	<u>Pre-Cast Concrete</u>
0' - 10'	8"	6"	6"
10' - 16'	12"	8"	8"
16"- 25'	16"	12"	12"

Manhole steps shall be built into and thoroughly anchored to walls. Steps shall be factory installed in precast structures.

All piping entering or leaving drainage structures shall be adequately supported by poured-in-place concrete fill from pipe center to undisturbed ground.

The outside surfaces of brick or concrete masonry unit portion of drainage structures shall be plastered and troweled smooth with 1/2" layers of cement mortar.

Set frames in full bed of stiff mortar or bituminous mastic jointing compound at final elevation.

3.4 **BACKFILLING.** Trenches and excavation pits shall not be backfilled until all tests and inspections covering the installation of the storm drainage system have been performed and approved.

All timber sheeting below a plane 12" above top of pipe shall remain in place in order not to disturb pipe grading. Before backfilling, remove all other sheeting, bracing and shoring.

Granular Bedding used for trench bottom shall be extended up the sides and carefully placed around and over pipe in 6" maximum layers. Each layer shall be thoroughly and carefully compacted to 95% of maximum dry density as per ASTM D-1557 until 12" of cover exists over pipe.

In streets, drives, parking lots and other areas in the influence of pavement to have or having improved hard surfaces, backfill shall be Class II Backfill Material and shall be deposited in 6" loose layers at optimum moisture content (+2%) and compacted to 95% of maximum dry density per ASTM D-1557.

Where service or utility lines cross streets, bedding shall be carried to 3 feet behind the curb, or where sidewalks exist, to the Site of sidewalk farthest away from the street.

Before backfilling around drainage structures, all forms, trash and debris shall be removed and cleared away. Selected excavated material shall be placed symmetrically

on all sides in 8" maximum layers; each layer shall be moistened and compacted with mechanical or hand tampers.

3.5 RIP RAP. Prepare subgrade to cross-section as shown on the plans. Place rip rap on 4 inch thick stone filter or engineering fabric.

3.6 FIELD QUALITY CONTROL. After installation of pipes and drainage structures, clean them, and adjust tops to finish grade. Pipes shall be straight between structures, with the full inside diameter visible when sighting between structures. Conform to leakage limitations of the controlling governmental agency.

End of Section

SECTION 02621**ASPHALT PAVING****PART 1 – GENERAL**

1.1 **SCOPE.** Provide all materials, labor, equipment and services necessary to complete all bituminous paving (Hot-Mix Asphalt) repairs as indicated in the Construction Documents.

1.2. **GENERAL.** Rules, regulations or laws of any controlling Governmental Agency shall govern when they are more stringent than the requirements of this Section. Reference Specifications where applicable to Work under this Section are referred to by abbreviation as follows:

- American Association of State Highways and Transportation Officials (AASHTO)
- The Asphalt Institute (AI)
- Michigan Department of Transportation (MDOT)
- American Society for Testing Materials (ASTM)

The pavements shall consist of the following elements: Tack coat between all asphalt courses and on existing surfaces to be overlaid, Aggregate Base course replacement or re-compaction as shown on the Drawings, Intermediate (Leveling) and Surface (Wearing) courses of compacted asphalt mix, thickness as specified on plans.

Allowable Limits: The materials and methods specified herein and included in the reference specifications provide for permissible variations that may be encountered due to supply, character of the work, climate, and location. Changes in gradations and mixtures are subject to the approval of the Engineer.

1.3 **SUBMITTALS.** Submit to the Engineer, a copy of all material certificates and mix designs for review and approval prior to construction. Certificates shall state that each material item meets specified requirements. Material submittals and asphalt mix designs shall be provided for approval a minimum of seven (7) days prior to installation.

1.4 **TRAFFIC CONTROL.** Contractor shall maintain vehicle and pedestrian traffic during paving and repair operations in such a manner as to not disrupt normal business activities of adjacent enterprises and shall obtain any permits required by all agencies having jurisdiction over the Work.

1.5 **WEATHER LIMITATIONS.** Place asphalt courses only if the surface is dry and if weather conditions are such that proper handling, finishing, and compaction can be accomplished. Bituminous mixtures, prime, tack or seal coats shall not be applied, produced or placed during rainy or threatening weather, or when the moisture on the surfaces to be treated would prevent satisfactory bond, or when the air or surface temperature is less than 50 degrees F., except with the approval of the Engineer.

PART 2 – PRODUCTS

2.1 TACK COAT. Tack coat shall be SS-1 or approved equal.

2.2 AGGREGATE BASE COURSE. Aggregate Base Course shall meet the requirements of the Michigan Department of Transportation 2012 Standard Specifications for road structures. This shall consist of MDOT requirements and be compacted to a density equal to at least 95% of the maximum dry density as determined by ASTM D-1557. Dense-Graded Aggregate 21AA Limestone or approved equal shall be used.

2.3 HOT-MIXED ASPHALT PAVEMENT

- Hot-Mixed Asphalt Surface (Wearing) Course shall meet the requirements of 1500T mixture type per MDOT specifications. The mixture shall contain a maximum of 10% reclaimed asphalt pavement (RAP). Binder Type Shall Be PG 64-22.
- Hot-Mixed Asphalt Leveling Course shall meet the requirements of 1500L mixture type per MDOT specifications. The mixture shall contain a maximum of 40% reclaimed asphalt pavement (RAP). Binder Type Shall Be PG 64-22.

2.4 ASPHALT JOINT SEALANT. Asphalt pavement crack and joint sealant shall meet the performance standards of AASHTO M301 and ASTM D6690 Type II when tested according to ASTM D5329 and must be approved by the Engineer in accordance with the submittal process.

PART 3 – EXECUTION

3.1 SERVICE CONDITIONS. Testing coordination shall be implemented for all items of work as necessary. Asphalt pavement construction methods shall conform to applicable portions of the MDOT 2012 Standard Specifications for Construction.

Subgrade and subbase preparations shall consist of the final machining of the subgrade and subbase immediately prior to placing the bituminous base course. The surface shall be true to line and grade. Proofroll all areas to receive the base course with a (25-ton minimum weight) rubber-tired roller to locate all soft surface areas. Replace soil that deflects and will not compact with acceptable fill material and compact such fill in accordance with these Specifications.

3.2 CUTTING OF PAVEMENT. Cut pavement with a pavement saw or pneumatic hammer in a straight line to the full depth of the pavement, parallel to, and 12" wider than the distressed pavement on all sides, to provide an undisturbed shoulder adjacent to the Work.

3.3 **REMOVAL.** Asphalt Removal and Replacement: Cut pavement with a pavement saw or pneumatic hammer at the limits of Work in a straight line to the full depth of the pavement. Remove and dispose of the existing pavement. Compact the aggregate base to 95% maximum dry density per ASTM D-1557. If compaction cannot be reached on the aggregate base as determined by inspection by the Engineer, the base material and necessary subgrade material shall be removed to place new aggregate base shown on the Drawings. The subgrade shall be critically examined by the Engineer. At the Engineer's direction, any soft or unsuitable soils are to be removed. The subgrade is then to be shaped and compacted to 95% maximum dry density per ASTM D-1557. Removal of base or subgrade material shall be paid per supplemental unit rates. If re-grading of the area is required, the subgrade and/or base layers shall be shaped to meet the grading requirements shown on the plans. Additional base material required to meet the grades shall be provided at no additional cost to the Owner. At the approval of the Engineer, asphalt millings may be added to the new base material.

Asphalt Milling and Replacement: Mill pavement to the specified depth shown on the Drawings. Millings shall be removed from the site. Milled surface shall be inspected and approved by Engineer prior to asphalt replacement. Removal of additional material shall be performed in required areas as determined by the Engineer, and paid per supplemental unit rates. The equipment for profiling or removing the pavement surface shall be a power operated, self-propelled planing machine or grinder capable of removing a thickness of bituminous or PCC concrete to the specified depth and providing a uniform profile and cross slope. The equipment shall be capable of accurately and automatically establishing profile grades within 1/8-inch of each edge of the machine by referencing from the existing pavement by means of a ski or matching shoe or from an independent grade control. The equipment shall be controlled by an automatic system for controlling grade elevation and cross slope at a given rate. The machine shall be equipped with water spray to control dust and other particulate matter created by the cutting action. It shall also have an effective means of removing cuttings from the pavement and discharging them into a hauling unit, all in one operation as the pavement is milled. The pavement surface shall be removed to the depth, width, grade, and cross section as shown on the plans or directed by the Engineer. The milling operations, except in depth transition areas, shall be regulated by an automatically controlled grade leveling and slope control device. This device shall have the necessary controls to permit the operator to vary the slope as directed by the Engineer.

Asphalt Cut and Patch: Cut pavement with a pavement saw or pneumatic hammer in a straight line to the full depth of the pavement. Remove and dispose of the existing pavement. Compact the aggregate base to 95% maximum dry density per ASTM D-1557. If compaction cannot be reached on the aggregate base as determined by inspection by the Engineer, the base material and necessary subgrade material shall be removed to place new aggregate base shown on the Drawings. The subgrade shall be critically examined by the Engineer. At the Engineer's direction, any soft or unsuitable soils are to be removed. The subgrade is then to be shaped and compacted to 95%

maximum dry density per ASTM D-1557. Removal of base or subgrade material shall be paid per supplemental unit rates.

Asphalt Scratch Course and Asphalt Overlay: Prior to compacting the asphalt scratch course, the existing pavement shall be milled if needed to remove high spots, potholes shall have loose soil, aggregate, and pavement removed, and surface shall be cleaned of all debris and loose material. Prior to the overlay, butt joints shall be milled around the perimeter of the overlay area in order to maintain positive drainage from and onto all surrounding areas.

3.4 REPLACEMENT OF BASE. When replacement of the aggregate base course is required, the subgrade shall be compacted to 95% maximum dry density per ASTM D-1557. Replace the aggregate base course in layers not to exceed 5 inches in thickness, and compact to 95% maximum dry density per ASTM D-1557. If the existing base is to remain, compact existing base to 95% maximum dry density per ASTM D-1557.

3.5 SURFACE PREPARATION. Remove all loose material from compacted base surface or existing asphalt surface. Apply tack coat to contact surfaces of previously constructed asphalt and surfaces abutting or projecting into asphalt concrete pavement.

3.6 UTILITY OR DRAINAGE STRUCTURE MODIFICATIONS. Where the elevation of the existing asphalt pavement is being raised, lowered or where existing structure elevations are found to be unacceptable by review of the Owner or Engineer, all structures shall be adjusted to match the proposed elevation of the new pavement. Structures shall be adjusted to create a smooth transition between structure castings and the adjacent pavement to provide positive drainage. Structures shall be adjusted by removing the existing utility casting, adding adjustment rings or bricks to raise the casting to the proposed elevation, and tuck pointing the casting to the structure using mortar cement prior to final paving operations to a minimum depth of 1 foot below existing rim.

Where specified on the drawings and specifications, underdrain shall be installed below the pavement to allow for drainage of the base material. The Contractor shall excavate a 12" wide trench where specified on the Drawings to place the 4" diameter perforated drain pipe. The trench shall be lined with a Mirafi 140N filter fabric, or approved equal to provide adequate drainage. The pipe shall be wrapped in a geotextile fabric and placed on a minimum of 4" pea gravel bedding. The trench shall then be backfilled with pea gravel. Underdrain shall have a minimum slope of 1%. When connected to the existing drainage structures, the connection shall be tuck pointed using mortar cement.

3.7 SPREADING. The bituminous concrete (hot-mix asphalt) is to be spread, by machine or hand, at a temperature range of 250° to 350° F so that a uniform layer is deposited throughout the repair area. This layer is to be of sufficient thickness that the minimum compacted thickness shown on the Drawings is achieved. The spreading of

the mix shall begin along the edges of the area and proceed to the center unless directed otherwise.

Asphalt Scratch Course and Asphalt Overlay: Sufficient asphalt will be placed to fill existing potholes and surface imperfections during the scratch course and provide a smooth surface prior to the final overlay.

3.8 COMPACTION. The mixture shall be thoroughly and uniformly compacted by rolling. The surface shall be rolled when the mixture has attained sufficient stability so that the rolling does not cause undue displacement, cracking or shoving. The sequence of compacting operations shall start along one edge with a 6" pass and then move to the other side to repeat the process. Once this is accomplished, compaction shall proceed at right angles to the compacted edges until the entire patch is compacted.

The speed of the roller shall, at all times, be sufficiently slow to avoid displacement of the hot mixture. Any displacement occurring as a result of reversing the direction of the roller, or from any other cause, shall be corrected at once. Rolling shall continue until all roller marks are eliminated, the surface is of uniform texture and true to grade and cross-section, and the required field density is obtained. Prevent adhesion of the mixture to the roller; the wheels shall be kept properly moistened. Excessive water will not be permitted. In areas not accessible to the roller, the mixture shall be thoroughly compacted with hot hand tampers.

Any mixture that becomes loose and broken, mixed with dirt, or in any way defective shall be removed and replaced with fresh hot mixture and immediately compacted to conform to the surrounding area. This Work shall be done at the Contractor's expense. Skin patching shall not be allowed.

The Engineer may retain a Soils Engineer with a testing device for determining density during the compacting operation.

Protection: After final rolling, do not permit vehicular traffic on the asphalt patch until it has cooled and hardened and in no case sooner than six hours.

3.9 MINIMUM QUALITY REQUIREMENTS. In addition to other specified conditions, comply with the minimum quality requirements as specified in applicable sections of MDOT 2012 Standard Specifications for Construction, Division 5.

Density: Compare the density of in-place material against specimens of the same asphalt concrete mixture. Minimum acceptable density of the in-place course material is 97% Compaction of the recorded laboratory specimen density.

Thickness: In-place compacted minimum thickness is as shown in Cross-Sectional Pavement Detail on the Plans. Any thickness less than this is not acceptable.

Joints: Carefully make joints between old and new pavements, or between successive days' Work, to ensure a continuous bond between adjoining Work. Construct joints to have the same texture, density and smoothness as other sections of the asphalt concrete course. Clean contact surfaces of sand, dirt, or other objectionable material and apply tack coat.

3.10 FIELD QUALITY CONTROL. Field quality control testing is not mandatory for this project. The Contractor is required to submit material certifications from the supplier that the mixes meet the specified and approved mix designs. If deemed necessary by the Engineer, the Owner will obtain the services of a separate material testing consultant. In this case, the contractor shall, at no additional cost to the Owner, coordinate with the Testing Firm, directed by the Engineer, to complete the following field quality control tests:

Uncompacted asphalt concrete mix:

- Sampling: ASTM D979
- Asphalt Cement Content: ASTM D2172
- Percent of Laboratory Density: ASTM D-1559

Compacted asphalt concrete mix:

- In-place Density: ASTM D-2950.

All quality control testing to be performed shall be in accordance with MDOT 2012 Standard Specifications for Construction. Record the locations where samples are taken, to correlate with subsequent testing. Additional testing may be required if any of the previous tests indicate insufficient values. If two successive tests indicate insufficient values, contact the Engineer for a course of action. Asphalt concrete materials not complying with specified requirements shall be repaired or removed and replaced with new paving.

3.11 EXISTING DRAINAGE. Do not block road drainage. Maintain shoulders, catch basins, gutters and ditches affected by construction operations to carry drainage flows. Adjust these structures if located in construction areas.

3.12 TEMPORARY REPAIRS. Where it is not feasible to replace pavements in roads immediately after completion of the excavation and backfill, furnish and place crushed stone or gravel as required to maintain traffic until the pavement can be restored. Continuously maintain the temporary crushed stone or gravel surfaces in a smooth condition, free of chuck holes or ruts, until the permanent pavement is restored. Restore permanent pavement within 5 days after the existing pavement has been cut.

End of Section

SECTION 02624**CRACK SEALING****PART 1 – GENERAL**

1.1 **SCOPE.** The Work in this Section is to be performed as indicated on the Drawings. The Work includes but is not limited to the preparation of and sealing of cracks with the specified crack sealing material. This work shall consist of cleaning and filling cracks up to 1 inch wide with the material specified. Distressed areas shall be repaired as specified and as directed by the Engineer. Cracks greater than 1 inch wide or alligator cracks smaller than 6 inch square requiring major repairs shall not be sealed and shall be brought to the attention of the Engineer as additional repair work that may be required which is not covered in this Specification.

Typical Crack Sealing (Unless otherwise stated on plans):

Crack Name	Size of Crack	Preparation Prior to Sealing
Small	Less than 1/2 inch	Clean and Blow Out
Large	1/2 inch – 1 inch	Rout, Clean and Blow out

Cracks less than 1/8 of an inch do not need to be sealed if a seal or slurry coat is to be provided on the pavement surface to thoroughly fill these smaller cracks. In this case, the seal or the slurry coat material shall be worked into the crack during application. Contractor shall allow crack sealant to set up to manufacturer requirements prior to seal or slurry coat. Contractor shall ensure pavement finished surface shall be flush with remaining pavement after crack seal, seal, or slurry coat repairs.

1.2 **QUALITY ASSURANCE.** The scheduling and sequencing of construction operations shall be carefully coordinated with the Owner or Engineer. Building operations will be maintained during the construction and it is the Contractor's responsibility to determine the nature and schedule of these operations.

1.3 **SUBMITTALS.** Submit to the Engineer, a copy of material certificates for review and approval prior to construction. Certificates shall state that each material item meets specified requirements and shall be provided for approval a minimum of seven (7) days prior to installation.

1.4 **TRAFFIC CONTROL.** Contractor shall maintain vehicle and pedestrian traffic during operations in such a manner as to not disrupt normal business activities of adjacent enterprises. Re-routing traffic and any necessary traffic control devices such as barrels, cones, tape, flags, etc. shall be the sole responsibility of the Contractor.

PART 2 – PRODUCTS

2.1 MATERIALS. Asphalt pavement crack and joint sealant shall meet the performance standards of AASHTO M301 and ASTM D6690 Type II when tested according to ASTM D5329 and must be approved by the Engineer in accordance with the submittal process.

PART 3 – EXECUTION

3.1 EXAMINATION. The following procedures shall be used in preparing cracks in pavement for resealing. When crack is deeper than that specified, a backer material shall be provided to maintain depth requirements.

Preparation – Crack or joint must be properly prepared prior to installation of crack sealant by means of routing and/or the use of a hot compressed air jet to remove all incompressible material and assure the sidewalls of the crack are clean and dry.

Cracks 1/2 inch to 3/4 inch shall be routed as close to a 1:1 ratio as possible following the crack as nearly as possible. Maximum size shall be approximately 3/4 inch wide by 3/4 inch deep.

All cracks greater than 3/4 inch width shall be routed as close to a 1:1 ratio as possible up to a maximum of 1 inch following the crack as nearly as possible. Maximum size shall be approximately 1 inch wide by 1 inch deep. Crack shall be cleaned to a depth of 1 inch and sealed.

The routing machine to be used for routing cracks and joints shall have a cutter that consists of radially located steel cutters mounted on a circular cutter head. The routing machine shall also be capable of cutting a uniform square shape in either a straight or irregular line. Immediately ahead of sealer placement, dust and debris shall be blown from the crack with a power brush/blower or with compressed air with a minimum pressure of 90 psi. If compressed air is used, the pneumatic tool lubricator must be bypassed and a filter installed on the discharge valve to keep water and oil out of the lines.

All debris and objectionable material resulting from cleaning operations will be removed from the pavement surface prior to sealing operations.

3.2 PREPARATION OF CRACK SEALING MATERIAL. The crack sealant material shall be heated in a vessel designed for heating hot pour crack sealants. Some means of agitation and monitoring of temperature are required. The range of safe heating temperature for the product is between 325 and 375 degrees F. At no time may the product be heated to 425 degrees F or above. A direct fire melter can be used if these precautions can be met. An oil-jacketed double boiler may also be used. Heating/melting equipment shall be equipped with a working accurate temperature gauge on the kettle.

Crack sealant material that has been overheated, heated more than four hours, or any amount of material that remains in the applicator at the end of the day's operation shall be withdrawn and wasted. Prior to the start of each day's operation, the Contractor shall withdraw a minimum of 1 gal of filler from the applicator wand to be considered as waste material.

3.3 CRACK SEALING. No crack-sealing compound shall be applied in wet joints, where frost, snow or ice is present, or when temperatures are 50 degrees F and falling.

When crack-sealing work is done during periods when the pavement is contracted, as occurs during the colder months, (average temperature lower than 55°) cracks shall be filled to no more than 1/8 inch below the pavement surface. When cracks are sealed during the hot weather periods, (average temperature higher than 55°) when the pavement is expanded, they should be poured flush with the pavement surface.

As soon as the cracks are cleaned with compressed air, they shall be sealed with crack sealing material. The surface of the pavement shall be dry at the time of sealing. No cracks shall be sealed until the cleaning and preparation of the cracks have been inspected and approved by the Engineer or approval is obtained by Engineer for Contractor to take a minimum of six (6) pictures of prepared areas at the site.

Cracks shall be filled the same day they are prepared. Cracks that are not filled on the same day they are prepared shall be re-cleaned, dried, and filled.

Install heated sealant directly into and pushed in with squeegee. Cracks/joints not to exceed a 4 inch wide band. Thickness should be controlled to not more than 1/8 inch above pavement surface. Finished sealed cracks and joints will be uniformly level. Refill to achieve a flush to 1/8 inch concave surface appearance.

Any filled crack not in conformance with these specifications two hours after filling shall be refilled as directed by the Engineer at no additional cost to the owner.

Cracks that cannot be filled due to filler drainage into a large void shall be repaired by plugging the void with hot mix asphalt, or other suitable material approved by the Engineer, then filling the crack as specified above.

Pouring of the sealing compound shall be done so as to completely fill the crack. Any sealing compound spilled on the surface of the pavement shall be removed immediately. After the first pour has cooled to the temperature of the pavement and settled, a second pour shall be made to fill the sag or groove and bring the sealing compound flush with the surface of the pavement.

Traffic shall not be permitted until the compound has hardened sufficiently to resist being picked up by vehicular tires. The Contractor at no additional cost to the Owner or

Engineer shall repair filler that pulls loose within 96 hours after opening the pavement to traffic.

End of Section

SECTION 02641**CONCRETE SIDEWALKS, CURB, GUTTER AND PAVEMENT****PART 1 – GENERAL**

1.1 **SCOPE.** Provide all materials, labor, equipment, and services necessary to complete all concrete sidewalk, curb, gutter and pavement repairs and to construct new concrete sidewalk, curb, gutter or pavement as indicated in these Construction Documents. Work includes, but is not limited to the removal and replacement of all sidewalks, sidewalk ramps, curb, gutter, and pavement as indicated on the Plans, and the installation of new concrete sidewalk, curb, gutter, and pavement as indicated on the Plans.

1.2. **GENERAL.** Rules, regulations or laws of any controlling Governmental Agency shall govern when they are more stringent than the requirements of this Section. Reference Specifications where applicable to Work under this Section are referred to by abbreviation as follows:

- American Association of State Highways and Transportation Officials (AASHTO)
- The Asphalt Institute (AI)
- Michigan Department of Transportation (MDOT)
- American Society for Testing Materials (ASTM)

Allowable Limits: The materials and methods specified herein and included in the reference specifications provide for permissible variations that may be encountered due to supply, character of the work, climate, and location. Changes in gradations and mixtures are subject to the approval of the Engineer.

1.3 **SUBMITTALS.** Submit to the Engineer, a copy of all material certificates and mix designs for review and approval prior to construction. Certificates shall state that each material item meets specified requirements. Material submittals and concrete mix designs shall be provided for approval a minimum of seven (7) days prior to installation.

1.4 **TRAFFIC CONTROL.** Contractor shall maintain vehicle and pedestrian traffic during paving and repair operations in such a manner as to not disrupt normal business activities of adjacent enterprises and shall obtain any permits required by all agencies having jurisdiction over the Work.

1.5 **WEATHER LIMITATIONS.** Concrete placement shall be permitted only when air temperature is at least 32 degrees F. and rising. Concrete mix temperature shall be a minimum 45 degrees F. Protect concrete from damage by rain, inclement weather, and freezing weather. Pavement damaged by inclement weather shall be removed and replaced at no cost to the Owner or Engineer.

PART 2 – PRODUCTS**2.1 MATERIALS.**

2.1.1 AGGREGATE BASE COURSE. Aggregate Base Course shall meet the requirements of the Michigan Department of Transportation 2012 Standard Specifications for road structures. This shall consist of MDOT requirements and be compacted to a density equal to at least 95% of the maximum dry density as determined by ASTM D-1557. Dense-Graded Aggregate 21AA Limestone or approved equal shall be used.

2.1.2 CONCRETE MIX DESIGN.

Concrete construction shall conform to 2012 MDOT Standard Specifications. All concrete mixtures used for driveways, ramps, sidewalk, curb, gutter, and pavement shall conform to the MDOT Requirements for Grade P1 per 2012 MDOT Standard Specification Section 601.

All cement used in construction shall be Portland Cement, Type I or Type II and shall meet AASHTO M85, Type I or Type II requirements. Portland Cement shall conform to 2012 MDOT Standard Specifications, Section 901.

Fly ash may be used as an optional portion of the cementing material with Portland cement per 2012 MDOT Standard Specifications Sections 601 and 901, and shall meet the requirements of ASTM C 618, Class F, or Class C.

The fine aggregate shall be 2NS and meet requirements of 2012 MDOT Standard Specifications, Section 902.

The coarse aggregate shall be 6A or 6AA and meet all requirements of 2012 MDOT Standard Specifications, Section 902.

2.1.3 GENERAL.

Water used in concrete shall be clean, free from oil, salts, acids, strong alkalis or vegetable matter per AASHTO T26. Potable water obtained from a municipal supply, suitable for drinking, may be accepted without testing.

Air-Entraining Admixture shall be in accordance with 2012 MDOT Standard Specifications, Section 903, and AASHTO M154. Additional admixtures shall only be used as approved by the Engineer and meet the requirements of 2012 MDOT Standard Specifications, Section 903.

Expansion papers shall be of the preformed resilient joint material type, not less than 1/2-inch thick. The length shall be equal to the width of the slab, and the depth equal to the thickness of the slab.

The curing compound shall be white membrane-type and shall comply with 2012 MDOT Standard Specifications, Section 903.

Steel reinforcement shall meet requirements of 2012 MDOT Standard Specifications, Section 905.

Poured contraction joint sealer shall meet the requirements of MDOT specifications. Hot poured joint sealer shall be composed of petropolymers and be supplied in solid form. The sealer shall meet requirements of ASTM D 3405 with the following modifications:

- Penetration of 90 – 150 at 77 degrees F.
- Bond at -20 degrees F standard specimen, 3 cycles, 200% extension, Passes.

Cold applied contraction joint sealer meeting the above physical requirements may be used with the approval of the Engineer.

Preformed expansion joint filler and sealer shall be one of the following types. When the type is not specified, resilient filler shall be used.

- Resilient filler: MDOT specifications, AASHTO M 213.
- Polyethylene joints: MDOT specifications, AASHTO T 42.
- Elastomeric joints seals: MDOT specifications, AASHTO M 220.
- Preformed urethane foam expansion joint filler: MDOT specifications, IM 436.

Forms shall be metal or wood and of an approved section. They shall be straight, free from distortion and shall show no vertical variation greater than 1/8-inch (1/8") in 10-foot lengths from the true plane surface on the top of the forms when tested with a 10-foot straightedge, and shall show no lateral variation greater than 1/4-inch (1/4") in 10-feet from the true plane surface on the lateral face of the form when tested with a 10-foot straightedge. They shall be of the depth specified on the Drawings, securely held in place and true to line and grade.

2.2 MINIMUM QUALITY REQUIREMENTS. Concrete mix shall be Grade P1 per MDOT Specification Section 601 and be proportioned to provide the following:

- Cement Content: 564 lbs/cyd
- Compressive Strength at 28 days: 3500 psi minimum.
- Total air content by volume: 5% to 8.5%.

PART 3 – EXECUTION

3.1 REMOVAL AND GRADING. The required removal of sidewalk, curb, gutter, and pavement shall be done in a manner that will avoid damage to property and any existing adjacent sidewalks, curb, gutter, or pavement that are to remain. Where portions of an existing concrete are to remain, the removed portion shall extend to an existing joint or sawed joint as directed by the Engineer. The sawed joint shall be cut full-depth with a power-driven concrete saw. Earth removal at the edges of the existing

sidewalks shall be limited to that reasonably required for the subsequent installation of the concrete forms or rails. Existing sod shall be carefully removed and suitably stored for later replacement. Such work will be considered incidental to the cost of construction.

All sidewalk, curb, gutter, and pavement shall be placed only on the prepared base or subgrade as indicated on the drawings, smoothed and leveled to the grades established by the Engineer. The subgrade shall be thoroughly compacted and leveled to grade. Prepare subgrade or base in accordance with local agency Standard Specifications unless indicated otherwise on the Drawings. Replace unsuitable subgrade soils with approved suitable materials as directed by Engineer. Moisten base to minimize absorption of water from fresh concrete. Coat surfaces of manhole, catch basin and other metal frames and covers with oil to prevent bond with concrete pavement. Notify Engineer a minimum of 24 hours prior to commencement of concreting operations.

3.2 SLOPE. Sidewalks shall pitch toward the street with a maximum cross slope of 2%. Pavement, curb and gutter shall meet flush with surrounding areas outside of the removal area, and shall be placed according to the Drawings. All pavement, curb and gutter shall be placed to maintain positive drainage.

3.3 CONCRETE PLACING. Prior to placing the concrete, all debris, stones, dirt, etc., shall be removed from the base or subgrade. The base or subgrade shall be moistened with water in such a manner as to thoroughly wet the material without forming puddles or pockets of water. No concrete shall be placed on frozen surfaces.

The concrete shall be distributed or spread as soon as placed. The concrete shall be deposited on the base in such a manner as to require as little re-handling as possible. Any additional spreading required shall be done by means of shovels. The method and manner of placing shall be such as to avoid segregation and separation of the materials. The concrete shall be distributed to such depth and sufficiently above grade so that when consolidated and finished, the surface shall conform to the required finished grade. The concrete along the faces of the forms and adjacent to joints shall be consolidated and compacted to fill all voids and insure a dense smooth surface.

The concrete shall be deposited continuously in the forms in such a manner as to avoid segregation and it shall be thoroughly tamped or vibrated so that the forms are entirely filled and the concrete thoroughly consolidated. The slabs shall be placed in sections or blocks in one operation as a monolith. The depositing and spreading of the concrete shall be continuous, as far as possible, between transverse joints. In the case of a temporary shutdown, the concrete at the unfinished end of the slab shall be covered with wet burlap. In the event of an unavoidable interruption of the work continuing more than ½ hour, a construction joint shall be placed provided the section is 10 feet (3.1 m) or more in length between joints. Sections less than 10 feet (3.1 m) in length shall not be permitted, and if constructed shall be removed.

In all cases the minimum thickness of the pavement shall be the thickness shown on the plans.

Concrete sidewalks shall be constructed in the locations they are removed due to construction operations and shall match the general characteristics of the removed and adjacent sections of sidewalk unless otherwise noted on the plans. Sidewalks shall be edged and grooved.

Concrete curb and gutter shall be constructed in the locations they are removed due to construction operations and shall match the shape of the curb and gutter that was removed and the adjacent construction. If slip forming is used, an acceptable slip form curb machine shall be used to place, consolidate, and finish the freshly placed concrete in one complete pass in a manner that will require a minimum of hand finishing to produce a dense and homogenous section in conformance with the details indicated on the drawings. A form shall trail behind the machine for such a distance that no appreciable slumping of the concrete will occur. Final finishing shall be as specified hereinafter.

3.4 CONTRACTION JOINTS. Contraction joints shall be placed at right angles to the edge of the sidewalk, curb, gutter, or pavement, and perpendicular to the surface and at a minimum depth of 1-1/4 inches. Contraction joints shall be spaced at a distance generally equal to the width of the concrete sidewalk or pavement section, with a maximum spacing of 10 feet apart. The concrete surface shall be struck off to a plane surface with a straightedge. After the surface has been floated to an even surface, the contraction joint shall be cut and all slab edges rounded with a 1/2-inch radius edging tool that will finish to a width of 2-inches. After the concrete has slightly set, a broom shall be brushed lightly across the surface at right angles to forms so as to impart a rough finish.

3.5 EXPANSION (OR ISOLATION) JOINTS. Place expansion joint filler paper within the concrete construction at the locations noted below and seal with Crafcro RoadSaver Silicone Sealant or approved equal. Expansion Joints shall be placed at the following locations:

- At the back of the curb and front edge of the sidewalks adjacent to each driveway approach and service walk.
- At intervals not to exceed 30-feet in all concrete sidewalks or curb and gutter, with a minimum of one at each area of replacement.
- At the back of the curb where the ramps extend from the key flag to the street.
- Between the key flag and the ramp in all cases except where there are existing expansion joints at the intersections of the sidewalks and the key flag.
- At any place where a sidewalk abuts a building or fixed structure.
- At any other locations indicated on the plan.

3.6 FINISHING. After concrete in sidewalks has been thoroughly consolidated and leveled, and the initial set has taken place, the surface shall be finished with a wood or cork float and either burlap or broom finish. The top surface of sidewalks shall be uniform in color and edges shall be tooled. Care shall be taken to ensure a straight, neat appearance along edges of the sidewalk and at joints.

Each curb shall be tooled to the required radii as soon as possible after the concrete takes its initial set. After the forms and templates are removed, the joints shall be tooled and the surface finished with a wood or cork float to remove all imperfections without additional mortar or drier. In all cases, the resulting surface shall be smooth and of uniform color with all rough spots, projections and form stakes removed. No plastering of the concrete will be allowed. Each finished curb and gutter shall have a true surface; shall be free from sags, twists, or warps and shall have a uniform appearance. Final finishing shall be light brooming transverse to the line of the curb.

When the water sheen has practically disappeared, the concrete pavement surface shall be textured (finished) by use of an approved broom or brush. The texturing operations shall produce uniform corrugations approximately 1/16 inch (1.6 mm) in depth and approximately at right angles to the centerline of the pavement. Texturing shall be completed before the concrete is in such condition that the surface will be torn or unduly roughened by the operations. The finished surface shall be free from rough or porous areas, irregularities and depressions resulting from texturing operations and shall meet the approval of the Engineer. Brooms or brushes for texturing the pavement surface shall be of such material and design that they will be capable of producing uniform corrugations of the specified depth.

3.7 CURING CONCRETE. Freshly placed concrete shall be protected as required to maintain the temperature of the concrete at not less than 50 degrees F. nor more than 80 degrees F. and in a moist condition continuously for the period of time necessary for the concrete to cure. Changes in temperature of the concrete during curing shall be as uniform as possible and shall not exceed 5 degrees F. in any one hour, nor 50 degrees F. in any 24-hour period.

3.8 IDENTIFICATION. Prior to the application of curing compound, the Contractor shall clearly and neatly mark the sidewalk with the Contractor's name and the year of construction. This indentation shall be stamped in the concrete at both ends of the length of sidewalk constructed and at one spot in a driveway approach.

3.9 REMOVAL OF FORMS. All forms, rails and stakes shall be removed once the initial set of the concrete has taken place.

3.10 WEATHER PROTECTION OF CONCRETE DURING CURING. Cold Weather Protection: When the temperature of the atmosphere is 40 degree F. and below, the concrete shall be protected by heating, insulation covering, housing or combination thereof as required to maintain the temperature of the concrete at or above 50 degrees

F. and in a moist condition continuously for the concrete curing period. Cold weather protection shall meet the requirements of ACI 306R "Cold Weather Concreting."

Hot Weather Protection: When the temperature of the atmosphere is 90 degrees F. and above, or during other climatic conditions which will cause too rapid drying of the concrete, the concrete shall be protected by windbreaks, shading, fog spraying of the light-colored, moisture-retaining covering, or a combination thereof as required to maintain the temperature of the concrete below 80 degrees F. and in a moist condition continuously for the concrete curing period. Hot weather protection shall meet the requirements of ACI 305R "Hot Weather Concreting."

3.11 CLEANUP. After completion of concrete curing in an area, remove all weather protection materials and rubbish and debris resulting from specified Work, sweep concrete curbs and gutters clean, and seal joints.

End of Section

SECTION 02650**PAVEMENT STRIPING****PART 1 – GENERAL**

1.1 **SCOPE.** Provide all materials, labor, equipment, and services necessary to complete a two (2) coat application of all painted traffic lane striping, crosswalks, and other permanent pavement markings. All striping and painting shall match existing, unless otherwise specified on the Drawings or as directed by the Engineer. Existing striping shall be replaced where pavement is resurfaced or treated with a surface sealant.

1.2 **SUBMITTALS.** Submit to the Engineer, a copy of all material certificates for review and approval prior to construction. Certificates shall state that each material item meets specified requirements. Material Certificates shall be provided for approval a minimum of seven (7) days prior to installation.

PART 2 – PRODUCTS

2.1 **MATERIALS.** Pavement shall be marked by painted lines 4 inches wide, accurately and neatly arranged as indicated within the Construction Documents. White and yellow markings shall be painted using Sherwin-Williams Setfast Low VOC Acetone TM5626 or TM5627, or approved equal. Blue markings shall be painted using Sherwin-Williams Setfast TM2133, or approved equal. Markings on concrete surfaces shall be painted with approved marking paint compatible with concrete surfaces.

PART 3 – EXECUTION

3.1 **WEATHER LIMITATIONS.** The painting shall be performed only when the existing surface is dry and clean, when the atmospheric temperature is above 40-degrees F. and when the weather is not excessively windy, dusty or foggy.

3.2 **EQUIPMENT.** All equipment for the Work shall be approved by the Contractor and shall include the apparatus necessary to properly clean the existing surface, a mechanical marking machine, and such auxiliary hand painting equipment as may be necessary to satisfactorily complete the job.

For new pavement marking, the mechanical marker shall be an approved atomizing spray-type marking machine suitable for application of traffic paint. It shall produce an even and uniform film thickness at the required coverage and shall be designed so as to apply markings of uniform cross-sections and clear-cut edges without running or spattering and within the limits for straightness set forth herein. When needed, a dispenser shall be furnished, which is properly designed for attachment to the mechanical marker and suitable for dispensing the required quantity of reflective media.

Suitable adjustments shall be provided on the sprayer/sprayers of a single machine or by furnishing additional equipment for painting the width required.

3.3 PREPARATION OF EXISTING SURFACE. Immediately before application of the paint, the existing surface shall be dry and entirely free from dirt, grease, oil, acids, laitance, or other foreign matter which would reduce the bond between the coat of paint and the pavement. The surface shall be thoroughly cleaned by sweeping and blowing as required to remove all dirt, laitance and loose materials. Areas which cannot be satisfactorily cleaned by brooming and blowing shall be scrubbed as directed with a water solution of tri-sodium phosphate (10%Na₃PO₄ by weight) or an approved equal solution. After scrubbing, the solution shall be rinsed off and the surface dried prior to painting.

Existing markings or stripes which are to be abandoned or removed shall be obliterated or obscured by total removal and to the satisfaction of the Owner or the Engineer.

3.4 LAYOUTS AND ALIGNMENT. The Contractor shall establish necessary control to replace the existing striping layout and pavement markings prior to their removal. The Engineer will not be responsible for providing control or layout for existing pavement markings.

On those sections of pavements where no previously applied figures, markings, or stripes are available to serve as a guide, suitable layouts and lines of proposed stripes shall be spotted in advance of the paint application. Control points shall be spaced at such intervals as will ensure accurate location of all markings.

The Contractor shall provide an experienced Technician to supervise the location, alignment, layout, dimensions and application of the paint.

3.5 APPLICATION. Markings shall be applied at the locations and to the dimensions and spacing indicated on the Plans or as specified. Paint shall not be applied until the indicated alignment is laid out and the conditions of the existing surface have been approved by the Owner or the Engineer.

The paint shall be mixed in accordance with the manufacturer's instructions before application. The paint shall be thoroughly mixed and applied to the surface of the pavement with the marking machine at its original consistency without the addition of thinner. The surface shall receive two (2) coats. The first coat shall be applied immediately upon execution of the work to the pavement surface. The second coat shall be applied after the first coat is given suitable amount of time to cure properly.

A period of 48 hours shall elapse between application of a seal coat, slurry seal or the placement of the bituminous surface course and the marking of the pavement. The paint shall not bleed excessively, curl, or discolor when applied to bituminous surfaces.

In the application of straight stripes, any deviation in the edges exceeding 1/2-inch in 50-feet shall be obliterated and the marking corrected. The width of the markings shall be as designated within a tolerance of 5 percent (5%). All painting shall be performed to the satisfaction of the Engineer by competent and experienced Equipment Operators, Laborers, and Artisans in a neat and workmanlike manner.

Paint shall be applied uniformly by suitable equipment at a rate of 0.0094 gal/sf for stencils and 0.00313 gal/ft for striping. Paint application shall produce an average wet film thickness of 0.015-inches.

3.6 PROTECTION. After applications of the paint, all markings shall be protected while the paint is drying. The fresh paint shall be protected from injury or damage of any kind. The Contractor shall be directly responsible and shall erect or place suitable warning signs, flags, or barricades, protective screens or coverings as required. All surfaces shall be protected from disfiguration by spatter, splashes, spillage, drippings of paint or other material.

End of Section

SECTION 02800**LANDSCAPING****PART 1 - GENERAL**

1.1 **SCOPE.** This section covers placing and grading topsoil, turf establishment, and the installation of vegetative swale, trees, shrubs, and ground cover. The Contractor shall provide all materials, labor, and equipment to complete all landscape work in accordance with the drawings and specifications or where contractor damages existing landscaping during work.

1.2 **GENERAL.** Where conflicts exist from those identified in these documents and the local jurisdiction requirements, the more stringent shall apply. Finish Grades and Soil Conditions shall be subject to approval before commencing work under this section.

1.3 **SUBMITTALS.** Submit to the Engineer, a copy of all material certificates for review and approval prior to construction. Certificates shall state that each material item meets specified requirements. Material Certificates shall be provided for approval a minimum of seven (7) days prior to installation.

1.4 **WARRANTY.**

Guaranteed Period. All seeded areas shall be subject to one year correction period which shall commence upon the date of Final Acceptance by the Owner or Engineer. Any dead plant or seeded area that dies to the point that of 25 percent or more shall be replaced at the Contractor's expense. Replacements made under the Contractor's warranty shall be covered by a like warranty for a period of one year after completion of the replacement. Rejection of plants or seeded areas by the Owner or Engineer will be final. When notified by the Engineer that certain plants or seeded areas require replacement, the replacements shall be made within 30 days of notification, providing the 30 day period falls within the planting season.

Replacements. All replacements shall be of the same kind and size as originally planted and shall be made at no extra cost. The Contractor shall repair any damage, including ruts in seeded or bed areas incurred in making replacements. At the direction of the Engineer, replacements may be planted at the start of the next planting and digging season. In such cases, dead trees and shrubs shall be removed within a reasonable time.

Notification. The Owner or Engineer will conduct additional inspections, and will notify the Contractor of any plants or seeded areas that die or require replacement during the one-year warranty period. The Contractor shall provide and coordinate planting of replacements.

Final Warranty Inspection. At the conclusion of the warranty period, the Contractor and Owner/Engineer shall conduct a final warranty inspection at a time mutually agreeable. It will be the Contractor's responsibility to notify the Engineer in writing requesting the inspection.

PART 2 - PRODUCTS

2.1 **MATERIALS.** All landscaping Materials shall be in accordance with 2012 MDOT Standard Specifications for Construction, Division 917.

Topsoil. Topsoil for planting operations shall be fertile, friable, natural loam containing a liberal amount of humus, and shall be capable of sustaining vigorous plant growth and shall not be delivered in a frozen state.

Grass Seed Mixture. Seed mixture shall be 30% Kentucky Bluegrass, 20% Perennial Ryegrass, 50% Creeping Red Fescue, or approved equal.

Plants. Plant types, quantity, and locations shall be installed as shown on the Drawings.

PART 3 - EXECUTION

3.1 **INSTALLATION.** All landscaping Procedures shall be in accordance with the Construction Documents, and include restoring disturbed areas with 3" of topsoil, grass seed, straw mulch, and straw mulch blankets.

General. Prior to grading and tilling, vegetation that may interfere with operations shall be mowed, grubbed, and raked. The collected material shall be removed from the site. The surface shall be cleared of stumps, stones larger than 3 inches (7.62 cm), roots, cable, wire, and other materials that might hinder the work for subsequent maintenance.

Planting Operating. Planting operations shall proceed under a well-organized program and according to accepted nursery practices. The Contractor shall be held solely liable for damage to existing utilities and other structures.

Protection. After completion of construction operations, seeded areas shall be protected where necessary against traffic by erecting barricades or placing warning signs in appropriate areas. Such protective devices shall be maintained until final acceptance of the project.

Watering. Once planting is completed, vegetation shall be watered thoroughly to settle the plants and eliminate air pockets.

3.2 **FINAL ACCEPTANCE.** When the work has been completed, the Contractor

shall notify the Engineer in writing requesting a final acceptance. At a time mutually agreeable, the Contractor and Owner or Engineer will inspect the work and report findings as to acceptability and completeness. Any work remaining to be done shall be subject to another review. This final acceptance shall serve as the start of the guarantee period.

End of Section

Pheasant Run Roadway Maintenance Association (PRRMA) - Pavement Core Information

Core	Date	Subdivision / Street	Pavement Type	Location Description	Pavement Thickness	Pavement Description	Base Thickness	Base Description	Subgrade Description	Comments
1	3/26/2009	Fairways / Sandalwood Ct.	Asphalt	Near BC at end of Cul-de-sac	5.5"	Single Layer	10.0"	Granular material (mixture of gravel and sand), large coarse aggregate	Light Brown / Orange Clay	Base was very well compacted. Subgrade came out in clumps and was dry
2	3/26/2009	Fairways / Eastbourne Rd.	Asphalt	Near AC on east part of road	6.0"	Two Layers	9.5"	Granular material (mixture of gravel and sand), small coarse aggregate	Light Brown / Orange Clay; some sand	Subgrade came out in clumps and was wet
3	3/26/2009	Fairways / Mornington Dr.	Asphalt	Near isolated AC area	6.0"	Two Layers	6.0"	Granular material (mixture of gravel and sand), small coarse aggregate	Light Brown / Orange Clay	
4	3/26/2009	Fairways / Country Club Ln.	Asphalt	Near Sandalwood intersection, near high severity BC	4.5"	Single Layer	6.0"	Granular material (mixture of gravel and sand)	Looked similar to base material, but had rounder, more natural coarse aggregate, and was wetter after 6.0" (see notes)	Went total of 24" below TOP, soil appeared slightly different after 6.0", with more rounded aggregate was wetter. This was determined to be the subgrade material.
5	3/26/2009	Fairways / Glengarry Blvd.	Asphalt	Near AC	4.5"	Single Layer	12.0"	Granular material (mixture of gravel and sand)	Light Brown / Orange Clay	
6	4/29/2009	Pheasant View / Crowndale Ln.	Asphalt	Near existing patch and adjacent distress	6"	Two Layers	12"	Granular material (mixture of gravel and sand)	Brown Clay	Subgrade was very hard and dry
7	4/29/2009	Pheasant View / Overhill Ln.	Asphalt	Near BC	5.5"	Two Layers	7.5"	Granular material (mixture of gravel and sand)	Brown Clay	Subgrade was dry
8	4/29/2009	Pheasant View / Stonebridge Way	Asphalt	Near AC	7"	Single Layer	8"	Granular material (mixture of gravel and sand)	Brown Clay	Subgrade was dry
9	4/29/2009	Pheasant View / Stonebridge Way	Asphalt	Near BC	6"	Two Layers	9.5"	Granular material (mixture of gravel and sand)	Brown Clay	Subgrade was dry
10	4/29/2009	Pheasant View / Windridge Blvd.	Asphalt	Near linear cracking	6.25"	Single Layer	7"	Granular material (mixture of gravel and sand)	Brown Clay	Subgrade was dry
11	4/30/2009	Fairway Pines / Muirfield Dr.	Asphalt	Near AC	8"	Single Layer	6"	Granular material (mixture of gravel and sand)	Brown Clay	
12	4/30/2009	Fairway Pines / Muirfield Dr.	Asphalt	Near AC	5.5"	Two Layers	9.5"	Granular material (mixture of gravel and sand)	Brown Clay	
13	4/30/2009	Fairway Pines / Augusta Dr.	Asphalt	Near AC and high severity raveling	5"	Two Layers	9"	Granular material (mixture of gravel and sand)	Brown Clay	
14	4/30/2009	Fairway Pines / Highlands Dr.	Asphalt	Near AC	6"	Two Layers	8"	Granular material (mixture of gravel and sand)	Brown Clay	
15	4/30/2009	Fairway Pines / Fountain View Dr.	Asphalt	Near isolated AC	5.5"	Two Layers	8.5"	Granular material (mixture of gravel and sand)	Brown Clay	
16	4/30/2009	Fairway Pines / Highlands Dr.	Asphalt	Near AC	5"	Two Layers	10"	Granular material (mixture of gravel and sand)	Brown Clay	
17	4/30/2009	Fairway Pines / Glengarry Blvd.	Asphalt	Near linear cracking	8"	Single Layer	8"	Granular material (mixture of gravel and sand)	Brown Clay	
18	4/30/2009	Fairway Pines / Summit Pkwy.	Asphalt	Near AC	5"	Two Layers	9"	Granular material (mixture of gravel and sand)	Brown Clay	Subgrade was very stiff
19	4/30/2009	Fairway Pines / Summit Pkwy.	Asphalt	Joint between old asphalt and new patch	4.5"	Two Layers	9"	Granular material (mixture of gravel and sand)	Brown Clay	Core was taken at joint between old asphalt and newer patch. From the core, the patch was a two-inch mill and overlay.