

[Form01]

City of Mt. Pleasant, Michigan

CONTRACT DOCUMENTS

For Construction
of

2011 Street Reconstruction Project



BRUCE KILMER
Mayor

KATHIE GRINZINGER
City Manager

Prepared By:
Division of Public Works

RANDY CHESNEY, P.E.
Interim DPW Director/City Engineer

March 2011



THE CITY OF MT. PLEASANT, MICHIGAN

CITY HALL
320 W. Broadway • 48858-2447
(989) 779-5300
(989) 773-4691 fax

PUBLIC SAFETY
804 E. High • 48858-3595
(989) 779-5100
(989) 773-4020 fax

PUBLIC WORKS
1303 N. Franklin • 48858-4682
(989) 779-5400
(989) 772-6250 fax

NOTICE TO BIDDERS 2011 Street Reconstruction Project

The City of Mt. Pleasant, Michigan, is requesting sealed bids at the Office of the City Clerk, City Hall, 320 W. Broadway, Mt. Pleasant, Michigan 48858, until 1:30 p.m. (local time), on April 26, 2011, at which time and place the bids will be publicly opened and read. All bids shall be submitted in a sealed envelope, plainly marked "2011 Street Reconstruction Project – April 26, 2011."

Proposals are solicited on a unit price basis, for the following work:

Street Reconstruction	35 STA
Storm Sewer Construction	2700 LFT
Sanitary Sewer Construction	2400 LFT
Sidewalk Construction	7600 SFT
Curb and Gutter Construction	6400 LFT
Bituminous Paving	2800 TON

All bid proposals must be accompanied by a bid bond, bank cashier's check, bank draft, or certified check for not less than five percent (5%) of the bid price, made payable to the City of Mt. Pleasant.

To view and download Plans and Contract Specifications at no charge, visit the City of Mt. Pleasant website at www.mt-pleasant.org/depts/engineering/biddinginfo.htm. This project will be constructed to the 2003 MDOT Standard Specifications for Construction.

A non-refundable \$50.00 fee is required for plans and specifications picked up at the Public Works Building, 1303 N. Franklin Street, Mt. Pleasant, Michigan 48858, (989) 779-5401, Monday through Friday, 8:00 a.m. to 4:30 p.m.

A non-refundable \$60.00 fee is required for plans and specifications, which must be mailed.

The City of Mt. Pleasant reserves the right to accept or reject any or all bids, to waive any irregularities in the bids, and to select the bid considered most advantageous to the city.

Gary Schwerin
Assistant City Engineer
(989) 779-5408

Jeremy Howard
City Clerk

City of Mt. Pleasant, Michigan
INSTRUCTIONS TO BIDDERS**1. Proposals**

Proposals must be made upon the forms provided therefore, with the Bid amount both written and shown in figures, and all other data required submitted.

The Proposal, bound together with all Proposal Documents, must be enclosed in a sealed envelope marked as specified in the Notice to Bidders for such Bid and clearly indicating the name and address of the Bidder and must be received by the City Clerk, City Hall, 320 West Broadway Street, Mt. Pleasant, Michigan 48858, no later than the time and date specified in the Notice to Bidders. At such specified time, Proposals shall be publicly opened and read aloud.

2. Basis of Proposals

Proposals are solicited on the basis of unit price(s) and/or lump sum(s), as specified on the Proposal form.

The City of Mt. Pleasant (also referred to as "Owner"), reserves the right to accept any Bid, to reject any or all Bids, to waive any irregularities in the Bids, and to select the Bid considered most advantageous to the city.

3. Comparison of Bids

In comparing Bids, consideration shall be given to the time proposed for completion of the Contract, qualifications of Bidder, price differentials, alternate Proposals for the alternate items listed in the Proposal (if applicable), and any other pertinent factors. **The City of Mt. Pleasant grants a preference to businesses located within the Mt. Pleasant City Limits. The preference given is a differential above the low bid if the low bid is not from a City of Mt. Pleasant bidder. The differential allowed is 3% of the total for bids between \$5,000 and \$9,999 and 2% of the total for bids over \$10,000. The maximum credit allowed is \$1500.00.** The Owner reserves the right to make an award to the Bidder whose Proposal is deemed to be in the best interest of the Owner.

4. Time

Time is of the essence in the performance of the Contract, and each Bidder, by submitting a Proposal, certifies his/her acceptance of the time allowed by the Contract for the completion of the work specified.

5. Indemnification

The Contractor shall save and hold harmless the city and its employees from and against all claims, damages, losses, or expenses, including attorney's fees, arising out of or resulting from the performance of the work; provided that any such claim, damage, loss or expense is caused in whole or in part by any negligent or willful act of omission of the contractor, subcontractor, employee, or anyone under their direction. The Contractor shall at his/her own expense, defend any and all such actions and shall pay all attorney's fees, costs, and expenses pertaining thereto.

6. **Bid Deposits**

Each Proposal shall be accompanied by a certified check, or a Bid Bond by a recognized Surety Company similar to a U. S. Government Standard Form Bid Bond, in the amount of five percent (5%) of the total amount of the Bid, made payable to the City of Mt. Pleasant, subject to forfeiture to the Owner in the event of failure on the part of the successful Bidder to enter into the attached form of agreement to do the work specified by said Proposal at the price and within the time stated therein. The Bid Deposit of all Bidders, except the three (3) lowest acceptable Bidders, shall be returned within two (2) weeks after opening of bids. The bid deposits of the three (3) lowest acceptable bidders shall be returned within 48 hours after the executed Contract(s) have been finally approved by the Owner.

7. **Liquidated Damages**

A liquidated damage clause, as given in the Contract form, provides that the Contractor shall pay the Owner as liquidated damages, and not as a penalty, the amount as indicated in Section 108.11 of the 2003 MDOT Standard Specifications for Construction for each and every calendar day that the Contractor may be in default of substantial completion of the work required under said Contract.

8. **Insurance and Bonds**

The successful Bidder will be required to execute (2) Bonds, in the form attached hereto, with Surety acceptable to the Owner and insurance, as follows:

- a. Bond in the amount of 100% of the Estimated Contract Price running to the City of Mt. Pleasant, Michigan, to insure the completion of the entire work, according to the statutes of the State of Michigan in effect at that time.
- b. Bond in the amount of 100% of the Estimated Contract Price running to the People of the State of Michigan for the protection of Subcontractors and Labor and Material Men, according to the statutes of the State of Michigan in effect at that time.
- c. Insurance in the amounts required by City Ordinance as specified in the Section 1 - General Construction Specifications, attached hereto.

The successful bidder shall be required to furnish for each set of executed Contract Documents, and conformed copies thereof, an original conformed Performance Bond, Labor and Materials Bond, Maintenance Bond, and Insurance Certificates.

9. **Permits and Local Codes**

The Owner shall procure the required permits for municipal sanitary sewer construction, municipal water system construction, and soil erosion control.

The Contractor shall obtain, at his/her expense, all other required local construction permits and shall comply with local building code and inspection requirements.

10. Qualifications of Bidders

It is the intent of the Owner to award the Contract to a Bidder fully capable, both financially and with regard to experience, to perform and complete all work in a satisfactory and timely manner. Evidence of such competency must be furnished on the forms included in the proposal, listing projects of similar difficulty, scope of work, and size, which the Bidder has satisfactorily undertaken and completed.

It is the intention of the City to award the contract to a Contractor whose ability and financial resources are fully equal to the task of performing the work in a satisfactory manner. With this in view, the Proposal calls for at least five (5) references, using specific names of persons to contact concerning the Contractor's ability to do this particular class of work. References from municipalities are preferred. The mere ability to furnish a Performance Bond shall not be accepted as sufficient evidence of responsibility on the part of the Bidder. The Bidder may also be required to furnish evidence of his current financial status.

11. Interpretation of Documents

If any Bidder is in doubt as to the true meaning of any part of the Plans, Specifications or any Contract Document, he/she may submit to the Owner a written request for an interpretation thereof. Any interpretation made in response to such a query shall be made only by Addendum, duly issued, and a copy of such Addendum shall be mailed or duly delivered to each prospective Bidder. The Owner shall not be responsible for any other explanation or interpretation of the Contract Documents. Alternative proposals that are suggested by bidders will be given consideration, if presented before the bid opening. If accepted, an addendum will be issued and sent out to all potential bidders, so that they may bid on the alternatives that have been identified.

12. Execution of Bid Proposal

A Bid Proposal, which is not signed by the individual making it, should have attached thereto a Power of Attorney evidencing authority to sign the Bid Proposal in the name of the person for whom it is signed.

A Bid Proposal, which is signed by a partnership, shall be signed by all of the partners or by an Attorney-in-Fact. If signed by an Attorney-in-Fact, there should be attached to the Bid a Power of Attorney evidencing authority to sign the Bid Proposal in the name of the partnership and such Power of Attorney shall be signed by all partners of the partnership.

A Bid Proposal, which is signed for a corporation, should have the correct corporate name thereof and the signature of the President, or other authorized officer(s) of the corporation, manually written below the corporate name and on the line indicating "By: _____." If such a Bid Proposal is manually signed by an officer other than the President of the corporation, a certified copy of a Resolution of the Board of Directors evidencing the authority of such officer(s) to sign the Bid Proposal should be attached thereto. Such a Bid Proposal should also bear the attested signature of the Secretary of the corporation and an impression of the corporate seal.

13. **Execution of Contract**

The successful Bidder to whom an award is made shall be required to enter into a written agreement, in the form attached hereto, within ten (10) days after receipt of a Notice of Award and copies of the documents to be executed. In the event the successful Bidder fails to comply with this provision, he/she may be considered by the Owner to have abandoned all his/her rights and interests in the award and his/her certified check or amount of the Bid Bond may be declared to be forfeited to the Owner, and the Contract may be awarded to another.

14. **Bidder Responsibility For Conditions of Work and Site**

The Bidder, or his/her representative, shall make personal investigation of the site of work and of existing structures and shall determine to his/her own satisfaction the conditions to be encountered, the nature of the ground, the difficulties involved in making connections to existing structures and pipes, and any and all other factors affecting the work proposed under the Contract.

The Bidder to whom the Contract is awarded shall not be entitled to any additional compensation by reason of conditions being different from those anticipated or by reason of his/her failure to fully acquaint himself/herself with the conditions at the site affecting the work of the Contract.

15. **Changes in Work**

If any change is required to be made in the work of the Contract, a payment adjustment therefore shall be determined as specified in Section 103 of the 2003 MDOT Standard Specifications for Construction.

Revised: March 2011

[Form42]

City of Mt. Pleasant, Michigan
NOTICE OF AWARD

TO: _____, 2011

PROJECT description: 2011 Street Reconstruction Project

THE CITY OF MT. PLEASANT (CITY) has considered your BID submitted April 26, 2011, for the above-described WORK in response to its NOTICE TO BIDDERS and INSTRUCTIONS TO BIDDERS.

You are hereby notified that your BID has been accepted for items in the amount of _____ Dollars (\$00).

You are required by the INSTRUCTIONS TO BIDDERS to execute the AGREEMENT and furnish the required Contractor's PERFORMANCE BOND, PAYMENT BOND, and CERTIFICATES OF INSURANCE within ten (10) calendar days from the date of this NOTICE to you.

If you fail to execute said AGREEMENT and to furnish said BONDS within ten (10) days from the date of this NOTICE, said CITY will be entitled to consider all your rights arising out of the CITY'S acceptance of your BID as abandoned and as a forfeiture of your BID BOND. The CITY will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the CITY.

Dated this ____ day of _____ 2011

CITY OF MT. PLEASANT, MICHIGAN
Owner

By: _____
Randy Chesney, P.E., Interim Director
Public Works Division

RECEIPT OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged this _____ day of _____.

By: _____
(Print or Type Name and Title)

Signature

City of Mt. Pleasant, Michigan
AGREEMENT

2011 STREET RECONSTRUCTION PROJECT

THIS AGREEMENT, made and entered into this _____ day of _____ 2011, by and between the CITY OF MT. PLEASANT, MICHIGAN, a Michigan municipal corporation, whose principal offices are located at City Hall, 320 West Broadway Street, Mt. Pleasant, Michigan 48858, hereinafter referred to as CITY and _____, hereinafter referred to as CONTRACTOR, for the considerations stated herein, agree as follows:

1. The CONTRACTOR agrees to forthwith perform specified services in accordance with the Specifications attached hereto and incorporated herein by reference.
2. The CITY shall pay to the CONTRACTOR, and the CONTRACTOR shall accept as full payment for the performance of this work, subject to any additions or deductions provided for, the total contract price of _____ DOLLARS (\$00). Such payment shall be made within thirty (30) days of receipt of any invoice, pending completion and acceptance of work performed.
3. In the event of any disagreement or controversy arising between the parties hereto as to the meaning of the Specifications, the interpretation of the proper execution of this contract, the amount of work to be performed, measurements and quantities, material(s) to be used, rate of progress, or other disputes under this contract, such disagreement or controversy shall be submitted to the Mt. Pleasant Division of Public Works, and the decision of the Director of Public Works shall be final.
4. All work shall be performed in strict compliance with the Specifications attached hereto.
5. In the event the CITY determines, at any time, that the work to be performed hereunder is not being performed in a good, substantial, workmanlike or timely manner, the CITY may suspend or terminate work hereunder without any liability to the CITY.
6. It is understood and agreed that the Notice to Bidders, Proposal, Specifications, and all Addenda prepared for this project are all essential documents of this contract and are incorporated as a part of this Agreement by reference.

7. In the event that any provision of any part of this contract conflicts with the provision(s) of another part of the contract, the provisions contained in the document first listed below, when applicable, shall govern:

- a) Agreement
- b) Addenda
- c) Special Conditions of Contract
- d) Contract Drawings
- e) Approved Shop and Working Drawings and Change Orders
- f) Contractor's Proposal and Bid Schedule
- g) Detailed Specifications
- h) Technical Specifications
- i) Instructions to Bidders
- j) Notice to Bidders

8. This agreement shall be binding upon the personal representatives, successors and assigns of the parties hereto.

In the WITNESS WHEREOF, the parties hereto have executed this document the day and year first above written.

WITNESS:

CITY OF MT. PLEASANT

_____ By: _____
Bruce Kilmer, Mayor

_____ _____
Jeremy Howard, City Clerk

WITNESSES:

Contractor

_____ By: _____
[signature-authorized officer]

_____ _____
Print or Type Name and Title

City of Mt. Pleasant, Michigan
PAYMENT BOND
(Under Act 213 of 1963)

KNOW ALL MEN BY THESE PRESENTS, That _____, as 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, are held and firmly bound unto THE CITY OF MT. PLEASANT, MICHIGAN, as obligee, and hereinafter called "OWNER", in the just and full sum of _____ Dollars (\$00), lawful money of the United States of America, for the payment whereof, the PRINCIPAL and SURETY bind themselves, their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the above PRINCIPAL has entered into a written contract with the OWNER, dated _____, for the work known as:

2011 STREET RECONSTRUCTION PROJECT

in accordance with the plans and specifications prepared by THE CITY OF MT. PLEASANT, DIVISION OF PUBLIC WORKS, Mt. Pleasant, Michigan, which contract is hereby referred to and made a part hereof as fully and to the same extent as if the same were entirely written herein; and

WHEREAS, this bond is given in compliance with and subject to the provisions of the Act 213 of the Public Acts of Michigan for the year 1963, as amended by subsequent acts to date.

NOW, THEREFORE, the conditions of this obligation are that if the PRINCIPAL and its subcontractors shall make all payments as they become due and payable of all amounts owing to subcontractors and to parties supplying labor or materials to the PRINCIPAL, or to its subcontractors, in the prosecution of the work provided for in said contract (intending to include herein all claimants as defined in Section 6 of Act 213 of 1963, as amended), then this obligation shall be void; otherwise, the same shall be in full force and effect; and

PROVIDED, that any alterations which may be made in the terms of the said contract, or in the work to be done under it, or any extension of the time for the performance of said contract or any other forbearance on the part of either part to the other, or the placing of an inspector or resident engineer thereon by the OWNER, shall not in any way release the PRINCIPAL and the SURETY, or either of them, their heirs, executors, administrators, successors, or assigns, from any liability hereunder. Notice to the SURETY of any alterations, extensions of or of any forbearance being hereby waived.

PAYMENT BOND – 2011 STREET RECONSTRUCTION PROJECT

IN WITNESS WHEREOF, signed and sealed this ____ day of _____, 2011.

WITNESSES:

PRINCIPAL: _____

By: _____ (Seal)

By: _____ (Seal)

SURETY: _____

By: _____ (Seal)

Title: _____

LOCAL ADDRESS OF AGENT FOR SURETY:

(Name)

(Street, City, State, ZIP Code)

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, That
 _____, as 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, are held and firmly bound unto THE CITY OF MT. PLEASANT,
 MICHIGAN, as obligee, and hereinafter called "OWNER", in the just and full sum of
 _____ Dollars (\$00), lawful money of the United
 States of America, for the payment whereof, the PRINCIPAL and SURETY bind
 themselves, their heirs, administrators, executors, successors and assigns, jointly and
 severally, firmly by these presents.

WHEREAS, the above PRINCIPAL has entered into a written contract with the
 OWNER, dated _____, for the work known as:

2011 STREET RECONSTRUCTION PROJECT

in accordance with the plans and specifications prepared by THE CITY OF
 MT. PLEASANT, DIVISION OF PUBLIC WORKS, Mt. Pleasant, Michigan, which contract
 is hereby referred to and made a part hereof as fully and to the same extent as if the
 same were entirely written herein; and

WHEREAS, this bond is given in compliance with and subject to the provisions of
 the Act 213 of the Public Acts of Michigan for the year 1963, as amended by subsequent
 acts to date.

NOW, THEREFORE, the conditions of this obligation are such that if the
 PRINCIPAL shall, in all respects, well and truly keep and perform the said contract, and
 shall pay all sums of money due or to become due for any labor, materials, apparatus,
 fixtures or equipment furnished for the purpose of constructing the work provided in said
 contract, and shall defend, indemnify and save harmless the OWNER against any and all
 liens, encumbrances, damages, demands, expenses, costs and charges of every kind,
 except as otherwise provided in said contract documents, arising out of or in relation to
 the performance of said work and the provisions of said contract, and shall remove and
 replace any defects in the workmanship or materials, as provided by contract, then this
 obligation shall be null and void; otherwise, it shall remain in full force and effect; and

PERFORMANCE BOND – 2011 STREET RECONSTRUCTION PROJECT

PROVIDED, that any alterations which may be made in the terms of the said contract, or in the work to be done under it, or any extension of the time for the performance of said contract or any other forbearance on the part of either part to the other, or the placing of an inspector or resident engineer thereon by the OWNER, shall not in any way release the PRINCIPAL and the SURETY, or either of them, their heirs, executors, administrators, successors, or assigns, from any liability hereunder. Notice to the SURETY of any alterations, extensions of or of any forbearance being hereby waived.

IN WITNESS WHEREOF, signed and sealed this _____ day of _____, 2011.

WITNESSES:

PRINCIPAL: _____

By: _____ (Seal)

By: _____ (Seal)

SURETY: _____

By: _____ (Seal)

Title: _____

LOCAL ADDRESS OF AGENT FOR SURETY: _____

(Name)

(Street, City, State, ZIP Code)

SPECIAL PROVISIONS
FOR
TECHNICAL SPECIFICATIONS

City of Mt. Pleasant/All Projects/RC

1 of 1

February 2011

GENERAL REQUIREMENT

The 2003 MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION shall govern all technical specifications of this contract. The following parts of the contract will prevail over all other parts in the following order:

- A. Special Provisions
- B. Supplemental Specifications
- C. Project Plans and Drawings
- D. MDOT Standard Plans
- E. MDOT Standard Specifications
- F. City of Mt. Pleasant Standard Construction Specifications

The Contractor shall not take advantage of any apparent error or omission in the contract documents. If any uncertainty, inconsistency, omission, or conflict is discovered in the contract documents, the Engineer will decide as to the true intent.

**City of Mt. Pleasant, Michigan
SUPPLEMENTAL SPECIFICATIONS
2011 STREET RECONSTRUCTION PROJECT**

Construction Specifications

The work under this contract shall be completed following the 2003 MDOT Standard Specifications for Construction. In addition, the work shall be completed in accordance with the City of Mt. Pleasant Standard Construction Specifications dated March 2007, which are available on the City's website at: <http://www.mt-pleasant.org/depts/engineering/genspecs/genspec07.pdf>

1. Holidays

No work is to be scheduled by the contractor on Sundays, nor on the following holidays or holiday weekends:

Memorial Weekend	May 27, 28, 29, and 30, 2011
Independence Day	July 1, 2, 3, and 4, 2011

2. Residential Access

Access to driveways for local residents, schools, and businesses shall be maintained and available for use. All driveways shall be opened by the contractor when the contractor is not working, including all evenings, nights, Sundays, and holidays, except as approved in writing by the inspector and with written notification to the residents/owners.

3. Residential Refuse and Recyclable Collection

The City contractor for trash (refuse) collection is Sunset Waste Services, (888) 707-3867, and recycling collection is MMI (989-773-6918). Collection starts at 7:30 a.m. The contractor shall schedule the work to allow and provide access for refuse and recycling contractors to provide their services to the residential properties. If the refuse and recycling contractors are unable to collect materials due to construction operations, then the construction contractor shall collect and dispose of the refuse and collect and deliver the recyclable material to the Material Recovery Facility (MRF) on River Road at no cost to the City. It is the responsibility of the construction contractor to contact the refuse and recycling contractors to coordinate operations.

4. Road Closure

Streets within 300 feet (one block) of construction operations may be closed only to through traffic. All other streets and intersections shall be open to all traffic and maintained in good driving condition by the Contractor at all times.

Intersections shall be open to cross street traffic except when construction work is in progress in those intersections. No more than one intersection may be closed at a time.

5. Audio-Video Recording

An aboveground audio-video recording of the construction area along and adjacent to the project meeting the requirements of the Special Provision for Preconstruction Audio-Video Recording is required. Deliver to DPW prior to mobilization.

6. Location Verification

The Contractor shall excavate, as the Contractor deems necessary, or at the direction of the Engineer, all points of the pipe connection or reconnection to verify the material, condition, location, alignment, and elevation prior to setting of manholes, valves, tees, or bends. The cost of this work and the temporary and permanent restoration thereof shall be included in the various unit prices for the project.

7. Concrete Removal

Sidewalk, concrete drives, and curb and gutter removal shall be to existing construction joints. Unbroken joints shall be saw cut prior to removal. If a saw cut can be made where the remaining section is undisturbed, unbroken or unjointed, and is five feet (5') in length at its least direction, then removal may be to that point.

8. Excavated Material

All excavated material, concrete, asphalt, broken pipe, and other material shall become the property of the Contractor for disposal, except as noted.

9. Tree Protection and Preservation

The Contractor shall protect and preserve trees within the construction area. If the Contractor causes tree damage resulting from non-compliance with the tree crossing detail, or if excessive damage occurs to the trunk or main limbs of a tree, the Contractor shall pay for the damages to the tree. The value of the tree shall be the amount appraised by the City's tree consultant. The Contractor shall also pay for the cost of removal in the event the damaged tree must be removed within a two-year period.

10. Truck Route Streets

The Contractor shall not allow any trucks, or equipment associated with this project to be driven on non-truck route City streets. The Contractor shall

ensure that all trucks and equipment associated with the project travel only on streets identified as truck route streets on the Truck Route Map in the construction specification details. If any of the Contractors, the Contractors' subs, and/or suppliers, are seen driving on other City streets, the Contractor shall be required to pay for resurfacing the street with a polymer-modified asphalt approved by the City at a rate of application determined by the City.

11. Utility Location

The Contractor shall expose all existing utilities and services that will be crossed by the pipe prior to beginning the drilling operation. Utility locations and elevations, as shown on the plans, are approximations and shall be verified by the Contractor prior to beginning any work. The Contractor is required to call the MISS DIG system as noted in the Standard Construction Specifications.

12. Soil Borings

Should a bidder desire to make soil borings along the route, the Contractor making the borings shall first obtain a permit from Public Works. Insurance meeting the requirements of the City of Mt. Pleasant is required. The soil boring permit fee is \$25.00 per hole, and will be refunded if the results of the soil boring in the form of a soil-boring log are submitted to the City Engineer within one week after the close of bidding.

13. Insurance

The contractor shall carry insurance that will provide for the full replacement cost of any property that is damaged during the project. The contractor shall also pay the immediate costs of the homeowner/resident in the event an incident occurs, while waiting for the insurance company to make compensation. Immediate costs include but are not limited to: Hotel/Motel bills and meals if the building is unusable, costs for basic necessities such as beds or clothes in the event they are damaged. A portion of the work on Fancher Street will be within the MDOT right-of-way. The City will apply for the MDOT permit. The contractor will be required to follow all requirements of the MDOT permit and shall include the cost of those requirements in the unit prices bid for Fancher Street. The contractor will also be required to name MDOT and the City of Mt. Pleasant as an additional insured on the insurance certificate.

14. Project Meetings

The contractor shall attend weekly progress meetings with the Engineer to provide updates on the project, the schedule of work for the following week, and to resolve outstanding issues.

15. Pre-Bid Meeting

There will be a non-mandatory pre-bid meeting on April 13, 2011. This meeting will take place in the City Commission Chambers at City Hall, 320 W. Broadway Street, at 1:30 p.m. The intent of the meeting will be to answer questions about the project and about the administration of the project.

[2011 Street Reconstruction Supplemental Specifications]

SPECIAL PROVISIONS
FOR
TECHNICAL SPECIFICATIONS

City of Mt. Pleasant/All Projects/RC

1 of 1

February 2011

GENERAL REQUIREMENT

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- D. MDOT Standard Plans
- E. MDOT Standard Specifications
- F. City of Mt. Pleasant Standard Construction Specifications

The Contractor shall not take advantage of any apparent error or omission in the contract documents. If any uncertainty, inconsistency, omission, or conflict is discovered in the contract documents, the Engineer will decide as to the true intent.

**SPECIAL NOTICE
INSURANCE**

The Contractor, prior to execution of the contract, shall file with the City a Certificate or Certificates of Insurance in form satisfactory to the City, showing that he has complied with the insurance requirements set forth in Section 107.10 of the "Standard Specifications Construction", i.e., Michigan Department of Transportation, 1304A, annexed hereto.

CERTIFICATE OF INSURANCE FOR CONSTRUCTION AND RECONSTRUCTION OF MICHIGAN DEPARTMENT OF TRANSPORTATION HIGHWAY/AERONAUTICS PROJECTS

Information required by the Federal specifications for Highway construction and/or Act 327, P.A. of 1945 to verify insurance.

INSTRUCTIONS: Complete and return to MDOT, Contract Services Division, P.O. Box 30050, Lansing, MI 48909.
All information must be submitted on Form 1304A. Any other form is invalid.

The subscribing insurance company certifies that insurance of the types and for limits of liability covering the work under contract with MDOT or airport owner has been obtained by the contractor named below.

Such insurance, here certified, is written in accordance with the company's regular policies and endorsements subject to the company's applicable manuals of rules and rates, except (1) the insurance shall not be subject to the usual "x" - explosion, "c" - collapse or "u" - underground property damage exclusions.

The insurer shall agree to provide the Department, in writing, the following:

1. A 30-day prior notice of any insurer-initiated cancellation or reduction in coverage for reasons other than nonpayment of the premium.
2. A 10-day prior notice of any cancellation or reduction in coverage for nonpayment of the premium.
3. Immediate notice of Contractor's cancellation or reduction of coverage.

The contractor shall cease operations if any insurance is canceled or reduced, and shall not resume operations until new insurance is in force.

NAME OF INSURED			
ADDRESS	CITY	STATE	ZIP CODE
TELEPHONE NO.	FAX NO.		

ALL WORK PERFORMED FOR THE MICHIGAN DEPARTMENT OF TRANSPORTATION OR AIRPORT OWNER AS A PRIME OR SUBCONTRACTOR					
TYPE OF INSURANCE	POLICY NUMBER & NAME OF INSURANCE COMPANY (If more than one)	POLICY DATES (MM/DD/YY)		LIMITS: Each Occurrence: \$1,000,000 Aggregate: \$2,000,000 BODILY INJURY AND PROPERTY DAMAGE LIABILITY	
		EFFECTIVE	EXPIRATION		
<input type="checkbox"/> General Liability				General Aggregate	\$
<input type="checkbox"/> Commercial General Liability				Prods. comp/ops Aggregate	\$
<input type="checkbox"/> Claims Made <input type="checkbox"/> Occurrence				Personal & Advertising Inj.	\$
<input type="checkbox"/> \$ _____ P.D. Deductible				Each Occurrence	\$
<input type="checkbox"/> XCU Exclusion				Fire Damage (any one fire)	\$
<input type="checkbox"/> Contractual Exclusion				Medical Exp. (any one person)	\$
AUTOMOTIVE LIABILITY					
<input type="checkbox"/> Any Auto				Combined Single Limit (Minimum \$2,000,000.00)	\$
<input type="checkbox"/> All Owned Autos				Bodily Injury (per person) (Minimum \$500,000.00)	\$
<input type="checkbox"/> Scheduled Autos				Bodily Injury (per accident) (Minimum \$1,000,000.00)	\$
<input type="checkbox"/> Hired Autos				Property Damage (Minimum \$1,000,000.00)	\$
<input type="checkbox"/> Non-Owned Autos					
<input type="checkbox"/> Garage Liability					
<input type="checkbox"/> Umbrella				Each Occurrence	\$
				Aggregate	\$
<input type="checkbox"/> Excess Liability Other Than Umbrella				Each Occurrence	\$
				Aggregate	\$
WORKERS COMPENSATION AND EMPLOYERS LIABILITY					
				STATUTORY	
				\$	(Each Accident)
				\$	(Disease - Policy Limit)
				\$	(Disease - Each Empl.)
<input type="checkbox"/> Other					

NAME OF AGENCY	NAME OF INSURANCE COMPANY (If only one for all policies)		
ADDRESS	CITY	STATE	ZIP CODE
TELEPHONE NO.	FAX NO.		
AUTHORIZED REPRESENTATIVE SIGNATURE (Required)			DATE

**SPECIAL
BONDING PROVISION**

In addition to the security required by 1905 PA 187, MCLA 570.101 et seq.; MSA 26.321 et seq.; and section 102.16 of the Michigan Department of Transportation "2003 Standard Specifications for Construction" the successful bidder on the project shall furnish a satisfactory lien bond written by the same surety as the standard statutory performance bond, in an amount not less than the total contract price, which additional bond shall secure the payment of all claims:

- (1) Lienable under the terms of said statute.
- (2) Notice of which is not given by subcontractors within the statutory period, but
 - (a) Notice of which is given by subcontractors within sixty (60) days after notice of the payment of the final estimate or post final estimate having been made by the City; or
 - (b) In the case of a supplier to the contractor or subcontractor, within 120 days after the materials are last furnished.

Said additional bond shall conform with the terms of 1905 Pa 187, supra, in all respects except the time within which the notice of lien claims must be given, as provided herein.

Notice to Bidders

Insurance

1/04/2007

The contractor shall provide for and in behalf of the City of Mt. Pleasant and its official, agents and employees, and all agencies and their employees, specifically named below **or as stated on the Insurance Requirements (Form 1304, dated 01/2006) Package provided to the contractor with the contracts for the project**, owner's protective public liability insurance. The minimum limit shall be \$1,000,000 for bodily injury and property damage liability.

The Agencies are the: Michigan Department of Transportation and the City of Mt. Pleasant

NOTICE TO BIDDERS

All inquiries concerning the plans and proposal for this project are to be directed to:

Gary Schwerin, P.E.
Name

Assistant City Engineer
Title

(989) 772-6250
Fax Number

gschwer@mt-pleasant.org
E-mail Address

(989) 779-5408
Phone

The abovementioned contact person is available Monday through Friday, 8:00 a.m. to 12:00 p.m. / 1:00 p.m. to 4:30 p.m. All inquiries must be made by Fax or E-mail. Telephone inquiries will not be answered. To be able to process and distribute an addendum, if required, all inquiries shall be made at least **seven calendar days** before the letting. Inquiries made after this date will be considered by the City, but will not require a response.

Inquiries made by Fax or E-mail must include the following information:

Project Name
Name of Inquiring Person
Company Name
Phone #, Fax #, and/or E-mail address
Detailed question(s) with reference to proposal page and plan sheet number

Other employees of the City have been instructed to direct all inquires to the person mentioned above.

[Airport Insurance]

City of Mt. Pleasant, Michigan
BID PROPOSAL
2011 Street Reconstruction Project

TO: Office of the City Clerk
City Hall
320 W. Broadway Street
Mt. Pleasant, MI 48858

BID DATE: April 26, 2011
TIME: 1:30 p.m

The undersigned, as Bidder, hereby declares that this bid is made in good faith without fraud or collusion with any person or persons bidding of the same Contract; that he has carefully read and examined the Contract Documents, including the Notice to Bidders, Instructions, Bond Forms, Technical and Detailed Specifications, and Contract Drawings, for the designated work and understands all of the same; that he, or his representative, has made such a personal investigation at the site as is necessary to determine the character and difficulties attending the execution of the proposed work; and he proposes and agrees that if this Proposal is accepted, he will contract with the Owner in the form of the Contract hereto annexed, to provide necessary machinery, tools, apparatus and other means of construction, including utility and transportation services, necessary to do all the work and furnish all the materials and equipment specified or referred to in the Contract Documents, including Addenda No. __, __, and __, in the manner and time therein prescribed, and according to the requirements of the Owner as therein set forth to furnish Contractor Bonds and Insurance required of the Contractor by the Contract Documents, and that he will take in full payment therefore the unit prices set forth in the following Proposal.

The Bidder understands that the Owner reserves the right to reject any or all bids and to waive any irregularities in the bidding.

The Bidder agrees that his bid shall be good and may not be withdrawn for a period of sixty (60) calendar days after the scheduled closing time for receiving the bids.

Upon receipt of a written Notice of Award of the Bid, the Bidder shall execute the formal Contract Agreement attached hereto within ten (10) days and shall deliver to the Owner a Surety Bond or Bonds required. In the event the Contract and Bond are not executed within the time above set forth, the Bid Deposit attached in the sum of five percent (5%) of the Bid Proposal shall become the property of the Owner as liquidated damages for the delay and additional expense to the Owner caused thereby.

The Bidder hereby agrees to commence work under this Contract on or before the date to be specified in the written Notice to Proceed executed by the Owner and to fully complete the project as stipulated in the Special Conditions of these Specifications. The Bidder further agrees to pay as liquidated damages the sum indicated in the Special Conditions for each consecutive calendar day thereafter, until substantial completion, that is when all work items in the proposal are complete and notification of substantial completion of work items and final quantities is given to the Director of Public Works by the contractor.

The below unit prices shall include all labor, materials, overhead, profit, insurance, etc., to cover the finished work of the several kinds specified, and the Bidder agrees to perform all of the work described in the Specifications and/or shown on the Plans for the following unit prices:

Fancher Street

Pay Item Code	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL
8120022	Barricade, Type III, High Intensity, Lighted, Furn	32	EA	_____	_____
8120023	Barricade, Type III, High Intensity, Lighted, Oper	32	EA	_____	_____
8120260	Plastic Drum, High Intensity, Lighted, Furn	80	EA	_____	_____
8120261	Plastic Drum, High Intensity, Lighted, Oper	80	EA	_____	_____
8120350	Sign, Type B, Temp, Prismatic, Furn	130	SFT	_____	_____
8120351	Sign, Type B, Temp, Prismatic, Oper	130	SFT	_____	_____
8120170	Minor Traffic Devices	1	LSUM	_____	_____
4027051	Preconstruction Audio Video Recording	1	LSUM	_____	_____
2030011	Dr Structure, Rem	22	EA	_____	_____
2040045	Masonry and Conc Structure, Rem	10	CYD	_____	_____
2040055	Sidewalk, Rem	660	SYD	_____	_____
2047011	Driveway, Rem	1305	SYD	_____	_____
2047011	Pav't, Rem, Modified	14360	SYD	_____	_____
2057002	Machine Grading, Modified	70	STA	_____	_____
2050041	Subgrade Undercutting, Type II	100	CYD	_____	_____
4030390	Dr Structure, Temp Lowering	4	EA	_____	_____
5017001	Deep Sawing	3060	LFT	_____	_____
5017001	Sawcutting	450	LFT	_____	_____
3010002	Subbase, CIP	5310	CYD	_____	_____
3027011	Aggregate Base, 6 Inch, Modified	14420	SYD	_____	_____
3067021	Maintenance Gravel, LM, Modified	550	CYD	_____	_____
4030200	Dr Structure, 24 Inch Dia	19	EA	_____	_____
4030210	Dr Structure, 48 Inch Dia	22	EA	_____	_____
4030250	Dr Structure, Add Depth of 48 Inch Dia, 8 feet to 15 feet	20	LFT	_____	_____
4030220	Dr Structure, 60 Inch Dia	2	EA	_____	_____
4030006	Dr Structure Cover, Adj, Case 2	25	EA	_____	_____
4037050	Dr Structure Cover, CB, Modified	22	EA	_____	_____
4037050	Dr Structure Cover, Stm, Modified	13	EA	_____	_____
4037050	Dr Structure Cover, San, Modified	11	EA	_____	_____
5017031	HMA, 13A	1615	TON	_____	_____
5017031	HMA, 36A	1250	TON	_____	_____
5027031	HMA Approach, Modified	30	TON	_____	_____
8010005	Driveway, Nonreinf Conc, 6 inch	1360	SYD	_____	_____
8010006	Driveway, Nonreinf Conc, 8 inch	180	SYD	_____	_____
8027001	Curb and Gutter, Conc, Det F4, Modified	6460	FT	_____	_____
8030044	Sidewalk, Conc, 4 Inch	3810	SFT	_____	_____
8030046	Sidewalk, Conc, 6 Inch	3350	SFT	_____	_____
8037010	Sidewalk, Conc, 8 Inch	450	SFT	_____	_____
8037010	Sidewalk Ramp, ADA, Modified	4180	SFT	_____	_____
8167011	Slope Restoration, Modified	3540	FT	_____	_____
8230052	Gate Valve and Box, 8 inch	2	EA	_____	_____
8237001	Water Main, 6 Inch, Tr Det G, Modified	55	LFT	_____	_____
8237001	Water Main, 8 Inch, Tr Det G, Modified	100	LFT	_____	_____
8237001	Water Main, 12 Inch, Tr Det G, Modified	10	LFT	_____	_____
8237001	Water Main, 6 Inch, Directional Bore, Modified	930	LFT	_____	_____
8230051	Gate Valve and Box, 6 Inch	5	EA	_____	_____
8230054	Gate Valve and Box, 12 Inch	1	EA	_____	_____
8237050	1 Inch Water Service, Short	8	EA	_____	_____
8237050	1 Inch Water Service, Long	8	EA	_____	_____
8230091	Rem Hydrant Set	1	EA	_____	_____

8250040	Hydrant Set	3	EA	_____	_____
4027001	Sewer (San.), 8 Inch Modified	2456	LFT	_____	_____
4027001	Sewer (Storm), 12 Inch Modified	2690	LFT	_____	_____
4027001	Sewer (San.), 6 Inch Modified	1395	LFT	_____	_____
4027021	Sewer Abandon	34.9	CYD	_____	_____
4030308	Dr Structure Tap, 8 Inch	2	EA	_____	_____
4030312	Dr Structure Tap, 12 Inch	1	EA	_____	_____
8117001	Pavement Marking, Inlay Cold Plastic, 4 Inch White	60	LFT	_____	_____
8117001	Pavement Marking, Inlay Cold Plastic, 4 Inch Yellow	1160	LFT	_____	_____
8117001	Pavement Marking, Inlay Cold Plastic, 24 Inch Stop Bar	20	LFT	_____	_____
8117050	Pavement Marking, Inlay Cold Plastic, Lt Turn Arrow, Symbol	1	EA	_____	_____
8117001	Pavement Marking, Inlay Cold Plastic, 6 Inch Crosswalk	70	LFT	_____	_____
TOTAL DIVISION				_____	_____

TOTAL FOR ALL DIVISIONS

_____ and _____ /100 Dollars
(written)

RESPECTFULLY SUBMITTED, _____ DATE _____

COMPANY NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP CODE _____

AREA CODE/TELEPHONE NUMBER _____ FAX NUMBER _____

AUTHORIZED SIGNATURE _____

PRINT OR TYPE NAME AND TITLE _____

EXPERIENCE QUESTIONNAIRE
TO BE FURNISHED BY BIDDER
CITY OF MOUNT PLEASANT, MICHIGAN

The signatory of this proposal guarantees the truth and accuracy of all statements and of all answers hereinafter made.

1. How many years have you been in business as a contractor under your present name?

2. How many years have you been a principal officer of a firm under a different name?

Name of Firm _____

3. What projects of a similar nature has your organization contracted for within the past five years? (NOTE: Fill out each blank completely.)

Name of Owner & Location	Name/Address/Phone # of Person in Charge as Reference	Type of Work	Value of Work	Date Completed
1.				
2.				
3.				
4.				
5.				
6.				

PROGRESS CLAUSE

Start work on May 16, 2011, Chippewa Street site only, or before the date designated as the starting date in the Detailed Progress Schedule. No work shall begin before June 20, 2011, on Fancher or Wisconsin Streets. In no case, shall any work be commenced prior to receipt of formal notice of award by the City.

The base course of HMA shall be placed on Chippewa Street on or before June 24, 2011. All construction on the entire project will be completed and open to through traffic on or before August 12, 2011.

The approved low bidder(s) for the work covered by this proposal will be required to participate in a pre-construction meeting with the local agency owner and/or department representatives to work out a detailed progress schedule. The schedule for this meeting will be set within two days after the approved low bidder is determined.

The named subcontractor(s) for Designated and/or Specialty Items, as shown in the proposal, is recommended to be at the scheduled meeting if such items materially affect the work schedule.

The City of Mt. Pleasant will arrange the time and place for the meeting.

The Progress Schedule shall include, as a minimum, the controlling work items for the completion of the project and the planned dates (or workday for a workday project) that these work items shall be controlling operations. When specified in the bidding proposal, the date the project is to be opened to traffic as well as the final project completion date shall also be included in the project schedule.

The Progress Schedule shall clearly show that Fancher and Wisconsin Streets shall be done in three phases:

- Phase 1 shall include storm and sanitary sewer work on Wisconsin Street and Fancher Street, from Sta 57+00 through Sta 69+09. All earth work, including aggregate base, must be completed before proceeding to Phase 2.
- Phase 2 construction shall include storm and sanitary sewer work on Fancher Street, from Sta 46+36 through Sta 57+00. All earth work, including aggregate base, must be completed before proceeding to Phase 3.
- Phase 3 construction shall include remaining road work through completion, for both streets. Final paving of the street shall not take place prior to a successful mandrel test of the sanitary sewer.

The Progress Schedule shall also clearly show how work will be completed on Chippe-
wa Street and how that work will be coordinated with the Fancher Street and Wisconsin
Street project sites.

If the bidding proposal specifies other controlling dates, these shall also be included in
the Progress Schedule.

Failure on the part of the contractor to carry out the provisions of the Progress Sche-
dule, as established, may be considered sufficient cause to prevent bidding future
projects until a satisfactory rate of progress is again established.

PROGRESSION OF WORK

When constructing the sanitary sewer on Fancher and Wisconsin Streets, the contractor shall begin at the outlet and construct the sewer upstream. At station 57+00, (the phase 1 limit), the contractor shall install a temporary plug in the sewer and air test the downstream runs. Once the contractor begins phase 2, the temporary plug shall be removed and the sewer runs completed.

When working between Cherry and Maple Streets, the contractor shall provide storm sewer service to Maple Street. The contractor shall either protect and maintain the existing storm sewer while constructing the sanitary sewer, or install the proposed storm sewer in that block prior to installing the sanitary sewer.

When constructing the sanitary sewer on Chippewa Street, the contractor shall reconnect the existing live sewer leads as the mainline sewer is constructed. In place of air testing, the contractor shall video record the completed sanitary sewer. The cost of video recording shall be included in the sanitary sewer unit price.

SPECIAL PROVISION
FOR
UTILITY COORDINATION

City of Mt. Pleasant

1 of 2

February 2011

The contractor shall cooperate and coordinate construction activities with the owners of utilities as stated in Section 104.07 of the 2003 MDOT Standard Specifications for Construction. In addition, for the protection of underground utilities, the contractor shall follow the requirements in Section 107.12 of the 2003 MDOT Standard Specifications for Construction. Contractor delay claims, resulting from a utility, will be determined based upon Section 109.03 of the 2003 MDOT Standard Specifications for Construction.

1. General

For protection of underground utilities, the Contractor shall call the Miss Dig system at (800) 482-7171 a minimum of three (3) working days prior to excavating. Members will thus be routinely notified. This does not relieve the Contractor of the responsibility of notifying utility owners who may not be a part of the Miss Dig alert system.

2. Coordination with Utilities

During the course of the construction, the Contractor will encounter both overhead and underground utilities. The contact information of the utility company representatives are as follows:

Consumers Energy - Electric
Richard Klender
1325 Wright Avenue
Alma, MI 48801
(989) 466-4279
(800) 477-5050 Emergency

Frontier – Telephone
Jeff James
345 Pine Street
Alma, MI 48801
(989) 463-0392

DTE Energy/MichCon – Gas
Dave Newcomb
609 Bjornson
Big Rapids, MI 49307
(231) 592-3244
(800) 947-5000 Emergency

Charter Communication – Cable TV
Jeff Price
915 E. Broomfield Rd.
Mt. Pleasant, MI 48858
(989) 773-7090

City of Mt. Pleasant – Water, Sanitary & Storm Sewer
Gary Schwerin
1303 N. Franklin Ave.
Mt. Pleasant, MI 48858
(989) 779-5408

The Contractor's attention is directed to existing underground gas mains, which are located adjacent to or near the work. The Contractor shall use extreme care when working in these areas, and shall notify MichCon Gas Company at least three (3) working days in advance before beginning any excavation in these areas.

SPECIAL PROVISION
FOR
UTILITY COORDINATION

City of Mt. Pleasant

2 of 2

February 2011

3. Relocation

Utility relocation work is anticipated for this project. Contractor shall contact the appropriate utility company immediately to coordinate relocations. This will minimize delays to the Contractor's operations due to utility work.

Owners of public or private utilities will not be required to relocate utilities in order to facilitate the operations of construction equipment, unless it is determined by the Engineer that such poles or structures constitute a hazard to the public or are extremely dangerous to the Contractor's operations.

SPECIAL PROVISION
FOR
LINES, LEVELS, AND SURVEYS

City of Mt. Pleasant

Page 1 of 1

February 2011

Staking by the City of Mt. Pleasant or its agent shall meet the Engineering staking requirements of Section 104.08A. The contractor shall carefully preserve all benchmarks, reference points, grade stakes, and other necessary control points and be held responsible for all errors that may result from their loss or disturbances. The engineer shall make the final determination as to what lines or grades were disturbed by the contractor.

A minimum of three (3) working days (excluding Saturdays) notice to the City Engineer is required for staking or re-staking. Re-staking will be at a rate of \$75.00 per hour with a \$150.000 minimum.

SPECIAL PROVISION
FOR
MAINTAINING TRAFFIC

City of Mt. Pleasant

1 of 3

February 2011

GENERAL REQUIREMENTS

This work shall be in accordance with the requirements of Section 812 of the Michigan Department of Transportation 2003 Standard Specifications for Construction and as herein specified. The contractor is advised that the 2005 Michigan Manual of Uniform Traffic Control Devices, as amended, is hereby established as governing all work in connection with traffic control devices, barricade lighting, etc., required on this project.

The contractor shall furnish, erect, maintain, and upon completion of work remove all traffic control devices and barricade lights within the project limits and around the perimeter of the project. Traffic regulators, where required by the Engineer, are included, as part of the contract item, Minor Traf Devices.

Walks, driveways and entrances to buildings shall not be unnecessarily blocked. Vehicular access shall be maintained to all properties as directed by the Engineer. Temporary gravel shall be placed, maintained and removed in the roadway and driveways wherever access is possible between phases of construction. Payment for temporary gravel is included in the contract item Maintenance Gravel, LM, Modified.

Street name signs, stop signs and other traffic control signs in the way of construction will be removed and reset by the City of Mt. Pleasant. The contractor shall inform the City a minimum of 24 hours in advance of the need for sign removal and replacement.

Where directed by the Engineer, the requirements for maintenance of through traffic, as directed by the Standard Specifications, shall also apply to the maintenance of local traffic.

Payment for temporary signs, barricades and lighted arrows will be based on maximum number of units required at any one time for the entire project. Moving of units from one location to another is considered included in the appropriate pay item.

Protection for and protection of pedestrian traffic shall be maintained at all times.

SPECIAL PROVISION
FOR
MAINTAINING TRAFFIC

City of Mt. Pleasant

2 of 3

February 2011

For HMA paving, no traffic shall be allowed on the surface being placed until rolling has been completed and the surface has cooled sufficiently to prevent damage from traffic. The contractor shall provide traffic regulators in sufficient number to maintain traffic as described herein, and to keep traffic off sections being surfaced, and provide for safe travel at all times, as directed by the Engineer. Providing traffic regulators and maintaining traffic are included in the item of Minor Traf Devices.

Base, surface preparation, manholes, catch basins and other structure adjustment or reconstruction, shall be maintained longitudinally in such a manner as to provide the required traffic flow without undue shifting of traffic from lane to lane.

CONSTRUCTION INFLUENCE AREA (CIA)

The CIA of the Fancher Street, Wisconsin Street, and Chippewa Street projects shall include the area within the right-of-way of each street within the limits of the furthest placed advance construction signing required for this project. In addition, the CIA shall include the rights-of-way of adjacent streets within the limits of the furthest advanced construction signing required for this project.

SPECIFIC REQUIREMENTS

The contractor shall place aggregate base the same workday that sand subbase is placed in all locations of the project. Any damage occurring to the subgrade from exposure to the elements will be undercut and removed and replaced in accordance with the Subgrade Undercutting, Type II, Specifications, at the contractor's expense.

The Contractor will be responsible for coordinating construction activities with all local businesses and residences, keeping them advised, in advance of any construction activities that will affect vehicular and pedestrian movements to their business or residence.

No work shall be performed between the hours of 7:00 p.m. and 7:00 a.m. No deviations from these restrictions will be allowed unless otherwise approved by the Engineer.

SPECIAL PROVISION
FOR
MAINTAINING TRAFFIC

City of Mt. Pleasant

3 of 3

February 2011

PAYMENT

The following pay items are governed by this provision:

<u>Pay Item</u>	<u>Pay Unit</u>
Maintenance Gravel, LM, Modified	Cubic Yard
Barricade, Type III, High Intensity, Lighted, Furn	Each
Barricade, Type III, High Intensity, Lighted, Oper	Each
Minor Traf Devices	Lump Sum
Plastic Drum, High Intensity, Lighted, Furn	Each
Plastic Drum, High Intensity, Lighted, Oper	Each
Sign, Type B, Temp, Furn	Square Foot
Sign, Type B, Temp, Oper	Square Foot

SPECIAL PROVISION
FOR
MACHINE GRADING, MODIFIED

City of Mt. Pleasant

1 of 1

February 2011

DESCRIPTION

This work shall consist of all excavation, including earth, necessary to shape the sub-grade to the cross-sections shown on the plans for pavements, sidewalks, curbs, drive approaches, etc., within the R-O-Ws of the project. The work shall include proper disposal of excavated materials. This work shall also include all embankments necessary to shape areas behind curb and gutter, around all drives and sidewalks to grade to allow for placement of topsoil.

MATERIALS, EQUIPMENT AND CONSTRUCTION METHODS

This work shall conform to the requirements of Section 205 of the Michigan Department of Transportation 2003 Standard Specifications for Construction of machine grading, earth excavation, embankment and density except as modified herein.

MEASUREMENT AND PAYMENT

The completed work as measured for Machine Grading, Modified will be paid for at the contract unit price for the following contract item (Pay Item).

<u>Pay Item</u>	<u>Pay Unit</u>
Machine Grading, Modified	Station

Machine Grading, Modified will be measured by length in Stations along the curb line, each side of the roadway to be measured separately and will be paid for at the contract unit price per Station, which price shall be payment in full for all labor, equipment and materials, including embankment, excavation and disposal of excavated material needed to accomplish this work on each side of the existing R-O-Ws.

Approximately 6,900 cubic yards (compacted) of earth will be excavated in front of, under and behind the curb and gutter. Suitable excavated material as determined by the Engineer may be used as fill material behind proposed curb. Approximately 1,050 cubic yards (LM) of embankment will be needed behind the proposed curb and gutter. Use of excavated material for fill material will be considered as included in the work of Machine Grading, Modified.

SPECIAL PROVISION
FOR
DEEP SAWING

City of Mt. Pleasant

1 of 1

February 2011

DESCRIPTION

This work shall be accomplished in accordance with Section 502 of Michigan Department of Transportation 2003 Standard Specifications for Construction except as modified herein.

METHOD OF CONSTRUCTION

This item shall be for sawing depths greater than five (5) inches for pavement, driveway approaches and curb and gutter; as shown on the plans and/or as directed by the Engineer. Sawing depths shall be full depth or 15 inches maximum.

MEASUREMENT AND PAYMENT

The completed work as measured for Deep Sawing will be paid for at the contract unit price for the following contract item (Pay Item).

<u>Pay Item</u>	<u>Pay Unit</u>
Deep Sawing	Foot

Deep Sawing will be measured by length in feet; and will be paid for at the contract unit price per foot, which price shall be payment in full for all labor, material and equipment needed to accomplish this work.

SPECIAL PROVISION
FOR
SAW CUTTING

City of Mt. Pleasant

1 of 1

February 2011

DESCRIPTION

This work shall be accomplished in accordance with Section 502 of Michigan Department of Transportation 2003 Standard Specifications for Construction except as modified herein.

METHOD OF CONSTRUCTION

This item shall be for sawing sidewalks and pavements, five (5) inches or less in depth; as shown on the plans or as directed by the Engineer. The saw cut shall be to the depth required to accomplish this work, but shall in no case be more than five (5) inches in depth. All joints between existing and new pavement shall be saw cut prior to placing the HMA top course.

MEASUREMENT AND PAYMENT

The completed work as measured for Deep Sawing will be paid for at the contract unit price for the following contract item (Pay Item).

<u>Pay Item</u>	<u>Pay Unit</u>
Saw Cutting	Foot

Saw Cutting will be measured by length in feet; and will be paid for at the contract unit price per foot, which price shall be payment in full for all labor, material, and equipment needed to accomplish this work.

SPECIAL PROVISION
FOR
PAVT, REM, MODIFIED

City of Mt. Pleasant

1 of 1

February 2011

GENERAL REQUIREMENT

This work shall be in accordance with the requirements of Section 204 of the Michigan Department of Transportation 2003 Standard Specifications for Construction, except as modified herein.

DESCRIPTION OF WORK

Pavt, Rem, Modified consists of the removal and disposal of curb and gutter and existing pavement; as specified on the plans, in the proposal, or as directed by the Engineer. Pavt, Rem, Modified shall be performed in accordance with the Standard Specifications, except that additional payment will not be made for multiple layers of pavement, regardless of depth and type of pavement.

MEASUREMENT AND PAYMENT

The completed work as measured for Pavt, Rem, Modified will be paid for at the contract unit price for the following item (Pay Item).

<u>Pay Item</u>	<u>Pay Unit</u>
Pavt, Rem, Modified	Square Yard

Pavt, Rem, Modified will be measured by area in square yards of surface to be removed – regardless of depth of material being removed, and regardless of status or type of the underlying material and will be paid for at the contract unit price per square yard which price shall be payment in full for all labor, equipment, and materials needed to accomplish this work.

Curb and gutter removal will not be paid for separately, but will be included in the pay item for Pavt, Rem, Modified.

SPECIAL PROVISION
FOR
DRIVEWAY, REM

City of Mt. Pleasant

1 of 1

February 2011

GENERAL REQUIREMENT

This work shall be in accordance with the requirements of Section 204 of the Michigan Department of Transportation 2003 Standard Specifications for Construction, except as modified herein.

DESCRIPTION OF WORK

Driveway, Rem consists of the removal and disposal of existing driveway; as specified on the plans, in the proposal, or as directed by the Engineer. Driveway, Rem shall be performed in accordance with the Standard Specifications, except that additional payment will not be made for multiple layers of pavement, regardless of depth and type of pavement.

MEASUREMENT AND PAYMENT

The completed work as measured for Driveway, Rem will be paid for at the contract unit price for the following contract item (Pay Item).

<u>Pay Item</u>	<u>Pay Unit</u>
Driveway, Rem	Square Yard

Driveway, Rem will be measured by area in square yards of surface to be removed – regardless of depth of material being removed, and regardless of status or type of the underlying material and will be paid for at the contract unit price per square yard which price shall be payment in full for labor, equipment, and materials needed to accomplish this work.

Curb and gutter removal will not be paid for separately, but will be included in the pay item for Pavt, Rem, Modified.

SPECIAL PROVISION
FOR
SEWER, ABANDON

City of Mt. Pleasant

1 of 1

February 2011

GENERAL REQUIREMENT

This work shall be in accordance with the requirements of Section 203 of the Michigan Department of Transportation 2003 Standard Specifications for Construction, except as modified herein.

DESCRIPTION OF WORK

Sewer, Abandon consists of abandoning sewers or water mains using concrete flowable fill and installing bulkheads at the ends of the sewers and water mains to be abandoned; as specified on the plans, in the proposal, or as directed by the Engineer. Sewer, Abandon shall be performed in accordance with the Standard Specifications, except that Sewer, Abandon will be paid for by the cubic yard of flowable fill and shall include bulkheads at both ends of the pipe.

MEASUREMENT AND PAYMENT

The completed work as measured for Sewer, Abandon will be paid for at the contract unit price for the following contract item (Pay Item).

<u>Pay Item</u>	<u>Pay Unit</u>
Sewer Abandon	Cubic Yard

Sewer, Abandon will be measured by volume in cubic yard of flowable fill, and will be paid for at the contract unit price per cubic yard which price shall be payment in full for labor, equipment, and materials needed to accomplish this work.

SPECIAL PROVISION
FOR
CONCRETE PAY ITEMS

City of Mt. Pleasant

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February 2011

DESCRIPTION

This work shall be in accordance with sections 601 and 701 of the Michigan Department of Transportation 2003 Standard Specifications for Construction except as modified herein. This special provision indicates the type of concrete mixture to be used for pay items related to concrete.

MATERIALS

Materials for all concrete items shall be Concrete, Grade S2, Six Full Sack Mix, in accordance with Sections 601 and 701 of MDOT 2003 Standard Specifications for Construction. Cement content shall be 564 pounds per cubic yard and shall not contain any fly ash or water reducing agents.

CONSTRUCTION

Construction of concrete related items included but not limited to curb and gutter, driveways, sidewalks and ADA sidewalk ramps shall be according to the Michigan Department of Transportation 2003 Standard Specifications for Construction or as directed by the Engineer in the field.

MEASUREMENT AND PAYMENT

Payment for the completed work for the various concrete pay items in this contract using a six full sack mix shall be at their individual contract unit prices. Payment for each shall include the material, labor and equipment necessary to construct each item according to plans, specifications and any special provisions included with this contract.

SPECIAL PROVISION
FOR
CURB AND GUTTER, CONC, DET F-4, MODIFIED

City of Mt. Pleasant

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February 2011

DESCRIPTION

The work of Curb and Gutter, Conc, Det F-4, Modified shall be in accordance with Section 802 of the Michigan Department of Transportation 2003 Standard Specifications for Construction except as modified herein.

MATERIALS

Materials for Curb and Gutter, Conc, Det F-4, Modified shall be Concrete, Grade S2, Six Full Sack Mix in accordance with Sections 601 and 701 of MDOT 2003 Standard Specifications for Construction.

CONSTRUCTION

Construction of Curb and Gutter, Conc, Det F-4, Modified shall be in accordance with Section 802 of the Michigan Department of Transportation 2003 Standard Specifications for Construction, except that the reinforcing steel shall be eliminated.

MEASUREMENT AND PAYMENT

The complete work as measured for Curb and Gutter, Conc, Det F-4, Modified will be paid for at the contract unit price for the following pay item (Pay Item):

<u>Pay Item</u>	<u>Pay Unit</u>
Curb and Gutter, Conc, Det F-4, Modified	Foot

Curb and Gutter, Conc, Det F-4, Modified will be measured in place, by linear foot; and will be paid for at the contract unit price per linear foot; which price shall be payment in full for all labor, materials, and equipment needed to accomplish this work.

SPECIAL PROVISION
FOR
SIDEWALK, CONC, 8 INCH, MODIFIED

City of Mt. Pleasant

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February 2011

DESCRIPTION

The work of Sidewalk, Conc, 8 inch, Modified shall be as per Michigan Department of Transportation Standard Plan R-29 Series and in accordance with Section 803 of the Michigan Department of Transportation 2003 Standard Specifications for Construction except as modified herein.

MATERIALS

Materials for Sidewalk, Conc, 8 inch, Modified shall be Concrete, Grade S2, Six Full Sack Mix in accordance with Sections 601 and 701 of MDOT 2003 Standard Specifications for Construction.

CONSTRUCTION

Construction of Sidewalk, Conc, 8 inch, Modified shall be as per Michigan Department of Transportation Standards Plan R-29 Series, and in accordance with Section 803 of the Michigan Department of Transportation 2003 Standard Specifications for Construction.

MEASUREMENT AND PAYMENT

The completed work as measured for Sidewalk, Conc, 8 inch, Modified will be paid for at the contract unit price for the following contract item (Pay Item):

<u>Pay Item</u>	<u>Pay Unit</u>
Sidewalk, Conc, 8 inch, Modified	Square Foot

Sidewalk, Conc, 8 inch, Modified will be measured in place, by area in square foot; and will be paid for at the contract unit price per square foot; which price shall be payment in full for all labor, materials, and equipment needed to accomplish this work.

SPECIAL PROVISION
FOR
SIDEWALK RAMP, ADA, MODIFIED

City of Mt. Pleasant

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February 2011

DESCRIPTION

The work of Sidewalk Ramp, ADA, Modified, shall be as per Michigan Department of Transportation Standard Plan R-28G Series and in accordance with Section 803 of the Michigan Department of Transportation 2003 Standard Specifications for Construction except as modified herein.

MATERIALS

Materials for Sidewalk Ramp, ADA, Modified, shall be Concrete, Grade S2, Six Full Sack Mix in accordance with Sections 601 and 701 of MDOT 2003 Standard Specifications for Construction. Detectable warning surface shall be cast iron.

CONSTRUCTION

Construction of Sidewalk Ramp, ADA, Modified, shall be as per Michigan Department of Transportation Standards Plan R-28G Series, and in accordance with Section 803 of the Michigan Department of Transportation 2003 Standard Specifications for Construction.

Furnish and install cast iron detectable warning surfaces according to manufacturer's instructions and Standard Plan R-28G.

MEASUREMENT AND PAYMENT

The completed work as measured for Sidewalk Ramp, ADA, Modified, will be paid for at the contract unit price for the following contract item (Pay Item):

<u>Pay Item</u>	<u>Pay Unit</u>
Sidewalk Ramp, ADA, Modified	Square Foot

SPECIAL PROVISION
FOR
SIDEWALK RAMP, ADA, MODIFIED

City of Mt. Pleasant

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February 2011

Sidewalk Ramp, ADA, Modified, will be measured in place for the area of the ramp, by square foot, and will be paid for at the contract unit price per square foot. Ramped sidewalk includes sidewalk sloped greater than the normal continuous sidewalk grades to meet the elevation of the curb opening or an intermediate landing. Payment includes all labor, materials, and equipment required to construct the sidewalk ramp pavement as shown on the plans, including monolithic rolled curb or side flares along the longitudinal edges of the ramp. Payment also includes all labor, materials, and equipment necessary to furnish and install cast iron detectable warning surfaces.

Replacement of all sidewalk, curb and gutter, and gutter outside the area to be measured for Sidewalk Ramp, ADA, Modified, will be paid for separately. The curb and gutter opening will be paid for as Curb and Gutter, Det F-4, Modified. The landing at the top of the ramp will be paid for as Sidewalk, Conc, ____ Inch.

SPECIAL PROVISION
FOR
MAINTENANCE GRAVEL, LM, MODIFIED

City of Mt. Pleasant

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February 2011

DESCRIPTION

This work consists of constructing an aggregate surface on a prepared grade, where directed by the Engineer, to maintain traffic during construction. Removal and disposal of the aggregate when no longer needed, is included in this item of work. This work will be in accordance with Section 306 of the Michigan Department of Transportation 2003 Standard Specifications for Construction except as modified herein.

MATERIALS

Materials for Maintenance Gravel, LM, Modified will be dense graded aggregate conforming to Class 22A or 23A Aggregate under Section 902 of MDOT 2003 Standard Specifications for Construction. When approved by the Engineer, salvaged aggregate or HMA material may be used in place of Class 22A or 23A. Salvaged material must come from this project and must be two (2) inches or less, in diameter.

CONSTRUCTION

Maintenance gravel is to be placed at locations shown on the plans or indicated by the Engineer, to provide a flush transition to shoulders, driveways, roadway and other areas where traffic is to be maintained. Depth shall be a minimum of six (6) inches, and may be increased as directed by the Engineer.

The aggregate surface shall be maintained in a smooth and firm condition until no longer needed for maintaining traffic. When construction operations progress to the point that the maintenance gravel is no longer needed, removal of maintenance gravel is to occur in the same workday as paving or aggregate surfacing of the removal area. The Contractor is responsible for removal and disposal of the material in accordance with the MDOT 2003 Standard Specifications for Construction.

MEASUREMENT AND PAYMENT

The completed work as measured for Maintenance Gravel, LM, Modified will be paid for at the contract unit price for the following contract item (Pay Item):

SPECIAL PROVISION
FOR
MAINTENANCE GRAVEL, LM, MODIFIED

City of Mt. Pleasant

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<u>Pay Item</u>	<u>Pay Unit</u>
Maintenance Gravel, LM, Modified	Cubic Yard

Payment for Maintenance Gravel, LM, Modified includes all labor, equipment and materials required for the construction, maintenance and removal of the aggregate surface as described in this special provision and as directed by the Engineer.

SPECIAL PROVISION
FOR
AGGREGATE BASE, ____ INCH, MODIFIED

City of Mt. Pleasant

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February 2011

DESCRIPTION

The work of Aggregate Base, ____ inch, Modified, shall consist of furnishing and placing crushed limestone compacted-in-place, in accordance with Section 302 of the Michigan Department of Transportation 2003 Standard Specifications for Construction except as modified herein.

MATERIALS

Materials for Aggregate Base, ____ inch, Modified, shall be 100% crushed limestone conforming to 23A Aggregate under Section 902 of MDOT 2003 Standard Specifications for Construction.

MEASUREMENT AND PAYMENT

The completed work as measured for Aggregate Base, ____ inch, Modified will be paid for at the contract unit price for the following contract item (Pay Item).

<u>Pay Item</u>	<u>Pay Unit</u>
Aggregate Base, ____ inch, Modified	Square Yard

Aggregate Base, ____ inch, Modified, will be measured in place, at the specified depth, by area in square yards; and will be paid for at the contract unit price per square yard, at the specified depth; which price shall be payment in full for all labor, materials and equipment needed to accomplish the work.

SPECIAL PROVISION
FOR
DR STRUCTURE COVER, _____, MODIFIED

City of Mt. Pleasant

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February 2011

DESCRIPTION

Dr Structure Cover, _____, Modified, hereinafter referred to as Cover, shall consist of materials and work as described in Section 403 of the Michigan Department of Transportation 2003 Standard Specifications for Construction except as modified herein.

MATERIALS

Dr Structure Cover, CB, Modified, shall include the frame, grate, and adjustable back, and shall be EJIW Model 7000, with M1 Grate and T1 Back, or approved equal. The preferred catch basin cover shall have the back stamped with the shape of a fish and the words "Dump No Waste" and "Drains to Rivers". Dr Structure Cover, STM, Modified, shall include the frame and perforated lid, and shall be EJIW Model 1040 B, or approved equal. Dr Structure Cover, San, Modified, shall include the frame and solid lid, and shall be EJIW Model 1040A, or approved equal. The preferred cover shall be stamped with the City of Mt. Pleasant logo.

The castings and adjustments shall be wrapped with geotextile fabric, with the ends overlapping a minimum of six inches (6").

MEASUREMENT AND PAYMENT

The completed work as measured for Dr Structure Cover, _____, Modified, will be paid for at the contract unit price for the following item (Pay Item):

<u>Pay Item</u>	<u>Pay Unit</u>
Dr Structure Cover, _____, Modified	Each

Dr Structure Cover, _____, Modified will be measured and paid for at the contract unit price of each for the various covers installed, which price shall be payment in full for all labor, equipment, and materials needed to accomplish this work.

SPECIAL PROVISION
FOR
HOT MIX ASPHALT (HMA) APPLICATION ESTIMATE

City of Mt. Pleasant

1 of 2

February 2011

DESCRIPTION

This work shall be done in accordance with the requirement of Division 5 of the Michigan Department of Transportation 2003 Standard Specifications for Construction except as modified herein.

CONSTRUCTION METHODS

The Nuclear Gauge Method for testing compaction, Section 502.03.G will apply for this project.

MATERIALS

Fancher Street: HMA, 13A shall have an average yield of 220 pounds per square yard.
Fancher Street: HMA, 36A shall have an average yield of 165 pounds per square yard.

Wisconsin St: HMA, 13A shall have an average yield of 165 pounds per square yard.
Wisconsin St: HMA, 36A shall have an average yield of 135 pounds per square yard.

Chippewa St: HMA, 13A shall have an average yield of 165 pounds per square yard.
Chippewa St: HMA, 36A shall have an average yield of 135 pounds per square yard.

Driveways: HMA, Approach shall have an average yield of 220 pounds per square yard.

The asphalt cement for mixtures HMA, 13A and HMA, 36A shall be 58–28 performance grade.

The HMA bond coat mixture shall be as per standard specifications. The application rate on existing or between courses shall be 0.05 to 0.10 gallons per square yard.

The HMA bond coat mixture will be paid for separately, but will be included in HMA pay items.

The aggregate wear index shall be 260 minimum, top course only.

SPECIAL PROVISION
FOR
HOT MIX ASPHALT (HMA) APPLICATION ESTIMATE

City of Mt. Pleasant

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MEASUREMENT AND PAYMENT

Measurement and payment shall be at the contract unit price per ton. No additional payment will be made for HMA bond coat mixture.

The paving of all intersecting street approaches shall be as shown on the plans and paid for as mainline paving using the appropriate HMA mixture items.

SPECIAL PROVISION
FOR
HMA APPROACH, MODIFIED

City of Mt. Pleasant

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February 2011

DESCRIPTION

The work of HMA Approach, Modified shall consist of furnishing and placing HMA material on a 6" aggregate base, in accordance with Sections 501 and 502 of the Michigan Department of Transportation 2003 Standard Specifications for Construction except as modified herein. HMA Approach, Modified will apply to HMA mixture placed in the area between the curb and right-of-way line or as directed by the Engineer.

MATERIALS

Materials for HMA Approach, Modified shall consist of 6" of 100% crushed limestone conforming to 23A Aggregate and HMA, 36A material.

MEASUREMENT AND PAYMENT

HMA Approach, Modified will be measured by weight in tons. The completed work of HMA Approach, Modified will be paid for at the contract unit price for the following:

<u>Pay Item</u>	<u>Pay Unit</u>
HMA Approach, Modified	Ton

HMA Approach, Modified will be measured in place by weight in **tons** and will be paid for at the contract unit price per **ton**, which price shall be payment in full for all labor, material and equipment to needed to accomplish this work.

All HMA material and work in street intersection areas will be measured and paid for as mainline paving.

SPECIAL PROVISION
FOR
PERMANENT PAVEMENT MARKING

City of Mt. Pleasant

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February 2011

DESCRIPTION

This work shall be done in accordance with Section 811 of the Michigan Department of Transportation 2003 Standard Specifications for Construction and as modified herein.

METHOD OF CONSTRUCTION

The inlay method shall be used for installing pavement markings. The inlay method involves pressing the marking material into the new warm (120°F-150°F) hot mixed asphalt pavement with a finishing roller. When marking by the inlay application method for cold plastic, the material is required to withstand the pressure of 5 to 10 ton tandem rollers used to embed the material into the new pavement surface. The inlay application method does not require the application of contact cement on the pavement surface. All transverse and special markings shall be placed and rolled at least once with a 200-pound minimum weight roller, prior to the finish rolling. Additional rolling is not required for longitudinal applications when the equipment installing the line is equipped with a roller. The placed line shall not vary in width more than +/- 1/8 inch. Pavement markings which become deformed during the inlay process due to shifting, turning, or twisting; shall be replaced at the Contractor's expense.

MATERIAL

All material shall be cold plastic, suitable for application to new hot mixed asphalt surfaces and shall meet or exceed material specifications as set forth in the Michigan Department of Transportation Materials Source Guidebook for long lines, cross-hatching, transverse lines and special symbols such as stop bars, crosswalks and arrows.

MEASUREMENT AND PAYMENT

The completed work for pavement markings will be paid for at the contract unit price for the following item (Pay Item).

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FOR
PERMANENT PAVEMENT MARKING

City of Mt. Pleasant

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<u>Pay Item</u>	<u>Pay Unit</u>
Pavt Mrkg, Inlay Cold Plastic, six (6) inch, Crosswalk	Foot
Pavt Mrkg, Inlay Cold Plastic, four (4) inch, Yellow	Foot
Pavt Mrkg, Inlay Cold Plastic, four (4) inch, White	Foot
Pavt Mrkg, Inlay Cold Plastic, 24 inch, Stop Bar	Foot
Pavt Mrkg, Inlay Cold Plastic, Lf Turn Arrow, Symbol	Each

Longitudinal and Transverse pavement markings will be measured by length in feet and will be paid for at the contract unit price per foot in place, which price shall be payment in full for all labor, material and equipment needed to accomplish this work.

SPECIAL PROVISION
FOR
SLOPE RESTORATION

City of Mt. Pleasant

1 of 2

February 2011

DESCRIPTION

All work shall be done in accordance with Section 816 of the Michigan Department of Transportation 2003 Standard Specifications for Construction, except as modified herein. This work shall consist of shaping all disturbed areas requiring seeding, placing topsoil, seed, fertilizer and mulch blankets as shown on the plans and typical cross sections, as directed by the Engineer.

MATERIALS

Seed mixture shall be TUF (Turf Urban Freeway) supplied at a rate of 220 lbs. per acre.

MDOT Class A commercial fertilizer shall be used containing 12% nitrogen, 12% phosphoric acid, and 12% potash; application rate is 228 lbs. of nutrients per acre.

Excelsior Mulch Blanket, or approved equal shall be used on this project and shall be removed by the contractor once adequate growth has been attained, as determined by the Engineer. Excelsior mulch shall consist of wood fibers cut from sound, green timber. The average length of the fibers shall be four to six inches. The cut shall be made in such a manner as to provide maximum strength of fiber, but at a slight angle to the natural grain of the wood so as to cause splintering of the fibers when weathering in order to provide adherence to each other and to the soil.

Topsoil Surface, Furnish, four (4) inch (compacted depth) shall be used on this project. All topsoil shall consist of screened imported material which material size is ½-inch in dimension or less.

CONSTRUCTION METHOD

The contractor shall restore all areas as described in Section 816 of the 2003 Standard Specifications. Materials shall be placed at rates described herein, or as directed by the Engineer.

SPECIAL PROVISION
FOR
SLOPE RESTORATION

City of Mt. Pleasant

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February 2011

Topsoil Surface, Furnished shall be applied to a compacted depth of not less than four (4) inches to all areas requiring Slope Restoration to meet proposed finished grade. Contractor shall compact all topsoil in slope restoration areas to avoid future settlement behind curb and gutter, sidewalk and drive approach areas.

MEASUREMENT AND PAYMENT

The completed work as measured for Slope Restoration will be paid for at the contract unit price for the following contract item (Pay Item).

<u>Pay Item</u>	<u>Pay Unit</u>
Slope Restoration	Square Yard

Slope Restoration will be measured in place by area in **square yards** and will be paid for at the contract unit price per **square yard** which price shall be payment in full for all labor, material and equipment needed to accomplish this work. Placement of Topsoil Surface, Furnished, four (4) inch; TUF Seeding Mixture; MDOT Class A Fertilizer, Commercial Grade; Excelsior Mulch Blanket shall be considered as included in the pay item, Slope Restoration. No separate payment will be made for these various items of work.

Topsoil surface will not be paid for separately. Any areas where settlement occurs that is not acceptable to the Engineer shall be restored as directed by the Engineer at no additional costs. Once adequate growth has been attained as determined by the Engineer, the contractor shall remove remaining excelsior mulch blanket, payment to be included in Slope Restoration.

SPECIAL PROVISION
FOR
PRECONSTRUCTION AUDIO VIDEO RECORDING

City of Mt. Pleasant

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DESCRIPTION OF WORK

The work covered under this section of the specifications consists of furnishing all labor, materials and equipment to provide color and audio-video electrography along the entire length of the project to serve as a record of "original" conditions.

AUDIO-VIDEO EQUIPMENT

All audio-video recording equipment shall be supplied and operated by professional electrographers actively engaged in pre-construction color audio-video recording.

INSPECTION

1. Requirements

Prior to commencing any work, a continuous color audio-video recording shall be made of the project.

A. Coverage Area

Shall include all above ground features located within the zone of construction influence. Of particular concern are any existing faults, fractures, defects or other imperfections exhibited by any above ground features.

2. Qualifications

The audio-video recording shall be done by professional electrographers actively engaged in pre-construction color audio-video recording.

3. Sample Video

Prior to recording the entire project site, the electrographer shall record a "sample" route as designated on the plans. The audio-video recording quality and standards for the entire project will be based upon the "sample", approved by the Engineer. The "sample" recording shall be submitted to the Engineer within three (3) weeks from date of written authorization. The "sample" shall be re-recorded as many times as necessary until a video is produced that meets the requirements specified herein.

SPECIAL PROVISION
FOR
PRECONSTRUCTION AUDIO VIDEO RECORDING

City of Mt. Pleasant

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4. Entire Project Site

The entire project site shall be recorded upon written approval of the Engineer. It will not be necessary to re-record the portion of the project included in the accepted "sample" video.

5. Equipment

When conventional wheeled vehicles are used for recording, the distance from the camera lens to the ground shall not be less than twelve (12) feet to insure proper perspective. In some instances, audio-video coverage will be required in areas not accessible on conventional wheeled vehicles. Such coverage shall be obtained by walking or special conveyance approved by the Engineer.

A. Audio-Video Recording

The audio-video recording provided shall be in a DVD format.

B. Camera(s)

A color video camera shall be used that shall have a horizontal resolution of at least 300 lines at center. The camera shall be a professional quality camera acceptable to the Engineer.

6. Execution

A. Audio

Each video shall begin with the current date, project name, project number and municipality, and be followed by the general location; i.e. name of the street or location of "cross country" line, viewing side and direction of progress.

B. Video

To preclude the possibility of tampering or editing in any manner, all video recordings shall, by electronic means, display continuously and simultaneously generated transparent digital information to include the date and time of recording, as well as the corresponding engineering stationing numbers. The date information will contain the month, day and year. For example, 3/16/01, and shall be placed directly below the time information. The time information shall consist of

SPECIAL PROVISION
FOR
PRECONSTRUCTION AUDIO VIDEO RECORDING

City of Mt. Pleasant

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hours, minutes, and seconds, separated by colons. For example 11:25:14. This transparent information shall appear on the extreme upper left-hand third of the screen.

1. Engineering Station Numbers

Station numbers shall be continuous, accurate, correspond to the project stationing and include the standard engineering symbols (for example, 16+50). This information shall appear in the lower half of the viewing screen.

2. Additional Information

Below the engineering stationing, periodic transparent alphanumeric information, consisting of the name of the project, name of the area covered, direction of travel, viewing side, etc., shall appear.

C. Audio-Video Tracks

The audio-video recording shall consist of one (1) video and two (2) audio tracks, all of which shall be recorded simultaneously. All tracks shall consist of original, live recordings and, thus, shall not be copies of other audio or video recordings. Audio track 1 shall contain the narrative commentary of the electrographer, recorded simultaneously with his fixed elevation video record of the zone of influence of construction. Audio Track 2 shall contain the narrative commentary and evaluations of the ground level remote technician whose function shall be to provide a complete circumspection of any features not adequately visible to the electrographer and to describe in detail the extent of any damage encountered. In order to maintain viewer orientation, transition from fixed camera overview to remote camera picture shall be by means of an electronic dissolve.

D. Lighting Requirements

All recording shall be done during times of good visibility. Auxiliary lighting may be required to fill in shadow areas and/or when recording inside a building. The lighting shall be sufficient to illuminate all details in the area. Lighting shall be required upon the request of the Engineer.

SPECIAL PROVISION
FOR
PRECONSTRUCTION AUDIO VIDEO RECORDING

City of Mt. Pleasant

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E. Video Coverage

Video coverage shall include all surface features located within the zone of influence of construction specified on the plans and supported by appropriate audio description. Audio description shall be made simultaneously with video coverage.

1. Coverage

Video coverage shall include, but not be limited to, all existing driveways, sidewalks, curbs, ditches, streets (including condition of paving for full width), landscaping, trees, culverts, catch basins, manholes, headwalls, retaining walls, fences, visible utilities, and all buildings located within the zone of influence. Of particular concern are any existing faults, fractures, defects, or other imperfections exhibited by the above-mentioned surface features.

2. Houses and Buildings

Structures shall be identified visually by house or building number, when possible, in such a manner that the progress of the video and the proposed construction may be located by reference to the houses and buildings.

3. General

Recording shall not be done during periods of visible precipitation or when more than 10% of the ground area is covered with snow, leaves, floodwaters or debris, unless otherwise authorized by the Engineer.

F. Rate of Speed

The rate of speed in the general direction of travel of conveyance used during recording shall not exceed 48 feet per minute. Panning rates and zoom-in, zoom-out rates shall be controlled sufficiently such that the rates will produce clarity of the object viewed during playback of the videos.

G. Coverage Area

The Engineer shall have the authority to designate areas that may be omitted or added for audio-video coverage.

SPECIAL PROVISION
FOR
PRECONSTRUCTION AUDIO VIDEO RECORDING

City of Mt. Pleasant

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H. Identification

1. Disks and Cases

Disks and cases shall be properly identified by video number, location and project name and municipality in a manner acceptable to the Engineer.

2. Records

A record of the contents of each video shall be supplied by a sheet identifying each segment of the video by location; i.e. roll number, street or road viewing, video counter number, viewing side, point starting from, traveling direction and ending destination point.

MEASUREMENT AND PAYMENT

The complete work as measured for Preconstruction Audio Video Recording will be paid for at the contract unit price for the following contract pay item and includes all material, equipment, and labor to complete the item.

<u>Pay Item</u>	<u>Pay Unit</u>
Preconstruction Audio Video Recording	Lump Sum

CITY OF MT. PLEASANT
SPECIAL PROVISION
FOR
SANITARY SEWER MATERIALS AND CONSTRUCTION
1 OF 10

DESCRIPTION

The Contractor shall furnish all labor, equipment, and materials to completely construct, test, and place in operation, the sanitary sewer system as shown on the Plans and specified herein.

MATERIALS

A. Service Pipe

Six-inch (6") service pipe used for riser pipe and house leads shall be constructed of the following material:

PVC conforming to D-3034 with 0.180-inch wall thickness (SDR-35). Joints and couplings shall conform to ASTM D-3212. Pipe shall have a home mark, and shall not be blue in color.

B. Sewer Main Pipe

Unless otherwise specified on the Plans or Proposal form, the Contractor shall utilize the following materials, subject to Specifications and size limitations. Sewer pipe materials may be changed only at manholes.

1. Eight-inch (8") diameter through fifteen-inch (15") diameter pipe - Shall be SDR 35 PVC sewer pipe meeting the requirements of ASTM D-3034.
2. Sixteen-inch (16") diameter pipe and larger - Shall be SDR 35 PVC pipe meeting the requirements of ASTM F-679.
3. Joints shall meet ASTM D-3212 push on type with seating mark. Service lead connections shall be made using standard wye fittings.

C. Manholes

1. Pre-Cast Sections

Manholes shall be constructed of circular pre-cast concrete units with circular reinforcement and shall conform to the requirements of the current Specifications for Pre-Cast Reinforced Concrete Manhole Risers and Tops ASTM C-478.

Marking of the sections shall be done within six (6) days after manufacture. Certification from the manufacturer that the manholes supplied meet the required Specifications shall be provided to the Engineer by the Contractor.

Cone sections shall be the eccentric type with a minimum depth of 12".

Joints between sections shall be rubber O-ring gasket. Mastic sealing compound will not be accepted.

Manhole connections shall be made with an integrally cast seal system, such as "Kor-N-Seal", "Lock-Joint Flexible Manhole Sleeve", or an approved equal. Connections to existing manholes (without flexible coupling) with PVC pipe shall be made using a water stop cemented to the plastic pipe.

2. Manhole Steps

Manhole steps shall be plastic-coated steel. They shall be placed sixteen-inches (16") apart unless otherwise shown and shall be cast in the manhole walls. It will not be acceptable to grout the steps in place after the manhole section is poured.

Plastic-coated steel steps shall consist of a 3/8-inch diameter deformed steel reinforcing rod covered with a copolymer polypropylene plastic. The steel rod shall be grade 60 and conform to the ASTM A-615. The plastic shall conform to ASTM 2146-68, Type II, Grade 49108.

Steps shall also conform to the following standards:

- a. Michigan Department of Labor Occupational Safety Standards, Part 3, Rule 341.
- b. ASTM C-478.
- c. OSHA 1910.27 G

3. Castings

Manhole frames and covers shall be EJIW 1040 or equal and catch basin castings shall be EJIW 7000 or equal. The preferred casting shall be stamped with the City of Mt. Pleasant logo, available at East Jordan Iron Works. Castings shall have a minimum clear internal opening of 24 inches.

Top of casting shall be set as follows:

- a. Flush with paved or grass surfaces.
- b. Four-inches (4") below gravel road surface with eight-inches (8") of adjustment.

4. Cement Mortar

Mortar for block and brick work in manholes and other appurtenances shall be mixed in the proportion of one (1) part Portland cement to three (3) parts sand. Hydrated lime may be added in proportions not to exceed ten percent (10%) of the volume of the cement.

5. Adjusting Rings

Casting adjustments shall be accomplished with pre-cast concrete grade rings conforming to ASTM C478. Rings shall have an ID not less than twenty-four-inches (24") nor greater than twenty-five inches (25"), a minimum thickness of two-inches (2"), and a minimum OD of forty-inches (40").

6. Brick and Block

Fill-in around pipes shall be accomplished with bricks and/or blocks. Brick shall be concrete conforming to ASTM C-55, Grade N. Block shall be concrete conforming to ASTM C-139.

7. Concrete

Concrete used in manhole construction shall be transit mixed with a twenty-eight (28) day compressive strength of 3,000 psi. The approximate proportions of the mix shall be one (1) part cement, two (2) parts fine aggregate, and three (3) parts coarse aggregate. The mix shall contain six (6) sacks of cement per cubic yard with a maximum allowable slump of three and one half-inches (3 1/2").

CONSTRUCTION

A. Sewer Main

Polyvinyl chloride (PVC) pipe shall be installed according to the UniBell Plastic Pipe Association Recommended Standards and Practices, and shall conform to ASTM D2321.

The installation, handling, and storage of all pipe shall be in accordance with manufacturer's recommendations. Pipe shall be protected at all times against impact, shocks, and free fall. Stockpiling of pipe at the job site shall be in such a location as to minimize handling.

Trenches for pipe shall be excavated so that there will be a minimum clearance of six-inches (6") on each side of the barrel of the pipe and a maximum width of trench at the level of the top of the pipe of not more than 16 inches greater than the OD of the pipe 30 inch ID or smaller and not more than 24 inches greater than the OD of pipe 33 inch ID or larger. There shall be, at all times, sufficient width to permit the pipe to be laid and to permit first-class construction methods to be used. Sufficient space shall be provided in the trench to permit the joint to be properly made.

The trench bottom shall be undercut a minimum of four-inches (4") below the final location of the pipe and the trench then filled with MDOT 6A crushed limestone compacted with hand tampers to provide a cushion for bedding the pipe. The bedding material shall be free of stone over 1 ½ inches in size.

The trench shall be dry during the pipe laying operation. Bell holes shall be excavated so that after placement, the barrel of the pipe will have full bearing on the trench bottom. The laying of pipe shall commence at the outlet and proceed upgrade with spigot ends pointing in the direction of flow.

All pipe shall be laid to the line and grade called for on the Plans utilizing an in-line laser beam system for vertical and horizontal control. Each pipe, as laid, shall be checked by the Contractor with a suitable target to insure that this result is obtained. Vertical elevation of the invert shall, at any point, be within plus or minus 0.04 foot (1/2-inch) of plan elevation. Horizontal alignment must meet the same tolerance.

Joints shall be made in accordance with the manufacturer's requirements. The socket of the pipe last laid shall be wiped clean and the spigot end of the pipe to be laid shall then be centered and pushed home to the stop mark. The pipe shall be centered so that they will form a sewer with a uniform invert.

After the pipe is laid, MDOT 6A crushed limestone shall be placed the entire width of the trench up to the spring line of the pipe. Backfill shall be carefully tamped under the haunches of the pipe. Care shall be taken during backfilling and tamping so that the line and grade of the pipe are not disturbed. After compacting, MDOT 6A crushed limestone shall be placed until the entire width of the trench is filled to not less than one foot (1') above the top of the pipe. The maximum stone size for backfill material within one foot (1') of the top of pipe shall be 1 ½ inches.

The remainder of the backfilling may be done with Class II sand backfill. All backfill is to be compacted in maximum one-foot (1') lifts to a density of ninety-five percent (95%) of the maximum unit weight as determined by the modified proctor and shall contain no debris, frozen material, organic material, etc., within two feet (2') of the top of the pipe. **The use of a hoe pack will not be allowed for compaction.**

Main sewer line stubs for future connections shall be furnished and placed by the Contractor according to details shown on the drawings and as directed by the Engineer. The end of the stub where future connections will be made shall be properly supported on MDOT 6A crushed limestone so that any settlement will not disturb the connection. The end of the main sewer line stub shall be witnessed and marked in the manner described for sanitary sewer leads.

Excavation for structures shall be extended sufficiently beyond the limits of the structure to provide ample room for form construction, backfill compaction, and other construction methods to be followed, wherever necessary.

In case soft material is encountered in the bottom of a sewer trench or underneath a drainage structure which, in the opinion of the Engineer, is not suitable for supporting the pipe, the Engineer may order the removal of this soft material and its replacement with MDOT 6A crushed limestone in order to make a suitable foundation for the construction of the sewer structure.

Where the construction is on or along the line of an existing sewer, the Contractor shall maintain sanitary sewer services by means of bypass pumping or other methods approved by the Owner.

The pumps, when used, shall be large enough to handle the peak daily flow of the pipe which is being bypassed. If flow exceeds the pump capacity, the plugs shall be pulled allowing the flow to pass through the downstream sewer. When plugs are used to control flow or for pumping, they shall be of the pneumatic type to allow for quick release without entering the manhole.

If sand bags are used to block a downstream pipe in a manhole, each bag shall be tied off with a rope to allow removal of the sand bag without entering the manhole.

Flow control shall be monitored so that surcharging of sewers, flooding of private or public property (including basements) does not occur. Any damage caused by the control of flow shall be the Contractor's responsibility to repair, correct or indemnify.

Smaller sewers with low flow, which must be temporarily blocked, shall use the bypass pumping procedure or temporary fluming to maintain flow.

The Contractor shall be responsible for any damage that may result from failure to maintain sewer flow.

B. Service Leads

1. Riser Pipe

Where shown on the Plans or where directed by the Engineer, the Contractor shall put in six-inch (6") pipe risers extending from the branch connection in the sewer up to within eleven-feet (11') of the ground surface or to a depth adequate to serve the house lead elevation shown at the property line. These pipes shall be laid up with a joint as specified, and the top pipe shall be closed with a stopper. All risers shall be laid up and held securely in place and the backfill shall be carefully placed around them so as not to disturb them. MDOT 6A crushed limestone, six-inches (6") thick shall be placed under and around the "Y" branch and over it to a height of six-inches (6") above the sewer to furnish an adequate support to the riser pipe.

The top of each riser pipe shall be measured and recorded by the Contractor in the same manner as specified for measuring and marking stub connections.

2. Sewer Leads

Sewer leads shall be installed at the locations and elevations shown on the Plans or as directed by the Engineer. Before sewer leads are installed, the Contractor shall confirm the exact location with the property owner, if property is occupied. On vacant lots, the sewer leads will generally be located at approximately the mid-point of the front lot line, unless the owner requests another location. The sewer leads shall connect to the six-inch (6") wye or six-inch (6") riser and generally extend to the street right-of-way line. All sewer leads that do not have other pipe connected to them immediately shall be fitted with suitable stoppers and braced for pressure tests.

In order to properly mark the location of every wye, riser, clean out, and sewer lead, the Contractor shall make accurate measurements of each installation before the sewer lead is backfilled. The measurements shall indicate the distance from each wye to the center of the downstream manhole. The measurement of risers, clean outs, and sewer leads shall indicate the distance from the main line sewer and to two (2) fixed reference points, i.e. fire hydrants, manholes, building corners.

The Contractor shall furnish the Engineer with a copy of these measurements immediately upon the completion of each street.

In addition to measurements, the Contractor shall furnish and place a treated two inch by four inch (2" x 4") marking stick at each lead of such length that it will reach from the lead to within six-inches (6") of the ground surface. Each marker shall be set in a vertical position and held vertical while backfilling the trench. Two (2) 16-penny common nails shall be driven into the top of each two inch by four inch (2" x 4") marking stick so the sewer lead location may be found with a magnetic locator.

3. Tapping Existing Mains

Where existing main sewer lines are to be tapped, the Contractor shall use a pre-formed saddle approved by the Engineer. A hole shall be cored to the proper size in the main line and all rough edges smoothed to prevent obstructions. Tap shall be horizontal to forty-five (45) degrees above horizontal. No vertical taps are allowed. The exterior of the main line pipe shall be thoroughly cleaned in order to provide a prepared surface for gluing the saddle onto the main line. The Contractor shall clean the main line of all debris, which may enter during his tapping operation. The Contractor shall insure that the sewer lead does not protrude into the main.

The Contractor shall notify the Engineer prior to making any connection to the main line and shall not backfill the connection prior to approval of the Engineer. If the pipe becomes covered with water or backfill material, the Contractor shall remove the water or material to facilitate the inspection.

C. Manholes

Sanitary sewer manholes are to be constructed as shown on the detailed drawings. Precast concrete manholes sections shall be installed in a plumb position.

All masonry items shall be clean and shall be thoroughly wetted by immersion, when practical to do so, just before laying. If immersion is impractical, masonry items shall be thoroughly sprinkled before laying.

All items shall be laid in a full bed of mortar, without subsequent grouting, flushing or filling and shall be thoroughly bonded. Interior joints shall not be more than 1/4-inch in width. Whole brick and block only shall be used, except to effect closures.

Mortars mixed by hand shall be prepared in a suitable clean watertight box. The ingredients, except water, shall first be thoroughly mixed dry until of uniform color; then water shall be added and the mixing continued until proper consistency and uniform texture is produced.

No re-tempered mortar or mortar that has been mixed for more than thirty (30) minutes shall be used in the work. No cement mortar shall be mixed when temperature is below thirty (30) degrees Fahrenheit without properly heating the sand and water.

All manholes shall be finished so that all visible leakage is repaired. The interior and exterior joints between manhole sections and adjusting rings shall be plastered with at least one-half-inch (1/2") thick mortar. All plastered areas shall have a brushed finish. All lift holes shall be mortared and finished. The bottom of the manhole, the flow line of the sewer, and the steps shall be clean of all mortar, concrete, dirt and other debris.

The flow channels shall be constructed with a minimum depth of 80 percent of the pipe diameter. The flow channel and manhole bottom shall be sloped to prevent accumulation of sewage and shall have a brushed finish.

No sanitary sewer leads shall be connected to a sanitary manhole. Sanitary sewer leads shall connect to the main sewer line. Backfill materials around manholes shall meet the same requirements as trench backfill for pipe that is installed under and within the zone of influence of pavement.

Where shown on the Plans, new sewers shall be connected into existing manholes. In such cases, new channels shall be constructed using 3,000 psi concrete. Where required, existing manholes shall be demolished. This work shall be included in other items of the project.

CLEANING AND TESTING SANITARY SEWERS

A. Cleaning

Before the sewer may be tested, the Contractor shall clean the sewers using a hydraulic system consisting of a high-pressure pump feeding water to a nozzle, which directs the water against the walls, and flow line of the pipe, dislodging the debris and flushing it toward a manhole. All debris shall be removed at the nearest downstream manhole.

B. Testing

The Contractor shall furnish all equipment and personnel to conduct an acceptance test using low-pressure air. The test shall be conducted under the supervision of the Engineer.

All stubs, sewer leads and risers shall be installed completely and securely plugged with suitable stoppers that will withstand the internal test pressures. The section of line being tested shall also be securely plugged at each manhole. All stoppers shall be adequately braced.

Low-pressure air test of installed PVC pipe shall be in accordance with the most recent Recommended Practice (Uni-B-6-79) of the UniBell Plastic Pipe Association, as well as ASTM F1417.

The completed installation of PVC sewers shall at no point have out-of-round pipe deflections greater than five percent (5%). The contractor shall provide "go-no-go" test mandrels to test the deflection of the PVC pipe. The test shall be conducted not less than at least thirty (30) days after pipe installation. Testing shall be performed by the Contractor under the supervision of the Engineer.

C. Infiltration

The maximum allowable infiltration shall not exceed 100 gallons per day per inch diameter per mile.

D. Connections

If the sewer installation fails to meet these requirements, the Contractor shall determine the source or sources of the leakage and all defective materials or workmanship shall be repaired or replaced. The completed sewer installation shall meet the requirement of the test.

METHOD OF MEASUREMENT AND PAYMENT

A. Sewer (Type), __", Modified

1. Description

The work of Sewer (Type), __", Modified, shall consist of excavation, removal and disposal of existing sewer pipe, furnishing and placing SDR 35 plastic sewer pipe, and trench backfill, in accordance with section 402 of the 2003 MDOT Standard Specifications for Construction, MDOT Standard Plan R-83-B, and special details within the construction plans, except as modified.

2. Method of Measurement and Basis of Payment

Sewer (Type), __", Modified, will be measured in place by length in feet and will be paid for at the contract unit price which price shall be payment in full for any fittings, couplers, sheeting or shoring trench walls, backfill as required and all labor, material and equipment needed to accomplish this work. Removal of existing sewer less than 12 inches in diameter will not be paid for separately, but will be included in the pay item for construction Sewer (Type), __", Modified

B. Dr Structure (Type), __ inch dia,

1. Description

Dr Structure (Type), __ inch dia, shall consist of excavation, the furnishing and placing of pre-cast sections, concrete work, drop pipes, connection of existing and new pipes, and backfilling, in accordance with section 403 of the 2003 MDOT Standard Specifications for Construction and special details within the construction plans.

2. Method of Measurement and Basis of Payment

Dr Structure (Type), ___ inch dia, will be measured and paid for by the unit each shall be payment in full for all labor, material and equipment needed to accomplish this work. This work shall include but is not limited to: excavation, backfill, concrete, reinforcing steel, waterstops, temporary sewer supports, removing portion of sewer, connecting existing and proposed sewers, construction of a manhole riser, boots, drop inlets (if required), grade rings, concrete bench and flow channel, and casting and cover.

C. Dr Structure, Tap, ___ inch

1. Description

Dr Structure, Tap, ___ inch, shall consist of coring the Dr Structure at the correct elevation, location, and size utilizing a coring machine. This work shall include using a water stop, stopping all leaks and removing and reconstructing the existing flow channel, as directed by the Engineer.

2. Method of Measurement and Basis of Payment

Dr Structure, Tap, ___ inch, will be measured and paid for by the unit each shall be payment in full for all labor, material and equipment needed to accomplish this work.

<u>PAY ITEM</u>	<u>PAY UNIT</u>
Sewer (Type), ___", Modified	Foot
Dr Structure (Type), ___ inch dia,	Each
Dr Structure, Tap, ___ inch	Each

SPECIAL PROVISION
FOR
DIRECTIONAL BORE WATER MAIN MATERIALS AND CONSTRUCTION

City of Mt. Pleasant

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DESCRIPTION

This Special Provision addresses the installation of water mains by guided boring, including connecting to existing water services or other water mains. All gate valve, gate well, and other appurtenances shall be installed using the Special Provision for Water System Materials and Construction. The Contractor will provide all labor, components, materials, tools and appurtenances necessary or proper for the performance and completion of the contract. Inspection and payment will be by the method stipulated in the contract.

Guided boring is a method of trenchless construction using a surface launched steerable drilling tool controlled from a mobile drilling frame, and includes a field power unit, mud mixing system and mobile spoils extraction system. The drilling frame differs from micro-tunneling, auger boring or pipe jacking equipment. The drilling frame is set back from an access pit that has been dug at the location of a proposed gate well (or other appurtenances), and a high-pressure fluid jet toolhead, that uses a mixture of bentonite clay and water, is launched and guided to the correct invert elevation and line required at the gate well. Using a real-time guidance system attached behind or within the toolhead, which measures inclination, roll, and azimuth, the toolhead is guided through the soil to create a pilot tunnel. Tunneling may also be performed between proposed gate wells or other appurtenances. Upon reaching the pit dug at the target location, the toolhead is removed and a reamer, with the product pipe attached, is joined to the arm swing and pulled back through the tunnel. A vacuum spoils extraction system removes any excess spoils generated during the installation. The gate wells are then completed at both locations and the surface restored to the original condition.

A. Qualifications

- 1) Guided Boring Contractors shall have actively engaged in the installation of pipe using guided boring for a minimum of three years. The Contractor shall also have completed at least 5,000 feet of guided boring installations ranging from 6 inches to 24 inches in diameter, in the last year.
- 2) Field supervisory personnel employed by the Guided Boring Contractor will have at least three years' experience in the performance of this type of work.

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A. Site Conditions

- 1) Guided boring operations must not interfere with, interrupt or endanger the surface or activity upon the surface, and shall be located as called for on the project drawings.
- 2) Contractor must comply with all applicable jurisdictional codes and OSHA requirements.
- 3) When rock stratum, boulders, underground obstructions, or other soil conditions that impede the progress of drilling operations are encountered, the Contractor and Project Engineer will review the situation and jointly determine the feasibility of continuing drilling operations, by making adjustments or switching to an alternate construction method.

MATERIALS

A. Pipe and Fittings

High Density Polyethylene Pipe (HDPE), fittings, and additional appurtenances used shall be in accordance with the Special Provision for Water System Materials and Construction.

B. Drilling Fluid

- 1) Drilling fluid shall be a mixture of water and bentonite clay. The fluid shall be inert. The fluid should remain in the tunnel to ensure the stability of the tunnel, reduce drag on the pulled pipe, and provide backfill within the annulus of the pipe and tunnel.
- 2) Disposal of excess drilling fluid and spoils shall be the responsibility of the Contractor, who must comply with all relevant regulations, right-of-way, work space and permit agreements. Excess drilling fluid and spoils shall be disposed at an approved location. The Contractor is responsible for transporting all excess drilling fluid and spoils to the disposal site and paying any disposal costs. Excess drilling fluid and spoils shall be transported in a manner that prevents accidental spillage onto roadways. Excess drilling fluid and

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spoils will not be discharged into sanitary sewers, storm drain systems or waterways.

- 3) Drilling fluid returns (caused by fracturing or formations) at locations other than the entry and exit points shall be minimized. The Contractor shall immediately clean up any drilling fluid that surfaces through fracturing.
- 4) Mobile spoils removal equipment capable of quickly removing spoils from entry or exit pits and areas with returns caused by fracturing shall be present during guided boring operations to fulfill the requirements of paragraphs b and c above.
- 5) The Contractor shall be responsible for making provisions for a clean water supply for the mixing of drilling fluid. A permit to use water can be obtained from the Division of Public Works. No water may be taken from City fire hydrants. The Contractor shall be responsible for complying with all the requirements of that permit.

CONSTRUCTION METHODS

A. General

The Engineer must be notified immediately if any obstruction is encountered that stops forward progress of drilling operations. The Contractor and Engineer must review the situation and jointly determine the feasibility of continuing guided boring operations or switching to an alternative construction method. When it is determined that it is impossible to continue drilling operations, the Contractor will be directed how to proceed by the Project Engineer. Dewatering of pits and excavations must meet the general provisions and specifications for water main construction in effect at the City of Mt Pleasant. The type of dewatering method will be at the option of the Contractor. When water is encountered, the Contractor must provide a dewatering system of sufficient capacity to remove water, keeping any excavations free of water until the backfill operation is in progress. Dewatering shall be performed in a manner so that removal of soil particles is held to a minimum.

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B. Preparation

Excavate required pits in accordance with the project drawings.

The drilling procedures and equipment shall provide protection to workers, particularly against electrical shock. As a minimum, grounding mats, grounded equipment, hot boots, hot gloves, safety glasses, and hard hats will be used by crewmembers. The drilling equipment shall have an alarm system capable of detecting electrical current. The Contractor is responsible for existing utilities, as stated under the Miss Dig System. All utilities that the boring operation may encounter shall be exposed to determine the actual depth and location. The costs of exposing utilities, whether shown on the plans or not, shall be the responsibility of the Contractor and included in the bid price for installing the new water main.

C. Guided Boring Operations

1) Equipment

- a) The drilling equipment must be capable of placing the pipe within the planned line and grade.
- b) The drilling equipment must have a minimum pullback rating of 35,000 lbs., a torque rating of 2,000 foot lbs., and mud flow of 24 gallons per minute.
- c) The guidance system must have the capability of measuring inclination, roll and azimuth. The guidance system must have an independent means to ensure the accuracy of the installation. The Contractor shall demonstrate a viable method to eliminate accumulated error due to the inclinometer (pitch or accelerometer). The guidance system shall be capable of generating a plot of the borehole survey for the purpose of an as-built drawing. The guidance system must meet the following specifications.

Inclination:	Accuracy	0.06'
	Range	90°
	Repeatability	0.09

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Roll:	Accuracy	0.1
	Range	0' to 360°
Azimuth:	Repeatability	0.1
	Range	0' TO 360°

- D. The Contractor shall supply the City with a data-log of the fusions indicating the successful fusion of all joints. The Contractor shall supply the City with a log of the water main depth every 25 feet along the length of the pipe.
- E. Pilot Hole Boring
- 1) The entry angle of the pilot hole and the boring process shall maintain a curvature that does not exceed the allowable bending radius of the product pipe.
 - 2) Alignment Adjustments and Restarts
 - a) The Contractor shall follow the pipeline alignment as shown on the drawings, within the specifications stated. If adjustments are required, the Contractor shall notify the Project Engineer for approval prior to making the adjustments.
 - b) In the event of difficulties at any time during boring operations requiring the complete withdrawal from the tunnel, the Contractor will be allowed to withdraw and abandon the tunnel by completely filling the void and begin a second attempt at a location approved by the Project Engineer; or at the option of the Contractor and with the approval of the Engineer, the Contractor may excavate at the point of the difficulty and install the product pipe by trench method per the contract documents and technical specifications for construction. The number of access pits shall be kept to a minimum and the equipment must be capable of boring the following lengths in a single bore. The guided boring system shall have the capability of boring and installing 12-inch diameter and smaller water main in a continuous run without intermediate pits, for a minimum distance of 700 feet.

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3) Installing Product Pipe

- a) After the pilot hole is completed, the Contractor shall install a swivel to the reamer and commence pullback operations. Pre-reaming of the tunnel may be necessary and is at the option of the Contractor.
- b) Reaming diameter shall not exceed 1.4 times the diameter of the product pipe being installed.
- c) The product pipe being pulled into the tunnel shall be protected and supported so that it moves freely and is not damaged by stones and debris on the ground during installation.
- d) Pullback forces shall not exceed the allowable pulling forces for the product pipe.
- e) The Contractor shall allow sufficient length of product pipe to extend past the termination point to allow connections to adjacent pipe sections or gate valves. Pulled pipes shall be allowed 24 hours of stabilization prior to making tie-ins. The length of extra product pipe shall be at the Contractor's discretion and cost.
- f) The Contractor shall install a braided 12 gauge, blue in color, tracer wire at the same time as the product pipe. The tracer wire shall be connected to each hydrant at a bolt on the bottom of the hydrant barrel by use of a soldered connection, a crimped U-shaped connection, or a ring lug.
- g) The Contractor shall install a "Driscopipe AWWA C153 Mechanical Joint Adaptor" type adaptor, per the manufacturer's requirements, for connecting the pipe to the specified valve and hydrant.

4) Water Service Connections

The Contractor is responsible for reconnecting existing water services as directed by the Engineer. All service leads will be to the

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size indicated in the plans and proposal. The service connections shall be tapped to the main line as described:

- a) Sidewall Fusion Procedure
 - 1) The Contractor shall follow the pipe manufacturer's recommendations for installing the service connection using the sidewall fusion procedure.
 - 2) The Contractor shall use a fusion connector that is approved to be used with HDPE pipe Philmac Connection or equivalent.
 - 3) The fusion connector must be capable of being joined with "K-copper" pipe.

TESTING

A. Pressure Testing Considerations

- 1) Guidelines for Test Methods

Leak testing shall be conducted as specified by the responsible Project Engineer or Owner.

Joints may be exposed to inspect for leakage. Heat fusion joints must be properly cooled before pressure testing.

Testing may be conducted on the full system, or in sections. The test section size is determined by test equipment capability. If the pressurizing or pumping equipment is too small, it may not be possible to complete the test within allowable testing time limits. If so, higher capacity test equipment, or a smaller test section may be necessary.

Expansion joints and expansion compensators should be temporarily restrained, or isolated, or removed during the pressure test.

The temperature of the test medium and the pipe test section should be the same, and should be at ambient temperature.

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Before applying test pressure, allow time for the test medium and the pipe test section to equalize. At temperatures above 100°F (38°C), test pressure must be reduced.

2) Test Pressure

Test pressure may be limited by valves, or other lower pressure rated components. Such components may not withstand the required test pressure. They should be either removed, or isolated from the test section to avoid possible damage, or failure of these devices. Isolated equipment should be vented. For pressure piping systems the maximum allowable test pressure is 1 ½ times the system design operating pressure at the lowest point in the section under test, provided that test pressure limiting components or devices have been isolated, or removed from the test section.

Test pressure ratings must not be exceeded.

If a lower pressure rated device or component cannot be removed or isolated, then the test pressure is limited to the pressure rating of that device.

3) Test Duration

For any test pressure from 1 to 1 ½ times the system operating design pressure, the total test time including initial pressurization, initial expansion, and time at test pressure, must not exceed eight (8) hours. If the test is not completed due to leakage, equipment failure, etc., depressurize the test section, and then allow it to “relax” for at least eight (8) hours before bringing the test section up to test pressure again.

B. Hydrostatic Testing

1) General

Piping system pressure testing using hydrostatic procedures is recommended. The testing medium shall be clean water. The test section should be completely filled with water. Take care to bleed

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off any trapped air. While the test section is filling, venting at high points may be necessary to purge air pockets. Venting may be provided by loosening flanges, or by using equipment vents. Retighten any loosened flanges before applying test pressure.

The test procedure consists of initial expansion, and test phases. During the initial expansion phase, the test section is pressurized to the test pressure, and enough make-up water is added each hour for three (3) hours to return to test pressure.

2) Non-monitored Make-Up Water Test

For the test phase, the test pressure is reduced by 10 psi. If the pressure remains steady (within 5% of the target value) for an hour, no leakage is indicated.

3) Monitored Make-up Water Test

The test phase may be one (1), two (2), or three (3) hours. At the end of the test time, the test section is returned to test pressure by adding a measured amount of water. If the amount of make-up water added does not exceed Table I values on the facing page, leakage is not indicated.

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TABLE 1: TEST PHASE MAKE-UP AMOUNT

Nominal Pipe Size (in.)	Make-Up Water Allowance (U.S. Gallons/100 ft. of Pipe)		
	1 hour test	2 hour test	3 hour test
1 ¼	0.06	0.10	0.16
1 ½	0.07	0.10	0.17
2	0.07	0.11	0.19
3	0.10	0.15	0.25
4	0.13	0.25	0.40
5	0.19	0.38	0.58
5 3/8	0.21	0.41	0.62
6	0.3	0.6	0.9
7 1/8	0.4	0.7	1.0
8	0.5	1.0	1.5
10	0.8	1.3	2.1
12	1.1	2.3	3.4
13 3/8	1.2	2.5	3.7
14	1.4	2.8	4.2
16	1.7	3.3	5.0
18	2.2	4.3	6.3
20	2.8	5.5	8.0
22	3.5	7.0	10.5
24	4.5	8.9	13.3
26	5.0	10.0	15.0
28	5.5	11.1	16.8
30	6.3	12.7	19.2
32	7.0	14.3	21.5
34	8.0	16.2	24.3
36	9.0	18.0	27.0
42	12.0	23.1	35.3
48	15.0	27.0	43.0
54	18.5	31.4	51.7

METHOD OF MEASUREMENT AND PAYMENT

Payment for the completed work for the various items shall be as described in the Special Provision for Water System Materials and Construction.

CITY OF MT. PLEASANT
SPECIAL PROVISION
FOR
WATER SYSTEM MATERIALS AND CONSTRUCTION
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DESCRIPTION

The Contractor shall furnish all labor, equipment, and materials to completely construct, test, and place in operation, the water system as shown on the drawings and specified herein.

MATERIALS

A. Water Main Pipe

1. Ductile Iron Pipe

Ductile iron pipe shall meet the requirements of ANSI/AWWA C151/A21.51. Where these specifications differ with ANSI/AWWA C151/A21.51 these specifications will prevail.

Cement Mortar Lining - Cement mortar lining of pipe shall conform to ANSI/AWWA C104/A21.4. Care shall be taken to insure that no mortar remains in the joint surface of the bell. If mortar is found in the joint surface or lining, of greater thickness than allowed, the pipe will be returned.

Length of Pipe - The minimum nominal laying length of the pipe shall be eighteen feet (18'). A maximum of twenty percent (20%) of the total number of each size of an order may be furnished as much as twenty-four inches (24") shorter than the nominal laying length; an additional ten percent (10%) may be furnished as much as six inches (6") shorter than nominal laying length.

Pipe Thickness - Ductile iron pipe shall have a wall metal thickness as follows:

6-inch pipe	0.31 inch (Class 52)
8-inch pipe	0.33 inch (Class 52)
12-inch pipe	0.37 inch (Class 52)
16-inch pipe	0.37 inch (Class 51)
20-inch pipe	0.39 inch (Class 51)

Tolerances will be as allowed in ANSI/AWWA C151/A21.51. Pipe sizes not listed above will not be approved for use as main lines in the City water system.

Coating - The inside and outside of the pipe shall be coated with a bituminous coating of either coal-tar or asphalt base one mil. thick.

Independent Tests - The supplier shall furnish reports of all tests and inspections as required in the ANSI/AWWA C151/A21.51.

2. Polyvinyl Chloride Pipe (PVC)

Polyvinyl chloride pipe (PVC) shall be of a class and designation as shown on the proposal, Plans and/or special conditions, with a SDR of 18 to 13.5 and compound designation Class No. 12454A, ASTM D-1784. PVC pipe shall be in accordance with current AWWA Standard C-900 and blue in color.

PVC pipe sizes six to twelve inches (6" - 12") in diameter shall be Class 150, and pipe sizes greater than twelve inches (12") shall be Class 200.

A single strand of 12 gauge insulated copper wire, blue in color, shall be buried in the trench twelve inches (12") above the PVC pipe. Solder all wire splices and wrap with "Scotch 2200 Vinyl Mastic Pads". The tracer wire shall be connected to each hydrant at a bolt on the bottom of the hydrant barrel by use of a soldered connection, a crimped U-shaped connection, or a ring lug.

3. High Density Polyethylene Pipe (HDPE)

Pipe used shall be DRISCOPIPE PRISMA, Series 4000 AWWA C906 or equivalent, SDR 11. HDPE pipe shall be produced from resins meeting the requirements of ASTM D1248, designation PE3408, ASTM D3350 cell classification, PE34543C, and shall meet the requirements of AWWA C901 and C906. Material taken from HDPE pipe shall meet the minimum stability requirements of ASTM D3360. The pipe shall be blue shelled on the exterior and black on the inside, or the exterior shall be black with one or more blue stripes, and be legibly marked at intervals of no more than five feet with the manufacturers name, trademark, pipe size, HDPE cell classification, appropriate legend such as SDR 11, ASTM D3035, AWWA C9091, or C9906, dates of manufacture and point of origin. The pipe shall be ductile iron pipe size. Pipe not marked as indicated above will be rejected.

4. Water Services

Allowable sizes are one inch, two inch, four inch (1", 2", 4"), or as specified for mains. Service saddles are required at each service connection on water main.

Material for four inch (4") shall be ductile iron or polyvinyl chloride, as specified for mains. Material for one inch (1") and two (2") shall be one of the following:

- a. Type K annealed seamless copper tubing conforming to ASTM B-88.
- b. One inch (1") shall be copper tube size, polyethylene (PE) water service pipe meeting AWWA C901 specifications. Markings on the pipe shall be AWWA C901, PE 3406, ASTM D-2737, dimension ratio SDR-9 brand name, date of manufacture, nominal size, sizing type (i.e., copper tube Size (CTS)), pressure rating 160 PSI at 73 1/2°F temperature, seal or (mark) of accuracy.
- c. Two inch (2") shall be copper tube size, polyethylene (PE) water service pipe meeting AWWA C901 specifications. Markings on the pipe shall be AWWA C901, PE 3406, ASTM D-2737, dimension ratio 7, brand name, date of manufacture, nominal size, sizing type (i.e., copper tube size (CTS)), pressure rating 200 PSI at 73 1/2°F temperature, seal or (mark) of accuracy.

B. Joints

1. Cast and Ductile Iron Pipe

- a. Mechanical - ANSI A21.11 or AWWA C111 with rubber gaskets.
- b. Push-on - ANSI A21.11 or AWWA C111 with thermite welded sockets and cable.

C. Fittings

1. Cast Iron or Ductile Iron ANSI A21.10 or AWWA C110 or C153, 250 psi working pressure through twelve inches (12") and 150 psi above. Cutting-in sleeves, Clow Corporation #F 1220 or Traverse City Iron Works #A 847 M.
2. All fittings are to be mechanical joint, including bends, tees, valves, hydrants. All fittings on new water main shall be Mega Lug fittings.

D. Valves

1. Gate - AWWA C509, full resilient wedge, non-rising stem, mechanical joint, fully bronze mounted with roller and gear operator. Waterous Series 500 or Clow RW Valve or equal. Turn counter-clockwise to open.
2. Butterfly - AWWA C504, Class 150-B, cast iron short body, cast iron disc, mechanical joint, worm gear traveling nut operator for direct burial allowed only for valves larger than sixteen inches (16"). Turn counterclockwise to open.

3. Boxes - Three section cast iron with lid marked "WATER":
 - a. Upper Section - Screw on adjoining center section and full diameter throughout.
 - b. Center Section - Minimum five inch (5") inside diameter.
 - c. Base Section - Fit over valve bonnet and shaped round for valves through ten inches (10") and oval for twelve inches (12") and over.

E. Hydrants

1. Style - Break-away traffic model by East Jordan Iron Works, Model 5 – BR. AWWA C502, open clockwise.
2. Size - Hydrant with eight inch (8") I.D. barrel.
3. Inlet – six inch (6") diameter mechanical joint.
4. Drain - Tapped and plugged with brass plug.
5. Nozzles - National Standard Thread
 - a. Two (2) 2-1/2 inch hose nozzles.
 - b. One (1) 4-1/2 inch pumper nozzle.
6. Operating nut and nozzle cap nuts to be 1-3/4 inch square.
7. Burial - six feet (6') minimum or as directed on the Plans or by the Engineer. The Contractor is to verify needed fire hydrant length to provide for 22 inch port height above the ground.
8. Conforming to City standards.

F. Service Fittings

1. Unions will not be allowed between corporation stop and the curb stop. New services and the repair of existing services shall be made so that there will be a continuous, unbroken pipe between the corporation stop and the curb stop.
2. Service Saddles - Double-strap bronze or brass parts, AWWA CC threads. For PVC C900 pipe, use Ford S90 or approved equivalent.

3. Brass Corporation Stops [With CC (AWWA) threads]
 - a. Ford - one inch (1") F600; Mueller – one inch (1") H15000 or approved equivalent.
 - b. Polyethylene Pipe - Use above specified corporations with adapter. Ford C 06-44.
 - c. For two inch (2") Services - Ford FB 1000, Mueller P-25008
 4. Brass Curb Stops – two inch (2") Minneapolis pattern required.
 - a. Ford Z22-333M, Z22-444M, Z44-777M, Mueller P25155 or approved equivalent. Polyethylene pipe will require a Ford C 06-44 adapter or equal.
 5. Curb Stop Boxes - six feet (6') burial – two inch (2") Minneapolis tapped base with 1-1/4 inch upper section riser with pentagon brass nut in cap. Mueller H10300, Ford type PL or approved equivalent.
- G. Miscellaneous
1. Stainless Steel Tie Rods and Clamps - Clow Corp. or Traverse City Iron Works.
 2. Plastic Seamless Encasement Tubing
 - a. Material - ASTM D-1248 Polyethylene, Type III, Class C, eight (8) mils thick.
 - b. Closing Tape – two inches (2") wide Poly-Ken #900 or Scotchwrap #50.
 3. Tapping Sleeves
 - a. The tapping sleeve shall be a Ford Tapping sleeve, style FAST, with a stainless steel flange and rubber coat.
 - b. Stainless steel tapping sleeve shall not be allowed on water mains larger than 16 inches.
 - c. Full circle mechanical joint cast iron shall be required on water mains larger than 16 inches.
 - d. All tapping sleeves must be pressure tested to 150 psi before main is tapped.
- H. Shop Drawings and Material Inspection
1. The Contractor shall have the City Water Department Superintendent review shop drawings and all materials to be used on the City water system prior to installation.

CONSTRUCTION**A. Water Main**

The installation, handling, and storage of all pipe and appurtenances shall be according to manufacturer's recommendations. Pipe shall, at all times, be protected against impact shocks and free fall. Stockpiling of pipe and appurtenances at the site shall be in such a location as to minimize handling and prevent collecting or submergence with water.

The depth of trench shall be such that the top of the pipe to be placed therein shall not be less than six feet (6') or more than seven feet (7') below the proposed finish grade. The depth shall be increased or decreased, if so shown on the Plans or so ordered by the Engineer. Depths shall be noted on the "As Built" Plans and Daily Inspection Reports. The trench shall be of such width as will readily permit the laying, handling and assembling of the pipes in the trench and to allow thorough filling and compacting of the earth backfill, adjacent to the lower half of the pipe. All hub holes shall be excavated to an extra width and depth to allow for proper examining of the pipe and shall provide a solid bearing for the pipe, practically its full length without refilling before the pipe is laid. Blocking of the pipe will not be allowed.

The trench bottom shall be undercut three to four-inches (3"-4") below the final location of the pipe and the trench then filled with Class II sand or crushed stone compacted with hand tampers to provide a cushion for bedding the pipe. The Contractor shall provide the sand or crushed stone from off the site, except when the trench passes through well-defined strata of sand or gravel.

Trenches for pipe shall be excavated so that there will be a minimum clearance of six inches (6") on each side of the barrel of the pipe and a maximum width of trench at the level of the top of the pipe, of not more than 16 inches greater than the OD of the pipe.

There shall be, at all times, a sufficient width to permit the pipe to be laid and to permit first-class construction methods to be used. Sufficient space shall be provided in the trench to permit the joint to be properly made.

Excavation for structures shall be extended sufficiently beyond the limits of the structure to provide ample room for placement and for other construction methods to be followed, wherever necessary.

In case soft material is encountered in the bottom of a trench or underneath a special structure, which, in the opinion of the Engineer, is not suitable for supporting the pipe or structure, the Engineer may order the removal of this soft material and its replacement with crushed stone, concrete or other material in order to make a suitable foundation for the construction of the pipe or structure.

After the pipe is laid, Class II sand, fine gravel or crushed stone shall be placed the entire width of the trench up to the spring line of the pipe. Backfill shall be carefully tamped under the haunches of the pipe. Additional sand, gravel or stone shall then be placed until the entire width of the trench is filled to not less than one foot (1') above the top of the pipe. Sand used for backfill around and over the pipe shall be thoroughly compacted with a vibratory compactor; hand compaction will not be acceptable.

The remainder of the backfilling may be done with acceptable material. All backfill, including pipe bedding, is to be compacted in maximum one-foot (1') lifts to a density of 95 percent of the maximum unit weight as determined by the modified proctor.

After the trench has been excavated as required, the pipe, fittings, valves and hydrants shall, after first being thoroughly inspected and the joints cleaned, be placed in the trench. All pipe fittings, and valves that will not be chlorinated with the new water main, shall be swabbed inside with five percent (5%) bleach (Sodium Hypochlorite) full strength before assembly and placement into the system. All pipe, fittings, valves and hydrants shall be carefully placed into the trench in such a manner as to prevent damage to them. Under no circumstances shall water main materials be dropped or dumped into the trench.

All lumps, blisters, and excess tar coating shall be removed from the bell and spigot ends of all ductile iron pipe and fittings. The outside of the spigot and the inside of the bell shall be wire-brushed and wiped clean before the pipe is laid.

Any damage to the exterior coating of the pipe shall be repaired with an approved coating before the pipe is laid. After placing a length of pipe in the trench, the spigot end shall be lubricated and then entered into the bell and the pipe pushed to the stop mark and brought to correct line and grade. Lubricants recommended by the pipe manufacturer and approved for use on a potable water system shall be applied as recommended. Due care should be used to seat the gasket evenly in the bell at all points.

The plain end of the slip type joint is furnished with a slight taper to ease its sliding fit with the gasket when the joint is made up. When necessary to cut pipe in the field, the outside of the cut end should be tapered by filing or grinding back about 1/8-inch at an angle of about 30 degrees with the centerline of the pipe.

Cutting pipe for inserting valves, fittings, etc., shall be performed in a neat workmanlike manner, without damage to the pipe or lining, and so as to leave a smooth end at right angles to the axis of the pipe.

Ductile Iron - Cutting shall be performed with a roller or shear type cutter for pipe sizes up to 20 inches in diameter. When machine cutting is not available for cutting pipe twenty 20 inches in diameter, or larger, electric arc cutting method will be permitted, using a carbon or steel rod. Only qualified, experienced workmen shall be used for this.

Asbestos-Cement or PVC Pipe - Cutting the pipe shall be performed by hand saw, abrasive discs or with a special asbestos-cement or PVC pipe cutting tool. All piping cutting tools must be of the true cutting variety. Under no circumstances is the pipe to be cut with a roller or shear type cutting tool.

If the trench contains any water, the open ends of the pipe shall be plugged with a water tight plug. A plug shall be used during any breaks in construction to prevent any possible contamination.

Whenever it is desirable to deflect the pipe in order to form a long-radius curve or to avoid obstructions, the pipe may be deflected within the tolerances recommended by the manufacturer and approved by the Engineer. No deflections in excess of those recommended by the manufacturer shall be allowed except by utilization of standard fittings as specified herein.

1. Valve and Hydrant Operation

No valves or fire hydrants on the existing system or new system, after it is in operation within the City system, shall be operated for any purpose by the Contractor without prior permission of the City Water Superintendent. Any unauthorized operation of said valves or fire hydrants shall result in a three hundred dollar (\$300.00) fine per incident.

2. Notification Procedure for Scheduled Water main Shutdown

A 48 hour notification is required to the Water Department and to critical users, as identified below, all others require a 24 hour notification. Notification must be in writing stating the time of shutdown and length of time water is to be off. It shall be the responsibility of the Contractor to notify, in writing, all persons affected by any shutoff in accordance with the notification procedures.

Critical users are Central Michigan University, restaurants, beauty shops, hospitals, medical care facilities, nursing homes, schools, and commercial laundries.

3. Shutdown of Water Mains

Water mains shall not be shutdown on Mondays, Saturdays, Sundays, or holidays, and/or one (1) day on either side of the holiday unless approved in advance by the Director of Public Works or Water Superintendent. From Tuesday through Friday, water mains shall be shutdown after 9:00 a.m. and are to be placed back into service before 4:30 p.m., after notification specified in the preceding paragraph. Notification must also be given to the City Water Superintendent and the Fire Department. The City has a water main shutdown procedure and checklist which are part of this specification by reference.

B. Valve Manholes

Valves twenty 20 inches or larger shall be installed in a valve manhole. All air release valves shall be in manholes. Details and materials of construction shall be as shown on the Plans and as specified for sanitary sewer manholes. The cover shall have "WATER" cast in the top.

C. Setting Valves and Boxes

All valves shall be set at a depth to the top of pipe, from a minimum of six feet (6') to a maximum of seven feet (7') below finished grade, with the stem in a vertical position and shall be plumb. The valve box shall be set so that it will not transmit shock or stress to the valve. It shall be centered over the stem nut of the valve and shall be true and plumb. The box shall be adjusted so that the cover is flush with the finished ground surface or as directed by the Engineer. Unless otherwise specified, a valve box shall be provided for every valve.

D. Setting Fire Hydrants

Fire hydrants shall be located as shown on the Plans, or as directed by the Engineer. All hydrants shall be set plumb and to a grade which will place center of the pumper nozzle above finished grade, (E.J.I.W. 22" above finished grade), unless otherwise directed by the Engineer. At no time shall the breakaway flange be below finished grade. Sufficient barrel extensions shall be furnished and installed by the Contractor to meet this requirement. Barrel extensions shall be installed such that the breakaway flange is located at finished grade level. Barrel extensions, if needed, shall be incidental to construction.

Each hydrant shall be connected to the main by a six inch (6") branch. A six inch (6") resilient wedge gate valve with box shall be installed with a valve depth of six feet (6') minimum to seven (7') feet maximum from finished grade to top of pipe, in each hydrant connection. The hydrant and valve shall be connected to the main line tee, as shown in the City standard detail, and the steamer port on the hydrant shall face the roadside.

E. Blocking

All bends, stub ends, plugs and any other portion of the system, which may be subject to separation of joints because of water pressure, shall be securely braced or blocked. Blocking shall be concrete blocks or concrete poured in place and shall be so placed as to prevent any movement of pipe or fitting joints due to water pressure. Shape of blocks shall be in accordance with the details shown on the Plans and within the following sizes:

Bearing Area in Square Feet Against Trench Wall in Sand

Pipe Size	Tees Plugs	Hydrants 90 deg. Els	45 deg. Els	22-1/2 deg. Els	11-1/4 deg. Els
4"	2	2	1	1	1
6"	3	3	2	1	1
8"	4	6	3	2	1
10"	7	9	5	3	2
12"	9	11	6	3	2
14"	11	15	8	5	3
16"	13	20	10	6	3
18"	16	25	12	7	4
20"	20	28	14	8	4
24"	28	40	20	11	6

OTHER SOIL CONDITIONS:

Cemented Sand or Hardpan

Multiply above by 0.5

Gravel

Multiply above by 0.7

Hard Dry Clay

Multiply above by 0.7

Soft Clay

Multiply above by 2.0

Muck - secure all fittings with tie rod clamps with concrete reaction backing, the same as listed for sand conditions.

F. Water Service Connection

1. Water service connections shall not be made prior to the water main passing the bacteriological tests.
2. Water service materials must meet City specifications and be one inch (1") in size, unless specified otherwise.
3. Each service will consist of a saddle, corporation, piping, curb stop, and curb box.
4. Depth shall be a minimum of six feet (6') and a maximum of seven feet (7') of cover to the finished grade of the project or development.
5. Curb boxes shall be adjusted to finished grade.
6. Curb boxes shall be fully screwed onto the curb stop valve.
7. Pipe must be beveled and lubricated with an approved lubricant for use on potable water systems.
8. Curb stops are to be installed two feet (2') from the water main.

Curb stops are to be installed so that the key top is parallel to curb, or proposed curb, when in the off position. (i.e. Flow is to be perpendicular to curb.) Curb boxes installed in concrete or bituminous areas shall be separated from the concrete or bituminous by the use of a length of four inches (4") PVC pipe.

9. The Contractor will check to see if existing curb stop is in the on or off position and leave new curb stop in same position. No curb stop valve will be turned on unless there is someone in the building to ensure there are no leaks.
10. Water services, if extended past the curb stop, shall be extended straight for a minimum of six feet (6') or past the right-of-way line perpendicular to the curb or proposed curblines.
11. Services are to be flushed prior to backfilling.
12. Taps are to be on the service side of the main.
13. Taps shall be horizontal to five degrees above horizontal.
14. Cookies must be given to the inspector at the time of tap.

G. Water Service Reconnections

1. The City Water Department shall be notified of any iron pipe or lead pipe water services in use (pressurized).
2. Except for iron or lead pipes, all reconnections shall be of the same materials as the existing service and use brass fittings.
3. Where iron pipe or lead pipe water services are encountered, a new one inch (1") water service connection shall be constructed, in accordance with Sec. 8.03F, Water Service Connection above.
4. Reconnection shall include service saddle, corporation, and piping meeting City specifications.
5. Taps shall be on the service side of the main.
6. Taps shall be horizontal to 5 degrees above horizontal.
7. After reconnection is made and before the service line is pressurized, the water meter shall be removed, the line flushed, and the meter reinstalled. Any stopped water meters caused by reconnection will be charged to the Contractor on a time and material basis for repair and re-installation.

H. Live Taps

All service taps shall be made live taps, including chlorination and testing taps.

TESTING AND STERILIZATION

A. Pressure Testing

The Contractor shall furnish equipment for the test, and the test shall be run by him under the direction of the Engineer. The test shall be made at 150 pounds per square inch hydrostatic pressure, and shall be maintained for at least two (2) hours and the leakage shall not exceed 10.45 gallons per day, per inch diameter, per mile of pipe. The City will provide a certified gauge for the test. The Contractor shall furnish all labor and all additional equipment to make the test.

All valves shall be opened such that all air in the line can be removed upon filling with water. The Contractor shall install any corporation stops necessary to allow the air to be expelled.

The Contractor shall run a preliminary test to determine that all air has been expelled and to check for any leakage. If any leakage should exist, the Contractor shall make the necessary repairs and perform the preliminary testing until satisfactory results are obtained. The final test shall be made in the presence of the Engineer or Water Superintendent. If the test to be witnessed by the Engineer or Water Superintendent fails, the Contractor will be billed \$75.00 per hour with a \$150.00 minimum for the additional testing. The City will provide a certified gauge for the pressure test. The Contractor shall provide any additional equipment necessary to add and measure the water necessary to maintain the hydrostatic pressure within five pounds per square inch (5 psi) of the required test pressure for the duration of the test. If the City's gauge becomes damaged while in the Contractor's possession, the Contractor will be charged for the repair/replacement of the gauge.

When the testing period is complete, the Contractor shall add and measure the water to bring the final pressure reading to the initial pressure reading. The total gallons added during the duration of the test shall not exceed the allowable leakage.

B. Sterilization

Before the mains are chlorinated, they shall be thoroughly flushed. All mains shall be chlorinated for a period of twenty-four (24) hours. The Contractor shall furnish all necessary equipment and materials and the work shall be done under the direction of the City Engineer in accordance with all local and state health department regulations. Chlorine shall be added in sufficient quantity to give a 50 PPM residual of free chlorine after a twenty-four (24) hour period. Chlorine tablets shall not be used.

After completion of the chlorine procedure, the main shall be flushed and sampled, as per Michigan Department of Public Health requirements. The chlorinated water flushed from the main shall not be discharged to a storm sewer or open drainage way, that would result in discharge to surface water. The chlorinated water must be discharged to a sanitary sewer, held on site, or treated, until the chlorine is removed. All requirements of the Federal Clean Water Act (CWA) must be followed.

Two consecutive samples of water, 24 hours apart, shall be taken from the main by the Water Department for bacteriological tests, at a rate established by the DPW, per test. If the results of these tests indicate safe water, the main may be placed in service. If the tests should result in unsafe conditions, the chlorination shall be repeated by the Contractor. The Contractor shall be responsible for all costs associated with necessary retesting.

METHOD OF MEASUREMENT AND PAYMENT

A. Water Main, ____", (Type), SDR ____, Modified

1. Description

The work of Water Main, ____", (Type), SDR ____, Modified shall consist of excavation, the furnishing and placing of the complete water main (including all fittings, testing, concrete work, disinfecting, backfilling and removal of surplus excavated material), protection and replacement or repair of existing utilities and restoration of the surface to within four inches (4") of original grade. All work shall be done in accordance with the Plans and/or Specifications.

2. Method of Measurement and Basis of Payment

Water Main, ____", (Type), SDR ____, Modified will be measured in place by length in feet and will be paid for at the contract unit price which price shall be payment in full for any fittings, couplers, sheeting or shoring trench walls, backfill as required and all labor, material and equipment needed to accomplish this work.

B. ____” Gate Valve and Box

1. Description

The work of ____” Gate Valve and Box, shall consist of excavation, the furnishing and placing of valves, valve manholes (inc. castings), and/or boxes, as applicable. All work shall be done in accordance with the Plans and/or Specifications.

2. Method of Measurement and Basis of Payment

____” Gate Valve and Box will be paid for by the unit each, and shall include the valve box and/or valve manhole, and casting, as well as all labor, materials, and related work as described above.

C. Hydrant Set

1. Description

The work of Hydrant Set shall consist of furnishing and installing fire hydrant, an auxiliary valve, valve box, connecting piping, fittings, thrust block, barrel extension, drainage pit, and miscellaneous appurtenances. All work shall be done in accordance with the Plans and/or Specifications.

2. Method of Measurement and Basis of Payment

Hydrant Set shall be paid for by the unit each, and shall include the auxiliary valve, valve box, connecting piping, fittings, thrust block, barrel extension, and miscellaneous appurtenances. All work shall be done in accordance with the Plans and/or Specifications.

D. ____” Tapping Sleeve & Valve

1. Description

The work of ____” Tapping Sleeve & Valve shall consist of furnishing and installing tapping sleeves and valves on existing mains without loss of pressure in the existing main. It shall also include the installation of a valve box or manhole, as applicable. All work shall be done in accordance with the Plans and/or Specifications.

2. Method of Measurement and Basis of Payment

____” Tapping Sleeve & Valve shall be paid for by the unit each, and shall include the installation of a valve box or manhole, as applicable. There will be a time and materials charge by the City if main has to be de-pressurized to pull out cookie.

E. ____” Water Service

1. Description

The work of ____” Water Service shall consist of excavation, furnishing and placement of sand backfill, removal of surplus excavated material, tapping the main, furnishing and installation of service clamp or saddle, corporation stops, curb stops, curb boxes, service pipe, and fittings to connect to existing service pipe, in accordance with the Specifications. Long-side service leads shall include crossing roads. Short-side service leads are those which do not cross roads.

2. Method of Measurement and Basis of Payment

____” Water Service shall be paid for by the unit each, and shall include tapping the main, furnishing and installation of service clamp or saddle, corporation stops, curb stops, curb boxes, service pipe, and fittings to connect to existing service pipe, in accordance with the Specifications.

F. ____” Water Service Reconnection

1. Description

The work of ____” Water Service Reconnection shall consist of excavation, furnishing and placement of sand backfill, removal of surplus excavated material, tapping the main, furnishing and installation of service clamp or saddle, corporation stops, service pipe from the main to the reconnection point between the main and the existing curb stop box, and fittings to connect to existing service pipe, in accordance with the Specifications.

2. Method of Measurement and Basis of Payment

____” Water Service Reconnection shall be paid for by the unit each, and shall include tapping the main, furnishing and installation of service clamp or saddle, corporation stops, service pipe, and fittings to connect to existing service pipe, in accordance with the Specifications

SOIL EROSION AND SEDIMENTATION CONTROL PROCEDURES
for the
CITY OF MT. PLEASANT
(July 14, 2005)

INTRODUCTION

All requirements of Part 91, Soil Erosion and Sedimentation Control (SESC), of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and the administrative rules promulgated under the authority of Part 91 are included in this procedure by reference.

The City of Mt. Pleasant will anticipate and plan for potential SESC problems associated with all phases of a project, including clearing, rough grading, construction, final grading, restoration, and continuing site maintenance. All earthwork for new construction projects will be performed in accordance with a comprehensive SESC plan which meets the requirements of Rule 323.1703. Routine maintenance and reconstruction projects will be done in accordance with established specifications and/or maintenance guidelines referenced in this procedure.

The SESC procedures of the City of Mt. Pleasant are subject to review by City staff and the Michigan Department of Environmental Quality (MDEQ). Procedures will be revised as standards and techniques for SESC evolve. Any revisions to the procedures must be reviewed and approved by the MDEQ prior to formal adoption.

These SESC procedures will be given to City of Mt. Pleasant staff and contractors who are engaged in SESC.

All City personnel who make decisions regarding the design, inspection, or implementation of SESC measures must complete the MDEQ's SESC training and pass the final exam. The following positions must have current certificates of SESC training:

- Engineering Aide
- Assistant City Engineer covering SESC

STANDARDS AND SPECIFICATIONS

The most recent versions of the documents listed below are available at the City of Mt. Pleasant, Division of Public Works and guide the implementation of SESC measures:

1. Michigan Department of Transportation Specifications for SESC, including:
 - a. The most recent edition of *Standard Specifications for Construction*
 - b. Soil Erosion and Sedimentation Control Measures, *Standard Plan R-96-C*, or subsequent revisions
 - c. *Soil Erosion and Sedimentation Control Manual*
2. Michigan Department of Environmental Quality, *Guidebook of Best Management Practices for Michigan Watersheds*.

3. The manufacturer's standards and specifications for SESC products
4. General Construction Specifications of the City of Mt. Pleasant Standard Construction Specifications

NEW CONSTRUCTION AND RECONSTRUCTION

PLANNING AND DESIGN

Develop a comprehensive SESC plan as part of the design plans for new construction and reconstruction projects which disturb 1 acre or more or are located within 500 feet of a stream or lake. Clearly show the location for all SESC measures on the plans, in the specifications, or in the special conditions for construction projects. Include a schedule and sequence of earth changes and SESC activities. Attempt to minimize the area and time in which unstabilized soils are exposed to erosive forces.

Emphasize the placement and maintenance of both temporary and permanent SESC measures on the plans or in the specifications, and handle as bid items in contracts when feasible. Contracts will specify that temporary SESC measures shall be installed prior to, or upon commencement of, earth change activity and shall be removed only after permanent SESC measures are in place and the site is stabilized. Permanent SESC measures shall be in accordance with the manufacturer's specifications and the guidelines set forth in the standards and specifications adopted by the City of Mt. Pleasant.

CONSTRUCTION

All phases of construction, including the installation and maintenance of SESC measures, will follow the schedule prescribed in the SESC plan or maintenance guidelines. The first step is the placement of SESC measures such as silt fence, or the establishment of vegetative buffers, around the perimeter of the proposed earth change to effectively prevent movement of sediment. Common additional measures may include Silt Sacks in catch basins located within 500 feet downstream of construction activities, and check dams in ditches for reducing runoff velocity. Spoils and stockpiles should be prevented from eroding into water bodies, catch basins, or adjacent properties.

The construction sequence is completed by the conversion of temporary SESC measures to permanent controls and full stabilization of soils on the site. Permanent SESC measures shall be installed on any disturbed land area within five (5) calendar days after final grading or completion of the final earth change. These measures include seed and mulch, or other ground stabilizing vegetation, where slopes are gentle enough to allow their effective use, or staked sod, geotextiles, riprap, or other suitable erosion control materials, on steep slopes or other areas unsuitable for standard vegetative treatments. If permanent stabilization of a disturbed area is not possible upon completion of an earth change, temporary SESC measures shall be maintained until the site is stabilized.

INSPECTIONS

City of Mt. Pleasant personnel who have successfully completed the SESC training and passed the final exam are responsible for inspecting and documenting the condition of the SESC measures on a weekly basis and after every significant rain event, and initiating changes or maintenance if required. Violations or problems with SESC measures shall be corrected immediately and both the problem and the corrective action will be documented in an inspection report.

MAINTENANCE OF CONTROL MEASURES

Maintenance includes implementing necessary repairs or corrections to existing temporary or permanent SESC measures. Temporary SESC measures shall be maintained daily; permanent measures in need of repair shall be corrected within five (5) days of detection of the problem, unless the scope of the work or the season prevents such action. Implement temporary measures immediately to contain sediments from failed permanent measures and maintain temporary measures until the permanent measures are repaired.

MAINTENANCE

Maintenance activities are subject to the same general SESC considerations as other construction projects. All maintenance projects will be inspected and maintained as are new construction projects. Typical maintenance tasks include, but are not limited to, the following:

- Street and alley grading
- Ditch clean-out
- Utility Repair (storm sewer, sanitary sewer, water main, curb and gutter)
- Slope protection and washout repair

In lieu of developing formal SESC plans, the City of Mt. Pleasant will undertake maintenance activities in accordance with the General Construction Specifications of the City of Mt. Pleasant Standard Construction Specifications, and the following guidelines:

Street and Alley Grading

Conduct grading operations in a manner which does not allow graded materials to enter the storm sewer system.

Ditch Clean-Out

- a) Conduct ditching operations in the dry or in periods of low water flow.
- b) Leave at least 50 feet of natural vegetation between the terminus of ditching and any pond or stream.

- c) If existing vegetation is inadequate to filter sediments from runoff, install temporary or permanent check dams, sediment traps, or both.
- d) If it is necessary to remove the vegetated filter described in (a), do so only after the remainder of the ditch is revegetated and stabilized.
- e) Protect ditches with long slopes by leaving 20-foot long natural vegetation filters or constructing check dams at intervals not exceeding 2-feet of vertical drop or at lesser intervals if conditions dictate.
- f) Where possible, salvage topsoil and replace immediately upon completion of the ditching project or within five (5) days of earth disturbance on any portion of the project, whichever is less. Seed and mulch ditches within five (5) days of final grade.

Utility Repair

- a) Isolate work from flowing water when possible.
- b) Install Silt Sacks in downstream catch basins within 500 feet of the repair.
- c) Stabilize all disturbed areas with, seed, mulch, or other suitable erosion resistant material within five (5) days of final grade.

Slope Protection and Washout Repair

- a) Isolate all work from flowing water.
- b) Immediately stabilize all disturbed areas with seed, mulch, or other erosion resistant materials.
- c) Divert water flow away from the top of the slope or convey water downslope with a properly designed downdrain with a stable outlet until the area is stabilized.
- d) Additional SESC measures may be required for work on steep slopes or slopes located near lakes or streams.

COMPLIANCE AND ENFORCEMENT

The City of Mt. Pleasant is ultimately responsible for SESC practices undertaken by contractors working under the authorized public agency designation. Therefore, all contractors shall comply with this operating procedure. If the contractor fails to install or maintain the necessary SESC controls after a 24 hour written notification from the City Engineer, the City may complete Soil Erosion and Sedimentation Control work and deduct the cost from monies due to the contractor. **All work involved in complying with soil erosion and sedimentation control practices will not be paid for separately, but shall be included in other major items of work.**

