



THE CITY OF MT. PLEASANT, MICHIGAN

CITY HALL

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

PUBLIC SAFETY

804 E. High St. • 48858-3599
(989) 779-5100
(989) 773-4020 fax

PUBLIC WORKS

1303 N. Franklin St. • 48858-4682
(989) 779-5401
(989) 772-6250 fax

PRE-BID ADDENDUM NO. 3

Project Bid: 2011 Street Reconstruction Project

Bid Date: April 26, 2011

Time: 1:30 p.m.

Opening: Office of the City Clerk
City Hall
320 West Broadway St.
Mt. Pleasant, MI 48858

Addendum Issued By: Division of Public Works

Date Issued: April 26, 2011

- Intent:
1. To include a Special Provision for storm sewer.
 2. To revise the start and completion dates for Chippewa Street in the Progress Clause.
 3. To include the Truck Route map in the Specifications.
 4. To clarify that the sanitary sewer leads shall have the same bedding requirements as the main line sewer.
 5. To clarify that the water main pipe material used for the tie-ins on Chippewa Street is to be C-900 PVC pipe.
 6. To clarify that the bacteriological analysis shall meet the requirements of AWWA C651 and that samples shall be taken at all three proposed hydrants.
 7. To clarify that flushing of the water main shall meet the requirements of AWWA C605-05.
 8. To include a requirement for anchoring the HDPE water main.

Bid Proposal: No change

Specifications: Water main anchoring requirements are included.
Progress Clause revised and attached.

CITY OF MT. PLEASANT
SPECIAL PROVISION
FOR
STORM SEWER MATERIALS AND CONSTRUCTION
1 OF 11

DESCRIPTION

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

MATERIALS

A. Sump Leads and Sump Drains

Four-inch (4") and six-inch (6") pipe used for sump leads and sump drains shall be constructed of the following material:

1. Four-inch (4") pipe shall be PVC conforming to ASTM D 2665 with 0.273-inch wall thickness (Schedule 40), with bell and spigot premium joints. No glued joints except as approved by the Engineer.
2. Six-inch (6") pipe shall be one of the following:
 - a. 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 cement mortar or 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 grass surfaces.
- b. Four-inches (4") below final bituminous surface elevation during installation of the structure. Following final grading and compacting of the aggregate base, a two-inch (2") manhole cover riser shall be installed raising the elevation of the cover to the elevation of the final bituminous surface.
- c. Four-inches (4") below grade level with eight-inches (8") of downward adjustment available in ground surfaces.
- d. The casting and adjustments shall be wrapped with 24-inch wide with geotextile fabric prior to backfilling.
- e. As shown on Plans or as directed by the Engineer.

4. Manhole Cover Riser

Manhole cover risers shall be cast iron riser rings manufactured by EJIW, or approved equal, and shall be designed for use with the casting(s) used on the project.

5. 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.

6. 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").

7. 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. Inside and outside of brick and block fill-in shall be plastered with ½-inch thick cement mortar mix.

8. 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 10 OF 10 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 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 four-inch (4") or 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 wye or 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

Storm sewer manholes are to be constructed as shown on the detailed drawings. Pre-cast 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 debris and shall have a brushed finish.

No storm sewer leads shall be connected to a storm manhole. Storm 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.

CATCH BASINS AND INLETS

Catch basins and inlets shall be constructed as previously specified for manholes. Catch basins shall have a 24-inch deep sump provided below the invert of the outlet pipe. Inlets shall have no sumps and shall be connected to a catch basin. Diameter of catch basins and inlets shall be 48-inch inside measurement or as specified on the plans.

Castings for catch basins and inlets placed in a public road right-of-way shall be accordance with the City of Mt. Pleasant standards. Catch basin castings shall be stamped with the picture of a fish and the words "Dump No Waste" and "Drains to River".

CLEANING AND TESTING 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 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. Corrections

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

PROGRESS CLAUSE

Start work on **May 31, 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 **July 15, 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.

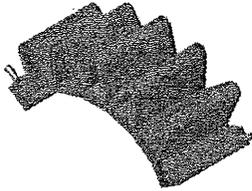
Failure on the part of the contractor to carry out the provisions of the Progress Sche-
dule, as established, may be considered sufficient cause to prevent bidding future
projects until a satisfactory rate of progress is again established.

**City of Mt. Pleasant
2011 Street Reconstruction Project**

Water Main Anchoring

Water Main Anchoring

The proposed HDPE water main shall be connected to the existing water main using a mechanical pipe adaptor. In addition, a concrete encased Flex Restraint Device, or approved equal, is required at each end of the HDPE. The Flex Restraint shall be installed no closer than five feet (5') nor farther than ten feet (10') from the pipe end. Concrete dimensions around the Flex Restraint Device for the 6" pipe shall be 9" thick by 2' wide by 2' high. A detail of the Flex Restraint Device is attached at the end of these Special Provisions.



ELECTROFUSION FLEX RESTRAINT

Size Range: works on solid wall pipe 6" IPS & larger

At Central Plastics we are proud to be recognized as the company that pioneered and introduced to industries within the United States to the concept of joining polyethylene piping systems together via the process of electrofusion. As an International leader in the world of manufactured Polyethylene (PE) Electrofusion fittings and with manufacturing facilities located around the world, Central Plastics has been actively involved since the early 1960's in the research and promotion of innovative joining methods for polyethylene piping systems for the natural gas, potable water, wastewater, oilfield, mining landfill, telecommunications and geothermal industries.

With unparalleled expertise focusing on the design and manufacturing of polyethylene electrofusion fittings, Central Plastics offers the largest, most complete line of electrofusion products, manufactured from a variety of common virgin resins, available in the market. Our substantial vertically integrated manufacturing capabilities allow Central Plastics to exercise complete control of our manufactured products. From design, to "state of the art" manufacturing, to shipping; Central Plastics maintains a high level of product consistency and quality throughout our manufacturing processes.

Electrofusion Flex Restraints are produced from a pre-blended virgin resin that has a PPI listing of PE3408 which complies with ASTM D1248 and ASTM D3350. The pre-blended virgin resin has a PPI listing of PE3408 that meets or exceeds the requirements of NSF Standard 61.

AVAILABLE FEATURES:

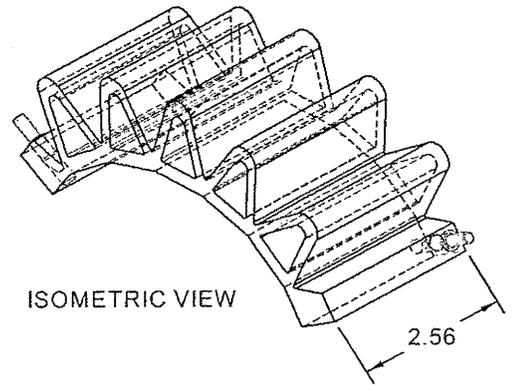
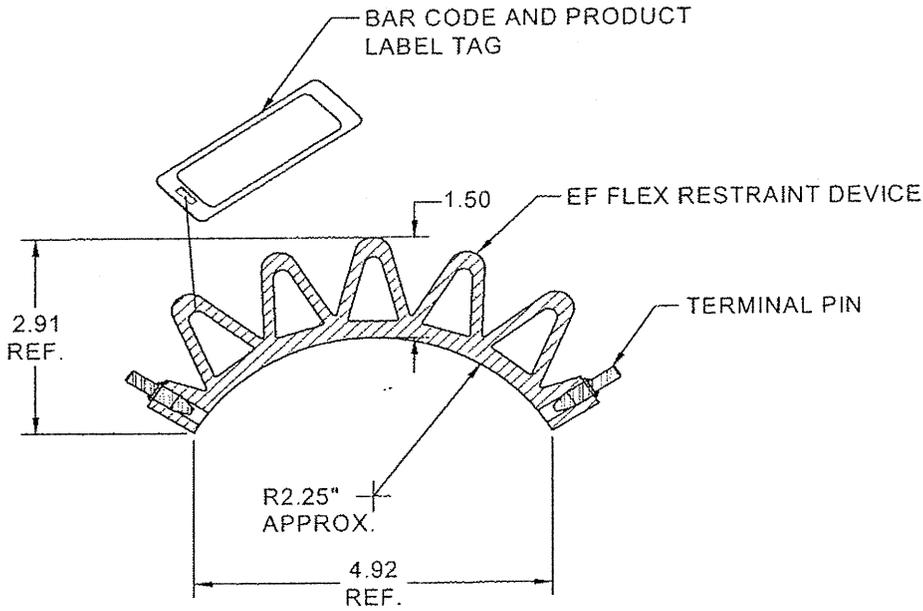
- Engineered for use on HDPE Pipe
- Manufactured to work on all solid wall polyethylene pipes 6" and larger
- PE3408 resin complies with ASTM D3350
- Designed to restrain Polyethylene pipe movement
- Axial resistance rated at 7,000 lbf. per saddle
- Permanently attached to pipe by electrofusion
- Quick and easy installation
- Needs no cumbersome equipment
- Manufactured in U.S.A.

FOR REFERENCE ONLY



Central Plastics Company
39605 Independence St.
Shawnee, OK USA 74801
www.centralplastics.com

Phone: 800-654-3872
405-273-6302
Fax: 800-733-5993
405-273-5993

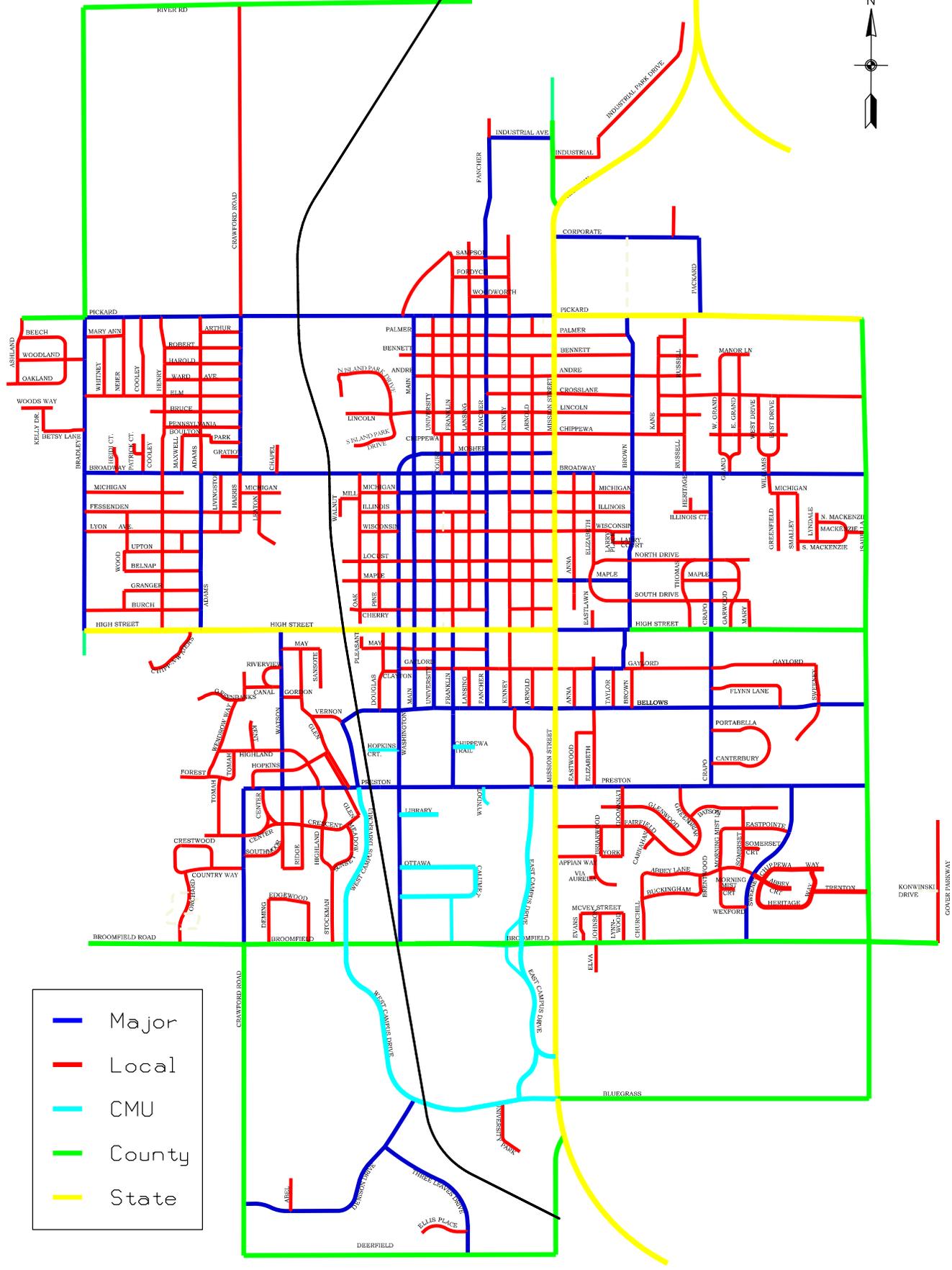


NOTES:

- 1. THIS FITTING IS DESIGNED TO BE USED AS A RESTRAINT (COLLAR) FOR PIPE NO SMALLER THAN 4"IPS
- 2. FOR STANDARD PIPE SIZES AND RADI SEE RADIUS CHART.

City of Mt. Pleasant

Street Designation Map



- Major
- Local
- CMU
- County
- State