City of Mt. Pleasant, Michigan

CONTRACT DOCUMENTS

For

Broadway Street – Phase II

KATHLEEN LING
Mayor

NANCY RIDLEY
City Manager

Prepared By:
Division of Public Works

JOHN ZANG
DPW Director

January 2016

City of Mt. Pleasant, Michigan

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2016 Broadway Street – Phase II

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

Broadway Street – Phase II

The City of Mt. Pleasant, Michigan, is requesting sealed bids at the Office of the City Clerk, City Hall, 320 W. Broadway Street, Mt. Pleasant, Michigan 48858, until 1:30 p.m. (local time), on February 23, 2016, at which time and place the bids will be publicly opened and read. All bids shall be submitted in a sealed envelope, plainly marked "Broadway Street - Phase II – February 23, 2016."

Proposals are solicited on a unit price basis, for the following work (approx. quantities):

Street Reconstruction	12.5	STA
Sidewalk Construction	4,750	SFT
Curb and Gutter Construction	2,559	LFT
Bituminous Paving	855	TON
12” Storm Sewer	155	FT
18” Storm Sewer	432	FT
Drainage Structures	8	EA

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 complete Plans and Specifications at no charge, visit the City of Mt. Pleasant website at www.mt-pleasant.org and navigate to the bids and quotes page.

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 that 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.

Stacie Tewari
City Engineer

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, bank cashier's check, bank draft, 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 108.10 of the 2012 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 statues 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, 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 2012 MDOT Standard Specifications for Construction.

[Form30]

City of Mt. Pleasant, Michigan

ADMINISTRATIVE MEMO NO 8-78

Issued: October 10, 1978
Revised: June 21, 1989

Subject: **MINIMUM INSURANCE REQUIREMENTS FOR CONTRACTORS**

Summary Statement

The provision of adequate insurance by persons and businesses working for the city or on street right-of-way is essential to protect the public from the costs of injury or damage and to protect the city from unnecessary liability resulting from the acts of persons and businesses working for the city. Minimum insurance requirements are needed to provide this protection.

Memo

Persons or businesses which provide professional services to the city under the terms of a written contract or provide labor and/or material to accomplish work for the city or for others on or over street right-of-way or other city property shall carry insurance and bonds to protect the public and the City from exposure to unnecessary financial risks.

Prior to signing of contracts, issuance of purchase orders or permits, or other authorization to begin work, certificates of insurance evidencing the purchase of insurance in amounts not less than required by the Administrative memo or bid specifications, whichever is greater, shall be filed with City Clerk. Such certificates shall:

a. Show that the insurance is currently in force and termination date of each policy.

b. State the limits of liability of the policies covered by the certificate.

c. Show that the City of Mt. Pleasant is to be specifically named in policy as an "additional insured" and should be issued to the City of Mt. Pleasant as the certificate holder.

d. Provide that the City will receive not less than 10 days written notice of the cancellation of any listed policy.

e. Be issued in the name of an insurance company authorized to conduct business in the State of Michigan.

Required bonds shall be filed with the City Clerk prior to the signing of contracts or other authorizations to proceed with work.

Insurance and bonds shall meet or exceed the following requirements. Exceptions to recognize more or less hazardous operations and financial risks should be considered and with approval of the City Manager may be made in specifications or contract requirements prior to awarding contracts or issuing purchase orders.

INSURANCE REQUIREMENTS

Type	Limit of Liability	Required of: City Contractor	Contractor On R-O-W
Worker's Compensation and Employer's Liability	Statutory Coverage B $100,000	X	X
Public Liability (including products and completed operations liability)			
Bodily Injury	$250,000 each person	X	X
	$500,000 each accident	X	X
Property Damage	$250,000 each accident	X	X
	$250,000 each aggregate	X	X
Automobile Liability (including hired cars and automobile non-ownership)			
Bodily Injury	$250,000 each person	X	X
	$500,000 each occurrence	X	X
Property Damage	$250,000 each accident	X	X
	$250,000 each aggregate	X	X
Additional Insured Clause	City of Mt. Pleasant to be specifically named in policy as an "additional insured"	X	X
Excess Liability (Required unless risk occurrence is nominal)	$1,000,000 each	X	

Persons or businesses engaged to provide labor and material in an amount in excess of $10,000, or who will receive partial payments as work progresses will provide labor, performance and material bonds equal to the value of the work being performed. Such bonds are not required where the work to be done is of a type in which the failure to perform will not adversely affect the city's ability to function or increase the city's cost of completing the work.

City of Mt. Pleasant, Michigan
Broadway Street – Phase II
BID PROPOSAL

TO: City Hall/City Clerk
320 W. Broadway Street
Mt. Pleasant, MI 48858

BID DATE: February 23, 2016
TIME: 1:30 p.m.

The undersigned, as Bidder, hereby declares that his bid is made in good faith without fraud or collusion with any person or persons bidding on 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:

BASE BID

DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL COST
Mobilization, Max. $35,000	1	LSUM	$	$
Preconstruction Audio Video Recording	1	LSUM	$	$
Contractor Staking, Modified	1	LSUM	$	$
Embankment, CIP	450	CYD	$	$
Excavation, Earth	5,000	CYD	$	$
Subbase, CIP	1,900	CYD	$	$
Stump, Rem, 19 inch to 36 inch	1	EA	$	$
Pavt, Rem	1,101	SYD	$	$
Curb and Gutter, Rem	2,611	FT	$	$
Curb and Gutter, Conc, Det F4, Modified	2,559	FT	$	$
Aggregate Base, 8 inch, Modified	4,345	SYD	$	$
HMA, 13A	855	TON	$	$
Restoration, Modified	12.5	STA	$	$
HMA Surface, Rem	5,486	SYD	$	$
Driveway, Nonreinf Conc, 6 inch	18	SYD	$	$
Driveway Opening, Conc, Det M	105	FT	$	$
Approach, Cl I, 6 inch	122	SYD	$	$
Approach, Cl I, 8 inch	545	SYD	$	$
HMA Approach	140	TON	$	$
Sidewalk, Rem	495	SYD	$	$
Sidewalk, Conc, 4 inch	3,865	SFT	$	$
Sidewalk, Conc, 6 inch	490	SFT	$	$
Sidewalk Ramp, Conc, 6 inch	395	SFT	$	$
Detectable Warning Surface, Modified	48	FT	$	$
Post, Mailbox	2	EA	$	$
Pavt Mrkg, Type NR, Tape, 4 inch, Yellow, Temp	200	FT	$	$
Pavt Mrkg, Waterborne, 4 inch, White	1,511	FT	$	$
Pavt Mrkg, Waterborne, 4 inch, Yellow	310	FT	$	$
Pavt Mrkg, Waterborne, 2nd Application, 4 inch, White	1,511	FT	$	$
Pavt Mrkg, Waterborne, 2nd Application, 4 inch, Yellow	310	FT	$	$
Pavt Mrkg, Waterborne, 6 inch, Crosswalk	224	FT	$	$
Pavt Mrkg, Waterborne, 24 inch, Stop Bar	75	FT	$	$
Pavt Mrkg, Waterborne, Railroad Sym	1	EA	$	$
Pavt Mrkg, Waterborne, Sharrow Symbol	8	EA	$	$
Pavt Mrkg, Waterborne, 2nd Application, 6 inch, Crosswalk	224	FT	$	$

Pavt Mrkg, Waterborne, 2nd Application, 24 inch, Stop Bar	75	FT	$	$
Pavt Mrkg, Waterborne, 2nd Application, Railroad Sym	1	EA	$	$
Pavt Mrkg, Waterborne, 2nd Application, Sharrow Symbol	8	EA	$	$
Post, Steel, 3lb	151	FT	$	$
Band, Sign	1	EA	$	$
Sign, Type II, Rem	9	EA	$	$
Sign, Type IIA	13	SFT	$	$
Sign, Type III, Rem	8	EA	$	$
Sign, Type IIIA	19	SFT	$	$
Sign, Type IIIB	39	SFT	$	$
Barricade, Type III, High Intensity, Double Sided, Lighted, Furn	8	EA	$	$
Barricade, Type III, High Intensity, Double Sided, Lighted, Oper	8	EA	$	$
Plastic Drum, High Intensity, Furn	25	EA	$	$
Plastic Drum, High Intensity, Oper	25	EA	$	$
Minor Traf Devices	1	LSUM	$	$
Traf Regulator Control	1	LSUM	$	$
Sign, Type B, Temp, Prismatic, Furn	314	SFT	$	$
Sign, Type B, Temp, Prismatic, Oper	314	SFT	$	$
Sign, Type B, Temp, Prismatic, Special, Furn	38	SFT	$	$
Sign, Type B, Temp, Prismatic, Special, Oper	38	SFT	$	$
Subgrade Undercutting, Type II	200	CYD	$	$
Hand Patching	10	TON	$	$
Maintenance Gravel	200	TON	$	$
Dr Structure, Rem	4	EA	$	$
Sewer, Rem, Less than 24 inch	502	FT	$	$
Erosion Control, Inlet Protection, Fabric Bag	8	EA	$	$
Sewer, Cl E, 12 inch, Tr Det B	155	FT	$	$
Sewer, Cl E, 18 inch, Tr Det B	432	FT	$	$
Dr Structure Cover, Adj, Case 1	1	EA	$	$
Dr Structure Cover, CB, Modified	8	EA	$	$
Dr Structure Cover, SAN, Modified	1	EA	$	$
Dr Structure, 24 inch dia	3	EA	$	$
Dr Structure, 48 inch dia	4	EA	$	$
Dr Structure, 60 inch dia	1	EA	$	$
Dr Structure, Add Depth of 48 inch dia, 8 foot to 15 foot	3	EA	$	$
Gas/Water Shutoff Cover, Adj, Case 1	5	EA	$	$
Water Valve, 4 inch	1	EA	$	$
Sewer (San), 8 inch, Modified	120	FT	$	$

Sewer (San), 6 inch, Modified	30	FT	$	$
Dr Structure (San), 48 inch, Modified	1	EA	$	$
Testing (Allowance)	1	LSUM	$ 5,000.00	$ 5,000.00
TOTAL			**$**	

_____

Total (written)

_____ and ___/100 Dollars

RESPECTFULLY SUBMITTED:

Company Name_____

Address _____

City_____ ST _____ Zip Code_____

Area Code/Telephone Number _____Fax _____

Email _____

Authorized Signature _____

Print of Type Name and Title _____

EXPERIENCE QUESTIONNAIRE

To be furnished by Bidder

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.				

City of Mt. Pleasant, Michigan
Broadway Street – Phase II

SUPPLEMENTAL SPECIFICATIONS

Construction Specifications

The work under this contract shall be completed following the 2012 MDOT Standard Specifications for Construction along with the City of Mt. Pleasant 2012 Standard Special Provisions, except as modified herein. This is not a state sponsored project; therefore, the payment of prevailing wages is not a requirement of this contract.

1. Time Constraints

Completion of this project within the time constraints described below is essential. The Contractor shall not begin work on the project before June 27, 2016. All work on this project shall be completed by August 5, 2016.

2. Holidays

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

July 1, 2016 – July 4, 2016

3. Residential/Commercial 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, Sundays, and holidays, except as approved in writing by the Inspector and with written notification to the residents/owners. Contractor is to keep delivery access to businesses during hours of operation.

4. **Cemetery Access**

The contractor is responsible for maintaining access to Riverside Drive, the only entrance to Riverside Cemetery and located next to the floral shop, to allow for funeral processions.

5. Additional Work By Contractor For Property Owner(s)

Any and all additional work between the contractor and property owner shall be handled and negotiated between the contractor and property owner. The city shall have no responsibility or liability for any additional construction.

6. Residential Refuse and Recycling Collection

The City Contractor for trash (refuse) collection is Allied Waste/Republic Services, (888) 707-3867, and recycling collection is Mid Michigan Industries (989) 773-6918. Collection starts at 7:30 a.m. Monday through Thursday. **Collection for Broadway Street occurs on Mondays.** 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.

7. 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.

8. Sidewalk Handicap Ramps

Handicap ramps shall be constructed following the 2012 MDOT Standard Specifications for Construction along with the City of Mt. Pleasant Special Provisions attached herein. Sidewalk handicap ramp construction shall also follow the latest ADA requirements

9. 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.

10. 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.

11. 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.

12. Excavated Material

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

13. 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.

14. 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.

15. Utility Location

The Contractor shall expose all existing utilities and services that will be crossed by proposed pipe. 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.

16. 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.

17. 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.

18. 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.

19. Signing and Barricading

Lighted barricades or barrels must adequately protect all excavations. Type I, Type II, or approved reflector zed barrels, shall be used at all excavations that will remain open overnight. Signing and barricading costs shall be borne by the contractor. The contractor shall provide the city with the telephone number of the signing company and the telephone number of a local contact person available during non-working hours to place or replace signs, signals, and barricades. One Hundred Dollars ($100.00) shall be deducted from monies due to the contractor for each and every call requiring action by city forces for purposes of placing or replacing barricades and/or signing.

20. Sidewalk Grade Elevation

It is imperative that any continuous sections of sidewalk replacement be graded to allow water to drain both to the outside edge of the street side of the sidewalk and laterally to a driveway opening or perpendicular sidewalk connecting to the street. This may require raising either end of a continuous stretch of sidewalk to raise the grade to provide positive drainage. This may require the use of additional sand to elevate the sidewalk grade. The city will pay for all sand-compacted in-place by the cyd. The contractor shall stockpile sand at the DPW yard for use in this contract. All delivery tickets shall be given to the inspector upon delivery. For bidding purposes an estimated amount of sand shall be included in the proposal.

21. Damaged Sidewalk, Street or Driveways

Any damage occurring to adjacent sidewalk, streets, or driveways outside the limits of removal will be replaced at the contractor's expense, unless otherwise agreed upon prior to removal. It is recommended that sawcutting take place at limits of removal to minimize damage to adjacent structures. Any newly poured sidewalk is to be protected by the contractor. Any damage occurring to concrete sidewalks prior to curing will be replaced at the contractor's expense. The contractor should verify listed quantities prior to removal.

NOTICE TO BIDDERS
FOR
UTILITY COORDINATION

The contractor shall cooperate and coordinate construction activities with the owners of utilities as stated in Section 104.08 of the 2012 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 2012 MDOT Standard Specifications for Construction. Contractor delay claims, resulting from a utility, will be determined based upon Sections 108.09 and 109.05.E of the 2012 MDOT Standard Specification for Construction.

TELEPHONE:
Frontier Communications
345 Pine Avenue
Alma, MI 48801
Attn: Mark Marshall
Phone: (989) 463-0392

TELEPHONE:
Winn Telecom
402 N. Mission Street
Mt Pleasant, MI 48858
Attn: Paul Labrai
Phone: (989) 621-8788

CABLE:
Charter Communications
915 East Broomfield Road
Mt. Pleasant, MI 48858
Attn: Bryon Carroll
Phone: (989) 621-0505

GAS:
DTE Energy / Michcon
609 Bjornson Street
Big Rapids, MI 49307
Attn: Larry Bourke
Phone: (231) 592-3244
(231) 349-2364

ELECTRIC:
Consumers Energy
1325 Wright Avenue
Alma, MI 48801
Attn: Rich Klender
Phone: (989) 466-4279

City of Mt Pleasant Municipal Contacts:
Division of Public Works
1303 N. Franklin Street
Mt. Pleasant, MI 48858
Attn: Stacie Tewari, City Engineer
Phone: (989) 779-5404

NOTE: All gas valves shall be adjusted and/or relocated by DTE Energy Gas.

The Contractor shall coordinate with DTE Energy for all gas valve adjustments within the project limits and shall provide 5 business days to facilitate this work by DTE personnel or their approved contractor.

The owners of existing service facilities that are within grading limits will move them to locations designated by the Engineer or will remove them entirely from the Right-of-Way. Owners of Public Utilities will not be required by the County to move additional poles or structures in order to facilitate the operation of construction equipment unless it is determined by the Engineer that such poles or structures constitute a hazard to the public or are extraordinarily dangerous to the Contractor's operations.

For protection of underground utilities and in conformance with Public Act 174, 2013, the contractor shall dial 1-800-482-7171 or 811 a minimum of three full working days, excluding Saturdays, Sundays, and holidays prior to beginning each excavation. All "MISS DIG" participating 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.

NOTICE TO BIDDERS

FOR

DPW Policy for replacing private items and systems in the public right-of-way, resulting from construction damage or street and utility maintenance.

Structures, walkways, and decorative paving and pillars (including mailboxes) in the right-of-way will be replaced with functionally and aesthetically similar structures, if damaged during construction or street, sidewalk, and utility repair. Curb cuts for service walks and driveways where the drive does not exist will not be replaced. Structures in the path of street or sidewalk construction will not be replaced. Fences will not be put back up in the right-of-way.

The City of Mt. Pleasant will give advance notice asking residents to move or mark their underground irrigation systems. If sprinklers are marked, or contractors are notified of sprinklers being present, and they are damaged, the contractor will pay for the damage (except as outlined below). If not marked and the contractor is not notified of the presence of underground irrigation systems, or if no building permit was taken out at installation, the City will not pay for damage. If the City repairs a sprinkler system, they will confirm backflow prevention is in place.

Landscaping and plantings will be spared as much a practicable, but will not be replaced at the City's expense. The City will give at least one week's notice to residents to allow time to move plantings.

On state roads where structures and private paving in the right-of-way are not repaired or replaced as a result of construction damage, (MDOT rule), the City will contract for repairs ad replacements outside the road contract, within the restrictions listed above.

When installing sidewalks, the DPW will accommodate residents to a reasonable extent to move sidewalks out of the normal sidewalk path to save trees and to allow extra driveway parking. The DPW will have final discretion as to which trees to cut for sidewalk installation. If there is no obstruction and no issue other than the resident wants the sidewalk to take a different path, the City will not accommodate the resident.

CITY OF MT. PLEASANT

SPECIAL PROVISION
FOR
LINES, LEVELS, AND SURVEYS

A) Description

Staking is by the Contractor. 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.

B) Measurement and Payment

The completed work, as described, will be measured as a lump sum and paid for at the contract price using the following pay items:

Contract Item (Pay Item)	**Pay Unit**
Contractor Staking, Modified.....	Lump Sum

Contractor Staking, Modified includes all work and actions specified herein including materials, labor and equipment.

CITY OF MT. PLEASANT

SPECIAL PROVISION
FOR
PRECONSTRUCTION AUDIO VIDEO RECORDING

A) Description

The work covered under this special provision consists of furnishing all labor, materials and equipment to provide High Definition color video recording along the entire length of the project to serve as a record of "original" conditions.

B) Equipment

All audio-video taping equipment shall be supplied and operated by a professional firm actively engaged in pre-construction audio-video recording.

C) Inspection

1) Requirements

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

i) 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 and photography shall be performed by a professional, qualified, established audio-video recording firm knowledgeable in construction practices which have a minimum of one year of experience in the implementation of established inspection procedures.

3) Acceptance of Recording

The City reserves the right to reject the audio-video recording because of poor quality, unintelligible audio, or uncontrolled pan or zoom. Any recording rejected by the City shall be re-recorded at no cost to the City. Under no circumstances shall construction begin until the City has received and accepted the audio-video recording.

4) 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.

i) Audio-Video Recording Media
The audio-video recording provided shall be in a DVD format.

ii) Camera(s)
A color video camera shall be used that shall have High Definition recording capability. The camera shall be a professional quality camera acceptable to the Engineer.

5) Execution

i) Audio
Each tape 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.

ii) 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 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.

iii) 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 camera operator, 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 camera operator 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.

iv) Lighting Requirements

All taping 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.

v) Recording Coverage

Recording 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 tape and the proposed construction may be located by reference to the houses and buildings.

(3) General

Taping 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.

(4) Rate of Speed

The rate of speed in the general direction of travel of conveyance used during taping 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 tapes.

(5) Coverage Area

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

(6) Identification

(a) Tape Cassettes and Tape Cases

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

(b) Records

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

D) Measurement and Payment

The complete work as measured for Preconstruction Audio Video Taping 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.

Contract Item (Pay Item)	**Pay Unit**
Preconstruction Audio Video Recording.	Lump Sum

CITY OF MT. PLEASANT

SPECIAL PROVISION
FOR
HMA APPLICATION ESTIMATE

P&N:GAM 1 of 1 1-13-2016

a. Description. This work shall be done in accordance with the requirements of Division 5 of the Michigan Department of Transportation 2012 Standard Specifications for Construction except as herein specified. **The use of Reclaimed Asphalt Pavement (RAP) shall be limited to Tier 1 (0% to 17%) RAP binder by weight of the total binder in the mixture).**

b. Construction Methods. The Nuclear Gauge Method of testing compaction shall apply for this project. The pavement density will be measured by the Engineer with a Nuclear Density Gauge using the Gmm from the Job Mix Formula (JMF) for the density control target. The required in place density of the HMA mixture shall be 92.0 – 96.0% of the density control target. The Contractor is responsible for establishing a rolling pattern that will achieve the required in place density.

c. Materials.

The Target Air Void percentage shall be 3.0% for all HMA on this project.

The HMA, 13A (Identity 1) for Top Course shall have a yield of 165 pounds per square yard.

The HMA, 13A (Identity 2) for Leveling Course shall have a yield of 220 pounds per square yard.

The HMA Approach (Identity 3) shall have a yield of 385 pounds per square yard (two courses of HMA, 13A) for intersections, and commercial driveways.

The HMA Approach (Identity 4), consisting of HMA, 13A, shall have a yield of 220 pounds per square yard (single course) for residential driveways.

The Aggregate Wear Index for all top course applications shall be a minimum of 260.

The Performance Grade Asphalt Binder Range for the Mixture shall be 58-28.

The HMA Bond Coat material shall be per Section 501.03. The uniform rate of application shall be 0.05 to 0.15 gallons per square yard. This is for information only and is included in the cost of HMA.

d. Measurement and Payment. Measurement and Payment shall be at the contract unit price for the related items of work.

CITY OF MT. PLEASANT

SPECIAL PROVISION
FOR
AGGREGATE BASE, 8 INCH, MODIFIED

A) Description

This work consists of constructing Aggregate Base, 8 inch according to the 2012 Michigan Department of Transportation (MDOT) Standard Specifications for Construction except as modified herein and details shown on the plans.

B) Materials

Materials used for this work shall be 22A aggregate and meet the requirements of Section 902 of the 2012 MDOT Standard Specifications for Construction.

C) Construction

Construct aggregate base in accordance with the requirements of Section 302 of the 2012 MDOT Standard Specifications for Construction.

D) Measurement and Payment

The complete work, as described, will be measured and paid for at the contract unit price for the following contract pay items and includes all material, equipment, and labor to complete the following items:

Contract Item (Pay Item)	Pay Unit
Aggregate Base, 8 inch, Modified	Square Yard

CITY OF MT. PLEASANT

SPECIAL PROVISION
FOR
CURB AND GUTTER, CONC, DET F4, MODIFIED

A) Description

This work consists of constructing concrete curb and gutter according to the 2012 MDOT Standard Specifications for Construction, Standard Plan R-30 series, except as modified herein and details shown on the plans.

B) Materials

The materials used for this work shall meet the requirements of Sections 802.02 and 902 of the 2012 MDOT Standard Specifications for Construction.

C) Construction

Construct curb and gutter in accordance with MDOT Standard Plan R-30 series and the requirements of Section 802 of the 2012 MDOT Standard Specifications for Construction.

The gutter pan shall be modified as detailed and where shown on the plans.

Granular material placed directly under the curb and gutter, as detailed on the plans, shall be 22A aggregate, and shall be included in the bid price for the curb and gutter pay items shown below. The thickness of this material shall be approximately 2.5 inches.

D) Measurement and Payment

The complete work, as described, will be measured and paid for at the contract unit price for the following contract pay items and includes all material, equipment, and labor to complete the following items:

Contract Item (Pay Item)	Pay Unit
Curb and Gutter, Conc, Det F4, Modified	Foot

CITY OF MT. PLEASANT

SPECIAL PROVISION
FOR
DRIVEWAY OPENING, DET M, MODIFIED

A) Description

This work consists of constructing a Detail M driveway opening according to the 2012 MDOT Standard Specifications for Construction, MDOT Standard Plan R-29 series, except as modified herein and details shown on the plans.

B) Materials

The materials used for this work shall meet the requirements of Sections 802.02 and 902 of the 2012 MDOT Standard Specifications for Construction.

C) Construction

Construct driveway opening in accordance with MDOT Standard Plan R-29 series and the requirements of Section 802 of the 2012 MDOT Standard Specifications for Construction.

Granular material placed directly under the driveway opening, as detailed on the plans, shall be 22A aggregate, and shall be included in the bid price for Driveway Opening, Conc, Det M, Modified. The thickness of this material shall be approximately 2.5 inches.

D) Measurement and Payment

The complete work, as described, will be measured and paid for at the contract unit price for the following contract pay items and includes all material, equipment, and labor to complete the following items:

Contract Item (Pay Item)	Pay Unit
Driveway Opening, Conc, Det M, Modified	Foot

CITY OF MT. PLEASANT

SPECIAL PROVISION
FOR
DETECTABLE WARNING SURFACE, MODIFIED

A) Description

This work shall be done in accordance with the requirements of Standard Plan R-28 series and Section 803 of the 2012 MDOT Standard Specifications for Construction except that the detectable warning plate shall be an asphalt dipped Cast Iron warning plate.

B) Materials

The detectable warning plate shall be an asphalt dipped Cast Iron warning plate meeting the requirements of section 803 of the 2012 MDOT Standard Specifications for Construction.

C) Construction

This work shall be done in accordance with the requirements of Standard Plan R-28 series and Section 803 of the 2012 MDOT Standard Specifications for Construction except that the detectable warning plate shall be an asphalt dipped Cast Iron warning plate.

D) Measurement and Payment

The complete work as measured for Detectable Warning Surface, Modified will be paid for at the contract unit price for the following contract pay items and includes all material, equipment, and labor to complete this item.

Contract Item (Pay Item)	Pay Unit
Detectable Warning Surface, Modified	Foot

CITY OF MT. PLEASANT

SPECIAL PROVISION
FOR
DR STRUCTURE COVER, ____ , MODIFIED

A) Description

Dr Structure Cover, ____, Modified, hereinafter referred to as Cover, shall consist of materials and work as described in Section 403 of the 2012 Michigan Department of Transportation (MDOT) Standard Specifications for Construction except as modified herein.

B) Materials

Covers shall include geotextile fabric, frame, grate or cover and shall be of the type indicated on the plans.

1) Dr Structure Cover, CB, Modified

Catch basin cover types shall depend on their location on the plans.

i) Catch basins covers located in driveway Detail M openings shall be model 5100Z with type M1 grate as manufactured by East Jordan Iron Works, or approved equal.

ii) All other catch basins covers located in the curb shall be model 7000 with type M2 grate as manufactured by East Jordan Iron Works, or approved equal.

iii) Unless otherwise indicated on the plans, catch basins covers outside of the curb shall be model 1040 with type M1 grates as manufactured by East Jordan Iron Works, or approved equal.

2) Dr Structure Cover, STM, Modified

i) Storm drainage structure covers shall be model 1040 with type B cover as manufactured by East Jordan Iron Works, or approved equal.

3) Dr Structure Cover, SAN, Modified

i) Sanitary drainage structure covers shall be model 1040 with type A cover as manufactured by East Jordan Iron Works, or approved equal. The preferred cover shall be stamped with the City of Mt. Pleasant logo.

C) Construction

Construct drainage structure covers according to the details on the plans and section 403 of the 2012 MDOT Standard Specifications for Construction. Drainage structure shall be wrapped with geotextile fabric as shown on the plans.

D) Measurement and Payment

This work will be measured and paid as specified in section 403 & 802 of the 2012 MDOT Standard Specifications for Construction using the following contract items (pay items).

Contract Item (Pay Item)	Pay Unit
Dr Structure Cover, CB, Modified	Each
Dr Structure Cover, STM, Modified	Each
Dr Structure Cover, SAN, Modified	Each

CITY OF MT. PLEASANT

SPECIAL PROVISION
FOR
EROSION CONTROL, INLET PROTECTION, FABRIC BAG

P&N:GAM 1 of 1 1-16-2016

a. Description. This work consists of providing all labor, equipment and materials necessary to furnish, install, maintain, disposal of collected material and remove fabric drop inlet protection devices (devices) at the locations specified on the plans and as directed by the Engineer.

b. Materials. Select one of the following acceptable devices or use an Engineer approved equal:

1. Siltsack Type B, Regular Flow, manufactured by ACF Environmental, Inc.

2. Inlet Pro Sediment Bag, Standard Flow, with optional foam deflector manufactured by Hanes Geo Components

3. Dandy Curb Bag manufactured by Dandy Products, Inc.

Ensure devices are sized appropriately for the catch basins in which they will be placed.

c. Construction. Install and remove the devices according to the manufacturer's guidelines. Empty and clean the devices according to the manufacturer's guidelines or when directed by the Engineer.

Dispose of material collected in devices in accordance with subsection 205.03.P of the Standard Specifications for Construction. Those devices that are no longer needed and have been removed may be reused elsewhere on the project as approved by the Engineer.

d. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Contract Item (Pay Item)	**Pay Unit**
Erosion Control, Inlet Protection, Fabric Bag	Each

Erosion Control, Inlet Protection, Fabric Bag will be paid for as one each for each time the alternate device listed herein is installed, maintained, and removed at a separate location within the project limits.

CITY OF MT. PLEASANT

SPECIAL PROVISION
FOR
GAS/WATER SHUTOFF COVER ADJ, CASE 1

P&N:GAM 1 of 1 1-13-2016

A) Description

This work consists of adjusting and water shutoff covers to final grade and coordinating with DTE Energy Gas to adjust gas valve covers.

B) Materials

The materials used for this work shall meet the requirements of the utility owning the shutoff.

C) Construction

Adjust water shutoff covers in accordance with the requirements of Section 403.03 C of the 2012 MDOT Standard Specifications for Construction for drainage structures.

All gas valves shall be adjusted and/or relocated by DTE Energy Gas.
The Contractor shall coordinate with DTE Energy for all gas valve adjustments within the project construction limits and shall provide 5 business days to facilitate this work by DTE personnel or their approved contractor.

DTE Contact info: **Larry Bourke**
DTE Energy Gas
PI Coordinator
Engineering & Construction Planning
231-349-2364 cell
231-592-3244 desk
bourkel@dteenergy.com

D) Measurement and Payment

The complete work as measured for Gas/Water Shutoff Cover, Adj, Case 1 will be paid for at the contract unit price for the following contract pay items and includes all material, equipment, and labor to complete this item and/or coordinate with the required utility company.

No claim for extra compensation or adjustment in the contract unit prices will be allowed on account of delay or failure of others to complete work units scheduled.

Contract Item (Pay Item)	Pay Unit
Gas/Water Shutoff Cover, Adj, Case 1	Each

CITY OF MT. PLEASANT

SPECIAL PROVISION
FOR
WATER SYSTEM MATERIALS AND CONSTRUCTION

A) 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.

B) Materials

1) Water Main Pipe

i) 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.

ii) 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, meet the ANSI/NSF standard 14, and be 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. All wire splices shall water be water tight. 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.

iii) Restrained Joint PVC Pipe (RJPVC)

Restrained Joint PVC Pipe (RJPVC) shall use a Certa-Lok^{TM} or approved equal joint restraint system. RJPVC shall meet the above requirements for Polyvinyl Chloride Pipe except that it shall be Class 235.

iv) 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:

(1) Type K annealed seamless copper tubing conforming to ASTM B-88.

(2) 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^{0}F temperature, seal or (mark) of accuracy.

(3) 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^{o}F temperature, seal or (mark) of accuracy.

v) 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.

vi) 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 shall be Clow Corporation #F 1220, Traverse City Iron Works #A 847 M or approved equal.

(2) All fittings are to be mechanical joint, including bends, tees, valves, hydrants. All fittings on new water main shall be Ford, EBBA-MEGALUG®, or approved equal restraint joint fittings.

vii) Valves

(1) Gate - AWWA C509, full resilient wedge, non-rising stem, mechanical joint, fully bronze mounted with roller and gear operator. Gates shall be Waterous Series 500, Clow RW Valve or approved 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.

(4) Hydrants

(a) Style - Break-away traffic model by East Jordan Iron Works, Model 5 – BR. AWWA C502, open clockwise.

(b) Size - Hydrant with eight inch (8") I.D. barrel.

(c) Inlet – six inch (6") diameter mechanical joint.

(d) Drain - Tapped and plugged with brass plug.

(e) Nozzles - National Standard Thread

(i) Two (2) 2-1/2 inch hose nozzles.

(ii) One (1) 4-1/2 inch pumper nozzle.

(f) Operating nut and nozzle cap nuts to be 1-3/4 inch square.

(g) 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.

(h) Conforming to City standards.

(5) Service Fittings

(a) 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.

(b) Service Saddles - Double-strap bronze or brass parts, AWWA CC threads. For PVC C900 pipe, use Ford S90, Mueller S 13000 or approved equivalent.

(c) Brass Corporation Stops [With CC (AWWA) threads]

(i) Ford - one inch (1") F600; Mueller – one inch (1") H15000 or approved equivalent.

(ii) Polyethylene Pipe - Use above specified corporations.

(iii) For two inch (2") Services - Ford FB 1000, Mueller P-25008 or approved equivalent.

(d) Brass Curb Stops – two inch (2") Minneapolis pattern required.

(i) Ford Z22-333M, Z22-444M, Z44-444M, Mueller P25155 or approved equivalent.

(e) 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.

(6) Miscellaneous

(a) Stainless Steel Tie Rods and Clamps - Clow Corporation, Traverse City Iron Works or approved equivalent.

(b) Plastic Seamless Encasement Tubing

(i) Material - ASTM D-1248 Polyethylene, Type III, Class C, eight (8) mils thick.

(ii) Closing Tape – two inches (2") wide Poly-Ken #900, Scotchwrap #50 or approved equivalent.

(c) Tapping Sleeves

(i) The tapping sleeve shall be a Ford Tapping sleeve style FAST, with a stainless steel flange and rubber coat.

(ii) Stainless steel tapping sleeve shall not be allowed on water mains larger than 16 inches.

(iii) Full circle mechanical joint cast iron shall be required on water mains larger than 16 inches.

(iv) All tapping sleeves must be pressure tested to 150 psi before main is tapped.

(7) Shop Drawings and Material Inspection

(a) 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.

C) Construction

1) 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.

i) 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.

ii) 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.

iii) 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.

2) 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.

3) 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.

4) 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.

5) 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.

6) Water Service Connection

i) Water service connections shall not be made prior to the water main passing the bacteriological tests.

ii) Water service materials must meet City specifications and be one inch (1") in size, unless specified otherwise.

iii) Each service will consist of a saddle, corporation, piping, curb stop, and curb box.

iv) 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.

v) Curb boxes shall be adjusted to finished grade.

vi) Curb boxes shall be fully screwed onto the curb stop valve.

vii) Pipe must be beveled and lubricated with an approved lubricant for use on potable water systems.

viii) 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 of bituminous by the use of a length of four inches (4”) PVC pipe.

ix) 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

x) 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 curbline.

xi) Services are to be flushed prior to backfilling.

xii) Taps are to be on the service side of the main.

xiii) Taps shall be horizontal to five degrees above horizontal.

xiv) Cookies must be given to the inspector at the time of tap.

7) Water Service Reconnections

i) The City Water Department shall be notified of any iron pipe or lead pipe water services in use (pressurized).

ii) Except for iron or lead pipes, all reconnections shall be of the same materials as the existing service and use brass fittings.

iii) 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.

iv) Reconnection shall include service saddle, corporation, and piping meeting City specifications.

v) Taps shall be on the service side of the main.

vi) Taps shall be horizontal to 5 degrees above horizontal. .

vii) 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.

8) Live Taps

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

D) Testing and Sterilization

1) 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 main shall be filled at a velocity no greater than 1 foot per second. Flushing at a minimum velocity of 3 feet per second shall be preformed prior to starting any pressure testing.

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.

2) 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. Samples shall be taken from each end of the main with additional samples taken in order to maintain a minium of 1 sample for each 1,200 feet of main. Sample shall also be taken at the end of each branch installed. 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.

E) Measurement and Payment

1) Water Main, ___ inch

i) Description

The work of Water Main, ___ inch 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.

ii) Method of Measurement and Basis of Payment

Water Main, ___ inch 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.

2) Water Valve ___inch

i) Description

The work of Water Valve ___ inch, 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.

ii) Method of Measurement and Basis of Payment

Water Valve ___ inch, 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.

3) Hydrant Set

i) 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.

ii) 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.

4) Tapping Sleeve & Valve ___ inch by ___ inch

i) Description

The work of Tapping Sleeve & Valve ___ inch by ___ inch, 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.

ii) Method of Measurement and Basis of Payment

Tapping Sleeve & Valve ___ inch by ___ inch 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.

5) Water Service - (Short or Long), ___inch

i) Description

The work of Water Service - (Short or Long), ___inch, 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.

ii) Method of Measurement and Basis of Payment

Water Service - (Short or Long), ___inch, 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.

6) Water Service Reconnection ___ inch

i) Description

The work of Water Service Reconnection ___ inch, 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.

ii) Method of Measurement and Basis of Payment

Water Service Reconnection ___ inch, 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

Contract Item (Pay Item)	**Pay Unit**
~~Water Main, ___ inch~~	~~Foot~~
Water Valve ___inch	Each
~~Hydrant Set~~	~~Each~~
~~Tapping Sleeve & Valve ___ inch by ___ inch~~	~~Each~~
~~Water Service - Short, ___inch.~~	~~Each~~
~~Water Service - Long, ___inch.~~	~~Each~~
~~Water Service Reconnection ___ inch~~	~~Each~~

CITY OF MT. PLEASANT

SPECIAL PROVISION
FOR
WATERBORNE SPECIAL PAVEMENT MARKINGS

P&N:GAM 1 of 1 1-13-2016

a. Description. This work consists of furnishing all labor, equipment, and materials necessary to install waterborne special pavement markings at the locations specified on the plans in accordance with the standard specifications and as specified herein.

b. Materials. Ensure materials meet the requirements of sections 811 and 920 of the Standard Specifications for Construction. Ensure all permanent pavement markings are placed with waterborne paint.

c. Construction. Ensure construction methods meet the requirements of section 811 of the Standard Specifications for Construction. The second application for all pavement markings items is at the discretion of the Engineer.

d. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the following pay items:

Contract Item (Pay Item)	**Pay Unit**
Pavt Mrkg, Waterborne, 6 inch, Crosswalk	Foot
Pavt Mrkg, Waterborne, 2nd Application, 6 inch, Crosswalk	Foot
Pavt Mrkg, Waterborne, 24 inch, Stop Bar	Foot
Pavt Mrkg, Waterborne, 2nd Application, 12 inch, Stop Bar	Foot
Pavt Mrkg, Waterborne, Sharrow Symbol	Each
Pavt Mrkg, Waterborne, 2nd Application, Sharrow Symbol	Each
Pavt Mrkg, Waterborne, Railroad Symbol	Each
Pavt Mrkg, Waterborne, 2nd Application, Railroad Symbol	Each

CITY OF MT. PLEASANT

SPECIAL PROVISION
FOR
RESTORATION, MODIFIED

A) Description

This work shall include all labor, materials and equipment to clean up and restore public and private ground to a condition equal to or better than that which existed prior to construction. This includes removal and legal disposal of all construction debris, litter, and materials.

B) Materials

1) Topsoil

Black dirt or natural surface soil, high in organic material, free from stones, brush, debris, objectionable weeds, or other litter, and approved by the City Engineer prior to spreading. The engineer may perform a soil test prior to approval. Peat material is not acceptable.

2) Fertilizer

Fertilizer shall be commercial seed starting 20-10-10 grade supplied in the manufacturer's packaging with composition clearly marked. Bulk fertilizer may be used when certified delivery slips are furnished by the Contractor, meeting section 816 of the 2012 MDOT specifications.

3) Seed

Seed material and application shall meet section 816 of the 2012 MDOT specifications, using TUF seed mixture.

4) Mulch and Adhesive

Mulch and adhesives shall meet section 816 of the 2012 MDOT specifications, for wood fiber mulch. Paper mulch or straw are not acceptable.

C) Construction

1) Preparation of Seed Bed

i) Grading

Grades on areas to be seeded shall be maintained in a true and even condition. Where the grades are not defined, they shall be established by the Contractor to blend with existing adjacent grades without irregularities and shall provide for proper drainage.

ii) Placing Topsoil

Topsoil shall be evenly spread by blade graders, or other approved methods, to a minimum depth of four inches (4"). Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions where water will stand. Topsoil shall not be placed until the subgrade has been smoothly graded and compacted, and the engineer or inspector approves the subgrade in writing.

iii) Application of Fertilizer

Fertilizer shall meet the requirements of section 812 of the 2012 MDOT specifications for Class A fertilizer.

iv) Cleanup

After completion of the above operations, the surface shall be cleared of stones, roots, brush, wire, grade stakes, and other objects that might be a hindrance to maintenance operations.

2) Seeding

TUF seed mixture meeting requirements of section 816 of the 2012 MDOT specifications shall be used on all lawn areas and adjacent backslopes. No seeding shall be done until the Engineer has inspected the seed container and has given written approval of the topsoil. Seeding for erosion control measures shall be cereal rye seed.

3) Mulching

i) Straw and Hay Mulch

As part of the seeding and fertilizing operations, wood fiber mulch shall be spread over the surface as required in section 816 of the 2012 MDOT specifications. Paper mulch is not acceptable.

ii) Mulch Adhesive

Mulch shall be held in place by a spray coating of mulch adhesive. The Contractor shall protect all traffic, signs, structures, and other objects from being marked or disfigured by the adhesive material. Fire hydrants shall be covered prior to the placement of all sprayed materials. Adhesive material shall be applied uniformly at a rate of 400 gallons per acre, sprayed simultaneously with the mulch, or a surface application of adhesive sprayed immediately following mulching.

4) Establishment of Seeded Areas

The Contractor shall be responsible for the proper care of the seeded area during the period when the grass is becoming established, and shall be responsible for a total grass cover. The acceptance of the work will not be given until grass cover is established.

i) Watering

Seeded areas shall be watered whenever excessive drying is evident during the period set for establishment of the seeded area. The Contractor shall be responsible for the proper care of the seeded areas and for the establishment of a uniform stand of grass until final acceptance of the entire work covered by the Contract.

The City has established a program to encourage residents to water the newly seeded areas, to help establish the lawn. Residents will be given a credit on their water bill for watering the newly seeded areas.

ii) Weeds

After the grass has become established, if it appears to have more than ten percent (10%) weeds, the Contractor shall spray with an approved herbicide (weed killer).

D) Measurement and Payment

Restoration, Modified shall be paid for by the station as measured along the project centerline and will include all work necessary to restore both sides of the street. The price paid shall be payment in full for all Restoration, Modified work.

Contract Item (Pay Item)	**Pay Unit**
Restoration, Modified.....	Station

CITY OF MT. PLEASANT

SPECIAL PROVISION
FOR
MAINTAINING TRAFFIC

a. Description. Construction will take place on Broadway Street from Harris Street east to the bridge approach over the Chippewa River, in the City of Mt. Pleasant. The work consists of a street reconstruct including sand subbase, aggregate base, HMA surface, concrete curb and gutter, sidewalk and ADA ramp improvements.

The proposed project will be closed to thru traffic with a detour established over existing roads. The Contractor shall maintain access to all local residences and businesses at all times throughout the project duration. The Contractor shall utilize traffic regulators in accordance with MDOT Maintaining Traffic Typical M0140a to direct local traffic where necessary.

Construction signing shall be required as shown on the Maintaining Traffic plan sheet. Changes and/or adjustments to the maintaining traffic plans and standards may be applied as determined by the Engineer.

The Contractor shall notify the Engineer a minimum of 72 business hours prior to the implementation of any detours, street closures, or lane closures.

The Contractor is required to contact all local and state police, fire, emergency services that have jurisdiction within the construction influence area a minimum of five (5) calendar days prior to the implementation of any lane closure or detours.

b. Traffic Control Devices. All signs, barricades and other traffic control devices shall be in accordance with the 2011 Michigan Manual on Uniform Traffic Control Devices (MMUTCD) and Special Detail WZD-125-E. All signs shall be placed on driven supports only (posts driven in ground) in accordance with Special Detail WZD-100-A. Bottom height of all signs shall be 7’ min.

Advance Signing shall be placed in accordance with MDOT Maintaining Traffic Typicals M0020a and M0040a, as modified by Special Provision 12SP812(B) for “Work Zone Signing on Local Agency Projects”.

Temporary traffic control devices shall be maintained properly as specified in the MDOT 2012 Standard Specifications for Construction. Fabrication, installation, and removal of temporary signs shall be the responsibility of the Contractor and shall be included in the pay item: Sign Type B, Temp, Prismatic.

Temporary warning, regulatory, and guide signs not required for a particular work Operation shall be removed, completely covered, or laid down with the legs off, as directed by the Engineer.

c. Construction. The Contractor shall limit street excavation activities to approximately 300 feet (one block) at a time. The Contractor's backfill and aggregate base placement shall follow closely behind, such that no more than 300 feet of road shall be without existing pavement or a minimum of four (4) inches of compacted gravel on the subbase during working hours.

1) Construction Staging

The Contractor shall present a detailed Construction Staging Plan to the City of Mt. Pleasant at the initial Progress Schedule meeting (see Progress Clause).

Payment for this staging plan shall be included in payment for Minor Traf Devices.

- The Contractor shall maintain one lane of traffic along Broadway Street during working hours for local traffic.
- At the end of each work day 2 lanes of traffic shall be provided for local traffic.
- Sidewalk shall be maintained along one side of the road at all times. Any temporary sidewalk, fencing, or directional signing for pedestrians required as directed by the Engineer, shall be included in payment for Minor Traf Devices.

2) Residential Access

Access to driveways for local residents and businesses shall be maintained and available for use. A quantity of Maintenance Gravel has been included for this purpose. All driveways shall be open when the Contractor is not working, including all evenings, nights, Sundays, and holidays except as approved in writing by the inspector and with written notifications to the residents/owners by the Contractor.

The Contractor shall provide property owners a minimum of 72 hours notice prior to driveway work.

3) Residential Refuse and Recycling Collection

The city contractor for trash (refuse) is Republic Services/Allied Waste, 877-698-7274, and MMI Industries, 989-773-6918, for recycling. Collection begins 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 deliver the refuse and recyclable material to a cross street for collection at no cost to the City. It is the responsibility of the construction contractor to contact the refuse and recycling contractors to coordinate operations.

Payment for this coordination or delivery shall be included in payment for Minor Traf Devices.

d. Measurement and Payment. Maintaining Traffic will be paid for at the contract unit prices for contract items (pay items) per the MDOT 2012 Standard Specifications for Construction.

Sign quantities represent the maximum amount of required signs used at any one time.

MINIMUM MERGING TAPER LENGTH "L" (FEET)

OFFSET	POSTED SPEED LIMIT, MPH (PRIOR TO WORK AREA)										
FEET	25	30	35	40	45	50	55	60	65	70	
1	10	15	20	27	45	50	55	60	65	70	TAPER LENGTH "L" IN FEET
2	21	30	41	53	90	100	110	120	130	140	
3	31	45	61	80	135	150	165	180	195	210	
4	42	60	82	107	180	200	220	240	260	280	
5	52	75	102	133	225	250	275	300	325	350	
6	63	90	123	160	270	300	330	360	390	420	
7	73	105	143	187	315	350	385	420	455	490	
8	83	120	163	213	360	400	440	480	520	560	
9	94	135	184	240	405	450	495	540	585	630	
10	104	150	204	267	450	500	550	600	650	700	
11	115	165	225	293	495	550	605	660	715	770	
12	125	180	245	320	540	600	660	720	780	840	
13	135	195	266	347	585	650	715	780	845	910	
14	146	210	286	374	630	700	770	840	910	980	
15	157	225	307	400	675	750	825	900	975	1050	

THE FORMULAS FOR THE MINIMUM LENGTH OF A MERGING TAPER IN DERIVING THE "L" VALUES SHOWN IN THE ABOVE TABLES ARE AS FOLLOWS:

$$"L" = \frac{W \times S^2}{60}$$ WHERE POSTED SPEED PRIOR TO THE WORK AREA IS 40 MPH OR LESS

"L" = S x W WHERE POSTED SPEED PRIOR TO THE WORK AREA IS 45 MPH OR GREATER

L = MINIMUM LENGTH OF MERGING TAPER
S = POSTED SPEED LIMIT IN MPH PRIOR TO WORK AREA
W = WIDTH OF OFFSET

TYPES OF TAPERS	TAPER LENGTH
UPSTREAM TAPERS	
MERGING TAPER	L - MINIMUM
SHIFTING TAPER	1/2 L - MINIMUM
SHOULDER TAPER	1/3 L - MINIMUM
TWO-WAY TRAFFIC TAPER	100 ' - MAXIMUM
DOWNSTREAM TAPERS (USE IS OPTIONAL)	100 ' - MINIMUM (PER LANE)

MDOT Michigan Department of Transportation
TRAFFIC AND SAFETY
MAINTAINING TRAFFIC TYPICAL

TABLES FOR "L", "D" AND "B" VALUES

DRAWN BY: CON:AE:djf	JUNE 2006 PLAN DATE:	M0020a	SHEET 1 OF 2
CHECKED BY: BMM			
FILE: K:/DGN/TSR/STDS/ENGLISH/MNTTRF/M0020a.dgn	REV. 08/21/2006		

DISTANCE BETWEEN TRAFFIC CONTROL DEVICES "D" AND LENGTH OF LONGITUDINAL BUFFER SPACE ON "WHERE WORKERS PRESENT" SEQUENCES

"D" DISTANCES	POSTED SPEED LIMIT, MPH (PRIOR TO WORK AREA)									
	25	30	35	40	45	50	55	60	65	70
D (FEET)	250	300	350	400	450	500	550	600	650	700

GUIDELINES FOR LENGTH OF LONGITUDINAL BUFFER SPACE "B"

SPEED* MPH	LENGTH FEET
20	33
25	50
30	83
35	132
40	181
45	230
50	279
55	329
60	411
65	476
70	542

* POSTED SPEED, OFF PEAK 85TH PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED

1 BASED UPON AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) BRAKING DISTANCE PORTION OF STOPPING SIGHT DISTANCE FOR WET AND LEVEL PAVEMENTS (A POLICY ON GEOMETRIC DESIGN OF HIGHWAY AND STREETS), AASHTO. THIS AASHTO DOCUMENT ALSO RECOMMENDS ADJUSTMENTS FOR THE EFFECT OF GRADE ON STOPPING AND VARIATION FOR TRUCKS.

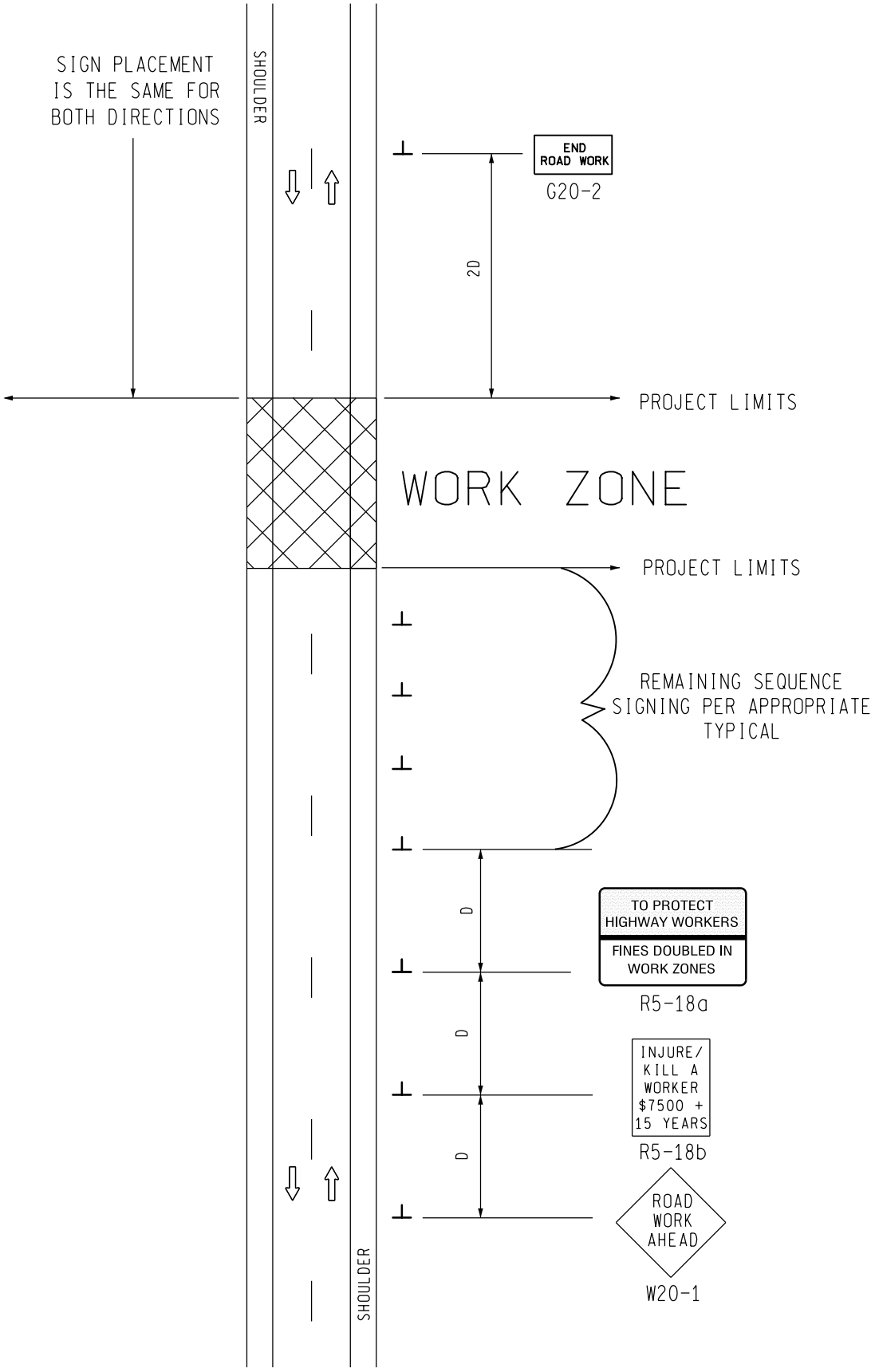
MDOT Michigan Department of Transportation

TRAFFIC AND SAFETY

MAINTAINING TRAFFIC TYPICAL

TABLES FOR "L", "D" AND "B" VALUES

DRAWN BY: CON:AE:djf	JUNE 2006	M0020a	SHEET 2 OF 2
CHECKED BY: BMM	PLAN DATE:		
FILE: K:/DGN/TSR/STDS/ENGLISH/MNTTRF/M0020a.dgn	REV. 08/21/2006		



SIGN = 68 ft2 - TYPE B
FOR ONE DIRECTION OF TRAFFIC
W20-1 QUANTITY INCLUDED
WITH APPROPRIATE TYPICAL
FOR SEQUENCE SIGNING

NOT TO SCALE

MDOT
Michigan Department of Transportation
TRAFFIC AND SAFETY
MAINTAINING TRAFFIC
TYPICAL

TYPICAL ADVANCE SIGNING TREATMENT FOR LONG, INTERMEDIATE AND SHORT TERM STATIONARY WORK ZONE OPERATIONS OF LESS THAN TWO MILES IN LENGTH WHERE TRAFFIC CONTROL DEVICES MAY REMAIN AT END OF WORK DAY ON AN UNDIVIDED TWO-WAY ROADWAY

DRAWN BY: CON:AE:djf	OCTOBER 2011	M0040a	SHEET 1 OF 2
CHECKED BY: BMM:CRB	PLAN DATE:		
FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0040a.dgn REV. 10/13/2011			

NOTES

30. THE APPROPRIATE ADVANCE SIGNING SEQUENCE(S), (M0030a THROUGH M0080a) SHALL BE USED ON ALL PROJECTS.

32. THESE SIGNS SHALL BE LEFT IN PLACE AT THEIR PRESCRIBED LOCATIONS FOR THE DURATION OF THE PROJECT AND UNTIL ALL TEMPORARY TRAFFIC CONTROL HAS BEEN REMOVED.

35. THESE SIGNS ARE INTENDED TO BE USED WITHIN THE LIMITS OF THE TEMPORARY SEQUENCE SIGNING AS IS SHOWN ON 1 OF 2. THESE SIGNS ARE NOT TO BE INTERMINGLED WITH ANY OTHER TEMPORARY SEQUENCE SIGNING EXCEPT AS SHOWN.

SIGN SIZES

G20-2	-	48" x 24"
R5-18a	-	96" x 60"
R5-18b	-	48" x 60"
W20-1	-	48" x 48"

NOT TO SCALE

MDOT Michigan Department of Transportation

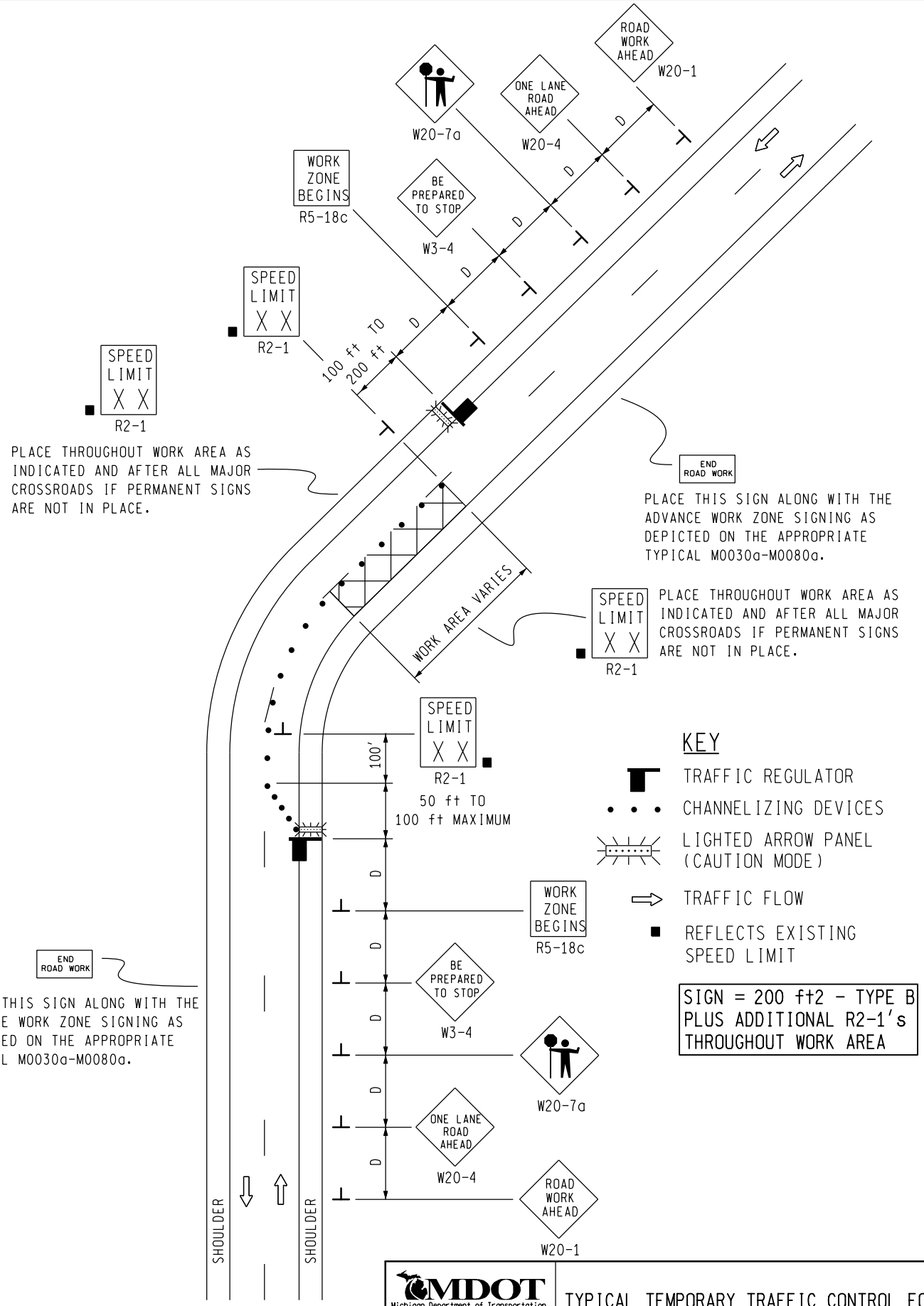
TRAFFIC AND SAFETY

MAINTAINING TRAFFIC TYPICAL

TYPICAL ADVANCE SIGNING TREATMENT FOR LONG, INTERMEDIATE AND SHORT TERM STATIONARY WORK ZONE OPERATIONS OF LESS THAN TWO MILES IN LENGTH WHERE TRAFFIC CONTROL DEVICES MAY REMAIN AT END OF WORK DAY ON AN UNDIVIDED TWO-WAY ROADWAY

DRAWN BY: CON:AE:djf	OCTOBER 2011	M0040a	SHEET 2 OF 2
CHECKED BY: BMM:CRB	PLAN DATE:		

FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0040a.dgn REV. 10/13/2011



NOT TO SCALE

MDOT Michigan Department of Transportation

TRAFFIC AND SAFETY

MAINTAINING TRAFFIC TYPICAL

TYPICAL TEMPORARY TRAFFIC CONTROL FOR A TWO-LANE TWO-WAY ROADWAY WHERE ONE LANE IS CLOSED UTILIZING TRAFFIC REGULATORS, NO SPEED REDUCTION

DRAWN BY: CON:AE:djf	OCTOBER 2011	M0140a	SHEET 1 OF 2
CHECKED BY: BMM:CRB	PLAN DATE:		

FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0140a.dgn REV. 10/04/2011

NOTES

1H. D = DISTANCE BETWEEN TRAFFIC CONTROL DEVICES AND LENGTH OF LONGITUDINAL BUFFERS SEE **M0020a** FOR "D" VALUES.

2. ALL NON-APPLICABLE SIGNING WITHIN THE CIA SHALL BE MODIFIED TO FIT CONDITIONS, COVERED OR REMOVED.

3. DISTANCES BETWEEN SIGNS, THE VALUES FOR WHICH ARE SHOWN IN TABLE D, ARE APPROXIMATE AND MAY NEED ADJUSTING AS DIRECTED BY THE ENGINEER.

3A. THE "WORK ZONE BEGINS" (R5-18c) SIGN SHALL BE USED ONLY IN THE INITIAL SIGNING SEQUENCE IN THE WORK ZONE. SUBSEQUENT SEQUENCES IN THE SAME WORK ZONE SHALL OMIT THIS SIGN AND THE QUANTITIES SHALL BE ADJUSTED APPROPRIATELY.

4A. THE MAXIMUM RECOMMENDED DISTANCE(S) BETWEEN CHANNELIZING DEVICES IN THE TAPER AREA(S) SHOULD BE 15 FEET AND SHOULD BE EQUAL IN FEET TO TWICE THE POSTED SPEED IN MILES PER HOUR IN THE PARALLEL AREA(S).

5. FOR OVERNIGHT CLOSURES, TYPE III BARRICADES SHALL BE LIGHTED.

6. WHEN CALLED FOR IN THE FHWA ACCEPTANCE LETTER FOR THE SIGN SYSTEM SELECTED, THE TYPE A WARNING FLASHER, SHOWN ON THE WARNING SIGNS, SHALL BE POSITIONED ON THE SIDE OF THE SIGN NEAREST THE ROADWAY.

7. ALL TEMPORARY SIGNS, TYPE III BARRICADES, THEIR SUPPORT SYSTEMS AND LIGHTING REQUIREMENTS SHALL MEET NCHRP 350 CRASHWORTHLY REQUIREMENTS STIPULATED IN THE CURRENT EDITION OF THE MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE STANDARD PLANS AND APPLICABLE SPECIAL PROVISIONS. ONLY DESIGNS AND MATERIALS APPROVED BY MDOT WILL BE ALLOWED.

9. ALL TRAFFIC REGULATORS SHALL BE PROPERLY TRAINED AND SUPERVISED.

9A. IN ANY OPERATION INVOLVING MORE THAN ONE TRAFFIC REGULATOR, ONE PERSON SHOULD BE DESIGNATED AS HEAD TRAFFIC REGULATOR.

10. ALL TRAFFIC REGULATORS' CONDUCT, THEIR EQUIPMENT, AND TRAFFIC REGULATING PROCEDURES SHALL CONFORM TO THE CURRENT EDITION OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD) AND THE CURRENT EDITION OF THE MDOT HANDBOOK ENTITLED "TRAFFIC REGULATORS INSTRUCTION MANUAL."

11. WHEN TRAFFIC REGULATING IS ALLOWED DURING THE HOURS OF DARKNESS, APPROPRIATE LIGHTING SHALL BE PROVIDED TO SUFFICIENTLY ILLUMINATE THE TRAFFIC REGULATOR'S STATIONS.

12E. THE MAXIMUM DISTANCE BETWEEN THE TRAFFIC REGULATORS SHALL BE NO MORE THAN 2 MILES IN LENGTH UNLESS RESTRICTED FURTHER IN THE SPECIAL PROVISIONS FOR MAINTAINING TRAFFIC. ALL SEQUENCES OF MORE THAN 2 MILES IN LENGTH WILL REQUIRE WRITTEN PERMISSION FROM THE ENGINEER BEFORE PROCEEDING.

13. WHEN INTERSECTING ROADS OR SIGNIFICANT TRAFFIC GENERATORS (SHOPPING CENTERS, MOBILE HOME PARKS, ETC.) OCCUR WITHIN THE ONE-LANE TWO-WAY OPERATION, INTERMEDIATE TRAFFIC REGULATORS AND APPROPRIATE SIGNING SHALL BE PLACED AT THESE LOCATIONS.

14. ADDITIONAL SIGNING AND/OR ELONGATED SIGNING SEQUENCES SHOULD BE USED WHEN TRAFFIC VOLUMES ARE SIGNIFICANT ENOUGH TO CREATE BACKUPS BEYOND THE W3-4 SIGNS.

15. THE HAND HELD (PADDLE) SIGNS REQUIRED BY THE MMUTCD TO CONTROL TRAFFIC WILL BE PAID FOR AS PART OF FLAG CONTROL.

28E. THE TRAFFIC REGULATORS SHOULD BE POSITIONED AT OR NEAR THE SIDE OF THE ROAD SO THAT THEY ARE SEEN CLEARLY AT A MINIMUM DISTANCE OF 500 FEET. THIS MAY REQUIRE EXTENDING THE BEGINNING OF THE LANE CLOSURE TO OVERCOME VIEWING PROBLEMS CAUSED BY HILLS AND CURVES.

SIGN SIZES

DIAMOND WARNING - 48" x 48"
R2-1 REGULATORY - 48" x 60"
R5-18c REGULATORY - 48" x 48"

NOT TO SCALE

MDOT Michigan Department of Transportation
TRAFFIC AND SAFETY
MAINTAINING TRAFFIC TYPICAL

TYPICAL TEMPORARY TRAFFIC CONTROL FOR A TWO-LANE TWO-WAY ROADWAY WHERE ONE LANE IS CLOSED UTILIZING TRAFFIC REGULATORS, NO SPEED REDUCTION

DRAWN BY: CON:AE:djf	OCTOBER 2011	M0140a	SHEET 2 OF 2
CHECKED BY: BMM:CRB	PLAN DATE:		
FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0140a.dgn REV. 10/04/2011			

SIGN MATERIAL SELECTION TABLE

	SIGN MATERIAL TYPE		
SIGN SIZE	TYPE I	TYPE II	TYPE III
≤ 36" X 36"		X	X
>36" X 36"≤ 96" TO WIDE		X	
> 96″ WIDE TO 144″ WIDE	X	X	
> 144″ WIDE	X		

TYPE I ALUMINUM EXTRUSION
TYPE II PLYWOOD
TYPE III ALUMINUM SHEET

ROUNDING OF CORNERS IS NOT REQUIRED FOR TYPE IOR IISIGNS.
VERTICAL JOINTS ARE NOT PERMITTED.
HORIZONTIAL JOINTS THROUGH SIGN LEGEND OR SYMBOLS ARE NOT PERMITTED.

POST SIZE REQUIREMENTS TABLE

	POST TYPE		
SIGN AREA (ft^2)	U-CHANNEL STEEL	SQUARE TUBULAR STEEL	WOOD
≤9	1 - 3 lb/ft*	1 - 2" 12 or 14 GA*	N/A
9 ≤ 20	2 - 3 lb/ft	2 - 2" 12 or 14 GA	1 - 4" X 6"*
> 20 ≤ 30	N/A	N/A	2 - 4" X 6"
> 30 ≤ 60	N/A	N/A	2 - 6" X 8"
> 60 ≤ 84	N/A	N/A	3 - 6" X 8"

*SIGNS 4 FEET AND GREATER IN WIDTH REQUIRE 2 POSTS.
SIGNS GREATER THAN 8 FEET IN WIDTH REQUIRE 2 OR 3 WOOD POSTS DEPENDING ON AREA OF SIGN.
A MAXIMUM OF 2 POSTS WITHIN A 7'PATH IS PERMITTED.

NOT TO SCALE

File:PW/Doc/RD/T&S/Typ/Dev/Sign MainTraf D/WZD-100-A Rev. 8/21/06 ECH

MDOT Michigan Department of Transportation

PREPARED BY TRAFFIC AND SAFETY SUPPORT AREA

DRAWN BY: CON/ECH

CHECKED BY: AUG

ENGINEER OF DELIVERY

ENGINEER OF DEVELOPMENT

PENDING
FHWA APPROVAL DATE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

GROUND DRIVEN SIGN SUPPORTS FOR TEMP SIGNS

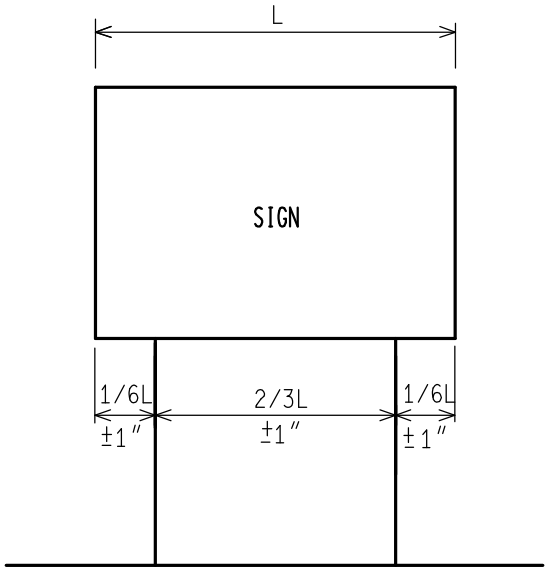
8/2006
PLAN DATE

WZD-100-A

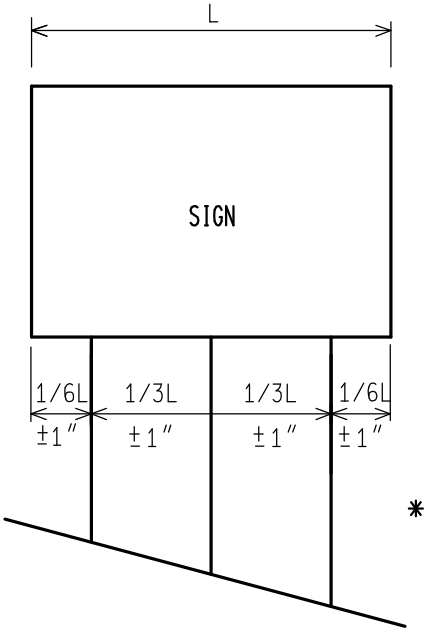
SHEET 1 of11

NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.

2 POST SIGN SUPPORT SPACING



3 POST SIGN SUPPORT SPACING



* FOR ALL 11' AND 12' LONG SIGNS ON 3 WOOD SUPPORTS, SPREAD POSTS SO AS TO HAVE A 8' MIN. TO 9' MAX. DISTANCE BETWEEN OUTSIDE POSTS.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	PENDING FHWA APPROVAL DATE	8/2006 PLAN DATE	WZD-100-A	SHEET 2 of11
File:PW/Doc/RD/T&S/Typ/Dev/Sign MainTraf D/WZD-100-A Rev. 8/21/06 ECH				

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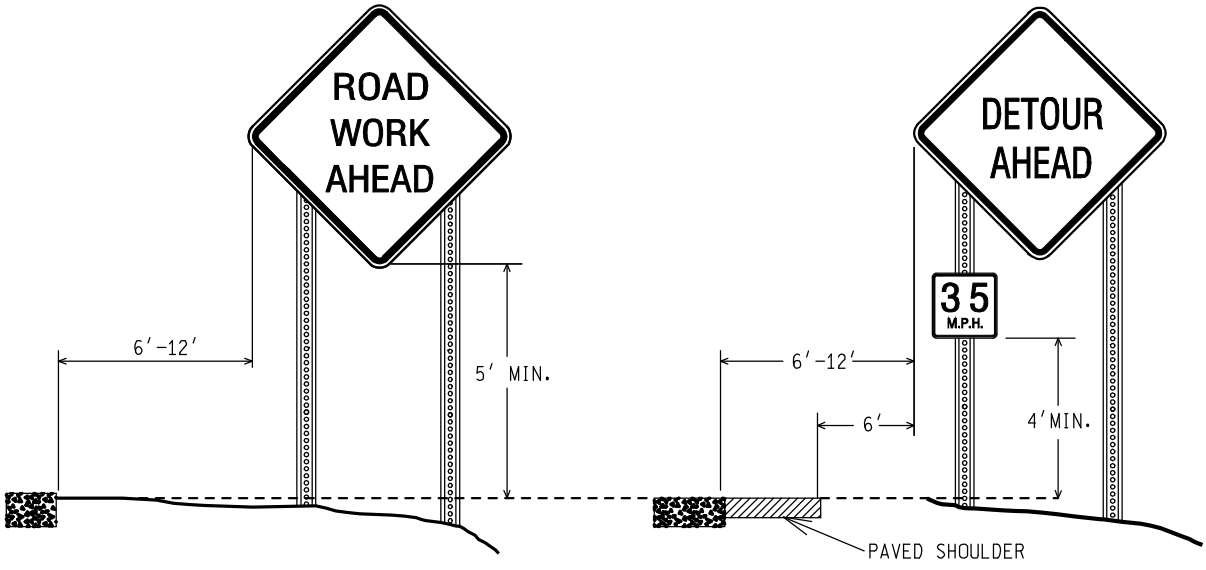
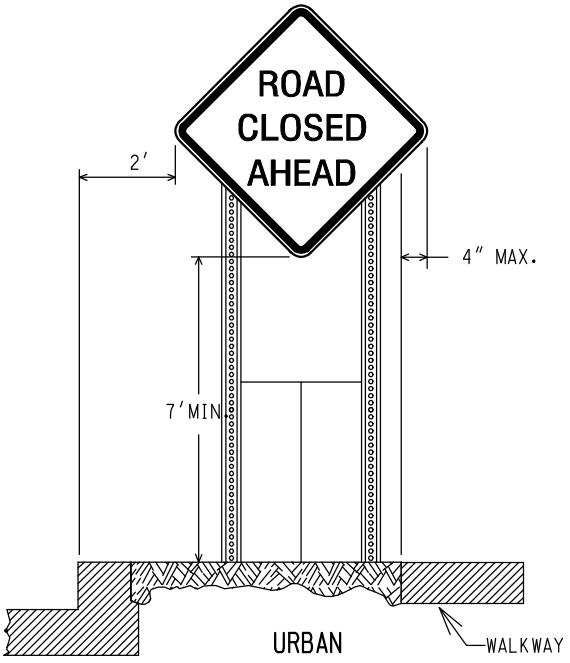
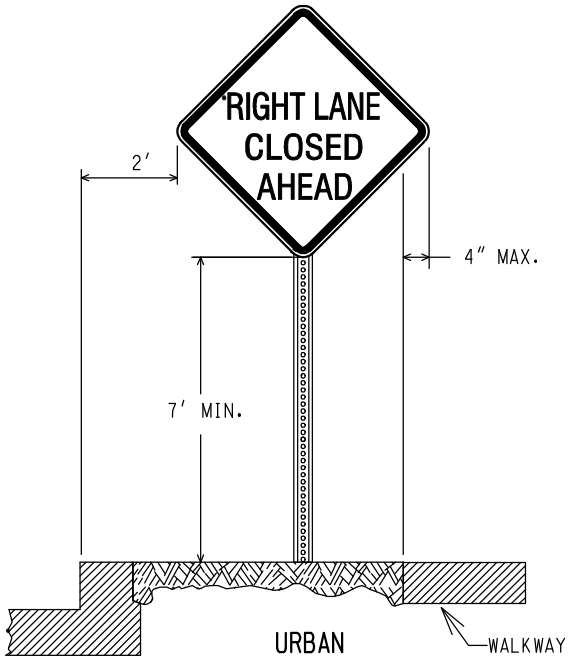


RURAL

RURAL WITH ADVISORY
SPEED PLATE



(CURBED AREAS OR WHERE
WALKWAYS ARE PRESENT)



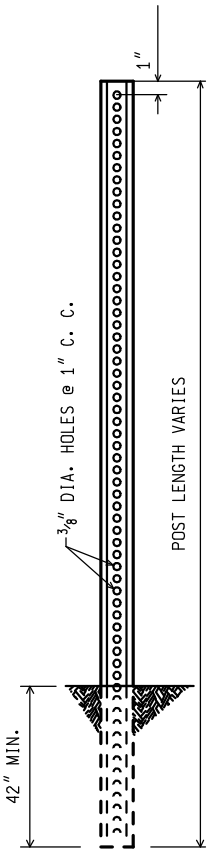
(CURBED AREAS OR WHERE
WALKWAYS ARE PRESENT)

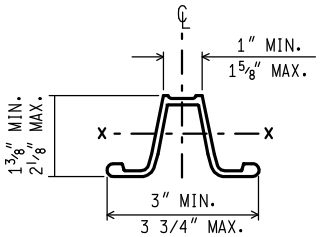
BOTTOM HEIGHT AND OFFSET

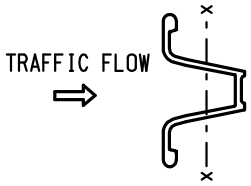
NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	PENDING FHWA APPROVAL DATE	8/2006 PLAN DATE	WZD-100-A	SHEET 3 of11
File:PW/Doc/RD/T&S/Typ/Dev/Sign MainTraf D/WZD-100-A Rev. 8/21/06 ECH				

NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.







WEIGHT = 3 lbs/ft
SECT. MOD. X.-X. = 0.31 CUBIC INCHES MIN.

3 lb. U - CHANNEL STEEL POST
(NO SPLICE)

MOUNT SIGN ON OPEN FACE OF
U - CHANNEL STEEL POST

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	PENDING FHWA APPROVAL DATE	8/2006 PLAN DATE	WZD-100-A	SHEET 4 of11
File:PW/Doc/RD/T&S/Typ/Dev/Sign MainTraf D/WZD-100-A Rev. 8/21/06 ECH				

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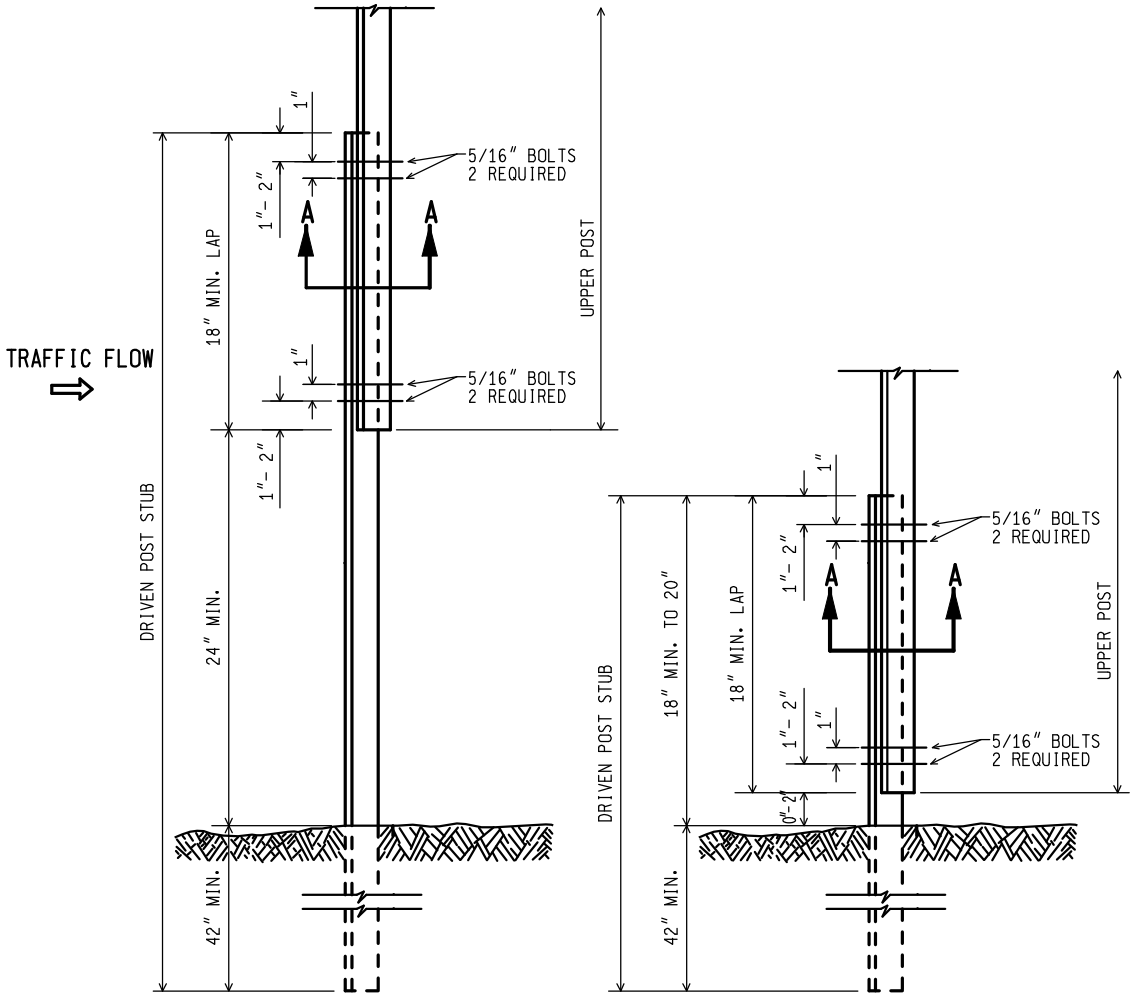


UPPER SPLICE

LOWER SPLICE

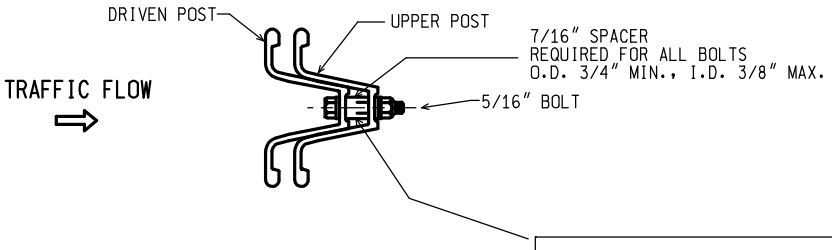
3 lb. U - CHANNEL STEEL POST
(WITH SPLICE)

MOUNT SIGN ON OPEN FACE OF
UPPER U - CHANNEL STEEL POST

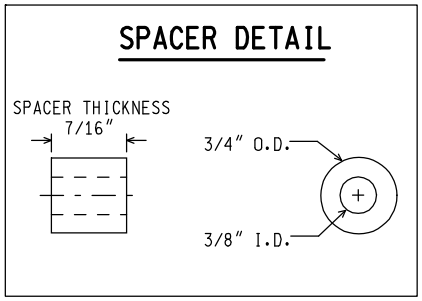
NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	PENDING FHWA APPROVAL DATE	8/2006 PLAN DATE	WZD-100-A	SHEET 5 of11
File:PW/Doc/RD/T&S/Typ/Dev/Sign MainTraf D/WZD-100-A Rev. 8/21/06 ECH				

NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.



SECTION A-A



NOTES:

1. THE SPACER THICKNESS SHALL BE 1/16" LESS THAN THE GAP BETWEEN THE POST WHEN POSITIONED IN THE UNBOLTED CONFIGURATION.

2. THE EXTERIOR BOLT (CLOSEST TO LAP), SPACER, WASHER, AND NUT SHALL BE INSTALLED IN A PREPUNCHED HOLE 1" to 2" FROM THE END OF THE LAP.

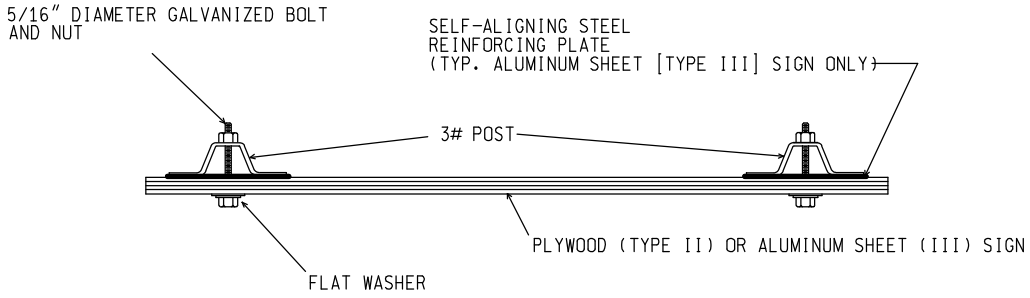
3. THE INTERIOR BOLT (FARTHEST FROM LAP), SPACER, WASHER, AND NUT SHALL BE INSTALLED IN THE NEXT PREPUNCHED HOLE.

4. THE DRIVEN POST SHALL ALWAYS BE MOUNTED IN FRONT OF THE UPPER POST WITH RESPECT TO THE ADJACENT ONCOMING TRAFFIC, REGARDLESS OF THE DIRECTION THE SIGN IS FACING.

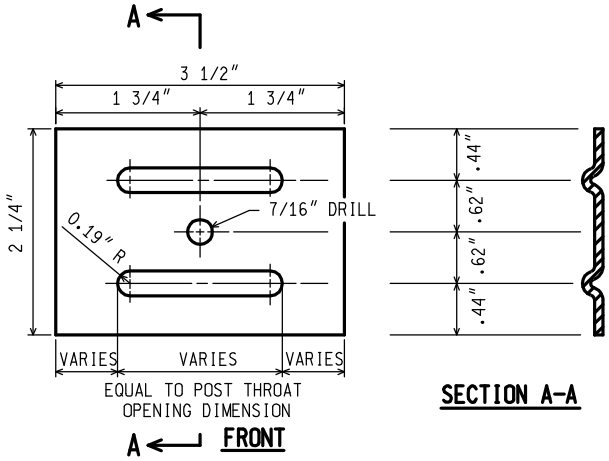
5. THE SPLICE LAP SHALL BE FASTENED BY FOUR-5/16" DIA. GALVANIZED A449 BOLTS (SAE J429 GRADE 5) OR GALVANIZED A325 BOLTS.

3 lb. U - CHANNEL STEEL POST
(WITH SPLICE)

NOT TO SCALE



SIGN TO 3 lb. POST CONNECTION



SECTION A-A

NOTES: (FOR STEEL SIGN REINF' PLATE)

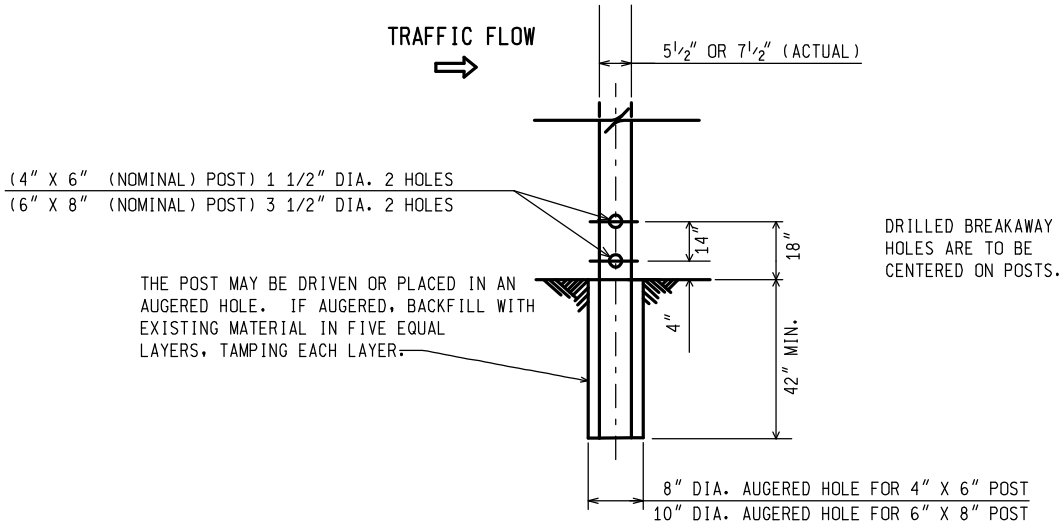
1. MATERIAL: 12 GAUGE CARBON STEEL.
2. TOLERANCE ON ALL DIMENSIONS ± 0.0625"
3. FINISH-AFTER STAMPING AND PUNCHING, GALVANIZE ACCORDING TO CURRENT SPECIFICATIONS FOR ZINC (HOT GALVANIZE) COATINGS ON PRODUCTS FABRICATED FROM PLATES OR STRIPS

STEEL SIGN REINFORCING PLATE
REQUIRED FOR TYPE III SIGNS ONLY

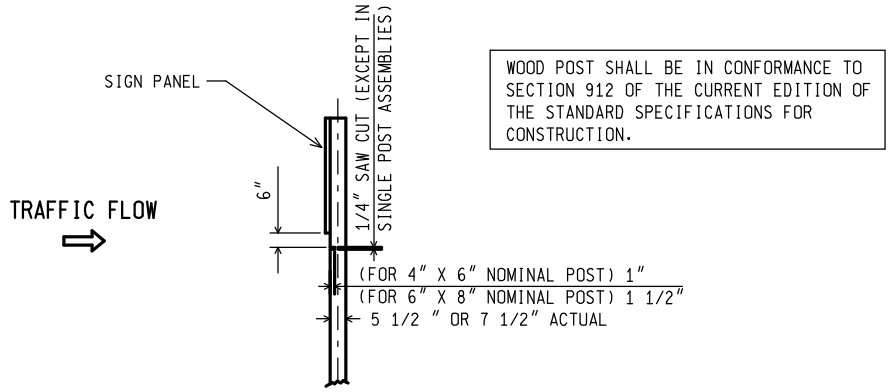
3 lb. U - CHANNEL STEEL POST SIGN CONNECTION

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	PENDING FHWA APPROVAL DATE	8/2006 PLAN DATE	WZD-100-A	SHEET 7 of11
File:PW/Doc/RD/T&S/Typ/Dev/Sign MainTraf D/WZD-100-A Rev. 8/21/06 ECH				



WOOD POST BREAKAWAY HOLES/ DIRECT EMBEDMENT DETAILS



SAW CUT DETAIL (MULTIPLE POST INSTALLATIONS)

WOOD POST DETAILS

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	PENDING FHWA APPROVAL DATE	8/2006 PLAN DATE	WZD-100-A	SHEET 8 of11
File:PW/Doc/RD/T&S/Typ/Dev/Sign MainTraf D/WZD-100-A Rev. 8/21/06 ECH				

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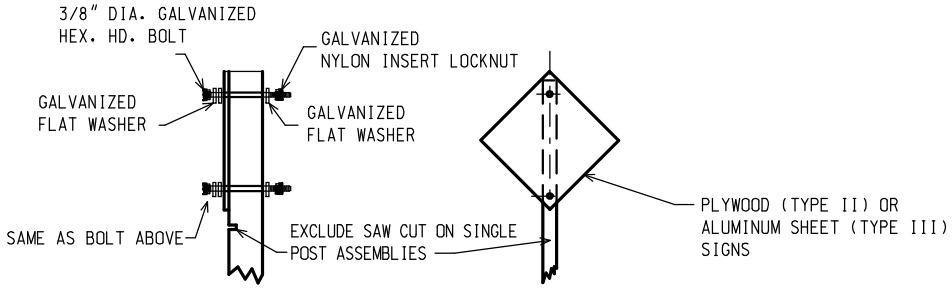
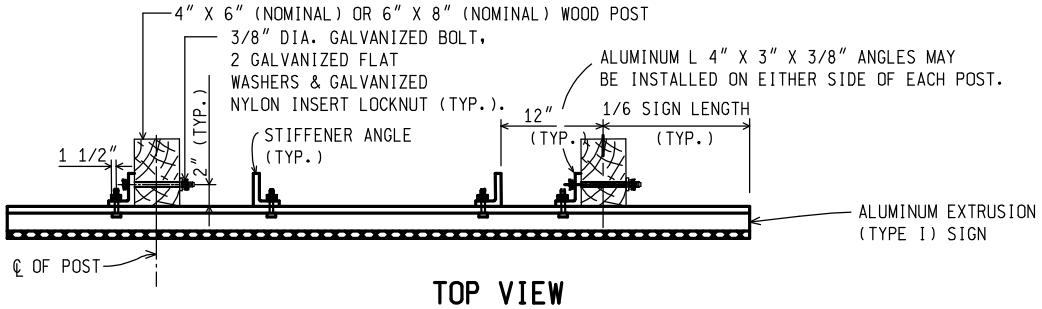
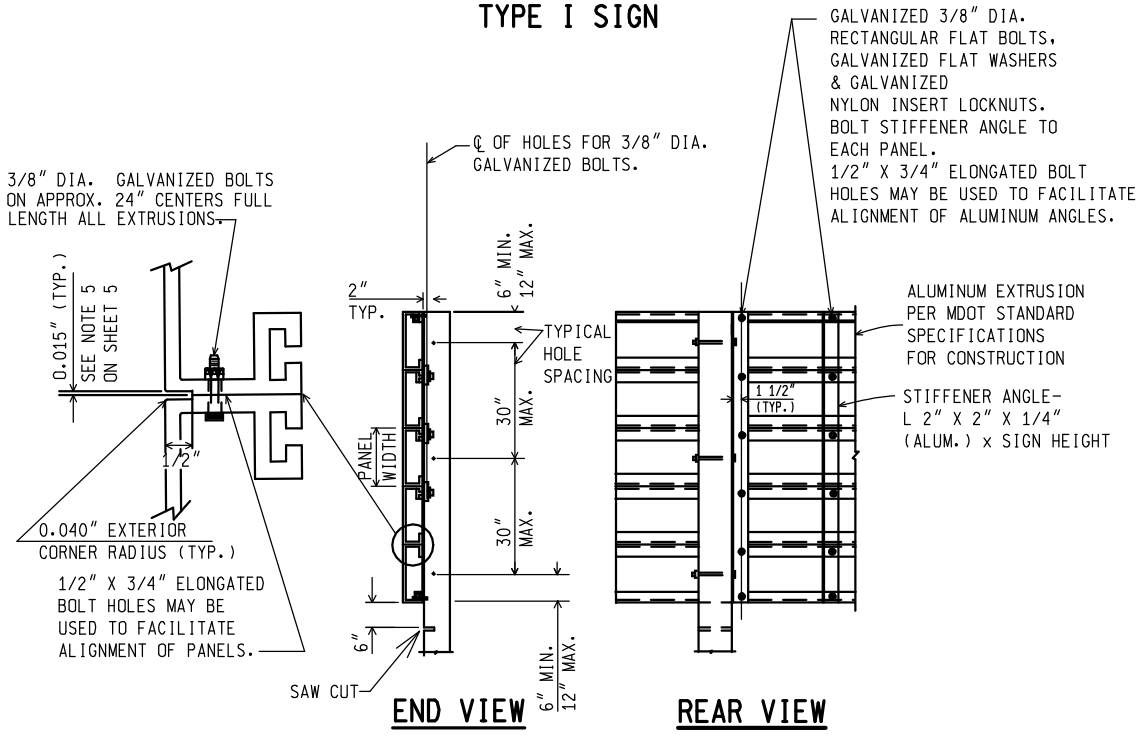


TYPE II AND TYPE III SIGNS



TOP VIEW
TYPE I SIGN



END VIEW
REAR VIEW

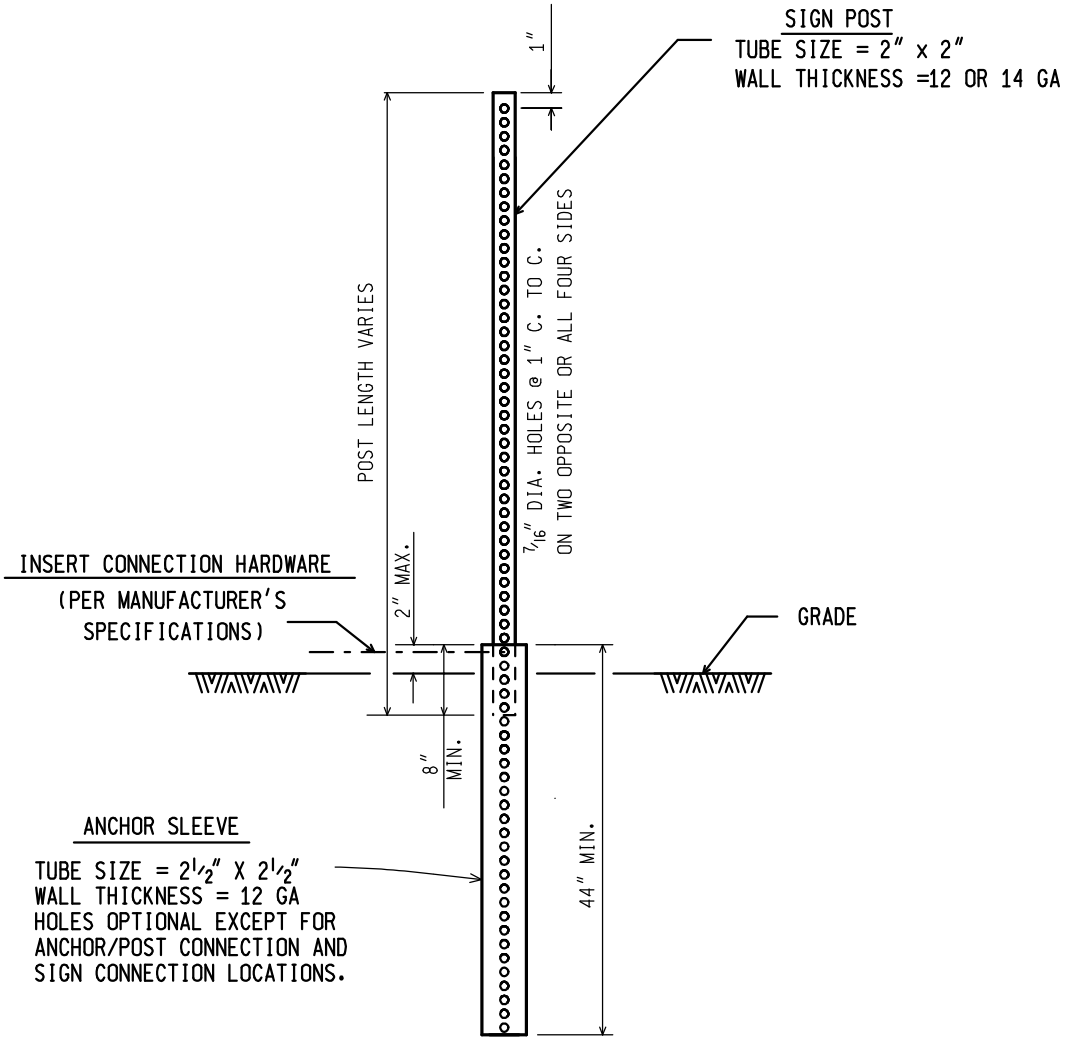
TYPE I SIGN - ERECTION DETAILS

WOOD POST CONNECTIONS

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	PENDING FHWA APPROVAL DATE	8/2006 PLAN DATE	WZD-100-A	SHEET 9 of11
File:PW/Doc/RD/T&S/Typ/Dev/Sign MainTraf D/WZD-100-A Rev. 8/21/06 ECH				

NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.



SQUARE TUBULAR STEEL POST

NOT TO SCALE

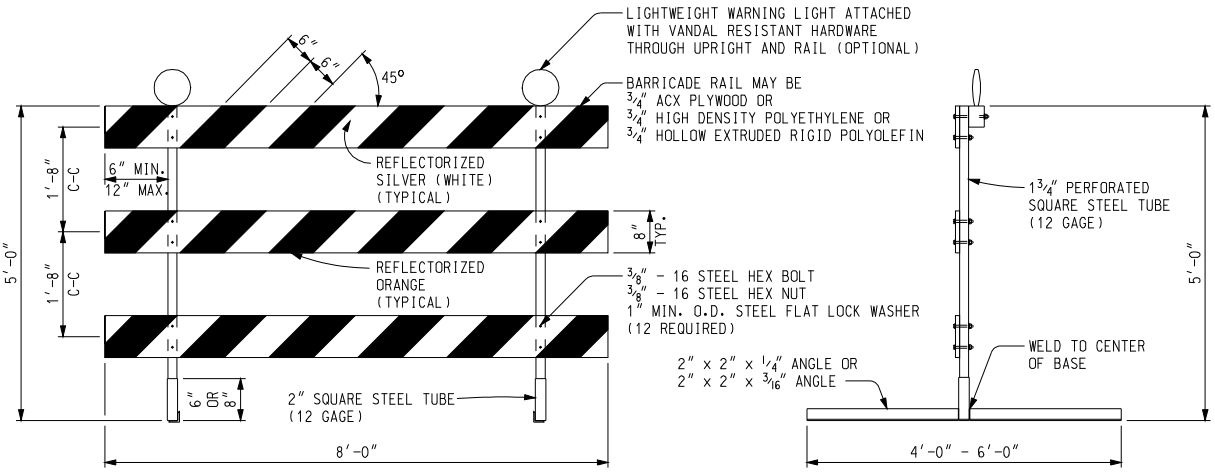
MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	PENDING FHWA APPROVAL DATE	8/2006 PLAN DATE	WZD-100-A	SHEET 10 of 11
File:PW/Doc/RD/T&S/Typ/Dev/Sign MainTraf D/WZD-100-A Rev. 8/21/06 ECH				

NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.

GENERAL NOTES:

1. A MAXIMUM OF TWO POSTS WITHIN A 7 FOOT PATH IS PERMITTED.
2. ALL SIGN POSTS SHALL COMPLY WITH NCHRP 350.
3. ALL POSTS SHALL BE EMBEDDED A MINIMUM OF 42".
4. BRACING OF POST IS NOT PERMITTED.
5. SIGN SHALL BE LEVEL, AND UPRIGHT FOR THE DURATION OF INSTALLATION.
6. ERECT POSTS SO THE SIGN FACE AND SUPPORTS DO NOT VARY FROM PLUMB BY MORE THAN 3/16" IN 3'. PROVIDE A CENTER-TO-CENTER DISTANCE BETWEEN POSTS WITHIN 2 PERCENT OF PLAN DISTANCE.
7. NO MORE THAN ONE SPLICE PER POST, AS SHOWN, WILL BE PERMITTED.
8. POST TYPES SHALL NOT BE MIXED WITHIN A SIGN SUPPORT INSTALLATION.
9. NO VERTICAL JOINTS ARE PERMITTED IN SIGN. NO HORIZONTIAL JOINTS THROUGH SIGN LEGEND OR SYMBOLS ARE PERMITTED IN SIGN
10. REMOVE SIGN POSTS AND/OR POST STUBS IN THEIR ENTIRETY WHEN NO LONGER REQUIRED.
11. ALL LABOR, MATERIALS, AND EQUIPMENT, INCLUDING TEMPORARY SUPPORTS REQUIRED TO INSTALL, MAINTAIN, RELOCATE, COVER, AND/OR REMOVE THE TEMPORARY SIGN, INCLUDING SUPPORTS, ARE CONSIDERED TO BE INCLUDED IN THE COST OF THE TEMPORARY SIGN.
12. SAW CUTS IN WOOD POSTS ARE TO BE PARALLEL TO THE BOTTOM OF THE SIGN.
13. POSTS SHALL NOT EXTEND MORE THAN 4" ABOVE TOP OF SIGN.

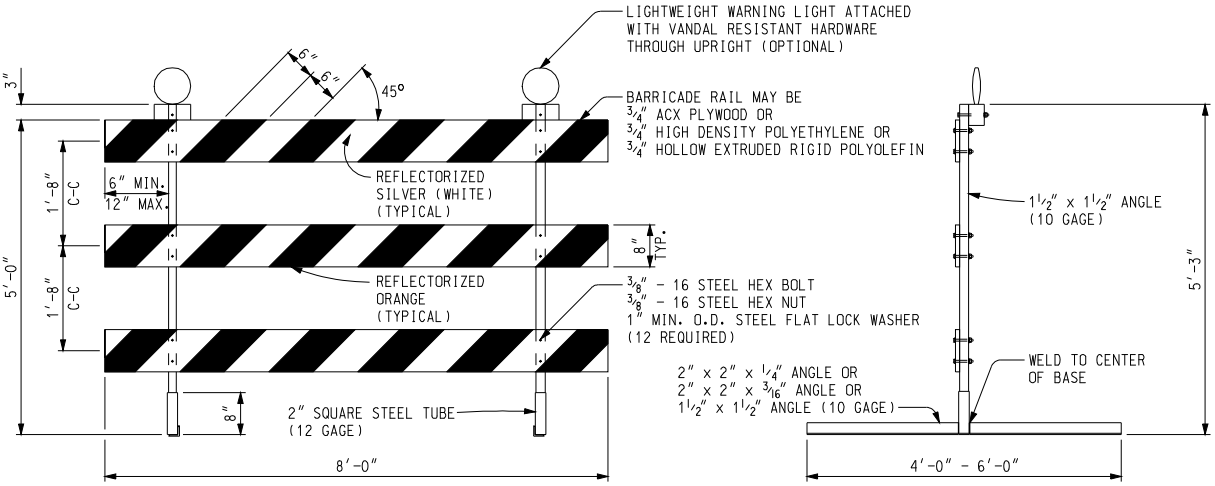
NOT TO SCALE



FRONT ELEVATION

SIDE VIEW

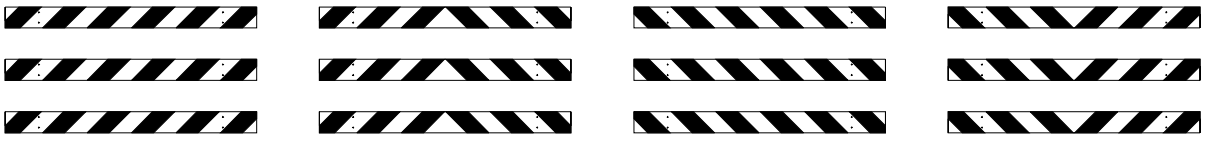
PERFORATED SQUARE STEEL TUBE OPTION



FRONT ELEVATION

SIDE VIEW

ANGLE IRON OPTION



LEFT DIRECTIONAL | BI-DIRECTIONAL | RIGHT DIRECTIONAL | CLOSURES

BARRICADE RAIL SHEETING OPTIONS
TYPE III BARRICADES

Other Type III Barricades meeting current NCHRP crash worthy criteria can be found on the FHWA Safety website at http://safety.fhwa.dot.gov/roadway_dept/road_hardware/wzd.htm

NOT TO SCALE

File: T&S/Typ/Signs/WorkZones/wzd 125 d Rev. 09/22/09 PJ

MDOT Michigan Department of Transportation

PREPARED BY TRAFFIC AND SAFETY

DRAWN BY: ECH

CHECKED BY: MWB

ENGINEER OF DELIVERY

ENGINEER OF DEVELOPMENT

(SPECIAL DETAIL)

FHWA APPROVAL DATE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

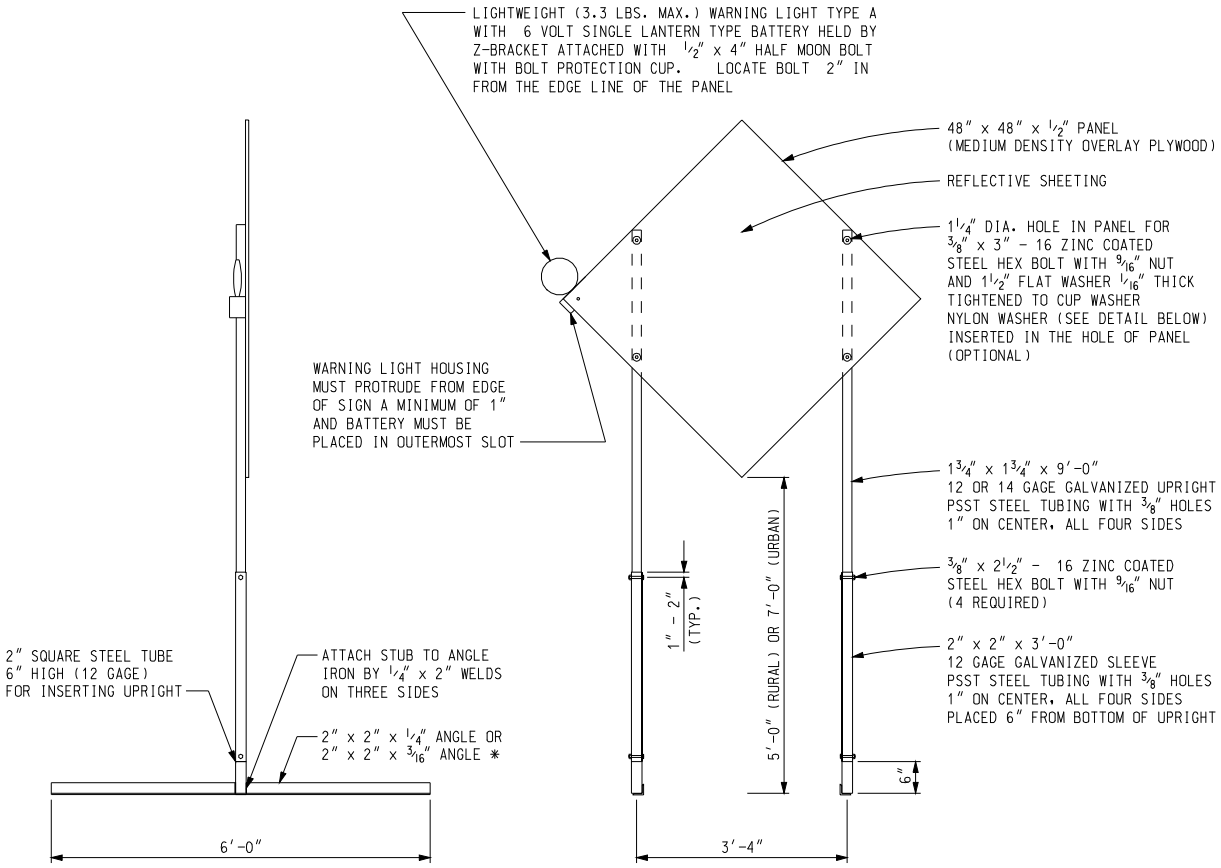
Temporary Traffic Control Devices

9/22/09
PLAN DATE

WZD-125-E

SHEET 1 of 3

NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.



SIDE VIEW

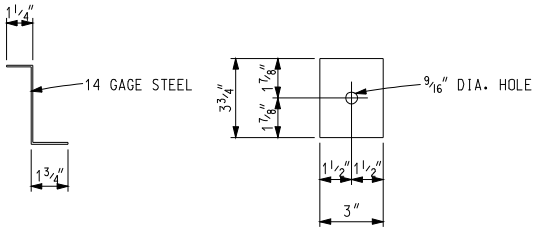
FRONT ELEVATION

TEMPORARY SIGN SUPPORT

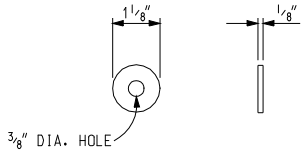
(WARNING LIGHT PLACED ON SIDE CLOSEST TO TRAFFIC)

* SIGN STAND IS BALLASTED WITH FOUR OR MORE 35 LB SANDBAGS. A MINIMUM OF ONE ON EACH END.

UPRIGHTS SHALL NOT EXTEND ABOVE THE SIGN PANEL.



Z-BRACKET DETAIL



OPTIONAL NYLON WASHER

Other temporary sign supports meeting current NCHRP crash worthy criteria can be found on the FHWA Safety website at http://safety.fhwa.dot.gov/roadway_dept/road_hardware/wzd.htm

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE	9/22/09 PLAN DATE	WZD-125-E	SHEET 2 of 3
File: T&S/Typ/Signs/WorkZones/wzd 125 d	Rev. 09/22/09 PJ			

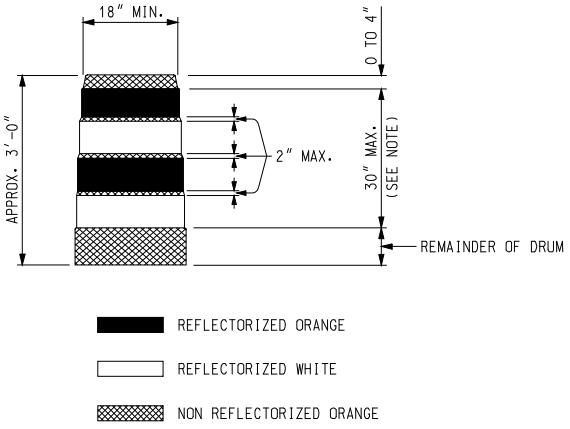
NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.

PLASTIC DRUM

PROPOSED TYPE III BARRICADE

EXISTING TYPE III BARRICADE

SYMBOLS TO BE USED ON PLANS



NOTE:
DRUMS SHALL HAVE AT LEAST 4 HORIZONTAL REFLECTORIZED STRIPES (2 ORANGE AND 2 WHITE) OF 6" UNIFORM WIDTH, ALTERNATING IN COLOR WITH THE TOPMOST REFLECTORIZED STRIPE BEING ORANGE. NON REFLECTORIZED SPACES BETWEEN THE HORIZONTAL REFLECTORIZED ORANGE AND WHITE STRIPES SHALL BE ORANGE IN COLOR AND EQUAL IN WIDTH.

PLASTIC DRUM

NOTES:

2" PERFORATED SQUARE STEEL TUBES MAY BE USED TO FABRICATE THE HORIZONTAL BASE OF THE TYPE III BARICADE.

WARNING LIGHTS SHALL BE PLACED ACCORDING TO THE CURRENT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND ALL OTHER PROVISIONS IN THE CONTRACT WHEN THEY ARE USED ON TYPE III BARRICADES.

SEE ROAD STANDARD PLANS R-113-SERIES FOR TEMPORARY CROSSOVERS FOR DIVIDED ROADWAY, AND R-126-SERIES FOR TYPICAL LOCATION AND SPACING OF PLASTIC DRUMS FOR PLACEMENT OF TEMORARY CONCRETE BARRIER.

SIGNS, BARRICADES, AND PLASTIC DRUMS SHALL BE FACED WITH PRESSURE-SENSITIVE REFLECTIVE SHEETING ACCORDING TO THE CURRENT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

SANDBAGS SHALL BE USED WHEN SUPPLEMENTAL WEIGHTS ARE REQUIRED TO ACHIEVE STABILITY OF THE BARRICADE. THE SANDBAGS SHALL BE PLACED SO THEY WILL NOT COVER OR OBSTRUCT ANY REFLECTIVE PORTION OF THE TRAFFIC CONTROL DEVICE.

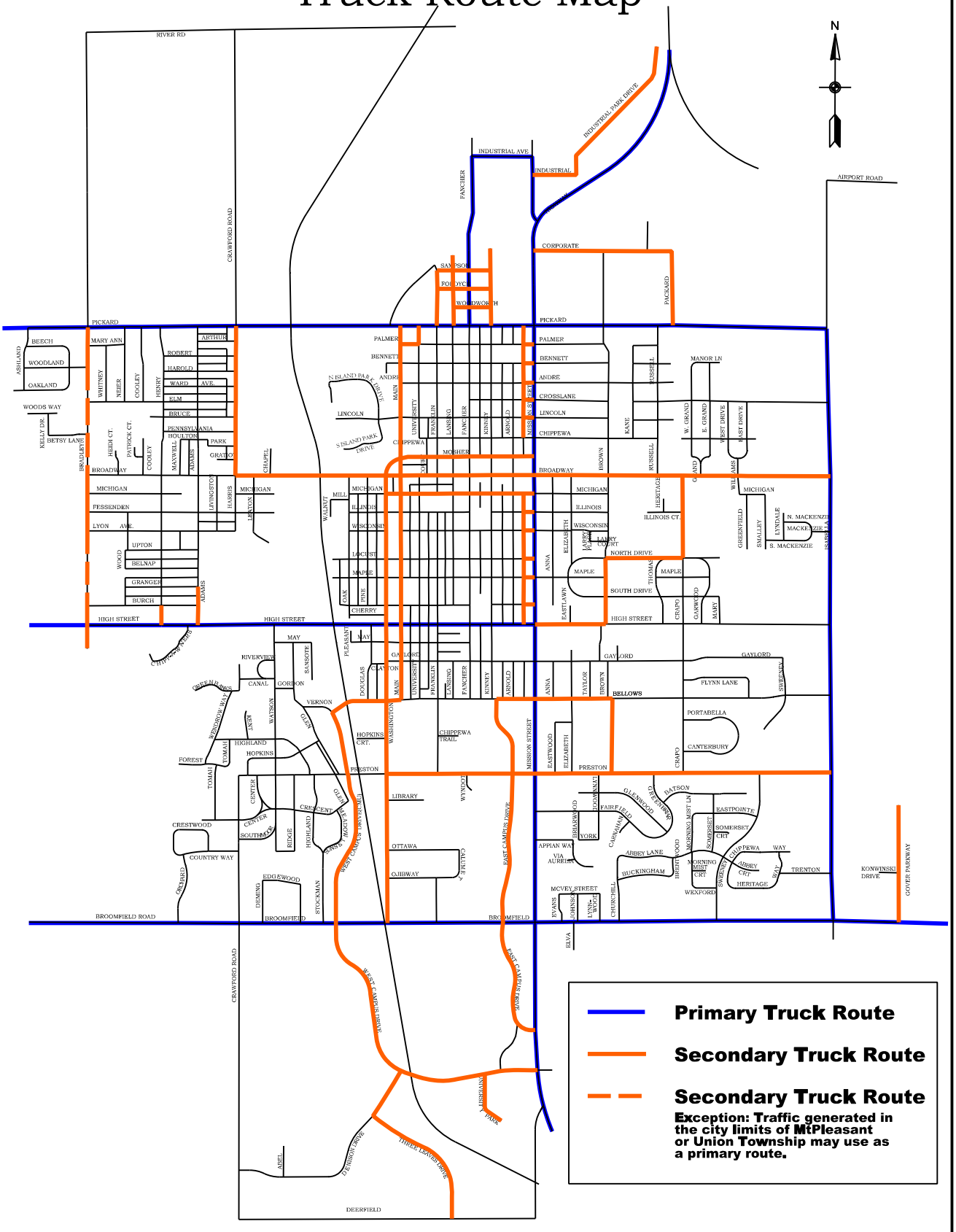
NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE	9/22/09 PLAN DATE	WZD-125-E	SHEET 3 of 3
File: T&S/Typ/Signs/WorkZones/wzd 125 d	Rev. 09/22/09 PJ			

NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.

City of Mt.Pleasant

Truck Route Map



DETAIL 27

DPW Policy for replacing private items and systems in the public right-of-way, resulting from construction damage or street and utility maintenance.

Structures, walkways, and decorative paving and pillars (including mailboxes) in the right-of-way will be replaced with functionally and aesthetically similar structures, if damaged during construction or street, sidewalk, and utility repair. Curb cuts for service walks and driveways where the drive does not exist will not be replaced. Structures in the path of street or sidewalk construction will not be replaced. Fences will not be put back up in the right-of-way.

The City of Mt. Pleasant will give advance notice asking residents to move or mark their underground irrigation systems. If sprinklers are marked, or contractors are notified of sprinklers being present, and they are damaged, the contractor will pay for the damage (except as outlined below). If not marked and the contractor is not notified of the presence of underground irrigation systems, or if no building permit was taken out at installation, the City will not pay for damage. If the City repairs a sprinkler system, they will confirm backflow prevention is in place.

Landscaping and plantings will be spared as much a practicable, but will not be replaced at the City's expense. The City will give at least one week's notice to residents to allow time to move plantings.

On state roads where structures and private paving in the right-of-way are not repaired or replaced as a result of construction damage, (MDOT rule), the City will contract for repairs ad replacements outside the road contract, within the restrictions listed above.

When installing sidewalks, the DPW will accommodate residents to a reasonable extent to move sidewalks out of the normal sidewalk path to save trees and to allow extra driveway parking. The DPW will have final discretion as to which trees to cut for sidewalk installation. If there is no obstruction and no issue other than the resident wants the sidewalk to take a different path, the City will not accommodate the resident.

THE IMPROVEMENTS COVERED BY THESE PLANS SHALL BE DONE IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF TRANSPORTATION 2012 STANDARD SPECIFICATIONS FOR CONSTRUCTION AS AMENDED BY SUPPLEMENTAL SPECIFICATIONS, SPECIAL PROVISIONS AND THE CITY OF MT. PLEASANT STANDARD SPECIFICATIONS AND DETAILS.

THE PROPOSED IMPROVEMENTS COVERED BY THESE PLANS ARE IN ACCORDANCE 4R GUIDELINES AS DETAILED IN THE MDOT LOCAL AGENCY PROGRAMS GUIDELINES FOR GEOMETRICS, DATED MARCH 4, 2014.

FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 174, 2013, THE CONTRACTOR SHALL DIAL 1-800-482-7171 OR 811 A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. 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.

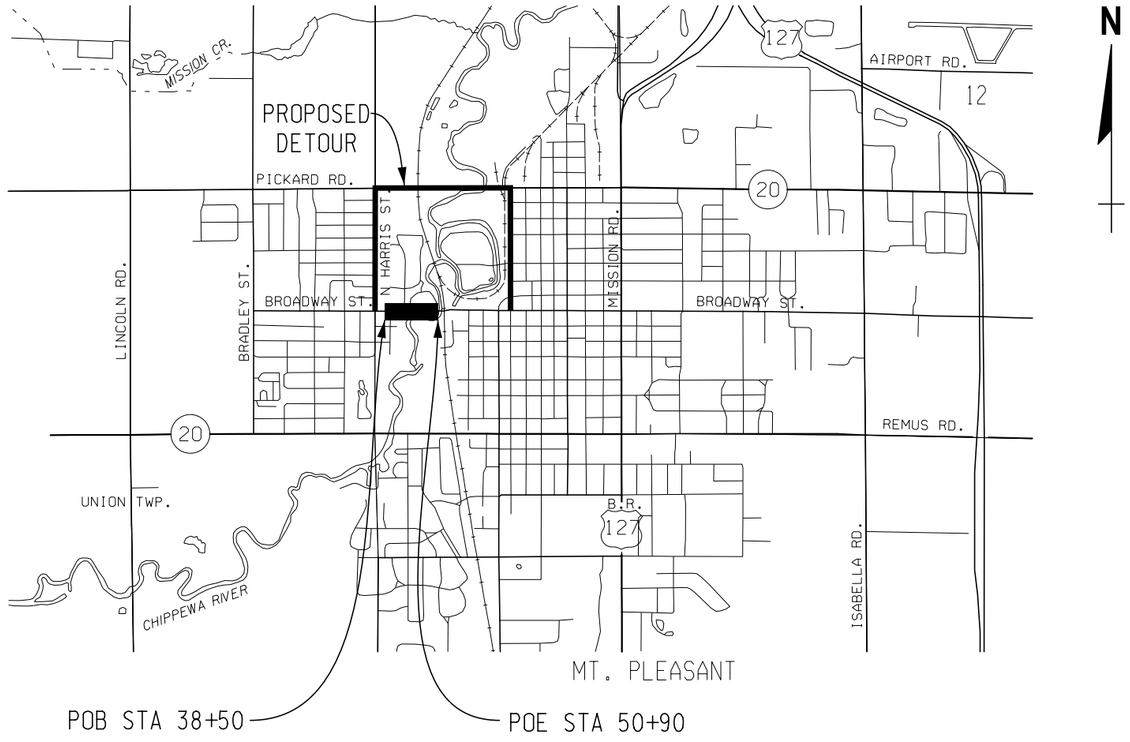
PLACING OF TEMPORARY TRAFFIC CONTROL ITEMS SHALL BE DONE IN ACCORDANCE WITH THE 2011 EDITION OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. THIS PROJECT SHALL BE OPEN TO LOCAL TRAFFIC THROUGHOUT CONSTRUCTION. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL RESIDENCES AND BUSINESSES AT ALL TIMES, AND SHALL BE RESPONSIBLE FOR CONSTRUCTION SIGNING WITHIN THE PROJECT LIMITS.

	TRAFFIC DATA			SPEED DATA	
YEAR	ADT	DHV	COMM	POSTED	DESIGN
2016	3500	500	5%	25	30
2036	6000	900	5%		

CITY OF MT. PLEASANT
DIVISION OF PUBLIC WORKS

PLANS FOR IMPROVEMENTS

BROADWAY STREET - PHASE 2



UTILITY CONTACTS:

TELEPHONE:
FRONTIER COMMUNICATIONS
345 PINE AVENUE
ALMA, MI 48801
ATTENTION: MARK MARSHALL
PHONE: 989-463-0392

TELEPHONE:
WINN TELECOM
402 N. MISSION STREET
MT. PLEASANT, MI 48858
ATTENTION: PAUL LABRAI
CELL: 989-621-8788

GAS:
DTE ENERGY/MICHCON
609 BJORNSON STREET
BIG RAPIDS, MI 49307
ATTENTION: LARRY BOURKE
PHONE: 231-592-3244
CELL: 231-349-2364

ELECTRIC:
CONSUMERS ENERGY
1325 WRIGHT AVENUE
ALMA, MI 48801
ATTENTION: RICH KLENDER
PHONE: 989-466-4279

CABLE:
CHARTER COMMUNICATIONS
915 EAST BROOMFIELD ROAD
MT. PLEASANT, MI 48858
ATTENTION: BRYON CARROLL
PHONE: 989-621-0505

MUNICIPAL CONTACTS:

MT. PLEASANT DIVISION OF PUBLIC WORKS
1303 N. FRANKLIN STREET
MT. PLEASANT, MI 48858
ATTENTION: STACIE TEWARI, CITY ENGINEER
PHONE: 989-779-5404

PLAN SHEET INDEX

MILES: 0.23

CONTRACT FOR:
FULL RECONSTRUCTION INCLUDING PAVEMENT AND CURB AND GUTTER REMOVAL, SIDEWALK IMPROVEMENTS FOR ADA COMPLIANCE, STORM SEWER DRAINAGE IMPROVEMENTS, SANITARY SEWER UPGRADES, WATER VALVE REPLACEMENT, HMA PAVING, AND CONCRETE CURB AND GUTTER CONSTRUCTION.

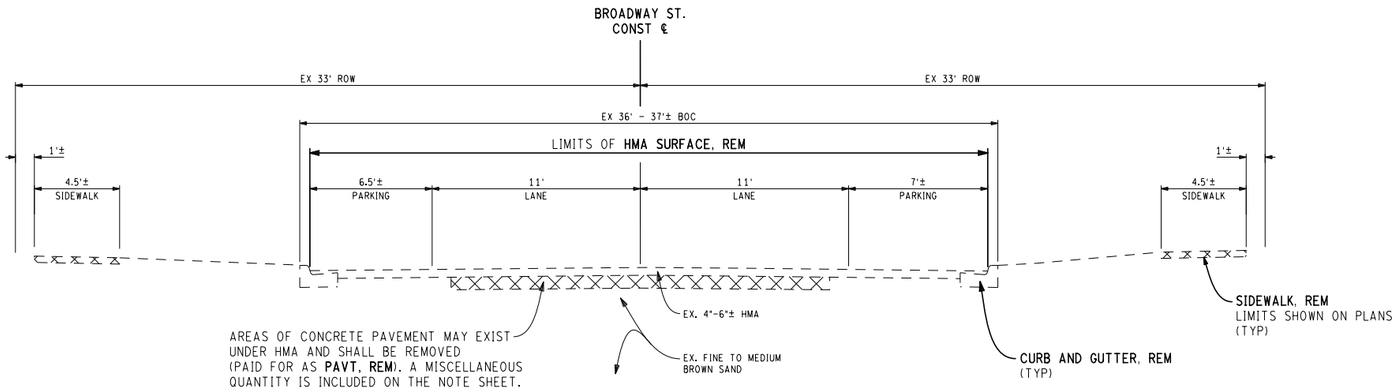
Prein&Newhof
Engineers ■ Surveyors ■ Environmental ■ Laboratory

NO SCALE

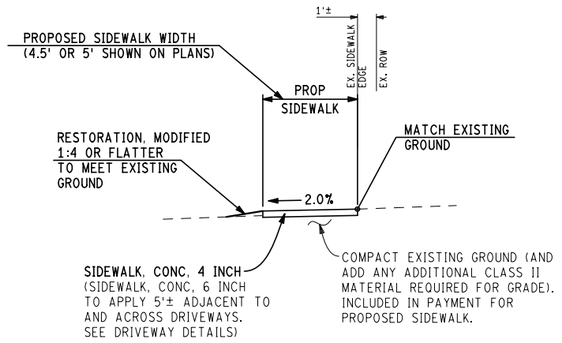
DATE: 1/20/16
DESIGN UNIT: HOUK
JN: 2130519

CITY OF MT. PLEASANT
BROADWAY STREET - PHASE 2
TITLE SHEET

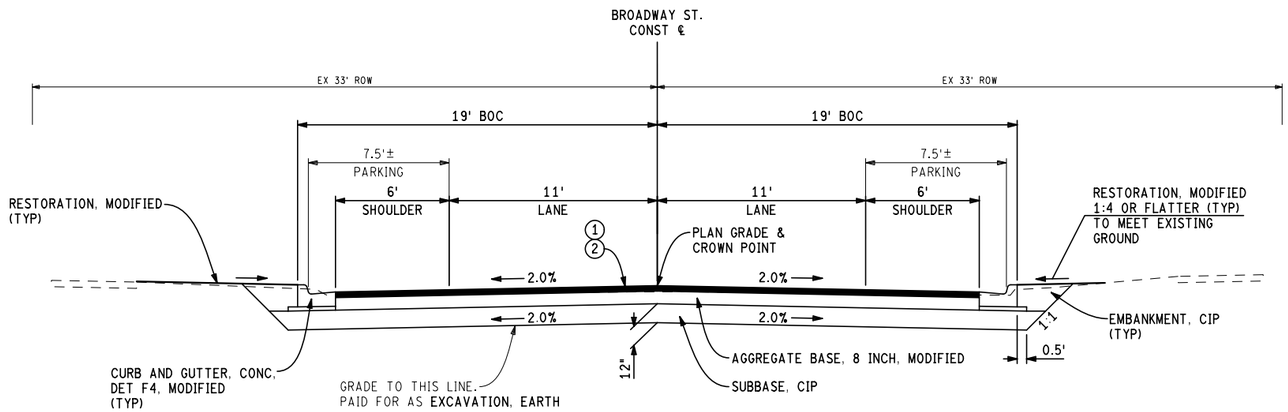
SHEET 1



EXISTING SECTION



PROPOSED SIDEWALK REPLACEMENT DETAIL

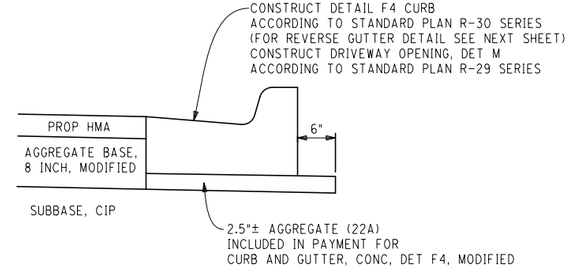


PROPOSED FULL WIDTH SECTION

SEE NEXT SHEET FOR PROPOSED BUMPOUT SECTIONS

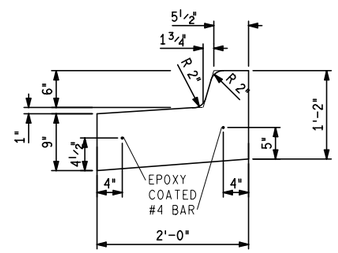
HMA APPLICATION ESTIMATE

IDENT. No.	ITEM	RATE: lbs/syd	PERFORMANCE GRADE	REMARKS
1	HMA, 13A	165	58-28	TOP COURSE, AWI=260 MIN.
2	HMA, 13A	220	58-28	LEVELING COURSE
3	HMA APPROACH	385	58-28	HMA, 13A PLACED IN 2 COURSES (220#/SYD & 165#/SYD FOR INTERSECTIONS AND COMMERCIAL DRIVES
4	HMA APPROACH	220	58-28	HMA, 13A (1 COURSE) FOR RESIDENTIAL DRIVES
	HMA BOND COAT	0.05 - 0.15 GAL/SYD		FOR INFORMATION ONLY



CURB AND GUTTER DETAIL

INCLUDES AGGREGATE 22A



REVERSE GUTTER DETAIL

TO APPLY AT CURB APPROACHES AS SHOWN ON DETAIL GRADES:
CHAPEL DRIVE (SEE SHEET 18)
NELSON PARK EXIT DRIVE (SEE SHEET 19)

PAID FOR AS CURB AND GUTTER, CONC, DET F4, MODIFIED

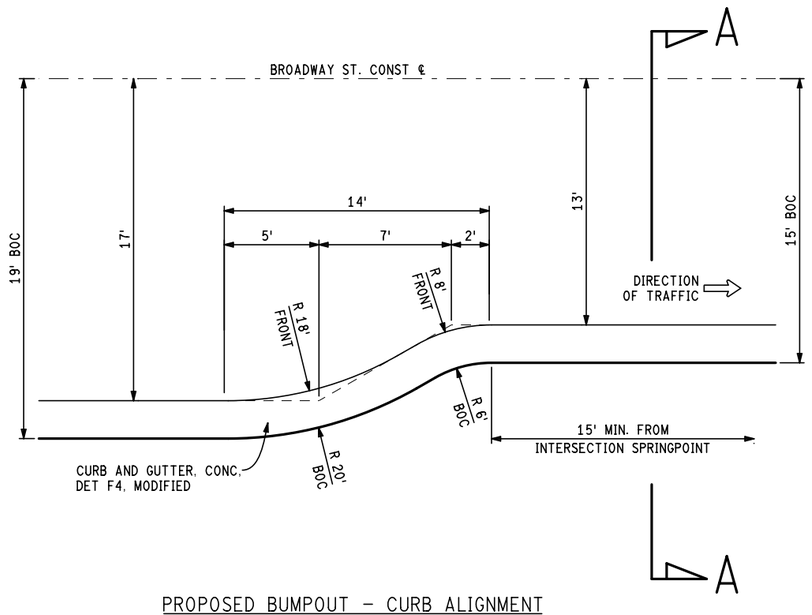
Prein&Newhof
Engineers ■ Surveyors ■ Environmental ■ Laboratory

0 HORZ. (FT) 8

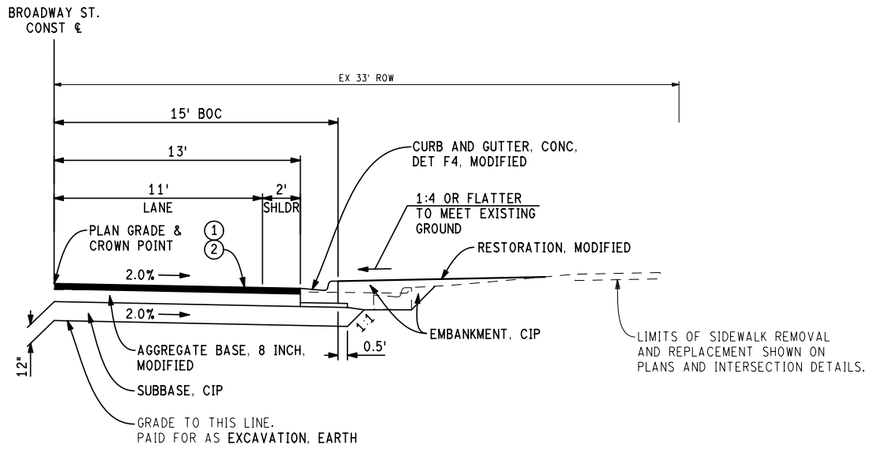
DATE: 1/20/16
DESIGN UNIT: HOUK
JN: 2130519

CITY OF MT. PLEASANT
BROADWAY STREET - PHASE 2
TYPICAL CROSS SECTIONS

SHEET 2



PROPOSED BUMPOUT – CURB ALIGNMENT

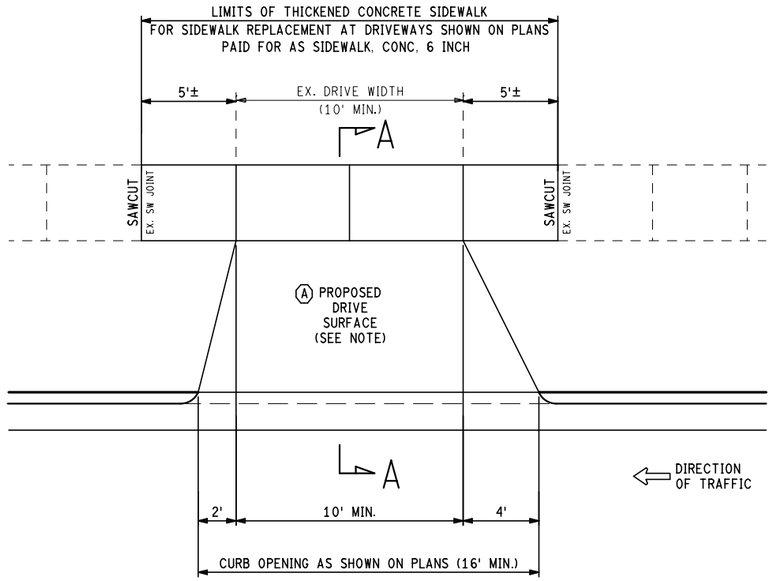


SECTION A–A
PROPOSED BUMPOUT – TYPICAL SECTION

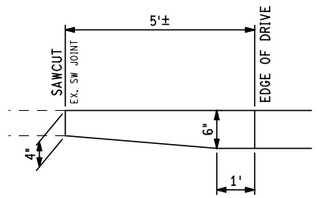
TO APPLY: LEATON STREET
STA 42+70 LT & RT
CHAPEL DRIVE
STA 47+45 RT

SEE DETAIL GRADE SHEETS FOR ADDITIONAL DETAILS

	Prein&Newhof Engineers ■ Surveyors ■ Environmental ■ Laboratory	0 HORZ. (FT)		DATE: 1/20/16	CITY OF MT. PLEASANT	SHEET
				DESIGN UNIT: HOUK	BROADWAY STREET – PHASE 2	
				JN: 2130519	CURB BUMPOUT DETAILS	3



DETAIL L RESIDENTIAL DRIVE OPENING



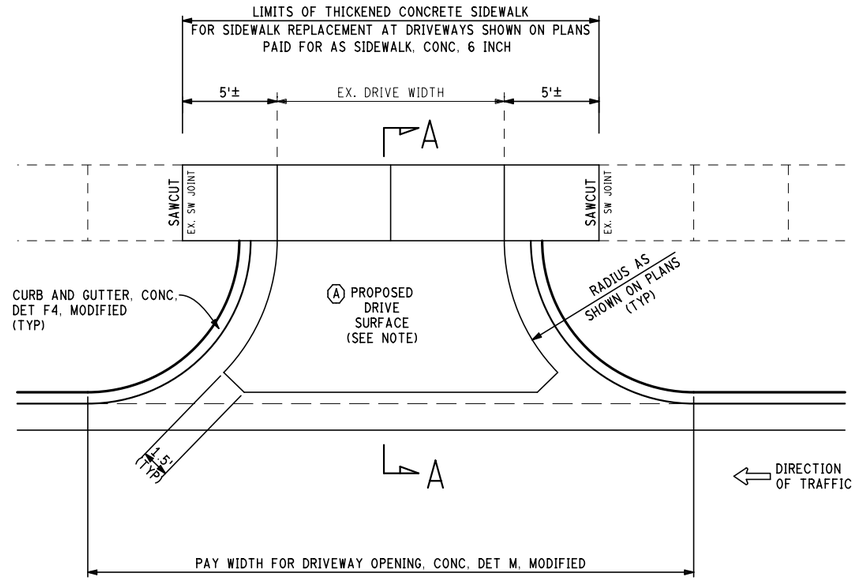
THICKENED SIDEWALK DETAIL

Ⓐ PROPOSED DRIVE SURFACE
TO MATCH EXISTING MATERIAL (SEE NOTE):

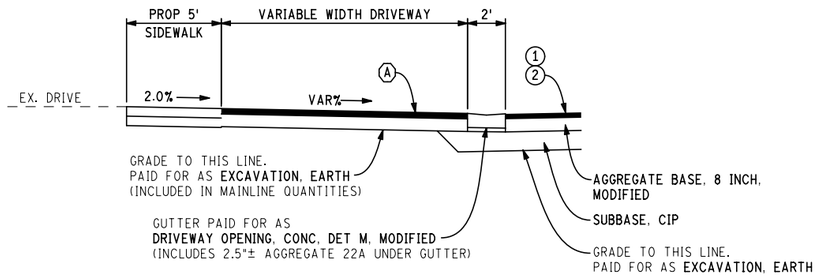
CONCRETE:
DRIVEWAY, NONREINF CONC, 6 INCH OVER
SUBBASE, CIP (4" MIN. DEPTH, INCLUDED IN MAINLINE QUANTITIES)

ASPHALT:
HMA APPROACH OVER
APPROACH, CL I, 6 INCH

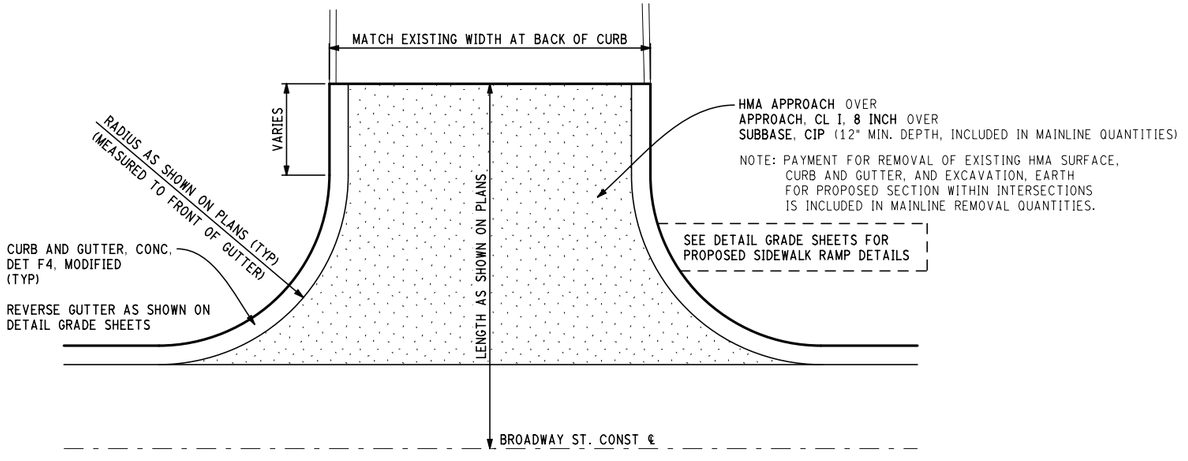
NOTE: EXISTING AGGREGATE DRIVES TO BE REPLACED WITH HMA BETWEEN CURB AND SIDEWALK



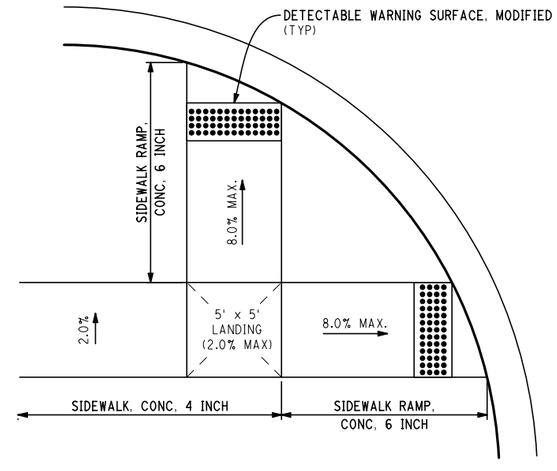
DETAIL M COMMERICIAL DRIVE OPENING



SECTION A-A



INTERSECTION DETAIL



SIDEWALK RAMP DETAIL

NOTE: PROPOSED SIDEWALK GRADES SHOWN ON THE DETAIL GRADE SHEETS ARE BASED ON LIMITED SURVEY DATA. ALL GRADES SHALL BE FIELD VERIFIED, ADJUSTED AS NECESSARY AND APPROVED BY THE ENGINEER TO MEET ALL A.D.A REQUIREMENTS PRIOR TO PLACING CONCRETE.

NEWLY CONSTRUCTED SIDEWALK OR RAMPS THAT DO NOT MEET A.D.A. REQUIREMENTS SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST THE PROJECT.

UTILITIES

UNDERGROUND UTILITIES

FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 174, 2013, THE CONTRACTOR SHALL DIAL 1-800-482-7171 OR 811 A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. 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.

ABANDONED GAS LINES

THERE ARE MULTIPLE ABANDONED GAS LINES LOCATED WITHIN THE PROJECT LIMITS. EXACT LOCATIONS ARE NOT MARKED ON PLANS. ANY GAS LINES ENCOUNTERED DURING CONSTRUCTION THAT ARE NOT SHOWN ON THE PLANS SHALL BE VERIFIED AS ABANDONED BY CALLING LARRY BOURKE WITH DTE ENERGY AT 1-231-592-3244.

EXISTING UTILITIES, WATER MAINS, AND SEWERS

THE CONTRACTOR MUST FIELD LOCATE ALL EXISTING UTILITIES TO VERIFY FLOW LINES, PIPE SIZES, AND LOCATIONS PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER IF CONFLICT EXISTS. PAYMENT IS CONSIDERED INCLUDED IN OTHER ITEMS.
THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO PROPERLY IDENTIFIED EXISTING WATER MAINS AND/OR EXISTING SEWERS DURING THE CONSTRUCTION OF THIS PROJECT.
THE CONTRACTOR SHALL PROTECT EXISTING ELECTRICAL CONDUITS, HAND HOLES AND LIGHTING FOUNDATIONS, POLES, ETC. DAMAGE CAUSED BY THE CONTRACTOR WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

UTILITY SEPARATION

THE CONTRACTOR MUST MAINTAIN A MINIMUM OF 18 INCHES OF SEPARATION BETWEEN SEWER AND WATER MAIN PIPES.

USE OF WATER DURING CONSTRUCTION

THE CONTRACTOR MUST APPLY FOR A PERMIT (FREE) TO OBTAIN WATER FROM THE CITY OF MT. PLEASANT, DIVISION OF PUBLIC WORKS, FOR WATER USED ON THIS PROJECT DURING CONSTRUCTION.

ADJUSTING VALVE BOXES

ALL WATER SERVICE AND VALVE BOXES TO BE ADJUSTED WITHIN THE LIMITS OF PROPOSED SIDEWALK SHALL BE INSTALLED WITH A PVC SLEEVE.

TEMPORARY BULKHEADS

TEMPORARY BULKHEADS MAY BE REQUIRED FOR THE PART WIDTH CONSTRUCTION OF SEWERS. ALL COSTS ASSOCIATED WITH THE TEMPORARY BULKHEADS ARE INCLUDED IN THE ITEM OF THE PIPE.

PROPOSED DRAINAGE STRUCTURES

ALL PLAN GRADES TO BE VERIFIED BY CONTRACTOR PRIOR TO INSTALLATION.

DETAIL GRADES

GRADES FOR INTERSECTIONS

ALL INTERSECTIONS ARE TO BE CONSIDERED AS COMPLETE UNITS AND THEIR GRADES DETERMINED BEFORE CONSTRUCTION IS STARTED.

SIDEWALK AND SIDEWALK RAMP GRADES

ALL SIDEWALK AND SIDEWALK RAMP GRADES SHALL BE STAKED ACCORDING TO STANDARD PLAN R-28 SERIES AND AS SHOWN ON PLANS. PRIOR TO CONSTRUCTING THE SIDEWALK RAMPS, THE ENGINEER WILL VERIFY THE GRADES AND AUTHORIZE THE CONSTRUCTION OF THE SIDEWALK AND SIDEWALK RAMPS.

PROPOSED SIDEWALK GRADES SHOWN ON THE DETAIL GRADE SHEETS ARE BASED ON LIMITED SURVEY DATA. ALL GRADES SHALL BE FIELD VERIFIED, ADJUSTED AS NECESSARY AND APPROVED BY THE ENGINEER TO MEET ALL A.D.A REQUIREMENTS PRIOR TO PLACING CONCRETE.

NEWLY CONSTRUCTED SIDEWALK OR RAMPS THAT DO NOT MEET A.D.A. REQUIREMENTS SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST THE PROJECT.

CONSTRUCTION STAKING

STAKING IS BY THE CONTRACTOR. 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.

EARTHWORK & PAVEMENT

SOIL BORINGS AND PAVEMENT CORES

THE SOIL BORING LOGS AND PAVEMENT CORES REPRESENT POINT INFORMATION. NO INFERENCE SHOULD BE MADE THAT SUBSURFACE OR PAVEMENT CONDITIONS ARE THE SAME AT OTHER LOCATIONS.

EARTHWORK

EARTHWORK QUANTITIES WILL BE PAID BASED ON PLAN QUANTITIES UNLESS KNOWN CHANGES AND AGREEMENT FOR PAYMENT BETWEEN ENGINEER AND CONTRACTOR IS MADE.
EARTHWORK FOR DRIVEWAYS, APPROACHES, AND INTERSECTIONS ARE INCLUDED IN MAINLINE QUANTITIES.

SUBBASE

PLAN QUANTITIES FOR EARTHWORK AND SUBBASE HAVE BEEN CALCULATED AS SHOWN IN THE PROPOSED TYPICAL SECTION. IN THE EVENT THAT THE EXISTING SOILS MEET SUBBASE REQUIREMENTS AND MAY BE LEFT IN PLACE, AS DIRECTED BY THE ENGINEER, EARTHWORK AND SUBBASE QUANTITIES SHALL BE ADJUSTED ACCORDINGLY, IN ACCORDANCE WITH MDOT 2012 STANDARD SPECIFICATIONS FOR CONSTRUCTION, SECTION 205.03.

PAVEMENT REMOVAL

PAVEMENT AND HMA SURFACE REMOVAL AS SHOWN ON THE PLANS WILL BE AT THE DISCRETION OF THE ENGINEER. IF IN HIS/HER JUDGMENT, AREAS OF PAVEMENT MAY BE LEFT IN PLACE, OR ADDITIONAL AREAS ADDED TO PROVIDE THE PROPER CROSS-SECTION AND BASE. CHANGES WILL BE MADE IN THE QUANTITIES.

SAWCUTTING

EXISTING CONCRETE PAVEMENT, HMA PAVEMENT, SIDEWALK, AND/OR CURB AND GUTTER SHALL BE SAWCUT PRIOR TO REMOVAL.
PAYMENT FOR SAWCUTS SHALL BE INCLUDED IN REMOVAL ITEMS.

AGGREGATE BASE

AGGREGATE BASES SHALL USE AGGREGATE 22A, UNLESS OTHERWISE SPECIFIED.
AGGREGATE BASE FOR SIDEWALK PLACED THROUGH DRIVEWAYS IS INCLUDED IN THE DRIVEWAY QUANTITIES.
PLACEMENT OF AGGREGATE BASE ON EXISTING SUBGRADE INCLUDES GRADING AND COMPACTING SUBGRADE.

SIDEWALK THICKNESS

CONCRETE SIDEWALK LOCATED ACROSS DRIVEWAYS AND ALLEYS SHALL BE A MINIMUM OF 6 INCHES THICK.

SOIL EROSION MEASURES

APPROPRIATE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO EARTH-DISTURBING ACTIVITIES. PLACE TURF ESTABLISHMENT ITEMS AS SOON AS POSSIBLE ON POTENTIAL ERODIBLE SLOPES AS DIRECTED BY THE ENGINEER. INLET PROTECTION, FABRIC BAGS MUST BE USED AT ALL CATCH BASINS WITHIN 500 FEET DOWNSTREAM OF CONSTRUCTION ACTIVITIES.

SIGNS

PERMANENT SIGNS

ANY PERMANENT SIGNS REQUIRING RELOCATION DUE TO CONTRACTOR OPERATIONS SHALL BE SALVAGED AND RESET BY THE CONTRACTOR ON NEW POSTS AT LOCATIONS DESIGNATED BY THE ENGINEER. SIGNS AND POSTS DAMAGED DURING THE REMOVAL AND STORAGE OPERATIONS SHALL BE REPLACED WITH NEW SIGNS AT THE CONTRACTORS EXPENSE. WHERE SIGNS ARE TO BE PLACED IN CONCRETE SURFACE A PVC SLEEVE SHALL BE INSTALLED.

MAILBOXES

THE CONTRACTOR SHALL RELOCATE THE EXISTING MAILBOXES AND NEWSPAPER BOXES TO A CENTRAL LOCATION, WHICH WILL BE DETERMINED BY THE CITY. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PAY ITEM POST, MAILBOX. THE CONTRACTOR SHALL INSTALL MAILBOXES AT THEIR ORIGINAL LOCATION, ON NEW POSTS, AT THE CONCLUSION OF THE PROJECT (PAID FOR AS POST, MAILBOX).

MISCELLANEOUS QUANTITIES

THE FOLLOWING ITEMS OF WORK SHALL BE DONE AS THEY APPLY THROUGHOUT THE PROJECT. THESE ITEMS ARE NOT DETAILED OR INCLUDED ON THE PLAN AND PROFILE SHEETS:

1	LSUM	Mobilization, Max. $
1	LSUM	Preconstruction Audio Video Recording
1	LSUM	Contractor Staking, Modified
1000	Syd	Pavt, Rem
200	Cyd	Subgrade Undercutting, Type II
200	Ton	Maintenance Gravel
10	Ton	Hand Patching
8	Ea	Erosion Control, Inlet Protection, Fabric Bag
2	Ea	Post, Mailbox
200	Ft	Pavt Mrkg, Type NR, Tape, 4 inch, Yellow, Temp
5	Ea	Gas/Water Shutoff Cover, Adj, Case 1

ROW / REAL ESTATE

PROPERTY OWNERS

PROPERTY OWNERS NAMES, WHERE SHOWN, ARE FOR INFORMATION ONLY, AND THEIR ACCURACY IS NOT GUARANTEED.

REPLACING PRIVATE ITEMS IN THE PUBLIC RIGHT-OF-WAY

STRUCTURES, WALKWAYS, AND DECORATIVE PAVING AND PILLARS (INCLUDING MAILBOXES) IN THE RIGHT-OF-WAY WILL BE REPLACED WITH FUNCTIONALLY AND AESTHETICALLY SIMILAR STRUCTURES, IF DAMAGED DURING CONSTRUCTION OR STREET, SIDWEALK, AND UTILITY REPAIR. CURB CUTS FOR SERVICE WALKS AND DRIVEWAYS WHERE THE DRIVE DOES NOT EXIST WILL NOT BE REPLACED. STRUCTURES IN THE PATH OF STREET OR SIDEWALK CONSTRUCTION WILL NOT BE REPLACED. FENCES WILL NOT BE PUT BACK UP IN THE RIGHT-OF-WAY.

THE CITY OF MT. PLEASANT WILL GIVE ADVANCE NOTICE ASKING RESIDENTS TO MOVE OR MARK THEIR UNDERGROUND IRRIGATION SYSTEMS. IF SPRINKLERS ARE MARKED, OR CONTRACTORS ARE NOTIFIED OF SPRINKLERS BEING PRESENT, AND THEY ARE DAMAGED, THE CONTRACTOR WILL PAY FOR THE DAMAGE (EXCEPT AS OUTLINED BELOW). IF NOT MARKED AND THE CONTRACTOR IS NOT NOTIFIED OF THE PRESENCE OF UNDERGROUND IRRIGATION SYSTEMS, OF IF NO BUILDING PERMIT WAS TAKEN OUT AT INSTALLATION, THE CITY WILL NOT PAY FOR DAMAGE. IF THE CITY REPAIRS A SPRINKLER SYSTEM, THEY WILL CONFIRM BACKFLOW PREVENTION IS IN PLACE.

LANDSCAPING AND PLANTINGS WILL BE SPARED AS MUCH AS PRACTIBLE, BUT WILL NOT BE REPLACED AT THE CITY'S EXPENSE. THE CITY WILL GIVE AT LEAST ONE WEEK'S NOTICE TO RESIDENTS TO ALLOW TIME TO MOVE PLANTINGS.

WHEN INSTALLING SIDEWALKS, THE DPW WILL ACCOMMODATE RESIDENTS TO A REASONABLE EXTENT TO MOVE SIDEWALKS OUT OF THE NORMAL SIDEWALK PATH TO SAVE TREES AND TO ALLOW EXTRA DRIVEWAY PARKING. THE DPW WILL HAVE FINAL DISCRETION AS TO WHICH TREES TO CUT FOR SIDEWALK INSTALLATION. IF THERE IS NO OBSTRUCTION AND NO ISSUE OTHER THAN THE RESIDENT WANTS THE SIDEWALK TO TALK A DIFFERENT PATH, THE CITY WILL NOT ACCOMMODATE THE RESIDENT.

ADJUSTING MONUMENT BOXES

ALL GOVERNMENT CORNERS ON THIS PROJECT SHALL BE PRESERVED, WHETHER SHOWN OR NOT. IT MAY BE NECESSARY TO PLACE OR ADJUST MONUMENT BOXES, AS REQUIRED.

RECREATIONAL PROPERTIES

THE CONTRACTOR SHALL NOT PARK ANY VEHICLES OR STORE ANY EQUIPMENT ON PUBLIC RECREATIONAL PROPERTY. ACCESS TO THE RECREATIONAL PROPERTIES MUST ALSO BE MAINTAINED AT ALL TIMES.

WATER AND SEWER SYMBOLS

- SANITARY MANHOLE
- STORM SEWER MANHOLE
- STORM SEWER CATCH BASIN
- HEADWALL
- CULVERT END SECTION
- WATER SERVICE CURB STOP BOX
- WATER GATE VALVE AND BOX
- WATER METER
- WATER GATE WELL MANHOLE
- FIRE HYDRANT
- GROUND WATER MONITORING WELL
- DRAINAGE FLOW ARROW
- W.T. — WATER TABLE (PROFILES)
- CHECK DAM (PROFILES)

MISCELLANEOUS SYMBOLS

- MAILBOX
- SIGN WITH ONE POST
- SIGN WITH TWO POSTS
- RIPRAP
- CONIFER TREE
- DECIDUOUS TREE
- SHRUB
- STUMP
- (A) ABANDON
- (B) BULKHEAD
- (C) CLEARING
- (R) REMOVAL
- (S) SAVE
- ADJ — ADJUST
- ADJ– — ADJUST DRAINAGE STRUCTURE W/COVER
- ADJ–B/O — ADJUST BY OTHERS
- REL–B/O — RELOCATE BY OTHERS
- REL– — RELOCATE W/CASE NUMBER
- SALV — SALVAGE
- SWR– — SIDEWALK RAMP TYPE
- TRAFFIC FLOW ARROW
- TH#25 — TEST HOLE NUMBER
- 00 — EROSION CONTROL ITEM NUMBER (SEE STANDARD PLAN R-96 SERIES)

UTILITY SYMBOLS

- ELECTRICAL, GUY OR TELEPHONE POLE
- (E) ELECTRICAL MANHOLE
- [E] ELECTRICAL HANDHOLE
- ELECTRICAL TRANSFORMER BOX
- ELECTRIC & LIGHT POLE
- (L) LIGHT MANHOLE
- [L] LIGHT HANDHOLE
- LIGHT POLE
- LIGHT STANDARD
- (U) GENERIC UTILITY MANHOLE
- (T) TELEPHONE MANHOLE
- TELEPHONE PEDESTAL
- GAS LINE, PETROLEUM OR FIBER OPTIC MARKER
- GAS VALVE
- GAS FILLER PIPE
- GAS WELL
- OIL WELL
- GUY ANCHOR
- POWER TOWER

HAZARDOUS OR FLAMMABLE MATERIAL — GAS AND ELECTRICAL LINES LABEL

CAUTION – CRITICAL UTILITY — FIBER OPTIC, TELEPHONE LINES, AND WATER MAIN LABEL

UNDERGROUND UTILITY LINESTYLES

- E — ELECTRIC LINE
- GAS — NATURAL GAS LINE
- OIL — OIL PIPELINE
- TEL — TELEPHONE LINE
- CTV — CABLE TV LINE
- FO — FIBER OPTICS LINE
- WM — WATER MAIN

OVERHEAD UTILITY LINESTYLES

- OH-E — ELECTRIC LINE
- OH-TEL — TELEPHONE LINE
- OH-CTV — CABLE TV LINE

ROW AND PROPERTY LINESTYLES

- FREE ACCESS ROW
- LIMITED ACCESS ROW
- GOVERNMENT LINE
- PLAT-L — LEGAL PLAT LINES
- PLAT-NL — NON-LEGAL PLAT LINES
- PARCEL-L — LEGAL PARCEL LINES
- PARCEL-NL — NON-LEGAL PARCEL LINES
- CITY LIMITS LINE

OTHER LINESTYLES

- HEDGE LINE
- TREE LINE
- FENCE
- GUARDRAIL
- MEDIAN CABLE BARRIER
- SINGLE FACE CONC BARRIER
- DOUBLE FACE CONC BARRIER
- SOUND WALL
- SS — SLOPE STAKE LINE
- DRAINAGE COURSE
- CULVERT/STORM SEWER
- SANITARY SEWER
- REM CURB OR CURB & GUTTER
- SWAMP AREA
- DELINEATED WETLANDS

PLAN SHEET PATTERNS

- HMA APPROACH/DRIVEWAY
- CONCRETE PAVEMENT BRIDGE APPROACH
- MISCELLANEOUS CONCRETE PAVEMENT
- REMOVING SIDEWALK
- REMOVING PAVEMENT
- COLD-MILLING (HMA/CONCRETE)
- HMA BASE CRUSH & SHAPE OR RUBBLIZE
- POTENTIALLY CONTAMINATED SITE

SIDEWALK RAMP PATTERNS

- DETECTABLE WARNING SURFACE
- SIDEWALK LANDING

TYPICAL SECTION PATTERNS

- CONCRETE PAVEMENT
- HMA PAVEMENT (ALL)

NOTE: PROPOSED LINESTYLES AND SYMBOLS ARE THE SAME AS EXISTING EXCEPT BOLD

REAL ESTATE & SURVEY SYMBOLS

- PROPERTY OWNERSHIP ARROW
- CONTIGUOUS PROPERTY SYMBOL
- 123456 — PARCEL NUMBER BOX
- SECTION CORNER
- QUARTER CORNER
- QUARTER QUARTER CORNER
- HALF SECTION CORNER
- HALF QUARTER CORNER
- PROPERTY CORNER
- REFERENCE MARKER
- CP# — CONTROL POINT
- BM# — BENCH MARK
- PRESERVE — PRESERVE MONUMENT BOX
- PROTECT — PROTECT MONUMENT CORNERS

TRAFFIC SYMBOLS

- PEDESTRIAN PUSH BUTTON
- PEDESTRIAN PEDESTAL
- PEDESTRIAN SIGNAL
- POLE MOUNTED SIGNAL CONTROLLER
- BASE MOUNTED SIGNAL CONTROLLER
- SIGNAL HANDHOLE
- (TS) SIGNAL MANHOLE
- POWER POLE W/PUSH BUTTON
- POWER POLE W/PEDESTRIAN SIGNAL
- PEDESTRIAN POLE W/PUSH BUTTON AND PEDESTRIAN SIGNAL
- STEEL SIGNAL POLE
- STEEL SIGNAL POLE W/PUSH BUTTON
- STEEL SIGNAL POLE W/PEDESTRIAN SIGNAL
- STEEL SIGNAL POLE W/PUSH BUTTON AND PEDESTRIAN SIGNAL
- STRAIN POLE FOR OH LIGHTS
- WOOD POLE
- RR — RAILROAD SWITCH BOX
- FLASHING RAILROAD SIGNAL

SPECIAL LEGEND THIS PROJECT

Prein&Newhof
Engineers ▪ Surveyors ▪ Environmental ▪ Laboratory

NO SCALE

DATE: 1/20/16
DESIGN UNIT: HOUK
JN: 2130519

CITY OF MT. PLEASANT
BROADWAY STREET – PHASE 2
LEGEND SHEET

SHEET 6

BROADWAY ST. CONST ℄
DEFLECTION DATA
△ = 0°54'01" LT
PI = 37+37.58 N=767255.82 E=1879611.93
NO CURVE

CP STA 37+70.1, 22.1' LT
N 767278.24 E 1879644.20
ELEV 768.81

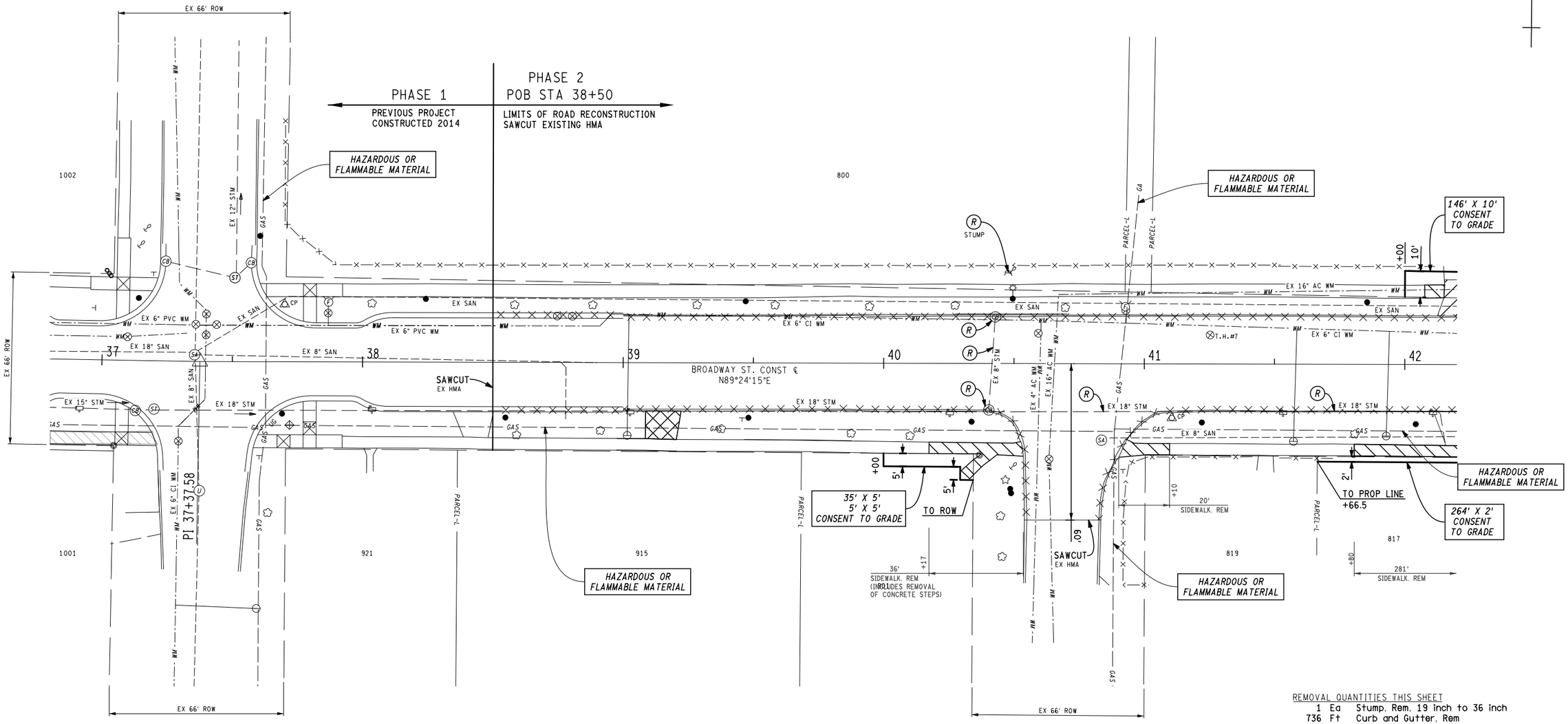
CP STA 41+10.6, 20.7' RT
N 767238.97 E 1879985.16
ELEV 766.20

N. HARRIS STREET

DRIVE REMOVAL QUANTITIES

STA. TYPE	Pavt. Rem Syd
39+14 RT, 12' CONC	16
TOTALS	16

N



N. HARRIS STREET

LEATON STREET

REMOVAL QUANTITIES THIS SHEET

1	Ea	Stump, Rem, 19 inch to 36 inch
736	Ft	Curb and Gutter, Rem
35	Syd	Sidewalk, Rem
1560	Syd	HMA Surface, Rem
2	Ea	Dr Structure, Rem
206	Ft	Sewer, Rem, Less than 24 inch

EARTHWORK QUANTITIES THIS SHEET

1500	Cyd	Excavation, Earth

Prein&Newhof
Engineers ■ Surveyors ■ Environmental ■ Laboratory

0 HORZ. (FT) 40

DATE: 1/20/16
DESIGN UNIT: HOUK
JN: 2130519

CITY OF MT. PLEASANT
BROADWAY ST., POB STA 38+50 TO STA 42+00
REMOVAL SHEET

SHEET 7

BROADWAY ST. CONST ℄
DEFLECTION DATA
△ = 0°54'01" LT
PI = 37+37.58 N=767255.82 E=1879611.93
NO CURVE

CP STA 37+70.1, 22.1' LT
N 767278.24 E 1879644.20
ELEV 768.81

CP STA 41+10.6, 20.7' RT
N 767238.97 E 1879985.16
ELEV 766.20

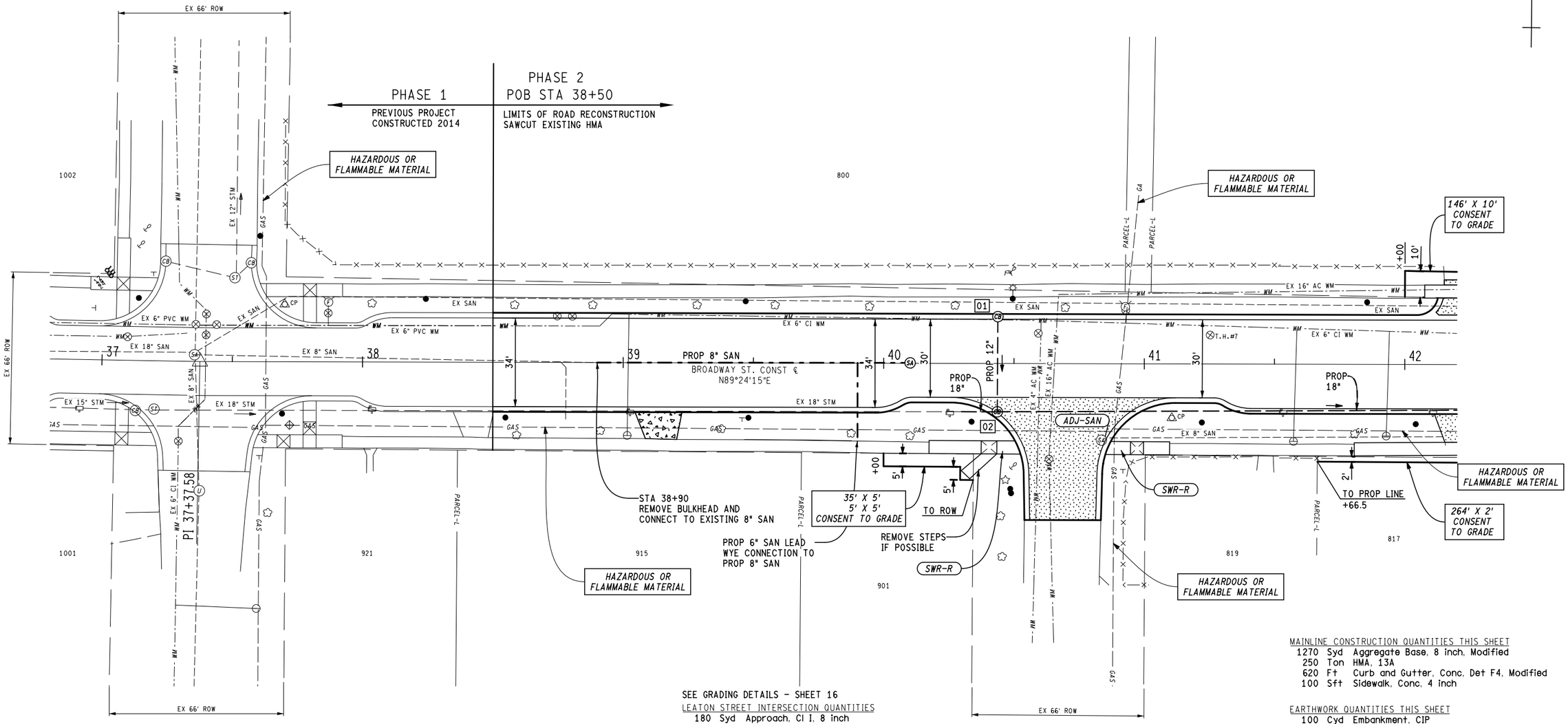
N. HARRIS STREET

DRIVE CONSTRUCTION QUANTITIES

STA. TYPE	DETAIL L CURB OPENING	Driveway, Nonreinf Conc, 6 inch
	Ft	Syd
39+14 RT, 12' CONC	18	18
TOTALS		18

PROPOSED DRAINAGE STRUCTURE TABLE

STRUCT. NO.	STA. OFFSET	RIM ELEV	Dr Structure, -- inch dia		Dr Structure Cover, CB, Modified	Sewer, Cl E, -- inch, Tr Det B	
			24	60		12	18
			Ea	Ea	Ea	Ft	Ft
01	40+43.5, 18.0' LT	765.98	1		1	37	
02	40+43.5, 18.5' LT	766.05		1	1		228
		TOTALS	1	1	2	37	228



SEE GRADING DETAILS - SHEET 16

LEATON STREET INTERSECTION QUANTITIES

180	Syd	Approach, Cl I, 8 inch
40	Ton	HMA Approach
130	Ft	Curb and Gutter, Conc, Det F4, Modified
230	Sft	Sidewalk, Conc, 4 inch
110	Sft	Sidewalk Ramp, Conc, 6 inch
12	Ft	Detectable Warning Surface, Modified

MAINLINE CONSTRUCTION QUANTITIES THIS SHEET

1270	Syd	Aggregate Base, 8 inch, Modified
250	Ton	HMA, 13A
620	Ft	Curb and Gutter, Conc, Det F4, Modified
100	Sft	Sidewalk, Conc, 4 inch

EARTHWORK QUANTITIES THIS SHEET

100	Cyd	Embankment, CIP
600	Cyd	Subbase, CIP
3.5	Sta	Restoration, Modified

UTILITY QUANTITIES THIS SHEET

1	Ea	Dr Structure Cover, Adj, Case 1
1	Ea	Dr Structure Cover, SAN, Modified
120	Ft	Sewer (San), 8 inch, Modified
30	Ft	Sewer (San), 6 inch, Modified
1	Ea	Dr Structure (San), 48 inch, Modified

N. HARRIS STREET

LEATON STREET

Prein&Newhof
Engineers ■ Surveyors ■ Environmental ■ Laboratory

0 HORZ. (FT) 40

DATE: 1/20/16
DESIGN UNIT: HOUK
JN: 2130519

CITY OF MT. PLEASANT
BROADWAY ST., POB STA 38+50 TO STA 42+00
CONSTRUCTION SHEET

SHEET 8

PHASE 1
PREVIOUS PROJECT
CONSTRUCTED 2014

PHASE 2
POB STA 38+50
LIMITS OF ROAD RECONSTRUCTION
SAWCUT EXISTING HMA

PROP TOC GRADES

768.20 | 767.98 | 767.77 | 767.55 | 767.34 | 767.12 | 766.90 | 766.67 | +43.5 01 24" CB | 766.41 | 766.13 | 765.83 | 765.51 | 765.17 | 764.80 | 764.42

PROP RIM EL 765.98
PROP INV EL
762.96 12" S

EX 6" WM

EX 6" WM

+35 EX SAN MH

PVI 38+50.00
ELEV=768.15

-0.86%

+10 48" MH

L 300.00'
K 287.53
SD 1184'

PVI 41+40.00
ELEV=765.65

RIM 766.76
PROP INV EL
759.86 8" W

PROP 8" SAN @ 0.40%

EX 8" SAN

STA 38+90 (APPROX)
CONNECT TO EX 8" SAN
EX INV 759.41

PROP TOC GRADES

768.20 | 767.98 | 767.77 | 767.55 | 767.34 | 767.12 | 766.91 | 766.74 | +43.5 02 60" CB | 765.76 | 765.59 | 765.17 | 764.80 | 764.42

PROP RIM EL 766.05
PROP INV EL
762.76 12" N
762.15 18" W
762.10 18" E

EX 18" STM

REMOVE EX 18" STM

PROP 18" STM @ 2.0%

EX GRADE AT ℄

PROP PLAN GRADE

768.42 | 768.52 | 768.62 | 768.67 | 768.57 | 768.36 | 768.15 | 767.93 | 767.72 | 767.50 | 767.29 | 767.09 | 767.07 | 766.85 | 766.67 | 766.62 | 766.43 | 766.36 | 766.22 | 766.08 | 766.00 | 765.78 | 765.73 | 765.46 | 765.34 | 765.12 | 764.84 | 764.75 | 764.47 | 764.37

770 / 765

37+00 | 37+50 | 38+00 | 38+50 | 39+00 | 39+50 | 40+00 | 40+50 | 41+00 | 41+50 | 42+00

EX GROUND PROFILE 17' LT
EX GROUND POINTS 32' LT
PROP TOP OF CURB PROFILE

EX & PROFILE
PROP PLAN GRADE

EX GROUND PROFILE 17' RT
EX GROUND POINTS 32' RT
PROP TOP OF CURB PROFILE

Prein&Newhof
Engineers ■ Surveyors ■ Environmental ■ Laboratory

0 VERT. (FT) 10
0 HORZ. (FT) 40

DATE: 1/20/16
DESIGN UNIT: HOUK
JN: 2130519

CITY OF MT. PLEASANT
BROADWAY ST., POB STA 38+50 TO STA 42+00
PROFILE SHEET

SHEET 9

BROADWAY ST. CONST ℄
DEFLECTION DATA
△ = 0°15'16" LT
PI = 43+66.51 N=767262.36 E=1880240.84
NO CURVE

CP STA 43+93.9, 23.3' LT
N 767286.04 E 1880267.84
ELEV 761.40

CP STA 44+11.4, 81.9' LT
N 767344.96 E 1880284.50
ELEV 762.49

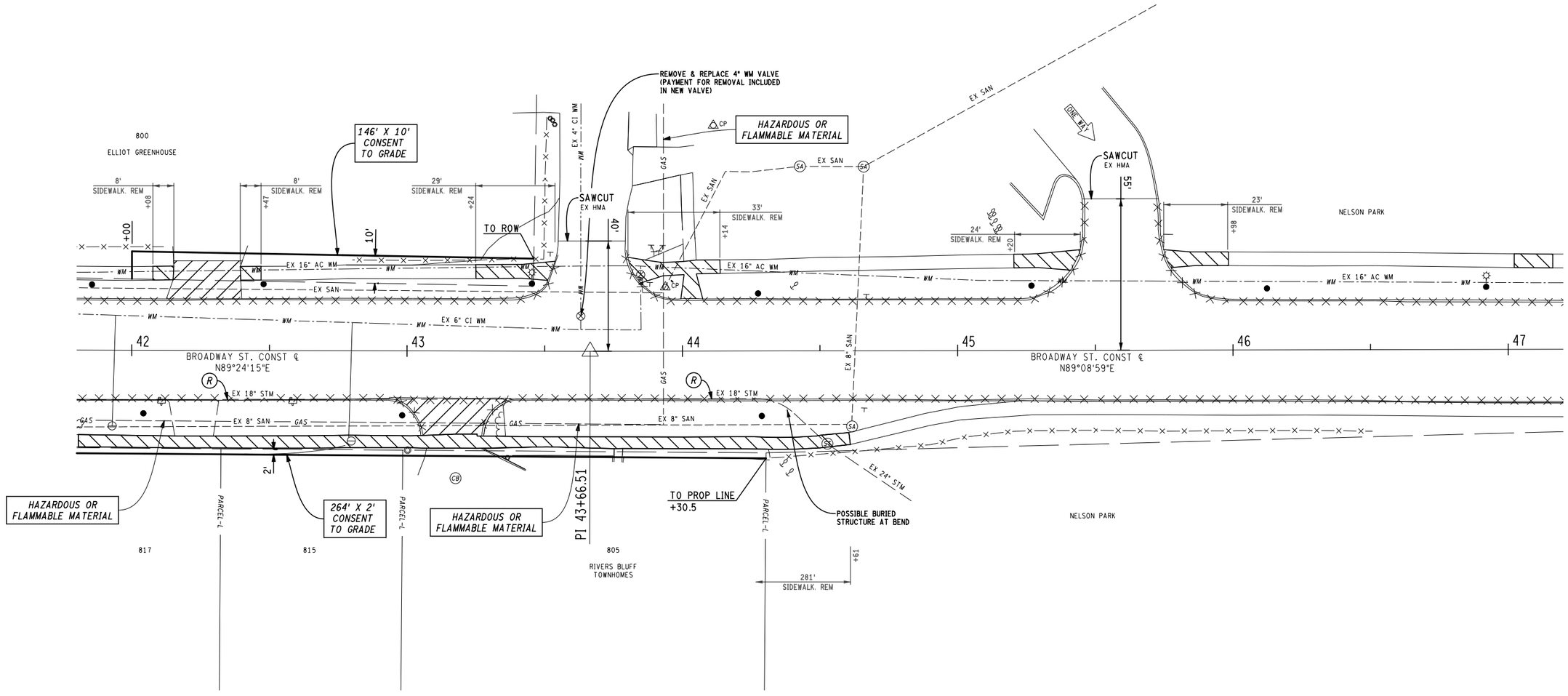
CHAPEL DRIVE

NELSON PARK
EXIT DRIVE

DRIVE REMOVAL QUANTITIES

STA. TYPE	HMA Surface, Rem	Curb and Gutter, Rem
	Syd	Ft
42+27 LT, 25' HMA	40	
42+23 RT, 15' GRVL		
43+17 RT, 22' HMA	46	40
TOTALS	86	40

N



REMOVAL QUANTITIES THIS SHEET
1025 Ft Curb and Gutter, Rem
215 Syd Sidewalk, Rem
2215 Syd HMA Surface, Rem
260 Ft Sewer, Rem, Less than 24 inch

EARTHWORK QUANTITIES THIS SHEET
2000 Cyd Excavation, Earth

Prein&Newhof
Engineers ■ Surveyors ■ Environmental ■ Laboratory

0 HORZ. (FT) 40

DATE: 1/20/16
DESIGN UNIT: HOUK
JN: 2130519

CITY OF MT. PLEASANT
BROADWAY ST., STA 42+00 TO STA 47+00
REMOVAL SHEET

SHEET 10

BROADWAY ST. CONST ℄
DEFLECTION DATA
△ = 0°15'16" LT
PI = 43+66.51 N=767262.36 E=1880240.84
NO CURVE

CP STA 43+93.9, 23.3' LT
N 767286.04 E 1880267.84
ELEV 761.40

CP STA 44+11.4, 81.9' LT
N 767344.96 E 1880284.50
ELEV 762.49

CHAPEL DRIVE

PROPOSED DRAINAGE STRUCTURE TABLE

STRUCT. NO.	STA. OFFSET	RIM ELEV	Dr Structure, -- inch dia	Dr Structure, Add Depth of -- inch dia, 8 foot to 15 foot	Dr Structure Cover, CB, Modified	Sewer, Cl E, -- inch, Tr Det B
			48	48		18
			Ea	Ea	Ea	Ft
03	42+57.0, 17.3' RT	762.95	1		1	168
04	44+25.0, 13.3' RT	759.85	1	3	1	36
		TOTALS	2	3	2	204

NELSON PARK EXIT DRIVE

DRIVE CONSTRUCTION QUANTITIES

STA. TYPE	DETAIL L CURB OPENING	Driveway Opening, Conc, Det M, Modified	Approach, Cl I, 6 inch	HMA Approach	Curb and Gutter, Conc, Det F4, Modified
	Ft	Ft	Syd	Ton	Ft
42+27 LT, 25' HMA		45	40	7	14
42+23 RT, 15' GRVL	21		22	3	
43+17 RT, 22' HMA		60	60	10	34
TOTALS		105	122	20	48

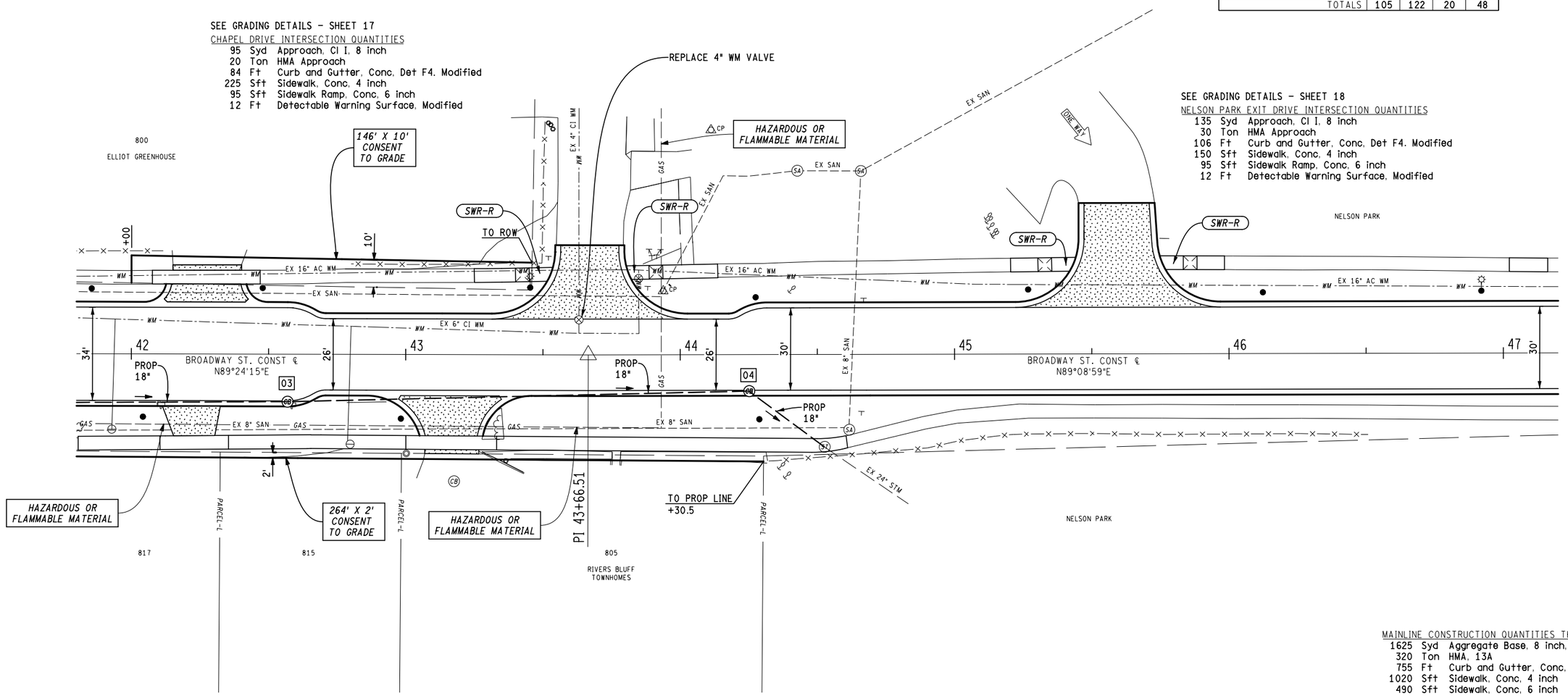
N

SEE GRADING DETAILS - SHEET 17

CHAPEL DRIVE INTERSECTION QUANTITIES
- 95 Syd Approach, Cl I, 8 inch
- 20 Ton HMA Approach
- 84 Ft Curb and Gutter, Conc, Det F4, Modified
- 225 Sft Sidewalk, Conc, 4 inch
- 95 Sft Sidewalk Ramp, Conc, 6 inch
- 12 Ft Detectable Warning Surface, Modified

SEE GRADING DETAILS - SHEET 18

NELSON PARK EXIT DRIVE INTERSECTION QUANTITIES
- 135 Syd Approach, Cl I, 8 inch
- 30 Ton HMA Approach
- 106 Ft Curb and Gutter, Conc, Det F4, Modified
- 150 Sft Sidewalk, Conc, 4 inch
- 95 Sft Sidewalk Ramp, Conc, 6 inch
- 12 Ft Detectable Warning Surface, Modified



MAINLINE CONSTRUCTION QUANTITIES THIS SHEET
- 1625 Syd Aggregate Base, 8 inch, Modified
- 320 Ton HMA, 13A
- 755 Ft Curb and Gutter, Conc, Det F4, Modified
- 1020 Sft Sidewalk, Conc, 4 inch
- 490 Sft Sidewalk, Conc, 6 inch
- 1 Ea Water Valve, 4 inch

EARTHWORK QUANTITIES THIS SHEET
- 200 Cyd Embankment, CIP
- 700 Cyd Subbase, CIP
- 5 Sta Restoration, Modified

Prein&Newhof
Engineers ■ Surveyors ■ Environmental ■ Laboratory

0 HORZ. (FT) 40

DATE: 1/20/16
DESIGN UNIT: HOUK
JN: 2130519

CITY OF MT. PLEASANT
BROADWAY ST., STA 42+00 TO STA 47+00
CONSTRUCTION SHEET

SHEET 11

765
760
765
760
755
750

764.42 764.01 763.58 763.20 762.73 762.26 762.13 760.78 760.30 759.80 759.32 758.87 758.49 757.47 757.43 757.16 756.92 756.73 756.57

PROP TOC GRADES

EX 6"WM

764.42 764.01 763.58 763.20 762.73 762.26 761.78 761.30 760.83 760.35 759.88 759.40 758.95 758.53 758.16 757.81 757.51 757.24 757.00 756.81 756.65

03 +57.0 48" CB

04 +25.0 48" CB

1.90%

PROP TOC GRADES

PROP 18" STM @ 2.0%

PROP 18" STM @ 2.0%

PROP RIM EL 762.95
PROP INV EL
757.90 18" W
757.80 18" E

REMOVE EX 18" STM

EX 8" SANITARY
EXISTING ELEV UNKNOWN

PROP 18" STM @ 5.0%

EX RIM EL 759.10
INV EL
749.21 18" NW (EX & PROP)
748.17 18" SE (EX)

PROP RIM EL 759.85
PROP INV EL
754.52 18" W
751.02 18" SE

EX 24" STM

EX OUTLET INV
EL 747.51 24"

EX GRADE AT ℄

PROP PLAN GRADE

764.47 764.37 764.08 763.96 763.67 763.53 763.26 763.07 762.80 762.60 762.27 762.13 761.88 761.65 761.35 761.17 760.86 760.70 760.42 760.22 759.97 759.75 759.42 759.27 759.03 758.82 758.65 758.40 758.28 758.03 757.90 757.68 757.58 757.38 757.30 757.11 757.11 756.87 756.83 756.68 756.73 756.52

42+00 42+50 43+00 43+50 44+00 44+50 45+00 45+50 46+00 46+50 47+00

EX GROUND PROFILE 17' LT
EX GROUND POINTS 32' LT
PROP TOP OF CURB PROFILE

EX & PROFILE
PROP PLAN GRADE

EX GROUND PROFILE 17' RT
EX GROUND POINTS 32' RT
PROP TOP OF CURB PROFILE

Prein&Newhof
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0 VERT. (FT) 10
0 HORZ. (FT) 40

DATE: 1/20/16
DESIGN UNIT: HOUK
JN: 2130519

CITY OF MT. PLEASANT
BROADWAY ST., STA 42+00 TO STA 47+00
PROFILE SHEET

SHEET 12

NELSON PARK
ENTRANCE DRIVE

BROADWAY ST. CONST ℄
DEFLECTION DATA
△ = 0°42'13" RT
PI = 50+87.61 N=767273.06 E=1880961.85
NO CURVE

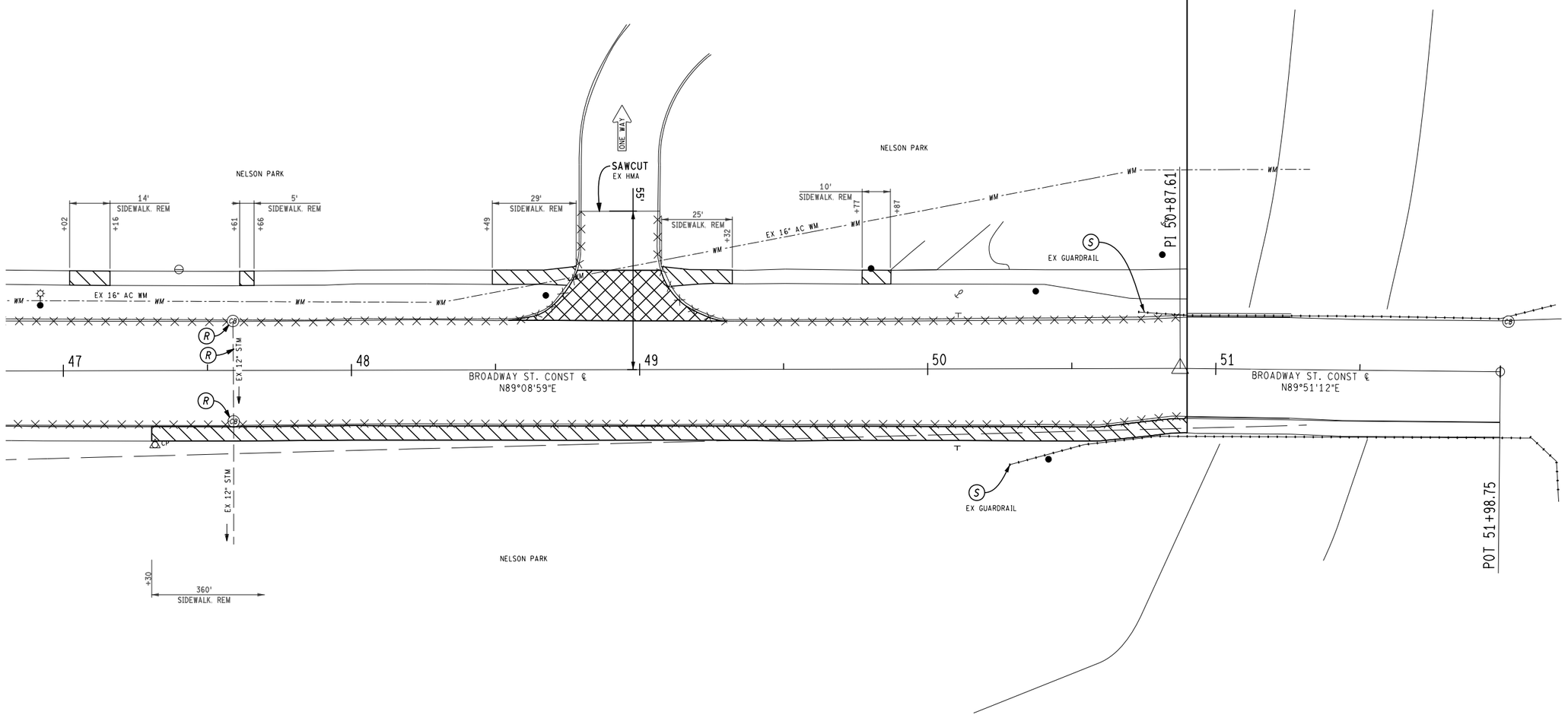
CP STA 47+31.8, 25.8' RT
N 767242.03 E 1880606.43
ELEV 756.71

CP STA 53+07.4, 23.2' RT
N 767261.66 E 1881181.62
ELEV 758.34

CHIPPEWA RIVER

N

POE STA 50+90
LIMITS OF ROAD RECONSTRUCTION
SAWCUT EXISTING HMA



REMOVAL QUANTITIES THIS SHEET

810	Ft	Curb and Gutter, Rem
245	Syd	Sidewalk, Rem
1625	Syd	HMA Surface, Rem
85	Syd	Pavt, Rem
2	Ea	Dr Structure, Rem
36	Ft	Sewer, Rem, Less than 24 inch

EARTHWORK QUANTITIES THIS SHEET

1500	Cyd	Excavation, Earth

CHIPPEWA RIVER

Prein&Newhof Engineers ▪ Surveyors ▪ Environmental ▪ Laboratory	0 HORZ. (FT) 40		DATE: 1/20/16 DESIGN UNIT: HOUK JN: 2130519	CITY OF MT. PLEASANT BROADWAY ST., STA 47+00 TO POE STA 50+90 REMOVAL SHEET	SHEET 13

PROPOSED DRAINAGE STRUCTURE TABLE

STRUCT. NO.	STA. OFFSET	RIM ELEV	Dr Structure, __ inch dia		Dr Structure Cover, CB, Modified	Sewer, CI E, __ inch, Tr Det B
			24	48		12
			Ea	Ea	Ea	Ft
05	47+59.0, 17.3' LT	755.83		1	1	36
06	47+59.0, 17.3' RT	755.83		1	1	
07	48+00.0, 18.0' LT	755.78	1		1	41
08	48+00.0, 18.0' RT	755.78	1		1	41
		TOTALS	2	2	4	118

NELSON PARK
ENTRANCE DRIVE

BROADWAY ST. CONST ℄
DEFLECTION DATA
△ = 0°42'13" RT
PI = 50+87.61 N=767273.06 E=1880961.85
NO CURVE

CP STA 47+31.8, 25.8' RT
N 767242.03 E 1880606.43
ELEV 756.71

CP STA 53+07.4, 23.2' RT
N 767261.66 E 1881181.62
ELEV 758.34

CHIPPEWA RIVER

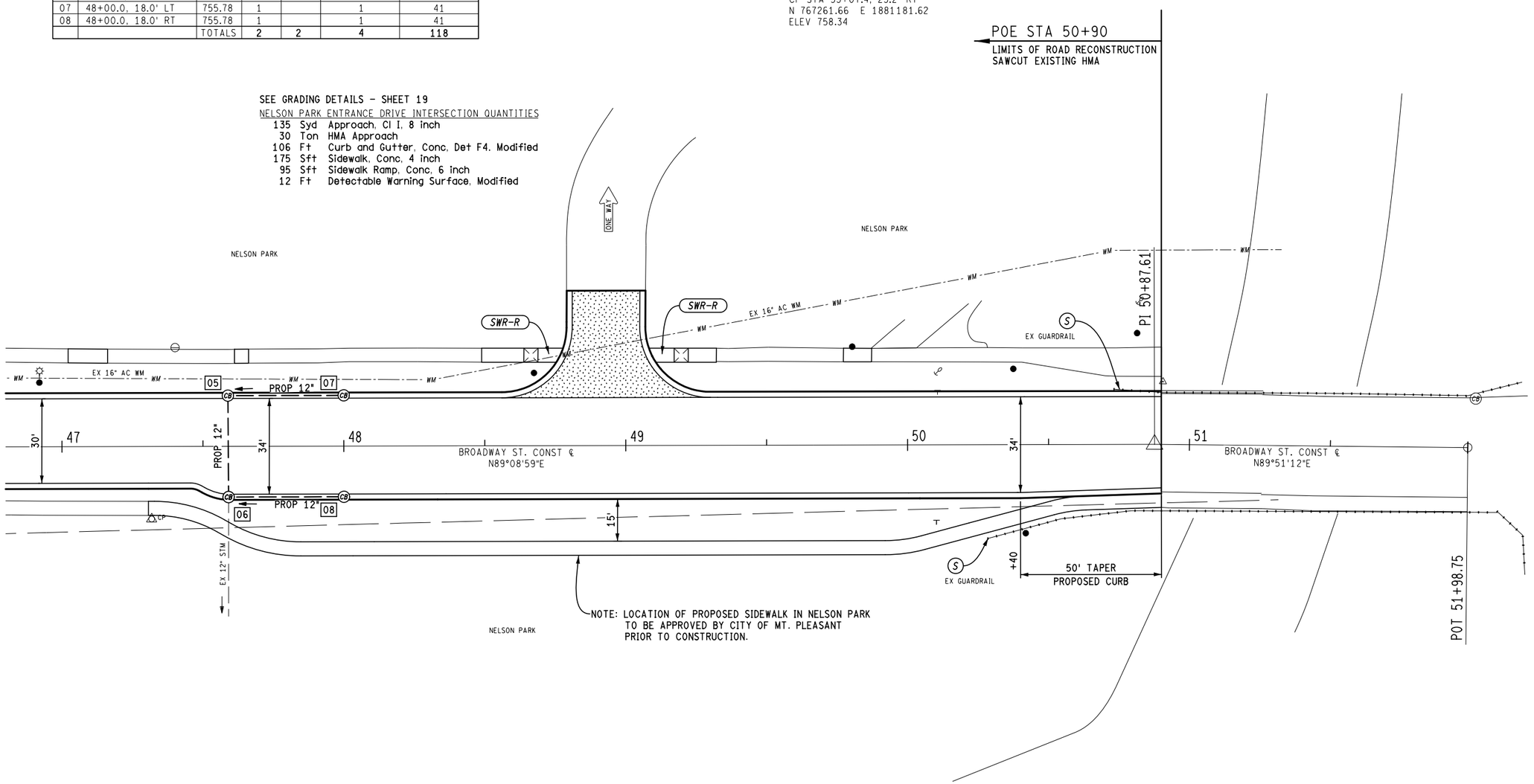
N

POE STA 50+90
LIMITS OF ROAD RECONSTRUCTION
SAWCUT EXISTING HMA

SEE GRADING DETAILS - SHEET 19

NELSON PARK ENTRANCE DRIVE INTERSECTION QUANTITIES

135	Syd	Approach, CI I, 8 inch
30	Ton	HMA Approach
106	Ft	Curb and Gutter, Conc, Det F4, Modified
175	Sft	Sidewalk, Conc, 4 inch
95	Sft	Sidewalk Ramp, Conc, 6 inch
12	Ft	Detectable Warning Surface, Modified



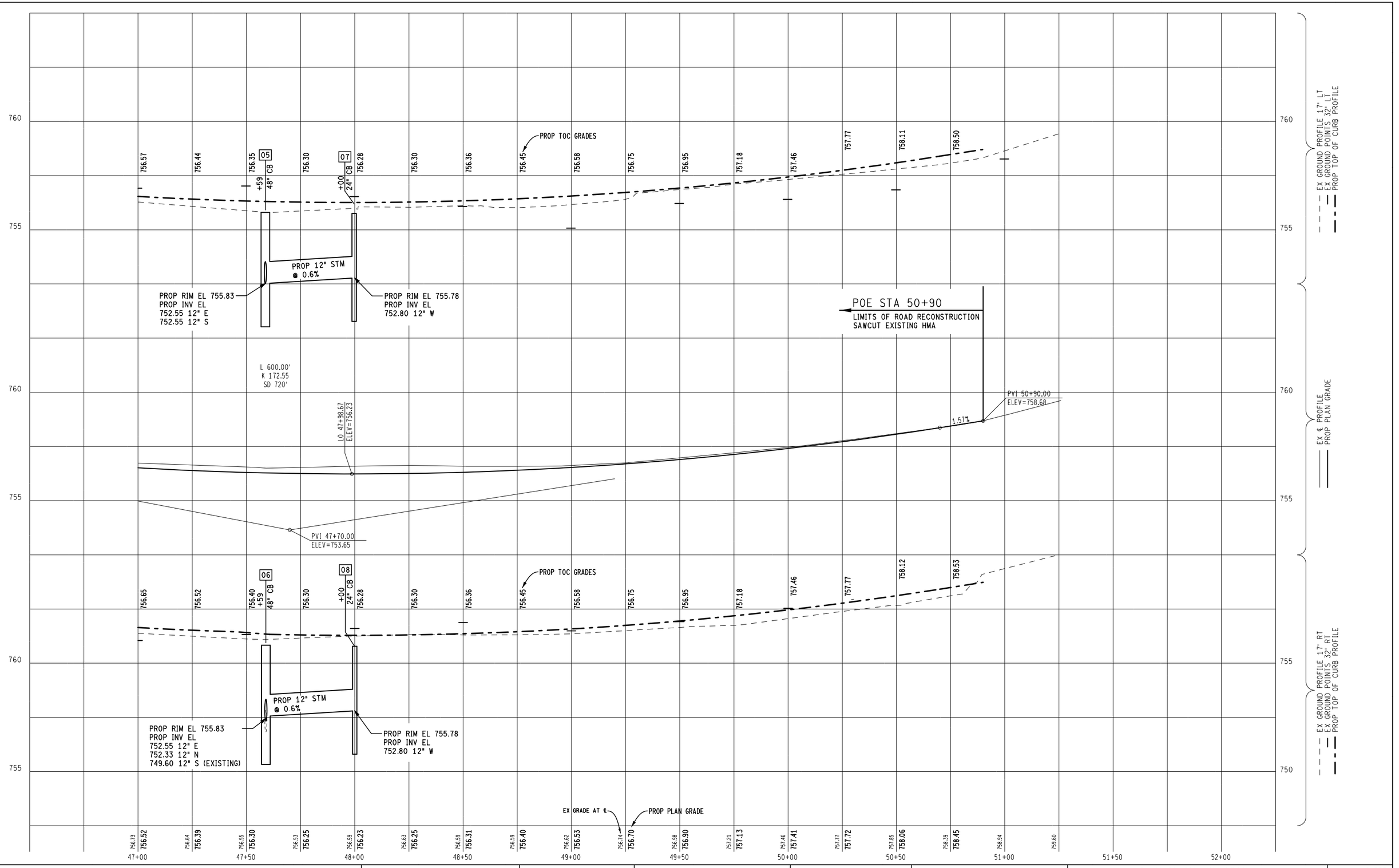
MAINLINE CONSTRUCTION QUANTITIES THIS SHEET

1450	Syd	Aggregate Base, 8 inch, Modified
285	Ton	HMA, 13A
710	Ft	Curb and Gutter, Conc, Det F4, Modified
1965	Sft	Sidewalk, Conc, 4 inch

EARTHWORK QUANTITIES THIS SHEET

150	Cyd	Embankment, CIP
600	Cyd	Subbase, CIP
4	Sta	Restoration, Modified

CHIPPEWA RIVER



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VERT. (FT) 0 10
HORZ. (FT) 0 40

DATE: 1/20/16
DESIGN UNIT: HOUK
JN: 2130519

CITY OF MT. PLEASANT
BROADWAY ST., STA 47+00 TO POE STA 50+90
PROFILE SHEET

SHEET 15

N

40

41

SANITARY MH
STA 40+10
RIM 766.76

BROADWAY ST. CONST ℄

+68.8
766.16

17'

13'

13'

765.90

13'

17'

766.55
CB RIM 766.05
02

+10.9
766.88

+25.9
766.74

+96.9
766.93

+11.9
765.76

+26.9
765.57

+40.9
762.30

22'

766.53

EX 768.15

20'

6'

7'

766.42
(RAMP 765.98)

5'

2.0%

7.5%±

766.73

2.0%

2.0%

8.0%

766.36
(RAMP 765.92)

EX 768.23

766.25

ADJUST
SANITARY MH
RIM 765.86

765.96

766.27
(RAMP 765.83)

1.5%

1.5%

2.0%

5'

2.8%±

EX 765.61

HIGHT POINT
766.36
(RAMP 765.92)

9.65'

5'

10'

EX 765.69

25'

REMOVE STEPS
& REPLACE WITH SIDEWALK
IF POSSIBLE

STA 40+25.9,
43.0' RT
30' RADIUS

STA 41+11.9,
43.0' RT
30' RADIUS

EX 765.97

EX 765.75

EX 765.93

EX 765.74

EX 765.77

GRADES SHOWN ARE
TOP OF CURB
UNLESS OTHERWISE
SPECIFIED

RAMP GRADE
(TOC - 0.44')
SEE STANDARD PLAN
R-28 SERIES

5.0%

2.0%

CB RIM GRADE
(TOC - 0.50')
(FLOW LINE OF GUTTER)

LEATON STREET

Prein&Newhof
Engineers ▪ Surveyors ▪ Environmental ▪ Laboratory

0 HORZ. (FT) 10

DATE: 1/20/16
DESIGN UNIT: HOUK
JN: 2130519

CITY OF MT. PLEASANT
BROADWAY STREET - PHASE 2
DETAIL GRADES - LEATON STREET

SHEET
16

CHAPEL DRIVE

N

STA 43+31.4,
38.0' LT
25' RADIUS

STA 44+02.7,
38.0' LT
30' RADIUS

EX 761.81
EX 761.50
EX 762.08
EX 761.50
EX 761.62
EX 763.06
EX 763.03
EX SIDEWALK
15'
5'
8.68'
7.0%±
5'
1.5%
2.0%
6.0%
762.03
(RAMP 761.59)
761.93
(RAMP 761.49)
761.88
18'
761.37
19'
761.06
REVERSE GUTTER
CURB DETAIL
761.45
(RAMP 761.01)
761.33
(RAMP 760.89)
8.27'
5'
20'
4.0%
1.5%
2.0%
2.5%±
2.0%
1.5%±
761.15
761.54
EX 761.62
EX 761.64
EX 761.46
EX SIDEWALK
EX 761.39
+00.0
762.73
+31.4
762.13
+02.7
760.78
+17.7
760.49
+31.7
760.14
+50.0
759.80
13'
13'
13'
17'
43
44
BROADWAY ST. CONST &
+67.2
761.32

	Prein&Newhof Engineers ▪ Surveyors ▪ Environmental ▪ Laboratory	0 HORZ. (FT) 10		DATE: 1/20/16 DESIGN UNIT: HOUK JN: 2130519		CITY OF MT. PLEASANT BROADWAY STREET - PHASE 2 DETAIL GRADES - CHAPEL DRIVE	SHEET 17

NELSON PARK
EXIT DRIVE

N

EX 759.73
EX 759.70
EX 759.69
EX 759.52
EX 759.75

STA 45+22.3,
42.0' LT
25' RADIUS

STA 45+97.0,
42.0' LT
25' RADIUS

REVERSE GUTTER
CURB DETAIL

18'
8'
12'

758.35
758.19
757.56

EX 759.29
10'
5'
8.8'
758.90
(RAMP 758.46)
EX SIDEWALK
5.3%±
5'
1.5%
2.0%
4.0%
758.80
(RAMP 758.36)
EX 759.22
758.62

8.61'
5'
10'
EX 758.20
758.46
(RAMP 758.02)
4.0%
1.5%
2.0%
5'
1.0%±
EX SIDEWALK
758.36
(RAMP 757.92)
758.18
EX 758.17

+00.0
758.87
+22.3
758.50
+97.0
757.46
+25.0
757.16

REVERSE GUTTER
CURB DETAIL

17'
17'
17'

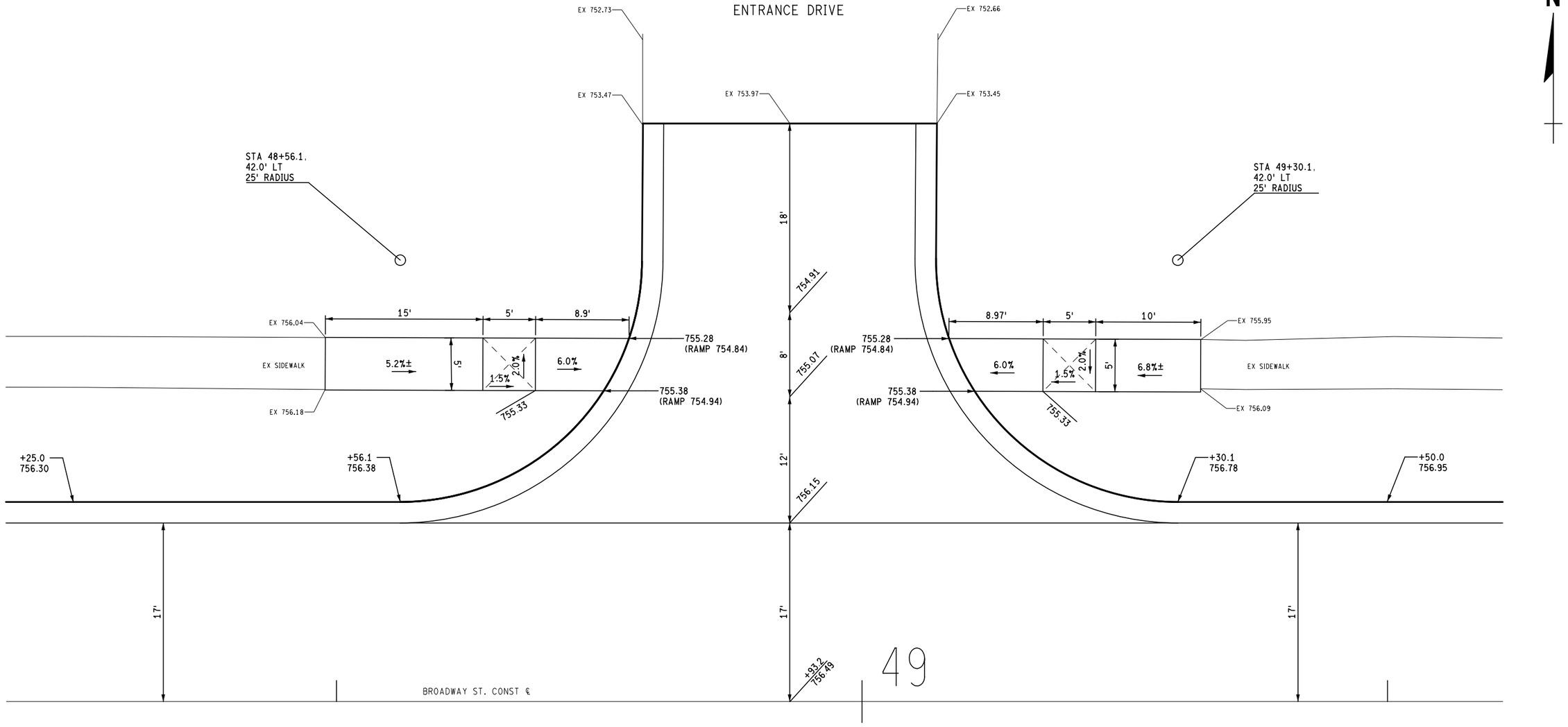
45
46

+59.2
757.90

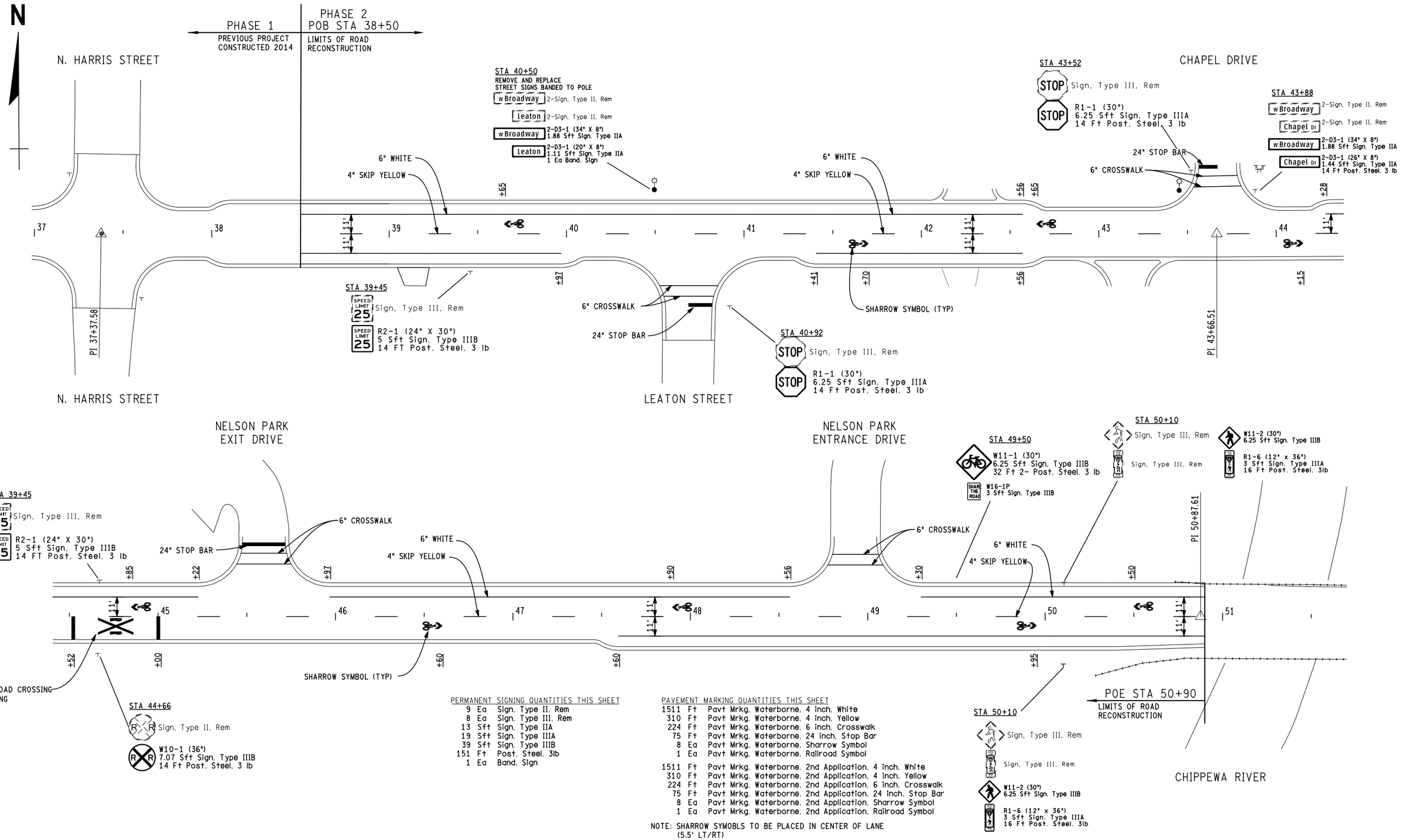
BROADWAY ST. CONST ℄

	Prein&Newhof Engineers ■ Surveyors ■ Environmental ■ Laboratory	0 HORZ. (FT) 10		DATE: 1/20/16 DESIGN UNIT: HOUK JN: 2130519		CITY OF MT. PLEASANT BROADWAY STREET - PHASE 2 DETAIL GRADES - NELSON PARK EXIT DRIVE	SHEET 18

NELSON PARK
ENTRANCE DRIVE



	Prein&Newhof Engineers ■ Surveyors ■ Environmental ■ Laboratory	0 HORZ. (FT) 10		DATE: 1/20/16 DESIGN UNIT: HOUK JN: 2130519		CITY OF MT. PLEASANT BROADWAY STREET - PHASE 2 DETAIL GRADES - NELSON PARK ENTRANCE DRIVE	SHEET 19



PERMANENT SIGNING QUANTITIES THIS SHEET

9	Ea	Sign, Type II, Rem
8	Ea	Sign, Type III, Rem
13	Sft	Sign, Type IIA
19	Sft	Sign, Type IIIA
39	Sft	Sign, Type IIIB
151	Ft	Post, Steel, 3lb
1	Ea	Band, Sign

PAVEMENT MARKING QUANTITIES THIS SHEET

1511	Ft	Pavt Mrkg, Waterborne, 4 inch, White
310	Ft	Pavt Mrkg, Waterborne, 4 inch, Yellow
224	Ft	Pavt Mrkg, Waterborne, 6 inch, Crosswalk
75	Ft	Pavt Mrkg, Waterborne, 24 inch, Stop Bar
8	Ea	Pavt Mrkg, Waterborne, Sharrow Symbol
1	Ea	Pavt Mrkg, Waterborne, Railroad Symbol
1511	Ft	Pavt Mrkg, Waterborne, 2nd Application, 4 inch, White
310	Ft	Pavt Mrkg, Waterborne, 2nd Application, 4 inch, Yellow
224	Ft	Pavt Mrkg, Waterborne, 2nd Application, 6 inch, Crosswalk
75	Ft	Pavt Mrkg, Waterborne, 2nd Application, 24 inch, Stop Bar
8	Ea	Pavt Mrkg, Waterborne, 2nd Application, Sharrow Symbol
1	Ea	Pavt Mrkg, Waterborne, 2nd Application, Railroad Symbol

NOTE: SHARROW SYMOBLS TO BE PLACED IN CENTER OF LANE (5.5' LT/RT)

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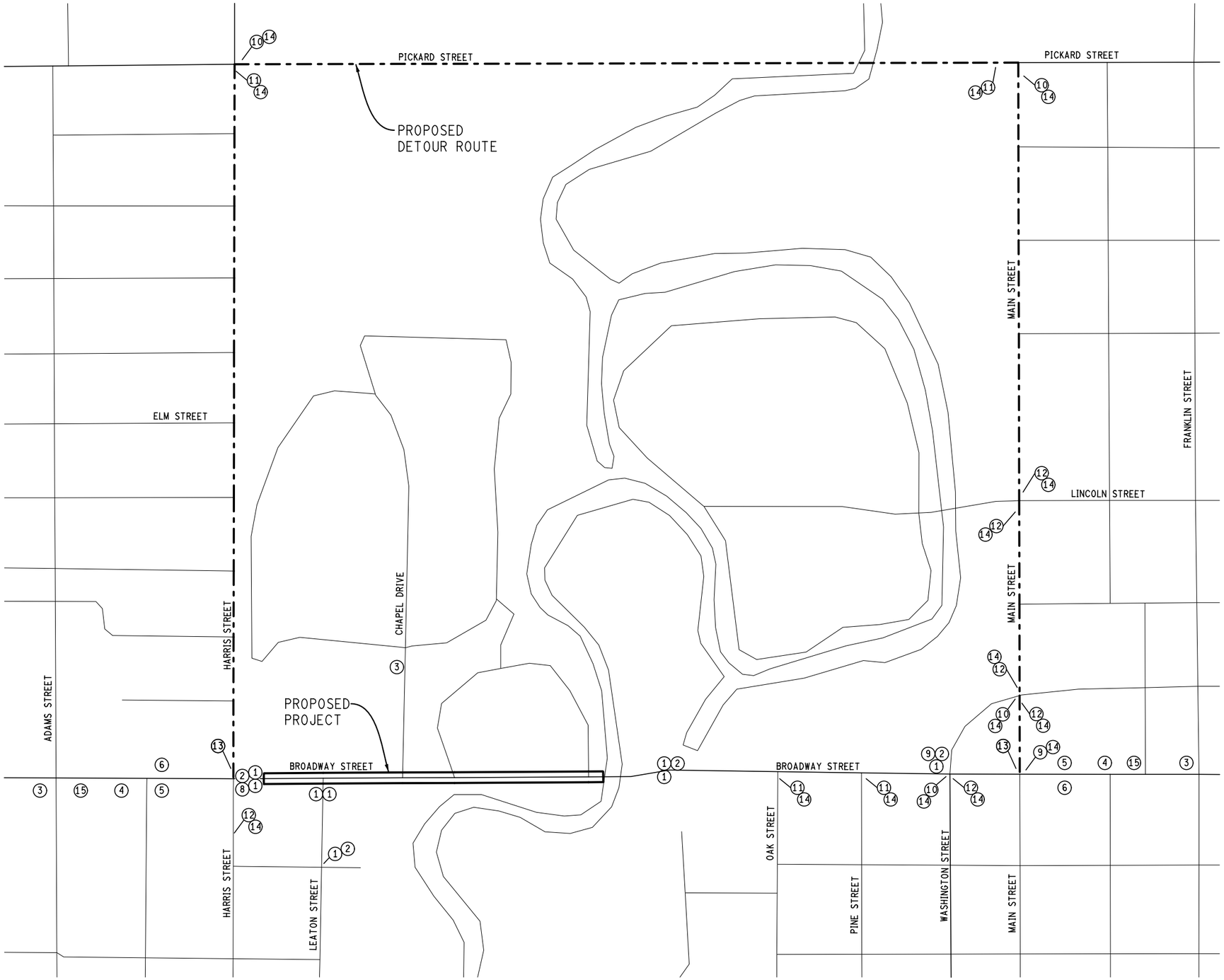
0 HORZ. (FT) 40

DATE: 1/20/16
DESIGN UNIT: HOUK
JN: 2130519

CITY OF MT. PLEASANT
BROADWAY STREET - PHASE 2
PERMANENT PAVEMENT MARKINGS AND SIGNING

SHEET 20



DETOUR SIGNING MINIMUM REQUIREMENTS

LEGEND	SIGN DESIGNATION		SIGN SIZE	QUANTITY
1	TYPE III BARRICADE			8
2	ROAD CLOSED TO THRU TRAFFIC	R11-4	60" X 30"	4
3	ROAD WORK AHEAD	W20-1	48" X 48"	3
4	INJURE / KILL A WORKER / FINE - $ 7500 JAIL - 15 YRS	R5-18cLA	42" X 60"	2
5	WORK ZONE BEGINS / TRAFFIC FINES DOUBLED	R5-18bLA	42" X 60"	2
6	END ROAD WORK	G20-2	48" X 24"	2
7	SIDEWALK CLOSED / USE OTHER SIDE	R9-10	24" X 12"	2
8	DETOUR	M4-10 (L)	48" X 18"	1
9	DETOUR	M4-10 (R)	48" X 18"	2
10	DETOUR	M4-9 (L)	30" X 24"	4
11	DETOUR	M4-9 (R)	30" X 24"	4
12	DETOUR	M4-9	30" X 24"	6
13	END DETOUR	M4-8a	24" X 18"	2
14	BROADWAY ST	D3-1	30" X 12"	15
15	DETOUR AHEAD	W20-2	48" X 48"	2

* SIGN PAID AS Sign, Type B, Temp, Prismatic, Special, Furn/Oper

THE FOLLOWING ITEMS OF ARE ESTIMATED FOR THE ENTIRE PROJECT FOR MAINTAINING TRAFFIC AND AS DESIGNATED BY THE ENGINEER.

1	LSUM	Minor Traf Devices
1	LSUM	Traf Regulator Control
8	Ea	Barricade, Type III, High Intensity, Double Sided, Lighted, Furn
8	Ea	Barricade, Type III, High Intensity, Double Sided, Lighted, Oper
25	Ea	Plastic Drum, High Intensity, Furn
25	Ea	Plastic Drum, High Intensity, Oper
314	Sft	Sign, Type B, Temp, Prismatic, Furn
314	Sft	Sign, Type B, Temp, Prismatic, Oper
38	Sft	Sign, Type B, Temp, Prismatic, Special, Furn
38	Sft	Sign, Type B, Temp, Prismatic, Special, Oper

Prein&Newhof
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NO SCALE

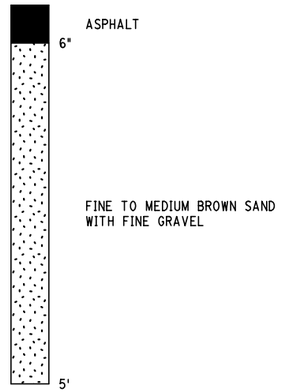
DATE: 1/20/16
DESIGN UNIT: HOUK
JN: 2130519

CITY OF MT. PLEASANT
BROADWAY STREET - PHASE 2
MAINTAINING TRAFFIC - DETOUR SIGNING

SHEET 21

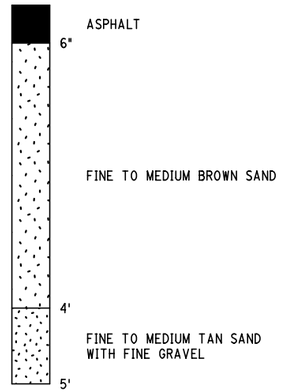
T.H. #7

STA 41+25, 14' LT



T.H. #8

STA 48+39, 14' RT



BORINGS PERFORMED ON 9/19/13 BY: PEARSON DRILLING COMPANY
6100 WEST BLUE ROAD
LAKE CITY, MI 49651

Prein&Newhof
Engineers ■ Surveyors ■ Environmental ■ Laboratory

NO SCALE

DATE: 1/20/16
DESIGN UNIT: HOUK
JN: 2130519

CITY OF MT. PLEASANT
BROADWAY STREET - PHASE 2
SOIL BORINGS

SHEET
22