

PROJECT SPECIFICATIONS
FOR
GREEN STREET RECONSTRUCTION
AND
2023 STREET IMPROVEMENTS #1

PROJECT FOR THE



May 2023

ADVERTISEMENT FOR PROPOSALS

PROJECT:	Green Street Reconstruction and 2023 Street Improvements #1
OWNER:	City of Marshall
DESIGN ENGINEER:	Progressive AE and City of Marshall
CONSTRUCTION ENGINEER:	Progressive AE and City of Marshall
OPENING DATE AND TIME:	May 25, 2023 at 1:00pm. City Hall, 323 W. Michigan Avenue, Marshall, Michigan 49068.
FORMAL ACTION:	June 5, 2023
BASIS OF PROPOSAL:	Unit Price
BRIEF DESCRIPTION:	<p>Work under this Contract includes reconstruction of 1 block of Green Street (Part 1) and rehabilitation of approximately 3 miles of streets within the City of Marshall (Part 2). The City of Marshall is embarking on the third year of construction under a local street millage proposal that was voter approved in 2020. Part 2 is the last year of street improvements under this local street millage. The Green Street Reconstruction project is a component of a larger plan to improve the downtown area. The overall plan includes improvements to Jefferson Street and the adjacent parking lot; however, those improvements have been delayed to 2024. Because of the condition of Green Street and added parking to the City's vibrant downtown a completion of the Green Street Reconstruction (Part 1) by November 1, 2023 is required.</p> <p>Special attention should be given to the Special Provision Performance Based Incentive when reviewing the bid documents.</p>
ENGINEERS ESTIMATE:	NA

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QUESTIONS: Any questions regarding the project shall be brought to the attention of:

Part 1- Green Street Reconstruction: Tim Bradshaw at Progressive AE via bradshawt@progressiveae.com

AND/OR

Part 2 – 2023 Street Improvements: Jon Skiles at the City of Marshall via jskiles@cityofmarshall.com

Questions by telephone call are prohibited. Questions will not be accepted if received less than seven (7) calendar days before the bids are due.

PROPOSAL SUBMITTAL: All bids shall be submitted in a sealed envelope labeled *Green Street Reconstruction and 2023 Street Improvements #1* and shall contain, as a minimum, all of the following: *Proposal, Unit Price Bid Form, Legal Status of Bidder, Subcontractor Form, and Bid Bond*. Bids will be received by the City Clerk, City Hall, 323 West Michigan Avenue, Marshall, Michigan 49068. All proposals will be date stamped and time marked. Proposals may not be faxed or emailed.

BID SECURITY: Each Proposal shall be accompanied by a cashier's check, certified check, money order or bid bond, payable to the Owner, in an amount not less than five percent (5%) of the amount of the Proposal, as a Bid Security. The Bid Security of the Bidders under consideration will be returned after approval of the Contract by the Owner. All others will be returned after the Proposal opening.

The successful Bidder will be required to furnish a satisfactory Performance Bond in the amount of One Hundred Percent (100%) of the Contract.

PROPOSAL WITHDRAWAL: Withdrawal of any Proposal is prohibited for a period of 90 days after the actual date of the opening thereof.

OWNER'S RIGHTS: The Owner reserves the right to accept any Proposal, to reject any or all Proposals, to waive any irregularities in any Proposal, and to delete any part(s) in any Proposal in the interest of the Owner.

NON-DISCRIMINATION: Bidders shall not discriminate against any employees or firm due to origin, race, age, or physical conditions. Contractor shall be an equal opportunity employer.

DOCUMENTS ON FILE: Documents may be received digitally by visiting <http://www.cityofmarshall.com/faqs/164/>. The bidder is responsible to receive addenda via the website.

SCHEDULE:

The contractor can start immediately after formal action
(scheduled for June 5, 2023).

END OF SECTION

INSTRUCTIONS TO BIDDERS

PROPOSALS

Each Proposal shall be made on a form prepared therefore by the Engineer and included as one of the Contract Documents and shall be submitted in a sealed envelope bound together with the other Contract Documents, as outlined in the in the Advertisement for Proposals, bearing the title of the Project and the name of the Bidder.

DELIVERY OF PROPOSALS

Proposals shall be delivered by the time and to the place stipulated in the Advertisement for Proposals. It is the sole responsibility of the Bidder to see that his Proposal is received in proper time. Any Proposal received after the bid date and time specified in the Advertisement shall be returned to the Bidder unopened.

OPENING

Proposals will be opened and read aloud at the time and place set forth in the Advertisement.

WITHDRAWAL BEFORE OPENING

Any Bidder may withdraw his Proposal, either personally or written request, at any time prior to the scheduled time for Opening of Proposals.

DISCREPANCIES

In case of a difference between the stipulated amounts in the Proposal written in words and the stipulated amounts written in figures, the stipulated amounts written in words shall govern.

MODIFICATIONS

Proposals shall not contain any recapitulations of the work to be done. Alternate proposals will not be considered unless expressly requested. Oral proposals or modifications will not be considered. Conditional proposals or conditions attached to proposals shall have no force or effect.

EXAMINATION OF CONTRACT DOCUMENTS

Before submitting his Bid, each Bidder should:

- 1) examine the Contract Documents thoroughly;
- 2) visit the site to familiarize themselves with local conditions that may in any manner affect performance of the work;
- 3) familiarize themselves with Federal, State, and local laws, ordinances, rules, and regulations affecting performance of the work; and
- 4) carefully correlate his observations with the requirements of the Contract Documents.

Reference is made to the General Requirements (Division I) of the Specifications for the identification of those surveys and investigation reports of subsurface or latent physical conditions at the site or otherwise affecting performance of the work which have been relied upon by Engineer in preparing the Drawings and Specifications. Owner will make copies of such surveys and reports available to any Bidder requesting them. Before submitting their Bid, each Bidder will at their own expense make such additional survey and investigations as he may deem necessary to determine his Bid Price for performance of the work within the terms of the Contract Documents.

The submission of a Bid will constitute an incontrovertible representation by the Bidder that he has complied with every requirement of this Article.

COMPLETE WORK REQUIRED

It is the intent of the Contract Documents to provide that the Product to be supplied under this Proposal shall be complete and ready for use in every respect. Any minor items not specifically called for in the Plans

or Specifications, but which are clearly necessary, are to be included at no increase in the Contract Price. The Proposal shall include a sum to cover the cost of all items of work to be performed such that the Product to be supplied under this Proposal shall be complete and ready for use in every respect. The Bidder to whom an Award is made will not be entitled to additional compensation or extension of time by reason of his failure to fully understand all subproposals or quotations.

SUBCONTRACTORS: MATERIAL & EQUIPMENT QUOTATIONS

The Bidder is responsible for all coordination between subcontractors and suppliers during the bidding and construction so that a complete project is furnished for the Contract Price and within the Contract Time. The completed project includes the furnishing of all equipment, accessories, and appurtenances necessary for the proper operation and maintenance of the Project.

REFERENCES

The Bidder is required to supply three (3) references for projects of similar scope and contract amount within the previous 5 years of date of this Proposal.

AWARD OF CONTRACT

Owner reserves the right to reject any and all Bids and waive any and all informalities, and the right to disregard all nonconforming or conditional Bids or counter proposals.

In evaluating Bids, Owner shall consider the qualifications of the Bidders, whether or not the Bids comply with the prescribed requirements, and alternates and unit prices if requested in the bid forms. They may consider the qualifications and experience of subcontractors and other persons and organizations (including those who are to furnish the principal items of material or equipment) proposed for those portions of the work as to which the identity of subcontractors and other persons and organizations must be submitted as specified in the Supplementary Conditions or Specifications. They may conduct such investigations as they deem necessary to establish the responsibility, qualifications, and financial ability of the Bidders, proposed subcontractors and other persons and organizations to do the work in accordance with the Contract Documents to Owner's satisfaction within the prescribed time. Owner reserves the right to reject the Bid or any Bidder who does not pass any such evaluation to Owner's satisfaction.

If a Contract is to be awarded, it will be awarded to the lowest responsible responsive Bidder. However, Owner reserves the right to by-pass the low bidder and award a Contract in the best interest of the Owner.

If the Contract is to be awarded, Owner will give the apparent successful Bidder a Notice of Award.

Simultaneous with delivery of the executed counterparts of the Agreement to OWNER, the CONTRACTOR shall deliver to OWNER the required Contract Security.

The City is exempt from the payment of any federal excise or any Michigan sales tax (State of Michigan Sales Tax Exemption number: 38-6004708). The price must be net, exclusive of taxes.

INTERPRETATIONS

All questions about the meaning or intent of the Contract Documents shall be submitted to Engineer in writing. Replies will be issued by Addenda posted to the website referenced in the bid advertisement. Questions received less than seven (7) days prior to the date of opening of Bids will not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

ADDENDA

Any Addenda issued during the time of bidding or forming a part of the Contract Documents shall be included in the Proposal and shall be made a part of the Contract Documents. Receipt of each Addendum shall be acknowledged in the Proposal.

BID SECURITY

The amount and type of Bid Security is stated in the Invitation to Bid. The required security must be in the form of a certified or bank cashier's check made payable to Owner or a Bid bond issued by a surety licensed to conduct business in the state where the Project is located and named in the current list of "Surety Companies Acceptable on Federal Bonds" as published in the Federal Register by the Audit Staff Bureau of Accounts, U.S. Treasury Department. The Bid Security of the successful Bidder will be retained until he has executed the Agreement and furnished the required Contract Security, whereupon it will be returned; if he fails to execute and deliver the Agreement and furnish the required Contract Security within ten (10) days, Sundays and legal holidays excepted, of receipt of the Notice of Award, Owner may annul the Notice of Award and the Bid Security of that Bidder will be forfeited. The Bid Security of any Bidder whom Owner believes to have a reasonable chance of receiving the Award may be retained by Owner until the earlier of the seventh day after the executed Agreement is delivered by Owner to Contractor and the required Contract security is furnished. Bid Security of other Bidders will be returned within seven (7) days of the Bid Opening

CONTRACT TIME

Time is of the essence in the performance of this contract. The work to be done shall be started upon receipt of the Notice to Proceed and shall be prosecuted expeditiously for completion at the earliest possible date prior to the completion date specified.

Details on work schedule can be found in section 1.06 Work Schedule of the General Requirements Specification.

REQUIREMENT FOR SIGNING PROPOSALS

Proposals which are not signed by the individual making them shall have attached thereto a Power of Attorney evidencing authority to sign the Proposal in the name of the person for whom it is signed.

Proposals which are 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 shall be attached to the Proposal a Power of Attorney evidencing authority to sign the Proposal, executed by the partners.

Proposals which are signed for a corporation shall have the correct corporate name thereof and the signatures of the president or other authorized officers of the corporation manually written below the corporate name following the word "By". If such a 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 official to sign the Proposal shall be attached to it. Such a Proposal shall also bear the attested signature of the secretary of the corporation and the impression of the corporate seal.

All Bidders shall complete the enclosed form entitled "Legal Status of Bidder".

BIDDERS INTERESTED IN MORE THAN ONE PROPOSAL

No person, firm, or corporation shall be allowed to make, file, or be interested in more than one (1) Proposal on this Project, unless Alternate Proposals are called for.

A person, firm, or corporation who has submitted a subproposal to a Bidder, or has quoted prices on materials and/or equipment to a Bidder, is not hereby disqualified from submitting a subproposal or quoting Prices to other Bidders.

EXECUTION OF AGREEMENT

The Bidder to whom an Award is made will be required to enter into a written Agreement in the form hereto annexed, within ten (10) days, Sundays and legal holidays excepted, after being notified of the acceptance of his Proposal and receipt by him of copies of the Contract Documents to be executed.

In case of failure to comply with this requirement, he shall be considered to have abandoned all rights and interest in the Award, his Proposal Guaranty may be declared forfeited to the OWNER and the Contract may be awarded to another.

TERMINATION FOR CONVENIENCE

This Contract may be terminated by the City of Marshall in whole or in part at any time for any reason upon provision of thirty (30) days written notice from the City to the contractor. If the Contract is terminated before performance is completed, the Contractor will be paid only for materials actually purchased and paid for that have been delivered to the project site and control of which has been surrendered to the control of the City as well as for work satisfactorily performed for which costs can be substantiated. All work in progress and corresponding materials will become the property of the City and will be turned over promptly by the Contractor to the City upon payment for such work and materials as set forth in this paragraph.

INSURANCE

The successful Bidder will be required to carry insurance in the amounts and kinds specified in the General Conditions. Such insurance must be with companies and in a form satisfactory to the Owner, and certificates of such insurance must be attached to each copy of the executed Contract Documents. These certificates shall contain a provision that coverages afforded under the policies will not be cancelled or materially changed unless at least thirty (30) days prior written notice has been given to the Owner and Engineer, as evidenced by return receipt or registered or certified mail.

BONDS

The successful Bidder will be required to furnish for each set of the executed Contract Documents and conformed copies thereof, an original conformed Performance Bond, and Labor and Material Bond on the forms attached hereto with a surety acceptable to the Owner, as follows:

- 1) Performance Bond in the amount of One Hundred Percent (100%) of the Contract Price to insure the completion of the entire Project according to the Contract Documents.

COMPLIANCE WITH PERMITS

The successful Bidder shall comply with all required State and local construction permits and shall comply with all local building codes and inspection requirements.

NONDISCRIMINATION

Any bidder submitting a proposal hereto certifies that it is not an Iran linked business as that term is defined by the Iran Economic Sanctions Act, Act 517 of 2012 and that it and its subcontractors shall not discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment, or a matter directly or indirectly related to employment, because of race, color, religion, national origin, age, sex, height, weight, or marital status or because of a disability that is unrelated to the individual's ability to perform the duties of a particular job or position.

Bidders must, if requested, submit a compliance report concerning their employment practices and policies in order to maintain their eligibility to receive the Award of Contract.

Successful Bidders must, if requested, submit a list of all subcontractors who will perform work on the Project and written signed statements from authorized agents of the labor pools with which they will or may deal for employees on the work, together with supporting information to the effect that said labor pools' practices and policies are in conformity with Executive Order No. 11246, as amended, and that said labor pools will affirmatively cooperate in, or offer no hindrance to, the recruitment, employment, and equal treatment of employees seeking employment and performing work under the Contract, or a certification as to what efforts have been made to secure such statements when such agents or labor pools have failed or refused to furnish same prior to the Award of Contract.

Successful Bidders must be prepared to comply in all respects with the Labor Standards Contract provisions regarding nondiscrimination.

HEALTH AND SAFETY

The successful Bidder shall comply with the Health and Safety Regulations, Chapter XVII of Title 29 CFR, Part 1926, as promulgated by the Department of Labor and/or applicable State and local safety and health regulations. All questions regarding compliance and enforcement, as well as requests for the regulations should be directed to the Department of Labor and/or local agencies.

SOIL EROSION AND SEDIMENTATION

The successful Bidder shall comply with the provisions of the "Soil Erosion and Sedimentation Control Act" of 1972 (Michigan P.A. 347, as amended), the "Inland Lakes and Streams Act" of 1972 (Michigan P.A. 346, as amended), and be in accordance with all applicable regulations, standards, and specifications as adopted by the local enforcing agencies.

END OF SECTION

PROPOSAL

FOR

GREEN STREET RECONSTRUCTION and 2023 STREET IMPROVEMENTS #1

to the

CITY OF MARSHALL, MICHIGAN

The undersigned as Bidder hereby declares that this Proposal is made in good faith without fraud or collusion with any person or persons bidding on the same Contract; that he has read and examined the Advertisement, Information for Bidders, Proposal, General Conditions, Agreement, Forms of Bonds, Specifications and Plans, as prepared by the ENGINEER, and understands all of the same; that he or his representative has made personal investigation at the site and has informed himself fully with regard to the conditions to be met in the execution of this Contract, and the undersigned proposes to furnish all labor, materials, tools, power, transportation, and construction equipment necessary for the construction of the Project and performing related work in full accordance with the aforesaid Contract Documents, including any and all addenda officially issued, the receipt of which is hereby acknowledged:

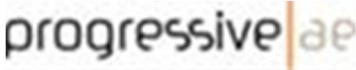
Addendum No. /Dated

Date of Receipt and Signature

AWARD OF CONTRACT: The Contract(s) will be awarded to the lowest responsive, responsible Bidder based on the base bid.

PROPOSAL PRICE: The Bidder agrees to complete the Project for the following unit prices:

BID FORM PART 1:

<div style="display: flex; justify-content: space-between; align-items: center;">  <div style="text-align: center;"> <p>City of Marshall Improvements to Green Street Bid Form Progressive AE Revised 5/5/2023</p> </div> </div>						
ITEM NO.	MDOT PAY ITEM	DESCRIPTION	QTY.	UNITS	UNIT PRICE	TOTAL
1	1100001	Mobilization, Max	1	LSUM		
2				Ea		
3				Ea		
4	2030001	Culv, Rem, Less than 24 inch	1	Ea		
5	2030011	Dr Structure, Rem	1	Ea		
6	2040020	Curb and Gutter, Rem	1255	Ft		
7	2040050	Pavt, Rem	2407	Syd		
8	2040055	Sidewalk, Rem	368	Syd		
9	2050030	Machine Grading	8	Sta		
10	2080020	Erosion Control, Inlet Protection, Fabric Drop	9	Ea		
11	2090001	Project Cleanup	1	LSUM		
12	3010002	Subbase, CIP	1020	Cyd		
13	3020016	Aggregate Base, 6 inch	575	Syd		
14	3020020	Aggregate Base, 8 inch	3060	Syd		
15	4020033	Sewer, CI A, 12 inch, Tr Det B	6	Ft		
16	4030050	Dr Structure Cover, Type K	2	Ea		
17	4030210	Dr Structure, 48 inch dia	1	Ea		
18	4037050	Adjusting Drainage Structure, Case 1, Modified	6	Ea		
19	4037050	MH, Storm Cover, Marshall	2	Ea		
20	5010025	Hand Patching	8	Ton		
21	5012025	HMA, 4EML	675	Ton		
22	6027001	Thickened Edge Sidewalk Curb	738	Ft		

23	8020038	Curb and Gutter, Conc, Det F4	770	Ft		
24	8027001	Valley Gutter, Conc, Modified	1029	Ft		
25	8030010	Detectable Warning Surface	12	Ft		
26	8030044	Sidewalk, Conc, 4 inch	7780	Sft		
27	8030046	Sidewalk, Conc, 6 inch	3435	Sft		
28	8032001	Curb Ramp, Conc, 4 inch	80	Sft		
29	8100371	Post, Steel, 3 lb	69	Ft		
30	8100404	Sign, Type IIIA	10	Sft		
31	8100405	Sign, Type IIIB	18	Sft		
32	8110231	Pavt Mrkg, Waterborne, 4 inch, White	1352	Ft		
33	8110232	Pavt Mrkg, Waterborne, 4 inch, Yellow	1205	Ft		
34	8110237	Pavt Mrkg, Waterborne, 12 inch, White	264	Ft		
35	8110293	Pavt Mrkg, Waterborne, for Rest Areas, Parks, and Lots, 4 inch, Blue	125	Ft		
36	8117001	Pavt Mrkg, Waterborne, 24 inch, Stop Bar	34	Ft		
37	8117050	Pavt Mrkg, Waterborne, Accessible Sym	2	Ea		
38	8127051	Temporary Traffic Control	1	LSUM		
39	8150002	Watering and Cultivating, First Season, Min	1	LSUM		
40	8157050	Acer x Freemanii 'Jeffsred', 3 inch	7	Ea		
41	8157050	Ulmus Americana 'Valley Forge', 3 inch	4	Ea		
42	8160025	Mulch	16	Syd		
43	8160055	Sodding	500	Syd		
44	8160062	Topsoil Surface, Furn, 4 inch	500	Syd		
45	8230391	Gate Box, Adj, Temp, Case 1	6	Ea		
46	8230421	Water Shutoff, Adj, Case 1	2	Ea		
47	8230432	Gate Box, Adj, Case 2	2	Ea		
48	8252146	Sanitary Structure Cover, Adj, Case 2	1	Ea		

TOTAL BID PRICE FOR ITEMS LISTED IN BID FORM PART 1:

Dollars (\$ _____)

(Amount shall be shown in both words and figures. In case of a discrepancy, the amount shown in words shall govern.)

BID FORM PART 2:

MDOT ITEM #	DESCRIPTION	UNIT	QTY	UNIT PRICE	EXTENDED PRICE
	AUDIO VISUAL RECORDING	Ea	1		
	Mobilization, Max 5% of bid	Ea	1		
1037050	_MH, SANITARY, COVER, MARSHALL	Ea	32		
1037050	_MH, STORM, COVER, MARSHALL	Ea	19		
2040020	CURB AND GUTTER, REM	Ft	2,567		
6037001	_SAWCUT PAVEMENT	FT	0		
8020023	CURB & GUTTER CONC., DET. C4	Ft	2,627		
2040050	PAVT, REM	Syd	427		
2040055	SIDEWALK, REM	Syd	146		
2080020	EROSION CONTROL, INLET PROTECTION, FABRIC DROP	Ea	89		
4030004	DR STRUCTURE COVER, ADJ, CASE 1, MODIFIED	Ea	51		
4030050	DR STRUCTURE COVER, TYPE K	Ea	6		
4030390	DR STRUCTURE, TEMP LOWERING	Ea	51		
5010002	COLD MILING HMA SURFACE	Syd	45,777		
5010703	HMA, 4EML	Tons	4,100		
6020015	CONC BASE CSE, NONREINF, 6 INCH	Syd	331		
8010005	DRIVEWAY, NONREINF. CONC., 6"	Syd	352		
6037001	_CURB CUT FOR ADA RAMP (PROVISIONAL)	Ft	20		
8030010	DETECTABLE WARNING SURFACE	Ft	89		
8030034	SIDEWALK RAMP CONC. 6"	Sft	1,199		
8030044	SIDEWALK, CONC, 4"	Sft	50		
8030046	SIDEWALK, CONC, 6"	Sft	76		
8110024	PAVT. MRKG., OVLY. COLD PLASTIC, 6", X-WALK	Ft	59		
8110231	PAVT. MRKG., WATERBORNE, 4", WHITE	Ft	0		
8110232	PAVT. MRKG., WATERBORNE, 4", YELLOW	Ft	260		
8110231	PAVT. MRKG., WATERBORNE, 4", BLUE	Ft	38		
8110425	PAVT. MRKG., WATERBORNE, FOSP, 4", WHITE	Ft	513		
8110045	PAVT. MRKG., OVLY. COLD PLASTIC, 24" STOP BAR	Ft	30		
8110063	PAVT. MRKG., OVLY. COLD PLASTIC, LEFT TURN ARROW SYMBOL	Ea	1		

8110071	PAVT. MRKG., OVLY. COLD PLASTIC, RIGHT TURN ARROW SYMBOL	Ea	1		
8110204	PAVT. MRKG., PREFORM. THERM., ACCESSIBLE SYM.	Ea	2		
8167011	_TURF ESTABLISHMENT	Syd	1,066		
8230411	GATE BOX, RECONST., CASE 1 (provisional)	Ea	1		
8230421	WATER SHUTOFF, ADJ, CASE 1 (provisional)	Ea	1		
8230431	GATE BOX ADJ., CASE 1	Ea	18		

TOTAL BID PRICE FOR ITEMS LISTED IN BID FORM PART 2:

_____ Dollars (\$_____)
(Amount shall be shown in both words and figures. In case of a discrepancy, the amount shown in words shall govern).

Continue to next page...

The undersigned agrees that if the foregoing Proposal shall be accepted by the Contractor, they will after receiving notice of such acceptance, enter into the attached form of Agreement and will complete the Project, ready for use, at the price and within the time stated in this Proposal, and that he will furnish the Owner satisfactory Contract Bonds and certificates of insurance coverage.

The undersigned further agrees that if the foregoing Proposal shall be accepted, they will commence work immediately after the Contract has been awarded, the Agreement executed, and they have received a Notice to Proceed and they shall complete the entire work within 90 calendar days.

The undersigned attaches hereto their Bid Security, as required by the Advertisement and Information for Bidders, and the undersigned agrees that in case they shall fail to fulfill his obligations under the foregoing Proposal and/or shall fail to furnish bonds, as specified, the OWNER may, at its option determine that the undersigned has abandoned their rights and interests in such Contract and that their Bid Security accompanying their Proposal has been forfeited to the said OWNER, but otherwise the Bid Security shall be returned to the undersigned upon the execution of the Contract and the acceptance of the bonds. The undersigned also agrees that for each and every calendar day that they may be in default of substantial completion of the entire work, ready for use, within the time specified in this Proposal or within the time to which said time of completion may be extended for good cause shown, the OWNER will suffer a damage of Eight Hundred Dollars (\$800.00) per day, and said OWNER shall be compensated therefore at the rate as liquidated damages in accordance with Article 1-B, Liquidated Damages, of the Agreement.

The Bidder shall acknowledge that they are an equal opportunity employer and that they do not discriminate against other firms due to race, age, gender or physical conditions.

In submitting this bid, it is understood that the right is reserved by the OWNER to accept any bid, to reject any or all bids, and to waive irregularities in bidding in the interest of the OWNER.

The Bidder has completed the accompanying "Legal Status" form.

Dated and Signed at _____

this the _____ day of _____, 20_____.

OFFICIAL ADDRESS

BIDDER'S NAME

By: _____

Telephone: _____

Title: _____

END OF SECTION

The undersigned agrees that if the foregoing Proposal shall be accepted by the Contractor, they will after receiving notice of such acceptance, enter into the attached form of Agreement and will complete the Project, ready for use, at the price and within the time stated in this Proposal, and that he will furnish the Owner satisfactory Contract Bonds and certificates of insurance coverage.

The undersigned further agrees that if the foregoing Proposal shall be accepted, they will commence work immediately after the Contract has been awarded, the Agreement executed, and they have received a Notice to Proceed and they shall complete the entire work within 90 calendar days.

The undersigned attaches hereto their Bid Security, as required by the Advertisement and Information for Bidders, and the undersigned agrees that in case they shall fail to fulfill his obligations under the foregoing Proposal and/or shall fail to furnish bonds, as specified, the OWNER may, at its option determine that the undersigned has abandoned their rights and interests in such Contract and that their Bid Security accompanying their Proposal has been forfeited to the said OWNER, but otherwise the Bid Security shall be returned to the undersigned upon the execution of the Contract and the acceptance of the bonds. The undersigned also agrees that for each and every calendar day that they may be in default of substantial completion of the entire work, ready for use, within the time specified in this Proposal or within the time to which said time of completion may be extended for good cause shown, the OWNER will suffer a damage of Eight Hundred Dollars (\$800.00) per day, and said OWNER shall be compensated therefore at the rate as liquidated damages in accordance with Article 1-B, Liquidated Damages, of the Agreement.

The Bidder shall acknowledge that they are an equal opportunity employer and that they do not discriminate against other firms due to race, age, gender or physical conditions.

In submitting this bid, it is understood that the right is reserved by the OWNER to accept any bid, to reject any or all bids, and to waive irregularities in bidding in the interest of the OWNER.

The Bidder has completed the accompanying "Legal Status" form.

Dated and Signed at _____

this the _____ day of _____, 20_____.

OFFICIAL ADDRESS

BIDDER'S NAME

By: _____

Telephone: _____

Title: _____

END OF SECTION

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

A. GENERAL

The method of measurement and the basis of payment for each item in the Proposal will be as specified in the schedule attached. The items are generally grouped by the section of the Specifications under which the particular unit of work is detailed. There will be no payment allowed for any unit of work not specifically mentioned in the Proposal as a bid item, and any such unit of work not mentioned in the Proposal, but necessary for the completion of the Project, will be considered as incidental to the construction of the Project.

B. MEASUREMENT

Quantities of work completed under the Contract will be measured by the ENGINEER according to the United States standard measures. When tons are specified, the unit shall be the ton of 2000 pounds. When measurements are stated in miles, stations, acres, they will be horizontal measurements unless specified otherwise. Where measurements are specified to be "in place," they will be taken along the actual surface of the completed item to obtain lineal, area, or volume measurements.

C. PAYMENT

In each and every instance in the schedule attached, where a Basis of Payment is specified, it shall be understood to be prefaced by the following statement, "The Contract unit price bid in the Proposal will be payment in full for all labor, materials, and equipment necessary to do the following according to the Plans and Specifications." Payment shall be made on the basis of the actual quantity of the item completed and accepted at the unit price for such item named in the Proposal

ITEM IN PROPOSAL	METHOD OF MEASUREMENT	BASIS OF PAYMENT
Audio Visual Recording	By the unit lump sum (LS).	Complete furnishing of all labor, material and equipment for the recording of the project area including the furnishing and delivering of three digital audio/video recordings to the Owner. Recordings shall be provided in .mp3 format or similar and on a USB drive.
Traffic Maintenance	By the unit lump sum (LS).	Complete furnishing of all labor, materials, and equipment to maintain traffic control on all roads and drives during construction. The work shall include submission of traffic control proposal, temporary barricades, signs, lights, flags, flag persons, fences, drums, temporary access roads for residents, trash pick-up, mail carriers, buses and emergency vehicles at all times in locations where construction of the utility may block or impede traffic flow, including furnishing, placing and maintaining temporary aggregates and temporary bituminous mixture, dust control, temporary lane closures, all as required by MDOT, the City of Marshall or the ENGINEER. Payment for this item shall correspond to the percent (%) complete of the total work
Curb cut for ADA ramp	By the linear foot (Ft) installed.	Complete furnishing of all labor, material, and equipment to cut existing curbs at the location of new ADA sidewalk ramps. Cutline shall be marked and approved by owner prior to the execution of the work. Item includes cleaning and preparation of existing curb, water supply, dust management, and cleaning prior to opening crosswalk to pedestrians.
MH, Sanitary Cover, Marshall	By the unit (Ea)	Furnish all material, labor, and equipment required to replace structure covers and frame as required. Includes removal of the existing frame and material adjacent to frame as required. Cover shall be East Jordan type 1040A with City of Marshall custom logo and 'sanitary' or 'storm' identification. The standard cover for City of Marshall is EJ product number NPR17-3065B.
MH, Storm Cover, Marshall	By the unit (Ea)	Furnish all material, labor, and equipment required to replace structure covers and frame as required. Includes removal of the existing frame and material adjacent to frame as required. Cover shall be East Jordan type 1040A with City of Marshall custom logo and 'sanitary' or 'storm' identification. The standard

**ITEM IN
PROPOSAL**

**METHOD OF
MEASUREMENT**

BASIS OF PAYMENT

cover for City of Marshall is EJ product number NPR17-
3065B

END OF SECTION

NAME, ADDRESS, LEGAL STATUS, AND SIGNATURE OF BIDDER

This Proposal is submitted in the name of:

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

Street: _____

City: _____ State: _____ Zip Code: _____

Phone: _____ Fax _____

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

- () INDIVIDUAL
- () INDIVIDUAL DOING BUSINESS UNDER AN ASSUMED NAME
- () CO-PARTNERSHIP

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

- () CORPORATION INCORPORATED UNDER THE LAWS OF THE STATE OF _____.

The Corporation is:

- () LICENSED TO DO BUSINESS IN MICHIGAN
- () NOT NOW LICENSED TO DO BUSINESS IN MICHIGAN

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

NAME AND TITLE

HOME ADDRESS

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

By (Signature) _____

Printed Name of Signer _____

Title _____

BID CERTIFICATION

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, or person submitting a bid for the same materials, supplies, equipment, or service, that it meets or exceeds all the specifications contained herein and is in all respects fair and without collusion or fraud. I understand collusive bidding is a violation of State and Federal law, and can result in fines, prison sentences, and civil damage awards. I agree to abide by all conditions of this bid and certify that I am authorized to sign for the bidder.

Bidder _____

Signature _____

Title _____

Date Certified _____

SUBCONTRACTOR FORM

If subcontractor any part of the project, the bidder/contractor expressly agrees that:

1. If awarded a contract as a result of this bid, the major subcontractor used in the prosecution of the work will be those listed below, and
2. The following list includes all subcontractors who will perform work representing approximately five percent (5%) or more of the Total Base Bid, and
3. The bidder represents that the subcontractors listed below are financially responsible and qualified to do the work required.

Subcontractor Name	City/State	Trade or Commodity	Approximate Dollar Value
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

AGREEMENT

THIS AGREEMENT, made as of the _____ day of _____, 20 _____, by and between

CITY OF MARSHALL

hereinafter called the Owner, and _____

_____ hereinafter called the Contractor.

WITNESSETH, that whereas the Owner intends to construct

GREEN STREET RECONSTRUCTION and 2023 STREET IMPROVEMENTS #1

hereinafter called the Project, in accordance with the Plans, Specifications and other Contract Documents prepared by the CITY OF MARSHALL.

NOW, THEREFORE, the Owner and Contractor for the considerations hereinafter set forth, agree as follows:

- I. The Contractor agrees to furnish all the necessary labor, materials, equipment, tools, and services necessary to perform and complete, in a workmanlike manner, all work required for the construction of the Project, in strict compliance with the Contract Documents herein mentioned, which are hereby made a part of the Contract, including the following Addenda:

ADDENDUM NO.

DATED

A. Contract Time: Work under this Agreement shall be commenced upon receipt of Notice to Proceed, and the entire work shall be complete within 90 calendar days.

If the Contractor refuses or fails to prosecute the work, or any separate part thereof, with such diligence as will insure its completion, ready for use within the number of consecutive calendar days specified herein, or any extension thereof, or fails to complete said work within such time, the Owner may, by written notice to the Contractor, terminate his right to proceed with the Project or such part of the Project as to which there has been delay. In such event the Owner may take over the Project and prosecute the same to completion, by contract or otherwise, and the Contractor and his Sureties shall be liable to the Owner for any excess cost occasioned the Owner thereby. If the Contractor's right to proceed is so terminated, the Owner may take possession of and utilize in completing the Project such materials, appliances, and plant as may be on the site of the Project and necessary therefore.

B. Liquidated Damages: If the Owner does not terminate the right of the Contractor to proceed, the Contractor shall continue the Project, in which event the actual damages for the delay will be impossible to determine and in lieu thereof, the Contractor shall pay the Owner the sum of One Thousand Five Hundred Dollars (\$1500.00) per day, as fixed, agreed and liquidated damages for each consecutive calendar day of delay until the Project is completed, accepted, and the Contractor and his Sureties shall be liable for the amount thereof: Provided, however, that the right of the Contractor to proceed shall

not be terminated or the Contractor charged with liquidated damages because of any delays in the completion of the Project due to unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including, but not restricted to acts of God or of the public enemy, acts of the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather, or delays of Subcontractors due to such causes, if the Contractor shall, within ten days from the beginning of any such delay (unless the Owner shall grant a further period of time prior to the date of final settlement of the Contract) notify the Owner in writing of the cause of delay who shall ascertain the facts and the extent of the delay and extend the time for completing the work, when in its judgment, the finds of fact justify such an extension and its findings of fact thereon shall be final and conclusive on the parties thereto.

C. Subcontractors: The Contractor agrees to bind every subcontractor by the terms of the Contract Documents. The Contract shall not be construed as creating any contractual relation between any Subcontractor and the Owner.

II. The Owner agrees to pay and the Contractor agrees to accept, in full payment for the performance of this Contract, the Contract Amount of:

_____ Dollars _____

(Amount shall be shown in both words and figures. In case of a discrepancy, the amount shown in words shall govern).

in accordance with the provisions of the Contract Documents.

A. Progress Payments will be made in accordance with the General Conditions.

III. CONTRACT DOCUMENTS: The Contract comprises the Contract Documents listed in the General Conditions of the Contract. In the event that any provision of one Contract Document conflicts with the provision of another Contract Document, the provision in that Contract Document first listed below shall govern, except as otherwise specifically stated:

- A. Agreement (this instrument)
- B. Modifications
- C. Addenda to Contract Documents
- D. Supplementary Conditions
- E. Instructions to Bidders
- F. General Conditions
- G. Specifications
- H. Drawings

IV. AUTHORITY AND RESPONSIBILITY OF THE ENGINEER: All work shall be done under the observation of the Engineer. The Engineer shall decide any and all questions which may arise as to the quality and acceptability of materials furnished, work performed, rate of progress of work, interpretation of Plans and Specifications and all questions as to the acceptable fulfillment of the Contract on the part of the Contractor.

V. SUCCESSORS AND ASSIGNS: This Agreement and all of the covenants hereof shall inure to the benefit of and be binding upon the Owner and the Contractor respectively and his partners, successors, assigns and legal representatives. Neither the Owner nor the Contractor shall have the right to assign, transfer or sublet his interests or obligations hereunder without written consent of the other party.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed on the day and year first above written.

ATTEST

CONTRACTOR

By _____

Title _____

BUSINESS ADDRESS

Telephone _____

Fax _____

ATTEST

OWNER

By _____

Title _____

Date _____

PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS THAT _____

as Principal, hereinafter called the CONTRACTOR, and as Surety, hereinafter called Surety, are held and firmly bound unto

CITY OF MARSHALL

As obligee, hereinafter called the OWNER, in the amount of

_____ Dollars (\$ _____)
(Amount shall be shown in both words and figures. In case of a discrepancy, the amount shown in words shall govern).

for the payment whereof the CONTRACTOR and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the CONTRACTOR has, by a written Agreement dated _____, entered into a Contract with the OWNER for the construction of

GREEN STREET RECONSTRUCTION and 2023 STREET IMPROVEMENTS #1

in accordance with Plans and Specifications prepared by the CITY OF MARSHALL.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if the CONTRACTOR shall promptly and faithfully perform said Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect, subject to, however, to the following conditions.

- A. The Surety hereby waives notice of any alteration or extension of time made by the OWNER.
- B. Whenever the CONTRACTOR shall be, and declared by the OWNER to be, in default under the Contract, the OWNER having performed OWNER's obligations there under, the Surety may promptly remedy the default, or shall promptly:
 1. Complete the Contract in accordance with its terms and conditions, or
 2. Obtain a bid or bids for submission to the OWNER for completing the Contract in accordance with its terms and conditions, and upon determination by the OWNER and Surety of the lowest responsible Bidder, arrange for a Contract between such Bidder and the OWNER, and make available as work progresses (even though there should be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract Price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "Balance of the Contract Price," as used in this paragraph, shall mean the total amount payable by the OWNER to the CONTRACTOR under the Contract and any amendments thereto, less the amount properly paid by the OWNER to the CONTRACTOR.
- C. Any suit under this bond must be instituted before the expiration of two (2) years from the date on which final payment under the Contract falls due.
- D. No right of action shall accrue on this bond to or for the use of any person or corporation other than the OWNER named herein or the heirs, executors, administrators or successors of the OWNER.

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

In the Presence of:

WITNESS

(fill in contractor's name)

Principal _____

Title _____

WITNESS

Surety _____

Title _____

Address of Surety _____

Bond No. _____

City _____ Zip Code _____

General Conditions

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ARTICLE 1: DEFINITIONS

- a) *Bid*: The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the work to be performed.
- b) *Bidder*: Any person, firm, or corporation submitting a Bid for the work.
- c) *Bonds*: Bid, performance and payment bonds, and other instruments of security, furnished by Contractor and his surety in accordance with the Contract Documents.
- d) *Change Order*: A written order to Contractor signed by Owner authorizing an addition, deletion, or revision in the work, or an adjustment in the Contract Price or the Contract Time issued after execution of the Agreement.
- e) *Contract Documents*: The Agreement, Addenda (whether issued prior to the Opening of Bids or the execution of the Agreement), Instructions to Bidders, Contractor's bid, the bonds, the Notice of Award, these General Conditions, the Supplementary Conditions, the Specifications, Drawings, and Modifications.
- f) *Contract Price*: The total monies payable to Contractor under the Contract Documents.
- g) *Contract Time*: The number of days stated in the Agreement for the Completion of the Work.
- h) *Contractor*: The person, firm, or corporation with whom Owner has executed the Agreement.
- i) *Day*: A calendar day of twenty-four (24) hours measured from midnight to the next midnight.
- j) *Drawings (Plans)*: The Drawings, also commonly known or referred to as Plans, which show the character and Scope of Work to be performed and which have been prepared or approved by Owner and are referred to in the Contract Documents.
- k) *Field Order*: A written order issued by Owner which clarifies or interprets the Contract Documents in accordance with Paragraph 9.3(a) or orders minor changes in the work in accordance with Paragraph 9(b).
- l) *Modification*:
 - I. A written amendment of the Contract Documents signed by both parties;
 - II. A Change Order;
 - III. A written clarification or interpretation issued by Owner in accordance with Paragraph 9.3(a);
 - or
 - IV. A written order for a minor change or alteration in the work issued by ENGINEER pursuant to Paragraph.
 - V. Modification may only be issued after execution of the Agreement.
- m) *Notice of Award*: The written notice by Owner to the apparent successful Bidder stating that upon compliance with the conditions precedent to be fulfilled by him within the time specified, Owner will execute and deliver the Agreement to him.
- n) *Notice to Proceed*: A written notice given by Owner to Contractor fixing the date on which the Contract Time will commence to run and on which Contractor shall start to perform his obligations under the Contract Documents.
- o) *Owner*: A public body or authority, corporation, association, partnership, or individual for whom the work is to be performed.

- p) *Owner's Representative*: The authorized representative of Owner who is assigned to the project site or any part thereof.
- q) *Project*: The entire construction to be performed as provided in the Contract Documents.
- r) *Shop Drawings*: All Drawings, diagrams, illustrations, brochures, schedules, and other data which are prepared by Contractor, subcontractor, manufacturer, supplier, or distributor and which illustrate the equipment, material, or some portion of the work.
- s) *Specifications*: Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the work. The Specifications are customarily organized in 18 divisions in accordance with the Uniform System for Construction Specifications endorsed by the Construction Specifications Institute.
- t) *Subcontractor*: An individual, firm, or corporation having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the work at the site.
- u) *Substantial Completion*: The date as certified by Engineer when the construction of the Project or a specified part thereof is sufficiently completed, in accordance with the Contract Documents, so that the Project or specified part can be utilized for the purposes for which it was intended; or if there be no such certification, the date when final payment is due in accordance with Paragraph 13.3(a).
- v) *Work*: Any and all obligations, duties, and responsibilities necessary to the successful completion of the Project assigned to or undertaken by Contractor under the Contract Documents, including all labor, materials, equipment, and other incidentals, and the furnishing thereof.

ARTICLE 2: PRELIMINARY MATTERS

2.1 Execution of Agreement:

- a) At least three counterparts of the Agreement and such other Contract Documents as practicable will be executed and delivered by Contractor to Owner within ten days of the Notice of Award and the Owner will execute and deliver one counterpart to Contractor within ten days of receipt of the executed Agreement from Contractor. The Owner will identify those portions of the Contract Documents not so signed and such identification will be binding on all parties. Owner and Contractor shall each receive an executed counterpart of the Contract Documents and additional conformed copies as required.

2.2 Delivery of Bonds:

- a) When Contractor delivers the executed Agreements to Owner, Contractor shall also deliver to Owner such Bonds as he may be required to furnish in accordance with ARTICLE 5 - BONDS AND INSURANCE.

2.3 Copies of Documents:

- a) Owner shall furnish to Contractor up to three copies (unless otherwise provided in the Supplementary Conditions) of the Contract Documents as are reasonably necessary for the execution of the work. Additional copies will be furnished, upon request, at the cost of reproduction.

2.4 Contractor's Pre-Start Representations:

- a) Contractor represents that he has familiarized himself with, and assumes full responsibility for having familiarized himself with the nature and extent of the Contract Documents, work, locality,

and with all local conditions and Federal, State, and local laws, ordinances, rules, and regulations that may in any manner affect performance of the work, and represents that he has correlated his study and observations with the requirements of the Contract Documents. Contractor also represents that he has studied all surveys and investigation reports of subsurface and latent physical conditions referred to in the General Requirements (Division 1) of the Specifications and made such additional surveys and investigations as he deems necessary for the performance of the work at the Contract Price in accordance with the requirements of the Contract Documents and that he has correlated the results of all such data with the requirements of the Contract Documents.

2.5 Commencement of Contract Time, Notice to Proceed:

- a) The Contract Time will commence to run on the day indicated in the Notice to Proceed; but in no event shall the Contract Time commence to run later than the ninetieth day after the day of Bid Opening or the thirtieth day after the day on which Owner delivers the executed Agreement to Contractor. A Notice to Proceed may be given at any time within thirty days after the day on which Owner delivers the executed Agreement to Contractor.

2.6 Starting the Project:

- a) Contractor shall start to perform his obligations under the Contract Documents on the date when the Contract Time commences to run. No work shall be done at the site prior to the date on which the Contract Time commences to run.

2.7 Before Starting Construction:

- a) Before undertaking each part of the work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. He shall at once report in writing to the Owner any conflict, error, or discrepancy which he may discover; however, he shall not be liable to Owner for his failure to discover any conflict, error, or discrepancy in the drawings or Specifications.
- b) Within ten days after delivery of the executed Agreement by Owner to Contractor, Contractor shall submit to Owner for approval, an estimated progress schedule indicating the starting and completion dates of the various stages of the work, and a preliminary schedule of shop drawing submissions.
- c) Before starting the work at the site, Contractor shall furnish Owner Certificates of Insurance as required by ARTICLE 5 - BONDS AND INSURANCE. Within twenty days after delivery of the executed Agreement by Owner to Contractor, but before starting the work at the site, a conference will be held to review the above schedules, to establish procedures for handling shop drawings and other submissions and for processing Applications for Payment, and to establish a working understanding between the parties as to the Project. Present at the conference will be Owner or their representative, Owners Project Manager or representative, Contractor, and his Superintendent.

ARTICLE 3: CORRELATION, INTERPRETATION, AND INTENT OF CONTRACT DOCUMENTS

- a) It is the intent of the Specifications and Drawings to describe a complete Project to be constructed in accordance with the Contract Documents. The Contract Documents comprise the entire Agreement between Owner and Contractor. They may be altered only by a Modification.
- b) The Contract Documents are complementary; what is called for by one is as binding as if called for by all. If Contractor finds a conflict, error or discrepancy in the Contract Documents, he shall call it to Owner's attention in writing at once and before proceeding with the work affected thereby; however, he shall not be liable to Owner for his failure to discover any conflict, error, or discrepancy

in the Specifications or Drawings. In resolving such conflicts, errors, and discrepancies, the Documents shall be given precedence in the following order: Agreement, Modifications, Addenda, Supplementary Conditions, Instructions to Bidders, General Conditions, Specifications, and Drawings. Figure dimensions on Drawings shall govern over scale dimensions, and detailed Drawings shall govern over general Drawings. Any work that may reasonably be inferred from the Specifications or Drawings as being required to produce the intended result shall be supplied whether or not it is specifically called for. Work, materials, or equipment described in words which so applied have a well-known technical or trade meaning shall be deemed to refer to such recognized standards.

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

4.1 Availability of Lands

- a) Owner shall furnish, as indicated in the Contract Documents, and not later than the date when needed by Contractor, the lands upon which the work is to be done, rights-of-way for access thereto, and such other lands which are designated for the use of Contractor. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by Owner, unless otherwise specified in the Contract Documents. If Contractor believes that any delay in Owner's furnishing these lands or easements entitles him to an extension of the Contract Time, he may make a claim therefor as provided in ARTICLE 12 - CHANGE OF THE CONTRACT TIME. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment

4.2 Physical Conditions - Surveys and Reports

- a) Reference is made to the General Requirements (Division 1) of the Specifications for identification of those surveys and investigation reports of subsurface and latent physical conditions at the Project site or otherwise affecting performance of the work which have been relied upon by ENGINEER in preparation of the drawings and Specifications.

4.3 Unforeseen Physical Conditions

- a) Contractor shall promptly notify Owner in writing of any subsurface or latent physical conditions at the site differing materially from those indicated in the Contract Documents. Owner will promptly investigate those conditions and advise Owner in writing if further surveys or subsurface tests are necessary. Promptly thereafter, Owner shall obtain the necessary additional surveys and tests and furnish copies to Contractor. If Owner finds that the results of such surveys or tests indicate that there are subsurface or latent physical conditions which differ materially from those intended in the Contract Documents, and which could not reasonably have been anticipated by Contractor, a Change Order shall be issued incorporating the necessary revisions.

4.4 Reference Points

- a) Owner shall provide engineering surveys for construction to establish reference points which in his judgment are necessary to enable Contractor to proceed with the work. Contractor shall be responsible for surveying and laying out the work (unless otherwise provided in the Supplementary Conditions) and shall protect and preserve the established reference points and shall make no changes or relocations without the prior written approval of Owner. He shall report to Owner whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations. Contractor shall replace and accurately relocate all reference points so lost, destroyed or moved.

- b) All elevations shown on the Plans or referred to herein are in feet above mean sea level datum as established by the United States Geological Survey, unless otherwise noted. The Contractor shall verify all the existing structure locations and elevations at points of connection or possible interference between his work and the existing structures and shall report at once to the Owner any interferences or discrepancies discovered.
- c) The Contractor shall cause to be replaced by a Registered Land Surveyor all survey monuments and/or property irons damaged or destroyed by his operations or the operations of his Subcontractor.

ARTICLE 5: BONDS AND INSURANCE

5.1 Performance, Payment and Other Bonds

- a) CONTRACTOR shall furnish performance and payment bonds as security for the faithful performance and payment of all his obligations under the Contract Documents. These bonds shall be in amounts at least equal to the Contract Price, and (except as otherwise provided in the Supplementary Conditions) in such form and with such sureties as are licensed to conduct business in the state where the Project is located and are named in the current list of "Surety Companies Acceptable on Federal Bonds" as published in the Federal Register by the Audit Staff Bureau of Accounts, U.S. Treasury Department.
- b) If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located, Contractor shall within five days thereafter substitute another bond and surety, both of which shall be acceptable to Owner.

5.2 Insurance Required of the Contractor

- a) Prior to commencement of the work, the Contractor shall purchase and maintain during the term of the Project such insurance as will protect him, the Owners(s) and Owners Representative from claims arising out of the work described in this Contract and performed by the Contractor, Subcontractor(s), or Sub-subcontractor(s) consisting of:
 - I. Worker's Compensation Insurance including Employer's Liability to cover employee injuries or disease compensable under the Worker's Compensation Statutes of the states in which work is conducted under this Contract; disability benefit laws, if any; or Federal Compensation Acts such as U.S. Longshoremen or Harbor Workers, Maritime Employment, or Railroad Compensation Act(s), if applicable. Self-insurance plans approved by the regulatory authorities in the state in which work on this Project is performed are acceptable.
 - II. A Comprehensive General Liability policy to cover bodily injury to persons other than employees and for damage to tangible property, including loss of use thereof, including the following exposures:
 - i. all premises and operations;
 - ii. explosion, collapse, and underground damage;
 - iii. Contractor's Protective Coverage for independent Contractors and subcontractors employed by him;
 - iv. Contractual Liability for the obligation assumed in the indemnification or hold harmless agreement found in the General Conditions section of this Contract;
 - v. the usual Personal Injury Liability endorsement with no exclusions pertaining to employment;

vi. products and completed operations coverage -- this coverage shall extend through the Contract Guarantee period.

III. A Comprehensive Automobile Liability policy to cover bodily injury and property damage arising out of the ownership, maintenance, or use of any motor vehicle, including owned, non-owned, and hired vehicles. In light of standard policy provisions concerning:

- i. loading and unloading; and
- ii. definitions pertaining to motor vehicles licensed for road use vs. unlicensed or self-propelled construction equipment, it is strongly recommended that the Comprehensive General Liability and the Comprehensive Auto Liability be written by the same insurance carrier, though not necessarily in one policy.

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

V. The Contractor shall purchase a Builder's Risk-Installation Floater in a form acceptable to the Owner covering property of the Project for the full cost of replacement as of the time of any loss which shall include as named insureds:

- i. the Contractor;
- ii. all Subcontractors;
- iii. all Sub-subcontractors;
- iv. the Owner;

VI. as their respective interests may prove to be at the time of loss, covering insurable property which is the subject of this Contract, whether in place, stored at the job site, stored elsewhere, or in transit at the risk of the insured(s). Coverage shall be affected on an "All Risk" form including, but not limited to, the perils of fire, wind, vandalism, collapse, theft, and earthquake, with exclusions normal to the coverage. The Contractor may arrange for such deductibles as he deems to be within his ability of self-assume, but he will be held solely responsible for the amount of such deductible and for any non-insurance penalties. Any insured loss shall be adjusted with the Owner and the Contractor and paid to the Owner and Contractor as trustee for the other insureds.

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

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

5.3 Limits of Liability

a) The required limits of liability for insurance coverages requested in Paragraph 5.3 shall be NOT LESS than the following:

I. Worker's Compensation:

i. Coverage A - Compensation	Statutory
ii. Coverage B - Employer's Liability	\$500,000
II. Comprehensive General Liability:	
i. Bodily Injury - Each Occurrence	\$1,000,000
ii. Bodily Injury - Aggregate	\$1,000,000 (Completed Operations)
iii. Property Damage - Each Occurrence	\$500,000
iv. Property Damage - Aggregate	\$1,000,000
v. or Combined Single Limit	\$2,000,000
III. Comprehensive Automobile Liability:	
i. Bodily Injury	\$500,000
ii. Property Damage	\$200,000
iii. or Combined Single Limit	\$1,000,000
IV. OWNER's Protective:	
i. Bodily Injury - Each Occurrence	\$1,500,000
ii. Property Damage - Each Occurrence	\$500,000
iii. Property Damage - Aggregate	\$1,000,000
iv. or Combined Single Limit	\$2,000,000
b) Builder's Risk-Installation Floater:	Replacement Cost at Time of Loss
c) Umbrella or Excess Liability:	\$3,000,000

5.4 Insurance - Other Requirements

a) The following conditions shall also be required in regard to insurance coverage.

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

II. Evidence of Coverage: Prior to commencement of the work, the Contractor shall furnish to the Owner, Certificates of Insurance in force on the Owner's form of certificate provided. Other forms of certificate are acceptable only if:

i. they include all of the items prescribed in the OWNER's form of certificate, including agreement to cancellation provisions outlined in Paragraph 5.5.1. above; and

III. The Owner reserves the right to request complete copies of policies if deemed necessary to ascertain details of coverage not provided by the certificates. Such policy copies shall be "originally signed copies," and so designated.

IV. Evidence of Insurance Required for the Contractor:

i. Worker's Compensation and Employer's Liability Comprehensive General Liability including:

- all premises and operations;
- explosion, collapse, and underground damage;
- CONTRACTOR's Protective;
- Contractual Liability for obligations assumed in the Indemnification-Hold Harmless Agreement of this Contract;
- Personal Injury Liability;
- products and completed operations;
- Comprehensive Automobile Liability including owned, non-owned, and hired vehicles
- Umbrella or Excess Liability

V. Evidence of Insurance Required for the Owner:

i. Owner's Protective Liability which names as insured(s) the Owner and Owners Representative, their consultants, agents, employees, and such public corporations in whose jurisdiction the work is located.

VI. Evidence of Insurance Required for the Contractor and the Owner:

i. Builder's Risk-Installation Floater which names as insured(s) the Owner; Owner's Representative; their consultants, agents, and employees; the CONTRACTOR and all Subcontractors.

VII. Qualification of Insurers: In order to determine financial strength and reputation of insurance carriers, all companies providing the coverages required shall be licensed or approved by the Insurance Bureau of the State of Michigan and shall have a financial rating not lower than XI and a Policyholder's service rating no lower than B+ as listed in A.M. Best's Key Rating Guide, current edition. Companies with ratings lower than B+:XI will be acceptable only upon written consent of the Owner.

5.5 Additional Bonds and Insurance

a) Prior to delivery of the executed Agreement by Owner to Contractor, Owner may require Contractor to furnish such other bonds and such additional insurance, in such form and with such sureties or insurers as Owner may require. If such other bonds or such other insurance is specified by written instructions given prior to Opening of Bids, the premiums shall be paid by Contractor; if subsequent thereto, they shall be paid by Owner (except as otherwise provided in Article 10)

ARTICLE 6: CONTRACTOR'S RESPONSIBILITIES

6.1 Supervision and Superintendence

- a) Contractor shall supervise and direct the work efficiently and with his best skill and attention. He shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction, but he shall not be solely responsible for the negligence of others in the design or selection of a specific means, method, technique, sequence, or procedure of construction which is indicated in and required by the Contract Documents. Contractor shall be responsible to see that the finished work complies accurately with the Contract Documents.
- b) Contractor shall keep on the work site at all times during its progress a competent resident superintendent, who shall not be replaced without written notice to Owner except under extraordinary circumstances. The superintendent will be Contractor's representative at the site and shall have authority to act on behalf of the Contractor. All communications given to the superintendent shall be as binding as if given to Contractor.

6.2 Labor, Materials, and Equipment

- a) Contractor shall provide competent, suitably qualified personnel to survey and lay out the work and perform construction as required by the Contract Documents. He shall at all times maintain good discipline and order at the site.
- b) Contractor shall furnish all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water and sanitary facilities and all other facilities and incidentals necessary for the execution, testing, initial operation, and completion of the work.

- c) All materials and equipment shall be new, except as otherwise provided in the Contract Documents. If required by Owner, Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.
- d) All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacturer, fabricator, or processors, except as otherwise provided in the Contract Documents.

6.3 Substitute Materials or Equipment

- a) Whenever a material, article, or piece of equipment is identified on the Drawings or Specifications by reference to brand name or catalog number, it shall be understood that this is referenced for the purpose of defining the performance or other salient requirements and that other products of equal capacities, quality, and function may be considered.
- b) The Contractor may recommend the substitution of a material, article, or piece of equipment of equal substance and function for those referred to in the Contract Documents by reference to brand name or catalog number, and if, in the opinion of the Owner, such material, article, or piece of equipment is of equal substance and function to that specified, the Owner may approve its substitution and use by the Contractor. Any cost differential shall be deductible from the Contract Price and the Contract Documents shall be appropriately modified by Change Order. The Contractor warrants that if substitutes are approved, no major changes in the function or general design of the project will result. Incidental changes or extra component parts required to accommodate the substitute will be made by the Contractor without a change in the Contract Price or Contract Time.

6.4 Concerning Subcontractors

- a) Contractor shall not employ any Subcontractor or other person or organization (including those who are to furnish the principal items of materials or equipment), whether initially or as a substitute, against whom Owner may have reasonable objection. A Subcontractor or other person or organization identified in writing to Owner prior to the Notice of Award will be deemed acceptable to Owner. Acceptance of any Subcontractor, other person, or organization by Owner shall not constitute a waiver of any right of Owner to reject defective work or work not in conformance with the Contract Documents. If Owner, after due investigation, has reasonable objection to any Subcontractor, other person or organization proposed by Contractor after the Notice of Award, Contractor shall submit an acceptable substitute and the Contract Price shall be increased or decreased by the difference in cost occasioned by such substitution, and an appropriate Change Order shall be issued. Contractor shall not be required to employ any Subcontractor, other person or organization against whom he has reasonable objection. Contractor shall not without the consent of Owner make any substitution for any Contractor, other person, or organization who has been accepted by Owner unless Owner determines that there is good cause for doing so.
- b) Nothing contained in these Contract Documents shall create any contractual relationship between the Owner and any Subcontractor or Sub-Subcontractor.
- c) Contractor shall be fully responsible for all acts and omissions of his Subcontractors and of persons and organizations directly or indirectly employed by them and of persons and organizations for whose acts any of them may be liable to the same extent that he is responsible for the acts and omissions of persons directly employed by him. Nothing in the Contract Documents shall create any contractual relationship between Owner and any Subcontractor or other person or organization having a direct contract with Contractor, nor shall it create any obligation on the part of Owner to pay or to see to the payment of any monies due any Subcontractor or other person or organization, except as may otherwise be required by law. Owner may furnish to any Subcontractor or other

person or organization, to the extent practicable, evidence of amounts paid to Contractor on account of specific work done in accordance with the Schedule of Values.

- d) The divisions and sections of the Specifications and the identifications of any drawings shall not control Contractor in dividing the work among Subcontractors or delineating the work to be performed by any specific trade.
- e) Contractor agrees to bind specifically every Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of Owner.
- f) All work performed for Contractor by a Subcontractor shall be pursuant to an appropriate agreement between Contractor and the Subcontractor which shall contain provisions that waive all rights the contracting parties may have against one another for damages caused by fire or other perils covered by insurance provided in accordance with Article 5 of these General Conditions, except such rights as they may have to the proceeds of such insurance held by Owner as trustee under Paragraph 5.2(a)V.

6.5 Patent Fees and Royalties

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

6.6 Permits

- a) Contractor shall obtain and pay for all construction permits and licenses and shall pay all governmental charges and inspection fees necessary for the prosecution of the work, which are applicable at the time of his Bid. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall also pay all public utility charges.

6.7 Laws and Regulations

- a) Contractor shall give all notices and comply with all laws, ordinances, rules and regulations applicable to the work. If Contractor observes that the Specifications or drawings are at variance therewith, he shall give Owner prompt written notice thereof, and any necessary changes shall be adjusted by an appropriate Modification. If Contractor performs any work knowing it to be contrary to such laws, ordinances, rules, and regulations, and without such notice to Owner, he shall bear all costs arising therefrom; however, it shall not be his primary responsibility to make certain that the Specifications and drawings are in accordance with such laws, ordinances, rules and regulations.

6.8 Taxes

- a) Contractor shall pay all sales, consumer use, and other Federal, State and Local taxes required to be paid by him in accordance with the law of the place where the work is to be performed.

6.9 Use of Premises

- a) Contractor shall confine his equipment, the storage of materials and equipment, and the operations of his workmen to areas permitted by law, ordinances, permits, or the requirements of the Contract Documents, and shall not unreasonably encumber the premises with materials or equipment. Contractor shall restore the areas to their original condition.
- b) shall not load nor permit any part of any structure to be loaded with weights that will endanger the structure, nor shall he subject any part of the work to stresses or pressures that will endanger it.

6.10 Record Drawings

- a) Contractor shall keep one record copy of all Specifications, Drawings, Addenda, Modifications, and Shop Drawings at the site in good order and annotated to show all changes made during the construction process. These shall be available to Owner and shall be delivered upon completion of the Project. (Note: Further provisions in respect of such record Drawings may be included in the General Requirements (Division 1).)

6.11 Safety and Protection

- a) Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work. He shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
 - I. all employees on the work and other persons who may be affected thereby;
 - II. all the work and all materials or equipment to be incorporated therein, whether in storage on or off the site;
 - III. other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.
- b) Contractor shall comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss. He shall erect and maintain, as required by the conditions and progress of the work, all necessary safeguards for its safety and protection. He shall notify Owner of adjacent utilities when prosecution of the work may affect them. All damage, injury or loss to any property referred to in Paragraph 6.20(b) or 6.20(c) caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, shall be remedied by Contractor; except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor. Contractor's duties and responsibilities for the safety and protection of the work shall continue until such time as all the work is completed and Owner has accepted work.
- c) Contractor shall designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This person shall be Contractor's superintendent unless otherwise designated in writing by Contractor to Owner.
- d) Owner shall not be responsible for safety on the job. It is the Contractor's sole responsibility to comply with the rules and regulations of the Occupational Safety and Health Act (OSHA).

6.12 Emergencies

- a) In emergencies affecting the safety of persons or the work or property at the site or adjacent thereto, Contractor without special instruction or authorization from Owner, is obligated to act, at his discretion, to prevent threatened damage, injury, or loss. He shall give Owner prompt written notice of any significant changes in the work or deviations from the Contract Documents caused thereby, and a Change Order shall thereupon be issued covering the changes and deviations involved. If Contractor believes that additional work done by him in an emergency which arose from causes beyond his control entitles him to an increase in the Contract Price or an extension of the Contract Time, he may make a claim therefor as provided in Articles 10 and 11.

6.13 Shop Drawings and Samples

- a) After checking and verifying all field measurements, Contractor shall submit to Owner for approval, in accordance with the accepted schedule of Shop Drawing submissions (see paragraph 2.7(b)) five copies (or at Owner's option, one reproducible copy) of all Shop Drawings, which shall have been checked by and stamped with the approval of Contractor. The data shown on the shop drawings will be complete with respect to dimensions, design criteria, materials of construction, and the like to enable Owner to review the information as required.
- b) Contractor shall also submit to Owner for approval with such promptness as to cause no delay in work, all samples required by the Contract Documents. All samples will have been checked by and stamped with the approval of Contractor, identified clearly as to material, manufacturer, any pertinent catalog numbers, and the use for which intended.
- c) At the time of each submission, Contractor shall in writing call Owner's attention to any deviations that the Shop Drawing or sample may have from the requirements of the Contract Documents.
- d) Owner will review and approve with reasonable promptness Shop Drawings and samples, but his review and approval shall be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents. The approval of a separate item as such will not indicate approval of the assembly in which the item functions. Contractor shall make any corrections required by the Owner and shall return the required number of correct copies of Shop Drawings and resubmit new samples, until approved. Contractor shall direct specific attention in writing or on resubmitted Shop Drawings to revisions other than the corrections called for by Owner on previous submissions. Contractor's stamp of approval on any Shop Drawing or sample shall constitute a representation to Owner that Contractor has either determined and verified all quantities, dimensions, field construction criteria, materials, catalog numbers, and similar data or he assumes full responsibility for doing so, and that he has reviewed or coordinated each Shop Drawing or sample with the requirements of the work and the Contract Documents.
- e) Where a Shop Drawing or sample submission is required by the Specifications, no related work shall be commenced until the submission has been approved by the Owner. A copy of each approved Shop Drawing and each approved sample shall be kept in good order by Contractor at the site and shall be available.
- f) Owner's approval of Shop Drawings or samples shall not relieve Contractor from his responsibility for any deviations from the requirements of the Contract Documents unless Contractor has in writing called Owner's attention to such deviation at the time of submission and Owner has given written approval to the specific deviation, nor shall any approval by Owner relieve Contractor from responsibility for errors or omissions in the Shop Drawings. (Note: Further provisions in respect to Shop Drawings and samples may be included in the General Requirements (Division 1).)

6.14 Cleaning

- a) Contractor shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the work, and at the completion of the work he shall remove all waste materials, rubbish, and debris from and about the premises as well as all tools, construction equipment and machinery, and surplus materials, and shall leave the site clean and ready for occupancy by Owner. Contractor shall restore to their original condition those portions of the site not designated for alteration by the Contract Documents. (Note: Further provisions in respect of cleaning may be included in the General Requirements (Division 1).)

6.15 Indemnification

- a) Contractor shall indemnify and hold harmless Owner and their agents, directors, officers, and employees from and against all claims, damages, losses and expenses including attorneys' fees arising out of or resulting from the performance of the work, provided that any such claim, damage, loss or expense is:
 - I. attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting therefrom; and
 - II. caused in whole or in part by any negligent act or omission of Contractor, any Subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.
- b) In any and all claims against Owner or any of their agents or directors, officers, and employees by any employee of Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.2(a) shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor, or any Subcontractor under Worker's Compensation Acts, disability benefit acts, or other employee benefit acts.
- c) The obligations of Contractor under Paragraph 6.2(a) shall not extend to the liability of Owner, his agents or directors, officers, and employees arising out of:
 - I. the preparation of approval of maps, drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
 - II. the giving of or the failure to give directions or instructions by ENGINEER, his agents or directors, officers and employees provided such giving or failure to give is the primary cause of injury or damage.

ARTICLE 7: WORK BY OTHERS

- a) Owner may perform additional work related to the Project by themselves, or he may let other direct contracts therefor which shall contain General Conditions similar to these. Contractor shall afford the other contractors who are parties to such direct contracts (or Owner, if he is performing the additional work themselves), reasonable opportunity for the introduction and storage of materials and equipment and the execution of work and shall properly connect and coordinate his work with theirs.
- b) If any part of Contractor's work depends for proper execution or results upon the work of any such other Contractor (or Owner), Contractor shall inspect and promptly report to Owner in writing any defects or deficiencies in such work that render it unsuitable for such proper execution and results. His failure so to report shall constitute an acceptance of the other work as fit and proper for the relationship of his work except as to defects and deficiencies which may appear in the other work after the execution of his work.

- c) Contractor shall do all cutting, fitting, and patching of his work that may be required to make its several parts come together properly and fit it to receive or be received by such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of Owner and of the other contractors whose work will be affected.
- d) If the performance of additional work by other Contractors or Owner is not noted in the Contract Documents prior to the execution of the Contract, written notice thereof shall be given to Contractor prior to starting any such additional work. If Contractor believes that the performance of such additional work by Owner or others involves him in additional expense or entitles him to an extension of the Contract Time, he may make a claim therefor as provided in Articles 10 and 11.

ARTICLE 8: OWNER'S RESPONSIBILITIES

- a) In case of termination of the employment of Owner's Representative, Owner shall appoint an Owner's Representative against whom Contractor makes no reasonable objection.
- b) Owner shall furnish the data required of him under the Contract Documents promptly and shall make payments to Contractor promptly after they are due as provided in Paragraphs 13.4(a) and 13.7(a).
- c) Owner's duties in respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.1(a) and 4.4(a). Paragraph 4.2(a) refers to Owner's identifying and making available to Contractor copies of surveys and investigation reports of subsurface and latent physical conditions at the site or otherwise affecting performance of the work which have been relied upon by Engineer in preparing the drawings and Specifications.
- d) Owner's responsibilities in respect of liability and property insurance are set forth in Article 5.
- e) addition to his rights to request changes in the work in accordance with Article 9, Owner (especially in certain instances as provided in Paragraph 9(d)) shall be obligated to execute Change Orders.
- f) Owner's responsibility in respect of certain inspections, tests, and approvals is set forth in Paragraph 12.2(a)
- g) In connection with Owner's right to stop work or suspend work, see Paragraphs 13.5(a) and 14.1(a). Paragraph 14.2(a) deals with Owner's right to terminate services of Contractor under certain circumstances.

ARTICLE 9: CHANGES IN THE WORK

- a) Without invalidating the Agreement, Owner may, at any time or from time to time, order additions, deletions, or revisions in the work; these will be authorized by Change Orders. Upon receipt of a Change Order, Contractor shall proceed with the work involved. All such work shall be executed under the applicable conditions of the Contract Documents. If any Change Order causes an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, an equitable adjustment will be made as provided in Article 10 or Article 11 on the basis of a claim made by either party.
- b) Owner may authorize minor changes or alterations in the work not involving extra cost and not inconsistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order. If Contractor believes that any minor change or alteration authorized by Owner entitles him to an increase in the Contract Price, he may make a claim therefor as provided in Article 10

- c) Additional work performed by Contractor without authorization of a Change Order will not entitle him to an increase in the Contract Price or an extension of the Contract Time, except in the case of an emergency and as provided in Paragraphs 10(b) and 13.4(b).
- d) Owner shall execute appropriate Change Orders prepared by Engineer covering changes in the work to be performed as provided in Paragraph 4.3(a), and work performed in an emergency as provided in Paragraph 6.1(b) and any other claim of Contractor for a change in the Contract Time or the Contract Price which is approved by Owner.
- e) It is Contractor's responsibility to notify his Surety of any changes affecting the general Scope of Work or change in the Contract Price and the amount of the applicable bonds shall be adjusted accordingly. Contractor shall furnish proof of such adjustment to Owner.

ARTICLE 10: CHANGE OF CONTRACT PRICE

- a) The Contract Price constitutes the total compensation payable to Contractor for performing the work. All duties, responsibilities, and obligations assigned to or undertaken by Contractor shall be at his expense without change in the Contract Price.
- b) The Contract Price may only be changed by a Change Order. Any claim for an increase in the Contract Price shall be based on written notice delivered to Owner within fifteen days of the occurrence of the event giving rise to the claim. Notice of the amount of the claim with supporting data shall be delivered within forty-five days of such occurrence unless Owner allows an additional period of time to ascertain accurate cost data. Any claims, not delivered to Owner within forty-five days or within any additional period allowed by Owner in writing, shall be forfeited by the Contractor and shall not be honored by the Owner.
- c) The value of any work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:
 - I. where the work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved;
 - II. by mutual acceptance of a lump sum;
 - III. on the basis of the Cost of the Work (determined as provided in Paragraph 10.2(a))

10.2 Cost of the Work

- a) The term Cost of the Work means the sum of all costs necessarily incurred and paid by the Contractor in the proper performance of the work. Except as may be otherwise agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items and shall not include any of the costs itemized in Paragraph 10.2(e).
 - I. Payroll costs for employees in the direct employ of Contractor in the performance of the work under schedules of job classifications agreed upon by Owner and Contractor: Payroll costs for employees not employed full time on the work shall be apportioned on the basis of their time spent on the work. Payroll costs shall include, but not be limited to salaries and wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, worker's compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. Such employees shall include superintendents and foremen at the site. The expenses of performing work after regular working hours, on Sunday or legal holidays shall be included in the above to the extent authorized by the Owner.

II. Cost of all materials and equipment furnished and incorporated in the work, including costs of transportation and storage thereof, and manufacturers' field services required in connection therewith: All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds, and all returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

b) Payments made by Contractor to the Subcontractors for work performed by Subcontractors: If required by Owner, Contractor shall obtain competitive bids from Subcontractors acceptable to him and shall deliver such bids to Owner who will then determine which bids will be accepted. If a subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work Plus a Fee, the Cost of the Work shall be determined in accordance with Paragraphs 10.2(a) and 10.2(e). All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

c) Costs of special consultants (including, but not limited to, ENGINEERS, architects, testing laboratories, surveyors, lawyers, and accountants) employed for services specifically related to the work.

d) Supplemental costs including the following:

I. The proportion of necessary transportation, traveling and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the work;

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

III. Sales, use or similar taxes related to the work, and for which Contractor is liable, imposed by any governmental authority;

IV. Deposits lost for causes other than Contractor's negligence, royalty payments and fees for permits and licenses;

V. Losses, damages and expenses, not compensated by insurance or otherwise, sustained by Contractor in connection with the execution of and to the work, provided they have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's Fee. If, however, any such loss or damage requires reconstruction and Contractor is placed in charge thereof, he shall be paid for his services a fee proportionate to that stated in Paragraph 10.3(a)II;

VI. The cost of utilities, fuel and sanitary facilities at the site;

VII. Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage and similar petty cash items in connection with the work;

VIII. Cost of premiums for bonds and insurance which OWNER is required to pay.

e) The term Cost of the Work shall not include any of the following:

I. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnership and sole proprietorships), general managers, architects, estimators, lawyers, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks and other personnel employed by Contractor whether at the site or in his principal or a branch office

for general administration of the work and not specifically included in the schedule referred to in Subparagraph 10.2(a)I. -- all of which are to be considered administrative costs covered by the Contractor's Fee.

II. Expenses of Contractor's principal and branch offices other than his office at the site.

III. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the work and charges against Contractor for delinquent payments.

IV. Cost of premiums for all bonds and for all insurance policies whether or not Contractor is required by the Contract Documents to purchase and maintain the same (except as otherwise provided in Subparagraph 10.2(d)VIII).

V. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

VI. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Section 10.2(a).

VII. Temporary shutdown of work due to unknown existing condition. Contractor shall not charge Owner for equipment or labor for idled operations due to unforeseen condition at the work site.

10.3 Contractor's Fee

a) The Contractor's Fee which shall be allowed to Contractor for his overhead and profit shall be determined as follows:

I. A fixed mutually acceptable. If no mutually acceptable fixed fee can be agreed upon, then,

II. A fee based on the following percentages of the various portions of the Cost of the Work:

i. for costs incurred under Paragraphs 10.2(a)I and 10.2(a)II.; the Contractor's Fee shall be ten (10) percent;

ii. for costs incurred under Paragraph 10.2(d) the Contractor's Fee shall be five (5) percent; and if a subcontract is on the basis of Cost of the Work Plus a Fee, the maximum allowable to the Subcontractor as a fee for overhead and profit shall be ten (10) percent; and

iii. no fee shall be payable on the basis of costs itemized under Paragraphs 10.2(e), 10.2(f), and 10.2(g).

III. The amount of credit to be allowed by Contractor to Owner for any such change which results in a net decrease in cost, will be the amount of the actual net decrease. When both additions and credits are involved in any one change, the combined overhead and profit shall be figured on the basis of the net increase, if any.

IV. Whenever the cost of any work is to be determined pursuant to Paragraphs 10.2(a) and 10.2(g), Contractor will submit in form prescribed by Owner an itemized cost breakdown together with supporting data.

10.4 Cash Allowances

a) It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the work so covered to be done by such materialmen, suppliers, or Subcontractors and for such sums within the limit of the allowances as Owner may approve. Upon final payment, the Contract Price shall be adjusted as required and an appropriate

Change Order issued. Contractor agrees that the original Contract Price includes such sums as he deems proper for costs and profit on account of cash allowances. No demand for additional cost or profit in connection therewith will be allowed.

ARTICLE 11: CHANGE OF THE CONTRACT TIME

- a) The Contract Time may only be changed by a Change Order. Any claim for an extension in the Contract Time shall be based on written notice delivered to Owner within fifteen days of the occurrence of the event giving rise to the claim. Notice of the extent of the claim with supporting data shall be delivered within forty-five days of such occurrence unless Owner allows an additional period of time to ascertain more accurate data. All claims for adjustment in the Contract Time shall be determined by Owner and Contractor's mutual agreement. Any change in the Contract Time resulting from any such claim shall be incorporated in a Change Order.
- b) The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of Contractor if he makes a claim therefor as provided in Paragraph 11(a). Such delays shall include, but not be restricted to, acts or neglect by any separate Contractor employed by Owner, fires, floods, labor disputes, epidemics, abnormal weather conditions, or Acts of God.
- c) All time limits stated in the Contract Documents are of the essence of the Agreement. The provisions of this Article 11 shall not exclude recovery for damages (including compensation for additional professional services) for delay by either party.

ARTICLE 12: WARRANTY AND GUARANTEE; TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

12.1 Warranty and Guarantee

- a) Contractor warrants and guarantees to Owner that all materials and equipment will be new unless otherwise specified and that all work will be of good quality and free from faults or defects and in accordance with the requirements of the Contract Documents and of any inspections, tests, or approvals referred to in Paragraph 12.2. All unsatisfactory work, all faulty or defective work, and all work not conforming to the requirements of the Contract Documents at the time of acceptance thereof or of such inspections, tests, or approvals, shall be considered defective. Prompt notice of all defects shall be given to Contractor. All defective work, whether or not in place, may be rejected, corrected, or accepted as provided in this Article 12.

12.2 Tests and Inspections

- a) If the Contract Documents, laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction require any work to specifically be inspected, tested, or approved by some public body, Contractor shall assume full responsibility therefor, pay all costs in connection therewith and furnish Owner the required certificates of inspection, testing, or approval. All other inspections, tests and approvals required by the Contract Documents shall be performed by organizations acceptable to Owner and Contractor and the costs thereof shall be borne by Contractor unless otherwise specified.
- b) Contractor shall give Owner timely notice of readiness of the work for all inspections, tests, or approvals. If any such work required so to be inspected, tested, or approved is covered without written approval of Owner, it must, if requested by Owner, be uncovered for observation, and such uncovering shall be at Contractor's expense unless Contractor has given Owner timely notice of his intention to cover such work and Owner has not acted with reasonable promptness in response to such notice.

- c) Neither observations by ENGINEER, nor inspections, tests, or approvals by persons other than CONTRACTOR shall relieve CONTRACTOR from his obligations to perform the work in accordance with the requirements of the Contract Documents.

12.3 Access to Work

- a) Owner and his representatives will at reasonable times have access to the work. Contractor shall provide proper and safe facilities for such access and observation of the work and also for any inspection or testing thereof by others.

12.4 Uncovering Work

- a) If any work is covered contrary to the written request of Owner, it must, if requested by Owner, be uncovered for his observation and replaced at Contractor's expense.
- b) If any work has been covered which Owner has not specifically requested to observe prior to its being covered, or if Owner considered it necessary or advisable that covered work be inspected or tested by others, Contractor at Owner's request shall uncover, expose, or otherwise make available for observation, inspection, or testing as Owner may require, that portion of the work in question, furnishing all necessary labor, material, and equipment. If it is found that such work is defective, Contractor shall bear all the expenses of such uncovering, exposure, observation, inspection, and testing and of satisfactory reconstruction, including compensation for additional professional services, and an appropriate deductive Change Order shall be issued. If, however, such work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction if he makes a claim therefor as provided in Articles 11 and 12.

12.5 Owner May Stop the Work

- a) If the work is defective, or Contractor fails to supply sufficient skilled workmen or suitable materials or equipment, or if Contractor fails to make prompt payments to Subcontractors or for labor, materials, or equipment, Owner may order Contractor to stop the work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor or any other party.

12.6 Correction or Removal of Defective Work

- a) If required by Owner prior to approval of final payment, Contractor shall promptly, without cost to Owner and as specified by Owner, either correct any defective work, whether or not fabricated, installed or completed, or, if the work has been rejected by Owner, remove it from the site and replace it with non-defective work. If Contractor does not correct such defective work or remove and replace such rejected work within a reasonable time, Owner may have the deficiency corrected or the rejected work removed and replaced. All direct and indirect costs of such correction or removal and replacement, including compensation for additional professional services, shall be paid by Contractor, and an appropriate deductive Change Order shall be issued. Contractor shall also bear the expenses of making good all work of others destroyed or damaged by his correction, removal or replacement of his defective work.

12.7 One-Year Correction Period

- a) If, after the approval of final payment and prior to the expiration of one year after the date of Substantial Completion or such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents, any work is found to be

defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions, either correct such defective work, or, if it has been rejected by Owner, remove it from the site and replace it with non-defective work. If Contractor does not promptly comply with the terms of such instructions, Owner may have the defective work corrected or the rejected work removed and replaced, and all direct and indirect costs of such removal and replacement, including compensation for additional professional services, shall be paid by Contractor.

12.8 Acceptance of Defective Work

- a) If, instead of requiring correction or removal and replacement of defective work, Owner prefers to accept it, he may do so. In such case, if acceptance occurs prior to approval of final payment, a Change Order shall be issued incorporating the necessary revisions in the Contract Documents, including appropriate reduction in the Contract Price; or, if the acceptance occurs after approval of final payment, an appropriate amount shall be paid by Contractor to Owner.

12.9 Neglected Work by Contractor

- a) If Contractor should fail to prosecute the work in accordance with the Contract Documents, including any requirements of the progress schedule, Owner, after seven days written notice to Contractor may, without prejudice to any other remedy he may have, make good such deficiencies and the cost thereof (including compensation for additional professional services) shall be charged against Contractor, in which case a Change Order shall be issued incorporating the necessary revisions in the Contract Documents including an appropriate reduction in the Contract Price. If the payments then or thereafter due Contractor are not sufficient to cover such amount, Contractor shall pay the difference to Owner.

ARTICLE 13: PAYMENTS AND COMPLETION

13.1 Schedules

- a) At least ten days prior to submitting the first application for a progress payment, Contractor shall submit a progress schedule, a final schedule of shop drawing submissions and a schedule of values of the work. These schedules shall be satisfactory in form and substance to Owner. The schedule of values shall include quantities and unit prices aggregating the Contract Price and shall subdivide the work into component parts in sufficient detail to serve as the basis for progress payments during construction. Upon approval of the schedules of values by Owner, it shall be incorporated into the form of Application for Payment furnished by Owner.

13.2 Application for Progress Payment

- a) At least ten days before each progress payment falls due (but not more often than once a month), Contractor shall submit to Owner for review an Application for Payment filled out and signed by Contractor covering the work completed as of the date of the application and accompanied by such data and schedules as Owner may reasonably require. If payment is requested on the basis of material and equipment not incorporated in the work but delivered and suitably stored at the site or at another location agreed to in writing, the Application for Payment shall also be accompanied by such data, satisfactory to Owner, as will establish Owner's title to the material and equipment and protect his interest therein, including applicable insurance. Each subsequent Application for Payment shall include an affidavit of Contractor stating that all previous progress payments received on account of the work have been applied to discharge in full all of Contractor's obligations reflected in prior Applications for Payment. Except where greater retention is necessary pursuant to definite circumstances specifically provided for in the construction contract, the following schedule of retained amounts from progress payments shall be followed:

- I. Not more than 10% of the dollar value of all work in place until work is 50% in place.
- II. After the work is 50% in place, additional retainage shall not be withheld unless the Owner determines that the Contractor is not making satisfactory progress, or for other specific cause relating to the Contractor's performance under the Contract. If the Owner so determines, the Owner may retain not more than 10% of the dollar value of work more than 50% in place.
- III. The retained funds shall not exceed the pro rata share of the Owner's matching requirement under the construction Contract and shall not be co-mingled with other funds of the Owner and shall be deposited in an interest bearing account in a regulated financial institution in this state wherein all such retained funds are kept by the Owner which shall account for both retainage and interest on each construction contract separately. An Owner is not required to deposit retained funds in an interest-bearing account if the retained funds are to be provided under a state or federal grant and the retained funds have not been paid to the Owner.
- IV. Except as provided in 13.2.j and 13.2.k, retainage and interest earned on retainage shall be released to the Contractor together with the final progress payment.
- V. At any time after 94% of work under the Contract is in place and at the request of the original Contractor, the Owner shall release the retainage plus interest to the original Contractor only if the original Contractor provides to the Owner an irrevocable letter of credit in the amount of the retainage plus interest, issued by a bank authorized to do business in this state, containing terms mutually acceptable to the Contractor and the Owner.

- b) If a dispute regarding a matter described in 13.2.c arises, the Contractor and the Owner shall designate an agent who has background, training, and experience in the construction of facilities similar to that which is the subject of the Contract, as follows:
 - I. in an agreement reached within 10 days after a dispute arises;
 - II. if an agreement cannot be reached within 10 days after a dispute arises, the Owner shall designate an agent who has background, training, and experience in the construction of facilities similar to that which is the subject of the Contract and who is not an employee of the Owner.
- c) The Owner may request dispute resolution by the agent regarding the following:
 - I. at any time during the term of the Contract, to determine whether there has been a delay for reasons that were within the control of the Contractor, and the period of time that delay has been caused, continued, or aggravated by actions of the Contractor.
 - II. at any time after 94% of work under the Contract is in place, whether there has been an unacceptable delay by the Contractor in performance of the remaining 6% of work under the Contract. The agent shall consider the terms of the Contract and the procedures normally followed in the industry and shall determine whether the delay was for failure to follow reasonable and prudent practices in the industry for completion of the project.
- d) This dispute resolution process shall be used only for the purpose of determining the rights of the parties to retained funds and interest earned on retained funds and is not intended to alter, abrogate, or limit any rights with respect to remedies that are available to enforce or compel performance of the terms of the Contract by either party.
- e) The agent may request and shall receive all pertinent information from the parties and shall provide an opportunity for an informal meeting to receive comments, documents, and other relevant information in order to resolve the dispute. The agent shall determine the time, place, and procedure for the informal meeting. A written decision and reasons for the decision shall be given to the parties within 14 days after the meeting.

- f) The decision of the agent shall be final and binding upon all parties. Upon application of either party, the decision of the agent may be vacated by order of the circuit court only upon a finding by the court that the decision was procured by fraud, duress, or other illegal means.
- g) If the dispute resolution results in a decision:
- I. that there has been a delay as described in 13.2.f.I all interest earned on retained funds during the period of delay shall become the property of the Owner;
 - II. that there has been unacceptable delay as described in 13.2.f.II, the Owner may contract with a subsequent contractor to complete the remaining 6% of the work under the Contract, and interest earned on retained funds shall become the property of the Owner. A subsequent contractor under this subdivision shall be paid by the Owner from the following sources until each source is depleted, in the order listed below:
 - i. the dollar value of the original Contract, less the dollar value of funds already paid to the original Contractor and the dollar value of work in place for which the original Contractor has not received payment;
 - ii. Retainage from the original Contractor, or funds made available under a letter of credit provided under 13.2(a)IV;
 - iii. interest earned on retainage from the original Contractor, of funds made available under a letter of credit provided under 13.2(a)IV.
- h) If the Owner contracts with a subsequent Contractor as provided in 13.2(g)II, the final progress payment shall be payable to the original Contractor within the time period specified in 13.4(a)I. The amount of the final progress payment to the original Contractor shall not include interest earned on retained funds. The Owner may deduct from the final progress payment all expenses of contracting with the subsequent Contractor. This act shall not impair the right of the Owner to bring an action or to otherwise enforce a performance bond to complete work under a construction Contract.

13.3 Contractor's Warranty of Title

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

13.4 Approval of Payments

- a) Owner will, within ten days after receipt of each Application for Payment, either indicate in writing his approval of payment or return the application to Contractor indicating in writing his reasons for refusing to approve payment. In the latter case, Contractor may make the necessary corrections and resubmit the application. Owner shall, after presentation to him of an approved Application for Payment, pay Contractor the amount approved.
- I. Each progress payment requested, including reasonable interest if requested under 13.4(a)II, shall be paid within thirty (30) days after receipt by the Owner of the Application for Payment.
 - II. Upon failure of the Owner to make a timely progress payment pursuant to this section, the person designated to submit requests for progress payments may include reasonable interest on amounts past due in the next request for payment.
- b) Owner may refuse to approve the whole or any part of any payment if, in his opinion, it would be incorrect to make such representation. He may also refuse to approve any such payment, or,

because of subsequently discovered evidence of the results of subsequent inspections or tests, nullify any such payment previously approved, to such extent as may be necessary in his opinion to protect himself from loss because:

- I. The work is defective, or completed work has been damaged requiring correction or replacement;
- II. Claims or liens have been filed or there is reasonable cause to believe such may be filed;
- III. The Contract Price has been reduced because of Modifications;
- IV. Owner has been required to correct defective work or complete the work in accordance with Paragraph 13.11; or
- V. Of unsatisfactory prosecution of the work, including failure to furnish acceptable submittals or to clean up.

13.5 Substantial Completion

- a) Prior to final payment, Contractor may, in writing to Owner, certify that the entire Project is substantially complete and request that Owner issue a Certificate of Substantial Completion. Within a reasonable time thereafter, Owner and Contractor shall make an inspection of the Project to determine the status of completion. If Owner does not consider the Project substantially complete, he will notify Contractor in writing giving his reasons therefor. If Owner considers the Project substantially complete, he will prepare and deliver a tentative Certificate of Substantial Completion which shall fix the date of Substantial Completion and the responsibilities between Owner and Contractor for maintenance, heat, and utilities. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment, and the certificate shall fix the time within which such items shall be completed or corrected, said time to be within the Contract Time. Contractor shall have seven days after receipt of the tentative certificate during which he may make written objection to Owner as to any provisions of the certificate or attached list. If, after considering such objections, Owner concludes that the Project is not substantially complete, he will within fourteen days after submission of the tentative certificate notify Contractor of Owner's objections. He will within said fourteen days execute and deliver to Contractor a definitive Certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as he believes justified after consideration of any objections from Contractor.
- b) Owner shall have the right to exclude Contractor from the Project after the date of Substantial Completion, but Owner shall allow Contractor reasonable access to complete or correct items on the tentative list.

13.6 Final Inspection

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

13.7 Final Application for Payment

- a) After Contractor has completed all such corrections to the satisfaction of Owner and delivered all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, and other documents -- all as required by the Contract Documents -- he may make application for final payment following the procedure for progress payments. The final Application for Payment

shall be accompanied by such data and schedules as Owner may reasonably require, together with complete and legally effective releases or waivers of all liens arising out of the Contract Documents and the labor and services performed and the materials and equipment furnished thereunder. In lieu thereof and as approved by Owner, Contractor may furnish receipts or releases in full; an affidavit of Contractor that the releases and receipts include all labor, services, material, and equipment for which a lien could be filed, and that all payrolls, material and equipment bills, and other indebtedness connected with the work for which Owner or his property might in anyway be responsible, have been paid or otherwise satisfied; and consent of the Surety, if any, to final payment. If any Subcontractor, materialman, fabricator, or supplier fails to furnish a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify him against any lien.

13.8 Approval of Final Payment

- a) If, on the basis of his observation and review of the work during construction, his final inspection and his review of the final Application for Payment -- all as required by the Contract Documents -- Owner is satisfied that the work has been completed and Contractor has fulfilled all of his obligations under the Contract Documents, he will, within ten days after receipt of the final Application for Payment, indicate in writing his approval of payment and present the application for payment.
- b) If after Substantial Completion of the work, final completion thereof is materially delayed through no fault of Contractor, Owner shall, without terminating the Agreement, make payment of the balance due for that portion of the work fully completed and accepted.

13.9 Contractor's Continuing Obligation

- a) Contractor's obligation to perform the work and complete the Project in accordance with the Contract Documents shall be absolute. Neither approval of any progress or final payment by Owner, nor the issuance of a Certificate of Substantial Completion, nor any payment by Owner to Contractor under the Contract Documents, nor any use or occupancy of the Project or any part thereof by Owner, nor any act of acceptance by Owner nor any failure to do so, nor any correction of defective work by Owner shall constitute an acceptance of work not in accordance with the Contract Documents.

13.10 Waiver of Claims

- a) The making and acceptance of final payment shall constitute:
 - I. A waiver of all claims by Owner against Contractor other than those arising from unsettled liens, from defective work appearing after final inspection pursuant to Paragraph 13.6, or from failure to comply with the requirements of the Contract Documents or the terms of any special guarantees specified therein; and
 - II. A waiver of all claims by Contractor against Owner other than those previously made in writing and still unsettled.

ARTICLE 14: SUSPENSION OF WORK AND TERMINATION

14.1 Owner May Suspend Work

- a) Owner may, at any time and without cause, suspend the work or any portion thereof for a period of not more than ninety days by notice in writing to Contractor which shall fix the date on which work shall be resumed. Contractor shall resume the work on the date so fixed. Contractor will be allowed

an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if he makes a claim therefor as provided in Articles 10 and 11.

14.2 Owner May Terminate

- a) If Contractor is adjudged bankrupt or insolvent, or if he makes a general assignment for the benefit of his creditors, or if a trustee or receiver is appointed for Contractor or for any of his property, or if he files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or similar laws, or if he repeatedly fails to supply sufficient skilled workmen or suitable material or equipment, or if he disregards laws, ordinances, rules, regulations or orders of any public body having jurisdiction, or if he disregards the authority of Owner, or if he otherwise violates any provision of the Contract Documents, then Owner may, without prejudice to any other right or remedy and after giving Contractor and his Surety seven days' written notice, terminate the services of Contractor and take possession of the Project and of all materials, equipment, tools, construction equipment and machinery thereon owned by Contractor, and finish the work by whatever method he may deem expedient. In such case Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the Contract Price exceeds the direct and indirect costs of completing the Project, including compensation for additional professional services, such excess shall be paid to Contractor. If such costs exceed such unpaid balance, Contractor shall pay the difference to Owner. Such costs incurred by Owner shall be determined by Owner and incorporated in a Change Order.
- b) Where Contractor's services have been so terminated by Owner, said terminations shall not affect any rights of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of monies by Owner due Contractor will not release Contractor from liability.
- c) Upon seven days' written notice to Contractor, Owner may without cause and without prejudice to any other right or remedy elect to abandon the Project and terminate the Agreement. In such case, Contractor shall be paid for all work executed and any expense sustained plus a reasonable profit.

14.3 Contractor May Stop Work or Terminate

- a) If, through no act or fault of Contractor, the work is suspended for a period of more than ninety days by Owner or under an order of court or other public authority, or Owner fails to act on any Application for Payment within thirty days after it is submitted, or Owner fails to pay Contractor any sum approved within thirty days of its approval and presentation, then Contractor may, upon seven (7) days' written notice to Owner, terminate the Agreement and recover from Owner payment for all work executed and any expense sustained plus a reasonable profit. In addition, and in-lieu-of terminating the Agreement, if Owner has failed to act on an Application for Payment or Owner has failed to make any payment as aforesaid, Contractor may upon seven days' notice to Owner stop the work until he has been paid all amounts then due.

ARTICLE 15: OFFICE SPACE

- a) The Contractor shall establish and maintain, at his own expense, office headquarters at the site of the Project. Telephone service shall be provided. At the office headquarters shall be kept a complete set of the Contract Documents and shop drawings.

GENERAL REQUIREMENTS

1.00 GENERAL

1.01 DESCRIPTION OF WORK

- A. Work under this Contract includes two parts; reconstruction of one block and rehabilitation of 3 centerline miles. Where required, sidewalks are being replaced to meet ADA requirements. Various drainage structures are being repaired due to condition. A majority of structures will require adjustment, but only a portion require replacement covers.
- B. A map of the proposed roads is included with the bid package.

1.02 CONSTRUCTION WATER

- A. Water for construction is available from the Owner and may be obtained from the existing facilities. The Contractor shall be responsible for obtaining an approved permit and backflow prevention device to protect the water source, meter, and all necessary piping. There is no charge to the Contractor for water use. The meter and backflow prevention device shall be obtained from the City. Only City of Marshall personnel or the Contractor under direct supervision of City of Marshall personnel may fill or flush lines.

1.03 CONSTRUCTION POWER

- A. Electrical power to be used during construction is not available from the Owner. The Contractor shall be responsible for obtaining and supplying electrical power at the Contractor's cost and shall be considered incidental to construction of proposed infrastructure.

1.04 WORK AREA, CONSTRUCTION ACCESS, AND MATERIAL STAGING

- A. The working area shall be organized in an orderly manner with storage and tool sheds, offices and sanitary facilities, parking areas for employees, and all other necessary facilities developed and maintained by the Contractor. The Contractor shall keep the site and all haul roads reasonably clean and dust free
- E. The Contractor shall provide adequate sanitary facilities for all persons employed on the project. The sanitary facilities shall conform in every way to the requirements of the "General Safety Rules and Regulations for the Construction Industry".

1.05 NOTIFICATION OF UTILITIES

- A. The Contractor shall notify all utilities prior to any excavation and coordinate any necessary protection or relocation of utilities. Information regarding size and location is available from the utility.
- B. MISS DIG - The Contractors shall contact "MISS DIG" not less than 72 hours before starting construction for assistance in locating utilities or for any work to be done on utilities. The toll-free phone number is (800) 482-7171.
- C. The Contractor shall notify Marguerite Davenport, City of Marshall Director of Public Services, 7 calendar days prior to the start of construction (269) 558-0323.
- D. A pre-construction conference shall be scheduled two (2) weeks prior to expected start of construction with the Owner, City of Marshall.
- E. Contractor shall notify the Owner, City of Marshall, 48 hours prior to construction or testing. Call Jon Skiles, City of Marshall GIS Specialist at 269-558-0346

1.06 WORK SCHEDULE

A. The Contractor shall provide a work schedule. The schedule shall be complete and shall show in detail the order in which they propose to complete the work under this contract and approximately monthly billing of the Contract. The purpose of the schedule is to assist the Owner in notifying the public of inconveniences and to anticipate cash-flow on the job, and to determine if the Contractor is reasonably proceeding with the work to assure completion within the specified time.

B. The City of Marshall has a robust community with active events throughout the summer months. The following is a list of the community events potentially affecting the construction under this contract. The following events will require the listed roads be open to traffic and not under any construction.

- June 10, 2023 – Oaklawn Color Classic 5k and Fun Run
 - Michigan Ave, N Gordon, Mansion, N Linden, N Kalamazoo, Fountain Circle
- June 24, 2023 – Bluesfest
 - Michigan Ave
- July 4, 2023 – Oaklawn Pet, Bike, and Wagon Parade/Chicken Barbeque/Rotary Band Concert
 - Michigan Ave at the Fountain Circle
- July 8 & 9, 2023 – Garden Tour
 - Michigan Ave at the Fountain Circle
- September 9 & 10, 2023 – Home Tour
 - Michigan Ave at the Fountain Circle, N Kalamazoo from Michigan Ave to Mansion Street

C. The City strives to limit undue impact on services that affect the entire community. The following restrictions will be in place for construction under this contract

- 100 block of S Madison must be completed between June 15, 2023 and August 15, 2023 OR June 15, 2024 and August 15, 2024
- Subsection #3 rehabilitation can not occur simultaneously with the Green Street Reconstruction work (Part 1).
- S Fountain will not be available for paving until after October 1, 2023

1.07 TRAFFIC MAINTENANCE

A. Because the availability of roads and streets is critical for the traveling public, the Contractor shall not close the roads adjacent to Rebecca street to traffic at any time. Through and local traffic shall always be maintained by the use of 1/2-lane construction techniques and by the use of temporary roadways and flaggers as required.

B. The Contractor shall provide all required Type II and Type III barricades, flashers, flashing arrows, flaggers, and all signing required to properly and safely maintain traffic flow through the construction area in accordance with the Michigan Manual of Uniform Traffic Control Devices. The Contractor shall provide as many signs and barricades as required by the Owner to protect and maintain traffic through this area at all times. The Contractor shall add any additional devices required by the Owner to provide a smooth flow of traffic.

C. The construction influence zone shall be properly signed in accordance with the recommendations outlined in the latest edition of the Michigan Manual of Uniform Traffic Control Devices.

D. The Contractor shall provide all dust control and other means to reduce dust during construction. The Contractor shall grade and maintain the area of the road being used as traveling surface for the through, as well as the local traffic.

- E. In case detours or other traffic instructions are necessary, suitable warning or direction signs shall be erected and maintained by the Contractor.
- F. In the event of the Contractor's failure to comply with these provisions, the Owner may with or without notice, cause the same to be done; and will deduct the cost of such work from any money due or to become due the Contractor under this Contract, but the performance of such work by the Owner or at his insistence, shall serve in no way to release the Contractor from his general or particular liability for the safety of the Public or the work.
- G. At dangerous points throughout the work, provide and maintain guard rails and colored lights, also flags; all possible precautions shall be taken to protect the workmen from injury at no extra cost to the Owner.
- H. Access to fire hydrants shall always be maintained. The Contractor's truck and equipment operations on public streets shall be governed by County regulations, and all local traffic ordinances, and regulations of the Fire and Police Departments.
- I. Small street openings necessary for structure repairs will be permitted. Such holes shall not be open longer than necessary and shall be protected and any traffic detouring necessary shall be done to the satisfaction of the Owner. Wherever possible, small openings shall be covered with steel plates at pavement level secured in place at time that work is not being performed at no extra cost to the Owner.
- J. Where streets are partially obstructed, the Contractor shall place and maintain temporary driveways, ramps, bridges and crossings which in the opinion of the Owner are necessary to accommodate the public at no extra cost to the Owner. In the event of the Contractor's failure to comply with the foregoing provisions, the Owner may, with or without notice, cause the same to be done and deduct the cost of such work from any monies due or to become due the Contractor under this contract, but the performance of such work by the Owner, or at his insistence, shall serve in no way to release the Contractor from his liability for the safety of the traveling public.
- K. The Contractor shall inform the local fire department in advance of his program of street obstruction and detours, so that the fire department can set up plans for servicing the area in case of an emergency. He shall also notify the governing police department and the Owner at least one week prior to obstructing any street according to the specifications set forth herein and/or as may be required elsewhere on the Drawings or Specifications.
- L. Payment for traffic maintenance, the furnishing of flaggers, barricades, flashers and maintenance of these shall be paid for under traffic maintenance.

1.08 CONSTRUCTION PERMITS

- A. The Contractor will be required to follow the requirements established by all permits necessary for the construction of this project. The following is a list of all permits that must be obtained prior to the beginning of construction.
 - 1. Construction Signs, Trunkline Right of Way, MDOT
- B. The permit application will be submitted by the owner. A copy must be obtained by the contractor prior to the start of construction.

1.09 MDOT SPECIFICATIONS

- A. The Contractor is responsible for performing all construction activities in accordance with Michigan's Department of Transportation 2012 Standard Specification for Construction. Specifications unique to this project supersede MDOT specifications as outlined in the detailed specifications.

1.10 MATERIAL AND QUALITY CONTROL TESTING

A. The Contractor shall be responsible for performing soil and aggregate compaction tests and bituminous/concrete quality control in all areas. The Contractor shall coordinate test with the Owner's representative so that Owner can be present for testing as desired.

B. The type and frequency of testing shall be as follows:

1. Concrete Drives, Sidewalk, and Curb & Gutter
 - Slump, minimum 50 CYD or load
 - Air entrainment, minimum 50 CYD or load
 - Comprehensive strength, minimum 50 50 CYD or load
1. Aggregate Drives
 - Sieve analysis per source
 - Proctor per source
 - Compaction test at each location. Where length exceeds 100', one test per 50'
2. Subgrade Fill Material
 - Sieve analysis per source
 - Proctor per source
 - Compaction testing at 50' intervals per lift, as required

C. The Owner shall be responsible for performing bituminous compaction tests and bituminous/concrete quality control in all areas. The Contractor shall coordinate test with the Owner's representative and provide all test results to the Owner or Owner's Representative.

D. The type and frequency of Owner testing shall be as follows:

1. Asphalt Pavement and Drives
 - Extraction as determined necessary
 - Thickness and density at each location. When length exceeds 100', one test per 50'

E. The Contractor shall cooperate in coordinating and preparing test locations for the Owner as required. The Contractor shall notify the Owner of all other test results at least 48 hours in advance of all new materials to be used. Any area failing tests shall be corrected at the Contractor's expense.

D. Copies of test reports shall be furnished to the Owner and distributed to parties designated by the Owner, including the Contractor.

1.11 DUST CONTROL

A. All haul roads, detour roads, and other public and private roads, driveways and parking lots used by the Contractor must be maintained in a dust free condition during the life of this Contract. The control of the dust shall be accomplished by the application of dust control materials and methods of application as approved and as directed by the Owner. Such dust control materials shall be applied as often as is necessary to control the dust.

B. Cost of providing dust control shall be included as part of Traffic Maintenance.

D. Should the Contractor be negligent of his duties in providing dust control, the Owner may, with or without notice, cause the same to be done and deduct the cost of such work from any monies due or to become due the Contractor under this Contract, but the performance of such work by the Owner, or at his insistence, shall service in no way to release the Contractor from his liability for dust control.

E. Dust Palliative may be any of the following:

1. Road oil of 30% asphalt base applied at the rate of 0.5 gallons per square yard.
2. Type 1-calcium chloride applied at the rate of 6 pounds per ton of aggregate.
3. Water, as required.
4. Vacuum cleaning
5. Other methods as approved by the ENGINEER.

1.12 CONSTRUCTION STAKING

A. The Owner will provide construction staking. The Owner will provide construction staking, in accordance with the General Conditions for the complete project only one time. Any and all stakes that are destroyed or tampered with after staking are to be replaced at the Contractors expense.

1.13 AUDIO-VIDEO DVD COVERAGE

A. The Contractor shall furnish to the Owner, an audio-video DVD recording for all areas proposed for improvement.

B. The audio-video recording shall be DVD and of such quality to accurately describe the existing conditions. The DVD shall be produced one (1) week prior to the placement of materials or equipment in the construction area. The DVD shall be of commercial quality and of size commonly used.

C. Both sides of the entire area must be recorded with the rate of speed less than 48 ft per minute. Camera functions such as panning rate; zoom-in/zoom-out shall be controlled to provide optimum object clarity.

D. The DVD must be recorded while the visibility is clear and at no time will it be allowed during periods of ground cover.

E. The DVD shall be continuous running and shall include date, time, and location at appropriate intervals. The location shall be easily referenced to the Contract Drawings.

1.14 PROJECT PROGRESS MEETING

A. It shall be the responsibility of the Contractor to have a representative present at each meeting. The meetings shall be held weekly, or as otherwise directed by the Owner.

1.15 WINTER CONSTRUCTION

A. The ENGINEER shall have permissive authority over the work which is proposed to be done during the winter months. The CONTRACTOR shall provide adequate weather protection, temporary heating and take any other measures which are necessary to ensure that the work performed during the winter months is properly installed and protected against damage from freezing.

1.16 PROTECTION OF TREES

A. All trees which are to be preserved unless specifically approved for removal and which, in the opinion of the Owner, might be subject to damage by the Contractor's operations, shall be adequately protected against damage by placing tree protection fencing around the tree at a distance from the trunk in feet equal to the diameter of the tree in inches. Such protection shall not be removed until authorized by the Owner.

B. Machine excavation shall not be made within a circular area of any tree, the diameter of the area in feet being equal to the diameter of the tree in inches. If hand excavation within this area cuts across a large root of a tree, the cutting of which, in the opinion of the Owner, would be injurious to the tree, the Contractor shall tunnel under such root and protect it from injury throughout the work.

1.17 RESTORATION

- A. Contractor shall be responsible to restore areas adjacent to work areas damaged throughout the construction activities. This shall be incidental to the work being performed to cause the disturbance.
- B. Restoration shall be completed to return the damaged area to its condition as documented prior to the execution of the construction regardless of the existing condition.
- C. For turf restoration, Section 816 shall govern.
- D. For other surface types, the plan for restoration shall be approved by the Owner prior to the start of the work. Equal consideration will be given to the prior condition of the area and existing surface conditions beyond the restoration area.

1.18 SUMMARY OF WORK BY STREET

Street Name	Length (ft)	Width (ft)	Milling (Syd)	Mill Depth (inches)	HMA (tons)	Sidewalk, Remove (Syd)	Structure Adjustments (Ea)
Allcott St	1,189	24	3,171	2.00	350	-	4
Arms St	687	24	1,833	1.50	185	-	4
Brandis Pl	365	28	1,136	1.50	114	-	1
Cherry St	641	27	2,208	1.75	232	-	2
Clinton	528	27	1,408	1.75	141	-	-
Deerfield Ln	1,010	28	3,143	1.50	317	-	3
E Pearl St	545	24	1,454	2.00	161	49	6
Grant Ct	212	24	566	2.00	63	-	2
Greenfield Blvd	1,353	32	4,811	2.00	530	-	-
Hobart Rd	598	24	1,678	2.00	186	-	1
N Grand St	998	25	3,071	2.00	336	62	4
N Linden St	3,276	24	8,466	2.00	936	119	15
Okeefe Rd	2,595	30	9,586	1.50	960	-	15
Oliver Dr	2,383	32	8,475	2.00	934	-	11
S Hamilton St	1,211	24	3,501	2.00	386	32	8
S Madison St	745	24	1,987	2.00	220	-	3
Sherman Dr	1,760	28	6,018	2.00	664	-	9
Union St	2,032	24	5,553	1.50	558	61	9
Ventura Way	1,876	28	6,191	1.50	620	-	8
W Hanover St	2,520	27	8,683	2.00	907	199	23
E Hanover St	1,243	24	3,773	2.00	417	22	8
Winding Way	418	28	1,301	2.00	144	-	1
Julius Dr	185	30	617	1.50	83	14	-
Laura Ln	264	28	822	1.50	83	14	-

END OF SECTION

CITY OF
MARSHALL

NOTICE TO BIDDERS
FOR
MDOT SPECIFICATIONS

MKD

1 of 1

March 2021

a. Description. All work completed within The City of Marshall must be done in accordance with the 2020 Standard Specifications for Construction of the Michigan Department of Transportation and the following Special Provisions. The 2020 Standard Specifications for Construction of the Michigan Department of Transportation will govern all technical specifications of this contract.

Project scope may include work on State Trunkline.

CITY OF
MARSHALL

SPECIAL PROVISION
FOR
PERFORMANCE BASED INCENTIVE

MKD

1 of 1

MAY 2023

- a. **Description.** The City of Marshall recognizes the current competitive bidding environment in the public infrastructure construction industry. The City has dictated that substantial completion of Part 1 work shall be in the current construction year (2023). To make this project attractive, the City has included Part 2 work with a substantial completion date in 2024. Ideally, the City would be in a position to complete both Part 1 and Part 2 during 2023, however, the City understands the likelihood of that is hard to gauge at this point in the construction season.
- b. **Execution.** The City will include a performance bonus equal to 10% of actual construction cost for all work under Part 2 substantially complete by November 1, 2023.
 - a. **Stipulations of Part 2 Performance Bond:**
 - i. Part 1 construction **MUST** be substantially complete by November 1, 2023. If Part 1 construction is not substantially complete by November 1, 2023, the contractor will waive all claims to performance bonus on Part 2 construction.
 1. Part 1 substantial completion will be measured by completion of road subbase, base, and asphalt work, all concrete work, pavement markings complete, with turf restoration completed to level of 50% payment per SP Turf Establishment, Performance section d. Measurement and Payment.
 - ii. The performance incentive will be issued for Part 2 on a block basis. A block will be measured by the street section between centerlines of two cross streets or the distance from cul-de-sac or dead end to closest cross street centerline but shall not be shorter than 300 linear feet.
 - iii. Part 2 substantial completion will be measured by completion of all proposed asphalt rehabilitation and concrete work with turf restoration completed to a level of 50% payment per SP Turf Establishment, Performance, section d. Measurement and Performance.
- c. **Measurement and Payment.** Performance bonus will be measured on or before November 1, 2023. Payment of performance bonus will be issued to contractor on or before December 31, 2023.

PART 1

DETAILED SPECIFICATIONS

CITY OF
MARSHALL
SPECIAL PROVISION
FOR
ADJUSTING DRAINAGE STRUCTURE, CASE 1, MODIFIED

MKD

1 of 2

March 2021

a. Description. This work consists of adjusting drainage structures, including utility manhole covers, in accordance with section 403 of the Standard Specifications for Construction, as shown on the plans, as directed by the Engineer, and as stated herein.

b. Materials. Provide materials in accordance with subsection 403.02 of the Standard Specifications for Construction with the following exceptions:

Provide Concrete, Grade P-NC in accordance with section 603

For concrete, curb; concrete, curb and gutter; or concrete traffic island repairs provide materials in accordance with the standard specifications.

c. Construction. For structures within the pavement area, use a rotary coring head to remove a minimum 4-foot diameter section of pavement around the drainage structure frame and cover. If the frame outside diameter measurement is greater than 36 inches, use a rotary coring head to remove a minimum 4.5-foot diameter section of pavement. For structures within the curb line, saw cut and remove a 4-foot by 6-foot section of pavement around the frame with the 6-foot dimension measured along the curb line. Remove curb and/or curb and gutter associated with the adjustment of structures as directed by the Engineer. For structures located adjacent to concrete traffic control islands, remove concrete island full-width or up to 6 feet wide to facilitate adjustment of the drainage structure cover frame, as directed by the Engineer.

Support the cover frame over the structure matching the adjacent roadway cross slope. Secure the frame in-place to allow for placement on concrete without altering frame position.

For structures within the pavement area, replace pavement around the frame with Concrete, Grade P-NC matching the finished elevation and cross-slope of the roadway. Construct plane of weakness joint as directed by the Engineer. For structures within the curb line, replace pavement around the frame with Concrete, Grade P-NC and HMA top course as shown in the detail. Install epoxy anchored lane ties to anchor the concrete to adjacent composite pavement for curb drainage structures located in curbed areas. Replace concrete, curb; concrete curb and gutter, or concrete traffic control islands "in-kind" in accordance with the Standard Plan R-30 Series and section 802 of the Standard Specifications for Construction.

Epoxy anchor all lane ties in accordance with section 603 of the Standard Specifications for Construction.

Immediately remove any debris that falls into the drainage structure due to Contractor operations.

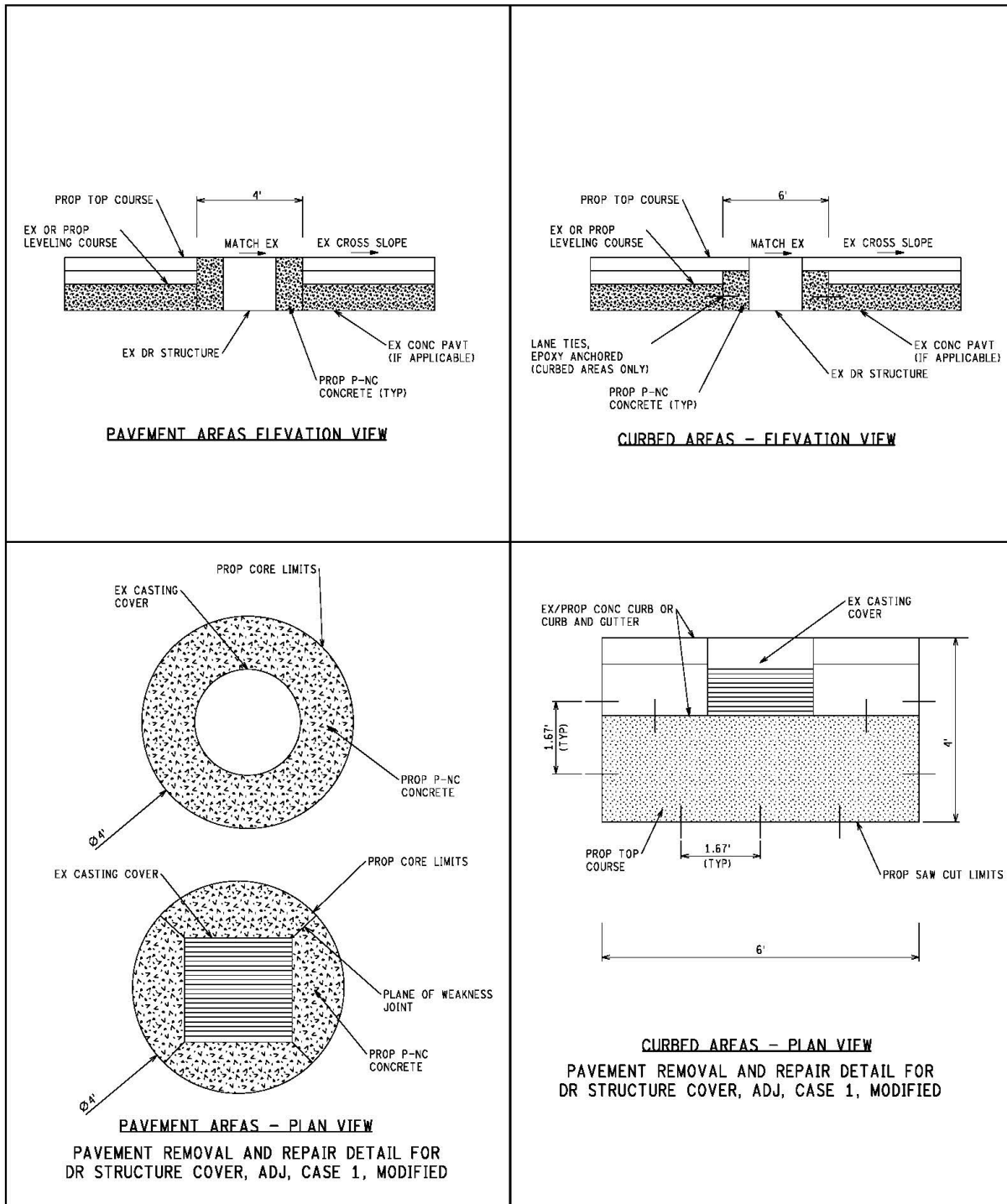
d. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Pay Item

Pay Unit

Dr Structure Cover, Adj, Case 1, ModifiedEach

Dr Structure Cover, Adj, Case 1, Modified includes furnishing all materials, saw cutting and removal of existing pavement and curb or curb and gutter, adjustment of cover to required elevation and cross-slope, installation of epoxy anchored lane ties (curbed areas only in composite sections), placement and finishing of new curb or curb and gutter, placement and finishing of new concrete, placement and removal of temporary HMA wedging for maintaining traffic, if required, placement of cover to open structures to prevent accumulation of debris and cleaning existing drainage structure due to Contractor operations.



SPECIAL PROVISION
FOR
DR STRUCTURE COVER, MODIFIED

PAE:DWW

1 of 1

Orig:12-13-21
Rev:03-15-2023

a. Description. This item shall consist of furnishing and installing new covers, including frames, on new or existing structures according to the contract documents. Place castings on a full mortar bed.

b. Materials. For manholes, the castings and covers shall be East Jordan Iron Works 1040, Neenah Foundry R1763 or approved equal with the City of Marshall standard cover. The covers shall be imprinted with the City of Marshall logo and cast with "City of Marshall" and either "Sanitary Sewer" or "Storm Sewer". A detail is provided on the construction drawings.

c. Measurement and Payment. This item shall be measured as Each in accordance with Section 403 of the MDOT 2020 Standard Specifications for Construction.

Contract (Pay Item)

Pay Unit

Dr Structure Cover, ModifiedEach

SPECIAL PROVISION
FOR
THICKENED EDGE SIDEWALK CURB

Progressive AE

1 of 1

3/15/2023

a. Description. This work consists of constructing thickened edge sidewalk curb in accordance with standard specifications, except as modified by this special provision and the detail C2 shown on the sheet 7 of the plans.

b. Materials.

1. Furnish materials in accordance with subsection 802.02 of the Standard Specifications for Construction.

c. Construction. Construct thickened edge sidewalk curb in accordance with subsection 802.03 of the Standard Specifications for Construction.

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:

Pay Item	Pay Unit
Thickened Edge Sidewalk Curb	Linear Foot

Thickened Edge Sidewalk Curb will be paid for as specified and measured in place.

SPECIAL PROVISION
FOR
MODIFIED CURB AND GUTTER

Progressive AE

1 of 1

3/15/2023

a. Description. This work consists of constructing a 24 inch valley gutter over subbase and a modified F4 curb with a 6 inch pan. All work shall be in accordance with standard specifications, except as modified by this special provision and the corresponding details C1, C5, & C6 shown on the sheet 7 of the plans.

b. Materials.

1. Furnish materials in accordance with subsection 802.02 of the Standard Specifications for Construction.

c. Construction. Construct valley gutter, F4 Curb, Modified, and Valley Drain in accordance with subsection 802.03 of the Standard Specifications for Construction.

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:

Pay Item	Pay Unit
Valley Gutter, Conc, Modified	Linear Foot
F4 Curb, Modified.....	Linear Foot
Valley Drain.....	Linear Foot

Valley Gutter, Conc, Modified will be paid for as specified and measured in place.

F4 Curb, Modified will be paid for as specified and measured in place.

Valley Drain will be paid for as specified and measured in place.

SPECIAL PROVISION
FOR
PAVEMENT MARKINGS, MODIFIED

Progressive AE

1 of 1

3/15/2023

a. Description. This work consists of constructing pavement markings in accordance with standard specifications, except as modified by this special provision.

b. Materials.

1. Furnish materials in accordance with subsection 811.02 of the Standard Specifications for Construction.

c. Construction. Construct all pavement markings denoted in this special provision in accordance with subsection 811.03 of the Standard Specifications for Construction.

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:

Pay Item	Pay Unit
Pavt Mrkg, Waterborne, 24 inch, Stop Bar.....	Linear Foot
Pavt Mrkg, Waterborne, Thru Arrow Sym	Ea
Pavt Mrkg, Waterborne, Thru Right Arrow Sym.....	Ea
Pavt Mrkg, Waterborne, Thru Left Arrow Sym	Ea
Pavt Mrkg, Waterborne, Right Left Arrow Sym	Ea
Pavt Mrkg, Waterborne, Accessible Sym.....	Ea

Pavt Mrkg, Waterborne, 24 inch, Stop Bar will be paid for as specified and measured in place.

Pavt Mrkg, Waterborne, Thru Arrow Sym will be paid for as specified and measured in place.

Pavt Mrkg, Waterborne, Thru Right Arrow Sym will be paid for as specified and measured in place

Pavt Mrkg, Waterborne, Thru Left Arrow Sym will be paid for as specified and measured in place

Pavt Mrkg, Waterborne, Right Left Arrow Sym will be paid for as specified and measured in place

Pavt Mrkg, Waterborne, Accessible Sym will be paid for as specified and measured in place.

SPECIAL PROVISION
FOR
TEMPORARY TRAFFIC CONTROL.

Progressive AE

1 of 2

3/15/2023

a. Description. This work consists of operating all required temporary traffic control in accordance with standard specifications, except as modified by this special provision.

b. Materials.

1. Furnish materials in accordance with subsection 812.02 of the Standard Specifications for Construction.

b. Construction. Construct all pavement markings denoted in this special provision in accordance with subsection 812.03 of the Standard Specifications for Construction.

a. Contractor shall submit a proposed construction sequencing plan to the engineer at the preconstruction meeting for review and approval.

b. The Contractor shall notify the Engineer and City Offices a minimum of 72 business hours prior to implementation of any detours, road closures, or lane closures.

c. Detours:

i. On those projects where the Engineer authorizes the full width of the street to be closed and the public is required to detour on other streets, the Contractor shall furnish and maintain adequate barricades and signs in accordance with the most current issue of the "Michigan Manual of Uniform Traffic Control Devices Concerning Road Construction Barricades" and with the Maintenance of Traffic Plan found in the plans and at street intersections along the detour route; and the Contractor shall furnish and maintain adequate signs and lights at those barricades in accordance with the above manual.

ii. When a detour of traffic is considered necessary to expedite the work, it shall be approved by the Engineer, sufficiently in advance of the road closing to make the necessary arrangements with the proper governmental authorities.

d. Lights, Signs, and Barricades:

i. The Contractor shall provide adequate warning signs, barricades, lights, and flagmen and shall take all necessary precautions for the protection of the work and the safety of the workers and the general public. All streets, roads, highways, alleys, and other areas accessible to the public that are closed to traffic or that restrict vehicular/pedestrian traffic shall be protected by means of effective barricades on which shall be placed approve warning signs.

- ii. All open trenches and other excavations shall be provided with suitable fencing, barricades, signs, and lights to the extent that adequate protection is provided to the public against accident by reason of such open construction. Obstructions, such as material piles and equipment, shall be provided with similar warning signs and lights.
- iii. All barricades shall be illuminated by means of warning lights at night, and all lights used for this purpose shall be kept lighted from sunset to sunrise.
- iv. All barricades, signs, lights, and other protection devices shall be installed and maintained in conformance with applicable statutory requirements and, where within railroad and highway rights-of-way, as required by the authority having jurisdiction there over. The Contractor shall be responsible for ascertaining any and all local, state, or other rules, regulations, or requirements concerning the placement of all such barricades, signs, lights, or other protective devices and shall install them in accordance therewith.
- v. Contractor shall construct and maintain temporary roads and drive approaches for the use of emergency vehicles, businesses, residences, and local traffic throughout completion of the work. Contractor shall grade temporary local roads and drive approaches to provide adequate drainage and a smooth and stable driving surface free of debris and obstructions. Contractor shall place gravel as required by the Engineer to meet the intent of this Specification.

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:

Pay Item	Pay Unit
Temporary Traffic Control	LSUM

Temporary Traffic Control will be paid for as specified and measured in place.

PART 1

PLANS

IMPROVEMENTS TO GREEN ST CITY OF MARSHALL

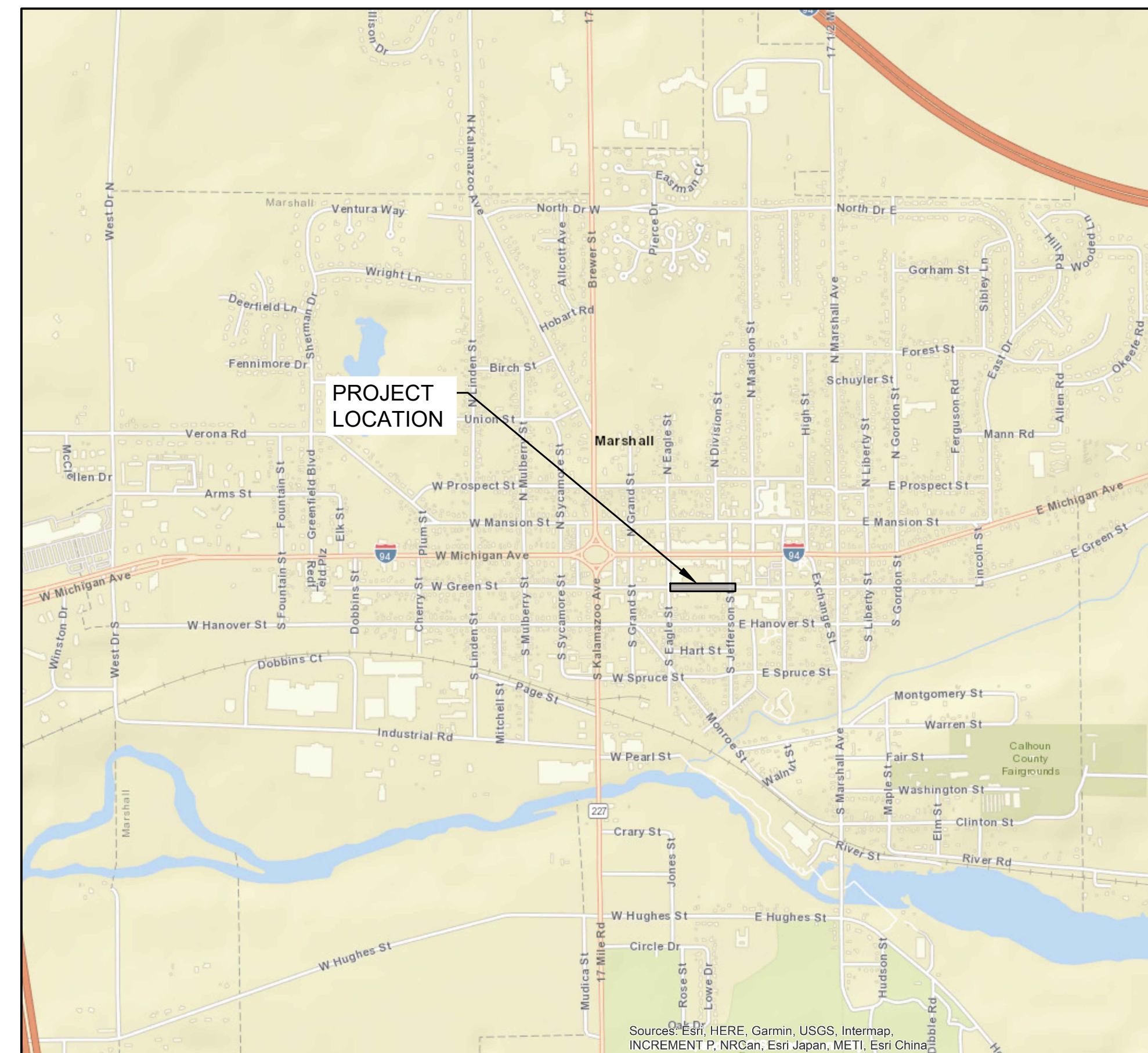
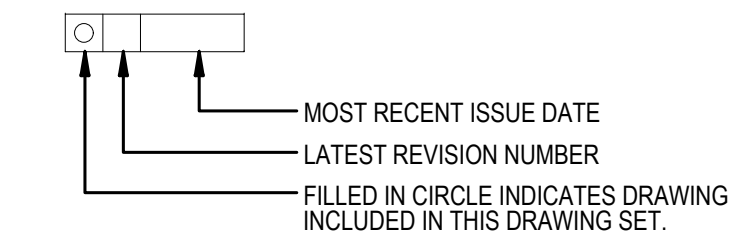
ISSUED FOR: BIDDING
DATE: 5/5/2023

CALL 811 NOTE:
CONTRACTOR TO CONTACT 811 SERVICE AT LEAST 3 WORKING DAYS PRIOR TO CONSTRUCTION, TO CONFIRM LOCATION OF EXISTING UTILITIES. DIAL 811.

DRAWING INDEX

● - - / - / -	1	COVER SHEET
● - - / - / -	2	TOPOGRAPHIC SURVEY
● - - / - / -	3	REMOVAL & SITE LAYOUT PLAN - GREEN ST
● - - / - / -	4	GRADING & UTILITY PLAN - GREEN ST
● - - / - / -	5	CIVIL DETAILS & CROSS SECTIONS
● - - / - / -	6	LANDSCAPE PLAN - GREEN ST
● - - / - / -	7	STRIPING AND SIGNAGE PLAN

DRAWING LIST LEGEND



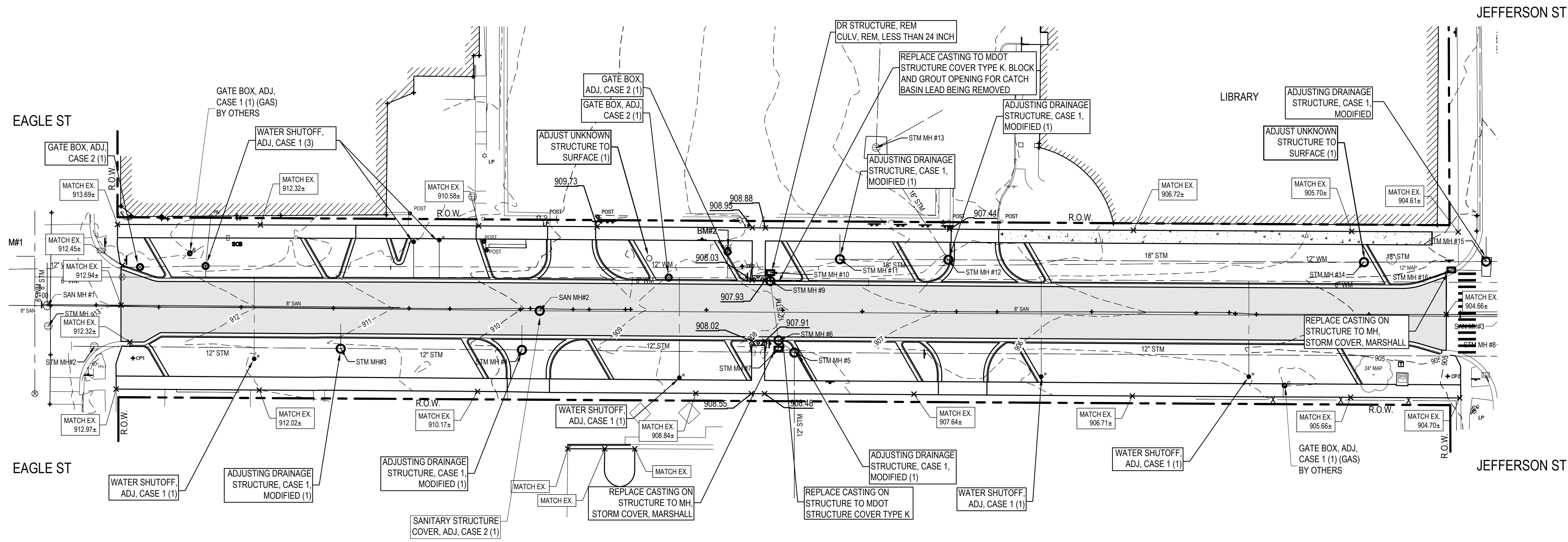
LOCATION MAP
NO SCALE

CONTACTS & AGENCIES

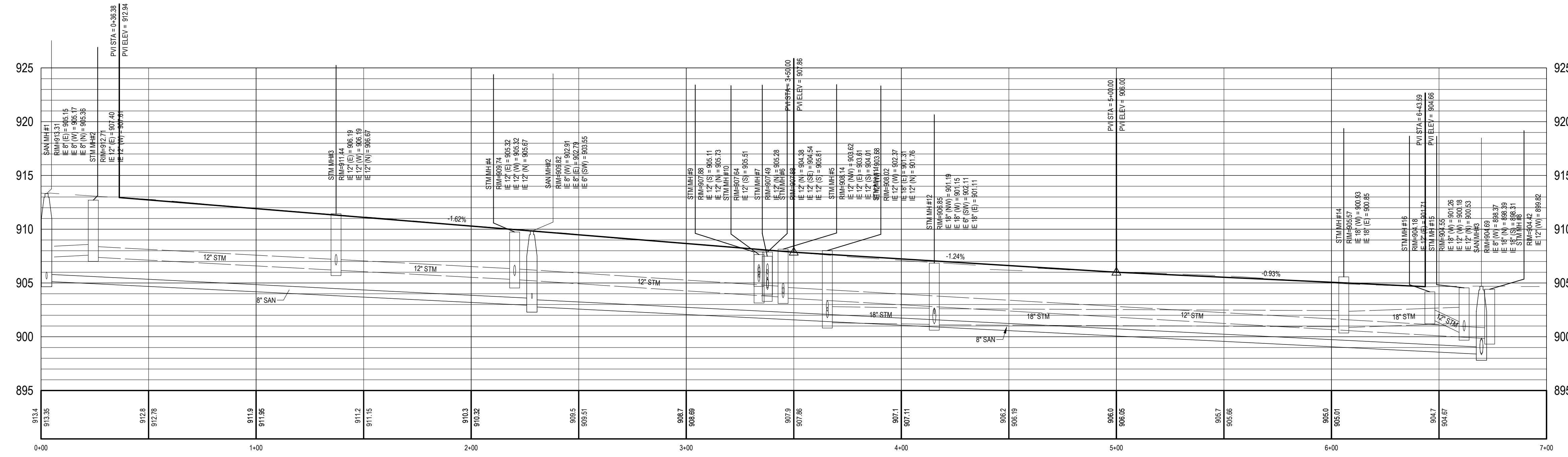
AT&T 53 N. MILL ST., 4TH FLOOR PONTIAC, MI 48342 (248) 456-8256	CITY OF MARSHALL 323 W. MICHIGAN AVE MARSHALL, MI 49068 (269) 781-3985
WOWI CABLE MID MICHIGAN 380 WRIGHT INDUSTRIAL PARKWAY POTTERVILLE, MI 48876 (517) 319-3158	MDOT (517) 335-4402
CONSUMERS ENERGY 530 W WILLOW ST LANSING, MI 48906 (517) 374-2002	MIDWEST COMMUNICATION 7255 TOWER ROAD BATTLE CREEK, MI 49014 (269) 963-7173

GENERAL NOTES

- MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF TRANSPORTATION 2020 STANDARD SPECIFICATIONS FOR CONSTRUCTION EXCEPT WHERE OTHERWISE INDICATED ON THESE PLANS OR IN THE PROPOSAL OR SUPPLEMENTAL SPECIFICATIONS.
- THE PROPOSED IMPROVEMENTS COVERED BY THESE PLANS ARE IN ACCORDANCE WITH THE AASHTO, A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, 2018, 7TH ED.
- ALL PERMANENT AND TEMPORARY TRAFFIC SIGNS SHALL BE IN ACCORDANCE WITH THE 2011 MMUTCD, INCLUDING ALL REVISIONS AND UPDATE PAGES.
- THE UNDERGROUND LOCATIONS SHOWN FOR NATURAL GAS (GAS), STEAM, TELEPHONE (TEL), ELECTRICAL POWER (PWR), CABLE TV (CTV) AND FIBER OPTIC LINES (FIBER) ARE APPROXIMATE. THE ENGINEER AND CITY ASSUMES NO RESPONSIBILITY FOR THEIR ACCURATE REPRESENTATION ON THE DRAWINGS INCLUDED IN THIS DRAWING SET. MISS DIG MUST BE CONTACTED PRIOR TO CONSTRUCTION TO LOCATE THESE UTILITIES.



GRADING & UTILITY PLAN - GREEN ST
 1" = 30'
 NORTH



GRADING & UTILITY PLAN - GREEN ST
 VERTICAL: 1" = 6'
 HORIZONTAL: 1" = 30'
 NORTH

STRUCTURE	RIM	PIPE	INVERT
SAN MH #1	913.31	8" E. 8" W. 8" N.	905.15 905.17 905.36
SAN MH#2	909.82	8" W. 8" E. 6" SW.	902.91 902.79 903.55
SAN MH#3	904.69	8" W. 18" N. 18" S.	898.37 898.39 898.31

STRUCTURE	RIM	PIPE	INVERT
STM MH #1	913.30	N/A	N/A
STM MH#2	912.71	12" E. 12" W.	907.40 907.61
STM MH#3	911.44	12" E. 12" W.	906.19 906.67
STM MH #4	909.74	12" E. 12" W. 12" N.	905.32 905.32 905.67
STM MH #5	908.14	12" NW. 12" E. 12" SE. 12" W.	903.62 903.61 904.01 903.68
STM MH #6	907.88	12" N. 12" SE. 12" S.	904.38 904.54 905.81
STM MH #7	907.49	12" N.	905.28
STM MH #8	904.42	12" W.	899.82
STM MH #9	907.88	12" S. 12" N.	905.11 905.73

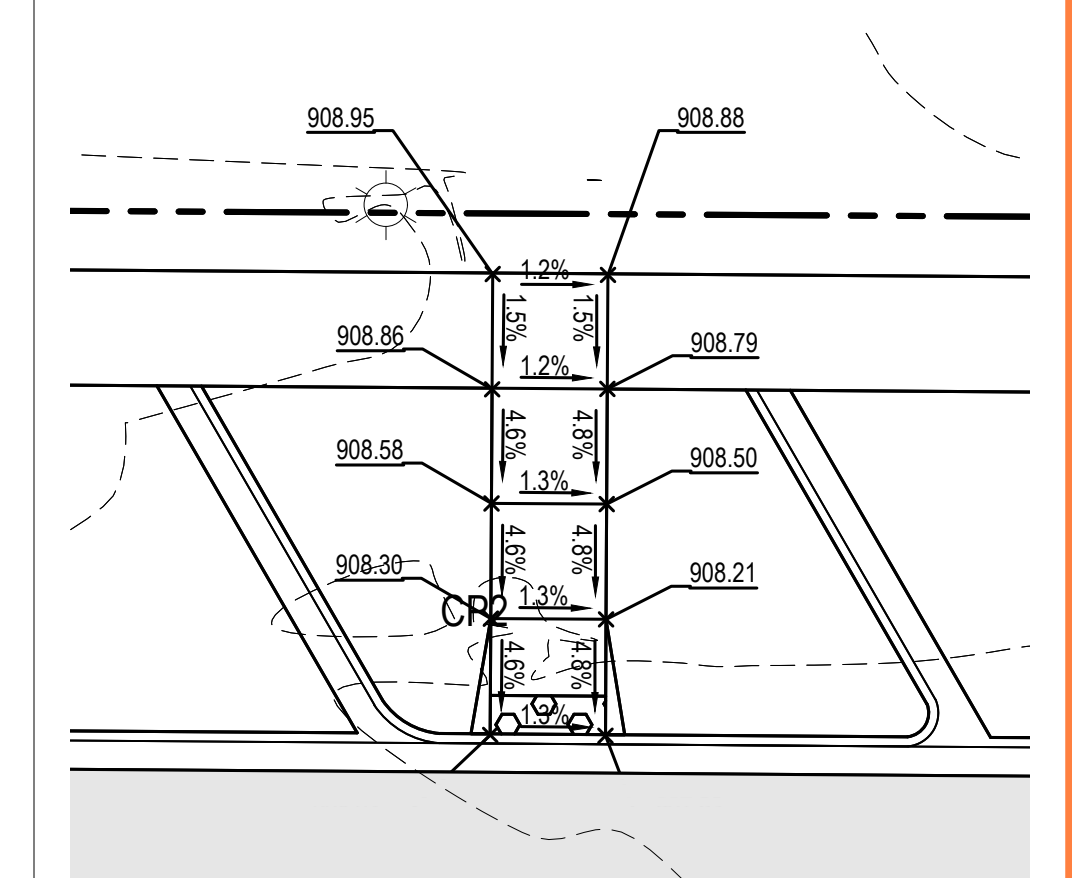
STRUCTURE	RIM	PIPE	INVERT
STM MH #10	907.64	12" S.	905.51
STM MH #11	908.02	12" W. 18" E. 12" N.	902.37 901.31 901.76
STM MH #12	906.85	18" NW. 18" W. 6" SW. 18" E.	901.19 901.15 902.11 901.11
STM MH #13	906.44	18" SE.	902.77
STM MH #14	905.57	18" W. 18" E.	900.93 900.85
STM MH #15	904.55	18" W. 12" W. 12" N.	901.26 900.18 900.53
STM MH #16	904.18	12" E.	901.71
STM MH #17	904.15	N/A	N/A
STM MH #18	0.00	N/A	N/A
STM MH #19	901.25	N/A	N/A

EARTHWORK & GRADING NOTES

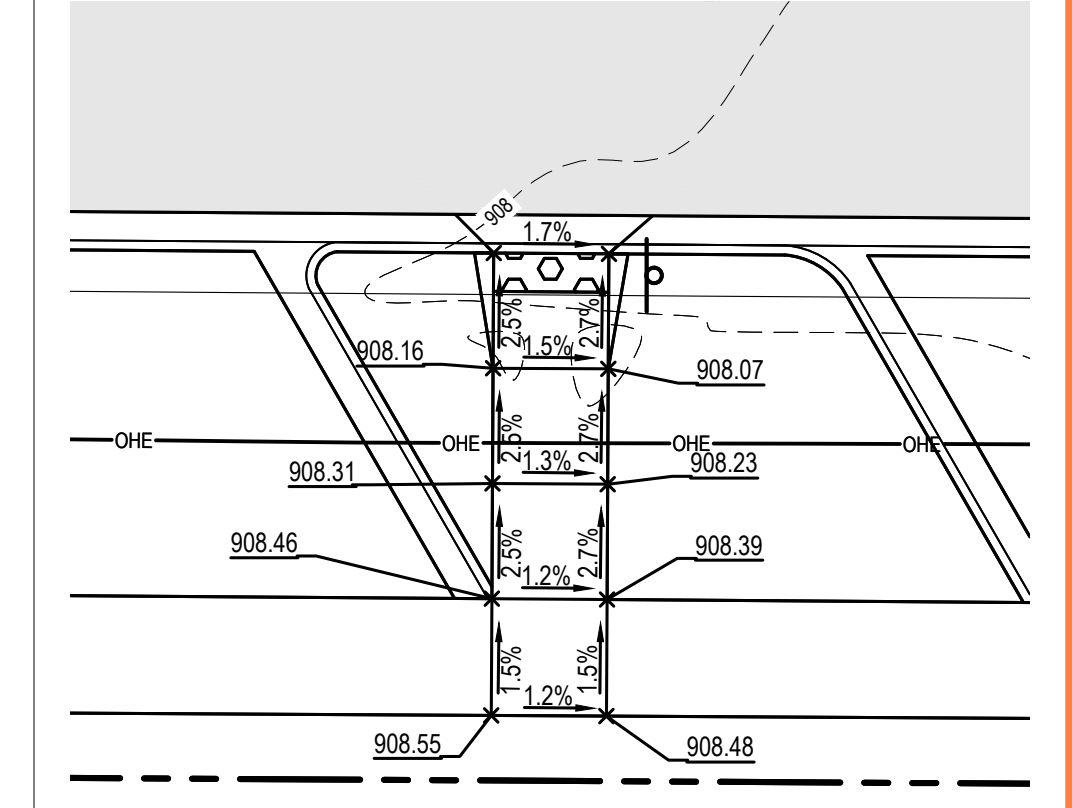
- EARTHWORK AND PAVEMENT CONSTRUCTION ARE TO BE PERFORMED IN ACCORDANCE WITH THE 2020 EDITION OF THE MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION UNLESS OTHERWISE NOTED IN THE FOLLOWING ITEMS.
- THE SUBGRADE SHALL BE THOROUGHLY PROOFROLLED USING THE EQUIVALENT OF A FULLY LOADED TANDEM AXLE TRUCK HAVING A MINIMUM AXLE WEIGHT OF 10 TONS. SOFT OR YIELDING AREAS THAT CANNOT BE MECHANICALLY STABILIZED SHOULD BE REMOVED AND REPLACED WITH ENGINEERED FILL.
- PROOFROLLING SHALL BE PERFORMED UNDER THE OBSERVATION OF THE PROJECT ENGINEER.
- FINISHED SUBGRADE SURFACE SHALL NOT BE MORE THAN 0.1 FEET ABOVE OR BELOW ESTABLISHED FINISHED SUBGRADE ELEVATIONS AND ALL GROUND SURFACES SHALL VARY UNIFORMLY BETWEEN INDICATED ELEVATIONS.
- GRADE THE AGGREGATE BASE MATERIAL TO PROVIDE POSITIVE DRAINAGE AT A MINIMUM OF 1.5 PERCENT.
- THE AGGREGATE BASE AND SUBBASE SHALL EXTEND 6 INCHES BEYOND THE PAVED EDGE.
- THE EXISTING (SOIL TYPE) MAY BE UTILIZED AS ENGINEERED FILL PROVIDED ALL DELETERIOUS OR ORGANIC MATERIALS ARE REMOVED FROM THE SOILS. ANY ON-SITE SOILS USED FOR ENGINEERED FILL SHALL BE EVALUATED BY A GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT.
- ENGINEERED FILL LOCATED WITHIN PAVEMENT AND BUILDING AREAS SHALL BE PLACED IN 8 INCH MAXIMUM LOOSE THICKNESS AND MOISTURE CONDITIONED TO WITHIN 2 PERCENT OF OPTIMUM MOISTURE CONTENT. COMPACT TO MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY PER ASTM D-1557, MODIFIED PROCTOR METHOD.
- ALL FILL OPERATIONS SHALL BE OBSERVED BY A QUALIFIED SOIL TECHNICIAN. A MINIMUM OF ONE COMPACTION TEST SHALL BE CONDUCTED PER 2,500 SFT AREA AT EACH LIFT. WITHIN TRENCH EXCAVATIONS, ONE TEST SHALL BE CONDUCTED FOR EACH 100 LINEAR FEET PER LIFT.
- SIDE SLOPES SHALL NOT EXCEED 1 VERTICAL OVER 4 HORIZONTAL SLOPE UNLESS SHOWN OTHERWISE.
- FOR ALL CURB ISLANDS, CENTER OF ISLANDS TO BE A MINIMUM OF 6" HIGHER THAN TOP OF CURB.

STORM SEWER NOTES

- STORM SEWER PIPE 10" DIA. OR LARGER SHALL BE ASTM C-76 CL IV REINFORCED CONCRETE PIPE.
- CATCH BASINS (CB) TO BE 4' DIA. UNLESS NOTED OTHERWISE.
- CONNECT ALL ROOF DRAINS TO PROVIDED STORM SEWER UNLESS OTHERWISE NOTED.

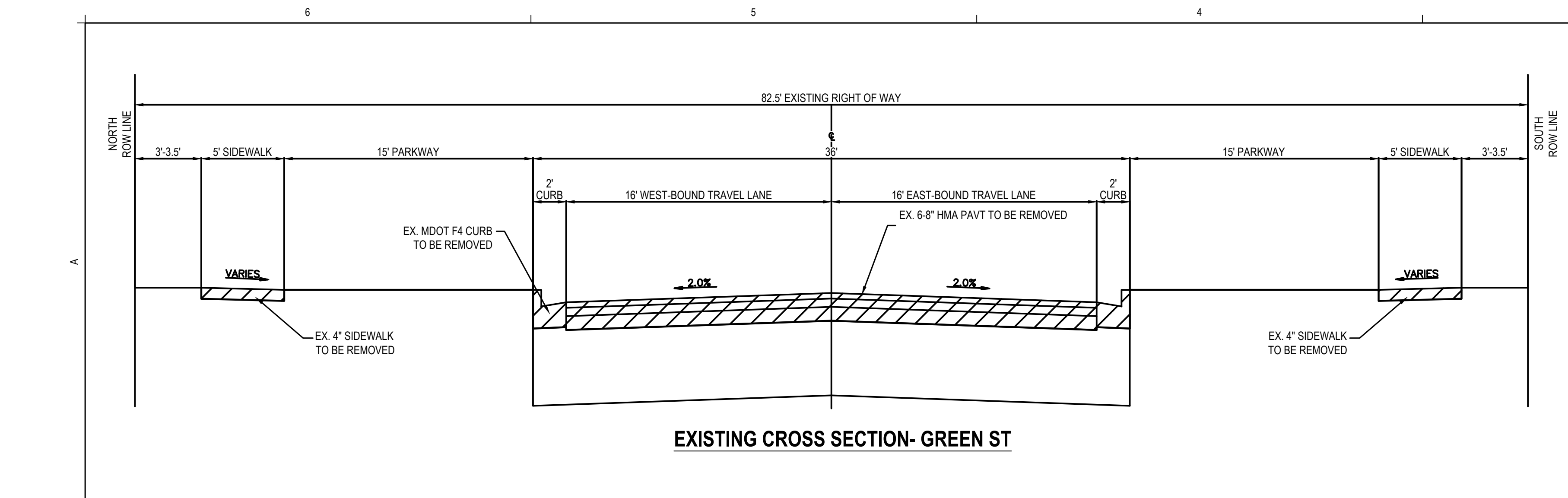


NORTH SIDE MID-BLOCK - SIDEWALK GRADING
 1" = 10'
 NORTH

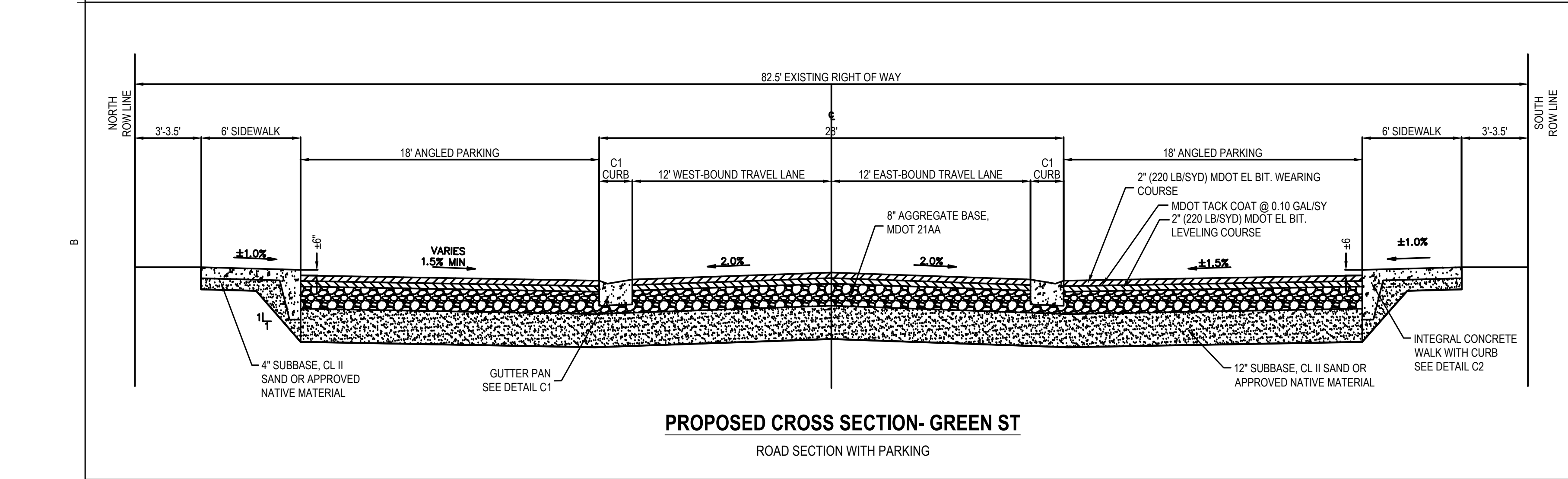


SOUTH SIDE MID-BLOCK - SIDEWALK GRADING
 1" = 10'
 NORTH

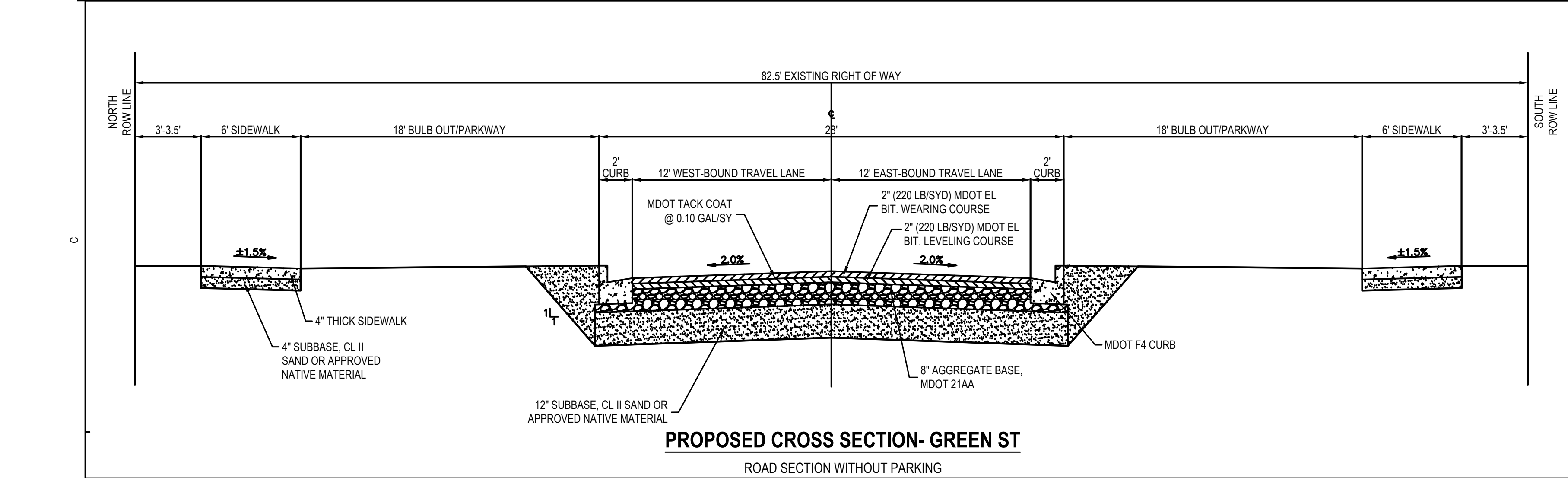
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 P:\20230503\1P\2\Bldg\Green St\0454 - STORM WATER & GRADING PLAN.dwg: mskd
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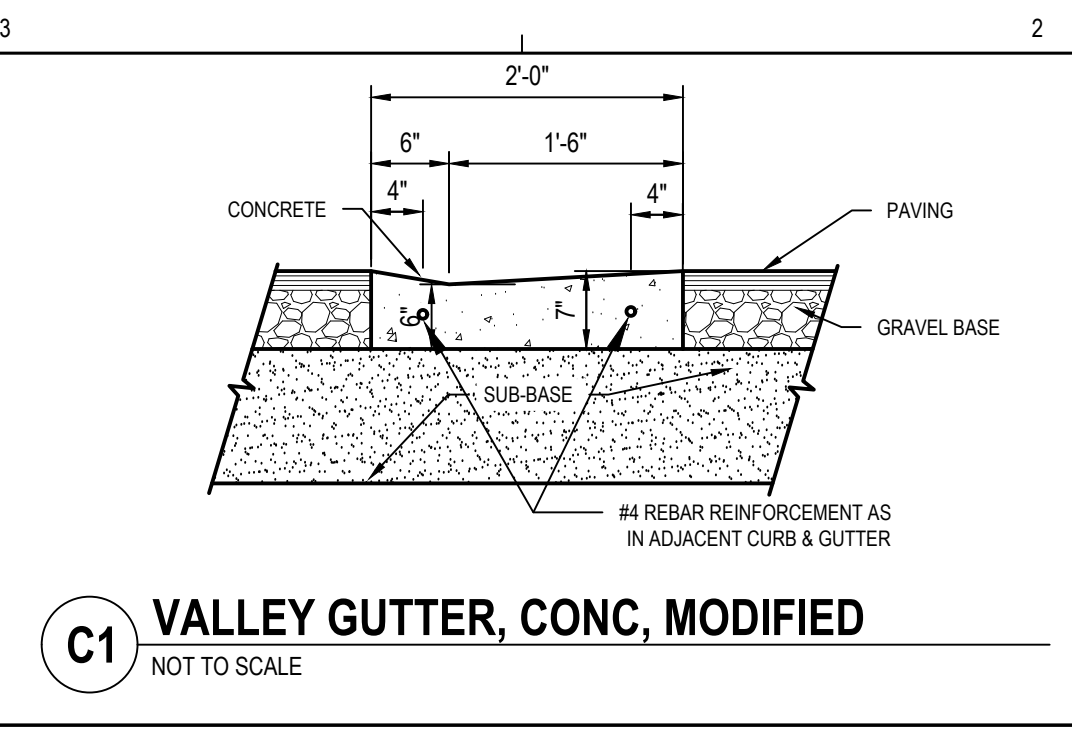
EXISTING CROSS SECTION- GREEN ST



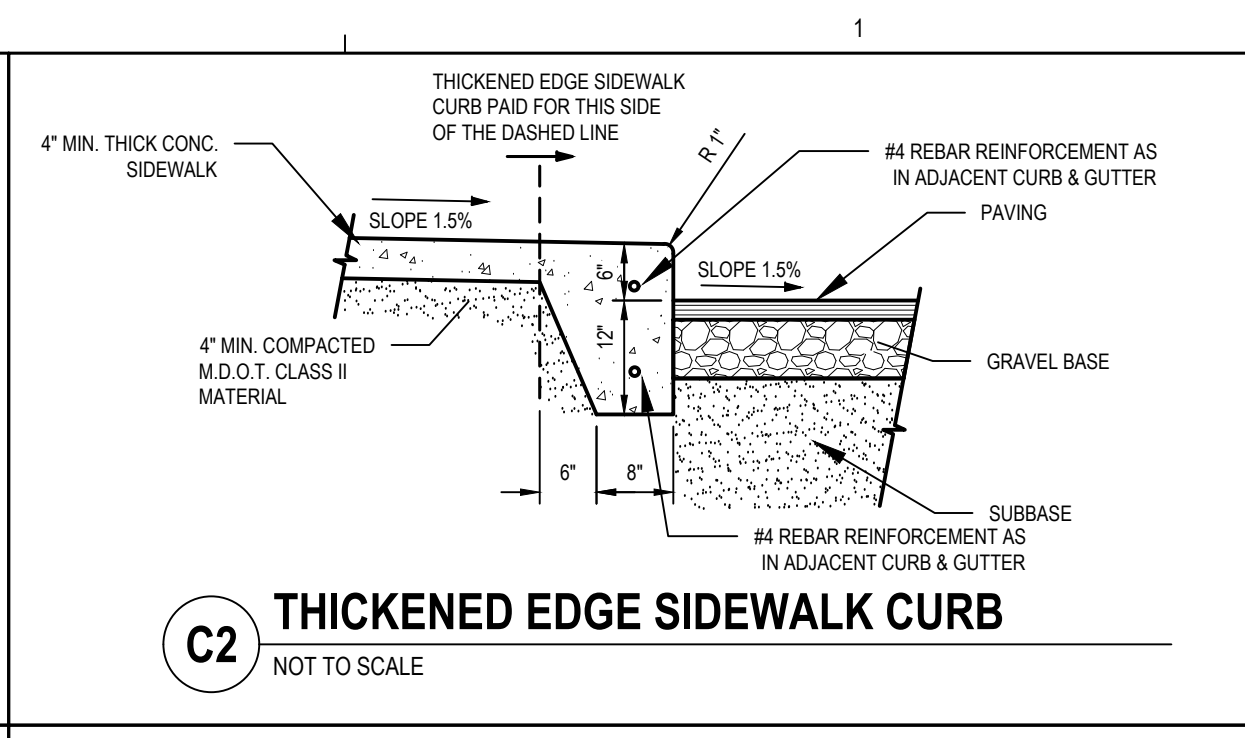
**PROPOSED CROSS SECTION- GREEN ST
ROAD SECTION WITH PARKING**



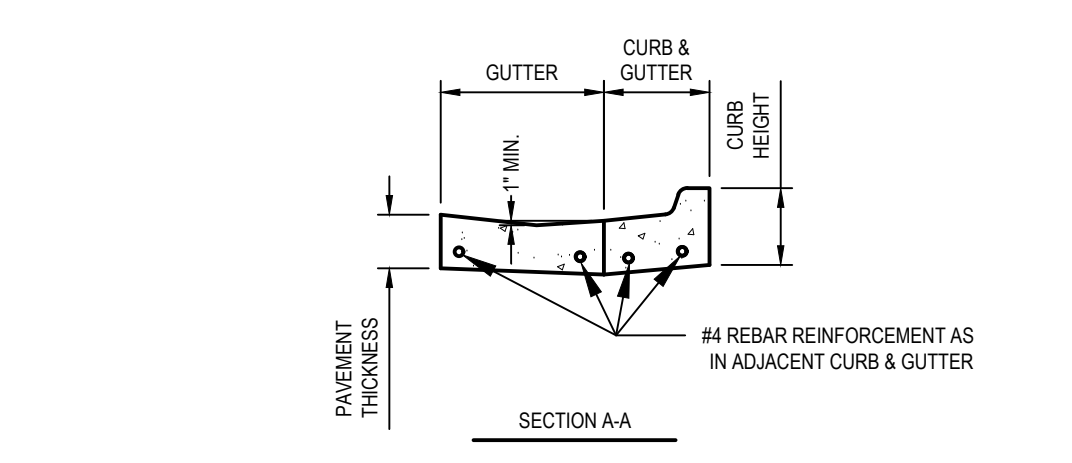
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ROAD SECTION WITHOUT PARKING**



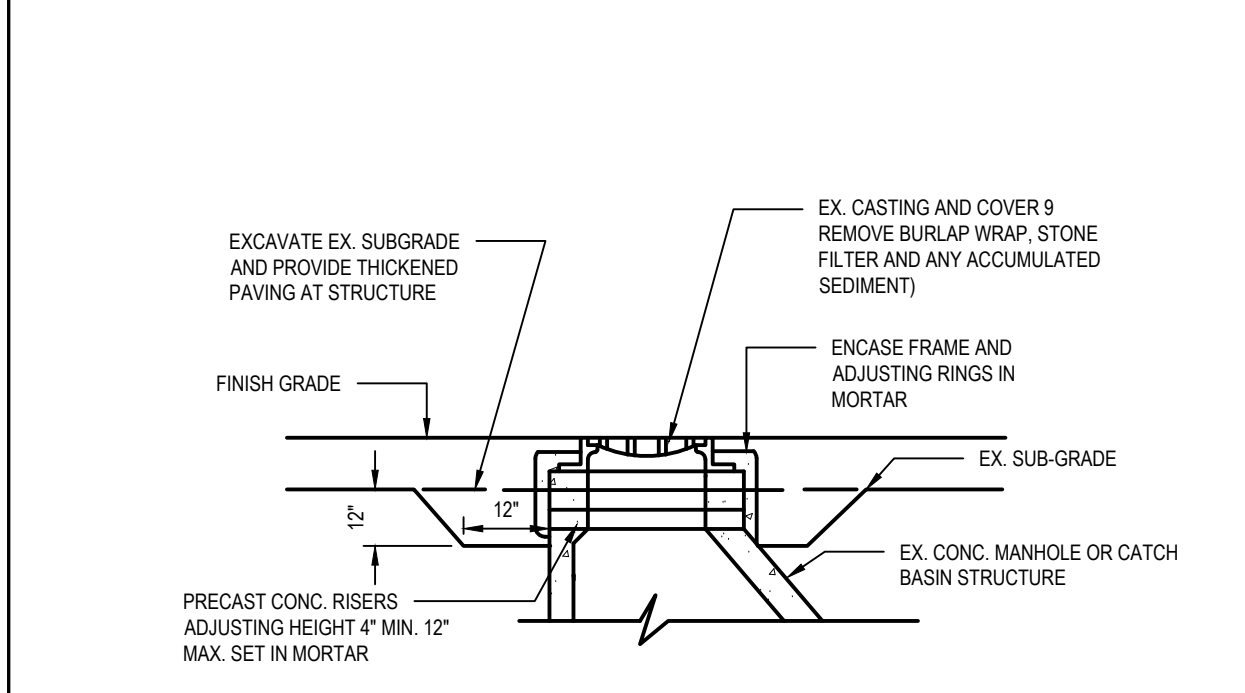
C1 VALLEY GUTTER, CONC, MODIFIED
NOT TO SCALE



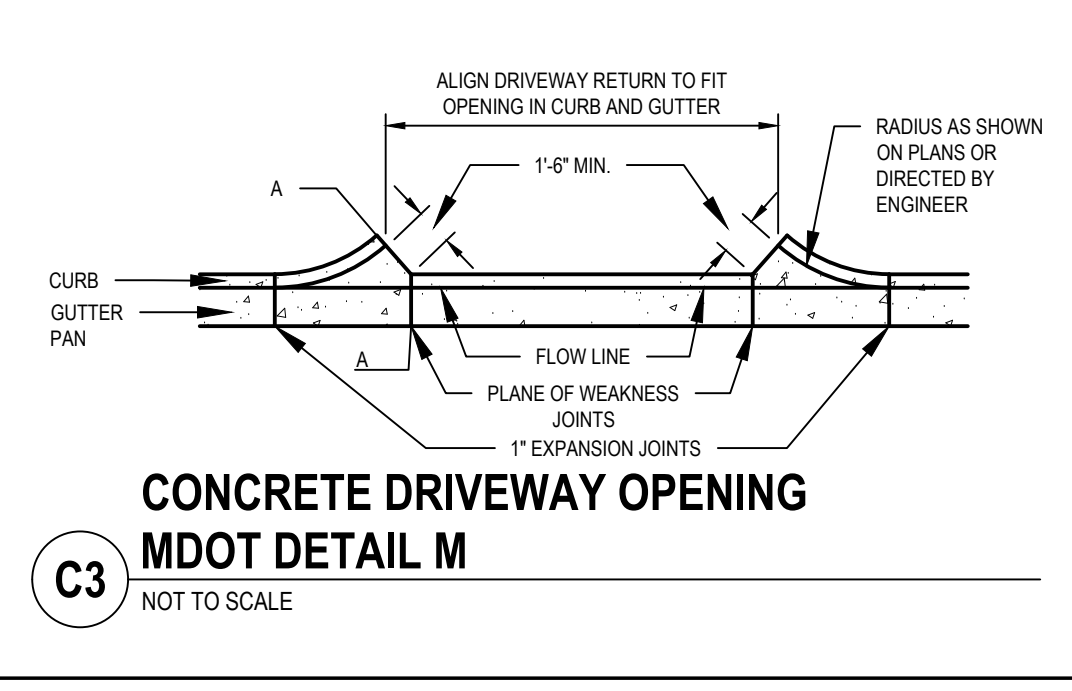
C2 THICKENED EDGE SIDEWALK CURB
NOT TO SCALE



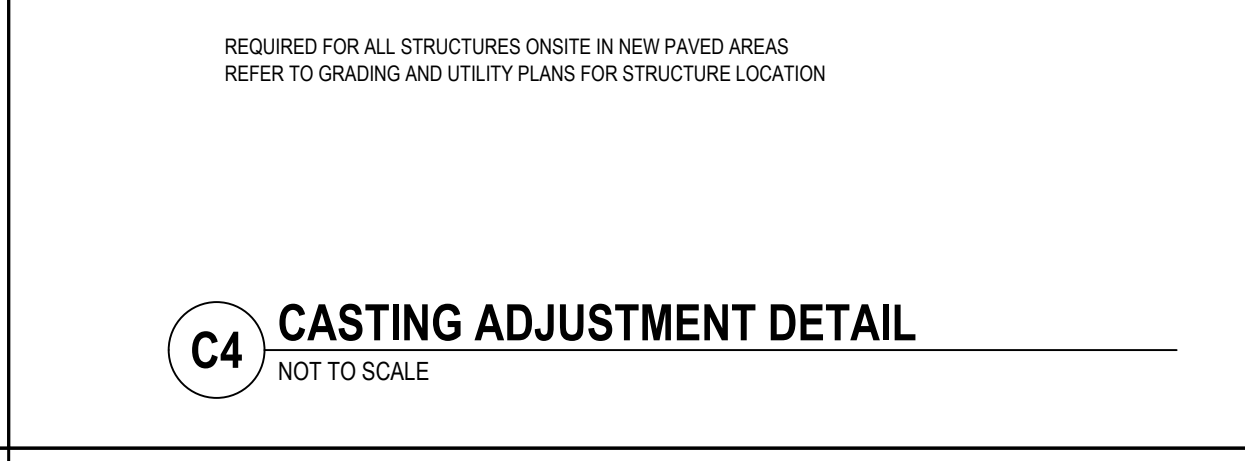
**C3 CONCRETE DRIVEWAY OPENING
MDOT DETAIL M**
NOT TO SCALE



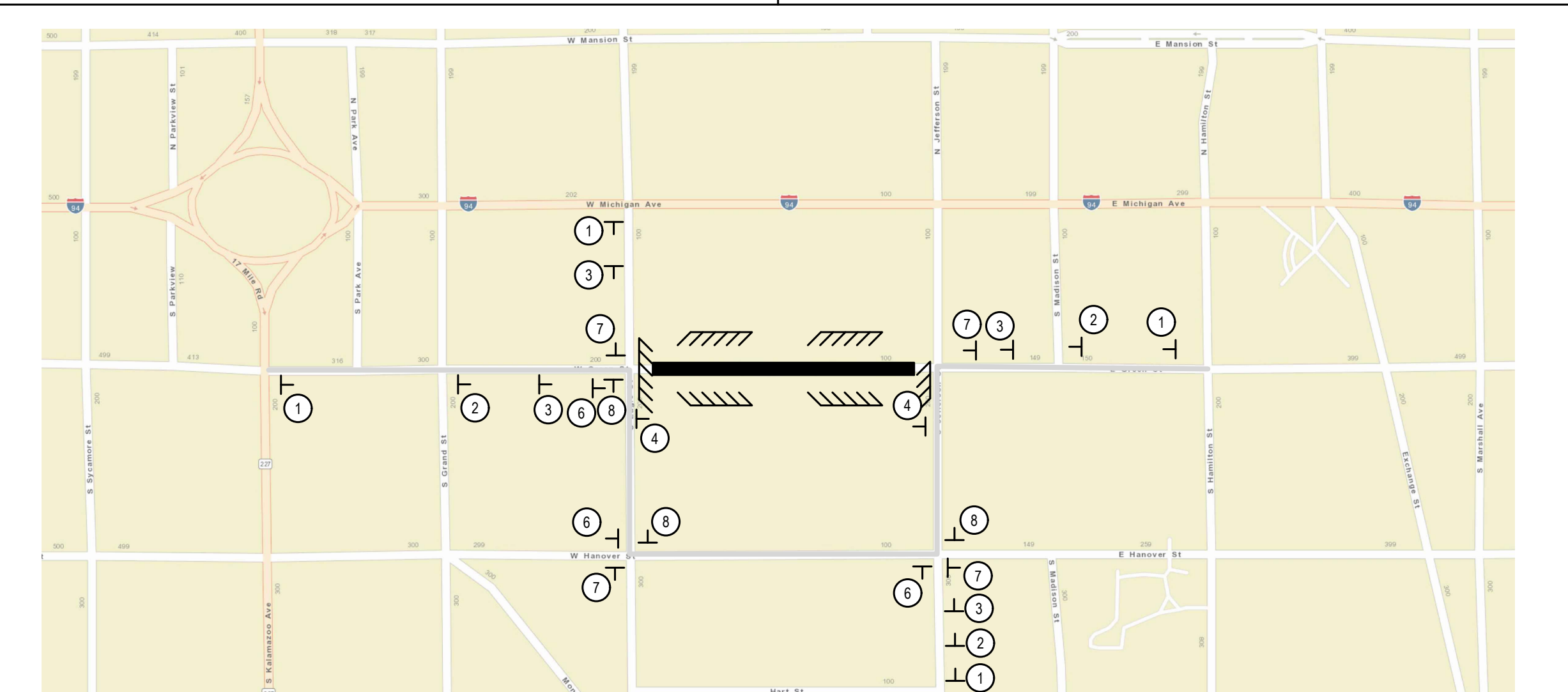
C4 CASTING ADJUSTMENT DETAIL
NOT TO SCALE



C5 F4 CURB, MODIFIED
NOT TO SCALE



C6 VALLEY DRAIN
NOT TO SCALE



- ① W20-1 (ROAD WORK AHEAD)
- ② W20-3 (ROAD CLOSED AHEAD)
- ③ W20-2 (DETOUR AHEAD)
- ④ R11-2 (ROAD CLOSED)
- ⑤ R11-4 (ROAD CLOSED TO THRU TRAFFIC)
- ⑥ M4-9R, D3-1 (DETOUR W/ RIGHT ARROW, STREET NAME)
- ⑦ M4-9L, D3-1 (DETOUR W/ LEFT ARROW, STREET NAME)
- ⑧ M4-9S, D3-1 (DETOUR W/ STRAIGHT ARROW, STREET NAME)
- ⑨ M4-8a (DETOURS ENDS)

C8 MAINTENANCE OF TRAFFIC PLAN
NOT TO SCALE

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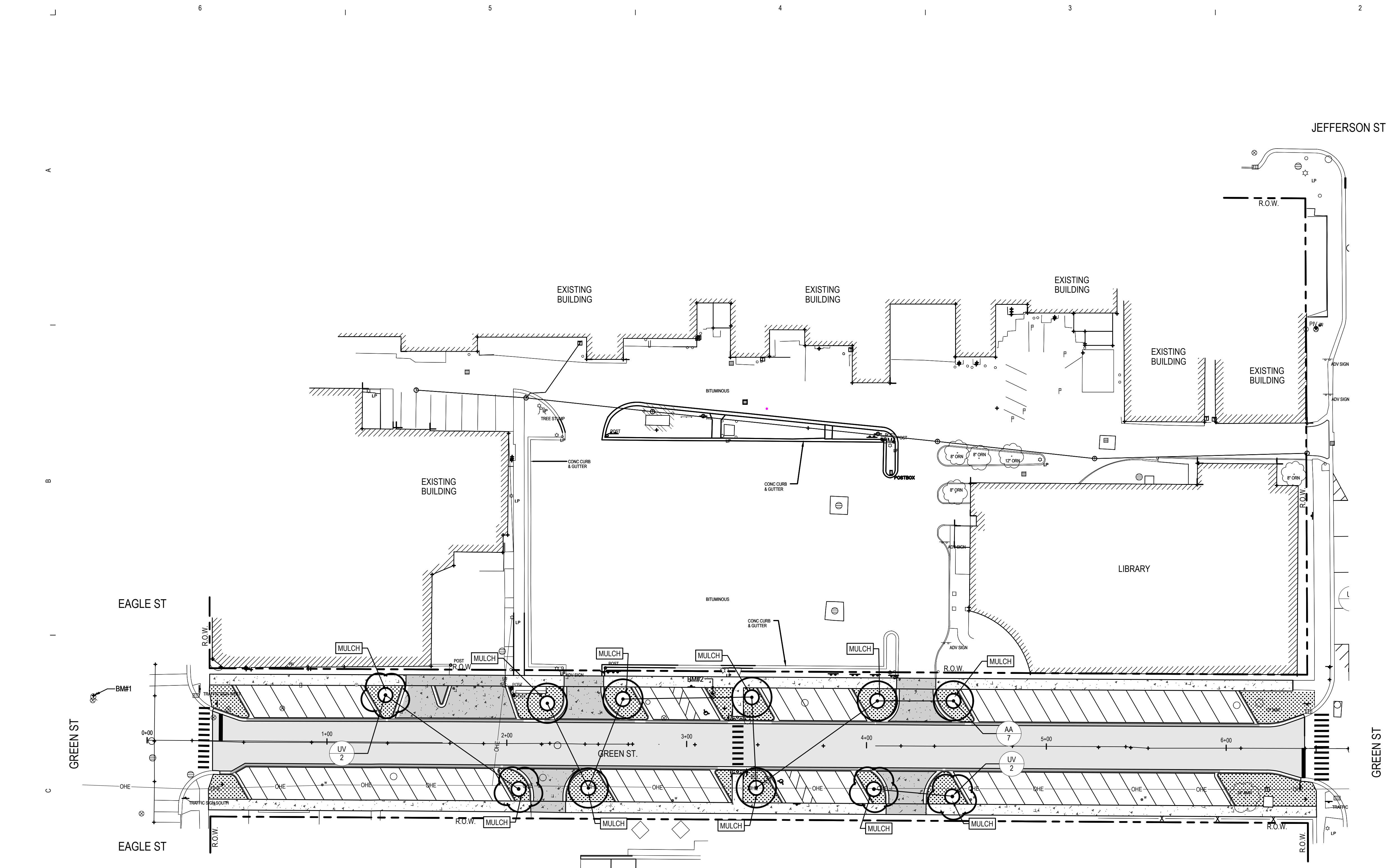
ISSUANCE
5/6/2023 BIDDING

PROJECT NUMBER: 83260005
PROJECT MANAGER: TMB
PROFESSIONAL: PCS
DRAWN BY: PCS
CHECKED BY: TMB

5/5/2023 8:03:43 AM
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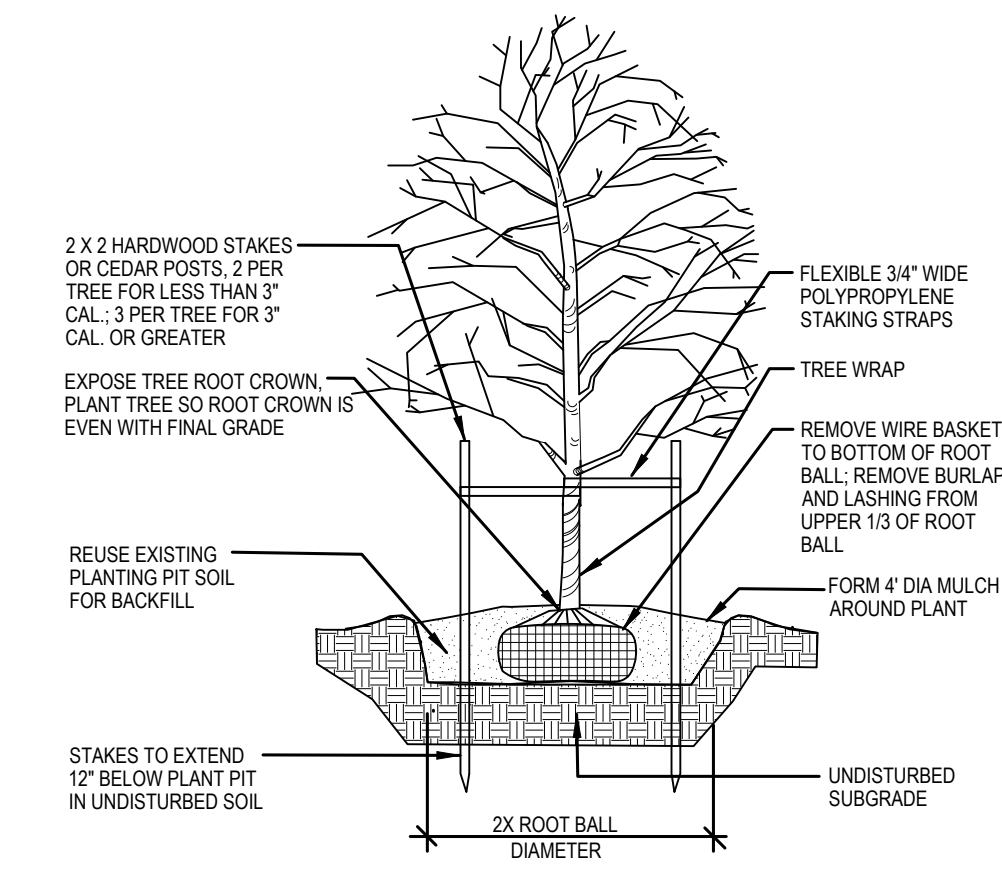
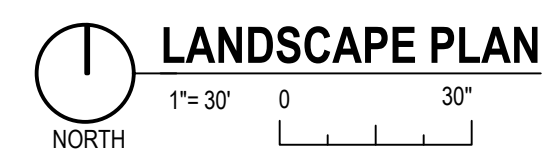
1811 4 Mile Rd NE | Grand Rapids, MI 49525 | 616.367.2864
330 South Tryon St | Suite 500 | Charlotte, NC 28202 | 704.731.5900 | www.progressiveae.com

MARSHALL, MICHIGAN



PLANT SCHEDULE STREET TREE

DECIDUOUS SHADE TREES	QTY	BOTANICAL / COMMON NAME	CONT	CAL
AA	7	ACER X FREEMANII 'JEFFSRED' TM / AUTUMN BLAZE FREEMAN MAPLE 7' BRANCH HT. MIN.	B & B	3"
UV	4	ULMUS AMERICANA 'VALLEY FORGE' / AMERICAN ELM 7' BRANCH HT. MIN.	B & B	3"



DECIDUOUS TREE PLANTING DETAIL
NO SCALE

GENERAL LANDSCAPE NOTES

- CONTRACTOR RESPONSIBLE FOR UNDERSTANDING PROJECT CONDITIONS AND VERIFYING PLANT QUANTITIES. NOTIFY LANDSCAPE ARCHITECT OF ANY PLAN DISCREPANCIES.
- PLANT LOCATIONS TO BE STAKED IN THE FIELD FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT AND OWNER. CONTRACTOR WILL BE RESPONSIBLE FOR VERIFYING ALL EXISTING UNDERGROUND UTILITIES. CONTACT THE APPROPRIATE UTILITY COMPANY FOR FIELD STAKING ALL LINES.
- ALL AREAS DISTURBED BY CONSTRUCTION TO HAVE SODDING APPLIED UNLESS SHOWN OTHERWISE ON PLANS.
- CONTRACTOR TO CONTACT MISS DIG AT PHONE NUMBER 811 AT LEAST 3 WORKING DAYS PRIOR TO CONSTRUCTION, TO CONFIRM LOCATION OF EXISTING UTILITIES.
- CONTRACTOR TO COORDINATE PLANTING SCHEDULE WITH IRRIGATION CONTRACTOR.
- NOTIFY LANDSCAPE ARCHITECT IF AREAS OF POOR DRAINAGE OR OTHER UNUSUAL SUB-GRADE CONDITIONS ARE ENCOUNTERED DURING EXCAVATION FOR PLANTING PITS.
- SHRUB PLANTING BEDS AND TREE SAUCERS TO RECEIVE 3" SHREDDED HARDWOOD MULCH. PERENNIAL BEDS TO RECEIVE 2" DEPTH MULCH AND GROUND COVER AREAS TO RECEIVE 1" DEPTH MULCH.
- CONTRACTOR SHALL PROVIDE SPECIFIED SHRUBS, GROUND COVERS AND OTHER PLANT MATERIALS THAT COMPLY WITH ALL RECOMMENDATIONS AND REQUIREMENTS OF ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK". PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS STOCK, GROWN WITH GOOD HORTICULTURAL PRACTICE AND INSTALLED IN ACCORDANCE WITH METHODS ESTABLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
- NOTIFY LANDSCAPE ARCHITECT AND OWNER (3 DAYS MIN. NOTICE) TO INSPECT AND TAG PLANT MATERIAL IN THE NURSERY PRIOR TO JOBSITE DELIVERY AND INSTALLATION.

LANDSCAPE LEGEND

- SODDING AREA
- 100% KENTUCKY BLUEGRASS

ISSUANCE
5/2/2023 BIDDING

PROJECT NUMBER
83260005
PROJECT MANAGER
TMB
PROFESSIONAL
PCS
DRAWN BY
PCS
CHECKED BY
TMB

5/2/2023 8:04:09 AM
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PART 2

DETAILED SPECIFICATIONS

CITY OF
MARSHALL
SPECIAL PROVISION
FOR
TURF ESTABLISHMENT, PERFORMANCE

MKD

1 of 6

MARCH 2022

a. Description. For the work identified in this special provision paid for by the pay item Turf Establishment, Performance only, delete section 816 of the Standard Specifications for Construction and replace it with this special provision. The Contractor is responsible for the performance and quality of turf growth in the areas shown on the plans and as identified by the Engineer. Comply with all local, state and federal laws when completing this work.

Establish a durable, permanent, mature, perennial turf. The work consists of fundamental turf work, including but not limited to topsoiling, seeding, mulching, erosion control, maintenance, watering and repair of turf as described herein during the life of the contract and during the life of any supplemental performance bond which may ensue.

Choose and implement proven turf establishment industry practices; provide all necessary labor and equipment; select and provide all turf establishment materials; and control erosion and any subsequent sedimentation at all times.

Perform a site analysis, interpret the results and implement a turf establishment program to ensure compliance with this specification. The site analysis must take into consideration topsoil needs, fertilizer and pH requirements, seed mix, existing and future soil moisture levels, slopes and grades, required erosion control items and devices, maintenance requirements, local highway snow removal and deicing practices, and any other characteristics that influence and affect turf establishment.

Subsection 107.11 of the Standard Specifications for Construction is revised relative to the Contractor's responsibility for the repair of turf establishment work as follows. The Contractor is responsible, at no additional cost to the contract, for the repair of turf establishment work occasioned by storm events of up to 3 inches of rain in a 24 hour period as documented by local meteorological data submitted to the Engineer for review and approval. All other portions of subsection 107.11 remain unchanged.

1. Contractor Turf Establishment Experience Requirements. Ensure weed control is done by a commercial herbicide applicator, licensed by the State of Michigan and certified by the Michigan Department of Agriculture & Rural Development (MDARD) in the appropriate category to apply herbicides. Use application procedures and materials in accordance with federal, state and local regulations. Use of restricted use chemicals is prohibited. Provide appropriate documentation and secure approval from the Engineer before application of herbicides.

At least 10 work days prior to start of turf establishment, provide documentation to the Engineer, from the Contractor performing the turf establishment work, that they meet one or both of the following requirements.

A. At least one person employed by the Contractor performing the turf establishment work and assigned to the job site has at least 5 years of experience in roadside turf

establishment.

b. Materials. Provide topsoil, seed, mulch, pesticide, herbicide, mulch blankets and any other unique erosion control materials as necessary to fulfill this specification, as shown on the plans. Use additional materials, as necessary, to meet the standards set forth for turf establishment in this special provision. The use of sod on the project requires the prior approval of the Engineer and if approved, may be used at limited site locations only.

Selection of all materials is the responsibility of the Contractor with the following minimum conditions.

1. Soil. Provide furnished or salvaged topsoil, which may be blended compost, that will support vigorous growth. Ensure topsoil is humus bearing and placed at least 4 inches deep. Ensure it is free of stones larger than 1 inch diameter and other debris. Trim and grade the finished slope to within $\frac{3}{4}$ inch of the required grade. Established grade shall match the existing grade prior to disturbance of area. If existing grade resulted in poor drainage or standing water, contractor shall grade per the direction of the Engineer.

2. Seed. Use a seeding mixture that is composed of four or more species of perennial grass. Use only species and their cultivars or varieties which are guaranteed hardy for Michigan.

Recommended species of perennial grasses include Kentucky Bluegrass, Perennial Ryegrass, Hard Fescue, Creeping Red Fescue, Chewings Fescue, Turf-type Tall Fescue, Buffalo grass, and Alkaligrass-Fulfs Puccinellia distans. Select cultivars or varieties of grasses that are disease and insect resistant and of good color. Ensure that no one species in the mix is less than 5 percent, or more than 25 percent, of the mixture by weight. Do not select grass species considered noxious or objectionable, such as Quack Grass, Smooth Brome, Orchard Grass, Reed Canary Grass and others.

A. Ensure the seed is legally saleable in Michigan. Ensure the seed product does not contain more than 10 percent inert materials.

B. Adapt the species and varieties of seed to the site conditions, to the site use, and to the soils, moisture and local climate. Site use may include, but is not limited to, playground, wetlands, rural roadside, urban roadside and highly maintained front yard.

C. Ensure at least two of the species in the mixture proposed to be planted within 15 feet behind the curb or the shoulder are salt tolerant.

3. Mulch. Mulch seeded areas with the appropriate materials for the site conditions to promote germination and growth of seed and to mitigate soil erosion and sedimentation.

4. Herbicides. Comply with all federal, state and local laws. As part of the MDARD weed control application, the Contractor is required to make proper notifications and/or postings in accordance with the label and MDARD requirements for all locations that will be sprayed. Notify the Engineer at least 48 hours prior to any applications being made. Furnish and apply herbicide(s) as needed. It is the Contractor's responsibility to select the herbicide(s) and the rate at which it is used. Obtain the Engineer's approval of work methods and herbicide(s) selected prior to the application of the herbicide(s). Complete a spray log and submit to the Engineer each day an application is made.

Do not draw water from any waterway (i.e. river, ditch, creek, lake etc.) located on state, county or municipal right-of-way, for mixing with herbicides.

5. Fertilizers. Furnish and apply fertilizer(s) as needed. It is the Contractor's responsibility to select the fertilizer(s) and the rate at which it is used. Obtain the Engineer's approval of work methods and fertilizer(s) prior to the application of the fertilizer(s).

6. Water. Furnish and apply water from an approved source at a rate to promote healthy growth.

c. Construction. The Contractor is responsible for all work and all construction methods used in completing this work. Implementation of any part of the standard specifications or standard plans by the Contractor does not relieve the Contractor of responsibility for acceptability of the construction methods or for the quality of the work.

1. Timeliness of Installation. The Contractor is required to initiate turf establishment work within 2 weeks of adjacent construction being accepted by Engineer. The engineer will document the date of acceptance of adjacent work on an Inspectors Daily Report (IDR) by description (address, intersection, etc). The IDR showing work acceptance will be sent to the contractor within 24 hours of inspection.

Start of turf establishment work is determined by Engineer and will generally include significant completion of the topsoil surfacing stage (top soil, seed, and mulch complete).

2. Inspection of the Work. The Contractor is responsible for all inspection of turf establishment work.

Use a Contractor's Daily Report, approved by the Engineer, to report inspections made and to document turf establishment work performed on this project. Complete and submit a Contractor's Daily Report to the Engineer when any work performed under this special provision is in progress.

Include all necessary materials documentation including tests slips, certifications, etc. with the associated Contractor's Daily Report.

The Engineer will determine the acceptability of the Contractor's Daily Report in terms of their completeness and accuracy. The Engineer reserves the right to verify all submitted measurements and computations. Failure by the Contractor to submit acceptable and timely reports to the Engineer may result in withholding of progress pay estimates on turf-related items until such time as reports are submitted and deemed acceptable.

The Engineer reserves the right to inspect the project for any reason in accordance with subsection 104.01 of the Standard Specifications for Construction, including the fulfillment of other inspection requirements such as Soil Erosion and Sedimentation Control, NPDES, etc. Inspections made by the Engineer do not relieve the Contractor of the responsibility for inspections required by this special provision or the Contractor's responsibilities for erosion control and turf establishment.

3. Erosion Control. Control erosion at all times in accordance with section 208 of the Standard Specifications for Construction. Control of soil erosion is the responsibility of the Contractor. However, ensure sedimentation controls are placed as shown on the plans or as

directed by the Engineer. Continuously monitor the site for needed erosion repair from any cause as addressed in the contract. Return all eroded areas to original grade as detailed in the contract.

Take immediate corrective action if sedimentation occurs in drainage structures or any watercourse or water containment area and stabilize all disturbed areas contributing to this sedimentation within 24 hours after the erosion occurrence. Remove sediment deposited as a result of the Contractor’s inability to control the soil erosion at the Contractor’s expense.

Reimburse the Department for any costs levied against the Department, such as fines, environmental costs, costs for remedies required, or any other costs as a result of the Contractor’s failure to comply with this special provision and with federal, state and local laws.

4. Erosion Repair. The Contractor is responsible for all repairs and liable for all consequences (legal, monetary or other) associated with erosion or sedimentation damage to finished or unfinished work.

Report all erosion occurrences and the repairs made by the Contractor to the Engineer in the format and at the frequency required by the Engineer. Repair any erosion, displacement or disturbance to ongoing or completed work by any cause at no additional cost to the contract unless otherwise noted herein.

The Contractor is responsible and liable for all traffic control and safety measures required to repair and protect damaged turf areas. Repair any eroded area that may affect the support of the roadbed or safety of the public within 24 hours of the erosion occurrence.

Place protective devices such as barriers, directional signs/signals, temporary fence, or any other safety measures immediately after any erosion damage occurs that has the potential of endangering the public. In these instances, provide the Engineer with a written summary of the immediate action taken describing the repairs made and the safety measures taken, within 24 hours of the occurrence of the damage.

5. Mowing and Weeding. Maintain turf to a visually appealing level, and not more than 8 inches in height at any time, prior to acceptance. Weeds must be controlled to less than 10 percent of the turf establishment area at all times during construction.

6. Final Acceptance

A. Final Acceptance Parameters. Ensure before final acceptance of the turf establishment work, all of the following minimum parameters are met throughout all exposed areas of the project designated on the plans or identified by the Engineer as turf establishment areas: there must be no exposed bare soil and the turf must be fully germinated, erosion free, weeds less than 10 percent, disease free, dark green in color and in a vigorous growing condition.

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:

Pay Item	Pay Unit
Turf Establishment, Performance	Square Yard

Turf Establishment, Performance includes installing, maintaining, inspecting, repairing and meeting the acceptance parameters for turf establishment specified in this special provision, including preparation, updating and submittal of the Contractor's Daily Reports.

Repairs made to damaged turf establishment areas as a result of a documented storm by local meteorological data resulting in rainfall amounts of more than 3 inches in a 24 hour period will be paid for as an increase to original quantities in accordance with subsection 109.05 of the Standard Specifications for Construction.

The following schedule of payment applies to work performed in accordance with this special provision. Upon completion of topsoil surfacing stage, 50 percent of the authorized amount for **Turf Establishment, Performance** will be paid to the Contractor. The remaining 50 percent of the authorized amount will be paid upon completion of all other work necessary to comply with this special provision and to meet all final acceptance parameters for **Turf Establishment, Performance**

All costs associated with turf establishment work performed during the duration of the performance bond will not be paid for separately. These costs which may include, but are not limited to, mobilization, traffic control devices, and the required permit insurance are included in the unit price bid for **Turf Establishment, Performance**.

CITY OF
MARSHALL
SPECIAL PROVISION
FOR
ADJUSTING DRAINAGE STRUCTURE, CASE 1, MODIFIED

MKD

1 of 2

March 2021

a. Description. This work consists of adjusting drainage structures, including utility manhole covers, in accordance with section 403 of the Standard Specifications for Construction, as shown on the plans, as directed by the Engineer, and as stated herein.

b. Materials. Provide materials in accordance with subsection 403.02 of the Standard Specifications for Construction with the following exceptions:

Provide Concrete, Grade P-NC in accordance with section 603

For concrete, curb; concrete, curb and gutter; or concrete traffic island repairs provide materials in accordance with the standard specifications.

c. Construction. For structures within the pavement area, use a rotary coring head to remove a minimum 4-foot diameter section of pavement around the drainage structure frame and cover. If the frame outside diameter measurement is greater than 36 inches, use a rotary coring head to remove a minimum 4.5-foot diameter section of pavement. For structures within the curb line, saw cut and remove a 4-foot by 6-foot section of pavement around the frame with the 6-foot dimension measured along the curb line. Remove curb and/or curb and gutter associated with the adjustment of structures as directed by the Engineer. For structures located adjacent to concrete traffic control islands, remove concrete island full-width or up to 6 feet wide to facilitate adjustment of the drainage structure cover frame, as directed by the Engineer.

Support the cover frame over the structure matching the adjacent roadway cross slope. Secure the frame in-place to allow for placement on concrete without altering frame position.

For structures within the pavement area, replace pavement around the frame with Concrete, Grade P-NC matching the finished elevation and cross-slope of the roadway. Construct plane of weakness joint as directed by the Engineer. For structures within the curb line, replace pavement around the frame with Concrete, Grade P-NC and HMA top course as shown in the detail. Install epoxy anchored lane ties to anchor the concrete to adjacent composite pavement for curb drainage structures located in curbed areas. Replace concrete, curb; concrete curb and gutter, or concrete traffic control islands "in-kind" in accordance with the Standard Plan R-30 Series and section 802 of the Standard Specifications for Construction.

Epoxy anchor all lane ties in accordance with section 603 of the Standard Specifications for Construction.

Immediately remove any debris that falls into the drainage structure due to Contractor operations.

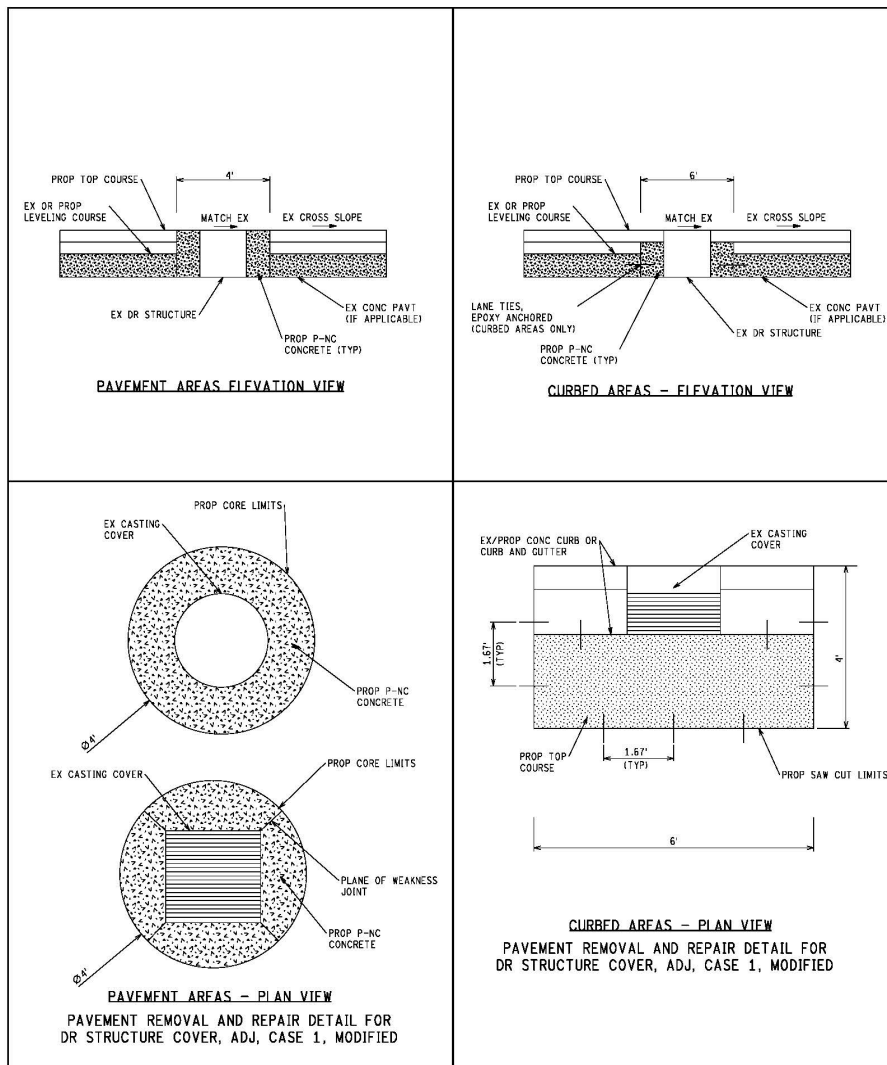
d. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Pay Item

Pay Unit

Dr Structure Cover, Adj, Case 1, ModifiedEach

Dr Structure Cover, Adj, Case 1, Modified includes furnishing all materials, saw cutting and removal of existing pavement and curb or curb and gutter, adjustment of cover to required elevation and cross-slope, installation of epoxy anchored lane ties (curbed areas only in composite sections), placement and finishing of new curb or curb and gutter, placement and finishing of new concrete, placement and removal of temporary HMA wedging for maintaining traffic, if required, placement of cover to open structures to prevent accumulation of debris and cleaning existing drainage structure due to Contractor operations.



CITY OF
MARSHALL
SPECIAL PROVISION
FOR
SIDEWALK GRADING, MODIFIED

MKD

1 of 2

March 2021

a. Description. This work consists of excavation and removal of material from existing right of way for new sidewalk installations. Includes furnishing all tools and materials to remove existing earth and establish grade for installation of granular subbase and concrete sidewalk. Pay item includes saw cutting and removal of existing pavement, curb, and curb and gutter where meeting existing sidewalk grade and adjustment of covers to required elevation and cross-slope, if applicable. Removal of adjacent earth to meet required slopes as directed by Engineer. Excess material can be transported to the City's Department of Public Works located at 616 Home Road, Marshall, MI 49068.

b. Materials. Provide materials in accordance with subsection 803.02 of the Standard Specifications for Construction.

c. Construction. Construct in accordance with subsection 803.03 of the Standard Specifications for Construction.

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:

Pay Item	Pay Unit
Sidewalk Grading, Modified	Linear Foot

Sidewalk Grading, Modified will be measured in place by linear foot along the centerline of the sidewalk.

CITY OF MARSHALL
SPECIAL PROVISION FOR
SAWCUT PAVEMENT

CEI: KEH

1 of 1

03-11-16

a. Description. – This work shall be done in accordance with the requirements of the 2012 Michigan Department of Transportation Standard Specifications for Construction and as specified herein. The work of %Sawcut Pavement+ shall consist of providing a straight sawcut, of full depth of the existing pavement of any kind, at the boundary between existing pavement and the new pavement surfaces. This pay item does not apply to areas requiring Sub Grading Undercutting Type II.

b. Measurement and Payment. . The completed work as measured for %Sawcut Pavement+ will be paid for at the contract unit price for the following contract pay item and includes all material, equipment and labor to complete this item. %Sawcut Pavement+ shall be paid by the linear foot of full depth of any type of pavement sawcut.

Contract Item (Pay Item)	Pay Unit
Sawcut Pavement	Foot

APPENDIX 1.0

PART 1 AND PART 2 PROJECT PAVEMENT CORES



3301 Tech Circle Drive
Kalamazoo, MI 49008-5611

T (269) 323-3555

www.sme-usa.com

March 24, 2023

Ms. Marguerite Davenport, PE
Director of Public Services
City of Marshall
323 W. Michigan Avenue
Marshall, Michigan 49068

Via E-mail: MDavenport@cityofmarshall.com

RE: Pavement Cores
2023 Road Rehabilitation Projects
City of Marshall, Michigan
SME Project No. 092058.00

Dear Ms. Davenport:

SME has completed pavement cores for the referenced project. This letter describes the field exploration and transmits the Pavement Core Logs and core location information.

SME performed 19 pavement cores (C101 through C112, C113A, C113B, and C114 through C118) for the project on March 9, 2023. Based on our observations and previous experience coring in the City of Marshall, SME performed an additional pavement core (C113B) on S Maddison Street to determine if concrete pavement was present closer to the center of roadway near the initial core location. The approximate locations of the cores are shown on the attached Pavement Core Location Map provided by the City of Marshall and described on the corresponding pavement core logs. The number and approximate locations of the cores were determined by the City of Marshall. The pavement elevations at the core locations were not determined by SME. Therefore, the depths indicated on the pavement core logs are referenced to the existing pavement surface.

SME staked the core locations prior to mobilizing for the field exploration. SME provided self-regulating traffic control during the fieldwork performed on March 9, 2023, using cones near the equipment and signs at the beginning and end of the work area.

SME cored the pavement using a 4-inch-diameter core barrel. The core thickness was measured in the field, and cores were returned to our laboratory for further visual examination. After coring, the core holes were patched with asphalt cold-patch.

The pavement thickness within the recovered pavement cores was measured to the nearest ¼-inch at three equally-spaced points around the core perimeter. The thickness of the core is considered the average of the three measurements. The pavement cores were also photographed in our laboratory.

Pavement cores are normally retained in our laboratory for 60 days upon completion of our report and are then disposed of, unless instructed otherwise. Please refer to the attached pavement core logs for the pavement thickness and condition at the specific core locations.

Engineering recommendations for the project were not requested as part of our scope of services. If pavement design services are desired at a later date, we would be pleased to assist you.

We appreciate the opportunity to be of service. If you have any questions regarding the attached pavement core logs or the information in this report, or if we can be of further assistance, please call.

Sincerely,

SME

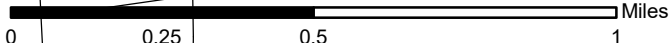
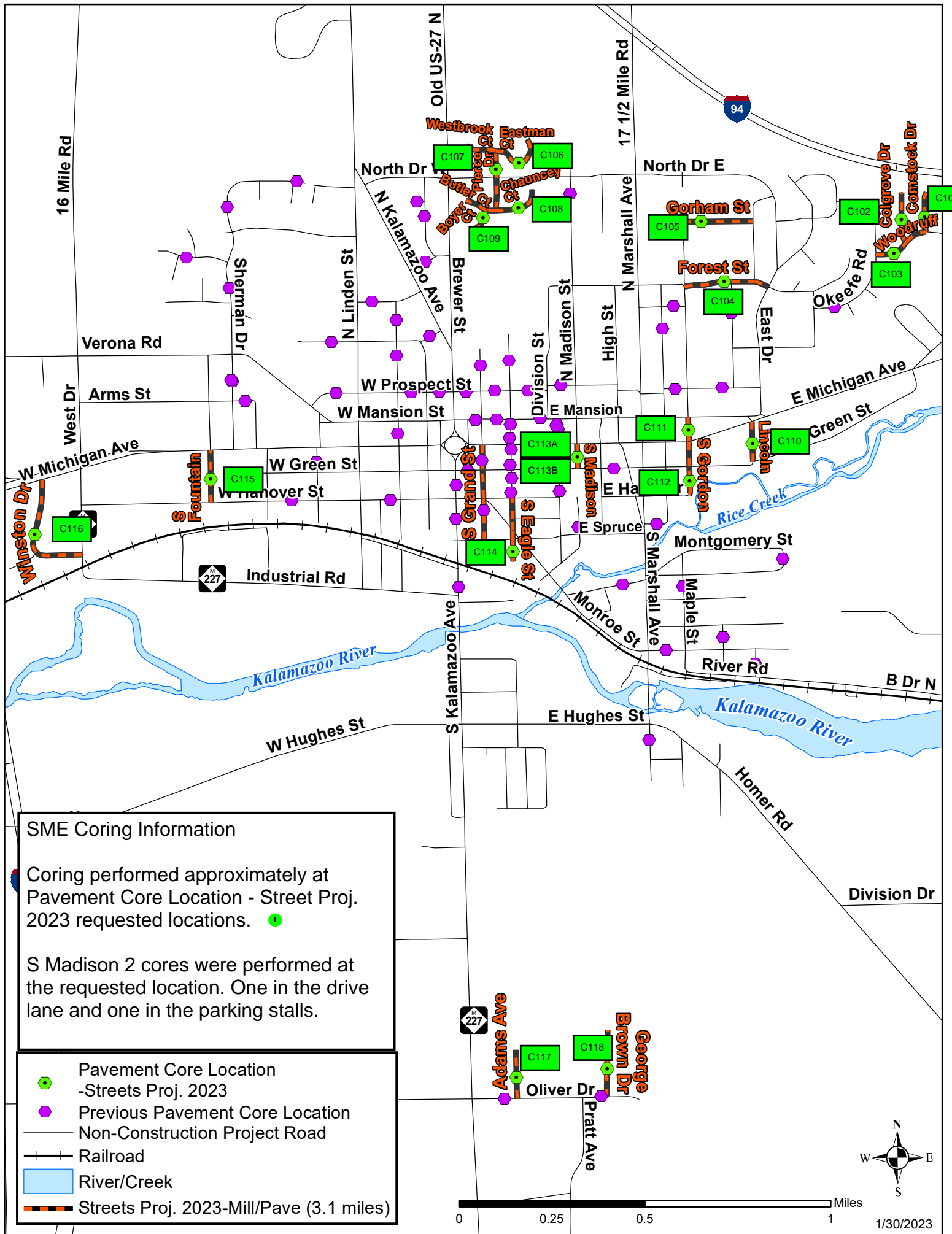
PREPARED BY:

REVIEWED BY:

Jacob E. Meyer, EIT
Senior Staff Engineer

Kevin J. Glupker, PE
Senior Consultant

Attachments: Pavement Core Location Map
Pavement Core Logs (C101 through C112, C113A and C113B, and C114 through C118)
Laboratory Testing Procedures
General Comments
Important Information about This Geotechnical-Engineering Report



1/30/2023

PAVEMENT CORE LOG

PROJECT NAME: City of Marshall Cores 2023 Projects
 PROJECT NO.: 092058.00
 LOCATION: Marshall, Michigan
 CLIENT: City of Marshall
 DATE: 3/9/23
 DRILLED BY: JEM / AKC
 LOGGED BY: JEM / KJG

CORE: C101
 ROADWAY: Comstock Drive
 LANE: Northbound
 OFFSET: 8 Feet East of Centerline
 STATION: 125 Feet North of Foxcroft Drive

PAVEMENT CONDITIONS

Layer, in.		Layer Thickness, in.	Description	Comment
From	To			
0	1 1/2	1 1/2	ASPHALT PAVEMENT	Vertical Cracks - Delaminated from Layer Below
1 1/2	3	1 1/2	ASPHALT PAVEMENT	Deteriorated into Pieces
			End of Core at 3 Inches	

NOTES:

1) Corehole patched with asphalt cold patch material.



**Core picture shows approximate thickness

PAVEMENT CORE LOG

PROJECT NAME: City of Marshall Cores 2023 Projects
 PROJECT NO.: 092058.00
 LOCATION: Marshall, Michigan
 CLIENT: City of Marshall
 DATE: 3/9/23
 DRILLED BY: JEM / AKC
 LOGGED BY: JEM / KJG

CORE: C102
 ROADWAY: Colgrove Drive
 LANE: Southbound
 OFFSET: 6 Feet West of Centerline
 STATION: 210 Feet North of Woodruff Drive

PAVEMENT CONDITIONS

Layer, in.		Layer Thickness, in.	Description	Comment
From	To			
0	1 1/2	1 1/2	ASPHALT PAVEMENT	Vertical Cracks - Partially Deteriorated
1 1/2	3	1 1/2	ASPHALT PAVEMENT	Vertical Cracks - Partially Deteriorated
			End of Core at 3 Inches	

NOTES:

1) Corehole patched with asphalt cold patch material.



**Core picture shows approximate thickness

PAVEMENT CORE LOG

PROJECT NAME: City of Marshall Cores 2023 Projects
 PROJECT NO.: 092058.00
 LOCATION: Marshall, Michigan
 CLIENT: City of Marshall
 DATE: 3/9/23
 DRILLED BY: JEM / AKC
 LOGGED BY: JEM / KJG

CORE: C103
 ROADWAY: Woodruff Drive
 LANE: Eastbound
 OFFSET: 7 Feet South of Centerline
 STATION: 165 Feet East of O Keefe Road

PAVEMENT CONDITIONS

Layer, in.		Layer Thickness, in.	Description	Comment
From	To			
0	1 1/2	1 1/2	ASPHALT PAVEMENT	Intact - Delaminated from Layer Below
1 1/2	3 1/2	2	ASPHALT PAVEMENT	Vertical Cracks
			End of Core at 3 1/2 Inches	

NOTES:

1) Corehole patched with asphalt cold patch material.



**Core picture shows approximate thickness

PAVEMENT CORE LOG

PROJECT NAME: City of Marshall Cores 2023 Projects
 PROJECT NO.: 092058.00
 LOCATION: Marshall, Michigan
 CLIENT: City of Marshall
 DATE: 3/9/23
 DRILLED BY: JEM / AKC
 LOGGED BY: JEM / KJG

CORE: C104
 ROADWAY: Forest Street
 LANE: Eastbound
 OFFSET: 8 Feet South of Centerline
 STATION: 120 Feet West of Ferguson Road

PAVEMENT CONDITIONS

Layer, in.		Layer Thickness, in.	Description	Comment
From	To			
0	1 3/4	1 3/4	ASPHALT PAVEMENT	Vertical Crack
			End of Core at 1 3/4 Inches	

NOTES:

1) Corehole patched with asphalt cold patch material.



**Core picture shows approximate thickness

PAVEMENT CORE LOG

PROJECT NAME: City of Marshall Cores 2023 Projects
 PROJECT NO.: 092058.00
 LOCATION: Marshall, Michigan
 CLIENT: City of Marshall
 DATE: 3/9/23
 DRILLED BY: JEM / AKC
 LOGGED BY: JEM / KJG

CORE: C105
 ROADWAY: Gorham Street
 LANE: Westbound
 OFFSET: 7 Feet North of Centerline
 STATION: 280 Feet East of Gordon Street

PAVEMENT CONDITIONS

Layer, in.		Layer Thickness, in.	Description	Comment
From	To			
0	1 1/4	1 1/4	ASPHALT PAVEMENT	Intact
1 1/4	2 1/4	1	ASPHALT PAVEMENT	Intact
			End of Core at 2 1/4 Inches	

NOTES:

1) Corehole patched with asphalt cold patch material.



**Core picture shows approximate thickness

PAVEMENT CORE LOG

PROJECT NAME: City of Marshall Cores 2023 Projects
 PROJECT NO.: 092058.00
 LOCATION: Marshall, Michigan
 CLIENT: City of Marshall
 DATE: 3/9/23
 DRILLED BY: JEM / AKC
 LOGGED BY: JEM / KJG

CORE: C106
 ROADWAY: Eastman Court
 LANE: Westbound
 OFFSET: 7 Feet North of Centerline
 STATION: 410 Feet East of Pierce Drive

PAVEMENT CONDITIONS

Layer, in.		Layer Thickness, in.	Description	Comment
From	To			
0	1 1/2	1 1/2	ASPHALT PAVEMENT	Intact - Delaminated form Layer Below
1 1/2	2 3/4	1 1/4	ASPHALT PAVEMENT	Vertical Crack - Partially Deteriorated
			End of Core at 2 3/4 Inches	

NOTES:

1) Corehole patched with asphalt cold patch material.



**Core picture shows approximate thickness

PAVEMENT CORE LOG

PROJECT NAME: City of Marshall Cores 2023 Projects
 PROJECT NO.: 092058.00
 LOCATION: Marshall, Michigan
 CLIENT: City of Marshall
 DATE: 3/9/23
 DRILLED BY: JEM / AKC
 LOGGED BY: JEM / KJG

CORE: C107
 ROADWAY: Pierce Drive
 LANE: Southbound
 OFFSET: 8 Feet West of Centerline
 STATION: 180 Feet North of N Drive E

PAVEMENT CONDITIONS

Layer, in.		Layer Thickness, in.	Description	Comment
From	To			
0	1 1/2	1 1/2	ASPHALT PAVEMENT	Intact
1 1/2	4	2 1/2	ASPHALT PAVEMENT	Intact
			End of Core at 4 Inches	

NOTES:

1) Corehole patched with asphalt cold patch material.



**Core picture shows approximate thickness

PAVEMENT CORE LOG

PROJECT NAME: City of Marshall Cores 2023 Projects
 PROJECT NO.: 092058.00
 LOCATION: Marshall, Michigan
 CLIENT: City of Marshall
 DATE: 3/9/23
 DRILLED BY: JEM / AKC
 LOGGED BY: JEM / KJG

CORE: C108
 ROADWAY: Chaunce Court
 LANE: Eastbound
 OFFSET: 5 Feet South of Centerline
 STATION: 380 Feet East of Pierce Drive

PAVEMENT CONDITIONS

Layer, in.		Layer Thickness, in.	Description	Comment
From	To			
0	1 1/2	1 1/2	ASPHALT PAVEMENT	Vertical Crack - Partially Deteriorated
1 1/2	2 1/4	3/4	ASPHALT PAVEMENT	Deteriorated into Pieces
			End of Core at 2 1/4 Inches	

NOTES:

1) Corehole patched with asphalt cold patch material.



**Core picture shows approximate thickness

PAVEMENT CORE LOG

PROJECT NAME: City of Marshall Cores 2023 Projects
 PROJECT NO.: 092058.00
 LOCATION: Marshall, Michigan
 CLIENT: City of Marshall
 DATE: 3/9/23
 DRILLED BY: JEM / AKC
 LOGGED BY: JEM / KJG

CORE: C109
 ROADWAY: Boyer Court
 LANE: Southbound
 OFFSET: 7 Feet West of Centerline
 STATION: 145 Feet South of Butler Court

PAVEMENT CONDITIONS

Layer, in.		Layer Thickness, in.	Description	Comment
From	To			
0	1 1/2	1 1/2	ASPHALT PAVEMENT	Vertical Cracks - Partially Deteriorated
1 1/2	2 1/4	3/4	ASPHALT PAVEMENT	Deteriorated into Pieces
			End of Core at 2 1/4 Inches	

NOTES:

- 1) Corehole patched with asphalt cold patch material.



**Core picture shows approximate thickness

PAVEMENT CORE LOG

PROJECT NAME: City of Marshall Cores 2023 Projects
 PROJECT NO.: 092058.00
 LOCATION: Marshall, Michigan
 CLIENT: City of Marshall
 DATE: 3/9/23
 DRILLED BY: JEM / AKC
 LOGGED BY: JEM / KJG

CORE: C110
 ROADWAY: Lincoln Street
 LANE: Northbound
 OFFSET: 6 Feet East of Centerline
 STATION: 315 Feet South of Michigan Avenue

PAVEMENT CONDITIONS

Layer, in.		Layer Thickness, in.	Description	Comment
From	To			
0	2	2	ASPHALT PAVEMENT	Vertical Crack - Delaminated from Layer Below
2	3	1	ASPHALT PAVEMENT	Deteriorated into Pieces
			End of Core at 3 Inches	

NOTES:

1) Corehole patched with asphalt cold patch material.



**Core picture shows approximate thickness

PAVEMENT CORE LOG

PROJECT NAME: City of Marshall Cores 2023 Projects
 PROJECT NO.: 092058.00
 LOCATION: Marshall, Michigan
 CLIENT: City of Marshall
 DATE: 3/9/23
 DRILLED BY: JEM / AKC
 LOGGED BY: JEM / KJG

CORE: C111
 ROADWAY: S Gordan Street
 LANE: Northbound
 OFFSET: 7 Feet East of Centerline
 STATION: 165 Feet North of Michigan Avenue

PAVEMENT CONDITIONS

Layer, in.		Layer Thickness, in.	Description	Comment
From	To			
0	1 1/2	1 1/2	ASPHALT PAVEMENT	Intact - Delaminated from Layer Below
1 1/2	6 1/2	5	PORTLAND CEMENT CONCRETE	Horizontal Cracks - Resteel Observed at 4.5" Below Top of Layer
			End of Core at 6 1/2 Inches	

NOTES:

1) Corehole patched with asphalt cold patch material.



**Core picture shows approximate thickness

PAVEMENT CORE LOG

PROJECT NAME: City of Marshall Cores 2023 Projects
 PROJECT NO.: 092058.00
 LOCATION: Marshall, Michigan
 CLIENT: City of Marshall
 DATE: 3/9/23
 DRILLED BY: JEM / AKC
 LOGGED BY: JEM / KJG

CORE: C112
 ROADWAY: S Gordon Street
 LANE: Southbound
 OFFSET: 5 Feet West of Centerline
 STATION: 225 Feet South of E Green Street

PAVEMENT CONDITIONS

Layer, in.		Layer Thickness, in.	Description	Comment
From	To			
0	1 1/2	1 1/2	ASPHALT PAVEMENT	Intact
1 1/2	3 1/2	2	ASPHALT PAVEMENT	Intact
			End of Core at 3 1/2 Inches	

NOTES:

1) Corehole patched with asphalt cold patch material.



**Core picture shows approximate thickness

PAVEMENT CORE LOG

PROJECT NAME: City of Marshall Cores 2023 Projects
 PROJECT NO.: 092058.00
 LOCATION: Marshall, Michigan
 CLIENT: City of Marshall
 DATE: 3/9/23
 DRILLED BY: JEM / AKC
 LOGGED BY: JEM / KJG

CORE: C113A (Parking Lane)
 ROADWAY: S Madison Street
 LANE: Southbound Street
 OFFSET: 14 Feet West of Centerline
 STATION: 180 Feet South of Michigan Avenue

PAVEMENT CONDITIONS

Layer, in.		Layer Thickness, in.	Description	Comment
From	To			
0	2 1/2	2 1/2	ASPHALT PAVEMENT	Intact
2 1/2	5	2 1/2	ASPHALT PAVEMENT	Intact
			End of Core at 5 Inches	

NOTES:

- 1) Corehole patched with asphalt cold patch material.



**Core picture shows approximate thickness

PAVEMENT CORE LOG

PROJECT NAME: City of Marshall Cores 2023 Projects
 PROJECT NO.: 092058.00
 LOCATION: Marshall, Michigan
 CLIENT: City of Marshall
 DATE: 3/9/23
 DRILLED BY: JEM / AKC
 LOGGED BY: JEM / KJG

CORE: C113B (Drive Lane)
 ROADWAY: S Madison Street
 LANE: Northbound
 OFFSET: 4 Feet East of Centerline
 STATION: 200 Feet South of Michigan Avenue

PAVEMENT CONDITIONS

Layer, in.		Layer Thickness, in.	Description	Comment
From	To			
0	2	2	ASPHALT PAVEMENT	Intact
2	4	2	ASPHALT PAVEMENT	Intact - Delaminated from Layer Below
4	9 1/2	5 1/2	PORTLAND CEMENT CONCRETE	Intact - No Resteel Observed
			End of Core at 9 1/2 Inches	

NOTES:

1) Corehole patched with asphalt cold patch material.



**Core picture shows approximate thickness

PAVEMENT CORE LOG

PROJECT NAME: City of Marshall Cores 2023 Projects
 PROJECT NO.: 092058.00
 LOCATION: Marshall, Michigan
 CLIENT: City of Marshall
 DATE: 3/9/23
 DRILLED BY: JEM / AKC
 LOGGED BY: JEM / KJG

CORE: C114
 ROADWAY: S Eagle Street
 LANE: Southbound
 OFFSET: 8 Feet West of Centerline
 STATION: 175 Feet South of W Spruce Street

PAVEMENT CONDITIONS

Layer, in.		Layer Thickness, in.	Description	Comment
From	To			
0	1 1/2	1 1/2	ASPHALT PAVEMENT	Intact
1 1/2	2 3/4	1 1/4	ASPHALT PAVEMENT	Intact
			End of Core at 2 3/4 Inches	

NOTES:

- 1) Corehole patched with asphalt cold patch material.



**Core picture shows approximate thickness

PAVEMENT CORE LOG

PROJECT NAME: City of Marshall Cores 2023 Projects
 PROJECT NO.: 092058.00
 LOCATION: Marshall, Michigan
 CLIENT: City of Marshall
 DATE: 3/9/23
 DRILLED BY: JEM / AKC
 LOGGED BY: JEM / KJG

CORE: C115
 ROADWAY: S Fountain Street
 LANE: Southbound
 OFFSET: 9 Feet West of Centerline
 STATION: 375 Feet South of Michigan Avenue

PAVEMENT CONDITIONS

Layer, in.		Layer Thickness, in.	Description	Comment
From	To			
0	2	2	ASPHALT PAVEMENT	Intact
2	4	2	ASPHALT PAVEMENT	Intact
4	7 1/4	3 1/4	ASPHALT PAVEMENT	Intact
			End of Core at 7 1/4 Inches	

NOTES:

- 1) Corehole patched with asphalt cold patch material.



**Core picture shows approximate thickness

PAVEMENT CORE LOG

PROJECT NAME: City of Marshall Cores 2023 Projects
 PROJECT NO.: 092058.00
 LOCATION: Marshall, Michigan
 CLIENT: City of Marshall
 DATE: 3/9/23
 DRILLED BY: JEM / AKC
 LOGGED BY: JEM / KJG

CORE: C116
 ROADWAY: Winston Drive
 LANE: Center Turn
 OFFSET: 2 Feet West of Centerline
 STATION: 850 Feet South of Michigan Avenue

PAVEMENT CONDITIONS

Layer, in.		Layer Thickness, in.	Description	Comment
From	To			
0	1 1/2	1 1/2	ASPHALT PAVEMENT	Intact
1 1/2	4	2 1/2	ASPHALT PAVEMENT	Intact
			End of Core at 4 Inches	

NOTES:

1) Corehole patched with asphalt cold patch material.



**Core picture shows approximate thickness

PAVEMENT CORE LOG

PROJECT NAME: City of Marshall Cores 2023 Projects
 PROJECT NO.: 092058.00
 LOCATION: Marshall, Michigan
 CLIENT: City of Marshall
 DATE: 3/9/23
 DRILLED BY: JEM / AKC
 LOGGED BY: JEM / KJG

CORE: C117
 ROADWAY: George Brown Drive
 LANE: Southbound
 OFFSET: 10 Feet West of Centerline
 STATION: 360 Feet North of Oliver Drive

PAVEMENT CONDITIONS

Layer, in.		Layer Thickness, in.	Description	Comment
From	To			
0	2	2	ASPHALT PAVEMENT	Intact
2	4	2	ASPHALT PAVEMENT	Intact
4	6	2	ASPHALT PAVEMENT	Intact
			End of Core at 6 Inches	

NOTES:

1) Corehole patched with asphalt cold patch material.



**Core picture shows approximate thickness

PAVEMENT CORE LOG

PROJECT NAME: City of Marshall Cores 2023 Projects
 PROJECT NO.: 092058.00
 LOCATION: Marshall, Michigan
 CLIENT: City of Marshall
 DATE: 3/9/23
 DRILLED BY: JEM / AKC
 LOGGED BY: JEM / KJG

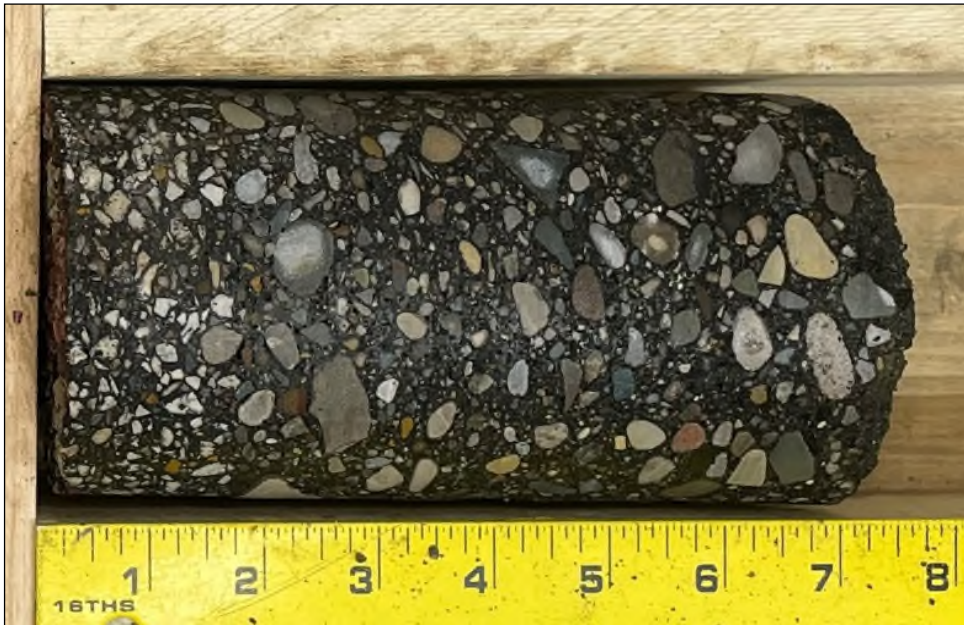
CORE: C118
 ROADWAY: Adams Avenue
 LANE: Northbound
 OFFSET: 9 Feet East of Centerline
 STATION: 525 Feet North of Oliver Drive

PAVEMENT CONDITIONS

Layer, in.		Layer Thickness, in.	Description	Comment
From	To			
0	1 1/2	1 1/2	ASPHALT PAVEMENT	Intact
1 1/2	3	1 1/2	ASPHALT PAVEMENT	Intact
3	5	2	ASPHALT PAVEMENT	Intact
5	7	2	ASPHALT PAVEMENT	Intact
			End of Core at 7 Inches	

NOTES:

1) Corehole patched with asphalt cold patch material.



**Core picture shows approximate thickness

LABORATORY TESTING PROCEDURES

VISUAL ENGINEERING CLASSIFICATION

Visual classification was performed on recovered samples. The appended General Notes and Unified Soil Classification System (USCS) sheets include a brief summary of the general method used visually classify the soil and assign an appropriate USCS group symbol. The estimated group symbol, according to the USCS, is shown in parentheses following the textural description of the various strata on the boring logs appended to this report. The soil descriptions developed from visual classifications are sometimes modified to reflect the results of laboratory testing.

MOISTURE CONTENT

Moisture content tests were performed by weighing samples from the field at their in-situ moisture condition. These samples were then dried at a constant temperature (approximately 110° C) overnight in an oven. After drying, the samples were weighed to determine the dry weight of the sample and the weight of the water that was expelled during drying. The moisture content of the specimen is expressed as a percent and is the weight of the water compared to the dry weight of the specimen.

HAND PENETROMETER TESTS

In the hand penetrometer test, the unconfined compressive strength of a cohesive soil sample is estimated by measuring the resistance of the sample to the penetration of a small calibrated, spring-loaded cylinder. The maximum capacity of the penetrometer is 4.5 tons per square-foot (tsf). Theoretically, the undrained shear strength of the cohesive sample is one-half the unconfined compressive strength. The undrained shear strength (based on the hand penetrometer test) presented on the boring logs is reported in units of kips per square-foot (ksf).

TORVANE SHEAR TESTS

In the Torvane test, the shear strength of a low strength, cohesive soil sample is estimated by measuring the resistance of the sample to a torque applied through vanes inserted into the sample. The undrained shear strength of the samples is measured from the maximum torque required to shear the sample and is reported in units of kips per square-foot (ksf).

LOSS-ON-IGNITION (ORGANIC CONTENT) TESTS

Loss-on-ignition (LOI) tests are conducted by first weighing the sample and then heating the sample to dry the moisture from the sample (in the same manner as determining the moisture content of the soil). The sample is then re-weighed to determine the dry weight and then heated for 4 hours in a muffle furnace at a high temperature (approximately 440° C). After cooling, the sample is re-weighed to calculate the amount of ash remaining, which in turn is used to determine the amount of organic matter burned from the original dry sample. The organic matter content of the specimen is expressed as a percent compared to the dry weight of the sample.

ATTERBERG LIMITS TESTS

Atterberg limits tests consist of two components. The plastic limit of a cohesive sample is determined by rolling the sample into a thread and the plastic limit is the moisture content where a 1/8-inch thread begins to crumble. The liquid limit is determined by placing a 1/2-inch thick soil pat into the liquid limits cup and using a grooving tool to divide the soil pat in half. The cup is then tapped on the base of the liquid limits device using a crank handle. The number of drops of the cup to close the gap formed by the grooving tool 1/2 inch is recorded along with the corresponding moisture content of the sample. This procedure is repeated several times at different moisture contents and a graph of moisture content and the corresponding number of blows is plotted. The liquid limit is defined as the moisture content at a nominal 25 drops of the cup. From this test, the plasticity index can be determined by subtracting the plastic limit from the liquid limit.

GENERAL COMMENTS

BASIS OF GEOTECHNICAL REPORT

This report has been prepared in accordance with generally accepted geotechnical engineering practices to assist in the design and/or evaluation of this project. If the project plans, design criteria, and other project information referenced in this report and utilized by SME to prepare our recommendations are changed, the conclusions and recommendations contained in this report are not considered valid unless the changes are reviewed, and the conclusions and recommendations of this report are modified or approved in writing by our office.

The discussions and recommendations submitted in this report are based on the available project information, described in this report, and the geotechnical data obtained from the field exploration at the locations indicated in the report. Variations in the soil and groundwater conditions commonly occur between or away from sampling locations. The nature and extent of the variations may not become evident until the time of construction. If significant variations are observed during construction, SME should be contacted to reevaluate the recommendations of this report. SME should be retained to continue our services through construction to observe and evaluate the actual subsurface conditions relative to the recommendations made in this report.

In the process of obtaining and testing samples and preparing this report, procedures are followed that represent reasonable and accepted practice in the field of soil and foundation engineering. Specifically, field logs are prepared during the field exploration that describe field occurrences, sampling locations, and other information. Samples obtained in the field are frequently subjected to additional testing and reclassification in the laboratory and differences may exist between the field logs and the report logs. The engineer preparing the report reviews the field logs, laboratory classifications, and test data and then prepares the report logs. Our recommendations are based on the contents of the report logs and the information contained therein.

REVIEW OF DESIGN DETAILS, PLANS, AND SPECIFICATIONS

SME should be retained to review the design details, project plans, and specifications to verify those documents are consistent with the recommendations contained in this report.

REVIEW OF REPORT INFORMATION WITH PROJECT TEAM

Implementation of our recommendations may affect the design, construction, and performance of the proposed improvements, along with the potential inherent risks involved with the proposed construction. The client and key members of the design team, including SME, should discuss the issues covered in this report so that the issues are understood and applied in a manner consistent with the owner's budget, tolerance of risk, and expectations for performance and maintenance.

FIELD VERIFICATION OF GEOTECHNICAL CONDITIONS

SME should be retained to verify the recommendations of this report are properly implemented during construction. This may avoid misinterpretation of our recommendations by other parties and will allow us to review and modify our recommendations if variations in the site subsurface conditions are encountered.

PROJECT INFORMATION FOR CONTRACTOR

This report and any future addenda or other reports regarding this site should be made available to prospective contractors prior to submitting their proposals for their information only and to supply them with facts relative to the subsurface evaluation and laboratory test results. If the selected contractor encounters subsurface conditions during construction, which differ from those presented in this report, the contractor should promptly describe the nature and extent of the differing conditions in writing and SME should be notified so that we can verify those conditions. The construction contract should include provisions for dealing with differing conditions and contingency funds should be reserved for potential problems during earthwork and foundation construction. We would be pleased to assist you in developing the contract provisions based on our experience.

The contractor should be prepared to handle environmental conditions encountered at this site, which may affect the excavation, removal, or disposal of soil; dewatering of excavations; and health and safety of workers. Any Environmental Assessment reports prepared for this site should be made available for review by bidders and the successful contractor.

THIRD PARTY RELIANCE/REUSE OF THIS REPORT

This report has been prepared solely for the use of our Client for the project specifically described in this report. This report cannot be relied upon by other parties not involved in the project, unless specifically allowed by SME in writing. SME also is not responsible for the interpretation by other parties of the geotechnical data and the recommendations provided herein.

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer

will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the “Findings” Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site’s subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report’s Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals’ misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals’ plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note*

conspicuously that you’ve included the material for information purposes only. To avoid misunderstanding, you may also want to note that “informational purposes” means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled “limitations,” many of these provisions indicate where geotechnical engineers’ responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a “phase-one” or “phase-two” environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

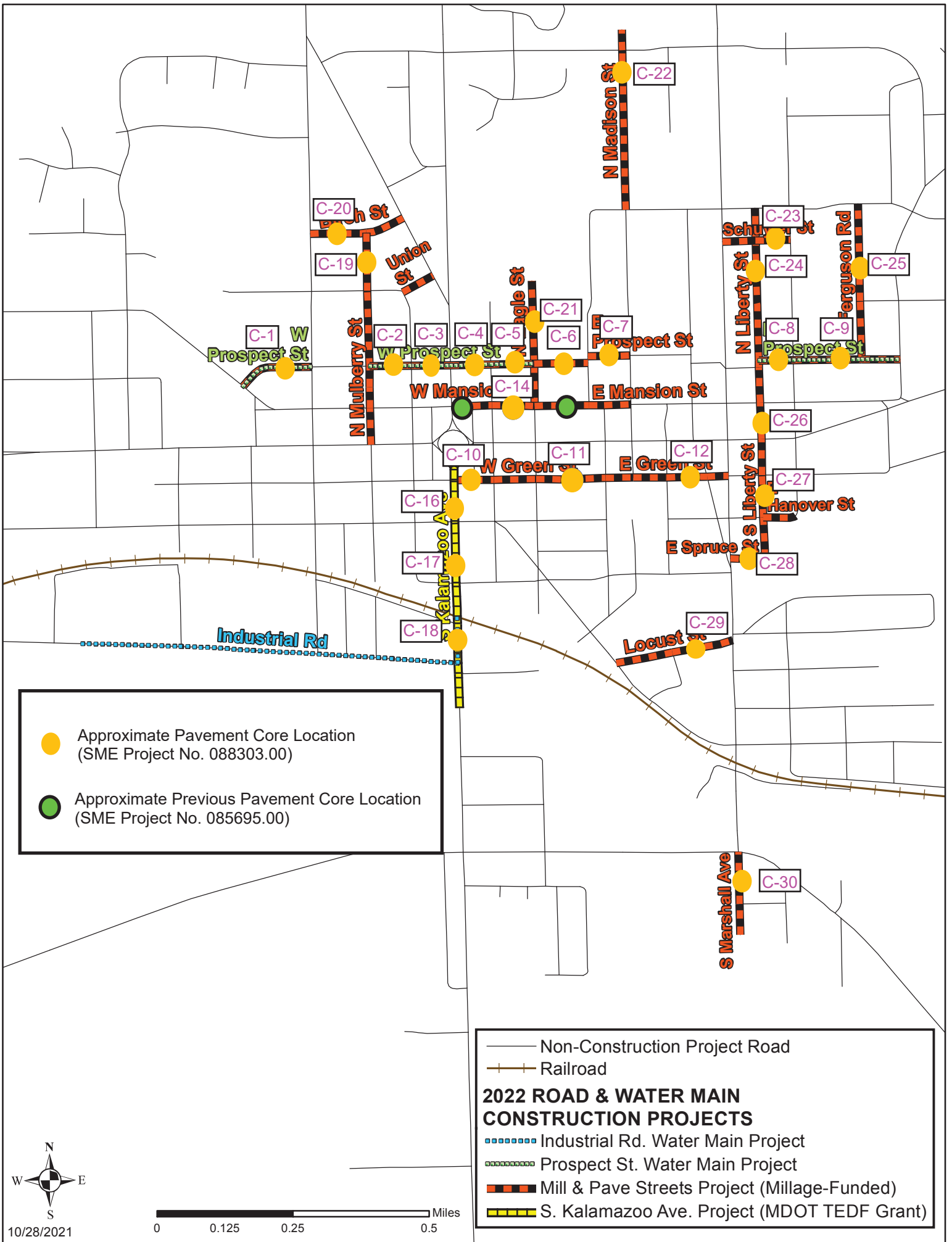
Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer’s services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, *proper implementation of the geotechnical engineer’s recommendations will not of itself be sufficient to prevent moisture infiltration.* **Confront the risk of moisture infiltration** by including building-envelope or mold specialists on the design team. **Geotechnical engineers are not building-envelope or mold specialists.**



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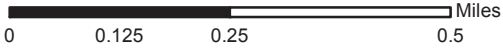
- Approximate Pavement Core Location (SME Project No. 088303.00)
- Approximate Previous Pavement Core Location (SME Project No. 085695.00)

- Non-Construction Project Road
- +— Railroad
- Industrial Rd. Water Main Project
- Prospect St. Water Main Project
- - - Mill & Pave Streets Project (Millage-Funded)
- - - S. Kalamazoo Ave. Project (MDOT TEDF Grant)

2022 ROAD & WATER MAIN CONSTRUCTION PROJECTS



10/28/2021



PAVEMENT CORE LOG

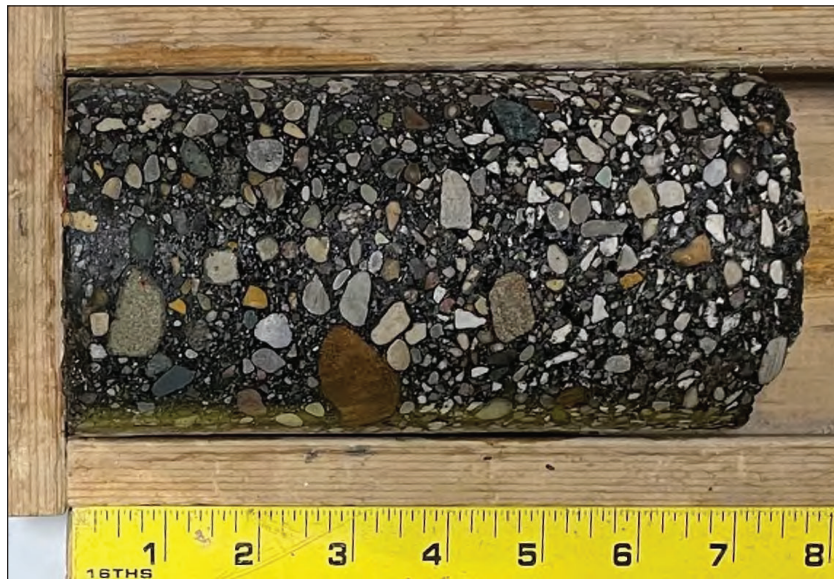
PROJECT NAME: City of Marshall Cores 2022 Projects
 PROJECT NO.: 088303.00
 LOCATION: Marshall, Michigan
 CLIENT: Marguerite Davenport
 DATE: 12/17/21
 DRILLED BY: JWM
 LOGGED BY: JEM

CORE: C11
 ROADWAY: E Green Street
 LANE: Westbound Lane
 STATION: Not Determined
 OFFSET: 9 Feet North from Centerline
 GROUND EL: Not Determined

PAVEMENT CONDITIONS

Layer, in.		Layer Thickness, in.	Description	Comment
From	To			
0	1 1/2	1 1/2	ASPHALT PAVEMENT	Intact
1 1/2	3 1/2	2	ASPHALT PAVEMENT	Intact
3 1/2	7	3 1/2	ASPHALT PAVEMENT	Intact
			End of Pavement Core	

NOTES:

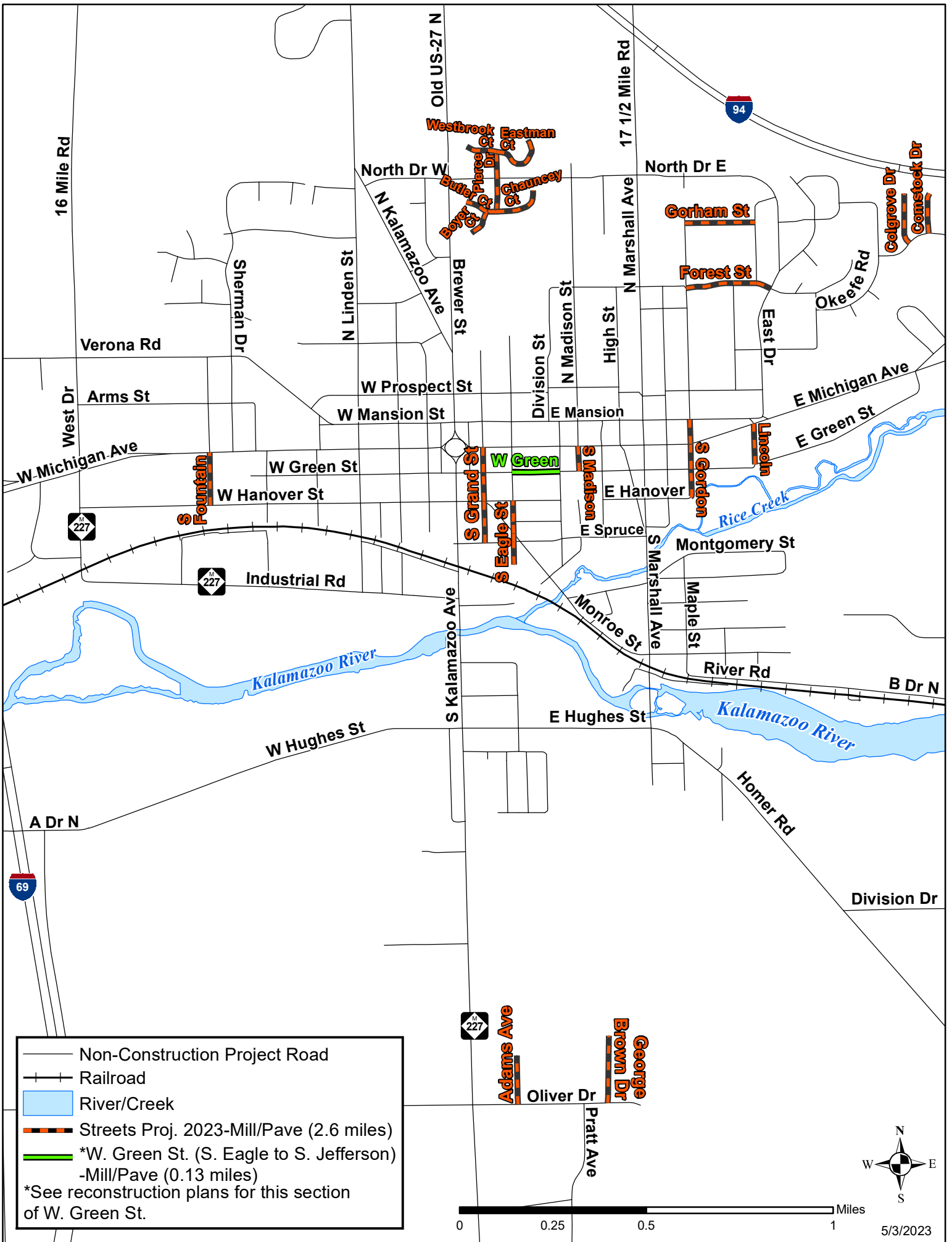


**Core picture shows approximate thickness

APPENDIX A2.0

PART 2

PROJECT MAP

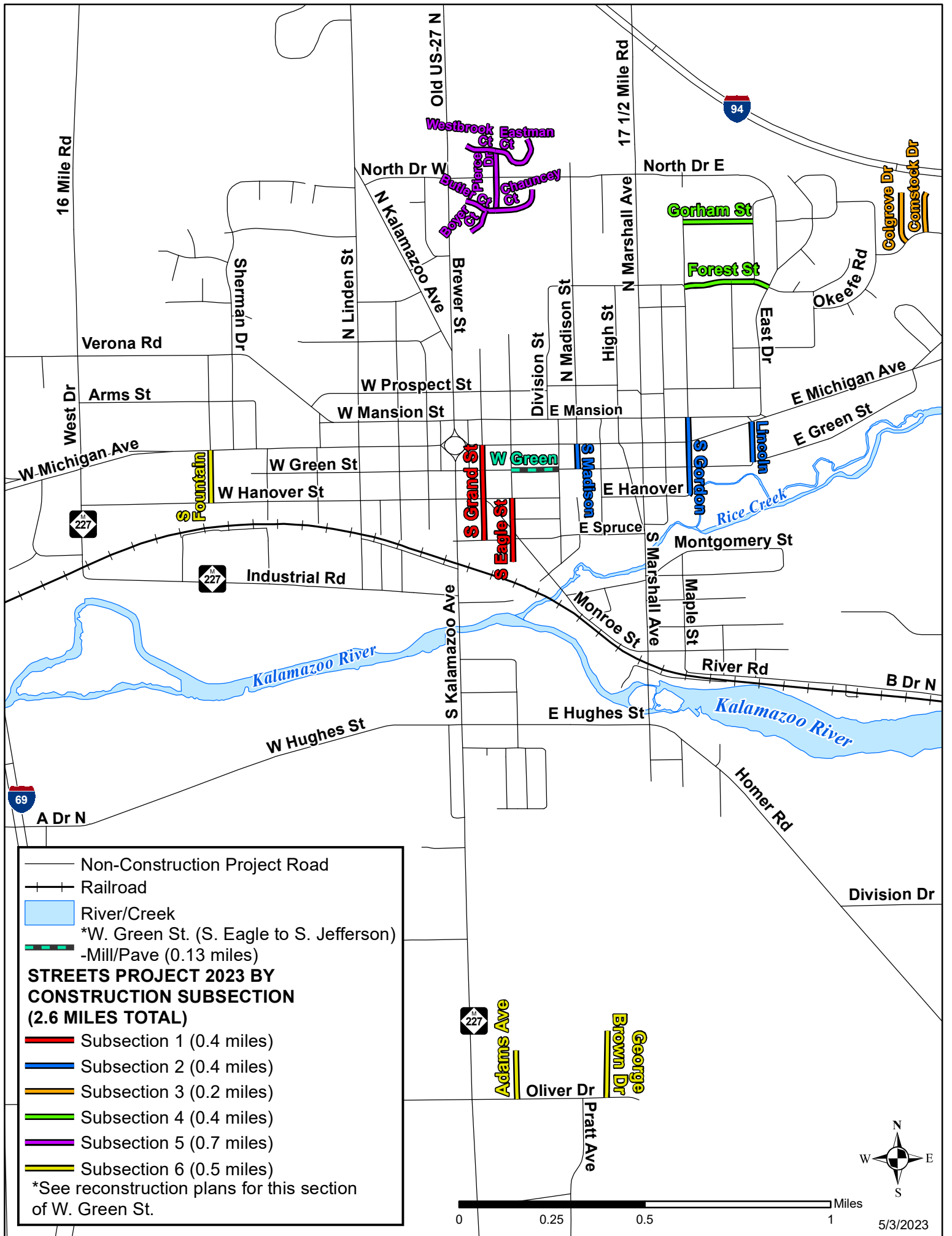


- Non-Construction Project Road
- +— Railroad
- River/Creek
- - - Streets Proj. 2023-Mill/Pave (2.6 miles)
- *W. Green St. (S. Eagle to S. Jefferson) -Mill/Pave (0.13 miles)
- *See reconstruction plans for this section of W. Green St.

APPENDIX A2.1

PART 2

PROJECT SUBSECTION MAP



— Non-Construction Project Road
 —+— Railroad
 River/Creek
 *W. Green St. (S. Eagle to S. Jefferson)
 -Mill/Pave (0.13 miles)

STREETS PROJECT 2023 BY CONSTRUCTION SUBSECTION (2.6 MILES TOTAL)

- █ Subsection 1 (0.4 miles)
- █ Subsection 2 (0.4 miles)
- █ Subsection 3 (0.2 miles)
- █ Subsection 4 (0.4 miles)
- █ Subsection 5 (0.7 miles)
- █ Subsection 6 (0.5 miles)

*See reconstruction plans for this section of W. Green St.