

ITEM NUMBER

1906 912
STATE OF MICHIGAN DEPARTMENT OF TRANSPORTATION
PROPOSAL

15.82 mi of hot mix asphalt cold milling and resurfacing, concrete curb and gutter, sidewalk, sidewalk ramps, drainage and pavement markings on various routes in the city of Detroit, Wayne County. This is a Local Agency project.

BIDS WILL BE ELECTRONICALLY DOWNLOADED AT 10:30 AM LOCAL TIME, ON 6/28/19

<u>CONTRACT ID</u>	<u>CONTROL SECTION</u>	<u>PROJECT</u>	<u>FEDERAL NUMBER</u>
82000-205935	NH 82000	207914A	1900830
	STU 82000	205935A	1900835

The bidder has downloaded and examined the plans, specifications, special provisions, and related materials in the proposal, as well as the location of the work described in the proposal for this project, and has obtained all addenda issued for this project, and is fully informed as to the nature of the work and the conditions relating to its performance and understands that the quantities shown are approximate only and are subject to either increase or decrease.

The bidder hereby proposes to furnish all necessary machinery, tools, apparatus, and other means of construction, do all the work, furnish all the materials except as otherwise specified and, for each unit price, lump sum, or one each named in the itemized bid, to complete the work in strict conformity with the plans therefore and the entire proposal which is incorporated by reference in these pages, and in strict conformity with the requirements of the 2012 Standard Specifications for Construction, Michigan Department of Transportation and such other special provisions and supplemental specifications as may be a part of the proposal for this project.

The bidder further proposes to do such extra work as may be authorized by the Department, prices for which are not included in the itemized bid. Compensation shall be made on the basis agreed upon before such extra work is begun.

The bidder hereby certifies that if it is not prequalified in all classifications required by the advertisement for this project, it has taken such preparatory steps as may be necessary and will within the time specified in Subsection 102.15 of the 2012 Standard Specifications for Construction, designate subcontractor(s) that are fully prequalified in the classification(s) to perform the work.

THE BIDDER UNDERSTANDS AND AGREES THAT THE DEPARTMENT RESERVES THE RIGHT TO REJECT ANY AND ALL BIDS AND NO CONTRACTUAL RELATIONSHIP SHALL EXIST BETWEEN THE BIDDER AND THE DEPARTMENT FOR THE WORK DESCRIBED HEREIN UNTIL SUCH TIME AS THE CONTRACT HAS BEEN FORMALLY EXECUTED BY BOTH THE BIDDER AND THE DEPARTMENT.

The bidder agrees upon submitting this bid that its agents, officers or employees have not directly or indirectly entered into any agreements, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with this proposal for the above project.

Unless the bidder gives MDOT advance written notice, MDOT may correspond directly with the insurance agencies concerning questions and problems with the insurance certificates, bonds and related materials. It is the obligation of the bidder to monitor the filing of the insurance certificates, bond, and related materials with MDOT and the bidder is responsible for any failure to provide MDOT with the required materials, on a timely basis and in proper form.

Subject to Subsection 102.17 of the 2012 Standard Specifications for Construction, the bidder agrees to pay to the Michigan Department of Transportation the bid guaranty sum of **\$50,000.00** if the bidder fails to provide the required materials and/or execute the contract in accordance with Subsection 102.15 of the 2012 Standard Specifications for Construction.

Detroit TSC



5/30/2019 11:45 AM

AASHTOWare Project™ Version 4.0 Revision 189

Schedule of Items

Report v1

Proposal ID: 82000-205935

Project(s): 205935A, 207914A

Letting Number: 190628

Call Number: 912

Contractor: _____

Section Information

Section ID	Section Description	Section Total	Alt. Set ID	Alt. Member ID
1	Road Work			

Item Prices

Proposal Line Number	Item ID - Description	Approximate Quantity and Units	Unit Price	Bid Amount
0010	1500001 - Mobilization, Max\$1,082,100.00	1.000 LSUM		
0020	2040050 - Pavt, Rem	56.000 Syd		
0030	2040055 - Sidewalk, Rem	21,255.000 Syd		
0040	2047001 - _Curb, Rem, Modified	22,675.000 Ft		
0050	2047001 - _Integral Curb and Sidewalk, 2 feet, Rem, Modified	3,909.000 Ft		
0060	2047051 - _Underground Sprinklers, Identify, Protect and Restore, Modified	1.000 LSUM		
0070	2050023 - Granular Material, CI II	100.000 Cyd		
0080	2050041 - Subgrade Undercutting, Type II	50.000 Cyd		
0090	2057021 - _Excavation, Earth, Modified	500.000 Cyd		
0100	3020010 - Aggregate Base, 4 inch	3,000.000 Syd		
0110	4037001 - _Dr Structure Lead, Cleaning, Modified	13,640.000 Ft		
0120	4037030 - _Dr Structure Cover, Modified	375,100.000 Lb		
0130	4037050 - _Dr Structure Cleaning, Modified	1,364.000 Ea		

Schedule of Items

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Item Prices

Proposal Line Number	Item ID - Description	Approximate Quantity and Units	Unit Price	Bid Amount
0140	4037050 - _Dr Structure Cover, Adj, Case 1, Modified	1,236.000 Ea		
0150	4037050 - _Dr Structure Cover, Adj, Case 2, Modified	41.000 Ea		
0160	4037050 - _Reconstructing Dr Structure, Case 1, Modified	87.000 Ea		
0170	4037050 - _Reconstructing Dr Structure, Case 2, Modified	4.000 Ea		
0180	5010001 - Pavt, Cleaning	1.000 LSUM		
0190	5010005 - HMA Surface, Rem	18,047.000 Syd		
0200	5010008 - Pavt for Butt Joints, Rem	4,469.000 Syd		
0210	5010025 - Hand Patching	5.000 Ton		
0220	5010051 - HMA, 4E3	39,116.000 Ton		
0230	5010057 - HMA, 5E3	30,107.000 Ton		
0240	5017011 - _Cold Milling HMA Surface, Modified	359,595.000 Syd		
0250	5017031 - _Conditioning Existing Pavement, Modified	4,846.000 Ton		
0260	5017031 - _HMA Approach, Modified	3,517.000 Ton		
0270	5017031 - _HMA Shoulder, Modified	298.000 Ton		
0280	6027011 - _Pavt Repr, Nonreinf Conc, 10 inch, Modified	1,274.000 Syd		
0290	6027011 - _Pavt Repr, Nonreinf Conc, 6 inch, Modified	50.000 Syd		

Schedule of Items

Report v1

Item Prices

Proposal Line Number	Item ID - Description	Approximate Quantity and Units	Unit Price	Bid Amount
0300	6027011 - _Pavt Repr, Nonreinf Conc, 8 inch, Modified	100.000 Syd		
0310	6030005 - Cement	5.000 Ton		
0320	6037001 - _Curb, Conc, Detail CD, Modified	15,967.000 Ft		
0330	6037011 - _Pavt Repr, Rem, Modified	1,274.000 Syd		
0340	8027001 - _Detectable Warning Surface Tile, Modified	3,420.000 Ft		
0350	8027010 - _Sidewalk Ramp, ADA, Modified	81,522.000 Sft		
0360	8027010 - _Sidewalk, Conc, 4 inch, Modified	102,246.000 Sft		
0370	8027010 - _Sidewalk, Conc, 6 inch, Modified	840.000 Sft		
0380	8030030 - Curb Ramp Opening, Conc	7,350.000 Ft		
0390	8037001 - _Integral Curb and Sidewalk, 2 Feet, Modified	3,465.000 Ft		
0400	8037010 - _Sidewalk, Conc with Tree Roots, 4 inch, Modified	5,276.000 Sft		
0410	8037010 - _Sidewalk, Conc with Tree Roots, 6 inch, Modified	306.000 Sft		
0420	8107050 - _Delineator Post, 36 Inch, White	538.000 Ea		
0430	8110024 - Pavt Mrkg, Ovly Cold Plastic, 6 inch, Crosswalk	4,366.000 Ft		
0440	8110041 - Pavt Mrkg, Ovly Cold Plastic, 12 inch, Crosswalk	700.000 Ft		

Schedule of Items

Report v1

Item Prices

Proposal Line Number	Item ID - Description	Approximate Quantity and Units	Unit Price	Bid Amount
0450	8110044 - Pavt Mrkg, Ovly Cold Plastic, 18 inch, Stop Bar	419.000 Ft		
0460	8110063 - Pavt Mrkg, Ovly Cold Plastic, Lt Turn Arrow Sym	17.000 Ea		
0470	8110068 - Pavt Mrkg, Ovly Cold Plastic, Only	26.000 Ea		
0480	8110071 - Pavt Mrkg, Ovly Cold Plastic, Rt Turn Arrow Sym	7.000 Ea		
0490	8110076 - Pavt Mrkg, Ovly Cold Plastic, Thru and Lt Turn Arrow Sym	4.000 Ea		
0500	8110077 - Pavt Mrkg, Ovly Cold Plastic, Thru and Rt Turn Arrow Sym	4.000 Ea		
0510	8110078 - Pavt Mrkg, Ovly Cold Plastic, Thru Arrow Sym	2.000 Ea		
0520	8110153 - Pavt Mrkg, Sprayable Thermopl, 4 inch, White	47,495.000 Ft		
0530	8110154 - Pavt Mrkg, Sprayable Thermopl, 4 inch, Yellow	80,310.000 Ft		
0540	8110155 - Pavt Mrkg, Sprayable Thermopl, 6 inch, White	5,788.000 Ft		
0550	8110159 - Pavt Mrkg, Sprayable Thermopl, 12 inch, White	590.000 Ft		
0560	8110197 - Pavt Mrkg, Thermopl, 6 inch, Crosswalk	8,036.000 Ft		
0570	8110214 - Pavt Mrkg, Thermopl, 12 inch, Crosswalk	12,770.000 Ft		
0580	8110217 - Pavt Mrkg, Thermopl, 18 inch, Stop Bar	2,610.000 Ft		

Schedule of Items

Report v1

Item Prices

Proposal Line Number	Item ID - Description	Approximate Quantity and Units	Unit Price	Bid Amount
0590	8110218 - Pavt Mrkg, Thermopl, 24 inch, Stop Bar	110.000 Ft		
0600	8110411 - Pavt Mrkg, Polyurea, Railroad Sym	2.000 Ea		
0610	8117001 - _Pavt Mrkg, Modified Urethane, 12 inch, Cross Hatching, White	5,283.000 Ft		
0620	8117001 - _Pavt Mrkg, Modified Urethane, 12 inch, Cross Hatching, Yellow	327.000 Ft		
0630	8117001 - _Pavt Mrkg, Modified Urethane, 4 inch, Cross Hatching, White	1,827.000 Ft		
0640	8117001 - _Pavt Mrkg, Modified Urethane, 4 inch, Cross Hatching, Yellow	10.000 Ft		
0650	8117001 - _Recessing Pavt Mrkg, 12 inch, Modified	13,470.000 Ft		
0660	8117001 - _Recessing Pavt Mrkg, 18 inch, Modified	3,029.000 Ft		
0670	8117001 - _Recessing Pavt Mrkg, 24 inch, Modified	110.000 Ft		
0680	8117001 - _Recessing Pavt Mrkg, 6 inch, Modified	12,402.000 Ft		
0690	8117010 - _Pavt Mrkg, Methyl Methacrylate (MMA), Green	52.000 Sft		
0700	8117050 - _Pavt Mrkg, Methyl Methacrylate (MMA), Bike Directional Arrow, White	26.000 Ea		
0710	8117050 - _Pavt Mrkg, Methyl Methacrylate (MMA), Bike Sym, White	26.000 Ea		
0720	8117050 - _Pavt Mrkg, Waterborne, Bike Sym and Arrow, White, Modified	46.000 Ea		

Schedule of Items

Report v1

Item Prices

Proposal Line Number	Item ID - Description	Approximate Quantity and Units	Unit Price	Bid Amount
0730	8120012 - Barricade, Type III, High Intensity, Double Sided, Lighted, Furn	20.000 Ea		
0740	8120013 - Barricade, Type III, High Intensity, Double Sided, Lighted, Oper	20.000 Ea		
0750	8120140 - Lighted Arrow, Type C, Furn	10.000 Ea		
0760	8120141 - Lighted Arrow, Type C, Oper	10.000 Ea		
0770	8120170 - Minor Traf Devices	1.000 LSUM		
0780	8120245 - Pavt Mrkg, Wet Reflective, Type R, Tape, 4 inch, White, Temp	7,500.000 Ft		
0790	8120246 - Pavt Mrkg, Wet Reflective, Type R, Tape, 4 inch, Yellow, Temp	7,500.000 Ft		
0800	8120250 - Plastic Drum, High Intensity, Furn	400.000 Ea		
0810	8120251 - Plastic Drum, High Intensity, Oper	400.000 Ea		
0820	8120350 - Sign, Type B, Temp, Prismatic, Furn	2,500.000 Sft		
0830	8120351 - Sign, Type B, Temp, Prismatic, Oper	2,500.000 Sft		
0840	8120370 - Traf Regulator Control	1.000 LSUM		
0850	8160055 - Sodding	3,331.000 Syd		
0860	8160090 - Water, Sodding/Seeding	64.000 Unit		
0870	8167021 - __Topsoil Surface, Furn, LM, Modified	313.000 Cyd		
0880	8210001 - Monument Box	10.000 Ea		



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Schedule of Items

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Item Prices

Proposal Line Number	Item ID - Description	Approximate Quantity and Units	Unit Price	Bid Amount
0890	8210015 - Monument Preservation, Vertical	4.000 Ea		
0900	8237050 - _Water Shutoff, Adj, Modified	127.000 Ea		
0910	8507051 - _Door Hanger Notifications, Modified	1.000 LSUM		
0920	8507060 - _Railroad Protection, at Grade Crossing	2,000.000 Dlr	\$1.00	\$2,000.00

Section 1 Total:

Total Bid:



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Schedule Of Items - Blank Schedule of Items

Report v1

Proposal ID: 82000-205935

Project(s): 205935A, 207914A

Letting Number: 190628

Call Number: 912

List items on this page by amendment

Contractor: _____

Item Prices

Proposal Line Number	Item ID - Description	Approximate Quantity and Units	Unit Price	Bid Amount
Total Bid:				

DESIGNATED and SPECIALTY ITEMS***DESIGNATED ITEMS:******COMPANY NAME AND ADDRESS OF
PREQUALIFIED SUBCONTRACTOR
DOING WORK:***

(Cb) Plant-Mixed Hot Mix Asphalt/ Bituminous
Paving

(COMPANY NAME)

(COMPANY ADDRESS)

(Ea) Grading, Drainage Structures, and
Aggregate Construction

(COMPANY NAME)

(COMPANY ADDRESS)

(J) Miscellaneous Concrete Items

(COMPANY NAME)

(COMPANY ADDRESS)

(N9-3A) Cold Milling

(COMPANY NAME)

(COMPANY ADDRESS)

(COMPANY NAME)

SPECIALTY ITEMS:

(COMPANY ADDRESS)

(COMPANY NAME)

(COMPANY ADDRESS)

***SEE NEXT PAGE FOR INFORMATION ON
COMPLETING THIS PAGE***

INFORMATION ON COMPLETION OF DESIGNATED AND SPECIALTY ITEMS PAGE

The contractor may sublet the item(s) of work stipulated on the DESIGNATED and SPECIALTY ITEMS page in this bid in accordance with Section 1.08.01 of the 2012 Standard Specifications, Section VII of the required provisions for Federal-Aid Contracts (with the exception noted in the following paragraph), and the following instructions.

The percentage of contract work performed by a contractor's own organization shall comply with Section 1.08.01 of the 2012 Standard Specifications, rather than the lower percentage allowed by Section VII of FHA required contract provisions (form FHWA 1273). Section 108.01 of the 2012 Standard Specifications requires forty percent (40%) performance by a contractor's own organization.

If the contractor **IS NOT** prequalified in EITHER the DESIGNATED or SPECIALTY ITEMS noted in this bid, the contractor MUST, prior to contract award, indicate the company name and address of a prequalified subcontractor in the space provided. If such company name is provided, the contractor MUST sublet the appropriate items to the prequalified subcontractor named, **unless the subcontractor is not prequalified at the time the work is to be performed, or the subletting of the item to another prequalified subcontractor is agreed to in writing by both the contractor and the named subcontractor.**

If the contractor **IS** prequalified in EITHER the DESIGNATED or SPECIALTY ITEMS noted in this bid and does not intend to do the work with its own forces, the contractor may indicate the company name and address of a prequalified subcontractor in the space provided. If such company name is provided, the contractor MUST sublet the appropriate items to the prequalified subcontractor named, **unless the subcontractor is not prequalified at the time the work is to be performed, or the subletting of the item to another prequalified subcontractor is agreed to in writing by both the contractor and the named subcontractor.**

If the contractor **IS** prequalified in the DESIGNATED or SPECIALTY ITEMS noted and NO subcontractor is named, any later decision to subcontract said items of work is subject to the sixty percent (60%) limitation of subcontracting.

At the time that a subcontractor is named in a bid to perform any of the DESIGNATED or SPECIALTY ITEMS, that subcontractor must be prequalified for the classification which includes the work it is to perform. In selecting a subcontractor, the prime contractor shall assure itself that the prospective subcontractor has sufficient equipment, working force, and supervision to complete the designated or specialty items to be subcontracted within the specified time limit.

It is understood and agreed that the prequalification of the subcontractor by the Department pursuant to 1933 P.A. 170 is not a guarantee or warranty of the subcontractor's ability to perform or complete the work contained herein.

Rev. (09/11)

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Notice of Advertisement

Report v1

Letting of: 190628

10:30 AM, Local Time 425 W. OTTAWA ST., LANSING, MI 48933

Call Number	Contract ID	Control Section	Project Number	Federal Project Number
912	82000-205935	STU 82000	205935A	1900835
		NH 82000	207914A	1900830

Description: 15.82 mi of hot mix asphalt cold milling and resurfacing, concrete curb and gutter, sidewalk, sidewalk ramps, drainage and pavement markings on various routes in the city of Detroit, Wayne County. This is a Local Agency project.

Required DBE Participation: 4.00%**Net Classification Required For This Project:** ** 11902 Cb or Comb/Jt. 11902 Ea, J or Comb/Jt. 11902 Ea, N9-3A ****Estimated Pages For Plans:****Completion Date:** 9/30/2020

In addition to the above minimum prequalification requirement for prime contractors this project includes subclassifications of Cb, Ea, J and N9-3A. If the prime contractor is not prequalified in those subclassifications it must use prequalified subcontractors. Those subcontractors must be designated prior to award of the contract to the confirmed low bidder.

Date Advertised: 5/31/2019

See proposal for bidder guaranty information.

Proposal and plans, if applicable, are available for examination online at
<<http://mdotcf.state.mi.us/public/eprop/login/index.cfm>>

PROGRESS CLAUSE

PROGRESS CLAUSE: After receiving notice of award of contract start work the date designated as the starting date herein or the date agreed upon with the Engineer. In no case, shall any work be commenced prior to receipt of formal notice of award by the department.

The starting date for this project shall be within ten (10) calendar days after receiving notice of award and the entire project shall be completed within 150 calendar days inclusive of rain days (except any landscaping maintenance guarantee work) from the starting date. No HMA work will be allowed during seasonal limitations as set forth in subsection 501.03.I.2. of the 2012 MDOT Standard Specifications for Construction.

All work must be completed by September 30, 2020. The contractor is required to remove all equipment and traffic control devices no later than November 30, 2019, for any work performed in 2019. No additional compensation will be paid for remobilization of equipment and reinstallation of traffic control devices.

The low bidder(s) for the work covered by this proposal will be required to meet with department representatives to work out a detailed progress schedule. The schedule for this meeting will be set within one week after the low bidder is determined.

The named subcontractor(s) for Specialty and/or Designated Items (if such items are designated in the proposal) which materially affect the work schedule, shall also be present at the scheduled meeting and they will be required to sign the Progress Schedule to indicate their approval of the scheduled dates of work set forth in the Progress Schedule.

The City Engineering Division, Department of Public Works will arrange the time and place for the meeting.

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

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

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

Liquidated damages will be applied based on Section 108.10.C of the 2012 Michigan Department of Transportation Standard Specifications for Construction.

CITY OF DETROIT
SPECIAL PROVISION
FOR
MAINTAINING TRAFFIC

DET:AHS

1 of 5

03-07-19

General Requirements: Traffic shall be maintained throughout the project in accordance with 2012 MDOT Standard Specifications for Construction, including any supplemental specifications, and as herein specified. All traffic control devices shall conform to the current edition of the 2011 Michigan Manual of Uniform Traffic Control Devices.

City of Detroit Street Maintenance Department and/or Contract Maintenance Agencies may perform maintenance work within or adjacent to the Construction Influence Area (CIA). The Maintenance Division of City of Detroit and or Contract Maintenance Agency will coordinate their operations with the Supervising Engineer to minimize the interference to the Contractor. No additional payment will be made to the Contractor for the joint use of the traffic control items.

The Contractor must submit a Work Zone Traffic Control Plan to the Engineer in accordance with Section 104 of the 2012 Standard Specifications for Construction. At a minimum, the plan shall include the proposed ingress/egress locations for construction equipment and vehicles, traffic control devices that will be utilized to warn the motoring public of ingress/egress locations, and measures that will be taken to ensure compliance with the plan. No work shall begin prior to the acceptance of the Work Zone Traffic Control Plan. Additional time required to obtain an accepted Work Zone Traffic Control Plan shall not be cause for delay or impact claims. All costs associated with obtaining an acceptable plan, providing and executing all parts of the accepted plan including required traffic control devices, or resolving an incomplete or unacceptable plan shall be borne by the Contractor.

Failure to comply with all stipulations of the following traffic specifications will be cause for complete shutdown of the project.

In the event of an emergency, the following specifications and restrictions are subject to change if traffic conditions indicate such a necessity.

Traffic specifications are to be with the work crews at all times.

Maintenance of Traffic:

- Walks, driveways, alleys and entrances to buildings shall not be blocked.
- The required number of lanes shall be maintained by plating of pavement.
- The paved surface shall be free of stored equipment, excavated material, etc. during specified hours.
- Protection and temporary crossings shall be provided for pedestrians at all crossings.
- Protection and temporary driveway access to residents and businesses shall be provided and maintained as directed by the Engineer.
- The Contractor shall notify local businesses a minimum of 48 hours prior to the implementation of any lane closures, weekend closures and major traffic shifts.
- The Contractor shall notify the Engineer, the Michigan Department of Transportation and the Detroit Police and Fire Departments patrolling the area three (3) business days prior to making any lane closures or traffic switches.

- The Contractor must coordinate his operations with contractors performing work on other projects within or adjacent to the construction influence area.
- The Contractor shall be required to coordinate the work with the curb-side garbage pick-up within the construction influence area.
- Steel plates, 3/4 inch thick, of sufficient size, shall be furnished and installed by the Contractor to cover paving cuts and to provide crossings over trenches. No separate compensation will be made to furnish, install, maintain and remove these steel plates when no longer needed. The cost for this material and work shall be incidental to the project.
- Plates shall be bedded in Cold Patch so as to avoid rocking and the noise resulting there from, and shall be firmly anchored by spiking into the existing pavement.
- Approved HMA material, shall be used at the ends of the plates to eliminate bumps in traffic lanes. The cost of the HMA and placement of same shall be considered incidental to the work.
- The spikes shall have a minimum length of three (3) inches and shall be driven not closer than twelve (12) inches from the edge of a trench up to three (3) feet deep or two (2) feet from the edge of a trench greater than three (3) feet deep.
- For trenches wider than four (4) feet, the Contractor shall submit a method of bridging to the Engineer for approval. All bridging shall be of a design that will satisfactorily carry an HS-20 truck loading across the opening smoothly, safely, and without undue noise.

Signing and Traffic Control: The Contractor shall furnish and install all signing necessary for the maintenance of traffic. Traffic control devices shall conform to the current edition of the 2011 Michigan Manual of Uniform Traffic Control Devices, Part VI, Construction and Maintenance; the Michigan Department of Transportation Maintaining Traffic Safety Typical Standards: M0020a, M0030a, M0040a, M0050a, M0110a, M0140a, M0240a, WZD-100-A and WZD-125-E; and/or the City of Detroit, Department of Public Works Standards on Maintenance and Utility Signing as applicable.

Pedestrian traffic shall be maintained using Michigan Manual of Uniform Traffic Control Devices details as shown in Figures 6H-28 and 6H-29.

Distances between sign locations will vary depending on the lengths of the City blocks in advance of the job site. Other traffic signing and barricading requirements for this project are contained in the proposal.

Temporary "No Parking" signs shall be placed in all parking areas when necessary to prohibit parking during construction activities. The "No Parking" signs shall be placed in all parking areas at least 24 hours and not more than 48 hours prior to construction activities.

The Contractor may relocate signs and other portable barricades only after coordinating with representatives of the Traffic Engineering Division of the Department of Public Works.

CONSTRUCTION INFLUENCE AREA (CIA)

Construction Influence Area (CIA): The CIA shall include the area within the right-of-way of the street or streets listed in the contract and/or the cross streets within the limits of the construction staging.

The Contractor shall coordinate his operations with Contractors performing work on other projects within or adjacent to the Construction Influence Area (CIA).

Time Restrictions: Maintaining traffic requirements and hourly restrictions are subject to change by the Engineer.

Maintain the full width of the following location(s) between 7:00 a.m. to 9:00 p.m. and 4:00 p.m. to 6:00 p.m. Monday through Friday, and one lane of thru traffic in each direction for all other hours:

No.	STREET	FROM	TO
1	3rd Street	W Grand Blvd	I-94
2	Bagley	21st St	Trumbull
4	Burt	I-96	Plymouth
8	E Lafayette	Mt Elliott	Iroquois
11	E Vernor	Gratiot	Mt Elliott
12	NB JC Lodge SD	Fort St	Abbott / Ramp
13	Jos Campau	E Davison	Carpenter
14	Linwood	Fenkell	W Davison
15	McClellan	E Jefferson	Gratiot
17	NB JC Lodge SD	Warren	I-94 / Kirby
18	NB Southfield SD	Paul	Joy
19	Puritan	Southfield Fwy	Greenfield
21	SB JC Lodge SD	I-94	MLK
22	SB Southfield SD	Joy	Paul
23	Spinoza Dr	Sawyer	Orangelawn
25	Woodmere	Dix	Richard

No work shall be performed or lane closures allowed during the Memorial Day, July 4th, or Labor Day holiday periods, as defined by the Engineer. The Contractor shall coordinate their work schedule around special events that take place in local communities in accordance with the Engineer. The Contractor shall be responsible to contact the Supervising Engineer to acquire specific dates and locations for these events.

Other special events that may affect lane closures, as defined by the Engineer, are as follows:

- Downtown Hoe Down
- Freedom Festival
- Annual Detroit Electronic Music Festival
- Chrysler Jeep Detroit APBA Cup
- African World Festival
- Ford Detroit International Jazz Festival
- Ford Field Special Events and Home Games
- Comerica Park Special Events and Home Games
- Little Caesar's Arena Special Events and Home Games

Work shall be suspended by the Engineer at any time traffic is being unduly hampered or delayed. In general, traffic is expected to be unduly hampered from 7:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 6:00 p.m. weekdays. These hours may be adjusted by the Engineer.

Truck Haul Routes: Truck haul routes selected by the Contractor must be submitted to the City of Detroit Department of Public Works for approval prior to the start of construction and are subject to regulations of the Department.

Barricades: Plastic Drums, High Intensity, and Barricade, Type III, High Intensity, Double Sided, Lighted necessary for traffic control and public safety shall be furnished and erected by the Contractor. All traffic control devices and their usage shall be in accordance with Part 6 of the Michigan Manual on Uniform Traffic Control Devices (MMUTCD) and MDOT Maintaining Traffic Typical M0020a, M0040a, M0110a and M0140a and any other applicable.

Warning Lights: Battery operated warning flashers shall be used on all barricades in accordance with the current edition of the 2011 Michigan Manual of Uniform Traffic Control Devices and any recent changes to special provision regarding battery operated warning lights.

Temporary Signs: The Federal Highway Administration (FHWA) requires that all signs be NCHRP 350 crashworthy. The Contractor shall submit the FHWA approved details for the temporary sign supports used on the project and have approval by the Engineer before the start of work.

Stage Construction: The traffic control required by this Special Provision for work on various streets in the contract and adjacent roadways is based on the current edition of the 2011 Michigan Manual of Uniform Traffic Control Devices. At the discretion of the Engineer, the Contractor may be requested to conduct construction activities in certain segments of the project at such times that coordinates with adjacent property owner uses and activities. The Contractor shall submit for review and approval by the Engineer a sequence of operation/staging plans to complete the work by the specified completion date. The adjustments or changes in the staging of construction to accommodate property owners shall not be paid for separately and shall be included in the overall project cost.

Cleaning Adjacent Streets and Sidewalks: Dirt, mud, construction materials or other debris deposited on public sidewalks or streets as the result of spilling, tracking by the wheels of trucks or construction equipment or by other actions of the Contractor, his employees or subcontractors shall be immediately removed by the Contractor. Failure to do so is a violation of City Ordinances punishable by fines and/or imprisonment.

Special Considerations at Railroad Crossing:

1. The Contractor will not obstruct the right-hand display of the railroad signal to traffic approaching the crossing.
2. No lane closure taper(s) may extend through the crossing. Traffic lane shifts cannot transition over the crossing.
3. No construction traffic control devices may be placed in the railroad crossing or closer than 25 ft. from the outside rail on either crossing approach.
4. Provide traffic regulator at railroad crossing if movement of traffic is restricted to alternating one-way traffic through construction area at crossing. The traffic regulator will serve to stop traffic for vehicles traveling in the direction opposed to normal flow and prevent them from entering the crossing upon a train approaching the crossing. When the railroad crossing is in the influence zone of active construction work, but not in a lane closure, the roadway traffic regulator will give immediate preference to clearing any traffic which backup over the crossing as a result of the traffic regulator control away from the crossing.

5. The Contractor will place a temporary stop line and sign R15-1 (crossbuck) to indicate the stopping point in advance of the crossing for vehicles traveling in a direction opposed to normal flow.

6. Roadway traffic regulator control operations through crossing(s) with half-roadway gates will also have a railroad watchperson present to provide notice of train approach to the crossing in advance of railroad warning device activation, so the crossing may be cleared of vehicular traffic. The Contractor is responsible for contacting the applicable railroad to obtain and pay for a railroad watchperson as described in the Special Provision for Work Near Railroad Crossing.

7. Payment for intermediate traffic regulator(s) stationed at the crossing is included in the pay item Traffic Regulator Control. The presence of the railroad flagger does not relieve the Contractor of the responsibility for this intermediate traffic regulator.

Measurement and Payment: Maintaining Traffic will be measured and paid for at the contract unit price for the contract pay items.

Payment for providing and maintaining driveway access and pedestrians crossing, temporary No Parking Signs, $\frac{3}{4}$ inch steel plates, plates bedding, spikes will not be paid separately, but shall be considered incidental and included in other pay items.

Any equipment required for nighttime operations shall be included in the cost of the work items being placed. All costs of additional signing or maintaining traffic devices required to expedite the construction will be borne by the Contractor.

All work must be completed by September 30, 2020. The contractor is required to remove all equipment and traffic control devices no later than November 30, 2019, for any work performed in 2019. No additional compensation will be paid for remobilization of equipment and reinstallation of traffic control devices.

MINIMUM MERGING TAPER LENGTH "L" (FEET)

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

TAPER LENGTH "L" IN FEET

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

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

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

L = MINIMUM LENGTH OF MERGING TAPER

S = POSTED SPEED LIMIT IN MPH
PRIOR TO WORK AREA

W = WIDTH OF OFFSET

TYPES OF TAPERS

UPSTREAM TAPERS

MERGING TAPER

SHIFTING TAPER

SHOULDER TAPER

TWO-WAY TRAFFIC TAPER

DOWNSTREAM TAPERS

(USE IS OPTIONAL)

TAPER LENGTH

L - MINIMUM

1/2 L - MINIMUM

1/3 L - MINIMUM

100' - MAXIMUM

100' - MINIMUM

(PER LANE)



TRAFFIC AND SAFETY
MAINTAINING TRAFFIC
TYPICAL

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

DRAWN BY: CON:AE:djf

JUNE 2006

CHECKED BY: BMM

PLAN DATE:

M0020a

SHEET
1 OF 2

FILE: R:/DGN/TSR/STDS/ENGLISH/MNTTRF/M0020a.dgn

REV. 08/21/2006

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

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

GUIDELINES FOR LENGTH OF
LONGITUDINAL BUFFER SPACE "B"

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

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

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



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

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



MDOT
Michigan Department of Transportation
TRAFFIC AND SAFETY
MAINTAINING TRAFFIC
TYPICAL

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

DRAWN BY: CON:AE:djf
CHECKED BY: BMM:CRB

OCTOBER 2011
PLAN DATE:

M0030a

SHEET
1 OF 2

NOT TO SCALE

FILE: K:-DGN-TSR-STDS-ENGLISH-MNTTRF-M0030a.dgn

REV. 10/13/2011

NOTES

30. THE APPROPRIATE ADVANCE SIGNING SEQUENCE(S), (M0030a THROUGH M0080a) SHALL BE USED ON ALL PROJECTS.
32. THESE SIGNS SHALL BE LEFT IN PLACE AT THEIR PRESCRIBED LOCATIONS FOR THE DURATION OF THE PROJECT AND UNTIL ALL TEMPORARY TRAFFIC CONTROL HAS BEEN REMOVED.
33. THESE SIGNS ARE INTENDED TO BE USED OUTSIDE THE LIMITS OF ALL TEMPORARY SEQUENCE SIGNING AS IS SHOWN ON 1 OF 2. THESE SIGNS ARE NOT TO BE INTERMINGLED WITH ANY TEMPORARY SEQUENCE SIGNING.

SIGN SIZES

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

NOT TO SCALE

 Michigan Department of Transportation TRAFFIC AND SAFETY MAINTAINING TRAFFIC TYPICAL		TYPICAL ADVANCE SIGNING TREATMENT FOR LONG, INTERMEDIATE AND SHORT TERM STATIONARY WORK ZONE OPERATIONS OF MORE THAN TWO MILES IN LENGTH WHERE TRAFFIC CONTROL DEVICES MAY REMAIN AT END OF WORK DAY ON AN UNDIVIDED TWO-WAY ROADWAY	
		DRAWN BY: CON:AE:djf CHECKED BY: BMM:CRB	OCTOBER 2011 PLAN DATE:
FILE: K:\-DGN-TSR-STD5-ENGLISH-MNTTRF-M0030a.dgn		REV.	10/13/2011

SIGN PLACEMENT
IS THE SAME FOR
BOTH DIRECTIONS

SHOULDER



END
ROAD WORK

G20-2

2D

PROJECT LIMITS

WORK ZONE

PROJECT LIMITS

REMAINING SEQUENCE
SIGNING PER APPROPRIATE
TYPICAL



D



D



D



TO PROTECT
HIGHWAY WORKERS
FINES DOUBLED IN
WORK ZONES

R5-18a

INJURE/
KILL A
WORKER
\$7500 +
15 YEARS

R5-18b



W20-1



SHOULDER

SIGN = 68 ft±2 - TYPE B
FOR ONE DIRECTION OF TRAFFIC
W20-1 QUANTITY INCLUDED
WITH APPROPRIATE TYPICAL
FOR SEQUENCE SIGNING

NOT TO SCALE

MDOT
Michigan Department of Transportation
TRAFFIC AND SAFETY
MAINTAINING TRAFFIC
TYPICAL

DRAWN BY: CON:AE:djf

CHECKED BY: BMM

JUNE 2006

PLAN DATE:

M0040a

SHEET
1 OF 2

FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0040a.dgn REV. 08/15/2007

NOTES

30. THE APPROPRIATE ADVANCE SIGNING SEQUENCE(S), (M0030a THROUGH M0080a) SHALL BE USED ON ALL PROJECTS.
32. THESE SIGNS SHALL BE LEFT IN PLACE AT THEIR PRESCRIBED LOCATIONS FOR THE DURATION OF THE PROJECT AND UNTIL ALL TEMPORARY TRAFFIC CONTROL HAS BEEN REMOVED.
35. THESE SIGNS ARE INTENDED TO BE USED WITHIN THE LIMITS OF THE TEMPORARY SEQUENCE SIGNING AS IS SHOWN ON 1 OF 2. THESE SIGNS ARE NOT TO BE INTERMINGLED WITH ANY OTHER TEMPORARY SEQUENCE SIGNING EXCEPT AS SHOWN.

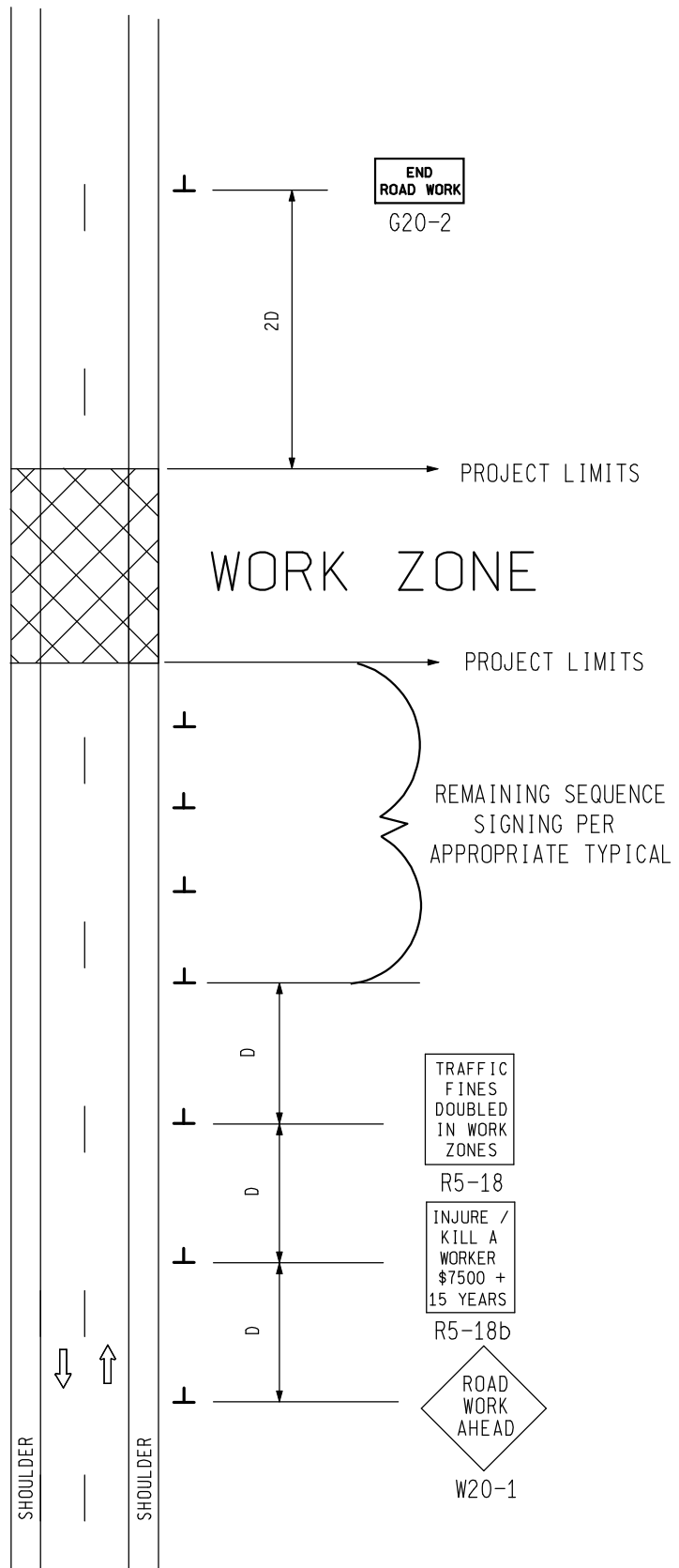
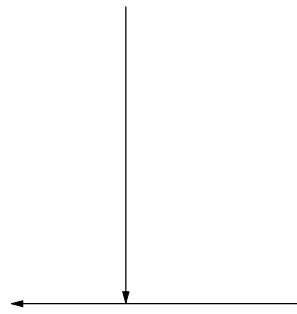
SIGN SIZES

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

NOT TO SCALE

 Michigan Department of Transportation TRAFFIC AND SAFETY MAINTAINING TRAFFIC TYPICAL		TYPICAL ADVANCE SIGNING TREATMENT FOR LONG, INTERMEDIATE AND SHORT TERM STATIONARY WORK ZONE OPERATIONS OF LESS THAN TWO MILES IN LENGTH WHERE TRAFFIC CONTROL DEVICES MAY REMAIN AT END OF WORK DAY ON AN UNDIVIDED TWO-WAY ROADWAY	
		DRAWN BY: CON:AE:djf CHECKED BY: BMM	JUNE 2006 PLAN DATE:
FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0040a.dgn REV. 08/15/2007			

SIGN PLACEMENT
IS THE SAME FOR
BOTH DIRECTIONS



SIGN = 48 ft x 2 - TYPE B
FOR ONE DIRECTION OF TRAFFIC
W20-1 QUANTITY INCLUDED WITH
APPROPRIATE TYPICAL FOR
SEQUENCE SIGNING

NOT TO SCALE

MDOT
Michigan Department of Transportation
TRAFFIC AND SAFETY
MAINTAINING TRAFFIC
TYPICAL

DRAWN BY: CON:AE:djf
CHECKED BY: BMM

TYPICAL ADVANCE SIGNING TREATMENT FOR
INTERMEDIATE AND SHORT TERM
STATIONARY WORK ZONE OPERATIONS WHERE
ALL TRAFFIC CONTROL DEVICES ARE
REMOVED AT END OF EACH WORK DAY ON
AN UNDIVIDED TWO-WAY ROADWAY

JUNE 2006
PLAN DATE:
M0050a
SHEET
1 OF 2

FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0050a.dgn REV. 08/15/2007

NOTES

30. THE APPROPRIATE ADVANCE SIGNING SEQUENCE(S), (M0030a THROUGH M0080a) SHALL BE USED ON ALL PROJECTS.
35. THESE SIGNS ARE INTENDED TO BE USED WITHIN THE LIMITS OF THE TEMPORARY SEQUENCE SIGNING AS IS SHOWN ON 1 OF 2. THESE SIGNS ARE NOT TO BE INTERMINGLED WITH ANY OTHER TEMPORARY SEQUENCE SIGNING EXCEPT AS SHOWN.

SIGN SIZES

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

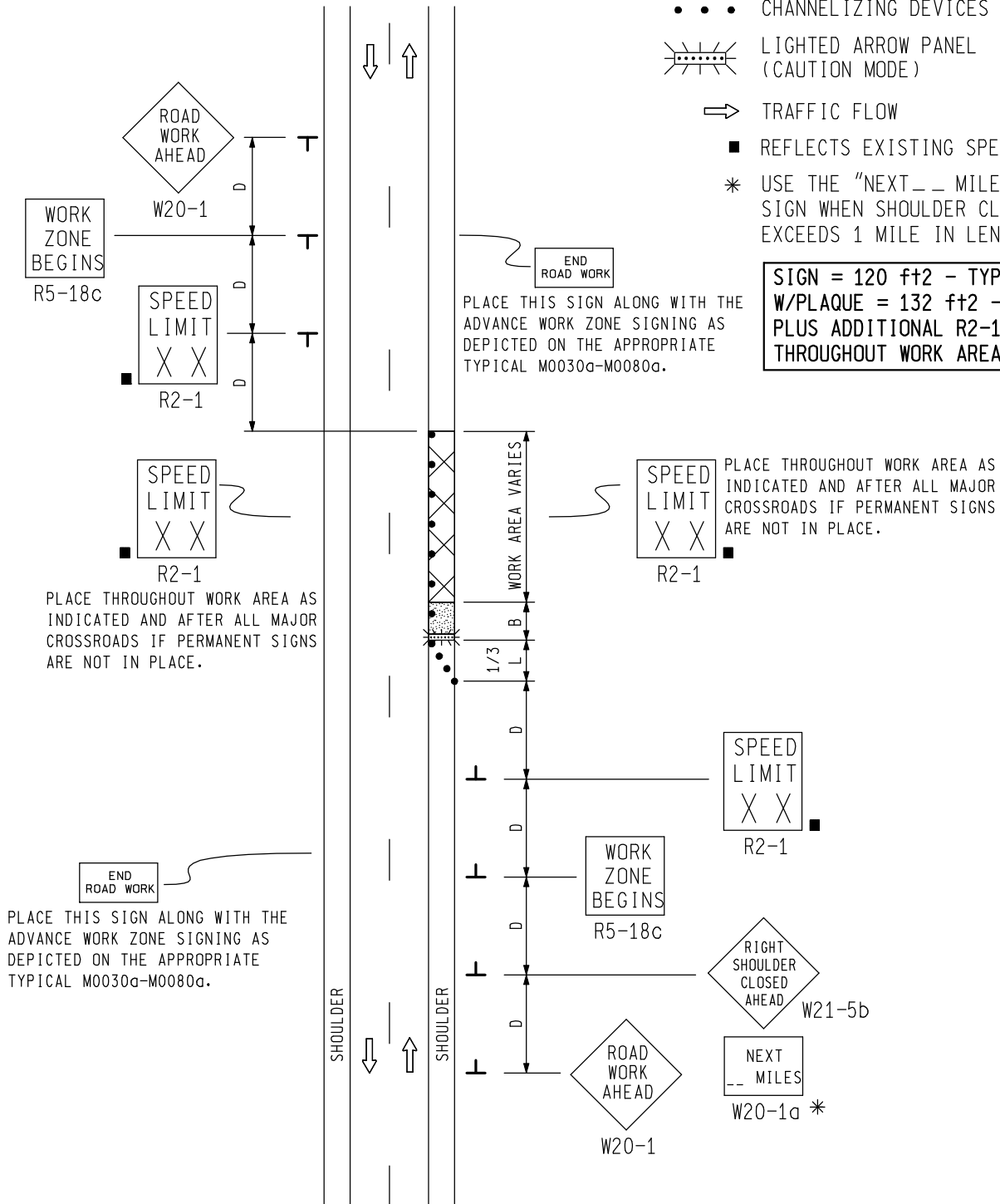
NOT TO SCALE

 Michigan Department of Transportation TRAFFIC AND SAFETY MAINTAINING TRAFFIC TYPICAL		TYPICAL ADVANCE SIGNING TREATMENT FOR INTERMEDIATE AND SHORT TERM STATIONARY WORK ZONE OPERATIONS WHERE ALL TRAFFIC CONTROL DEVICES ARE REMOVED AT END OF EACH WORK DAY ON AN UNDIVIDED TWO-WAY ROADWAY	
DRAWN BY: CON:AE:djf		JUNE 2006	M0050a
CHECKED BY: BMM		PLAN DATE:	
FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0050a.dgn		REV.	SHEET 2 OF 2
08/15/2007			

KEY

- • • CHANNELIZING DEVICES
-  LIGHTED ARROW PANEL (CAUTION MODE)
-  TRAFFIC FLOW
- REFLECTS EXISTING SPEED LIMIT
- * USE THE "NEXT -- MILES" SIGN WHEN SHOULDER CLOSURE EXCEEDS 1 MILE IN LENGTH

**SIGN = 120 ft± - TYPE B
W/PLAQUE = 132 ft± - TYPE B
PLUS ADDITIONAL R2-1's
THROUGHOUT WORK AREA**



MDOT
Michigan Department of Transportation
TRAFFIC AND SAFETY
MAINTAINING TRAFFIC
TYPICAL

**TYPICAL TEMPORARY TRAFFIC CONTROL
FOR A SHOULDER CLOSURE ON A TWO
LANE TWO-WAY ROADWAY
NO SPEED REDUCTION**

DRAWN BY: CON:AE:djf
CHECKED BY: BMM

JUNE 2006
PLAN DATE:

M0110a

SHEET
1 OF 2

NOT TO SCALE

FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0110a.dgn REV. 8/16/2007

NOTES

1. D = DISTANCE BETWEEN TRAFFIC CONTROL DEVICES
 $1/3 L$ = MINIMUM LENGTH OF TAPER
 B = LENGTH OF LONGITUDINAL BUFFER
 SEE **M0020a** FOR "D," "L," AND "B" VALUES
2. ALL NON-APPLICABLE SIGNING WITHIN THE CIA SHALL BE MODIFIED TO FIT CONDITIONS, COVERED OR REMOVED.
3. DISTANCES BETWEEN SIGNS, THE VALUES FOR WHICH ARE SHOWN IN TABLE D, ARE APPROXIMATE AND MAY NEED ADJUSTING AS DIRECTED BY THE ENGINEER.
- 3A. THE "WORK ZONE BEGINS" (R5-18c) SIGN SHALL BE USED ONLY IN THE INITIAL SIGNING SEQUENCE IN THE WORK ZONE. SUBSEQUENT SEQUENCES IN THE SAME WORK ZONE SHALL OMIT THIS SIGN AND THE QUANTITIES SHALL BE ADJUSTED APPROPRIATELY.
- 4E. THE MAXIMUM RECOMMENDED DISTANCE(S) BETWEEN CHANNELIZING DEVICES SHOULD BE EQUAL IN FEET TO THE POSTED SPEED IN MILES PER HOUR ON TAPER(S) AND TWICE THE POSTED SPEED IN THE PARALLEL AREA(S).
5. FOR OVERNIGHT CLOSURES, CHANNELIZING DEVICES SHALL BE LIGHTED PLASTIC DRUMS.
6. WHEN CALLED FOR IN THE FHWA ACCEPTANCE LETTER FOR THE SIGN SYSTEM SELECTED, THE TYPE A WARNING FLASHER, SHOWN ON THE WARNING SIGNS, SHALL BE POSITIONED ON THE SIDE OF THE SIGN NEAREST THE ROADWAY.
7. ALL TEMPORARY SIGNS, TYPE III BARRICADES, THEIR SUPPORT SYSTEMS AND LIGHTING REQUIREMENTS SHALL MEET NCHRP 350 CRASHWORTHLY REQUIREMENTS STIPULATED IN THE 2005 EDITION OF THE MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE STANDARD PLANS AND APPLICABLE SPECIAL PROVISIONS. ONLY DESIGNS AND MATERIALS APPROVED BY MDOT WILL BE ALLOWED.
8. WHEN BUFFER AREAS ARE ESTABLISHED, THERE SHALL BE NO EQUIPMENT OR MATERIALS STORED OR WORK CONDUCTED IN THE BUFFER AREA.
- 29A. THE TYPE OF REFLECTIVE SHEETING USED FOR THE W20-1a PLAQUE SHALL BE THE SAME AS THE TYPE USED FOR THE PARENT SIGN.

SIGN SIZES

DIAMOND WARNING - 48" x 48"
 W20-1a PLAQUE - 48" x 36"
 R2-1 REGULATORY - 48" x 60"
 R5-18c REGULATORY - 48" x 48"

NOT TO SCALE

 Michigan Department of Transportation TRAFFIC AND SAFETY MAINTAINING TRAFFIC TYPICAL		TYPICAL TEMPORARY TRAFFIC CONTROL FOR A SHOULDER CLOSURE ON A TWO LANE TWO-WAY ROADWAY NO SPEED REDUCTION	
DRAWN BY: CON:AE:djf	JUNE 2006	M0110a	SHEET 2 OF 2
CHECKED BY: BMM	PLAN DATE:		
FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0110a.dgn REV. 8/16/2007			

PLACE THROUGHOUT WORK AREA AS INDICATED AND AFTER ALL MAJOR CROSSROADS IF PERMANENT SIGNS ARE NOT IN PLACE.

PLACE THIS SIGN ALONG WITH THE ADVANCE WORK ZONE SIGNING AS DEPICTED ON THE APPROPRIATE TYPICAL M0030a-M0080a.

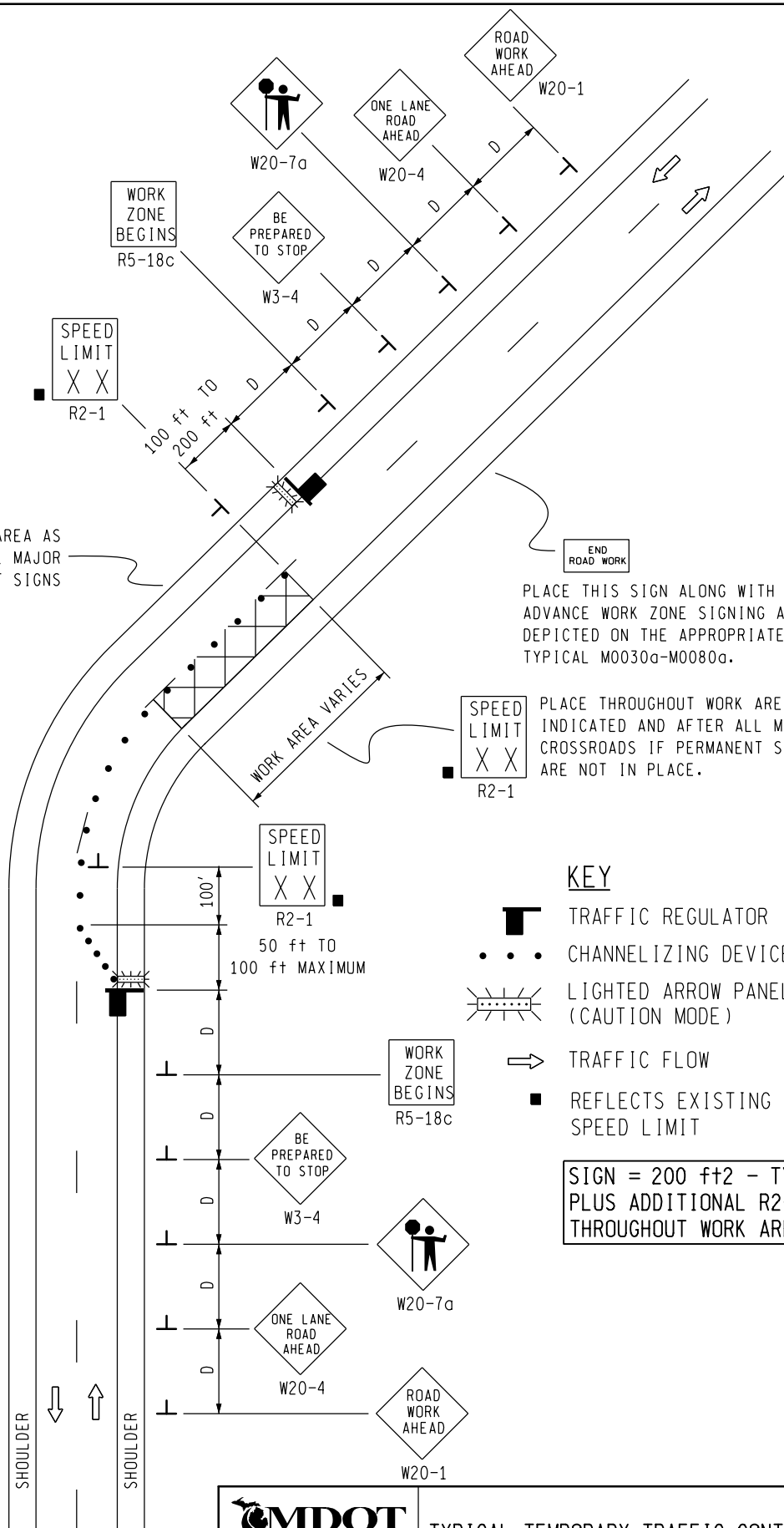
PLACE THROUGHOUT WORK AREA AS INDICATED AND AFTER ALL MAJOR CROSSROADS IF PERMANENT SIGNS ARE NOT IN PLACE.

KEY

-  TRAFFIC REGULATOR
-  CHANNELIZING DEVICES
-  LIGHTED ARROW PANEL (CAUTION MODE)
-  TRAFFIC FLOW
-  REFLECTS EXISTING SPEED LIMIT

SIGN = 200 ft ± 2 - TYPE B PLUS ADDITIONAL R2-1's THROUGHOUT WORK AREA

PLACE THIS SIGN ALONG WITH THE ADVANCE WORK ZONE SIGNING AS DEPICTED ON THE APPROPRIATE TYPICAL M0030a-M0080a.



MDOT
Michigan Department of Transportation
TRAFFIC AND SAFETY
MAINTAINING TRAFFIC
TYPICAL

DRAWN BY: CON:AE:djf
CHECKED BY: BMM:CRB

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

OCTOBER 2011
PLAN DATE:

M0140a

SHEET
1 OF 2

NOT TO SCALE

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

NOTES

- 1H. D = DISTANCE BETWEEN TRAFFIC CONTROL DEVICES AND LENGTH OF LONGITUDINAL BUFFERS
SEE **M0020a** FOR "D" VALUES.
2. ALL NON-APPLICABLE SIGNING WITHIN THE CIA SHALL BE MODIFIED TO FIT CONDITIONS, COVERED OR REMOVED.
3. DISTANCES BETWEEN SIGNS, THE VALUES FOR WHICH ARE SHOWN IN TABLE D, ARE APPROXIMATE AND MAY NEED ADJUSTING AS DIRECTED BY THE ENGINEER.
- 3A. THE "WORK ZONE BEGINS" (R5-18c) SIGN SHALL BE USED ONLY IN THE INITIAL SIGNING SEQUENCE IN THE WORK ZONE. SUBSEQUENT SEQUENCES IN THE SAME WORK ZONE SHALL OMIT THIS SIGN AND THE QUANTITIES SHALL BE ADJUSTED APPROPRIATELY.
- 4A. THE MAXIMUM RECOMMENDED DISTANCE(S) BETWEEN CHANNELIZING DEVICES IN THE TAPER AREA(S) SHOULD BE 15 FEET AND SHOULD BE EQUAL IN FEET TO TWICE THE POSTED SPEED IN MILES PER HOUR IN THE PARALLEL AREA(S).
5. FOR OVERNIGHT CLOSURES, TYPE III BARRICADES SHALL BE LIGHTED.
6. WHEN CALLED FOR IN THE FHWA ACCEPTANCE LETTER FOR THE SIGN SYSTEM SELECTED, THE TYPE A WARNING FLASHER, SHOWN ON THE WARNING SIGNS, SHALL BE POSITIONED ON THE SIDE OF THE SIGN NEAREST THE ROADWAY.
7. ALL TEMPORARY SIGNS, TYPE III BARRICADES, THEIR SUPPORT SYSTEMS AND LIGHTING REQUIREMENTS SHALL MEET NCHRP 350 CRASHWORTHLY REQUIREMENTS STIPULATED IN THE CURRENT EDITION OF THE MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE STANDARD PLANS AND APPLICABLE SPECIAL PROVISIONS. ONLY DESIGNS AND MATERIALS APPROVED BY MDOT WILL BE ALLOWED.
9. ALL TRAFFIC REGULATORS SHALL BE PROPERLY TRAINED AND SUPERVISED.
- 9A. IN ANY OPERATION INVOLVING MORE THAN ONE TRAFFIC REGULATOR, ONE PERSON SHOULD BE DESIGNATED AS HEAD TRAFFIC REGULATOR.
10. ALL TRAFFIC REGULATORS' CONDUCT, THEIR EQUIPMENT, AND TRAFFIC REGULATING PROCEDURES SHALL CONFORM TO THE CURRENT EDITION OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD) AND THE CURRENT EDITION OF THE MDOT HANDBOOK ENTITLED "TRAFFIC REGULATORS INSTRUCTION MANUAL."
11. WHEN TRAFFIC REGULATING IS ALLOWED DURING THE HOURS OF DARKNESS, APPROPRIATE LIGHTING SHALL BE PROVIDED TO SUFFICIENTLY ILLUMINATE THE TRAFFIC REGULATOR'S STATIONS.
- 12E. THE MAXIMUM DISTANCE BETWEEN THE TRAFFIC REGULATORS SHALL BE NO MORE THAN 2 MILES IN LENGTH UNLESS RESTRICTED FURTHER IN THE SPECIAL PROVISIONS FOR MAINTAINING TRAFFIC. ALL SEQUENCES OF MORE THAN 2 MILES IN LENGTH WILL REQUIRE WRITTEN PERMISSION FROM THE ENGINEER BEFORE PROCEEDING.
13. WHEN INTERSECTING ROADS OR SIGNIFICANT TRAFFIC GENERATORS (SHOPPING CENTERS, MOBILE HOME PARKS, ETC.) OCCUR WITHIN THE ONE-LANE TWO-WAY OPERATION, INTERMEDIATE TRAFFIC REGULATORS AND APPROPRIATE SIGNING SHALL BE PLACED AT THESE LOCATIONS.
14. ADDITIONAL SIGNING AND/OR ELONGATED SIGNING SEQUENCES SHOULD BE USED WHEN TRAFFIC VOLUMES ARE SIGNIFICANT ENOUGH TO CREATE BACKUPS BEYOND THE W3-4 SIGNS.
15. THE HAND HELD (PADDLE) SIGNS REQUIRED BY THE MMUTCD TO CONTROL TRAFFIC WILL BE PAID FOR AS PART OF FLAG CONTROL.
- 28E. THE TRAFFIC REGULATORS SHOULD BE POSITIONED AT OR NEAR THE SIDE OF THE ROAD SO THAT THEY ARE SEEN CLEARLY AT A MINIMUM DISTANCE OF 500 FEET. THIS MAY REQUIRE EXTENDING THE BEGINNING OF THE LANE CLOSURE TO OVERCOME VIEWING PROBLEMS CAUSED BY HILLS AND CURVES.

SIGN SIZES

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

NOT TO SCALE

 Michigan Department of Transportation TRAFFIC AND SAFETY MAINTAINING TRAFFIC TYPICAL		TYPICAL TEMPORARY TRAFFIC CONTROL FOR A TWO-LANE TWO-WAY ROADWAY WHERE ONE LANE IS CLOSED UTILIZING TRAFFIC REGULATORS, NO SPEED REDUCTION	
DRAWN BY: CON:AE:djf	OCTOBER 2011	M0140a	SHEET 2 OF 2
CHECKED BY: BMM:CRB	PLAN DATE:		
FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0140a.dgn REV. 10/04/2011			

KEY

- • • CHANNELIZING DEVICES
- ↔ LIGHTED ARROW PANEL
- ➡ TRAFFIC FLOW
- REFLECTS EXISTING SPEED LIMIT

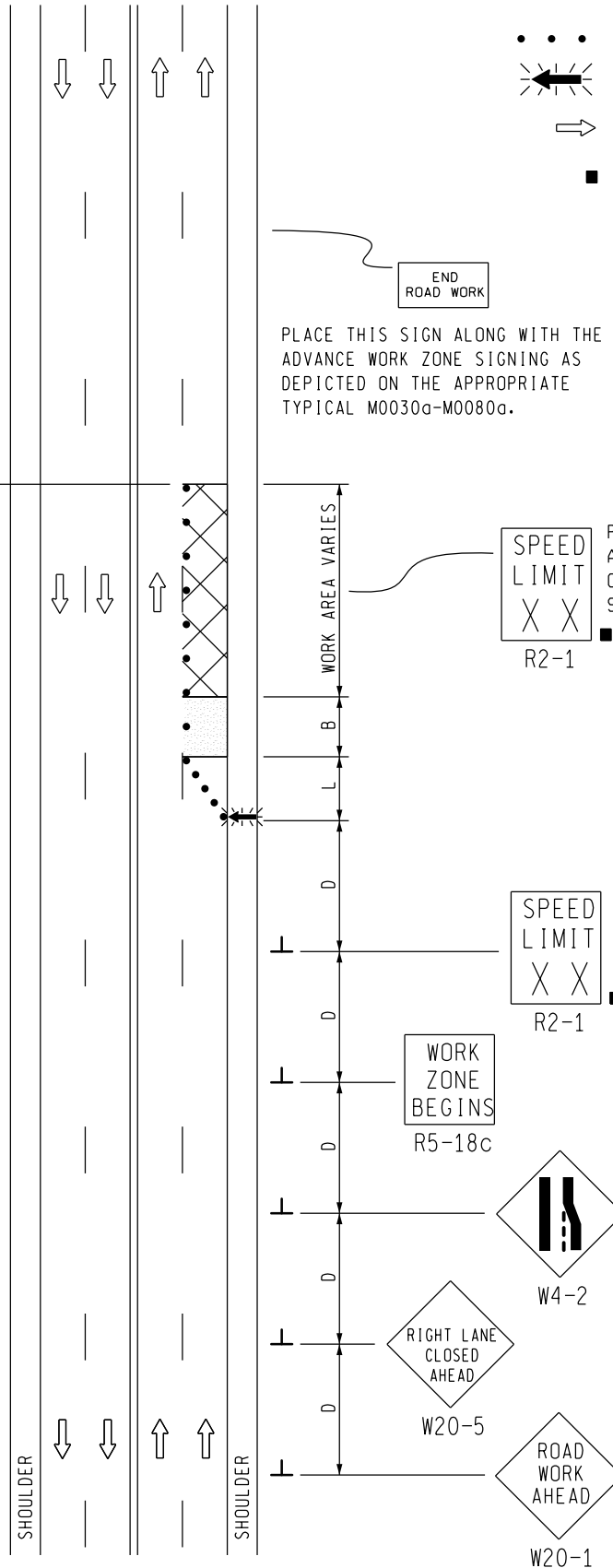
SIGN = 136 ft±2 - TYPE B
PLUS ADDITIONAL R2-1's
THROUGHOUT WORK AREA

PLACE THIS SIGN ALONG WITH THE
ADVANCE WORK ZONE SIGNING AS
DEPICTED ON THE APPROPRIATE
TYPICAL M0030a-M0080a.

PLACE THROUGHOUT WORK AREA
AS INDICATED AND AFTER ALL
CROSSROADS IF PERMANENT
SIGNS ARE NOT IN PLACE.

PLACE THROUGHOUT WORK AREA
AS INDICATED AND AFTER ALL
MAJOR CROSSROADS IF PERMANENT
SIGNS ARE NOT IN PLACE.

PLACE THIS SIGN ALONG WITH THE
ADVANCE WORK ZONE SIGNING AS
DEPICTED ON THE APPROPRIATE
TYPICAL M0030a-M0080a.



MDOT
Michigan Department of Transportation
TRAFFIC AND SAFETY
MAINTAINING TRAFFIC
TYPICAL

TYPICAL TEMPORARY TRAFFIC CONTROL
FOR A ONE-LANE CLOSURE ON AN
UNDIVIDED MULTI-LANE ROADWAY,
NO SPEED REDUCTION

DRAWN BY: CON:AE:djf
CHECKED BY: BMM:CRB

OCTOBER 2011
PLAN DATE:

M0240a

SHEET
1 OF 2

NOT TO SCALE

FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0240a.dgn REV. 10/11/2011

NOTES

- 1B. D = DISTANCE BETWEEN TRAFFIC CONTROL DEVICES
L = MINIMUM LENGTH OF TAPER
B = LENGTH OF LONGITUDINAL BUFFER
SEE **M0020a** FOR "D," "L," AND "B" VALUES
2. ALL NON-APPLICABLE SIGNING WITHIN THE CIA SHALL BE MODIFIED TO FIT CONDITIONS, COVERED OR REMOVED.
3. DISTANCES BETWEEN SIGNS, THE VALUES FOR WHICH ARE SHOWN IN TABLE D, ARE APPROXIMATE AND MAY NEED ADJUSTING AS DIRECTED BY THE ENGINEER.
- 3A. THE "WORK ZONE BEGINS" (R5-18c) SIGN SHALL BE USED ONLY IN THE INITIAL SIGNING SEQUENCE IN THE WORK ZONE. SUBSEQUENT SEQUENCES IN THE SAME WORK ZONE SHALL OMIT THIS SIGN AND THE QUANTITIES SHALL BE ADJUSTED APPROPRIATELY.
- 4E. THE MAXIMUM RECOMMENDED DISTANCE(S) BETWEEN CHANNELIZING DEVICES SHOULD BE EQUAL IN FEET TO THE POSTED SPEED IN MILES PER HOUR ON TAPER(S) AND TWICE THE POSTED SPEED IN THE PARALLEL AREA(S).
5. FOR OVERNIGHT CLOSURES, TYPE III BARRICADES SHALL BE LIGHTED.
6. WHEN CALLED FOR IN THE FHWA ACCEPTANCE LETTER FOR THE SIGN SYSTEM SELECTED, THE TYPE A WARNING FLASHER, SHOWN ON THE WARNING SIGNS, SHALL BE POSITIONED ON THE SIDE OF THE SIGN NEAREST THE ROADWAY.
7. ALL TEMPORARY SIGNS, TYPE III BARRICADES, THEIR SUPPORT SYSTEMS AND LIGHTING REQUIREMENTS SHALL MEET NCHRP 350 CRASHWORTHLY REQUIREMENTS STIPULATED IN THE CURRENT EDITION OF THE MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE STANDARD PLANS AND APPLICABLE SPECIAL PROVISIONS. ONLY DESIGNS AND MATERIALS APPROVED BY MDOT WILL BE ALLOWED.
8. WHEN BUFFER AREAS ARE ESTABLISHED, THERE SHALL BE NO EQUIPMENT OR MATERIALS STORED OR WORK CONDUCTED IN THE BUFFER AREA.
21. ALL EXISTING PAVEMENT MARKINGS WHICH ARE IN CONFLICT WITH EITHER PROPOSED CHANGES IN TRAFFIC PATTERNS OR PROPOSED TEMPORARY TRAFFIC MARKINGS, SHALL BE REMOVED BEFORE ANY CHANGE IS MADE IN THE TRAFFIC PATTERN. EXCEPTION WILL BE MADE FOR DAYTIME-ONLY TRAFFIC PATTERNS THAT ARE ADEQUATELY DELINEATED BY OTHER TRAFFIC CONTROL DEVICES.
26. THE LIGHTED ARROW PANEL SHALL BE LOCATED AT THE BEGINNING OF THE TAPER AS SHOWN. WHEN PHYSICAL LIMITATIONS RESTRICT ITS PLACEMENT AS INDICATED, THEN IT SHALL BE PLACED AS CLOSE TO THE BEGINNING OF THE TAPER AS POSSIBLE.

SIGN SIZES

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

NOT TO SCALE

 Michigan Department of Transportation TRAFFIC AND SAFETY MAINTAINING TRAFFIC TYPICAL		TYPICAL TEMPORARY TRAFFIC CONTROL FOR A ONE-LANE CLOSURE ON AN UNDIVIDED MULTI-LANE ROADWAY, NO SPEED REDUCTION	
DRAWN BY: CON:AE:djf	OCTOBER 2011	M0240a	SHEET 2 OF 2
CHECKED BY: BMM:CRB	PLAN DATE:		
FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0240a.dgn REV. 10/11/2011			

SIGN MATERIAL SELECTION TABLE

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

TYPE I ALUMINUM EXTRUSION
 TYPE II PLYWOOD
 TYPE III ALUMINUM SHEET

ROUNDING OF CORNERS IS NOT REQUIRED FOR TYPE I OR II SIGNS.
 VERTICAL JOINTS ARE NOT PERMITTED.
 HORIZONTAL JOINTS THROUGH SIGN LEGEND OR SYMBOLS ARE NOT PERMITTED.

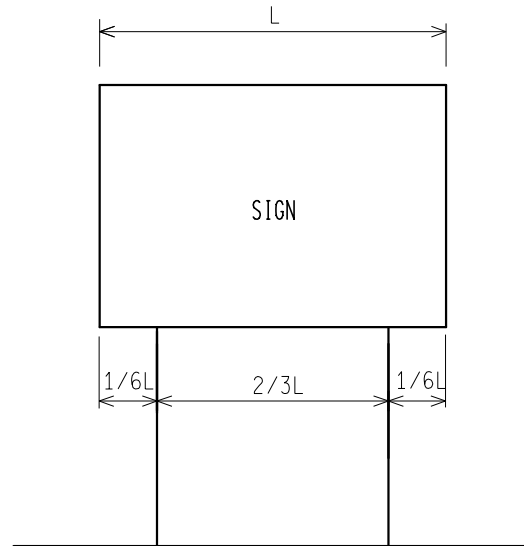
POST SIZE REQUIREMENTS TABLE

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

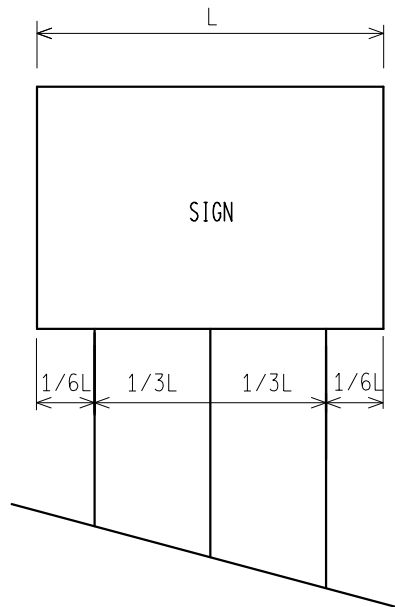
*SIGNS 4 FEET AND GREATER IN WIDTH REQUIRE 2 POSTS.
 SIGNS GREATER THAN 8 FEET IN WIDTH REQUIRE 2 OR 3 WOOD
 POSTS DEPENDING ON AREA OF SIGN.
 A MAXIMUM OF 2 POSTS WITHIN A 7' PATH IS PERMITTED.

 PREPARED BY DESIGN DIVISION	DEPARTMENT DIRECTOR Kirk T. Steudle	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR GROUND DRIVEN SIGN SUPPORTS FOR TEMP SIGNS		
	APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES			
	APPROVED BY: _____ DIRECTOR, BUREAU OF DEVELOPMENT	F.H.W.A. APPROVAL	11/2/2017 PLAN DATE	WZD-100-A

2 POST SIGN SUPPORT SPACING



3 POST SIGN SUPPORT SPACING



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

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

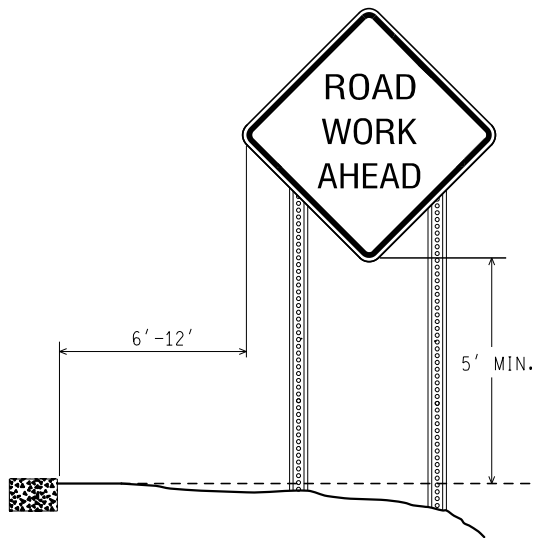
F.H.W.A. APPROVAL

11/2/2017
PLAN DATE

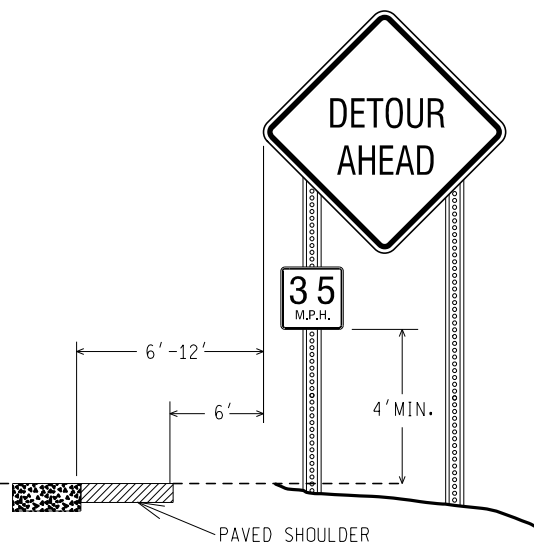
WZD-100-A

SHEET
2 OF 11

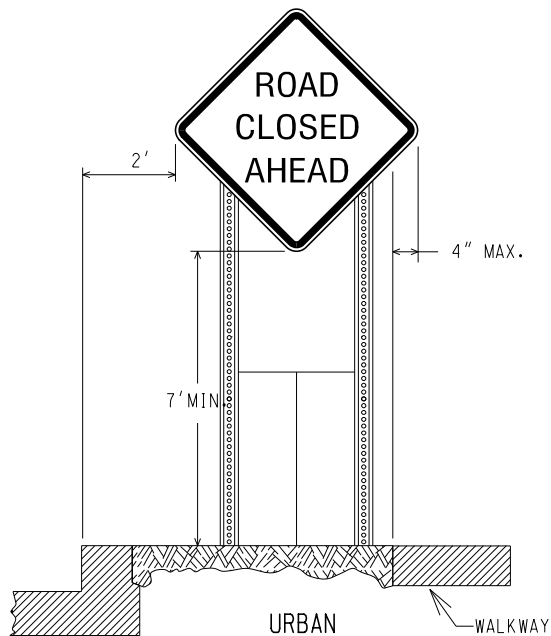
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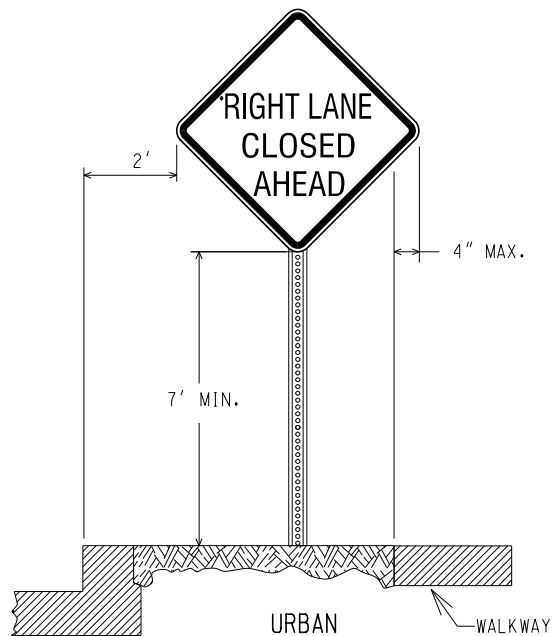
RURAL



RURAL WITH ADVISORY
SPEED PLATE



(CURBED AREAS OR WHERE
WALKWAYS ARE PRESENT)



(CURBED AREAS OR WHERE
WALKWAYS ARE PRESENT)

BOTTOM HEIGHT AND OFFSET

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

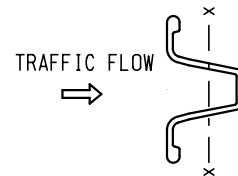
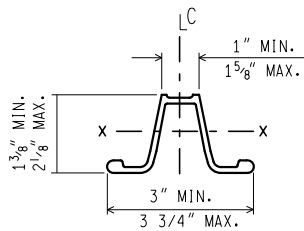
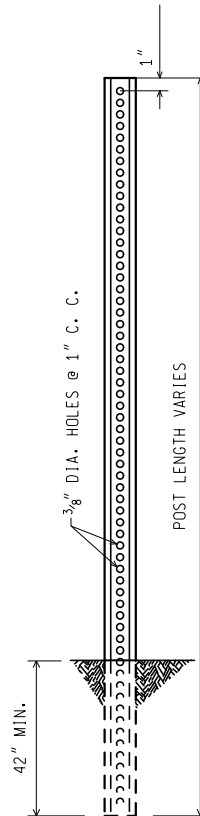
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PLAN DATE

WZD-100-A

SHEET
3 OF 11

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

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

MOUNT SIGN ON OPEN FACE OF
 U - CHANNEL STEEL POST

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF DEVELOPMENT STANDARD PLAN

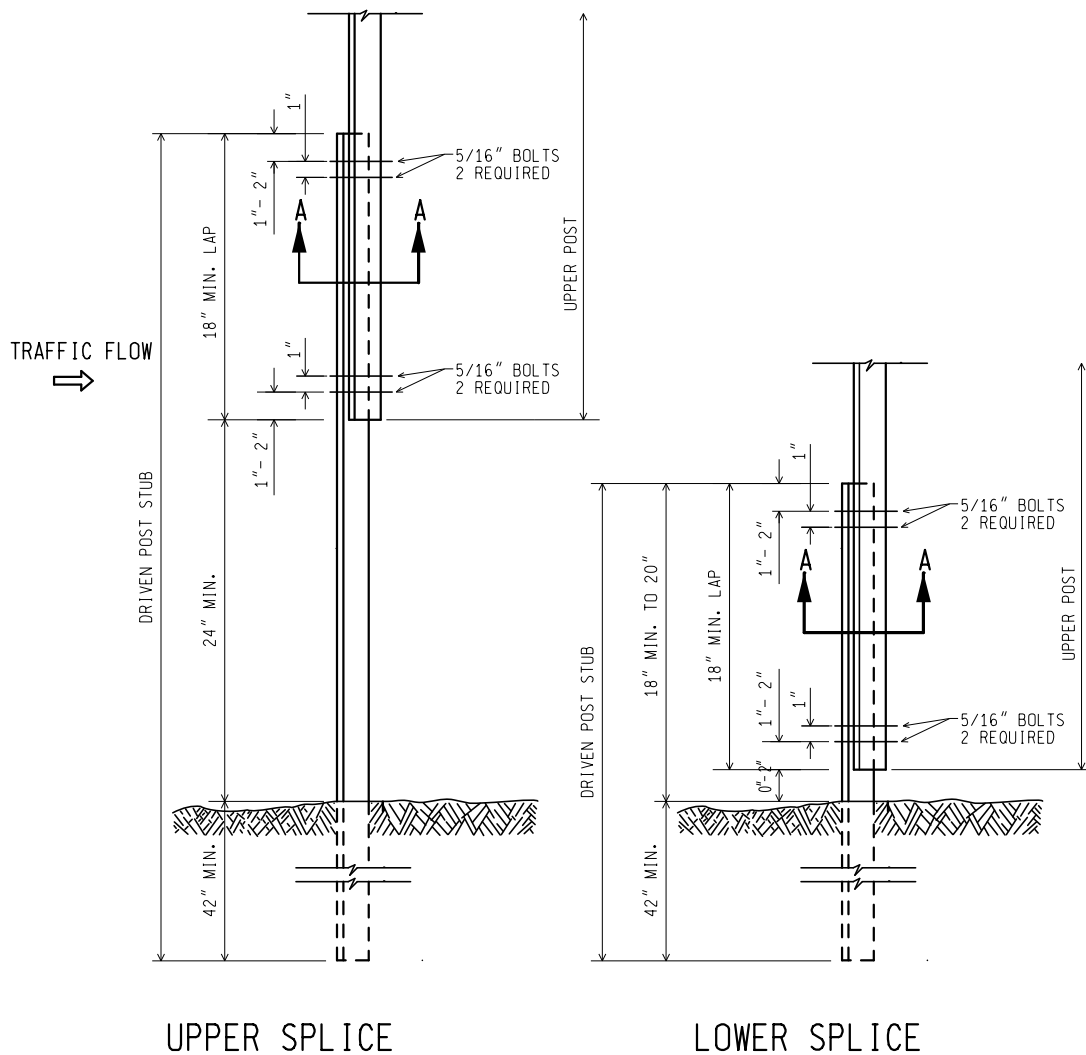
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 PLAN DATE

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 4 OF 11

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

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

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

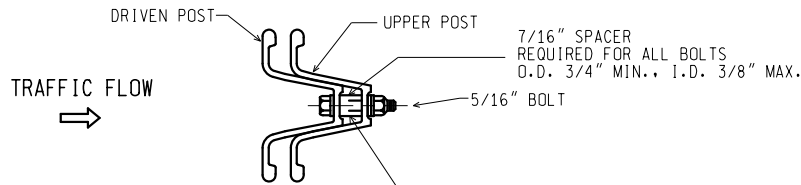
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11/2/2017
PLAN DATE

WZD-100-A

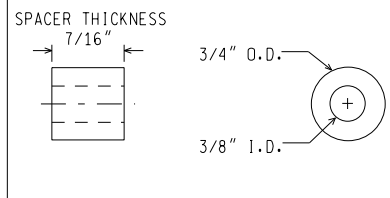
SHEET
5 OF 11

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SECTION A-A

SPACER DETAIL



NOTES:

1. THE SPACER THICKNESS SHALL BE 1/16" LESS THAN THE GAP BETWEEN THE POST WHEN POSITIONED IN THE UNBOLTED CONFIGURATION.
2. THE EXTERIOR BOLT (CLOSEST TO LAP), SPACER, WASHER, AND NUT SHALL BE INSTALLED IN A PREPUNCHED HOLE 1" to 2" FROM THE END OF THE LAP.
3. THE INTERIOR BOLT (FARTHEST FROM LAP), SPACER, WASHER, AND NUT SHALL BE INSTALLED IN THE NEXT PREPUNCHED HOLE.
4. THE DRIVEN POST SHALL ALWAYS BE MOUNTED IN FRONT OF THE UPPER POST WITH RESPECT TO THE ADJACENT ONCOMING TRAFFIC, REGARDLESS OF THE DIRECTION THE SIGN IS FACING.
5. THE SPLICE LAP SHALL BE FASTENED BY FOUR-5/16" DIA. GALVANIZED A449 BOLTS (SAE J429 GRADE 5) OR GALVANIZED A325 BOLTS.

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

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

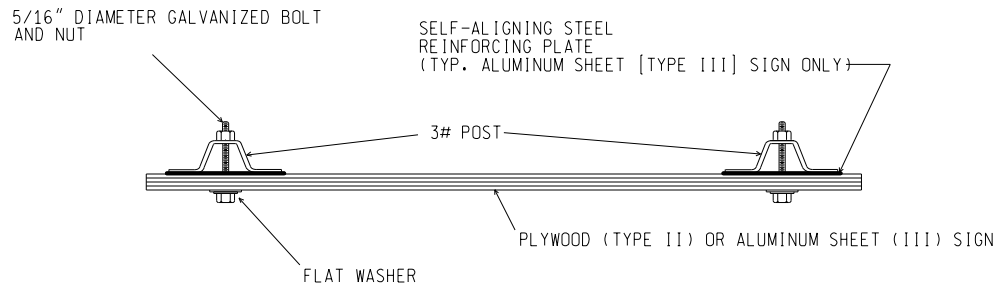
F.H.W.A. APPROVAL

11/2/2017
PLAN DATE

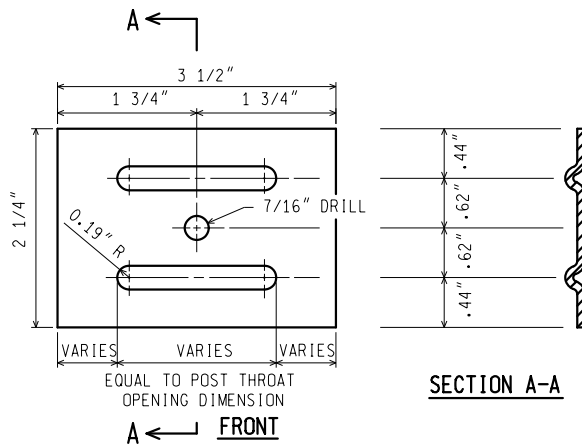
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SHEET
6 OF 11

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SIGN TO 3 lb. POST CONNECTION



NOTES: (FOR STEEL SIGN REINF' PLATE)

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

STEEL SIGN REINFORCING PLATE REQUIRED FOR TYPE III SIGNS ONLY

3 lb. U - CHANNEL STEEL POST SIGN CONNECTION

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

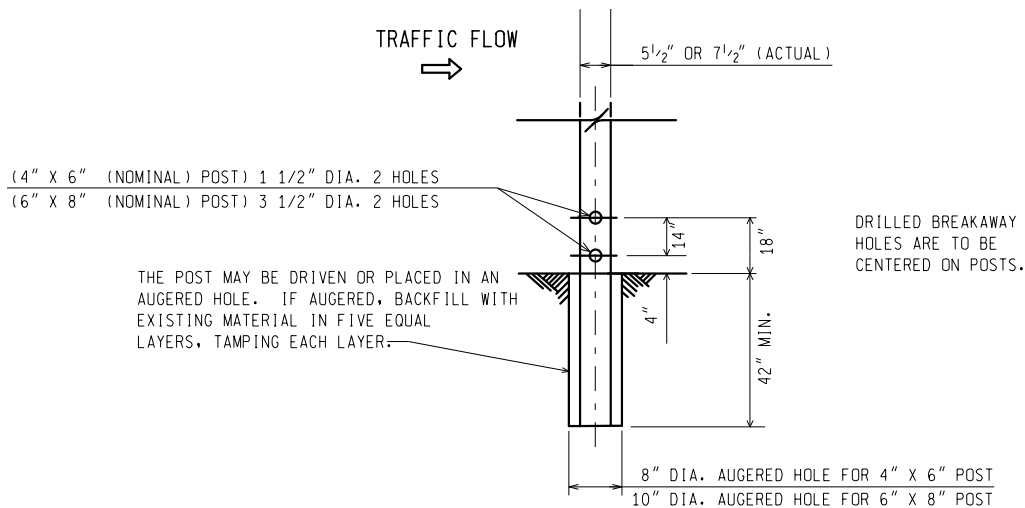
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PLAN DATE

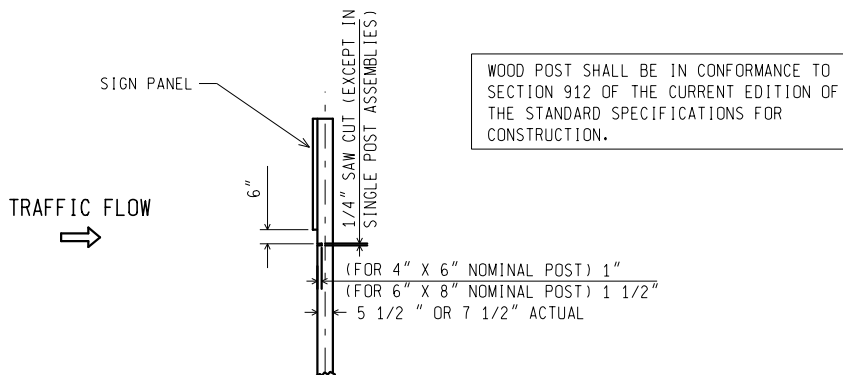
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WOOD POST BREAKAWAY HOLES/ DIRECT EMBEDMENT DETAILS



SAW CUT DETAIL (MULTIPLE POST INSTALLATIONS)

WOOD POST DETAILS

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

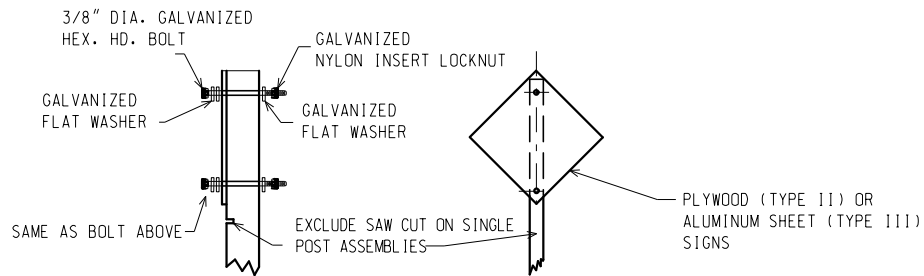
F.H.W.A. APPROVAL

11/2/2017
PLAN DATE

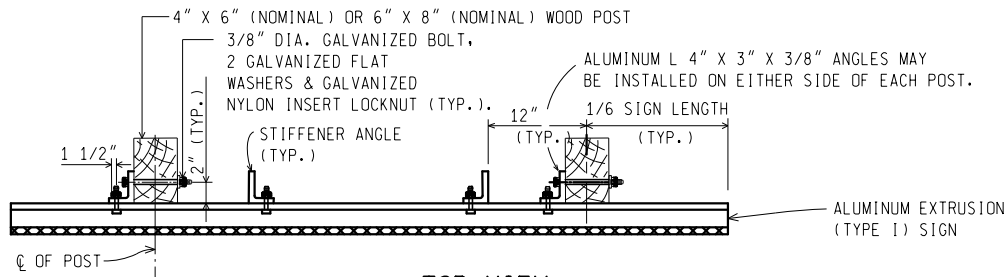
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8 OF 11

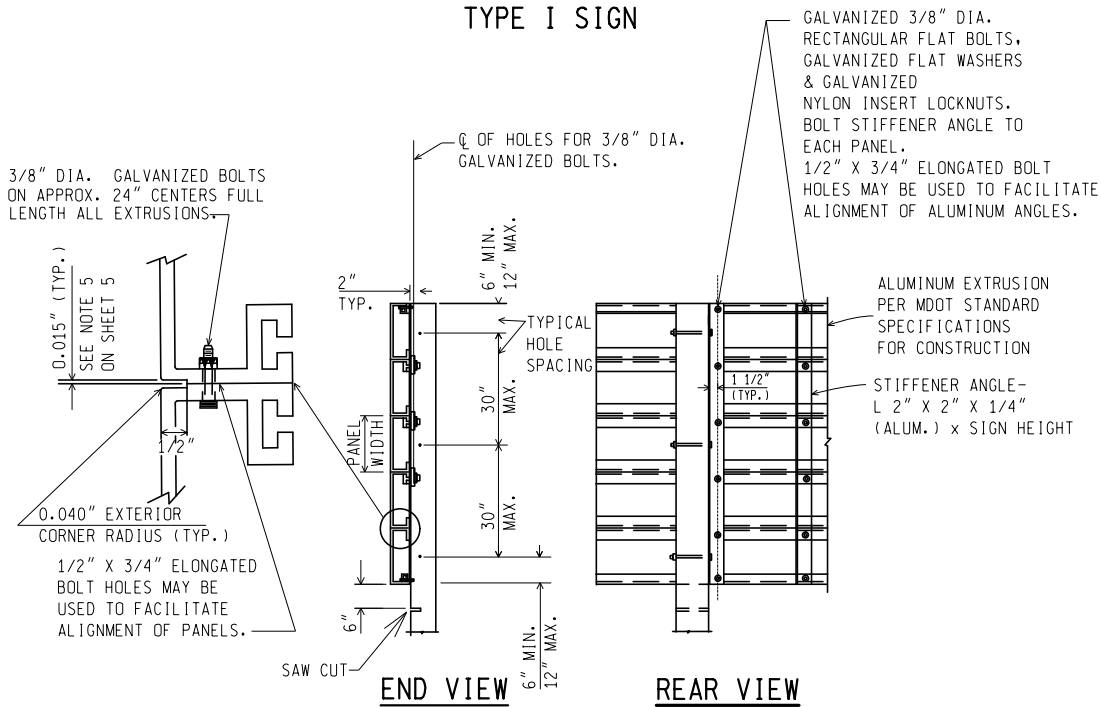
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TYPE II AND TYPE III SIGNS



TOP VIEW TYPE I SIGN



TYPE I SIGN - ERECTION DETAILS

WOOD POST CONNECTIONS

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

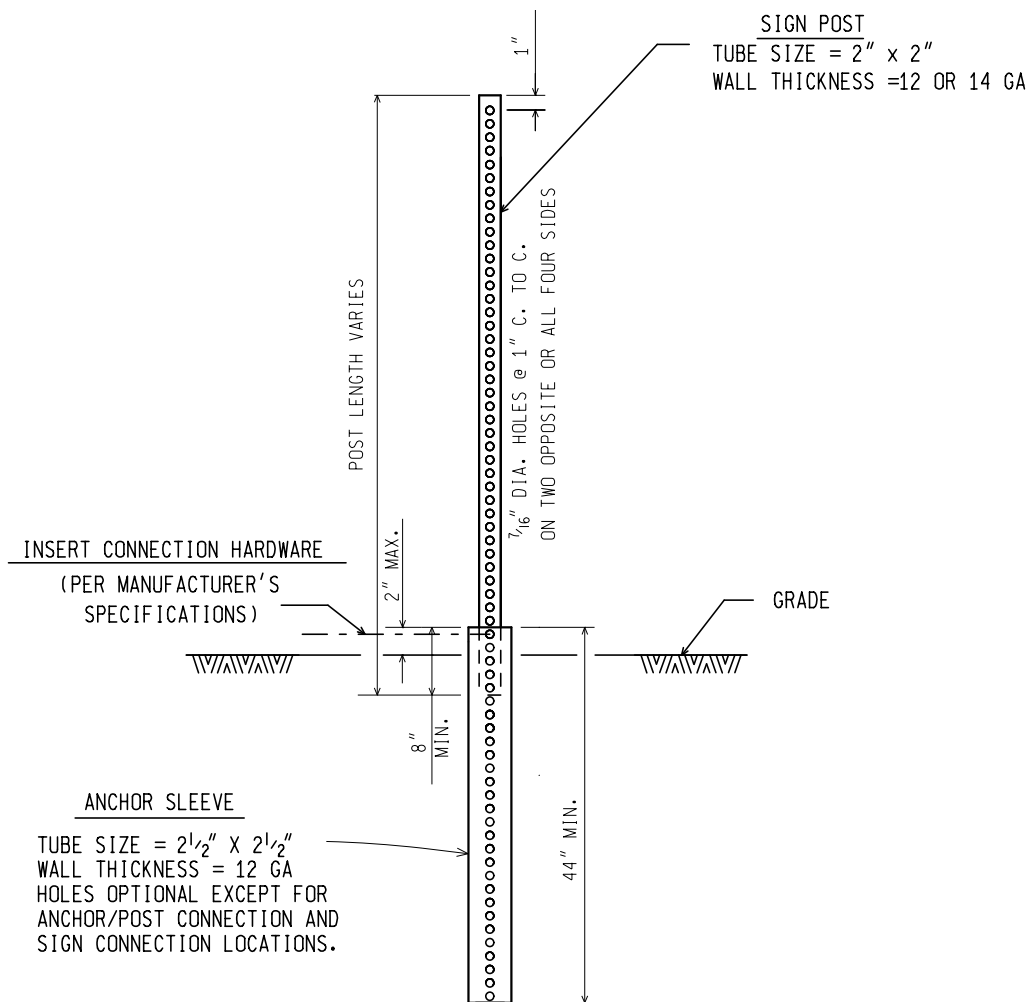
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11/2/2017
PLAN DATE

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9 OF 11

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SQUARE TUBULAR STEEL POST

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF DEVELOPMENT STANDARD PLAN

F.H.W.A. APPROVAL

11/2/2017
 PLAN DATE

WZD-100-A

SHEET
 10 OF 11

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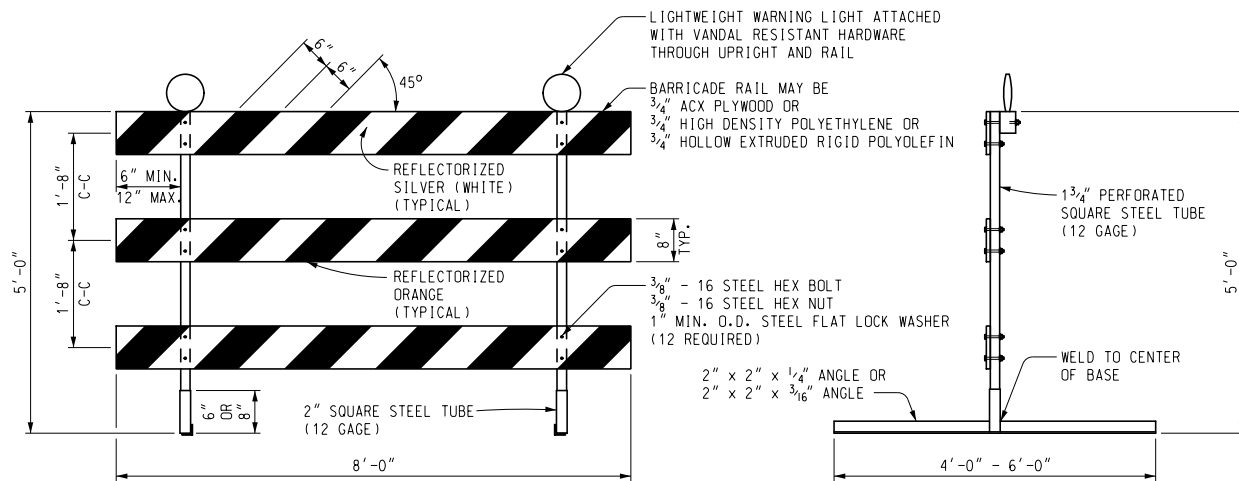
GENERAL NOTES:

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

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN	F.H.W.A. APPROVAL	11/2/2017 PLAN DATE	WZD-100-A	SHEET 11 OF 11
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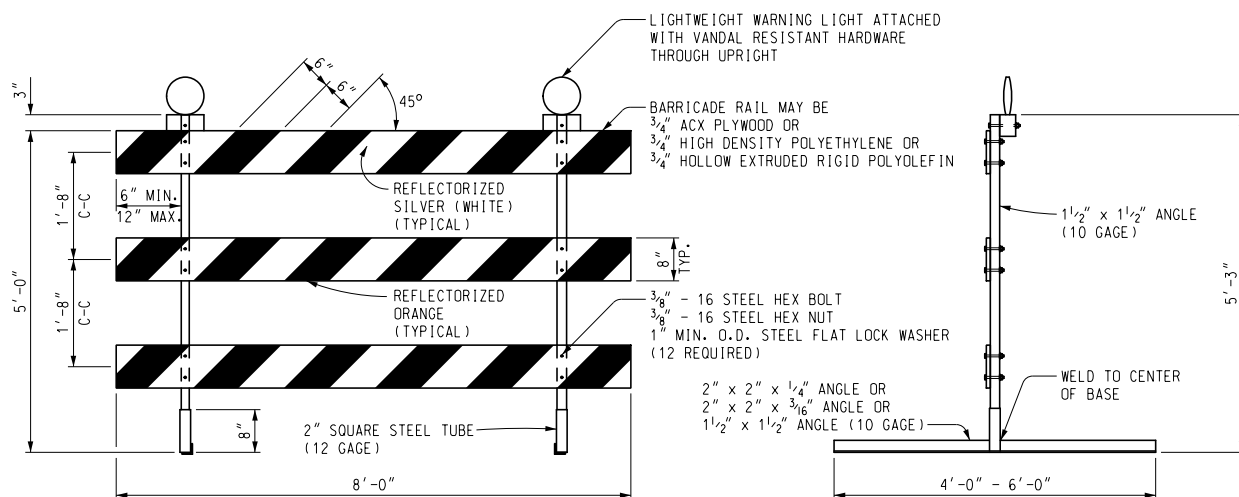
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FRONT ELEVATION

SIDE VIEW

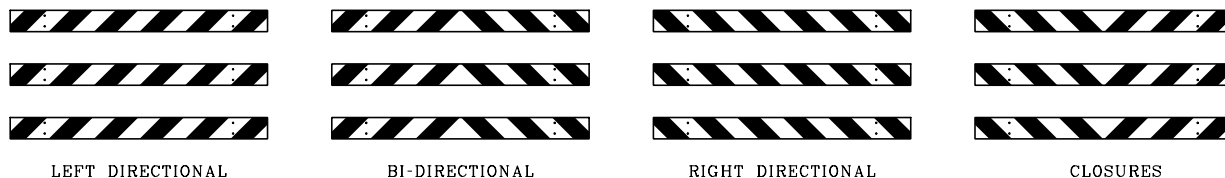
PERFORATED SQUARE STEEL TUBE OPTION



FRONT ELEVATION

SIDE VIEW

ANGLE IRON OPTION



BARRICADE RAIL SHEETING OPTIONS TYPE III BARRICADES

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



PREPARED
BY
DESIGN DIVISION

DRAWN BY: ECH

CHECKED BY: MWB

DEPARTMENT DIRECTOR
Kirk T. Steudle

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES
ENGINEER OF DEVELOPMENT

APPROVED BY: _____
(SPECIAL DETAIL) 48
DIRECTOR, BUREAU OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

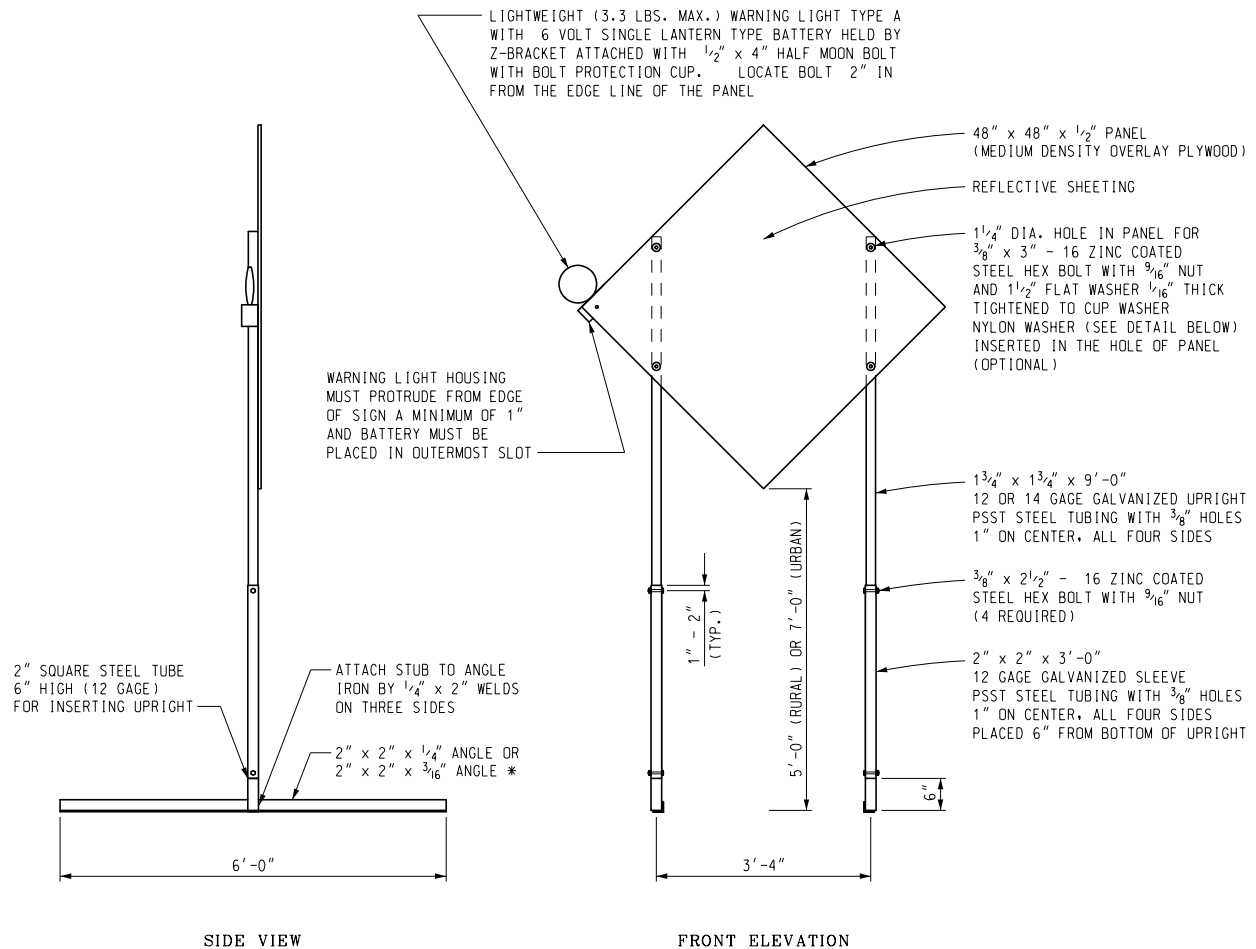
Temporary Traffic Control Devices

F.H.W.A. APPROVAL

1/18/11
PLAN DATE

WZD-125-E

SHEET
1 OF 3

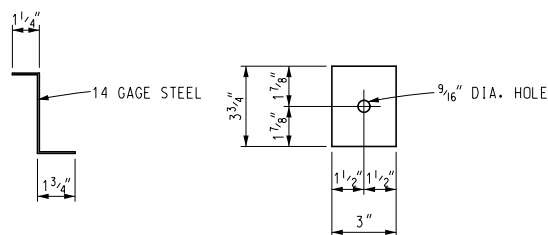


TEMPORARY SIGN SUPPORT

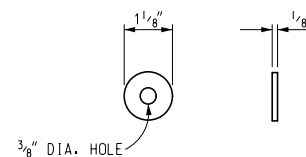
(WARNING LIGHT PLACED ON SIDE CLOSEST TO TRAFFIC)

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

UPRIGHTS SHALL NOT EXTEND ABOVE THE SIGN PANEL.



Z-BRACKET DETAIL



OPTIONAL NYLON WASHER

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

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

49

SPECIAL DETAIL
F.H.W.A. APPROVAL

1/18/11
PLAN DATE

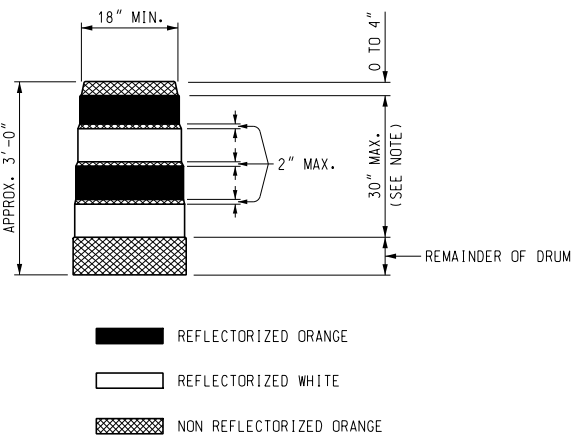
WZD-125-E

SHEET
2 OF 3

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

- PLASTIC DRUM
- ▲ PROPOSED TYPE III BARRICADE
- △ EXISTING TYPE III BARRICADE

SYMBOLS TO BE USED ON PLANS



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

PLASTIC DRUM

- NOTES:
- 2" PERFORATED SQUARE STEEL TUBES MAY BE USED TO FABRICATE THE HORIZONTAL BASE OF THE TYPE III BARRICADE.
- WARNING LIGHTS SHALL BE PLACED ACCORDING TO THE CURRENT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND ALL OTHER PROVISIONS IN THE CONTRACT ON TYPE III BARRICADES.
- SEE ROAD STANDARD PLANS R-113-SERIES FOR TEMPORARY CROSSOVERS FOR DIVIDED ROADWAY, AND R-126-SERIES FOR TYPICAL LOCATION AND SPACING OF PLASTIC DRUMS FOR PLACEMENT OF TEMPORARY CONCRETE BARRIER.
- SIGNS, BARRICADES, AND PLASTIC DRUMS SHALL BE FACED WITH PRESSURE-SENSITIVE REFLECTIVE SHEETING ACCORDING TO THE CURRENT STANDARD SPECIFICATIONS FOR CONSTRUCTION.
- SANDBAGS SHALL BE USED WHEN SUPPLEMENTAL WEIGHTS ARE REQUIRED TO ACHIEVE STABILITY OF THE BARRICADE. THE SANDBAGS SHALL BE PLACED SO THEY WILL NOT COVER OR OBSTRUCT ANY REFLECTIVE PORTION OF THE TRAFFIC CONTROL DEVICE.

NOT TO SCALE

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

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
INSURANCE

CSD:LFS

1 of 1

APPR:KF:DBP:02-01-18

Add the following after the first paragraph in subsection 107.10.C.4, on page 60 of the Standard Specifications for Construction:

In addition to the above insurance requirements, the following agencies must be listed as additional insured:

City of Detroit
Wayne County
Wayne County Department of Public Services

CITY OF DETROIT
SPECIFICATIONS
FOR
LIMITATIONS OF OPERATIONS

DET: GJM

1 of 1

Revised: 1-04-16

The work days used to develop the progress schedule shall be Monday through Saturday and shall not include Sundays or City Holidays. The Contractor may normally prosecute the work during the daylight hours of any work day provided that they so conduct their operations as not to create a public nuisance nor disturb the peace. Overtime shall be limited to the work days submitted on the progress schedule for the project. Overtime work on Sundays and City Holidays shall be limited to emergency work necessary to safeguard the health and safety of the public.

When the Contractor elects to conduct work operations in excess of eight hours per day, or on Saturdays, Sundays or a City Holiday, they shall bear overtime costs incurred by the City of Detroit for City personnel assigned to the project for those situations.

The following are the current City Holidays: New Year's Day, Martin Luther King Jr. Birthday, Good Friday, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, Day after Thanksgiving, Christmas Eve, Christmas Day, New Year's Eve. The Contractor shall be responsible for confirming with the City Engineering Division any amendments to this list of calendar dates designated as holidays for City of Detroit employees.

The Engineer may require the Contractor to cease construction operations during times as may be determined to be in the interest of the public at no additional compensation or cost to the City.

Contractor shall suspend or limit their operations if work interferes with the City Sponsored Public events within project CIA (Construction Influence Area) at no additional compensation or cost to the City.

CITY OF DETROIT
SPECIAL PROVISIONS

DET: PAL

1 of 3

REVISED 01-26-18

Work Approvals: Acceptance by the City of Detroit of any or all utility work under this contract will be conditioned upon approval by the appropriate Department of the City of Detroit.

Utility Access: The Contractor shall contact the utility owners, including the Detroit Fire and Police Departments, regarding their facilities prior to starting the work. All utility outlets and control fixtures shall be maintained in an accessible condition at all times.

Adjacent Utilities: When proposed utilities cross or lay parallel to an existing or proposed utility, a vertical clearance of twelve (12) inches and a horizontal clearance of forty two (42) inches shall be provided between the outside limits of their construction and the outside limits of the Public Lighting Department (PLD) or Department of Water and Sewerage (DWSD) facility. PLD facilities include electrical conduits, communication conduits, and related structures. DWSD facilities include sewers, water mains, and related structures. If for any reason this clearance cannot be provided, the Contractor shall notify the project engineer and proceed under his direction in an approved manner.

Reclaiming Salvageable Material: All salvageable material within the limits of this project and belonging to either privately or municipally owned utilities, which are to be reclaimed by its owner, will be indicated on the plans or in the proposal. The removal of such material shall be done by the owner and at their own expense and at such time as will cause no delay to the Contractor. If after due notice the owner does not remove the material, the Engineer shall advise the Contractor to remove the material and this material shall become the property of the Contractor. The work of removing the material is included in the construction of the project and will not be paid for separately

Hydrants and Water: The Contractor shall pump out at the end of each day throughout the year, regardless of the season, any fire hydrant used to obtain water.

The Contractor shall secure the required permit from the Detroit Water and Sewerage Department, and shall bear all the expense for such permits and for the water used. If connections are made to hydrants, Fire Department's standard hydrant wrench shall be used for the operation of the hydrant.

The DWSD current fees include a permit fee of \$650.00 per day and an unmetered commercial usage fee of \$1,920.00. These fees are subject to change. For more information, contact DWSD at (313) 245-1057.

Removal of Miscellaneous Structures: The use of a crane and ball type pavement breaker for the removal of miscellaneous structures referred to in Section 204 of the 2012 MDOT Standard Specifications for Construction and the removal of other items called for in these Specifications and Plans will NOT be permitted at any time for work under this Contract, except when specifically authorized by the Engineer.

Pumping and Drainage: The Contractor will be required to furnish all equipment and supplies and perform all labor necessary to keep all excavated areas dewatered during the period of this Contract.

The work will include the disposal of all drainage water flowing into the excavation. The drainage of the entire project shall be disposed of in a manner that will not interfere with or delay the work of others. This work shall be performed as directed by the Engineer.

The City will permit, subject to its approval, drainage water from the excavations for the project to enter existing operating sewers without reimbursement. No claims for damages, however, will be allowed the Contractor because of the inadequacy of the City sewers to accommodate the water from the excavations.

All sewers and drainage structures shall be kept thoroughly cleaned of silt, debris and foreign matter, and shall be free from such accumulation at the time of final inspection.

The work of pumping and draining excavations, and cleaning the structures used for disposal of same will be considered included in the construction of the project and no additional payment will be made.

Property and Survey Monuments: Before any monuments or stakes marking the boundaries of property along or near the work are removed or disturbed, the Contractor shall notify the Engineer in sufficient time so that they can be properly located and reset.

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

City of Detroit vertical survey monuments shall be adjusted and preserved in accordance with the Special Provision\Specification titled Vertical Survey Monuments.

Notification: The Contractor shall provide notification to residents and businesses along the length of the project of pending surface milling, curb replacement, pavement repair and resurfacing activities, and sidewalk and ADA ramp construction a minimum of 48 hours in advance of such work. The notice, at a minimum, shall advise residents of the date work activity will start, the anticipated length of time the area will be worked on, notification of temporary loss of curbside or driveway access to property, and request that street be cleared of parked vehicles.

Should construction activities cease, either due to weather or scheduling, for an anticipated time of five (5) days or more, any and all posted signage shall be removed. Once work will begin again, the Contractor shall re-notify as previously set forth.

For sidewalk repair work, the Contractor shall provide notification to residents and businesses along the length of the pending sidewalk work a minimum of 72 hours (3 day) in advance of such work. This notification shall be placed in accordance with the Specification for Sidewalk Repair Notification.

Cleanliness of the Work: The Contractor shall at all times keep the street pavement and right-of-way and any public or private premises temporarily occupied by him for purposes of work under this contract free from accumulations of waste material or rubbish caused by the Contractor's employees or the work. This requirement shall apply to any streets in vicinity of the work which are affected by the Contractor's construction or hauling operations, as well as to streets in which the work is located. If the Contractor shall fail to keep any street cleaned of

debris resulting from their operations, and therefore creating a public nuisance, they shall be notified in writing by the Engineer to clean the street and remove the nuisance immediately. If, within 24 hours after the receipt of such notice, the Contractor shall have failed to clean such street satisfactorily, the Engineer shall order the street cleaned by the Department of Public Works or such other agency as he shall designate and all costs of such cleaning shall be paid by the Contractor.

Materials and equipment not in current use shall not be stored on any city streets. Storage of materials on private property shall require a written agreement with the owner. The Contractor shall provide the Engineer a copy of the agreement.

CITY OF DETROIT
SPECIFICATIONS
FOR
WORKING AREA AND PROJECT CLEANUP

DET: GJM

1 of 1

Revised: 12-07-15

All the work under this Contract shall be in City streets, alleys, easements, or right-of-ways, and the space allowed for the Contractor's operations shall be in City streets and alleys adjacent to the work. Construction equipment, storage of materials, and the construction operations shall normally be restricted to such areas. Should additional working or storage space be desired, the Contractor may be permitted to utilize adjacent private property provided the Contractor makes all arrangements with the Owners of the property, bears all expense in connection with its use, and in no way involves or obligates the City, County or State by such use.

Materials delivered on the street shall be neatly and compactly stored in such a manner as to cause the least inconvenience to adjacent property owners and the general public.

Working and storage areas shall be promptly restored to their original conditions as soon as the required construction work has been completed at the particular location, and shall not be used as a storage area for unneeded material or construction equipment.

The work, and all property used in connection with the work, shall be kept in a neat and orderly condition at all times. Waste material and refuse from the Contractor's operations may be temporarily stored behind the curb in a manner not to interfere with pedestrians. Waste materials, rubbish, and debris shall not be allowed to accumulate and shall be removed daily, or as directed by the Engineer. Construction equipment and excess materials shall be promptly removed from the site as they become no longer needed for the progress of the work.

All cost relating to maintaining a neat working area and providing the required cleanup will not be paid for separately, but shall be included in the total project cost.

CITY OF DETROIT
SPECIAL PROVISION
FOR
INTEGRAL CURB AND SIDEWALK, 2 FEET

DET: GJM

Page 1 of 2

12-17-15

Description: The removal of integral curb and sidewalk shall be done in accordance with the requirements of Section 204 of the 2012 Michigan Department of Transportation Standard Specifications for Construction and as specified herein.

This construction of an Integral Curb and Sidewalk shall be in accordance with the City of Detroit Detail "Integral Curb and Sidewalk", or as directed by the Engineer, and shall conform to the requirements of Section 803 of the 2012 Michigan Department of Transportation Standard Specifications for Construction.

Removal: The work shall consist of removing existing curb that has integral sidewalk as part of the curb structure. Saw cut existing sidewalk at two (2) feet distance from the back of the curb if there is no joint within five (5) feet of the back of the curb to remove curb and integral sidewalk. Any additional sidewalk to be removed will be paid for as Sidewalk, Rem.

Backfill as necessary as specified in Section 204.03.C to the level necessary for new construction

Construction: The work shall include all labor, material, and equipment necessary to construct the Integral Curb and Sidewalk as specified to a distance two (2) feet from the face of the curb. Earth excavation, backfill with granular material, and expansion joint and other items which may be required to complete this work as specified shall be included in the cost of the work.

Any additional sidewalk to be constructed abutting this work shall be paid for as Sidewalk, Conc, ___ inch.

Removal of the existing curb and sidewalk and/or existing integral curb and sidewalk will be paid separately.

Where there is a step curb, the Integral Curb and Sidewalk shall be constructed to meet the face of the step curb. The exact height of the curb face and the width of the Integral Curb and Sidewalk will vary depending upon the field conditions and shall be constructed as directed by the Engineer. Where the difference between the step curb and gutter elevations is less than 7 inches, the Integral Curb and Sidewalk shall be constructed to eliminate the step.

Measurement and Payment: "Integral Curb and Sidewalk, 2 Feet, Rem, Modified" and "Integral Curb and Sidewalk, 2 Feet, Modified" will be measured and paid for at the contract unit rate per lineal foot and shall include all labor, equipment and material to remove the integral curb and sidewalk, including saw cutting and backfill, and to prepare for and construct the integral curb and sidewalk as specified.

<u>Pay Item</u>	<u>Pay Unit</u>
Integral Curb and Sidewalk, 2 Feet, Rem, Modified	Foot
Integral Curb and Sidewalk, 2 Feet, Modified	Foot

CITY OF DETROIT
SPECIAL PROVISION
FOR
REMOVAL OF CURB AND CURB AND GUTTER

DET: PAL

2-17-2019

Description: The work shall be done in accordance with the applicable provisions of Section 204 of the 2012 MDOT Standard Specifications for Construction and as specified herein.

Construction: This work consists of removing curb and integral curb and gutter, where the adjoining pavement or sidewalk remains. When the curb is integral with the pavement, saw cutting of pavement shall be required.

Backfill base material removed with concrete curb or integral curb and gutter as specified in Section 204.03.C to the level necessary for new curb or curb and gutter. The cost of all backfill material or any other approved material is included in the unit price of the pay items for new curb or new curb and gutter, and will not be paid separately.

Backfill other area around curb with material excavated from site only if approved by the Engineer. Selected excavated material, suitable for backfill, will be free from rubbish or debris, organic matter, large stones, concrete fragments, or other road material, lumber, tree roots, or branches. In general, selected excavated material to be suitable for backfill will be restricted to sand or crumbly clay. Blue clay is not considered a suitable backfill material. If there is not sufficient selected excavated material on the project, the contractor shall provide the needed fill material and no additional payment will be made for providing this backfill.

Measurement and Payment: The completed work for the items below will be measured and paid for per lineal foot at the contract unit price

<u>Pay Item</u>	<u>Unit</u>
Curb, Rem, Modified	Foot

CITY OF DETROIT
SPECIFICATION
FOR
UNDERGROUND SPRINKLER SYSTEMS

1 of 1

DET: SRB

4-20-17

Description: This special provision covers the identification, protection, restoration and modification of underground sprinkling systems as described herein, and incidental to other construction.

Materials: All materials used to restore or modify existing underground sprinkling systems shall be of the same brand, model and specifications as the removed or damaged portion(s) and shall be compatible with the rest of the system.

Construction: Existing lawn sprinklers and irrigation control boxes shall be relocated to accommodate the proposed construction. The Contractor shall exercise care in preserving and protecting existing lawn irrigation systems.

All necessary work associated with the relocation, replacement and reconnection of sprinkler systems shall be as directed by the Engineer. Where replacement of portions of existing systems is necessary, the various components used for replacement shall match and duplicate the existing materials as closely as practicable.

Sprinkler heads and underground piping shall be relocated, restored and reconnected immediately following disruption by construction operations.

During construction activities, the disturbed portions of the system shall be isolated and/or removed in such a way that the undisturbed portions of the system remain operational until the entire system is completely restored. The existing underground sprinkling systems shall be restored or modified so that spray from the sprinkler heads does not spray over sidewalks or into driving lanes of the road.

Measurement and Payment: The completed work shall be paid for at the contract unit price for the following contract item (pay item) which shall include all materials, equipment and labor required to complete this work.

PAY ITEM

Underground Sprinklers, Identify, Protect and Restore, Modified

PAY UNIT

Lump Sum

CITY OF DETROIT
SPECIAL PROVISION
FOR
EXCAVATION, EARTH, MODIFIED

1 of 1

DET:MCS

Revised: 01-12-12

Description. This work consists of excavating materials not otherwise addressed in the contract as a separate work item. This work will be done in accordance with section 205 of the 2012 Michigan Department of Transportation (MDOT) Standard Specifications for Construction, except debris and non hazardous material when encountered, shall not be paid for separately. Experience has shown that most or all of earth excavation may be debris and may require hauling to special disposal sites which will accept this type of material.

Measurement and Payment. "Excavation, Earth, Modified" will be measured per cubic yards. The contract unit price will be payment in full for furnishing all labor, equipment, and materials necessary to excavate and dispose of the material. Where masonry and concrete structures and heavy foundations are encountered, their removal will be paid for as specified for these items.

Pay Item

Excavation, Earth, Modified

Pay Unit

Cubic Yard

CITY OF DETROIT
SPECIFICATIONS
FOR
DRAINAGE STRUCTURE CLEANING AND SEWER LEAD CLEANING

DET: GJM

1 of 1

10-02-15

Description: The work of drainage structure cleaning consists of cleaning existing catch basins and manholes in the area of the project where directed by the Engineer. The work of sewer cleanout consists of cleaning sewer lines between catch basins and between catch basins and manholes.

Construction: When necessary and as directed by the Engineer, the work shall be performed in accordance with Section 403.3.G of the 2012 MDOT Standard Specifications for Construction and as modified herein.

Cleaning shall be by high velocity hydro-cleaning (jetting). Mechanical cleaning shall only be used when authorized by the Engineer. Contractor shall take precautions to protect the sewer lines from damage.

No debris shall be accumulated on site except in totally enclosed containers approved by the Engineer. All material deposits shall be removed from site and disposed of at an approved location.

Some of the catch basins, manholes and sewers may be completely filled. The Engineer shall determine actual condition and necessity for cleaning prior to cleanout. Cleaning shall restore 90% of the pipe's carrying capacity.

Measurement and Payment: "Dr Structure Cleaning, Modified" will consist of cleaning catch basins and manholes, and shall be paid for at the contract unit price each, and will include all equipment and labor necessary to clean each catch basin or manhole, including installation of bulkheads as necessary and hauling away and disposing of any waste and debris generated.

"Dr Structure Lead, Cleaning, Modified" consists of cleaning sewers between catch basins or between catch basins and manholes, and shall be paid for at the contract unit price per foot which will include payment for furnishing all equipment and labor to clean sewers lines regardless of size, temporary bulkheads, and hauling away and disposing of any waste and debris generated.

<u>Pay Item</u>	<u>Pay Unit</u>
Dr Structure Cleaning, Modified	Each
Dr Structure Lead, Cleaning, Modified	Foot

CITY OF DETROIT
SPECIFICATIONS
FOR
DRAINAGE STRUCTURE COVERS

DET: GJM

1 of 1

01-19-2016

Description: The work shall consist of furnishing and placing metal frames and covers; removal of existing drainage structures.

Materials:

Gray Iron Castings shall be as specified in Section 908.05. Gray Iron Castings of the 2012 MDOT Standard Specifications for Construction, City of Detroit DPW/CED DWSD Manhole and Catch Basin Drawings No's. 101 thru 113, and as specified herein.

The manhole and catch basin frame and its cover or grate shall constitute one unit. Each unit shall conform to the detailed requirement of the respective DPW/CED DWSD drawing. Each unit shall have a weight, with a tolerance of plus or minus 3 percent, of that specified below:

Manhole Frame and Cover

East Jordan ERGO Assembly or Approved Equal
Product Number: 00104051L01 (Sewer) Weight 235 Lb

Catch Basin Rectangular Frame and Flat Grate

East Jordan Assembly or Approved Equal
Product Number: 00500063B01 Weight 219 Lb
Product Number 00500063B02 Weight 241 Lb

Construction

The metal frames, covers, and grates on existing manholes and catch basins that are to be reused shall be carefully removed to prevent damage. Any reusable casting damaged by the Contractor shall be replaced with a new casting without additional cost to the City. All salvaged castings that are not to be used on the work shall become the property of the Contractor and shall be promptly removed from the job site.

Measurement and Payment: Drainage Structure Cover unit prices shall include the furnishing and installation of the manhole, catch basin and inlet covers of the appropriate type.

Pavement removal and replacement, when required will be paid for separately.

Pay Item

Pay Unit

Dr Structure Cover, Modified

Each

CITY OF DETROIT
SPECIFICATIONS
FOR
STRUCTURE COVER ADJUSTMENT,
RECONSTRUCTING STRUCTURE, AND
WATER SHUTOFF ADJUSTMENT

DET: AHS

1 of 3

01-19-18

Description: The work consists of adjusting utility structure covers in accordance with the applicable provisions of Section 403 and Section 823 of the 2012 Michigan Department of Transportation (MDOT) Standard Specifications for Construction, except as modified herein.

Utility structure cover adjustments will include all Public Lighting Department (PLD) manholes, and all Detroit Water and Sewerage Department (DWSD) gate wells, sewer manholes and catch basins whose covers are required to be raised or lowered to meet the required new pavement elevations. Water shutoff adjustments will include DWSD water shutoff boxes or stop boxes, and PLD hand holes which are required to be raised or lowered to meet the required new pavement elevations.

Before starting this work, the Contractor and the Engineer, or his representative, shall jointly inspect each structure to evaluate its interior conditions. Access to the structure will be provided by the Contractor. The Engineer, or his representative, shall determine whether the structure is to be adjusted or reconstructed. The Engineer shall also determine if any structure cleaning is necessary to remove existing debris. The Contractor shall remove all debris from the structure resulting from the Contractor's operations.

Materials: Materials used in the adjustment and reconstruction of drainage structures shall be as specified in Section 403. Drainage Structures, of the 2012 MDOT Standard Specifications for Construction.

Construction: Where called for on the plans or authorized by the Engineer, existing structure covers shall be adjusted to the proper elevation in accordance with Section 403 of the 2012 MDOT Standard Specifications for Construction, except as modified herein.

For Case 1 structures, saw cut full depth and remove the adjacent concrete and/or HMA pavement, curb, curb and gutter, or sidewalk as necessary to adjust the structure and cover. Remove an area of pavement and curb at least five (5) feet by five (5) feet around the structure. The existing frame and cover shall be carefully removed and the upper portion of the existing utility structure repaired as necessary and raised or lowered as required. The frame and cover shall then be reset on the adjusted structure so constructed as to hold them firmly in place and reset on a full mortar bed so as to fit the required new pavement grade and cross section. Replace adjacent concrete and/or HMA pavement, curb, curb and gutter, or sidewalk to match existing grades or to the required new pavement grade and cross section.

Case 2 structures shall be those that are located outside of existing pavement, curb, and curb and gutter.

When the existing frames and covers are unacceptable for reuse as determined by the Engineer, new frames and covers shall be furnished and installed. Drainage structure frames and covers shall be as specified in the City of Detroit "Specifications for Manholes and Catch Basins", and as specified in the Plans for DWSD Watergate and PLD Manhole covers. Any reusable frame and cover damaged by the Contractor shall be replaced by the Contractor at no cost to the City. The frames and covers that are not to be used on the work shall become property of the Contractor and shall be promptly removed from the jobsite and properly disposed of.

Where the structure is in need of repair, as determined by the Engineer, in excess of the adjustment limits set forth herein, the existing structure shall be broken down and rebuilt with new materials as specified in the City of Detroit Specifications for Manholes and Catch Basins, to the required new pavement elevations.

A finished concrete collar shall be placed around any structure adjusted that is within five (5) feet of the Detroit Thermal (formerly Detroit Edison) steam lines, as directed by the Engineer. The cost of this shall be paid for separately as Pvmt Repr, Nonreinf Conc, 10 inch, Modified, and measured by the surface area of the concrete collar.

Non-ferrous handholes and covers used by PLD and other City Utilities are made of fiberglass, copolymer propylene or similar material. These structure and covers shall be adjusted by a qualified electrical contractor. The removal of concrete around the perimeter of a non-ferrous handholes shall be performed with light chipping hammers to insure that no damage is done to the handhole, cover or any conduit or other utility that may feed the structure. Any damage to structures, conduits, cable and wiring shall be repaired by the Contractor at no cost to the City or utility.

For HMA pavement sections, immediately before placing the HMA top course or overlay, make final adjustments to drainage structure covers. Equipment will not be permitted to operate over adjusted structures for a period of twenty four (24) hours after their completion, unless otherwise approved by the Engineer.

Measurement and Payment: The completed work as described for adjusting or reconstructing structure will be measured as units and will be paid for at the Contract Unit Price, which price will be payment in full for furnishing all materials, equipment and labor; removal and replacement of concrete or HMA pavement, curb, curb and gutter, sidewalk; excavation, backfilling, disposal of surplus material, removal of all debris and foreign material from the structure (including the sump); adjusting the structure and cover to the required new pavement grade and cross section, with the existing or new cover; and providing access to all structures for inspection, as directed by the Engineer.

Structure damage due to the Contractors operations shall be repaired at the Contractors expense.

"Dr Structure Cover, Adj. Case __, Modified" shall include the above described work necessary to raise or lower the existing catch basin, manhole or gate well rim elevation involving adjustment, repair or replacement of less than or equal to three (3) layers of bricks, including mortar, regardless of whether or not it is necessary to remove a cone section to accommodate the rim elevation adjustment.

“Reconstructing Dr Structure, Case __, Modified” shall include the above described work necessary to raise or lower the existing catch basin, manhole or gate well structure and cover involving adjustment, repair or replacement of more than three (3) layers of bricks, including mortar, and may include the removal of a cone section to accommodate the rim elevation adjustment.

“Water Shutoff, Adj, Case __, Modified” shall include the above described work necessary to raise or lower the existing structure and cover of water DWSD water shutoff boxes or stop boxes, and PLD hand holes.

<u>Pay Item</u>	<u>Pay Unit</u>
Dr Structure Cover, Adj, Case 1, Modified	Each
Dr Structure Cover, Adj, Case 2, Modified	Each
Reconstructing Dr Structure, Case 1, Modified	Each
Reconstructing Dr Structure, Case 2, Modified	Each
Water Shutoff, Adj, Modified	Each

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
HOT MIX ASPHALT PRICES FOR ADJUSTMENTS

MDOT:LAP:GCM

1 of 1

APPR:MAS:KAS:03-05-19

a. Description. This special provision identifies the price(s) that will be used in all payment adjustments for work related to hot mix asphalt item(s) used in conjunction with this contract.

If the Contractors bid is lower than the established base price any positive adjustment will use the Contractors bid in the calculation for the adjustment. If the Contractors bid is lower than the established base price any negative adjustment will use the base price established herein in the calculation for the adjustment.

If the Contractors bid is higher than the established base price any positive adjustment will use the Contractors bid in the calculation for the adjustment. If the Contractors bid is higher than the established base price any negative adjustment will use the Contractors bid in the calculation for the adjustment.

b. Base Unit Prices. The base price(s) shown below will be used as specified above in calculating adjustments for the pay item(s) listed herein:

Pay Item Code	Pay Item Name	Unit	Base Price
5010025	Hand Patching	Ton	\$165.22
5010051	HMA, 4E3	Ton	\$67.04
5010057	HMA, 5E3	Ton	\$70.95
5010058	HMA, 5E10	Ton	\$77.55
5017031	Conditioning Existing Pavement, Modified	Ton	\$70.00
5017031	HMA Approach, Driveway, Modified	Ton	\$350.00
5017031	HMA Approach, Modified	Ton	\$120.00

CITY OF DETROIT
SPECIAL PROVISION
FOR
HMA AND CONCRETE PAVEMENT
SEQUENCE OF OPERATIONS AND REQUIREMENTS

DET: GJM

1 of 1

11-30-15

Once work on a street is begun, the Contractor shall maintain a continuous operation.

The Contractor shall schedule the cold-milling operation so that entire lane width of the roadway is cold milled between road terminus limit before switching over to other lane/side. This is required to avoid having a vehicle travel over milled surface on one side and normal pavement surface other side.

The Contractor shall place a wedge, at the base of driveway approaches, a minimum of six (6) inches wide, the full width of the driveway approach, where milling is greater than 2 inches in depth, to provide a smooth transition onto and off of the milled surface and driveway approach. The cost of the wedge shall be included in the cost of the "Cold Milling HMA Surface" pay item.

At the end of the day, the Contractor shall place a wedge, a minimum of 6 feet wide, the full length of all transverse and longitudinal joints at intersections where milling is greater than 2 inches in depth, to provide a smooth transition onto and off of the milled surface. The cost of the wedge shall be included in the cost of the "Cold Milling HMA Surface" pay item.

All milled surfaces shall be completely resurfaced with leveling course as soon as possible, but not to exceed 48 hours from the milling unless specifically approved otherwise by the Engineer.

Top Course HMA shall be placed only after all base repairs, concrete curb repairs, and structure adjustments and repairs are completed.

All milled pavement surfaces shall be completely resurfaced with leveling and top courses before the seasonal shutdown for the winter.

It is the Contractor's responsibility to establish the finish (final) grade on all streets and to ensure proper (positive) drainage at all locations.

CITY OF DETROIT
SPECIFICATION
FOR
HMA APPLICATION ESTIMATE

DET: AHS

1 of 1

02-25-19

Description: This Specification covers the furnishing and placing of Hot Mixed Asphalt in accordance with Section 501 of the 2012 MDOT Standard Specifications for Construction.

Material: HMA materials shall be as specified in Section 501.02.

The HMA Leveling Surfacing Mixture 4E3 shall have a yield of 220 pounds per square yard with an estimated thickness of 2 inches.

The HMA Top Surfacing Mixture 5E3 shall have a yield of 165 pounds per square yard with an estimated thickness of 1.5 inches.

Performance Grade; PG 64-22

The material for HMA Approach, Modified shall be 2 inches of HMA Mixture 4E3 for leveling, and 1.5 inches of HMA Mixture 5E3 for top surface, having a total yield of 385 pounds per square yard.

HMA Approach, Driveway, Modified shall be HMA Mixture 5E3, having a yield of 165 pounds per square yard.

HMA Prime Coat and HMA Bond Coat shall be included in the HMA pay item and shall meet the requirements specified in Section 904 of the 2012 MDOT Standard Specifications for construction.

The aggregate wear index shall be 260.

Construction: The HMA shall be produced and placed in accordance with Section 501.03 of the 2012 MDOT Standard Specifications for Construction.

Measurement and Payment: The unit price bid shall be full compensation for all labor, equipment, and materials required to place the HMA as specified.

CITY OF DETROIT
SPECIAL PROVISIONS
FOR
COLD MILLING HMA SURFACE, MODIFIED

1 of 1

DET: UP

Revised: 05-08-12

Description This work shall consist of removing HMA pavement or surface by use of cold-milling equipment to prepare the foundation for HMA overlays per section 501.03 of the 2012 Michigan Department of Transportation (MDOT) Standard Specifications for Construction and as specified herein.

The cost of exploration for the existing street car rails when encountered during cold milling shall be included in the work of cold milling HMA surface. Extra payment for cost of actual removal and disposal of any street car rail will be made per section 103.02

The Contractor shall schedule the cold-milling operation so that entire lane width of the roadway is cold milled between road terminus limit before switching over to other lane/side. This is required to avoid having a vehicle travel over milled surface on one side and normal pavement surface other side.

At the end of the day, the Contractor shall place a wedge, a minimum of 6 feet wide, the full length of all transverse and longitudinal joints at intersections where milling is greater than 2 inches in depth, to provide a smooth transition onto and off of the milled surface.

It is the Contractor's responsibility to establish the finish (final) grade on all streets and to ensure proper (positive) drainage at all locations. This work shall included in the work of cold milling and be done at no additional cost to project.

Measurement and Payment The completed work as measured for "Cold Milling HMA Surface, Modified" will be paid for at the contract unit price for the following contract pay item.

Cold milling of existing concrete patches, and establishing finish (final) grade to ensure proper drainage, the cost of exploration for an existing street car rail when encountered during cold milling and wedging for longitudinal and transverse transition when required is included in the work of "Cold Milling HMA Surface, Modified".

The price shall be payment in full for removing the HMA material to the depth specified on the typical cross section sheet, and for transportation and disposal of the material.

Pay Item

Pay Unit

Cold Milling HMA Surface, Modified

Square Yard

CITY OF DETROIT
SPECIFICATION
FOR
CONDITIONING EXISTING PAVEMENT

DET: GJM

1 of 1

11-30-15

Description. This work shall be in accordance with Subsection 501.03.C of the 2012 Michigan Department of Transportation Standard Specifications for Construction including Removing HMA Patches, Joint and Crack Clean Out, and Repairing Pavement Joints and Cracks, Detail 7, and, shall include the application of bond coat as required.

Measurement and Payment. "Conditioning Existing Pavement, Modified" will be measured and paid for by the ton of HMA material placed. The contract price per ton will be payment in full for furnishing all labor, material and equipment required to remove deteriorated or unstable HMA material, to clean the pavement surface and apply any bonding material needed, to clean and prep joints and cracks, and to furnish, place and compact the HMA Mixture 4E3 to prepare the existing pavement for the HMA leveling surface.

HMA Patch, Remove; Joint and Crack, Cleanout, and Pavement Joint and Crack, Repr, Det 7 will not be paid for separately but are included in this item of work.

Full depth Pavement Joint and Crack Repair, Detail 8 is not included in the item of work.

Pay Item

Pay Unit

Conditioning Existing Pavement, Modified

Ton

CITY OF DETROIT
SPECIAL PROVISIONS
FOR
HMA APPROACH, MODIFIED

1 of 1

DET: AHS

Revised: 02-25-19

Description: "HMA Approach, Modified" shall conform to the requirements for "Placing HMA Approaches" of Section 501.03 of the 2012 Michigan Department of Transportation Standard Specifications for Construction except work shall include the construction of Butt Joints when meeting existing pavements and will not be paid for separately. The depth of the Butt Joints shall be as directed by the Engineer. Work at driveway approaches is covered in the Special Provision for HMA Approach, Driveway, Modified in this proposal and will be paid as HMA Approach, Driveway, Modified.

Materials: The HMA mixture for the HMA Approach shall be that specified in the Special Provision for HMA Application Estimate. The HMA mixture to be used for the Butt Joint shall be that used for the leveling HMA mixture as specified in the Special Provision for HMA Application Estimate.

Measurement and Payment: "HMA Approach, Modified" will be measured per ton. The contract unit price shall include all labor, material and equipment necessary to furnish, place and compact the HMA Approach, Modified as shown on the plans or as directed by the Engineer.

Pay Item

Pay Unit

HMA Approach, Modified

Ton

CITY OF DETROIT
SPECIAL PROVISION
FOR
HMA SHOULDER, MODIFIED

1 of 1

DET: AHS

05-24-2019

Description: This work shall include the removal of the existing HMA surface on residential and commercial driveway approaches and the placement and compaction of HMA to provide a smooth transition and positive drainage from the existing approach surface to the new street surface. The work shall conform to the requirements for "Placing HMA Approaches" of Section 501.03 of the 2012 Michigan Department of Transportation Standard Specifications for Construction, except as modified herein.

Material: The material used for residential and commercial driveways shall be as specified in the City of Detroit Special Provision for HMA Application Estimate.

Construction: The driveway approach shall be scraped clean of existing HMA overlay, if any, thoroughly swept clean and be free of moisture and debris before work is started. Bond coat material shall be SS-1h, meeting the requirements of Table 904-4 Anionic Emulsified Asphalts of the Michigan Department of Transportation 2012 Standard Specifications for Construction and shall be applied uniformly at a rate of 0.10 gallons per square yard to the driveway approach and terminate in a neat, straight line at the point indicated by the Engineer. The HMA shall be placed and compacted from the newly constructed pavement surface to a point in the drive which will provide positive drainage from the driveway out to the street flow line.

This work shall be performed after the mainline paving work has cured.

Measurement and Payment: The removal and placement of HMA on residential and commercial driveway approaches will be measured by the weight of material placed in tons, and shall be paid for at the contract unit price per ton which shall be payment in full for furnishing all materials, labor and equipment, including bond coat, required to complete the work as specified.

Pay Item

Pay Unit

HMA Shoulder, Modified

Ton

CITY OF DETROIT
SPECIFICATIONS
FOR
CONCRETE PAVEMENT REPAIR

DET: GJM

1 of 2

11-25-2015

Description. This work shall be in accordance with Section 603. Concrete Pavement Restoration, of the MDOT 2012 Standard Specifications for Construction, and MDOT Standard Plan R-44-F for Concrete Pavement Repair. The work shall consist of saw cutting as necessary for removal of existing concrete base with HMA overlay, preparation of sub base, placing horizontal dowels, placing concrete, joints, finishing, and curing.

Construction. HMA Leveling Course placed over the concrete base repair area shall be removed and paid for in accordance with MDOT Sections 204 and 501 as HMA Surface, Rem.

When removing existing concrete pavement, the pavement shall be removed to an existing joint, or saw cut to a true line with a vertical face along the lines as marked or directed by the Engineer. The pavement shall be saw cut full depth into existing concrete, or as directed by the Engineer. Intermediate saw cuts shall be made as required by Section 603, referenced above. The removal shall be such that there will be no disturbance and/or damage to sections of pavement which are to remain in place. All damaged or undermined pavement caused by the Contractor's operations shall be removed and replaced at the Contractor's expense. The use of a crane and ball type breaking equipment will not be allowed. Pavement removal shall be accomplished with a rubber-tired hydraulic ram or as specified in Section 603 of the MDOT Standard Specifications.

Where subgrade corrections are required due to undesirable or unstable soil conditions as determined by the Engineer, the removal of material and placement of fill shall be performed in accordance with MDOT Section 205, and paid for as Subgrade Undercutting, Type II.

All replacement concrete pavement shall be doweled or anchored to the existing concrete pavement as set forth on Standard Plan R-44-F. All expansion and longitudinal joints shall be restored. Transverse joints within partial width cuts shall be restored to match the joint in other lanes. Transverse joints that fall within full width cuts need not be restored.

The top of the concrete pavement repair shall be placed level with the HMA Leveling Course.

Measurement and Payment. All material, labor and equipment required for constructing concrete pavement repair as specified herein and as shown on the Standard Plans shall be paid for under the unit rates bid for as follows:

Pavt Repr, Nonreinf Conc, ___ inch, Modified, shall include all labor, material and equipment to place the concrete pavement repair including all dowels, anchors, joints, concrete material, finishing and curing.

Pay Item

Pay Unit

Pavt Repr, Nonreinf Conc, 6 inch, Modified
Pavt Repr, Nonreinf Conc, 8 inch, Modified
Pavt Repr, Nonreinf Conc, 10 inch, Modified
Pavt Repr, Rem, Modified

Square Yard
Square Yard
Square Yard
Square Yard

CITY OF DETROIT
SPECIAL PROVISION
FOR
CURB, CONC, DETAIL CD, MODIFIED

Page 1 of 1

DET: PAL

REVISED: 02-17-2019

Description: "Curb, Conc, Detail CD, Modified" shall be constructed in accordance with details included in these specifications and the 2012 Michigan Department of Transportation Standard Specifications for construction. No reinforcing bars are required. Joints shall be as shown in Michigan Department of Transportation Standard Plan R-30-Series and as directed by the Engineer.

Method of Measurement and Basis of Payment: "Curb, Conc, Detail CD, Modified" will be measured by the linear foot. The contract unit price shall be payment in full for furnishing all materials, labor and equipment necessary to construct this item.

Pay Item

Pay Unit

Curb, Conc, Detail CD, Modified

Foot

CITY OF DETROIT
SPECIFICATIONS
FOR
SIDEWALK RAMP, ADA, AND
DETECTABLE WARNING SURFACE

DET-AHS

02-25-2019

Description: This special provision covers construction of sidewalk ramp with detectable warning surface.

The work consists of excavating, backfilling, compacting, and grading of the disturbed area, and constructing sidewalk ramp and/or retrofitting ramp with detectable warning surface in accordance with the applicable provisions of Section 803 of the 2012 MDOT Standard Specifications for Construction and the current Department of Public Works, City Engineering Division Sidewalk Ramp and Detectable Warning Details R-28 with City of Detroit Thickness Amendment.

Complete this work in conformance with the American with Disability Act (ADA) provisions as applicable.

Material: The Detectable Warning Surface color shall be will be brick red, Federal Color Number 22144, unless otherwise approved by the Engineer. The color shall be homogeneous throughout the tile.

Construction: Construct sidewalk ramp(s), landings flares and detectable warning surface according to MDOT Standard Plan R-28-Series. The concrete sidewalk and ramp thickness shall be as determined by the City of Detroit and as shown on the Department of Public Works, City Engineering Division Sidewalk Ramp and Detectable Warning Details R-28 with City of Detroit Thickness Amendment, included in these Specifications. The Detectable Warning Surface installation shall also comply with the manufacturer's instructions.

The curb and gutter section at the bottom of the ramp (ramp opening) shall be a full depth curb with a minimum depth of 12 inches, and shall be 18 inches from the back of curb to abutting pavement.

It is also the Contractor's responsibility to incorporate any changes made to the ADA accessibility requirements that may take effect prior to the start date of actual construction. If the Contractor determines that any changes significantly alter the original bid cost, the Contractor may submit a written request to the Engineer or his representative for approval and compensation. Include a cost comparison between the original bid cost and the cost of the ADA required changes in the request.

The contractor shall stamp all concrete with a legible stamp bearing the name of the company and the year of construction. No sidewalk or ramp construction shall commence without a Contractor's stamp on site.

Restore berm areas disturbed beyond sidewalk ramp repair limits to its original conditions. No

separate payment will be made for such restoration, but is considered part of the work item.

Any constructed ramps that do not meet the current MDOT Standard Plan R-28-Series and latest ADA accessibility requirements will be removed and replaced by the Contractor, as directed by the Engineer or his representative, at the Contractor's expense.

Measurement and Payment: The completed work as described herein for Sidewalk Ramp, ADA and Detectable Warning Surface, will be measured as square feet and feet respectively. The contract unit price will be payment in full for furnishing all materials, labor and equipment necessary to construct the ADA ramp and curb and warning surface.

<u>Pay Item</u>	<u>Pay Unit</u>
Sidewalk Ramp, ADA, Modified	Square Foot
Detectable Warning Surface Tile, Modified	Foot

Sidewalk Ramp, ADA, Modified includes the cost of landings, monolithic rolled curbs or side flares along the longitudinal edges of the ramp or landing and curb and gutter opening. The Department will pay for rolled curb adjacent to the non-traffic edge of parallel or combination ramps separately, only if the required height exceeds 18 inches along a continuous run.

CITY OF DETROIT

SPECIFICATION
FOR
SIDEWALKS

DET: AHS

1 of 1

02-27-19

Description: This special provision covers the construction of sidewalk and driveways.

Construction: This item of work includes excavating, backfilling, compacting, and grading of the disturbed area, and construction of concrete sidewalk and driveway.

The concrete sidewalk and driveway shall be removed in accordance with the MDOT Standard Specifications for Construction, Section 204, Removing Miscellaneous Structures and Materials.

Concrete sidewalk and driveway, of the thickness specified, shall be constructed in accordance with Section 803 of the 2012 Michigan Department of Transportation Standard Specifications for Construction. Sidewalk cross slopes shall be between 1% and 2%, sloping towards the street.

Restore berm areas disturbed beyond sidewalk limits to its original conditions. No separate payment will be made for such restoration, but is considered part of the work item.

Measurement and Payment: Concrete sidewalks and driveways of the thickness specified shall be measured in square feet. Payment shall be for the entire flag or flags of sidewalk, or driveway, as marked by the Engineer. The contract unit price shall be payment in full for furnishing all labor, equipment and material necessary to complete the installation of new concrete sidewalk and driveway.

Pay Item

Pay Unit

Sidewalk, Conc, ___ inch, Modified

Square Foot

CITY OF DETROIT
SPECIFICATION
FOR
SIDEWALK WITH TREE ROOTS

DET: AHS

1 of 1

02-27-19

Description: This special provision covers the removal and replacement of sidewalk and driveways which has been raised and/or damaged by tree roots and includes the trimming of the tree roots in conjunction with the sidewalk and driveway replacement.

Construction: This item of work includes removing the concrete pavement, cutting and removing tree roots, removing wood chips and all debris material and properly disposing of same off site; excavating, backfilling, compacting, and grading of the disturbed area; and construction of concrete sidewalk and driveway.

The concrete sidewalk and driveway shall be removed in accordance with the MDOT Standard Specifications for Construction, Section 204, Removing Miscellaneous Structures and Materials.

All roots or stumps under the sidewalk and driveway area and within four (4) inches of the edges of the sidewalk or driveway, shall be ground to a depth that severs the roots from the main root mass or to a minimum depth of eight (8) inches from the proposed finished grade of the top of the sidewalk. All voids resulting from the removal of roots or stumps shall be backfilled within one (1) day of removal. The Contractor shall fill the voids with clean, compacted backfill as specified in MDOT Standard Specifications for Construction, Section 204.03.C. All debris resulting from the grinding process shall be removed from the site and cannot be used as fill. All roots and grindings shall be removed and disposed of within three (3) days of removal/grinding.

Concrete sidewalk and driveway of the thickness specified shall be constructed in accordance with Section 803 of the 2012 Michigan Department of Transportation Standard Specifications for Construction. Sidewalk cross slopes shall be between 1% and 2%, sloping towards the street.

Restore berm areas disturbed beyond sidewalk limits to its original conditions. No separate payment will be made for such restoration, but is considered part of the work item.

Measurement and Payment: "Sidewalk, Conc, __ inch, With Tree Roots, Modified" of the thickness specified shall be measured in square feet. Payment shall be for the entire flag or flags of sidewalk, or driveway affected by tree roots as marked by the Engineer. The contract unit price shall be payment in full for furnishing all labor, equipment and material necessary to complete the installation of new concrete sidewalk and driveway.

Pay Item

Pay Unit

Sidewalk, Conc with Tree Roots, __ inch, Modified

Square Foot

CITY OF DETROIT
SPECIAL PROVISION
FOR
DELINEATOR POST

DET: GWE

1 of 2

Revised: 02-11-2019

Description. This work consists of furnishing and installing delineator posts as shown on the plans and as directed by the Engineer. Complete this work in accordance to the applicable sections of the standard specifications and this special provision. Follow industry standards and conform to the details as shown on the plans.

Materials. Furnish tools and equipment as recommended by the manufacturer and as approved by the Engineer. Use equipment and materials from a single manufacturer throughout the entire project.

Design - The delineator post shall consist of a modified T-shaped tubular post a minimum of 3.00 inches wide by 2.00 inches deep, with 0.125 inch (min.) walls, comprised of flat front and curved rear surfaces and sides to create areas of opposing compression stresses on the inner and outer walls when impacted resulting in superior rebound. All delineator posts shall be capable of sustaining a minimum of twenty five (25) direct wheel-over impacts at 60 MPH (100 km/h) without damage to the post or the reflective sheeting applied to the post. All posts shall be easily replaceable. All posts shall be constructed of UV-stabilized thermo-plastic polyurethane (TPU) for superior durability, conforming to the following material specifications:

Property	ASTM Test	Results
Specific Gravity (min.)	D 792	1.10
Hardness (min.)	D 2240	80 A
Tear Strength (min PSI)	D 624, Die C	600
Tensile Strength @ yield, (min PSI)	D 412	4,000
Tensile Elongation @ break (min. %)	D 412	600
Cold Temp. Impact Test (-7° F)	FL/DOT	Pass

Bases - Delineator posts shall mount to a base unit with two (2) plastic locking pins. For highest visibility and durability, posts shall be mounted to bases of the same color as the post and curb and the corresponding lane line (yellow & yellow, white & white, etc.) and shall be 1.5 # in weight. All bases shall be constructed of a high-impact thermo-plastic styrenic alloy conforming to the following material specifications:

Property	ASTM Test	Results
Specific Gravity (min.)	D 792	1.02
Gardner Impact (min.)	N/A	160
Flexural Strength (min.)	D 790	5,500

Florescent and Standard Colors - Delineator posts and bases shall be constructed of UV-stabilized polymers and colors. The color shall be solid throughout and stabilized to resist UV degradation. In construction work zone areas where orange devices are used, all materials shall be Florescent Orange to improve visibility in low light conditions.

Locking Pins - The delineator posts shall be secured to the base units with rust-proof black plastic locking pins conforming to the same material specifications as the base units to prevent dislocation when posts are impacted and to ease replacement of old posts.

Reflective Sheeting - All posts shall have retro-reflective sheeting applied. The minimum reflective sheeting shall be two (2) 4-inch wide wraps of sheeting, one (1) inch down from the top of the post with a two (2) inch gap between wraps. The sheeting shall be Reflexite ® AR 1000 cube-corner micro-prismatic reflective sheeting for superior brightness, scratch resistance and durability. The color of sheeting shall be as specified in the construction plans.

Lengths - Delineator posts shall be available in lengths from 16 to 48 inches, as specified in the construction plans or procurement details.

NCHRP 350 Acceptance - The delineator posts shall be fully crash-tested on the AASHTO's NTPEP Test Deck and meet requirements for Category 1 devices as specified in NCHRP Report # 350. All delineator posts shall have the acceptance of the U.S. Department of Transportation, Federal Highway Administration. Certifications of acceptance to these standards must be supplied by the manufacturer upon request.

Construction. Delineator posts shall be secured to the roadway with removable and reusable one-piece anchor bolts with a finished hex head, integral washer, dual lead threads and chamfered tip. One-piece bolts shall be used to eliminate improper assembly; dual-thread bolts shall be used to prevent bolts spinning in holes when tightened. All delineator posts shall be completely removable with standard power tools. On bridges, posts shall be adhered to the roadway with approved bituminous adhesive or pressure-sensitive synthetic butyl rubber pads, min. 0.125" thick.

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

Pay Item	Pay Unit
Delineator Post, 36 Inch, White	 Each

Delineator Post will be measured and paid for at the contract unit price per each unit installed. The unit price shall be payment in full for furnishing all labor, equipment and material to furnish and install posts as shown on the plans or as directed by the Engineer.

CITY OF DETROIT
SPECIAL PROVISION
FOR
**METHYL METHACRYLATE (MMA) PAVEMENT
MARKING MATERIAL**

SGJJR:ESM

1 of 2

02-11-19

a. Description. This work consists of providing and applying methyl methacrylate (MMA) permanent pavement markings. Provide markings, shapes, spacing and dimensions as shown on plans.

b. Materials. Select pavement marking material from a single manufacturer for the entire project. Pavement marking material shall meet the follow characteristics:

Binder Resin:

Density	8.1 +/- .35 Lbs/Gal
Tensile	> 400 psi (ASTM D638)
Elongation	> 180% (ASTM D638)
Flash Point	> 10% °C (ASTM D1310)

Aggregate:

Hardness	9 Mohrs Scale
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Preferential Lane Treatment:

Density	18.5+/-0.5 Lbs/Gal
Build Thickness	90 +/-10 Mils
VOC	< 100 Grams/Liter
Pot Life	~15min (AASHTO T237)
Solids	> 99% cured (ASTM D2369)
Skid	> 60 (ASTM E303)
Hardness	50-60 (ASTM D2240)
Water Absorption	< 0.25% (ASTM D570)
Cure Time	< 30 Minutes

The contractor shall provide the Engineer with Material Safety Data Sheets (MSDS) for all materials and supplies used for this contract. The Contractor shall properly dispose of unused material and containers in accordance with the Federal Resource Conservation Recovery Act (RCRA) of 1976 and the Michigan Hazardous Waste Management Act (ACT 64). The Contractor must provide for storage of materials and or equipment.

c. Construction. Place permanent pavement markings in accordance with manufacturer's recommendations. Pavement markings shall be installed at 90 mils build thickness.

d. Delayed Acceptance. See special provision "03SP811(B)", from the Michigan Department of Transportation for specific regulations.

e. 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, Methyl Methacrylate (MMA), Green	Square Foot
_Pavt Mrkg, Methyl Methacrylate (MMA), Bike Directional Arrow, White	Each
_Pavt Mrkg, Methyl Methacrylate (MMA), Bike Sym, White	Each
_Pavt Mrkg, Methyl Methacrylate (MMA), Shared Lane Marking Bike Sym (Sharrow), White, modified	Each
_Pavt Mrkg, Methyl Methacrylate (MMA), Bus Stop Box Line, 12 inch wide Line, Red, modified	Foot

The contract unit price for each of these items includes all labor, material, equipment, and traffic control to furnish and install pavement markings as shown on the plans or as directed by the Engineer. Payment also includes the costs associated with corrective action as referred to in section (d) of this special provision.

City of Detroit
SPECIAL PROVISION
FOR
HAND SPRAYED WATERBORNE PAVEMENT MARKINGS

TED:JF

1 of 4

01-06-17

I. Description. Prepare pavement surfaces and apply by hand wand retro-reflectorized white or selectively colored waterborne pavement markings including legends, symbols, crosswalks, stop bars and miscellaneous lines. Complete this work according to this special provision, the project plans, the 2012 Michigan Department of Transportation Standard Specifications for Construction, and as directed by the Engineer.

II. Materials. Select waterborne pavement marking material from the Qualified Products List (QPL). Use standard glass beads as called for in Section 920 of the Standard Specifications for Construction **except as noted in this provision:**

A. General:

1. All material used in the formulation of the pavement marking paint shall meet the requirements herein specified. Any materials not specifically covered shall meet the approval of the engineer.

B. Composition Requirements:

1. The pavement marking paint shall be a ready-mixed, one component, water-borne traffic quality paint, of the correct color, to be applied to either asphaltic or Portland cement concrete pavement. The composition of the paint shall be determined by the manufacturer. It will be the manufacturer's responsibility to produce a pigmented water-borne paint containing all the necessary co-solvents, dispersant, wetting agents, preservatives and all other additives, so that the paint shall retain its viscosity, stability and all of the properties as specified herein. The manufacturer shall certify that the product does not contain mercury, hexavalent chromium, toluene, chlorinated solvents, hydrolysable chlorine derivatives, ethylene-based glycol ethers and their acetates, nor any carcinogen, as defined in 29 CFR 1910.1200. The certification shall indicate a lead content not exceeding 0.06 percent by weight of the dry film, and the test for chromium content shall be negative.
2. No glass beads will be allowed in the pavement marking paint. Glass beads will be applied after the paint has been applied.

- C. Manufacturing Formulations: The manufacturer shall formulate the pavement marking paint in a consistent manner and notify the engineer of any change of formulation. The formulation of the paint shall be determined by the manufacturer. It will be the manufacturer's responsibility to formulate paint which will meet the quantitative and qualitative requirements of this specification. Any change in the formulation of the paint must be approved by the CITY and Michigan Department of Transportation.

Rev: 02/14/08 PAINTED PAVEMENT MARKINGS 02520 - 2 D. Quantitative Requirements of Mixed Paints:	<u>White</u>	<u>Yellow</u>
Pigment: Percent by weight, ASTM D 3723, Allowable variation from qualifying sample	± 2.0	± 2.0
Non-Volatile Content: Percent by weight, ASTM D 2369, allowable variation from qualifying sample	± 2.0	± 2.0
Viscosity: Krebs Units at 77 ± 1° F, ASTM D 562	70 – 85	70 – 85
Weight per Gallon: Pounds per gallon 77 ± 1° F, ASTM D 1475P, allowable variation from qualifying sample	± 0.3	± 0.3
Vehicle Composition: Vehicle Infrared Spectra, ASTM D 2621, allowable variation from qualifying sample	None	None
pH: ASTM E 70, Allowable variation from qualifying sample	± 1.0	± 1.0
Fineness of Dispersion: HEGMAN, minimum, ASTM D 1210	3.0	3.0
Volatile Organic Compounds: Pounds per gallon of paint, maximum, ASTM D 3960 according to 7.1.2.	2.1	2.1
Flash Point: Degrees F., minimum, ASTM d 93, Method A	100	100
Dry Time to No Pick Up: With no beads: minutes, maximum, ASTM D 711	10	10
Dry Through Time: Minutes, ASTM D 1640 except no thumb pressure is used when thumb is rotated 90° on paint film	20	20
Flexibility: TT-P-1952D	Pass	Pass

The material must be shipped to the job site in sturdy containers plainly marked with the Manufacturer's name and address, the color of the material, date of manufacture and batch number.

Provide certification to the Engineer from the waterborne manufacturer documenting the Contractor's qualifications to place the product in a manner acceptable to the manufacturer and in compliance with the provisions of this specification.

Provide technical data from the manufacturer regarding material type and application rate to the Engineer prior to starting work.

III. Construction.

1. **Placement.** Place waterborne materials and beads according to this specification and the waterborne manufacturer's requirements. Applied markings shall be sharp and well defined and shall provide uniform application of beads.
2. **Surface Preparation.** Surface preparation requirements are dependent on surface conditions. Notes A through E apply to the application of **recessed lines, non-recessed lines and special makings**, as noted:
 - A. New hot mix asphalt (HMA) - "New" HMA has no oil drips, residue, debris, or temporary or permanent markings. Preparation required: Non-recessed lines and special markings- Scarify the proposed marking area using non-milling grinding teeth or shot blasting.
 - B. New Portland cement concrete (PCC) - "New" PCC has no oil drips, residue, and debris, temporary or permanent markings. Preparation required: Non-recessed lines and special markings- Remove curing compound; to be paid for separately as Removing Curing Compound.
 - C. Existing HMA or PCC surface - There may be oil drip areas and/or debris, but no existing markings. Preparation required: Non-recessed lines and special markings- Scarify the proposed marking area using non-milling grinding teeth or shot blasting.
 - D. Existing HMA or PCC surface with existing non-waterborne marking - There may be oil drips and debris. There will be an existing non-waterborne marking. Preparation required: Non-recessed lines and special markings- Completely remove non-waterborne markings; to be paid for as Removal of Special Markings or Removal of Longitudinal Lines.
 - E. Existing surface with existing waterborne marking-HMA or PCC - There may be oil drip areas and or debris where there is an existing waterborne marking.

Preparation required: Non-recessed lines and special markings: Scarify the proposed marking area using non-milling grinding teeth or shot blast or clean chemically per manufacturer's recommendations.

Occasionally an existing waterborne marking may require complete removal. When the Engineer decides complete removal is required, it will be paid for as Removal of Special Markings or Removal of Longitudinal Lines.

Conduct grinding, scarifying, sandblasting, shot blasting, or other operations in such a manner that the finished pavement surface is not damaged and does not exhibit a pattern that will mislead or misdirect the motorist. Use vacuum-type equipment or equivalent to collect and contain debris generated by this operation.

When surface preparation is complete, broom the pavement surface, and follow with compressed air cleaning to remove all residue and debris resulting from the preparation work. Control and minimize airborne dust and similar debris generated by surface preparation and cleanup to prevent a hazard to motor vehicle operation or nuisance to adjacent property.

Do not damage transverse and longitudinal joint sealers on HMA and PCC surfaces when performing removal and cleaning work.

3. **Temperature Limitations.** Use the temperature limitations recommended by the waterborne Manufacturer. Document the temperature at the start of each day of marking operation and at any other time deemed necessary by the manufacturer or the Engineer.

IV. Delayed Acceptance. See special provision "03SP811(B)", from the Michigan Department of Transportation for specific regulations.

V. Measurement and Payment. The completed work as described will be paid for at contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	Pay Unit
Pavt Mrkg, Waterborne, Bike Sharrow Sym, Modified	Each
Pavt Mrkg, Waterborne, Bike Sym and Arrow, White, Modified	Each
Pavt Mrkg, Waterborne, Handicapped Symbol, Blue, Modified	Each

The contract unit price for each of these items includes all labor, material, equipment, and traffic control. Payment also includes the costs associated with corrective action as referred to in section (IV) of this special provision. Removing curing compound or existing pavement markings will be paid for separately as described in section (III.2) of this special provision.

City Of Detroit
Special Provision
for
RECESSING for PAVEMENT MARKINGS

DPW / TED: AMF

1 of 2

02-11-2019

a. Description. This work shall be in conformance with Section 811 of the Standard Specifications for Construction and the following provisions specified herein.

b. Construction. The recessed markings shall be applied in accordance with the manufacturer's installation instructions. All material configurations shall be in accordance with the current Michigan Manual of Uniform Traffic Control Devices and Michigan Department of Transportation Pavement Marking Typical.

Grooved Pavement:

Concrete and Asphalt Road Surfaces.

The grooves shall be made in a single pass dry cut using stacked diamond cutting heads or engineer approved carbide or similar cutting tools, and the equipment used shall be self-vacuuming and leave the cut groove ready for material installation. The equipment and method used for grooving shall be approved by the manufacturer of the recessed material. The bottom of the groove shall have a fine corduroy finish. If a coarse tooth pattern is present, the number of blades is to be increased and the spaces on the cutting head are to be decreased. The pavement marking material shall be placed in the grooves the same day as the cut is made. Grooves shall be clean and dry prior to placing any pavement marking material.

On new surfaces where no permanent markings are present, paint temporary lines (with no beads) exactly where the permanent markings will be placed. Use these lines as a template for the grooving operation.

Groove Width: Material width +1 inch, + / - 1/8 inch
Groove Depth: As recommended by the manufacturer, + / - 5 mils or as shown on the plans
Groove Position: On the lane, 4 inches in from the joint line, + / - 1/8 inch

Permanent Marking Material Application:

Make sure the entire permanent marking is within the recessed area.

c. Measurement and Payment. The completed work as described will be paid for at the contract unit price for the following contract item (pay item):

<u>Contract Item (Pay Item)</u>	<u>Pay Unit</u>
Recessing for Pavt Mrkg, 6 inch, Modified	Foot
Recessing for Pavt Mrkg, 12 inch, Modified	Foot.
Recessing for Pavt Mrkg, 18 inch, Modified	Foot
Recessing for Pavt Mrkg, 24 inch, Modified	Foot

The item of Recessing Pavement Markings includes all equipment and labor necessary to complete the work. Payment for the temporary paint lines (used as a template) is included in the item Recessing Pavement Markings.

CITY OF DETROIT
SPECIAL PROVISIONS
FOR
TOPSOIL SURFACE, FURN, LM, MODIFIED

1 of 1

DET: SRB

11-30-15

DESCRIPTION:

"Topsoil Surface, Furn, LM, Modified" shall be in accordance with Section 816 of the 2012 MDOT Standard Specifications for Construction except as herein modified. The depth of topsoil placed shall vary as required to provide a uniform slope after modifying the top of curb elevation. The preparations of the foundation shall be as specified in the 2012 MDOT Standard Specifications for Construction. Lawn sprinkler systems, if encountered, shall be protected by the Contractor at no extra cost.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT:

"Topsoil Surface, Furn, LM, Modified" shall be measured and paid for per cubic yard (loose measure). The contract unit price shall be payment in full for furnishing all materials, labor and equipment necessary to complete the work.

Pay Item

Pay Unit

Topsoil Surface, Furn, LM, Modified

Cubic Yard

CITY OF DETROIT
SPECIFICATION
FOR
SIDEWALK REPAIR NOTIFICATIONS

1 of 1

DET: PAL

02-15-2019

Description: The Contractor shall provide notification in the form of door hangers to residents and businesses impacted by the pending sidewalk and ADA ramp construction activities.

Material: Specifications for the door hangers are as follows:

Door Hanger Size:	5 ½ inches by 17 inches
Page orientation:	Portrait
Paper quality:	80 lb bright orange card stock with aqueous coating
2-sided printing:	Yes
Color printing:	Black and White

Each door hanger will be printed with the notification in three languages; English, Arabic and Spanish as indicated in the example provided with this specification. A template for the door hanger will be provided by the Engineer.

Construction: One door hanger is to be hung on the accessible front door or gate of every residence or business impacted by sidewalk repair activities a minimum of three (3) calendar days and no more than seven (7) calendar days in advance of sidewalk removal. Impacted residents and businesses include the location where sidewalk flags are to be replaced and any neighboring residents or businesses whose access to their property may be limited by the construction activities.

Measurement and Payment: The completed work of hanging the sidewalk notifications will be paid based on the percent of completed construction work. The contract unit price will be payment in full for furnishing all labor, equipment, and materials to print and hang the door hangers.

Pay Item

Pay Unit

Door Hanger Notifications, Modified

Lump Sum

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
PROGRESS SCHEDULE

CFS:JJG

1 of 1

APPR:MB:LFS:01-09-18
FHWA:APPR:03-01-18

Delete the definition for Progress Schedule in subsection 101.03, on page 12 of the Standard Specifications for Construction, in its entirety and replace with the following:

Progress Schedule. A sequential listing of all the controlling operations and the estimated time the operations will remain controlling. The progress schedule is submitted by the Contractor after award and prior to starting work and is reviewed and approved by the Department. When approved, the progress schedule, or updated progress schedule, will become part of the contract.

Delete subsection 102.14, on page 22 of the Standard Specifications for Construction, in its entirety.

Delete the first sentence in the second paragraph of subsection 108.05, on page 74 of the Standard Specifications for Construction, in its entirety and replace with the following.

Submit a critical path method (CPM) schedule if required in the contract documents. Submittal of a progress schedule will not be required as the CPM schedule will replace the progress schedule.

Add the following paragraphs directly below the first paragraph of subsection 108.05.A.1, on page 74 of the Standard Specifications for Construction.

The progress schedule is to be submitted by the Contractor to the Engineer within 7 calendar days of award and prior to starting work.

The Engineer will provide documented approval, comments, or rejection within 7 calendar days of receipt of the Contractor's submittal, resubmittal, or responses.

The Contractor must resolve all responses within 7 calendar days of receipt of any Engineer requests or rejections.

If the progress schedule is not approved within 30 calendar days of contract award, the Engineer may withhold all or part of contract payments until the progress schedule is approved.

Delete the last sentence in the first paragraph of subsection 108.05.A.2, on page 74 of the Standard Specifications for Construction in its entirety.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
CONTRACTOR PERFORMANCE EVALUATIONS

CFS:MB

1 of 2

APPR:JJG:DBP:06-07-17
FHWA:APPR:06-07-17

a. Description. Project management staff will evaluate the Contractor's performance on this project and the evaluation may be used as a basis for modifying the prequalification ratings of the Contractor. An evaluation may be issued during the course of a project (interim) and will be issued after completion of a project (final). The criteria used for the evaluation will be provided by the Engineer upon written request at the preconstruction meeting or found on the MDOT web site. Any action to modify the Contractor's prequalification ratings will be taken in accordance with the duly promulgated prequalification rules.

If an interim contractor performance evaluation is issued and regardless of whether the Contractor requests a meeting to discuss a Contractor Performance Evaluation, project management staff may require the Contractor to submit a performance improvement plan to address needs identified in the Contractor Performance Evaluation and to attend a meeting to discuss the improvement plan. After the meeting is held, the project management staff may approve the plan or require changes to the plan. Resubmit the plan if changes are required. Performance improvement plans must be implemented per the time frame in the plan as approved by the Engineer. If the Contractor does not implement the plan as approved, MDOT will consider the Contractor to be in non-compliance and will take action as described under section c of this special provision.

Within 21 days of the receipt of a Contractor Performance Evaluation, the Contractor may make a written request to meet with project management staff to review the evaluation. As a result of this meeting, the evaluation may be left unchanged or revised as deemed appropriate by the Engineer. The Engineer will then give the Contractor written notice with the final Contractor Performance Evaluation. If the meeting is not requested within the 21-day period, the original evaluation becomes the final and will not be subject to later contest or appeal.

b. Appeals.

1. Appeal of Evaluation. Within 14 days after the date a performance evaluation becomes final and is received by a Contractor, they may file a written appeal of any rating of seven or below to the Engineer. The written appeal must contain documentation supporting the Contractor's position that the rating is not warranted. The appeal will be considered by a Contractor Performance Evaluation Appeal Panel. If no appeal is filed within the 14-day period, the evaluation becomes final and will not be subject to later contest or appeal. Interim Contractor Performance Evaluations cannot be appealed.

2. Appeal of Performance Improvement Plan. Within 14 days after the date that a performance improvement plan is approved and sent to the Contractor, the Contractor may file a written appeal of that plan to the Engineer and request to appear before a Performance Evaluation Appeal Panel. Documentation must include the reasons for the appeal. If a timely

written appeal is not filed, the performance improvement plan becomes final and will not be subject to later contest or appeal.

An appeal filed by a Contractor will be considered by a Contractor Performance Evaluation Appeal Panel. The panel will be composed of three licensed professional Engineers from the Department (following the format of a Central Office Review Panel) who were not directly involved in the management of the project. This panel will review appeals on all Contractor Performance Evaluations for this project. The Contractor and the Engineer will be required to submit supporting documentation relevant to the appeal and will attend a formal appeal hearing. Upon concluding its review, the panel will confirm or modify the Contractor Performance Evaluation. The panel will, within 30 days, send the Contractor and Engineer written notice of its decision along with a copy of the modified Contractor Performance Evaluation if applicable. The original or modified Contractor Performance Evaluation is final and constitutes the Department's decision; it is not subject to further contest or appeal.

c. Non-Compliance. If a Contractor fails to honor a request by project management staff to submit a performance improvement plan or to meet to discuss it, or if a Contractor fails to carry out an approved performance improvement plan, that failure may be used as a basis for modifying the prequalification ratings of the Contractor. Any action to modify the Contractor's prequalification ratings will be taken in accordance with the duly promulgated prequalification rules.

d. Subcontractors. For purposes of this special provision, the word "Contractor" includes subcontractors. Project management staff will evaluate the performance of subcontractors in accordance with this special provision.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
ELECTRONIC TRANSMITTAL OF CONTRACT DOCUMENTS

CSD:JDM

1 of 1

APPR:DAP:DBP:07-13-15
FHWA:APPR:07-16-15

Delete the first sentence in subsection 102.15, on page 22 of the Standard Specifications for Construction, and replace with the following:

The Department will provide the contract and bond forms electronically to the determined low Bidder, using ProjectWise. The low Bidder will receive notification of the documents availability from MDOT-Awards@michigan.gov at the e-mail address provided to the Department. The determined low Bidder will be responsible for printing the contract documents for return to the Department.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
LOW BID WITHDRAWAL PRIOR TO CONTRACT AWARD

CSD:JDM

1 of 1

APPR:JJG:DBP:07-02-13

FHWA:APPR:07-10-13

Add the following sentence to the end of the last paragraph in subsection 102.17, on page 24 of the Standard Specifications for Construction:

A determined low bidder whose bid is withdrawn prior to contract award cannot participate as a subcontractor, supplier, or trucker on the project.

Add the following sentence to the end of the fifth paragraph in subsection 108.01. on page 72 of the Standard Specifications for Construction:

The Contractor may not hire, a determined low bidder on a project who has withdrawn a bid prior to award, as a subcontractor, supplier, or trucker on the same project.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
DISADVANTAGED BUSINESS ENTERPRISES GOAL AT TIME OF BID

CSD:LFS

1 of 2

APPR:CRR:DBP:08-29-18
APPR FHWA:08-30-18

Add the following paragraphs directly below the first paragraph of the subsection 102.15, on page 22 of the Standard Specifications for Construction.

On projects with a DBE goal:

A. If the electronic transmittal of the contract and bond forms to the determined low Bidder occurs later than 5 calendar days of the bid letting, and the Department has not received the DBE Participation Sheets or Abbreviated Contractor Good Faith Effort Application from the otherwise determined low Bidder, the Department may award the contract to the next low Bidder, or otherwise exercise its discretion in accordance with subsection 102.13.

B. If the electronic transmittal of the contract and bond forms to the determined low Bidder occurs prior to 5 calendar days of the bid letting, and the Department does not receive the DBE Participation Sheets or Abbreviated Contractor Good Faith Effort Application from the determined low Bidder within 5 calendar days of the bid letting, the Department may award the contract to the next low Bidder, or otherwise exercise its discretion in accordance with subsection 102.13.

Add the following paragraph directly below the first paragraph of the subsection 102.17, on page 23 of the Standard Specifications for Construction.

On projects with a DBE goal, the determined low Bidder's failure to submit the overall DBE percentage with the bid or the determined low Bidder's failure to submit the DBE Participation Sheets or Abbreviated Contractor Good Faith Effort Application within 5 calendar days of the bid letting as specified in subsection 102.18 will result in the payment of the bid guaranty to the awarding authority if the Bid Appeal Committee denies the appeal as outlined in subsections 102.11 and 102.12.

Delete the second paragraph of subsection 102.18, on page 24 of the Standard Specifications for Construction in its entirety and replace with the following:

All Bidders must provide the overall DBE percentage they have attained at time of bid within the DBE Goal folder of the Expedite bid file on all projects with a DBE goal designation.

The two lowest Bidders, regardless of bid status (as checked, if available, or as submitted, if TBA), must provide Disadvantaged Business Enterprise (DBE) Participation Sheets within 5 calendar days of the bid letting. Submit this information using Form 0178 via e-mail to MDOT-Awards@michigan.gov.

If either of the two lowest Bidders, regardless of bid status (as checked, if available, or as submitted, if TBA), are unable to meet the DBE participation goal, an Abbreviated Contractor Good Faith Effort Application must be provided within 5 calendar days of the bid letting. Submit this information using Form 0188A via e-mail to MDOT-GFE@michigan.gov. This submittal must include the DBE Participation Sheets that will be used to meet any portion of the DBE goal.

A Bidder who fails to meet the DBE participation goal will be deemed ineligible for award of the contract subject to the provisions of subsection 102.18.A.

Delete subsection 102.18.A, on page 25 of the Standard Specifications for Construction in its entirety and replace with the following:

If a determined low Bidder is unable to meet the DBE participation goal, additional information relating to their Abbreviated Contractor Good Faith Effort Application specified in subsection 102.18, will be required. That additional information will be submitted in accordance with the current Department DBE Program Procedures. The contract will not be awarded until a determination is made by the Department.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
JOINT/TWO-PARTY CHECKS

CSD:LFS

1 of 1

APPR:JJG:DBP:06-23-16
FHWA:APPR:06-23-16

a. Description. This special provision establishes the requirements for parties desiring a joint/two-party check arrangement.

b. Requirements. Parties desiring a joint/two-party check arrangement must submit an *Application to Use Joint Checks* (MDOT Form 0183) to the Department as described on Form 0183. An acceptable joint check arrangement must include the following:

1. Prime contractor/payor cannot require the subcontractor to use a specific supplier or the prime contractor's negotiated price;
2. Subcontractor is more than an extra party in releasing the check to the material supplier;
3. Subcontractor negotiates the quantities, price and delivery of materials;
4. Prime contractor/payor issuing the check acts solely as guarantor;
5. Subcontractor releases the check to the supplier;
6. Only a short term arrangement (no more than two seasons) with the purpose being establishment of or increase of subcontractor's credit line with the material supplier; and
7. Subcontractor is responsible to both furnish and install the material/work item.

Copies of cancelled joint checks issued from the prime/payor to a Disadvantaged Business Enterprise (DBE) and supplier must be submitted by mail, fax, or e-mail to the MDOT Office of Business Development upon request.

c. Measurement and Payment. Joint/Two-Party Checks arrangements will not be paid for separately, but will be included in costs for other pay items.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
DISSEMINATION OF PUBLIC RELATIONS INFORMATION

CSD:JDM

1 of 1

APPR:JAT:DBP:07-01-14

FHWA:APPR:07-08-14

a. Description. This special provision establishes the requirements for dissemination of any public relations communications and/or products intended for an external audience pertaining to this contract. Dissemination must not be made without prior written approval from the Department, Office of Communications, and then only in accordance with explicit instructions by the Department. This includes the use of the Michigan Department of Transportation (MDOT) logo.

A violation of this provision may be considered a default of contract and the Department may exercise its rights in accordance with subsection 108.11 of the Standard Specifications for Construction.

b. Public Relations Information. Examples of communications and/or products may include, but are not limited to: brochures, flyers, invitations, programs, postings on social media sites or web sites, new or updated video, digital versatile disk (DVD) productions, or video sharing productions, exhibits, presentations, or any other printed materials intended for an external audience.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
DEBRIS OR MATERIALS IN TRAFFIC LANES

CFS:BRZ

1 of 1

APPR:EMB:DAJ:01-10-08
FHWA:APPR:06-01-11

Delete Subsection 104.07.B.2 on page 36 of the Standard Specifications for Construction, in its entirety and replace it with the following:

2. **Construction Safety Program.** Before beginning work on the project, the Contractor must submit a written "Construction Safety Program" that outlines the plan and procedures for preventing and mitigating accidents and fires on the project and meeting all health and safety requirements of the contract. Also in the program include provisions for meeting the requirements of subsection 812.03 and details for the materials and equipment that will be used to prevent construction related debris or materials from entering the open lanes of traffic and what actions, including traffic control measures, will be taken to immediately and safely remove the debris or material from the roadway. The Contractor must meet with the Engineer to discuss the "Construction Safety Program" and to develop mutual understandings to govern the administration and enforcement of the program.

Replace the second sentence in the first paragraph of Subsection 104.07.C.3 on page 37 of the Standard Specifications for Construction with the following:

The Contractor is responsible, at the Contractor's expense, to provide the necessary materials and equipment to prevent construction related debris or materials from entering the open lanes of traffic. This includes protection of traffic controls, removal of spilled materials or debris from the roadbed or drainage courses, and repair of damaged facilities necessary for public travel and safety.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
HIGH VISIBILITY CLOTHING

SSA:JDG

1 of 1

APPR:MWB:CRB:05-25-18

FHWA:APPR:06-01-18

Add the following, to the end, of subsection 104.07.B, Safety and Health Requirements, on page 36 of the Standard Specification for Construction:

4. **Worker Visibility.** All workers must wear high-visibility safety apparel as specified in the MMUTCD.

Costs incurred to comply with this requirement will be the responsibility of the Contractor.

Revise the second paragraph of subsection 812.03.G.8, on page 619 of the Standard Specification for Construction to read:

Equip traffic regulators with the following:

- a. High-visibility safety apparel as specified in the MMUTCD;
- b. "Stop/Slow" or "Stop/Stop" sign paddles; and
- c. A two-way radio system and a standby back-up system, if traffic regulators are not visible to each other.

Delete the subsection 922.11.B, on page 944 of the Standard Specification for Construction in its entirety and replace with the following:

- B. **Traffic Regulator's High-Visibility Safety Apparel.** Traffic regulators must wear high-visibility safety apparel as specified in the MMUTCD.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
VALUE ENGINEERING CHANGE PROPOSAL

CFS:MB

1 of 4

APPR:CJB:DBP:05-31-18
FHWA:APPR:06-14-18

a. Description. A Value Engineering Change Proposal (VECP) modifying plans, specifications, or other contract requirements may be submitted for this project if the proposed change results in reduced construction cost, a higher quality product, improved safety, or a shorter contract time. The estimated cost savings must be quantifiable in relation to the contract cost. No work can begin before written authorization. The proposed change must not alter the essential functions or characteristics of the project or significantly delay the completion of the project. A VECP or conceptual VECP will only be considered after project award. Essential functions and characteristics include, but are not limited to, service life, operating costs, ease of maintenance, desired appearance, impact on utilities and right of way, mobility and safety of the motorist, bicyclist and pedestrian; design standards, and safety standards. This specification does not restrict the Contractor from proposing improvements to the project that may not result in net cost savings. A conceptual VECP stating the basic concept and approximate cost savings may be submitted for preliminary consideration.

b. Submittal of Conceptual VECP. Submit a Conceptual Proposal for the preliminary evaluation. Upon review by the Engineer, one of the following actions will be taken:

- Conceptual approval and a request for the Contractor to submit a VECP.
- Request for additional information.
- Denial of the VECP.

Preliminary review of a conceptual proposal reduces the Contractor risk of subsequent denial and does not commit the Department to eventual approval. Submit the following information for each Conceptual VECP using the Value Engineering Change Proposal Form (Form # 1962) marked Conceptual VECP.

1. A description of the difference between the existing pay items and the proposed changes, and expected benefits.
2. A set of conceptual plans and a description of proposed changes to the pay items.
3. An estimate of the anticipated cost savings or increase.
4. A date by which the Department must make a decision to avoid delays to the existing contract and obtain the cost savings. Also include information on the amount of time necessary to develop the full proposal and impacts to the progress schedule.
5. If impacting maintenance of traffic provisions, identify proposed changes and impacts to the Special Provision for Maintaining Traffic.

After approval of Conceptual VECP, the Contractor must follow section c of this special provision for the Final VECP.

c. Submittal of Final VECP. Submit the following information for each VECP using Value Engineering Change Proposal Form (Form # 1962) marked Final VECP.

1. A description of the difference between the existing contract and the proposed change, and the advantages and disadvantages of each, including effects on service life, operating costs, ease of maintenance, desired appearance, impact on utilities and right of way, mobility and safety of the motorist, bicyclist and pedestrian; design standards, and safety standards.
2. A complete set of plans, if necessary, and specifications showing the revisions relative to the original contract. This portion of the submittal must include design notes and construction details. If the proposal has plans, these must be signed and sealed by the Contractor's Professional Engineer licensed in the State of Michigan.
3. All costs and proposed unit prices must be documented by the Contractor and must include a cost comparison summarizing all the items the VECP replaces, reduces, eliminates, adds, or otherwise changes from the original contract on a spreadsheet.
4. A date by which the Department must make a decision to avoid delays to the existing contract and to obtain the proposed cost savings.
5. If impacting maintenance of traffic provisions, identify proposed changes and impacts to the Special Provision for Maintaining Traffic. If the submitted revisions to the maintaining traffic provision are approved and require any corrections, the Contractor is responsible for all additional costs related to corrective measures.
6. A statement detailing the affect the proposal will have on the time for completing the contract and impacts to the critical path and progress schedule.
7. A description of any known uses or testing of the proposed changes and the conditions and the results.
8. If the VECP submittal includes pay items associated with a warranty, include the latest version of the warranty specification.

d. Evaluation. By submitting the VECP, the Contractor agrees not to hold the Department liable for its decision or for any delays to the work attributable to the VECP. Decisions on VECP's are not subject to appeal. Work on the project will continue in accordance with the requirements of the contract until a work order is issued which incorporates the VECP changes. The Department has final authority of the acceptability of a VECP and of the estimated net savings attributable to the adoption of all or any part of the VECP. If, in the judgment of the Engineer, contract prices do not represent a fair measure of the value of work to be performed or to be deleted, the Engineer will use other means to determine the estimated net savings.

The Department may modify a VECP, with the concurrence of the Contractor, in order to make it acceptable. The Contractor's share of the savings will be based on the modified VECP.

If the VECP is accepted, in whole or in part, the written acceptance will be issued by a work order and followed with a contract modification. The work order and contract modification will include

the necessary changes in the plans and specifications and any conditions upon which the approval is based. Acceptance of the VECP will not extend the time of contract completion unless specifically provided for in the work order and contract modification.

A VECP will be evaluated in accordance with the following:

1. The Engineer will determine if a VECP qualifies for consideration and evaluation. The Engineer may deny any VECP that requires excessive time or costs for review, evaluation or investigation. The Engineer may deny any VECP that is not consistent with the Department's design policies and criteria for the project.

2. The Department will not accept a VECP that is similar to a change in the plans or specifications under consideration by the Department for the project at the time the proposal is submitted; nor will the Department accept a proposal based upon, or similar to, standard specifications, general use special provisions or standard drawings adopted by the Department after the advertisement for the contract. The Department reserves the right to make such changes without compensation to the Contractor under the provisions of subsection 103.02 of the Standard Specifications for Construction.

3. The Contractor will have no claim against the Department for additional costs or delays resulting from denial or untimely acceptance of a VECP. These costs include but are not limited to: development costs, loss of anticipated profits, increased material or labor costs, or untimely response.

4. A VECP will be denied if equivalent options are already provided in the contract.

5. A saving resulting solely from the elimination or reduction in quantity of a contract pay item will not be considered as a VECP. A saving resulting from the elimination or reduction in quantity of a pay item specified as part of a VECP may be considered.

6. In calculating the value of cost savings, the Department has the right to disregard the Contract bid prices, if such prices do not represent the value of the work to be performed or to be deleted, and has the right to calculate the savings based on reasonable cost for such work.

7. A VECP cannot be used to alter incentive and disincentive rates and maximum payments on A + B and/or lane rental projects.

8. A VECP will be denied if the design consultant for the contractor is also the design consultant for the Department or other apparent conflicts of interest exist.

9. A VECP may be denied if it was rejected as a Value Engineering alternative during the development phase.

e. Time Frame for VECP Evaluation. The Contractor will be notified of the Department's decision to approve or deny a conceptual or final VECP within 14 calendar days of receipt of the VECP. If a written acceptance has not been received within this time frame, and the date has not been extended by mutual agreement of both parties, the VECP is denied. The Department's decision is final and there is no appeal.

f. Future Use of VECP. The Department reserves the right to use all or any part of a VECP on other contracts without obligation or compensation to the Contractor. If the VECP is accepted, the Department may use or disclose any information necessary to incorporate the VECP on future projects.

g. Payment for Work under the VECP. The Engineer may reject all or any portion of work performed under an approved VECP if results are unsatisfactory. The Engineer will direct the removal of rejected work and construction will proceed under the original contract requirements. There will be no payment for work performed under the proposal, or for its removal.

No work related to a VECP will be performed under force account. Agreed prices must be reached for any new or modified contract pay items related to the VECP before the VECP is approved.

The changes will be incorporated into the Contract by changes in quantities of unit bid items, new agreed unit price items, lump sum or any combination, as appropriate, under the Contract. Unless there is a differing site condition as described in subsection 103.02 of the Standard Specifications for Construction, the Contractor will not receive additional compensation for quantity overruns, design errors, supplemental surveys, geotechnical investigations, additional items or other increases in cost that were not foreseen in the accepted VECP, unless otherwise approved by the Engineer.

The work order and authorization will include the price for performing all affected items of work and the estimated net savings in the cost of performing the work directly attributable to the VECP. VECP payments only involve direct savings or costs. Indirect savings or costs (time, user delay, contract delay, etc) are not included in VECP payment calculations. The calculations of VECP payments are independent from the payments or penalties for contract time related issues. The Contractor will be paid 50 percent of this net savings based on as constructed or plan quantities whichever is in the best interests of the Department. The amount specified in the work order and authorization constitutes full compensation to the Contractor for the VECP and the performance of that work.

$(\text{Cost of Deleted Work}) - (\text{Cost of Added Work}) = \text{Net Savings}$

$\text{Payment} = (\text{Net Savings})/2$

Note: Approved VECP's will be paid using the pay item code "1200000", item description of "Value Engineering" and a unique secondary descriptor differentiating each VECP with the pay unit of "Dollar" for the contract modification.

The Contractor's development costs for the proposed VECP, including all costs associated with design, are not reimbursable.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
CONSTRUCTION DOCUMENT MANAGEMENT

CFS:RJC

1 of 3

APPR:JJG:LFS:12-19-18
FHWA:APPR:12-19-18

a. Description. This work consists of providing all materials, labor, and equipment necessary to meet MDOT's construction document management (CDM) system requirements. Submit all project documentation for this contract in electronic format and place it in MDOT's CDM system, unless otherwise noted in this special provision. No paper documents, in printed format (faxes, letters, etc.) are permitted except as allowed by this special provision or specifically approved by the Engineer. The Contractor is responsible for keeping all information in the CDM system up to date throughout the execution of the contract.

b. Digitally Encrypted Electronic Signatures. All documents that require Contractor or subcontractor signatures or signed authorizations by the Contractor or subcontractor must be signed using an MDOT issued digitally encrypted electronic signature. The MDOT approved digital signature tool is the CoSign/Docusign Digital Signature Tool. Digital signatures and software are provided by MDOT at no cost. Instructions on how to acquire and use MDOT's digitally encrypted electronic signature can be obtained at the following website. The website also provides support for users.

www.michigan.gov/MDOT-esign

Scanned signatures, retail point of sale scribble capture, cursive fonts or other non-conforming signatures are not permitted in lieu of digitally encrypted electronic signatures.

All fillable forms must retain the ability to be fillable upon submission to the Engineer. Submitted documents are not to be locked (preventing further changes to the form) when placing a digitally encrypted signature. Digital Signature Software tracks all changes to a document after placing a digital signature (track changes) and this information is embedded into the document as part of the digital signature signing process. Locked documents do not allow additional processing (information entry) by the Engineer and all locked documents will be returned to the Contractor for resubmission.

Failure to submit documents utilizing the MDOT digitally encrypted electronic signature process (Cosign) will result in the documents being rejected by the Engineer and returned to the Contractor. No payment will be made for any affected work items until all required documents are received with validated digitally encrypted signatures.

c. Contractor Access to MDOT's Construction Document Management System (ProjectWise). The Contractor must use MDOT's current CDM system (ProjectWise). ProjectWise access is available at no cost to all contractors, suppliers and other vendors associated with the project. ProjectWise access is granted in two ways, a web based access portal or full version of the software installed on a company's computer. User account setup, installation details, and access to ProjectWise may be requested by sending an e-mail request to:

MDOT-ProjectWiseConst@michigan.gov

d. Contractor Authorized Requestors. Designate two authorized requestors at the preconstruction meeting. The authorized requestors are:

1. The only individuals that can request the Engineer to provide or withdraw ProjectWise access for this contract.
2. Responsible to designate contract roles in ProjectWise (submitter or read only).
3. Responsible for promptly notifying the Engineer of any ProjectWise user access changes for this contract.

e. Training. Additional documentation and training for CDM system processes, details of scheduled classes, and methods for requesting training are available at the following website:

<https://mdotiboss.state.mi.us/SpecProv/projectwisesupport.htm>

f. Technical Issue Resolution. Upon discovery of a ProjectWise access issue immediately notify the Engineer with a copy sent to the following e-mail resource:

MDOT-ProjectWiseConst@michigan.gov.

g. Document Format. The Engineer may reject documents that are deemed to be unsuitable. This includes documents submitted that are named incorrectly, illegible, unreadable, locked, etc. Re-submit any corrected documents via ProjectWise. Failure to address rejected documents may delay progress payments.

Use the document naming conventions as documented by the Department and maintained on the Department's website:

https://www.michigan.gov/mdot/0,4616,7-151-9622_11044_11367---,00.html

h. Document Workflows. Electronic review/approval of documents will be accomplished through ProjectWise workflows and e-mail notifications. A workflow is an ordered group of milestones, or states, through which a document passes on its way to completion.

Documents placed in the ProjectWise Contractor In-Box folders will initially have a state of "Pending." Once the Contractor has finalized the document, change the state from "Pending" to "Submitted."

Complete the following actions:

1. Upload all documents into the corresponding Contractor In-Box folder.
 - A. Ensure all documents are named correctly per the document naming conventions.
2. Select the "Change State" option and then select "Next" to submit the document.
3. When the email message appears please send to the Engineer, or their approved

representative, providing notification that there are new documents submitted.

The Engineer will review all documents added to these folders and move them to the appropriate document folder for further review, processing, or records storage.

Furnish paper bills of lading/delivery tickets to the Engineer on the jobsite for any material that is paid based on weight or shipping volume, unless utilizing a Department approved e-ticketing process. Scanning of other manifests, seed tickets, or delivery confirmations will be as directed by the Engineer.

i. File/Document Retention. The electronic files stored in ProjectWise are the official project documentation and will be retained per the Department's document retention schedule.

j. Measurement and Payment. The work included in this special provision will not be paid for separately and is considered to be included in other items of work.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
SOURCE OF STEEL AND IRON (BUY AMERICA)

CFS:JJG

1 of 3

APPR:MB:DBP:05-01-18

FHWA:APPR:05-01-18

Delete subsection 105.10, on page 53 of the 2012 Standard Specifications for Construction, in its entirety and replace with the following:

105.10. Source of Steel and Iron. Provide steel and iron materials and products for permanent incorporation into the work that were produced only in the United States per Title 23 of the Code of Federal Regulations (CFR) Section 635.410, Buy America Requirements.

All steel and iron products and manufacturing processes of the steel and iron material in a product, including but not limited to the following steps; smelting, melting, rolling, extruding, machining, bending, grinding, drilling, welding, galvanizing, and coating, must occur within the United States.

Examples of products that are subject to Buy America coverage include, but are not limited to, the following:

- A. Steel or iron products used in pavements, bridges, tunnels or other structures, which include, but are not limited to, the following: fabricated structural steel, reinforcing steel, piling, high strength bolts, anchor bolts, dowel bars, permanently incorporated sheet piling, bridge bearings, cable wire/strand, pre-stressing/post-tensioning wire, motor/machinery brakes and other equipment for moveable structures.
- B. Guardrail, guardrail posts, end sections, terminals, cable guardrail.
- C. Steel fencing material, fence posts.
- D. Steel or iron pipe, conduit, grates, manhole covers, risers.
- E. Mast arms, poles, standards, trusses, supporting structural members for signs, luminaires, or traffic control systems.
- F. Steel or iron components of precast concrete products, such as reinforcing steel, wire mesh and pre-stressing or post-tensioning strands or cables.

Provide step certification for all steel and iron related pay items, materials, products, and components as specified on the Department website. The Department will maintain a list of these pay items, materials, products, and/or components on the following website.

http://www.michigan.gov/mdot/0,1607,7-151-9622_11044_11367---,00.html

Step certification is defined as the certification by the respective manufacturer or fabricator for their specific process (step) that the product, material, or component was fabricated, manufactured, and/or processed in the United States. The step certification documentation for these pre-defined pay items, materials, products, and/or components is to be submitted to the Engineer in a package covering each step prior to delivery or concurrent with material delivery on-site. Approved certification is required prior to incorporation of the materials into the project.

Buy America certification documentation for products and materials designated as fully compliant with the Buy America requirements on the Qualified Products List (QPL), Approved Manufacturers, and Tested Stock Suppliers Lists will be maintained by the MDOT Construction Field Services (CFS) Division. Buy America certification for these fully compliant items does not need to be submitted by the Contractor, but a bill of lading, product label, or shipping record to document that the products are from the respective source is to be provided to the Engineer. Buy America certification documentation for items that are partially compliant will be required to be submitted prior to delivery or concurrent with material delivery and prior to incorporation, noting the value of foreign steel/iron. The use of the Department maintained Buy America lists and notations does not relieve the Contractor from responsibility of ensuring Buy America compliance. The Contractor is ultimately responsible for Buy America compliance.

The Buy America lists maintained by the Department are solely for the benefit of the Department and may not be relied upon by the Contractor. The Contractor is solely responsible for the Buy America requirements for steel and iron as set forth in the CFR.

The above requirements do not preclude a minimal use of foreign steel and iron, provided the total invoice cost of foreign material permanently incorporated into the project does not exceed 0.1 percent of the total contract amount or \$2,500 whichever is greater. The Department defines the total invoice cost as the total value of the foreign steel and iron materials delivered to the project. The Department defines the total contract amount to be the total of the contract unit prices for items of road work and bridge work, any adjustments as provided for in the contract, and any assessment of incentive, disincentive or liquidated damages as provided for in the contract.

MDOT/Consultant fabrication facility inspectors are not responsible for approving the incorporation of foreign steel/iron prior to fabrication. It is the responsibility of the fabricator to notify and coordinate with the Contractor for all potential inclusion of foreign steel/iron in fabricated products.

For each item subject to meeting Buy America requirements, that doesn't fully meet Buy America requirements, the following documentation must be provided by the Contractor to verify the foreign steel value. This documentation is to be placed in the project files to ensure that the threshold is not exceeded:

- Pay Item,
- Description of associated foreign steel/iron material, product, or component,
- Cost of associated foreign steel/iron material, product or component, and
- Cumulative list of all non-compliant Buy America items with the total dollar amount.

The minimal use of foreign steel/iron under the minimal usage amount will be approved by the Engineer. The use of foreign steel/iron under the minimal usage amount does not

need to be approved by the FHWA. This amount is not considered a waiver to the Buy America requirements. The Contractor must ensure that the minimal usage amount is not exceeded.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
TEMPORARY TRAFFIC CONTROL MATERIALS

OFS:RAL

1 of 1

APPR:CRB:JFS:11-21-16
FHWA:APPR:11-22-16

Add the following subsection to subsection 105.01.B, on page 48 of the Standard Specifications for Construction:

1. Temporary traffic control materials that are covered in the Materials Quality Assurance Procedures Manual, section 4.10 *Temporary Traffic Control Certification and Acceptance Procedure*, are not required to be listed in the *Materials Source List*.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
ANTI-DISCRIMINATION CLAUSE FOR CITY OF DETROIT CONTRACTS

CFS:DBP

1 of 1

APPR:JJG:GCT:08-28-06
FHWA:APPR:06-01-11

a. All Contractors, prospective and otherwise, doing business with the city, shall take affirmative action to achieve reasonable representation of minority groups and women, on their work force. Such affirmative action shall include but not be limited to the following; employment, promotion, demotion or transfer, recruiting or recruitment, advertising, layoff or termination, and rates of pay or other forms of compensation, and selection for training or education, including apprenticeships. Breach of the covenant shall be regarded as a material breach of the contract.

b. All contracting city departments and agencies shall include in all contracts hereafter negotiated or renegotiated by them a covenant obligating the contractor to take affirmative action as outlined above to achieve reasonable representation of minority groups and women on their work force. City contractors shall be required to include a similar provision in all subcontracts.

c. All contracting city departments and agencies shall include in all contracts hereafter negotiated or renegotiated by them a covenant obligating the contractor not to discriminate against any employee or applicant for employment, training, education, or apprenticeship connected directly or indirectly with the performance of the contract, with respect to his or her hire, promotion, job assignment, tenure, terms, conditions or privileges of employment because of race, color, religious beliefs, national origin, age, marital status, disability, sex, sexual orientation or gender identity or expression. Breach of this covenant shall be deemed a material breach of the contract. This section shall not apply where it is determined by the human rights department that such requirements are bona fide occupational qualifications reasonably necessary to performance of the duties required for employment. The burden of proof that the occupational qualifications are bona fide is upon the employer.

Section 27-3-2

DETROIT CITY CODE

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
CONSTRUCTION STAGING AREAS

DES:LFS

1 of 1

APPR:JJG:KAS:10-06-11
FHWA:APPR:10-11-11

Add the following subsection to section 107, on page 70 of the 2012 Standard Specifications for Construction:

107.22 Construction Staging Areas. The contractor must not use any public recreation area as a staging area, marshalling yard, storage facility, or for any other construction support unless it is defined in the contract.

Public recreation areas include: parks, trails, game areas, wildlife and waterfowl refuges, playgrounds, golf courses, athletic fields or similar areas which are publically owned by public school districts, local, state, or federal governments.

Any agreements negotiated between the Contractor and the owner of the public recreation area, before or after the award of the contract will not be considered valid by the Department.

If the Engineer determines the Contractor is in non-compliance with this subsection, penalties up to and including termination of the contract, in accordance with subsection 108.12, may be enacted as well as the immediate restoration of the public recreation area at the Contractor's cost.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
E-VERIFY

CSD:JDM

1 of 1

APPR:JJG:JC:10-24-12
FHWA:APPR:10-25-12

a. Description. E-Verify is an Internet-based system that allows an employer, using information reported on an employee's Form I-9, Employment Eligibility Verification, to determine the eligibility of that employee to work in the United States. There is no charge to employers to use E-Verify. The E-Verify system is operated by the Department of Homeland Security (DHS) in partnership with the Social Security Administration. E-Verify is available in Spanish.

The State of Michigan is requiring all Contractors, and Subcontractors, to verify that new employees are legally present and authorized to work in the United States, using the E-Verify System.

Information on registration for and use of the E-Verify program can be obtained via the Internet at the DHS Web site: <http://www.dhs.gov/E-Verify>.

It is the responsibility of the Contractor to include this specification in all tiers of subcontracts.

Verification of the Contractors' use of E-verify will be a part of the random review of subcontract information performed by Contract Services Division.

The required use of the E-Verify system will not be paid for separately as part of the contract but is considered included in the costs for other pay items in the contract.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
LABOR COMPLIANCE

CFS:AS

1 of 3

APPR:JJG:RJC:06-27-18

FHWA:APPR:06-28-18

a. Description. Ensure all levels of contracting (prime, sub, sub-sub, etc.) comply with all labor compliance requirements in this contract. The Contractor is responsible for subcontractors and lower tier subcontractor labor compliance. Job site poster requirements apply to state and federally funded projects. All Contractors must insert this special provision in each subcontract and further require its inclusion in lower tier subcontracts for federal prevailing wage projects.

b. Requirements.

1. **Jobsite Posters.** All jobsite posters and employment notices required by State and Federal regulations and the contract documents are to be posted on the jobsite in a conspicuous area prior to the commencement of work. Ensure jobsite postings are accessible at all times.

2. **Federal Prevailing Wage Projects.** The Davis-Bacon Related Acts apply to all Contractors, and subcontractors (all tiers) performing work on federally funded or assisted construction contracts where the total construction contract price is in excess of \$2,000. Contractors and subcontractors are required to comply with *29 Code of Federal Regulations Parts 1, 3, and 5*.

The Contractor must advise subcontractors of the requirement to pay the prevailing wage rates prior to commencement of work and that all employees must cooperate during wage rate interviews.

A. **Certified Payroll Submittal Requirements.** Contractors (all tiers) must submit their certified payrolls to the prime Contractor. The submitted payrolls must accurately and completely include all information required on MDOT Form CP-347, Certified Payroll. The required weekly payroll information may be submitted on a contractor generated form but must contain all information required on Form CP-347. The first certified payroll is to be received by the Engineer within 3 weeks from the week ending in which work is performed. The 3 week period is to allow for the processing and review of the certified payrolls by the prime Contractor. The review must ensure the certified payroll is complete and contains all information required on Form CP-347. Form CP-347 is available on the MDOT forms webpage. Certified payroll information must meet the requirements of this special provision unless the contract requires payroll to be submitted through the prevailing wage and labor compliance (PWLC) system. Payroll submitted via the PWLC system must be entered into the system, certified, and approved by the prime Contractor to be considered received by the Department.

Labor compliance issues must be resolved within 60 calendar days of receiving the Departments first documented notice. The 60-day requirement may be extended based

on documented mutual agreement between the Department and the Contractor.

(1) Fringe Benefit Statements. Contractors making payments or incurring cost to provide bona fide benefits must submit an hourly breakdown of fringe benefits paid each worker, or work classification where applicable, that must accompany the first certified payroll where fringe benefits are credited towards the prevailing wage. The Contractor must update these documents as necessary to ensure they are current throughout the working life of the contract. Failure to submit or maintain the required fringe benefit statement will constitute a payroll deficiency.

(2) Delinquent Payroll. Certified payrolls not submitted per subsection b.2.A of this special provision will be considered delinquent.

(3) Deficient Payroll. Certified payrolls that are found to be incomplete, inaccurate, or inconsistent with other project records are considered deficient.

(4) Non-compliance Damages. A Contractor found to be in non-compliance with the requirements of this special provision will be assessed non-compliance damages listed in Table 1, proportional to the value of their work on the contract (including subcontract, purchase order (P.O.) or invoice amount).

Table 1: Schedule of Non-Compliance Damages

Contract/Subcontract/P.O./Invoice Amount (a)	Non-compliance damages per calendar day
\$0 to 49,999	\$200
50,000 to 99,999	400
100,000 to 499,999	600
500,000 to 999,999	900
1,000,000 to 1,999,999	1,300
2,000,000 to 4,999,999	1,550
5,000,000 to 9,999,999	2,650
10,000,000 and above	3,000
Trucker	\$200
a. "Contract" amount if offending contractor is the prime contractor. "Subcontract/P.O./Invoice" amount if offending contractor is a subcontractor/vendor.	

B. Record Keeping. Maintain payrolls and basic records relating thereto (i.e. employee names, occupation, hours worked, W2, canceled checks, bank statements, etc.) by all levels of contractors during the course of work and retain for a 3-year period from the date of final estimate for all employees working on the site of work. Make these records available for inspection, copying, or transcription by the Department or its representative.

C. Short Duration Projects. The following modifications apply if the project is less than 75 calendar days in duration.

(1) Submittal Requirements. On short duration projects the first certified payroll is

to be received by the Engineer within 2 weeks from the week ending in which work is performed. The 2-week period is to allow for the processing and review of the certified payrolls by the Contractor. The 2-week period allows the first estimate to be paid assuming the Contractor will submit certified payrolls in a timely manner. Ensure subsequent certified payroll submissions are made weekly. Payroll submissions failing to meet the above requirements will be considered delinquent.

Labor compliance issues are to be resolved within 30 days after receiving the Department's first documented notice. The 30-day requirement may be extended based on documented mutual agreement between the Department and the Contractor.

c. Materials. None specified.

d. Construction. None specified.

e. Measurement and Payment. Payment for compliance with this special provision will not be made separately. Payment will be considered as part of all other contract pay items.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
OPEN TO TRAFFIC

CFS:JJG

1 of 1

APPR:MB:DBP:07-07-17
FHWA:APPR:07-10-17

Delete subsection 107.21, on page 69 of the Standard Specifications for Construction, in its entirety and replace with the following:

107.21. Open to Traffic. The Contractor must not open the project or sections thereof to traffic until approved by the Engineer. Whenever the project or section thereof is in a condition suitable for traffic, the Engineer will determine if it is approved for traffic before project completion and the Contractor must open the project or section thereof to traffic as directed by the Engineer. To determine whether the project or section thereof is approved for traffic, the Engineer will verify that the surfacing material, shoulders, guardrails, signs, and other appurtenances are completed as required by the contract. The Engineer's approval of the project or section thereof for traffic does not constitute partial or final acceptance of the project or any part of it, or a waiver of any provision of the contract. The Contractor is not responsible for the costs of maintaining the section of the project opened for traffic.

If the Engineer approves the entire project or any section of it for traffic and the Contractor opens it to traffic before final acceptance and final payment, the Contractor must perform the remainder of the work in a manner that causes the least obstruction to traffic. The Contractor must make provisions for the safety of traffic as required by the contract. Legal weight restrictions, established by 1949 PA 300 as amended, local ordinances, or legal posting, apply to sections of the project opened to traffic.

Before the seasonal suspension, the Engineer will determine the work the Contractor must complete to bring the project to an acceptable condition for traffic and winter maintenance, including necessary traffic and erosion control measures. Until the Contractor completes this work, the Engineer will not designate the project as approved for traffic. On sections of the project opened to traffic, the Contractor must correct damage due to defective materials, to faulty workmanship, to operations of the Contractor, and to natural causes (except as provided in subsection 107.11 of the Standard Specifications for Construction), at no additional cost to the Department.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
**STORAGE OF MATERIALS ON, UNDER OR ADJACENT TO BRIDGES AND
STRUCTURES**

BRG:BMW

1 of 1

APPR:MRB:HLZ:01-09-19

FHWA:APPR:01-10-19

Add subsection 107.15C.3, on page 67 of the Standard Specifications for Construction:

3. **Storage of Materials on or under Bridges and Structures.** The Contractor must not store equipment or materials with the following USDOT Material Class Designations under, or within 50 feet of Department or Local Agency owned bridges and structures:
- a. Class 1 - Explosives;
 - b. Class 2 - Flammable Gas, Non-Flammable Gas, Inhalation Hazard, Oxygen;
 - c. Class 3 - Flammable Liquids - Flammable, Fuel Oil, Combustible, Gasoline;
 - d. Class 4 - Flammable Solids, Spontaneously Combustible and Dangerous When Wet;
 - e. Class 5 - Oxidizer and Organic Peroxide;
 - f. Class 6 - Toxic (Poisonous), Inhalation Hazard and Infectious Substances;
 - g. Class 7 - Radioactive;
 - h. Class 8 - Corrosive; and
 - i. Class 9 - Miscellaneous.

The Contractor must not store plastic, polyethylene, or other petroleum-based products, or other flammable or combustible materials under, or within 50 feet of bridges and structures owned by the Department or Local Agencies.

Staging and storage of construction equipment utilizing these materials will be allowed on the bridge decks, as it relates to the Contractor's active construction operations.

The Engineer will approve appropriate protective measures for fueling and maintenance of equipment on bridge decks.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
TIMELY PROJECT COMPLETION AND CLOSEOUT

DET:VJ

1 of 2

APPR:KB:DBP:05-29-07
FHWA:APPR:06-01-11

a. Description. This special provision establishes the required procedures and schedule for the completion of “deficient” work and timely close out of the project. The Contractor and Engineer should coordinate the evaluation of completed work and correct any defects during the general progress of the work. This special provision does not revise any schedule constraints established in the contract documents.

b. Procedure.

1. The Contractor must submit the written notification that the work is complete in accordance with subsection 109.07 of the Standard Specifications for Construction. The Engineer and Contractor will conduct the final inspection within the project closures or as agreed with the Contractor to mitigate the Contractor costs to conduct the inspection(s). The Engineer will provide the Contractor the preliminary defects (punch) list within 15 days of receipt of the Contractor's written notification that work is complete.

2. The Contractor must complete the preliminary defects list work and notify the Engineer in writing that all the work has been completed, within 30 days of receiving the preliminary defects list. The Engineer may grant an extension of this time period if the Contractor provides justification.

The Engineer will inspect the completed work and provide the Contractor the final defects list within 10 days of receipt of the written notification from the Contractor that all preliminary defects list work has been completed. Failure to complete all preliminary defects list work within the schedule described above will result in the Contractor being assessed 50 percent of the liquidated damages in accordance with the Schedule of Liquidated Damages for a maximum of 30 calendar days.

Failure to complete all incomplete preliminary defects list work within the maximum liquidated damage period of 30 calendar days may result in the Engineer placing the Contractor in default in accordance with subsection 108.11 of the Standard Specifications for Construction.

3. The Contractor must complete all final defects list work and notify the Engineer in writing that all the work has been completed, within 30 days of receiving the final defects list. The Engineer may grant an extension of this time period if justification is provided by the Contractor. The Engineer will provide written documentation of the status of the final defects list work within 10 days of receipt of the Contractor's written notification of completion of the final defect list work.

Failure to complete all final defects list work within the schedule described above will result in the Contractor being assessed 50 percent of the liquidated damages in accordance with the

Schedule of Liquidated Damages and for a maximum of 30 calendar days. Failure to complete all incomplete final defects list work within the maximum liquidated damage period of 30 calendar days may result in the Engineer placing the Contractor in default in accordance with subsection 108.11 of the Standard Specifications for Construction.

4. After the work is accepted, the Engineer will have 30 days to meet with the Contractor and finalize quantities for all pay items. Within 30 days of the meeting, the Engineer will then provide a list of final quantities to the Contractor. The Contractor will have 30 days from receipt of the final quantities list to provide a written response to the agreement or disagreement to the final quantities. If the Contractor fails to provide the timely written response, the Engineer will proceed with preparing the final estimate in accordance with subsection 109.07 of the Standard Specifications for Construction.

The Liquidated Damage provisions in this special provision and any other applicable provisions of the contract are cumulative so multiple assessments may be made.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
ON-THE-JOB TRAINING PROGRAM

OBD:TDB

1 of 1

 APPR:DBP:GCT:06-19-15
FHWA:APPR:07-06-15

a. Description. The On-The-Job Training (OJT) program is the MDOT's program to meet the requirements of the Federal-Aid Highway Act of 1970 and 23 CFR (Code of Federal Regulations) Part 230, Subpart A. The objective is to develop skill improvement programs to provide opportunities for unskilled workers, particularly minorities, women, and disadvantaged persons, to acquire training in the skilled construction trades.

b. Trainee Assignment. MDOT's Office of Business Development will allocate training assignments to prequalified Contractors based on the past contract volume of federal-aid work performed with MDOT. MDOT will notify each Contractor who has met the volume of work threshold at the beginning of each calendar year and advise them of the number of trainees they are expected to support.

c. Program Requirements. Contractors found to have reached the level(s), as identified in the MDOT OJT program document, are required to fulfill all of the requirements of the OJT program at no additional cost to the Department.

The Contractors are required to pay the trainees in accordance with the following schedule unless apprentices or trainees in an approved union program are enrolled as trainees on this project. In that case, the appropriate rates approved through the union apprenticeship will apply.

- 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period
- 75 percent for the third quarter of the training period
- 90 percent for the last quarter of the training period
- Full fringe benefits will be paid during the entire training period

All applicable forms and the appropriate regulation pertaining to the OJT program are available through the MDOT's On-the-Job Training Program website at www.michigan.gov/ojt.

Contractors should notify the Engineer at the preconstruction meeting if they intend to utilize trainees on the project.

d. Non-Compliance. Failure to comply with the OJT program provisions or complete a training assignment may result in the Contractor being found in non-compliance. Failure to resolve the non-compliance may be used as a basis for modifying the prequalification ratings of the Contractor. Any action to modify the Contractor's prequalification ratings will be taken in accordance with the duly promulgated prequalification rules.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
SCHEDULE OF LIQUIDATED DAMAGES FOR OVERSIGHT

CFS:BED

1 of 1

APPR:MB:JJG: 07-15-16

FHWA:APPR:07-29-16

Delete Table 108-1 in subsection 108.10.C.1, on page 83 of the Standard Specifications for Construction, in its entirety and replace with the following.

Table 108-1		
Schedule of Liquidated Damages for Oversight		
Original Contract Amount		Amount per Calendar Day, \$
From more than, \$	To and including, \$	
0	100,000	400
100,000	500,000	700
500,000	1,000,000	950
1,000,000	5,000,000	1,350
5,000,000	15,000,000	2,300
Over 15,000,000		3,900

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
PROMPT PAYMENT

CFS:JJG

1 of 4

APPR:JDM:DBP:06-29-15
FHWA:APPR:07-16-15

Add the following subsection to section 109, on page 106, of the Standard Specifications for Construction:

109.08 Prompt Payment.

A. Definitions.

Lower-tier subcontract. An agreement between a subcontractor of any tier and any individual or legal entity to perform a part of the subcontract work.

Lower-tier subcontractor. The individual or legal entity that performs part of the subcontract work through a lower-tier subcontract with a subcontractor.

Supplier. The individual or legal entity that agrees to provide materials or services to the prime Contractor, a subcontractor, or a lower-tier subcontractor for the performance of their contract work.

Sworn Statement. A written verification under oath reflecting all persons or entities, which have furnished labor, equipment, services or materials to a subcontractor or lower-tier subcontractor for performance of work on the project. The written verification includes union fringe benefit funds, original contract amount, current amount due, amounts paid to date and balance to finish the work for each person or entity.

Waiver of Lien. A written release and waiver of any claim or right to payment for payments actually received for labor, equipment, services or materials furnished for performance of work on the project.

The sworn statement and waiver of lien documents are used by the prime Contractor and its subcontractors for verifying payments made to lower-tier subcontractors/suppliers and are not to be submitted to the Engineer unless requested as an aid in determining an alleged prompt payment violation. These documents can be found at the following website under the Construction Field Services - Forms heading:

http://www.michigan.gov/mdot/0,1607,7-151-9622_11044_11367---,00.html

B. Progress Payments. For the first payment, or for a one time payment, the prime Contractor agrees to pay each subcontractor for the work associated with their subcontract no later than 10 calendar days from the date the prime Contractor receives payment from the Department.

For the second and subsequent payments, the prime Contractor agrees to pay each

subcontractor for the work associated with their subcontract no later than 10 calendar days from the date the prime Contractor receives payment from the Department.

The Contractor is required to provide payment information for previous payments made to all first tier subcontractors and all DBE companies (sub-subcontractors, suppliers, truckers, etc.) at any tier before the Engineer will release the third and subsequent estimates. For all subsequent progress pay estimates if 1) the Engineer payment does not include any first tier subcontractors or any DBE company payments at any tier, and 2) the previously submitted payment reporting information remains unchanged, then payment reporting in the system is not required. Reporting is required when the prime contractor makes payments to any first tier subcontractors and any DBE companies at any tier. The payment information is provided through submittal of the information via the 2124A reporting system (MERS). System information can be found at the following web link.

http://www.michigan.gov/documents/mdot/Prompt_Payment_2124A_Instructions_MERS_366314_7.pdf

The prime Contractor must bring any concerns about the satisfactory completion of subcontractor or lower-tier subcontractor work items, to the Engineer's attention as soon as the concern is discovered. If the work meets the requirements of satisfactory completion and the prime Contractor has been paid for that work, the Engineer must determine whether:

1. The prime Contractor has demonstrated a valid reason for withholding payment from the subcontractor or supplier, or
2. The subcontractor has demonstrated a valid reason for withholding payment from the lower-tier subcontractor or supplier.

If the Engineer determines the reason for withholding payment is valid, the Engineer will process a negative estimate to withdraw the amount involved in the complaint. If payment has not been made for the work related to the complaint, the Engineer will not include those items of work on an estimate until the issue has been resolved.

The prime Contractor remains responsible to make prompt payments on this project to their subcontractors and suppliers except as noted in subsection 109.08.D of this special provision, even if the prime Contractor is in violation of other contractual obligations and the Department is withholding payment from the prime Contractor for those violations.

The prime Contractor must include language in all subcontracts that the Department prohibits prime Contractors from holding retainage from subcontractors. All provisions of this prompt payment subsection apply to all subcontracts, lower-tier subcontracts, and supplier agreements and must be included in each subcontract for the contract, including all lower-tier subcontracts and agreements.

This prompt payment provision is a requirement of 49 CFR 26.29 and does not confer third-party beneficiary rights or other direct rights to a subcontractor against the Department. This provision applies to both DBE and non-DBE subcontractors/suppliers at all tiers.

C. Satisfactory Completion. Progress and partial payments for contract work are issued based on the satisfactory completion of work. Satisfactory completion, for purposes of this prompt payment provision, is defined as:

1. Upon preliminary review, the Engineer finds the work completed in accordance with the contract, plans, and specifications; and,
2. Required documentation, including material certifications, payrolls, submission of 2124A, etc., has been received and reviewed and found to be acceptable by the Engineer; and,
3. Required subcontractor sworn statements and waivers of lien have been provided to the prime Contractor. The prime Contractor must provide notice to the Engineer if sworn statements and waivers of lien have not been received for completed work.

The Engineer will determine if the work meets the standards of satisfactory completion.

D. Less than full payment release. The Engineer may give written approval to:

1. Delay or postpone payment from the time frames specified herein,
2. Process partial payment from the prime Contractor to a subcontractor or supplier,
3. Process partial payment from a subcontractor to a lower-tier subcontractor or supplier.

The unpaid portion will be held by the Department.

The parties may initiate whatever dispute resolution procedure is specified in their agreement or is available under Michigan law. If dispute resolution or litigation is selected, the actions by both parties must proceed in a timely manner. The result of the dispute resolution proceeding or litigation must be provided to the Engineer promptly upon the conclusion of the proceeding. The Engineer will release the disputed payment being held by the Department in accordance with the outcome of the proceedings.

E. Non-Payment Claims. The prime Contractor, subcontractor, lower-tier subcontractor or supplier must notify the alleged offending party in writing of any prompt payment violations within 30 calendar days of the date the payment was to be received. Copies of the notifications must be provided to the Engineer and the prime Contractor (only if the prime Contractor is not the offending party).

The alleged offending party must respond in writing to the claimant within 10 calendar days of receipt of the notification of failure to meet prompt payment provisions. Provide copies of the response to the Engineer, the prime Contractor (only if the prime Contractor is not the offending party), and the Engineer of Construction Field Services. The prime Contractor, subcontractor, or supplier must also provide the required sworn statements and waivers of lien from the affected subcontractor or supplier to the Engineer within 10 days of receipt of the notification. The Department will consider the failure of the alleged offending party to respond to the notification from the claimant as an admission of the prompt pay violation which may result in sanctions.

The Engineer will review the written notice and response and will verify in writing if there is a valid prompt pay violation.

Independent of all procedures and requirements in this special provision the non-payment claimant has the additional option of submitting a lien claim to the MDOT Contract Services Division. MDOT will notify the project surety of the non-payment issue. It is the responsibility of

the surety to ensure that all legitimately due payments are made. The submission of a lien claim will not nullify or affect any other requirements, obligations or procedures in this special provision.

F. Remedies. When the Engineer verifies a prompt payment violation, the prime Contractor within 5 days must propose one or a combination of any of the following actions items for review and approval by the Engineer:

1. Issue payment to the subcontractor.
2. Issue payments to a subcontractor in the form of joint checks to the subcontractor and the subcontractor's lower-tier subcontractors and/or suppliers.
3. Issue payment directly to the subcontractor's lower-tier subcontractors or suppliers.
4. Request a negative estimate to withdraw the amount confirmed in the prompt payment violation.

If the prime Contractor fails to submit a timely remedy request or obtain an approved course of action within the 5 day time period, the Engineer will direct a course of action or issue a negative estimate to withdraw the amount confirmed in the prompt payment violation.

If the prime Contractor fails to fulfill the approved or directed course of action the Engineer will impose sanctions until such time as the approved or directed course of action is completed.

Any payments to a subcontractor's lower-tier subcontractor or supplier will be issued in the amounts reflected upon the subcontractor's sworn statements or in amounts independently verified by the Engineer as being due the subcontractor's lower-tier subcontractors and suppliers for work completed. Payments to a lower-tier subcontractor or supplier will be considered payment to the subcontractor directly so that payment for the same work cannot be claimed.

Any other use of joint checks must follow current Department procedures.

G. Sanctions. Failure to comply with any of the prompt payment requirements by the prime Contractor, subcontractor, lower-tier subcontractor, or supplier may result in sanctions against the offending party. These sanctions may include, but are not limited to: withholding of estimates on projects where prompt payment violations are confirmed; reduction or removal of prequalification; and/or suspension of bidding privileges.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
FORCE ACCOUNT BUSINESS TAXES

CFS:RJC

1 of 1

APPR:JJG:JDM:04-14-15
FHWA:APPR:04-17-15

Delete subsection 109.05.D.8, on page 101 of the 2012 Standard Specifications for Construction in its entirety.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
**FORCE ACCOUNT MARK-UP FOR BOND PREMIUM, INSURANCE AND PAYROLL
TAXES**

CFS:JJG

1 of 1

APPR:LFS:MB:08-12-16

FHWA:APPR:08-18-16

Delete subsection 109.05.D.4, on page 97 of the Standard Specifications for Construction, in its entirety.

Delete the first paragraph of subsection 109.05.D.3, on page 96 of the Standard Specifications for Construction, in its entirety and replace with the following:

3. **Labor.** The Engineer will pay the Contractor an amount equal to the sum of the following labor costs, plus 55 percent of the sum (for road work) or 60 percent of the sum (for bridge work) to cover the costs of field and home office overhead, bond premium, insurance, payroll taxes and to provide for a reasonable profit.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
DELAY COSTS

CFS:JJG

1 of 1

APPR:RJC:MB:02-22-17
FHWA:APPR:02-27-17

Delete subsections 109.05.E.1.a through 109.05.E.1.e, on page 102 of the Standard Specifications for Construction, in their entirety and replace with the following:

- a. Proof of cost of project staff salaries, wages, payroll taxes and insurance.
- b. Proof of escalated cost for labor, equipment, and material.
- c. Proof of material storage costs.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
JOBSITE POSTER DEFICIENCIES AND INITIAL MOBILIZATION PAYMENT

CFS:JJG

1 of 1

APPR:AS:RJC:05-27-16

FHWA:APPR:06-07-16

Delete the subsection 150.03, on page 107 of the Standard Specifications for Construction, in its entity and replace with the following:

150.03. Construction. All jobsite posters and employment notices required by State and Federal regulations and the contract documents are to be posted as instructed in the Special Provision for Labor Compliance.

If at any time during the project the Engineer documents that the required jobsite posters and employment notices are not posted appropriately, the Engineer will provide documented instructions to the Contractor that corrective action is required. Posting of jobsite posters and employment notices (posted display, foreman vehicle binder, etc.) for short term or mobile operations will be as approved by the Engineer. Upon receipt of the notification of corrective action, the Contractor has 24 hours to correct the deficiency. If the issue cannot be corrected within the 24 hour time period, the Contractor will develop a documented implementation schedule for the corrective action and submit the schedule to the Engineer for approval within 24 hours of receiving the original documented notification. If the schedule is not approved, or if the schedule is approved, but is not followed, the Engineer will adjust the contract according to this special provision. If the implementation schedule is not followed, the Engineer will document notification to the Contractor that they are in violation of this special provision.

The Engineer will give documented notification to the Contractor as identified above. Failure to make corrections within the timeframe required will result in the following actions by the Engineer:

- A. The Engineer may stop work on the project until the Contractor completes corrective action.
- B. The Engineer will process a contract price adjustment in the amount of \$1,000 per calendar day or portion thereof that the corrective action remains incomplete or the implementation schedule is not followed. The contract price adjustment will continue to be assessed until jobsite posters and employment notices are posted appropriately, the Engineer has been notified of the corrective action and the Engineer has verified the correction.

Add the following paragraph after the third paragraph of subsection 150.04, on page 108 of the Standard Specifications for Construction:

The first scheduled payment for **Mobilization, Max (dollar)** will not occur until the Engineer has verified and documented the posting of required labor compliance posters and the project specific prevailing wage rates.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
SAMPLING ASPHALT BINDER ON LOCAL AGENCY PROJECTS

CFS:MF

1 of 1

APPR:JAR:JTL:12-19-01
FHWA:CON. APPR:06-06-11

For informational purposes, original samples of asphalt binder will be taken by the Contractor and delivered to the Engineer prior to incorporation into the mixture. The frequency of sampling will be determined by the Engineer. The cost of obtaining and delivering the samples to the Engineer will be included in the hot mix asphalt (HMA) pay items.

The Contractor must certify in writing that the materials used in the HMA mixture are from the same source as the materials used in developing the HMA mixture design and the bond coat is from an approved supplier as stated in the *Material Quality Assurance Procedures Manual*.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
RECYCLED HOT MIX ASPHALT MIXTURE ON LOCAL AGENCY PROJECTS

CFS:KPK

1 of 2

APPR:JWB:CJB:03-13-14

FHWA:APPR:03-13-14

Add the following subsection to subsection 501.02.A.2, on page 234 of the Standard Specifications for Construction.

- c. **Reclaimed Asphalt Pavement (RAP) and Binder Grade Selection.** The method for determining the binder grade in HMA mixtures incorporating RAP is divided into three categories designated Tier 1, Tier 2 and Tier 3. Each tier has a range of percentages that represent the contribution of the RAP binder toward the total binder, by weight. The tiers identified below apply to HMA mixtures with the following exception: Superpave mixture types E3, E3 High Stress, E10, E10 High Stress, E30, E30 High Stress, E50, and E50 High Stress used as leveling or top course must be limited to a maximum of 27 percent RAP binder by weight of the total binder in the mixture.

Recycled materials may be used as a substitute for a portion of the new materials required to produce HMA mixtures in accordance with contract.

- **Tier 1 (0% to 17% RAP binder by weight of the total binder in the mixture).** No binder grade adjustment is made to compensate for the stiffness of the asphalt binder in RAP.
- **Tier 2 (18% to 27% RAP binder by weight of the total binder in the mixture).** For all mixtures no binder grade change will occur in Tier 2 for all shoulder and temporary road mixtures.

The required asphalt binder grade must be at least one grade lower for the low temperature than the design binder grade required for the specified project mixture type. Lowering the high temperature of the binder one grade is optional. For example, if the design binder grade for the mixture type is PG 58-22, the required grade for the binder in the HMA mixture containing RAP would be a PG 52-28 or a PG 58-28.

For Marshall Mixes, no binder grade change will be required when Average Daily Traffic (ADT) is above 7000 or Commercial Average Daily Traffic (CADT) is above 700. No binder grade change will occur for LVSP, E03 and E1 mixtures used as leveling or top course.

The asphalt binder grade can also be selected using a blending chart for high and low temperatures. Supply the blending chart and the RAP test data used in determining the binder selection according to *AASHTO M 323*.

- **Tier 3 ($\geq$ 28% RAP binder by weight of the total binder in the mixture).** The binder

grade for the asphalt binder is selected using a blending chart for high and low temperatures per *AASHTO M 323*. Supply the blending chart and the RAP test data used in determining the binder selection.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
ACCEPTANCE OF HOT MIX ASPHALT MIXTURE ON LOCAL AGENCY PROJECTS

CFS:KPK

1 of 7

APPR:CJB:JWB:07-05-16

FHWA:APPR:07-05-16

a. Description. This special provision provides sampling and testing requirements for local agency projects using the roller method and the nuclear density gauge testing. Provide the hot mix asphalt (HMA) mixture in accordance with the requirements of the standard specifications, except where modified herein.

b. Materials. Provide aggregates, mineral filler (if required), and asphalt binder to produce a mixture proportioned within the master gradation limits shown in the contract, and meeting the uniformity tolerance limits in Table 1.

Table 1: Uniformity Tolerance Limits for HMA Mixtures

Parameter		Top and Leveling Course		Base Course	
Number	Description	Range 1 (a)	Range 2	Range 1 (a)	Range 2
1	% Binder Content	-0.30 to +0.40	±0.50	-0.30 to +0.40	±0.50
2	% Passing	# 8 and Larger Sieves	±5.0	±8.0	±7.0
		# 30 Sieve	±4.0	±6.0	±6.0
		# 200 Sieve	±1.0	±2.0	±2.0
3	Crushed Particle Content (b)	Below 10%	Below 15%	Below 10%	Below 15%
a. This range allows for normal mixture and testing variations. The mixture must be proportioned to test as closely as possible to the Job-Mix-Formula (JMF).					
b. Deviation from JMF.					

Parameter number 2 as shown in Table 1 is aggregate gradation. Each sieve will be evaluated on one of the three gradation tolerance categories. If more than one sieve is exceeding Range 1 or Range 2 tolerances, only the one with the largest exceedance will be counted as the gradation parameter.

The master gradation should be maintained throughout production; however, price adjustments will be based on Table 1. Aggregates which are to be used in plant-mixed HMA mixtures must not contain topsoil, clay, or loam.

c. Construction. Submit a Mix Design and a JMF to the Engineer. Do not begin production and placement of the HMA until receipt of the Engineer's approval of the JMF. Maintain the binder content, aggregate gradation, and the crushed particle content of the HMA mixture within the Range 1 uniformity tolerance limits in Table 1. For mixtures meeting the definition of top or leveling course, field regress air void content to 3.5 percent with liquid asphalt cement unless

specified otherwise on HMA application estimate. For mixtures meeting the definition of base course, field regress air void content to 3.0 percent with liquid asphalt cement unless specified otherwise on HMA application estimate.

Ensure all persons performing Quality Control (QC) and Quality Assurance (QA) HMA field sampling are "Local Agency HMA Sampling Qualified" samplers. At the Pre-Production or Pre-Construction meeting, the Engineer will determine the method of sampling to be used. Ensure all sampling is done in accordance with *MTM 313 (Sampling HMA Paving Mixtures)* or *MTM 324 (Sampling HMA Paving Mixtures Behind the Paver)*. Samples are to be taken from separate hauling loads.

For production/mainline type paving, obtain a minimum of two samples, each being 20,000 grams, each day of production, for each mix type. The Engineer will sample and maintain possession of the sample. Sampling from the paver hopper is prohibited. Each sample will be divided into two 10,000 gram parts with one part being for initial testing and the other part being held for possible dispute resolution testing. Obtain a minimum of three samples for each mix type regardless of the number of days of production.

Obtain samples that are representative of the day's paving. Sample collection is to be spaced throughout the planned tonnage. One sample will be obtained in the first half of the tonnage and the second sample will be obtained in the second half of the tonnage. If planned paving is reduced or suspended, when paving resumes, the remaining sampling must be representative of the original intended sampling timing.

Ensure all persons performing testing are Bit Level One certified or Bit QA/QC Technician certified.

Ensure daily test samples are obtained, except, if the first test results show that the HMA mixture is in specification, the Engineer has the option of not testing additional samples from that day.

At the Pre-Production or Pre-Construction meeting, the Engineer and Contractor will collectively determine the test method for measuring asphalt content (AC) using *MTM 319 (Determination of Asphalt Content from Asphalt Paving Mixtures by the Ignition Method)* or *MTM 325 (Quantitative Extraction of Bitumen from HMA Paving Mixtures)*. Back calculation will not be allowed for determining asphalt content.

Ensure all labs performing local agency acceptance testing are qualified labs per the *HMA Production Manual* and participate in the MDOT round robin process, or they must be *AASHTO Materials Reference Laboratory* (AMRL) accredited for *AASHTO T 30* or *T 27*, and *AASHTO T 164* or *T 308*. Ensure on non-National Highway System (NHS) routes, Contractor labs are made available, and may be used, but they must be qualified labs as previously stated. Contractor labs may not be used on NHS routes. Material acceptance testing will be completed by the Engineer within 14 calendar days, except holidays and Sundays, for projects with less than 5,000 tons (plan quantity) of HMA and within 7 calendars days, except holidays and Sundays, for projects with 5,000 tons (plan quantity) or more of HMA, after the Engineer has obtained the samples. QA test results will be provided to the Contractor after the Engineer receives the QC test results. Failure on the part of the Engineer or the laboratory to provide Quality Assurance test results within the specified time frame does not relieve the Contractor of their responsibility to provide an asphalt mix within specifications.

The correlation procedure for ignition oven will be established as follows. Asphalt binder content based on ignition method from MTM 319. Gradation (*ASTM D 5444*) and Crushed particle content (*MTM 117*) based on aggregate from *MTM 319*. The incineration temperature will be established at the Pre-Production Meeting. The Contractor will provide a laboratory mixture sample to the acceptance laboratory to establish the correction factor for each mix. Ensure this sample is provided to the Engineer a minimum of 14 calendar days prior to production.

For production/mainline type paving, the mixture may be accepted by visual inspection up to a quantity of 500 tons per mixture type, per project (not per day). For non-production type paving defined as driveways, approaches, and patching, visual inspection may be allowed regardless of the tonnage.

The mixture will be considered out-of-specification, as determined by the acceptance tests, if for any one mixture, two consecutive tests per parameter, (for Parameter 2, two consecutive aggregate gradations on one sieve) are outside Range 1 or Range 2 tolerance limits. If a parameter is outside of Range 1 tolerance limits and the second consecutive test shows that the parameter is outside of Range 2, then it will be considered to be a Range 1 out-of-specification. Consecutive refers to the production order and not necessarily the testing order. Out-of-specification mixtures are subject to a price adjustment per the Measurement and Payment section of this special provision.

Contractor operations will be suspended when the mixture is determined to be out-of-specification, but contract time will continue to run. The Engineer may issue a Notice of Non-Compliance with Contract Requirements (Form 1165), if the Contractor has not suspended operations and taken corrective action. Submit a revised JMF or proposed alterations to the plant and/or materials to achieve the JMF to the Engineer. Effects on the Aggregate Wear Index (AWI) and mix design properties will be taken into consideration. Production and placement cannot resume until receipt of the Engineer's approval to proceed.

Pavement in-place density will be measured using one of two approved methods. The method used for measuring in-place density will be agreed upon at a pre-production or pre-construction meeting.

Pavement in-place density tests will be completed by the Engineer during paving operations and prior to traffic staging changes. Pavement in-place density acceptance testing will be completed by the Engineer prior to paving of subsequent lifts and being open to traffic.

Option 1 – Direct Density Method

Use of a nuclear density gauge requires measuring the pavement density using the Gmm from the JMF for the density control target. The required in-place density of the HMA mixture must be 92.0 to 98.0 percent of the density control target. Nuclear density testing and frequency will be in accordance with the *MDOT Density Testing and Inspection Manual*.

Option 2 – Roller Method

The Engineer may use the Roller Method with a nuclear or non-nuclear density gauge to document achieving optimal density as discussed below.

Use of the density gauge requires establishing a rolling pattern that will achieve the required in-place density. The Engineer will measure pavement density with a density gauge using the Gmm from the JMF for the density control target.

Use of the Roller Method requires developing and establishing density frequency curves, and meeting the requirements of Table 2. A density frequency curve is defined as the measurement and documentation of each pass of the finished roller until the in-place density results indicate a decrease in value. The previous recording will be deemed the optimal density. The Contractor is responsible for establishing and documenting an initial or QC rolling pattern that achieves the optimal in-place density. When the density frequency curve is used, the Engineer will run and document the density frequency curve for each half day of production to determine the number of passes to achieve the maximum density. Table 5, located at the end of this special provision, can be used as an aid in developing the density frequency curve. The Engineer will perform density tests using an approved nuclear or non-nuclear gauge per the manufacturer's recommended procedures.

Table 2: Minimum Number of Rollers Recommended Based on Placement Rate

Average Laydown Rate, Square Yards per Hour	Number of Rollers Required (a)	
	Compaction	Finish
Less than 600	1	1 (b)
601 - 1200	1	1
1201 - 2400	2	1
2401 - 3600	3	1
3601 and More	4	1
a. Number of rollers may increase based on density frequency curve.		
b. The compaction roller may be used as the finish roller also.		

After placement, roll the HMA mixture as soon after placement as the roller is able to bear without undue displacement or cracking. Start rolling longitudinally at the sides of the lanes and proceed toward the center of the pavement, overlapping on successive trips by at least half the width of the drum. Ensure each required roller is 8 tons minimum in weight unless otherwise approved by the Engineer.

Ensure the initial breakdown roller is capable of vibratory compaction and is a maximum of 500 feet behind the paving operations. The maximum allowable speed of each roller is 3 miles per hour (mph) or 4.5 feet per second. Ensure all compaction rollers complete a minimum of two complete rolling cycles prior to the mat temperature cooling to 180 degrees Fahrenheit (F). Continue finish rolling until all roller marks are eliminated and no further compaction is possible. The Engineer will verify and document that the roller pattern has been adhered to. The Engineer can stop production when the roller pattern is not adhered to.

d. Measurement and Payment. The completed work, as described, will be measured and paid for using applicable pay items as described in subsection 501.04 of the Standard Specifications for Construction, or the contract, except as modified below.

Base Price. Price established by the Department to be used in calculating incentives and adjustments to pay items and shown in the contract.

If acceptance tests, as described in section c. of this special provision, show that a Table 1 mixture parameter exceeds the Range 1, but not the Range 2, tolerance limits, that mixture parameter will be subject to a 10 percent penalty. The 10 percent penalty will be assessed based on the acceptance tests only unless the Contractor requests that the 10,000 gram sample part retained for possible dispute resolution testing be tested. The Contractor has 4 calendar days from receipt of the acceptance test results to notify the Engineer, in writing, that dispute resolution testing is requested. The Contractor's QC test results for the corresponding QA test results must result in an overall payment greater than QA test results otherwise the QA tests will not be allowed to be disputed. The Engineer has 4 calendar days to send the dispute resolution sample to the lab once dispute resolution testing is requested. The dispute resolution sample will be sent to an independent lab selected by the Local Agency, and the resultant dispute test results will be used to determine the penalty per parameter, if any. Ensure the independent lab is a MDOT QA/QC qualified lab or an AMRL HMA qualified lab. The independent lab must not have conflicts of interest with the Contractor or Local Agency. If the dispute testing results show that the mixture parameter is out-of-specification, the Contractor will pay for the cost of the dispute resolution testing and the contract base price for the material will be adjusted, based on all test result parameters from the dispute tests, as shown in Table 3 and Table 4. If the dispute test results do not confirm the mixture parameter is out-of-specification, then the Local Agency will pay for the cost of the dispute resolution testing and no price adjustment is required.

If acceptance tests, as described in section c. of this special provision, show that a Table 1 mixture parameter exceeds the Range 2 tolerance limits, the 10,000 gram sample part retained for possible dispute resolution testing will be sent, within 4 calendar days, to the MDOT Central Laboratory for further testing. The MDOT Central Laboratory's test results will be used to determine the penalty per mixture parameter, if any. If the MDOT Central Laboratory's results do not confirm the mixture parameter is out-of-specification, then no price adjustment is required. If the MDOT Central Laboratory's results show that the mixture is out-of-specification and the Engineer approves leaving the out-of-specification mixture in place, the contract base price for the material will be adjusted, based on all parameters, as shown in Table 3 and Table 4.

In the case that the Contractor disputes the results of the test of the second sample obtained for a particular day of production, the test turn-around time frames given would apply to the second test and there would be no time frame on the first test.

The laboratory (MDOT Central Laboratory or independent lab) will complete all Dispute Resolution testing and return test results to the Engineer, who will provide them to the Contractor, within 13 calendar days upon receiving the Dispute Resolution samples.

In all cases, when penalties are assessed, the penalty applies to each parameter, up to two parameters, that is out of specification.

Table 3: Penalty Per Parameter

Mixture Parameter out-of-Specification per Acceptance Tests	Mixture Parameter out-of-Specification per Dispute Resolution Test Lab	Price Adjustment per Parameter
NO	N/A	None
YES	NO	None
	YES	Outside Range 1 but not Range 2: decrease by 10%
		Outside Range 2: decrease by 25%

The quantity of material receiving a price adjustment is defined as the material produced from the time the first out-of-specification sample was taken until the time the sample leading to the first in-specification test was taken.

Each parameter of Table 1 is evaluated with the total price adjustment applied to the contract base price based on a sum of the two parameter penalties resulting in the highest total price adjustment as per Table 4. For example, if three parameters are out-of-specification, with two parameters outside Range 1 of Table 1 tolerance limits, but within Range 2 of Table 1 limits and one parameter outside of Range 2 of Table 1 tolerance limits and the Engineer approves leaving the mixture in place, the total price adjustment for that quantity of material is 35 percent.

Table 4: Calculating Total Price Adjustment

Cost Adjustment as a Sum of the Two Highest Parameter Penalties		
Number of Parameters Out-of-Specification	Range(s) Outside of Tolerance Limits of Table 1 per Parameter	Total Price Adjustment
One	Range 1	10%
	Range 2	25%
Two	Range 1 & Range 1	20%
	Range 1 & Range 2	35%
	Range 2 & Range 2	50%
Three	Range 1, Range 1 & Range 1	20%
	Range 1, Range 1 & Range 2	35%
	Range 1, Range 2 & Range 2	50%
	Range 2, Range 2 & Range 2	50%

Table 5: Density Frequency Curve Development

Tested by: _____ Date/Time: _____

Route/Location:		Air Temp:
Control Section/Job Number:		Weather:
Mix Type:	Tonnage:	Gauge:
Producer:	Depth:	Gmm:

Roller #1 Type: _____

Pass No.	Density	Temperature	Comments
1			
2			
3			
4			
5			
6			
7			
8			
Optimum			

Roller #2 Type: _____

Pass No.	Density	Temperature	Comments
1			
2			
3			
4			
5			
6			
7			
8			
Optimum			

Roller #3 Type: _____

Pass No.	Density	Temperature	Comments
1			
2			
3			
4			
5			
6			
7			
8			
Optimum			

Summary: _____

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
**QUALITY CONTROL AND ACCEPTANCE OF PORTLAND CEMENT CONCRETE
(FOR LOCAL AGENCY PROJECTS ONLY)**

CFS:JFS

1 of 21

APPR:TES:DBP:06-11-18

FHWA:APPR:06-14-18

a. Description. The Contractor must administer quality control (QC) and the Department will administer quality assurance (QA) procedures that will be used for acceptance of and payment for all Portland cement concrete (PCC) for the project. Except as explicitly modified by this special provision, all materials, test methods, and PCC mixture requirements of the standard specifications and the contract apply.

Do not place concrete until the Engineer's daily startup testing verifies that the fresh concrete properties have been met, in accordance with subsection d.2 of this special provision.

Provide the Engineer a minimum 24 hours notification prior to each concrete placement.

1. Terminology.

Air Content of Fresh Concrete. The recorded total air content of fresh concrete sampled and tested according to this special provision.

Air Content Test Results. The recorded air content of fresh concrete corresponding to the strength test specimens that were molded for acceptance.

Alkali-Silica Reactivity (ASR). A chemical reaction which occurs over time within concrete between high alkaline cement paste and reactive forms of silica found in some aggregates. In the presence of moisture, an expansive ASR gel is formed which can exert pressure within the concrete, causing random cracking and premature deterioration of the concrete. See subsection c.5.A of this special provision.

Base Price. Price established by the Department to be used in calculating incentives or adjustments to pay items and shown in the contract.

Concrete Mix Design. The process, by which the concrete mixture performance characteristics are defined, based on selected materials, performance requirements, environmental exposure considerations, placement methods, and other factors that control the plastic and hardened properties of the concrete in efforts to produce an economical and durable product.

Job Mix Formula (JMF). The actual batch quantities (mixture proportions) of each constituent included in the concrete mixture, based on adjustments to the target weights attained from the mix design process, necessary to optimize the concrete mixture properties.

Pay Factor (PF). The factor that is determined according to subsections d.3 of this special provision, used to calculate the price adjustment for a discrete quantity of concrete relative

to its respective level of quality. Pay factor will not exceed 1.00. Therefore, there will never be a positive pay adjustment.

Price Adjustment (ADJ). The price adjustment applied to the quantity of concrete represented by the respective quality index analysis described in subsections d.3 of this special provision.

Production Lot. A discrete cubic yard quantity of concrete containing the same JMF and used for the same application, as described in subsection d.2 of this special provision.

Quality Assurance (QA). Activities administered by the Engineer dealing with acceptance of the product, including, but not limited to, materials selection, sampling, testing, construction inspection, and review of Contractor QC documentation. All concrete QA sampling and testing will be administered by the Department. Department administered QA is described in section d of this special provision.

Quality Control (QC). All activities administered by the Contractor to monitor, assess, and adjust production and placement processes to ensure the final product will meet the specified levels of quality, including, but not limited to, training, materials selection, sampling, testing, project oversight and documentation. Contractor administered QC is described in section c of this special provision.

QC Action Limits. A range of values established by the Contractor in the QC plan that, if exceeded, requires that corrective action be taken by the Contractor to restore the continuity and uniformity of the mixture and methods in conformance with specification requirements. The QC action limits must not exceed the QC suspension limits.

QC Plan. The project-specific plan developed by the Contractor describing, in detail, all aspects of production and construction for the project to ensure consistent control of quality to meet specification requirements.

QC Plan Administrator. An employee of, or consultant engaged by the Contractor, responsible for developing and overseeing all aspects of QC for the project. This includes, but is not limited to preparing the QC plan, managing the Contractor QC personnel, communicating routinely with the production personnel to ensure quality, initiating corrective action and suspending operations when the process is found to be producing non-conforming materials, and preparing and submitting all necessary QC documentation to the Engineer within the specified time period.

QC Suspension Limits. A range of values defined in Table 1 that, if exceeded on a single QC test, requires that the Contractor suspend operations and determine, correct, and document the deficiencies before resuming production. The QC suspension limit must not exceed specification requirement thresholds.

Sample. A representative quantity of concrete taken during production which is used to measure the quality characteristics for the concrete.

Sampling Rate. The number of times the fresh concrete is sampled, as described in subsection d.2 of this special provision.

Small Incidental Quantity. A single day's placement of less than 20 cubic yards of concrete used for non-structural or non-pavement related applications, including, but not limited to:

curb and gutter, sidewalks and sidewalk ramps (excluding driveways and driveway ramps), installing sign or fence posts, guard rail or cable rail foundations (excluding end anchorage foundations), or other contract items where the small quantity of concrete is not paid for separately, as approved by the Engineer. Requirements for small incidental quantity consideration are described in subsections c.5.G, d.2.B and d.3 of this special provision. The corresponding weekly QA test results must meet specification limits defined in Table 3.

Specification Limits. The threshold values placed on a quality characteristic used to evaluate the quality of the material.

Strength Sample Test Result. The average of the two companion 28-day compressive strength test specimens taken from the same sample of concrete is considered a strength sample test result.

Strength Test Specimen. A strength test specimen is an individual 6-inch by 12-inch strength test cylinder or 4-inch by 8-inch strength test cylinder molded and cured according to *AASHTO T23/ASTM C 31* and tested according to *AASHTO T22/ASTM C 39*. All respective QC or QA strength test specimens must be the same nominal size. Strength test specimen cylinder size of 4-inch by 8-inch is permitted only if the nominal maximum coarse aggregate particle size, as specified for the coarse aggregate in the concrete mixture, is 1-inch, or less.

Sublot. A portion of a production lot, represented by a complete set of QA tests, as described in subsection d.2.A of this special provision. The Engineer and the Contractor may agree to reduce the typical subplot size based on project staging or other project conditions.

Supplementary Cementitious Materials (SCM). A mineral admixture (slag cement, fly ash) used to replace a portion of the Portland cement, either individually or as a blended cement, in the concrete mixture. SCM requirements are described in subsection c.5 of this special provision.

b. Materials. Mixture requirements must be in accordance with the contract.

c. Contractor Administered Quality Control (QC).

1. Contractor Quality Control Plan (QC plan). Prepare, implement, and maintain a QC plan specific to the project for concrete that will provide quality oversight for production, testing, and control of construction processes. The QC plan must be in conformance with the contract and must identify all procedures used to control production and placement including when to initiate corrective action necessary to maintain the quality and uniformity of the work.

Develop concrete mix designs and JMFs, as specified, and conduct QC sampling, testing, and inspection during all phases of the concrete work at the minimum frequency, or at an increased frequency sufficient to ensure that the work conforms to specification requirements.

Project-specific items required in the QC plan include (where applicable), but are not limited to the following:

A. Organization chart.

- B. QC Plan Administrator and contact information.
- C. The name(s) and credentials of the QC staff.
- D. Methods for interaction between production and QC personnel to engage timely corrective action, including suspension of work.
- E. Coordination of activities.
- F. Documentation, procedures, and submittals.
- G. Project and plant specifics.
- H. Concrete production facilities inspections and certifications.
- I. Current testing equipment calibration documentation including calibration factor.
- J. Testing and initial field curing facilities for QC and QA strength test specimens (AASHTO T23/ASTM C 31).
- K. Stockpile management plan.
- L. Corrective action plan.
- M. Mixing time and transportation, including time from batching to completion of delivery and batch placement rate (batches per hour), along with the manufacturer's documentation relative to the batching equipment's capabilities in terms of maximum mixing capacity and minimum mixing time (*ASTM C 94*).
- N. Placement and consolidation methods including monitoring of vibration, depth checks, and verification of pavement dowel bar alignment.
- O. Process for monitoring stability of air content of fresh concrete during concrete production and placement.
- P. Hot and cold weather protection considerations and methods.
- Q. Control charts with action and suspension limits.
- R. Verification for non-deleterious alkali-silica reactivity (see subsection c.5.A of this special provision).
- S. Mix design and JMFs.
- T. Proposed production lot size and location for use of each JMF on the project.
- U. The frequency of sampling and testing.
- V. Handling, protection, initial curing, and transporting of strength test specimens (*AASHTO T23/ASTM C31*).

- W. Methods to monitor construction equipment loading and open-to-traffic strengths.
- X. Finishing and curing procedure.
- Y. Ride quality control.
- Z. List of QC records to be submitted to the Engineer in accordance with subsection c.2 of this special provision.

Submit the QC plan, for the appropriate items of work, to the Engineer for review a minimum of 10 working days before the start of related work. The Engineer will notify the Contractor of any objections relative to the content of the QC plan within 5 working days of receipt of the QC plan. Do not begin concrete placement before acceptance of the QC plan by the Engineer. If the approved QC plan fails to provide acceptable work, or acceptable control of the work, the Engineer may require the Contractor to revise the QC plan. Revisions to the QC plan must be approved by the Engineer prior to resuming work.

2. QC Records. Maintain complete records of all QC tests and inspections. Document what action was taken to correct deficiencies. Include sufficient information to allow the test results to be correlated with the items of work represented.

Furnish one copy of all QC records, including test reports for the fresh concrete placement, to the Engineer within 24 hours after the date covered by the record in a format acceptable to the Engineer. The Engineer will withhold acceptance of the concrete for failure to provide properly documented and timely QC records and reports.

If the Engineer is performing QA sampling and testing at the same time the Contractor is performing QC sampling and testing, all associated QC records must include the appropriate production lot identification number that correlates with the Department's QA production lot identification number.

3. Personnel Requirements. The QC Plan Administrator must have full authority and responsibility to take all actions necessary for the successful implementation of the QC plan, including but not limited to, the following:

A. Monitoring and utilizing QC tests, control charts, and other QC practices to ensure that delivered materials and proportioning meets specification requirements.

B. Monitoring materials shipped to the project, prior to their use, to ensure their continued compatibility toward producing consistent quality.

C. Periodically inspecting all equipment utilized in transporting, proportioning, mixing, placing, consolidating, finishing, and curing to ensure proper operation.

D. Monitoring materials stockpile management, concrete batching, mixing, transporting, placement, consolidation, finishing, and curing to ensure conformance with specification requirements.

E. Maintaining and submitting all QC records and reports.

F. Directing the necessary corrective action to ensure continual conformance within

the QC action limits.

G. Suspending production for the project when suspension limits are exceeded.

H. Conducting or monitoring adjustments to the JMF.

Individuals performing QC tests must demonstrate that they are proficient and capable of sampling and testing concrete or aggregate, where applicable, in accordance with the associated test procedures and Department requirements prior to commencement of related work. Any adjustments to the JMF must be made by a certified concrete technician (Michigan Concrete Association (MCA) Michigan Level II).

4. QC Laboratory Requirements. Laboratories, including field laboratories and all associated testing equipment that prepare concrete mixes or perform QC testing, must demonstrate to the Engineer that they are equipped, staffed, calibrated, and managed so as to be capable of batching, and testing PCC in accordance with the applicable test methods and procedures. Mix designs and their accompanying JMFs must include a statement, signed by a certified concrete technician (MCA Michigan Level II), that all applicable standard test methods have been followed in verifying the mix design and JMF.

5. Mix Design and Documentation. Design concrete mixtures meeting the requirements specified in Table 1. Provide the grade of concrete for the section number reference application specified in Table 1, or as specified in the contract. Request variance in writing when proposing a mix design that exhibits temperature, slump or air content other than those specified. Include the proposed mix design, JMF, and associated trial batch verification test data. Do not use a grade of concrete with a lower specification limit (LSL) 28-day compressive strength greater than what is designated for the application.

Blended cement meeting the requirements of *ASTM C 595 Type II* is permitted.

Ensure supplementary cementitious materials are from an MDOT Approved Manufacturer. Slag cement must meet the requirements of subsection 901.06 of the Standard Specifications for Construction. Fly ash must meet the requirements of subsection 901.07 of the Standard Specifications for Construction.

Secure prior approval from the Engineer to use concrete intended for early opening to traffic to facilitate driveway gaps or other features necessary for required local access.

Unless otherwise specified in the contract, set accelerating admixtures are prohibited.

Optimized aggregate gradation is required for high performance concrete and concrete mixtures that are placed using a pump. Concrete mixtures for tremie and drilled shaft applications do not require optimized aggregate gradation. The physical requirements for coarse and intermediate aggregates specified in subsection 902.03.C of the Standard Specifications for Construction apply to high performance concrete pavement mixtures. The physical requirements for aggregates used in concrete mixtures for all other applications will be according to the contract.

Unless otherwise specified in the contract, provide either concrete Grade P1 or Grade D for bridge approach slab applications.

Unless otherwise specified in the contract, do not exceed 40 percent replacement of the Portland cement in the concrete mixture with a supplementary cementitious material. Do not exceed 40 percent total replacement of the Portland cement if more than one supplementary cementitious material is used in the concrete mixture.

Use the combined weight of all cementitious materials to determine compliance with the maximum water-cementitious ratio and cementitious material content requirements specified in Table 1.

For night casting, where applicable, a water-reducing admixture may be used in lieu of a water-reducing and retarding admixture, provided the concrete can be placed and finished in the sequence specified on the plans prior to initial set, is not subjected to residual vibration, or is not within the areas influenced by dead load deflections as a result of adjacent concrete placement operations. When the maximum air temperature is not forecast to exceed 60 degrees F for the day, the Contractor may use a water-reducing admixture or a water-reducing retarding admixture.

Table 1: Minimum Mix Design Requirements for Concrete

Mix Design Parameter	Grade of Concrete						
	P1M (a,b,e)	P1 (a,b)	D,DM (a,b,e)	T	S1 (a)	S2,S2M (a,b,e)	S3/P2 (a)
Lower Specification Limit (LSL) (28-day compressive, psi)	3500	3500	4500	3500	4000	3500	3000
Rejection Limit for an Individual Strength Sample Test Result	3000	3000	4000	3000	3500	3000	2500
Maximum Water/Cementitious Ratio (lb/lb) (c)	0.45						
Cementitious Material Content (lb/yd ³) (d)	470-564	517-611	517-658	517-611	517-611	517-611	489-517
Air Content (percent) (f)	5.5-8.5						
Slump (inch) (max.)	(g)						
Section Number Reference (h)	602, 603	602, 603, 801, 802, 803, 810	706, 711, 712	706, 718	705	401, 706, 712, 713, 718, 801, 802, 803, 810, 819	402, 403, 602, 803, 804, 806, 808, 810, 813, 814
a. If the local average minimum temperature in the next 10 consecutive days is forecast to be below 40 degrees F, submit a revised QC plan for the Engineer's approval, addressing in detail changes in materials, concrete batching and mixing processes, construction methods, curing, and protection of the in situ concrete to ensure that the necessary quality characteristics of the hardened concrete product will not be compromised as a result of the cold weather. The revised QC plan must be approved by the Engineer prior to cold weather concrete placement. Do not remove supplementary cementitious material from the concrete mixture. b. Use aggregates from only geologically natural sources for pavement, shoulder, miscellaneous pavement (including ramps), concrete pavement overlay, bridge approach slab, structural concrete, drilled shaft, bridge railing, and bridge sidewalk applications. c. Use admixtures as listed in the Qualified Products Lists to reduce mixing water. Ensure concrete in concrete diaphragms contains a water-reducing admixture, or a water-reducing retarding admixture. d. Type III cement is not permitted. e. For grades of concrete requiring optimized gradation, aggregates must meet the physical requirements specified in subsection 902.03.C of the Standard Specifications for Construction. f. For action, suspension, and specification limits, see Tables 2 and 3, where applicable. g. The maximum slump for Grades P1, P1M, and P2 concrete is 3 inches or as documented on the approved JMF. All other grades of concrete will be according to Table 701-1 of the Standard Specifications for Construction.							
h. Section Number Reference:			402 Storm Sewers 602 Concrete Pavement Construction 705 Foundation Piling 711 Bridge Railings 713 Bridge Rehabilitation-Steel 801 Concrete Driveways 803 Concrete Sidewalk, Sidewalk Ramps, and Steps 806 Shared Use Paths 810 Permanent Traffic Signs and Supports 814 Paved Ditches				
401 Pipe Culverts 403 Drainage Structures 603 Concrete Pavement Restoration 706 Structural Concrete Construction 712 Bridge Rehabilitation-Concrete 718 Drilled Shafts 802 Concrete Curb, Gutter and Dividers 804 Concrete Barriers and Glare Screens 808 Fencing 813 Slope Protection 819 Electrical and Lighting							

A. Alkali-Silica Reactivity. Provide documentation to the Engineer that the concrete mixture does not present the potential for deleterious expansion caused by alkali-silica reactivity (ASR). Provide current ASR test results (valid for 2 years from completion of testing), for the fine aggregate that is proposed to be used in the concrete, from an independent testing laboratory proficient in ASR testing. The independent testing laboratory must certify in writing, including a signed statement that all testing was conducted in accordance with the designated standard test procedures, described herein. Test results must conform to the specified criterion for one of the following standard test methods. ASR testing is not required for concrete pavement repairs and temporary concrete pavements. Use the Rounding Method described in *ASTM E 29* when determining significant digits for reporting expansion test results.

(1) Method 1. *ASTM C 1293*. Concrete Prism Test. If the expansion of concrete prisms is not greater than 0.040 percent (rounded to the nearest 0.001 percent) after 1 year, the fine aggregate is considered non-deleterious to ASR and may be used in the JMF.

(2) Method 2. *ASTM C 1567*. Mortar Bar Test. If no previous test data are available for the fine aggregate that shows it is resistant to ASR using Method 1, above, replace 25 to 40 percent of the Portland cement in the concrete mixture with a supplementary cementitious material. A blended cement meeting the requirements of *ASTM C 595* containing the above Portland cement and supplementary cementitious material proportions may also be used.

Demonstrate the ability of the supplementary cementitious material to control the deleterious expansion caused by ASR by molding and testing mortar bars according to the standard test method described in *ASTM C 1567* using the mix proportions and constituent sources for both the aggregates and the cementitious materials that will be used for the project. Make at least three test specimens for each cementitious materials-aggregate combination. If the average of three mortar bars for a given cementitious materials-aggregate combination produces an expansion less than 0.10 percent (rounded to the nearest 0.01 percent) at 14 days of immersion, the JMF associated with that combination will be considered non-deleterious to ASR. If the average expansion is 0.10 percent (rounded to the nearest 0.01 percent) or greater, the JMF associated with that combination will be considered not sufficient to control the deleterious expansion caused by ASR and the JMF will be rejected.

(3) Method 3. *ASTM C 1260*. Mortar Bar Test. If the expansion of the mortar bars is less than 0.10 percent (rounded to the nearest 0.01 percent) at 14 days of immersion, the fine aggregate is considered non-deleterious to ASR and may be used in the concrete without the need for ASR mitigation.

The Engineer will not approve the use of the JMF if the expansion exceeds the respective threshold limits for the respective ASTM test method used.

B. Contractor Provided Mixes. Provide mix design and accompanying JMFs using the methods of verification included in this special provision. Include sufficient information on constituent materials and admixtures along with trial batch verified physical properties of the fresh concrete, mix proportions per cubic yard for all constituents and compressive strength test results necessary to allow the Engineer to

fully evaluate the expected performance of the concrete mixture.

(1) Mix Documentation. Prepare mix designs for each grade of concrete required on the project. Submit JMF for each mix design, including all required documentation, to the Engineer for review 10 working days before the anticipated date of placement. The Engineer will notify the Contractor of any objections within 5 working days of receipt of the mix documentation. Number or otherwise identify each JMF and reference all accompanying documentation to this identification. Reference each JMF to the appropriate method of verification. Mix design and JMF submittals that do not include all required documentation will be considered incomplete and the Engineer will return them without review.

Mix documentation for the project is required to be verified annually. The Engineer may allow annual mix documentation renewal if it is shown that the material characteristics have not deviated beyond the requirements specified in the contract.

All mix designs and accompanying JMFs must be traceable to a laboratory meeting the requirements of this special provision.

Submit mix design and JMF on the MDOT Job Mix Formula (JMF) Concrete Field Communication form (MDOT Form Number 1976); include accompanying documentation. List the source of materials, bulk density (unit weight) of coarse aggregate (rodding procedure or shoveling procedure), absorption of aggregates, relative density (specific gravity) of aggregates, aggregate correction factors, batch weights, and project specific or historical laboratory test data. Include the recorded air content of fresh concrete using the same admixture and cementitious material sources to be used in the production of the concrete for the project. A JMF will be approved only if all of the minimum mix design requirements specified in the contract have been met.

(2) Job Mix Formula (JMF). Select proportions for concrete mixtures according to *ACI Standard 211.1*. The volume (oven-dry-rodded) of coarse aggregate per unit volume of concrete must be 65 percent, minimum.

Four methods of verification of proposed JMF are acceptable.

(a) Method 1. Trial Batches. Verification of JMF is based on trial batches with the same materials and proportions proposed for use on the project. Prepare at least one trial batch for each mix design in sufficient time before starting concrete placement to allow for review according to subsection c.5.B.(1) of this special provision. Provide the results of temperature, slump, density (unit weight), air content of fresh concrete, 28-day compressive strength, and age of concrete at the time of strength testing, for a minimum of three independent samples. All samples may be taken from a single trial batch for a mix design provided the trial batch is at least four cubic yards in volume. For JMF trial batch verification purposes only, 7-day compressive strength test results which report at least 70 percent of the specified 28-day lower specification limit (LSL) will be sufficient documentation in lieu of 28-day compressive strengths. The average of at least two strength test specimens represents one compressive strength sample test result for each independent sample. Provide the necessary ASR documentation as described in subsection c.5.A of this special provision.

(b) Method 2. Same Mix. Verification of JMF is based on the concrete producer's experience with the same mix design, JMF, and the same materials. Provide the results of temperature, slump, density (unit weight), air content of fresh concrete, 28-day compressive strength, and age of concrete at the time of strength testing, for a minimum of three independent samples. The average of at least two strength test specimens represents one compressive strength sample test result for each independent sample. Do not substitute material types or sources, including admixtures or cementitious materials, nor change mix proportions in the JMF. Provide the necessary ASR documentation as described in subsection c.5.A of this special provision.

(c) Method 3. Similar Mix. Verification of JMF is based on requirements described in Method 2, in subsection c.5.B.(2).(b) of this special provision. Substitution of coarse aggregate source is permitted if the new source is of the same geologic type as the original aggregate, and conforms to the specification requirements for the application. Substitution of fine aggregate is permitted only if the new source has been tested for ASR. Provide the necessary ASR documentation as described in subsection c.5.A of this special provision.

Provide the supporting laboratory trial batch documentation and accompanying calculations showing how the mix proportions in the JMF were adjusted, based on the documented differences in relative density (specific gravity), bulk density (unit weight) and absorption of the substituted aggregate sources, to produce a theoretical yield of 100 percent and the required fresh concrete properties.

(d) Method 4. Annual Verification. At the Engineer's option, verification may be accepted annually for a concrete producer rather than on a project basis provided the sources and proportions of the constituent materials, including cementitious materials and source and types admixtures, do not change. If the project is the continuation of work in progress during the previous construction season and written certification is submitted to the Engineer that materials from the same source and with the same mixture properties are to be used, the Engineer may waive the requirement for annual renewal verification of the JMF for the project. Provide the necessary ASR documentation as described in subsection c.5.A of this special provision.

C. Department Provided Mixes. Unless otherwise specified in the contract or approved by the Engineer, the Engineer will provide the concrete JMF for the following types of concrete regardless of the total quantity for the project.

- (1) Structural concrete patching mixtures, mortar and grout.
- (2) Bridge deck overlay concrete mixtures.
- (3) Project-specific concrete mixtures and grades not defined in Table 1.

Provide all other mix designs and accompanying JMF's according to subsection c.5.B of this special provision.

The ASR documentation for the fine aggregate described in subsection c.5.A of this

special provision must accompany the Contractor's request for the concrete JMF.

D. Changes in Materials and Proportions. Any changing from one approved JMF to another for the same grade of concrete must have prior approval by the Engineer.

Prior to batching, verify that the proposed JMF changes will not affect the properties of the fresh concrete (slump, temperature, air content, density (unit weight), workability), nor result in deleterious mortar bar expansion as a result of ASR, as described in subsection c.5.A of this special provision.

Record all changes to JMF in the QC records along with the rationale for the change.

E. QC Sampling and Testing. Conduct startup sampling and testing for temperature, slump, density (unit weight), and air content on the first load. Do not place concrete until testing verifies that the fresh concrete properties have not exceeded the QC action and suspension limit thresholds specified in Table 2 and the testing correlation requirements of subsection d.1.B of this special provision have been met. Continue testing subsequent loads as described in the QC plan, for each grade of concrete delivered to the work site each day. The QC sampling and testing must be random and independent from the Agencies QA sampling and testing.

Provide the curing facilities in accordance with subsection d.2.C of this special provision prior to start of concrete production.

Perform QC sampling and testing for air content of fresh concrete that is either slipformed or pumped, as described in the QC plan. Sample and test a representative haul unit of concrete immediately after its discharge but before the slipform paver or pump hopper, where applicable. Sample and test the concrete representing the same haul unit, again, after the slipform paver or after discharge from the pump (without interruption or alteration of the pumping operation), where applicable. If the difference in measured air content between the two test locations for the same concrete is greater than 1.5 percent air by volume of concrete, suspend operations and administer corrective action. Resume concrete placement only after taking the necessary corrective action to reduce the loss in air content of fresh concrete between the two test locations, as approved by the Engineer. Document the corrective action to be taken in the QC records and make the necessary changes to the QC plan, where applicable.

Concrete exceeding the maximum specification limits for slump or temperature must be rejected regardless of the total mixing time at the time of arrival to the project.

The Engineer may require the Contractor to administer additional QC sampling and testing if the Engineer determines the Contractor's current QC sampling and testing methodology is shown to be insufficient to ensure continual control of the quality of the concrete.

Take the appropriate corrective action, as described in the QC plan, when QC testing shows the QC action limits for any quality characteristic are exceeded. Suspend production if any of the QC suspension limits are exceeded or if the corrective action is not sufficient to restore the quality to acceptable levels.

Resume production only after making all necessary adjustments to bring the mixture into

conformance with all applicable specifications and receiving approval to resume work from the Engineer. Document these adjustments in the QC records.

Table 2: QC Action and Suspension Limits

Quality Characteristic	Action Limits	Suspension Limits
Air Content (percent)	See Note Below	< 5.0 or > 9.0
Air Content Loss (percent)	As Defined in the Contractor QC plan	Greater than 1.5
Conc. Temp. (Deg. F)		< 45 or > 90 at time of placement
Slump (max.) (inch)		See Table 1, footnote (g)
Density (unit weight)		N/A
Note: Action limits must be defined in the Contractor QC plan and cannot be < 5.5 or > 8.5. Suspend work if air content is < 5.0 or > 9.0 percent after pump or paver, regardless of the air content loss.		

F. Work Progress Test Specimens. Determine the strength of concrete for opening to construction traffic or regular traffic, for removing shoring and forms, or for similar purposes in accordance with subsections 104.11, 601.03.H and 701.03.D of the Standard Specifications for Construction, and as approved by the Engineer. Cure work progress test specimens in the same manner as the in-situ concrete. Allow the Engineer to witness testing of work progress test specimens.

The maturity method may be used to determine the in-place, opening-to-traffic flexural strength, provided the necessary preliminary flexural strength versus time-temperature factor correlation, using the same materials and JMF, is established according to Department procedures and approved by the Engineer before placing the concrete.

G. Reduced QC for Small Incidental Quantities. If approved by the Engineer, reduced levels of on-site QC testing for concrete may be considered for small incidental quantities defined in subsection a.1 of this special provision.

Unless approved by the Engineer, multiple small incidental quantities, including ones that are consecutively placed throughout the project on the same day, are not eligible for reduced QC consideration if the total plan quantity of concrete for the item exceeds 100 cubic yards in volume. Include details for reduced QC testing and oversight in the approved QC plan, and in accordance with following:

(1) The small incidental quantity of concrete will be limited to a single day's concrete placement of a maximum 20 cubic yards in volume.

(2) The small incidental quantity of concrete is not an integral part of a structural load bearing element.

(3) The Engineer received written certification from the Contractor that the concrete supplier has a current QC plan in place and available for review upon request by the Engineer.

(4) The concrete supplier employs a certified concrete technician (MCA Michigan Level II) available at the plant or on call during concrete placement to validate and authorize modifications to the concrete JMF, as necessary.

(5) Prior to the first concreting operation, concrete representing the JMF for the small incidental quantity has been sampled and tested by a certified concrete

technician (MCA Michigan Level I or II) to verify that, historically, the JMF produced a concrete mixture meeting the minimum requirements for density (unit weight), slump, air content, and strength. Annual verification may be acceptable provided there are no changes to the material types or sources, including the cementitious materials and admixtures.

(6) The Engineer verified that the temperature, slump, and air content conform to specification requirements at the start of the day's concreting operation associated with the small incidental quantity.

(7) The Engineer is notified and provided sufficient opportunity to witness concrete placement.

d. Department Administered Quality Assurance (Acceptance).

1. Department Quality Assurance Plan (QA plan). The Engineer will be responsible for administering the quality-based acceptance and will institute any actions necessary toward its successful implementation.

Acceptance of concrete pavement repair mixtures and concrete mixtures not included in Table 1 will be in accordance with the contract.

The Engineer will develop and follow a QA plan. The Engineer will provide the QA plan to the QC Plan Administrator a minimum of 5 working days prior to the pre-production meeting. The QA plan will be reviewed at the pre-production meeting and any proposed changes will be documented.

The nominal QA strength test specimen size, defined in subsection a.1 of this special provision will be noted in the QA plan.

A. Personnel Requirements. The personnel responsible for field inspection and for obtaining QA samples will possess the required qualifications to collect QA samples. Sampling will be performed by a certified concrete technician (MCA Michigan Level I or II) or (MCAT) certified aggregate technician, where applicable.

B. Testing Correlation. Prior to initial concrete placement, the testing personnel for both the Engineer's QA and Contractor's QC will use the equipment they have assigned to the project to conduct side by side correlation testing of the same concrete used on the project to verify correlation of both the Department's and the Contractor's test results for temperature and air content of fresh concrete. Additional side by side correlation testing will be conducted whenever there is a change in QC or QA equipment and/or testing personnel for the project, or as directed by the Engineer. The temperature measuring devices used for QC and QA must correlate with each other within 2 degrees F. If the air content results of the side by side tests conducted by the QC and QA testers and equipment differ by more than 0.8 percent air by volume of concrete, a referee air content test of fresh concrete must be conducted by a third party, designated by the Engineer but independent of the project, prior to commencement or continuation of concrete placement in efforts to resolve issues associated with non-correlation.

C. Laboratory Facilities. The testing laboratory with responsibility for acceptance testing on this project is the Department testing laboratory, or a qualified facility under the

authority of the Engineer.

2. QA Sampling and Testing. The Engineer will verify the Contractor's daily startup sampling and testing of temperature, slump, and air content of fresh concrete on the first load; conduct QA sampling and testing; monitor Contractor adherence to the QC plan; and inspect field placed materials in such a manner as to ensure that all concrete for the project is represented. The testing correlation requirements of subsection d.1.B of this special provision must be met prior to concrete placement.

The following *ASTM* test methods will apply. The Department's established procedures for sampling and testing are acceptable alternatives.

C 31 Practice for Making and Curing Concrete Test Specimens in the Field

C 39 Test Method for Compressive Strength of Cylindrical Concrete Specimens

C 78 Test Method for Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)

C 138 Test Method for Density (Unit Weight), Yield and Air Content (Gravimetric) of Concrete

C 143 Test Method for Slump of Hydraulic-Cement Concrete

C 172 Practice for Sampling Freshly Mixed Concrete

C 173 Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method

C 231 Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method

C 293 Test Method for Flexural Strength of Concrete (Using Simple Beam with Center-Point Loading)

A. Lot Size and Make Up. A production lot will not include more than one grade of concrete, concrete of the same grade having different specified slump or air content, or concrete of the same grade having different mix designs, or JMFs. Lot size and makeup will be determined by the Engineer, based on site conditions. A production lot may consist of a single day's production, individual concrete structural elements (eg. footing, column, pier cap, deck, bridge approach slab), or any combination thereof, provided they are of the same JMF. Each production lot will be divided into sublots of approximately equal size, as determined by the Engineer. The minimum number of sublots will be one per production lot, with the maximum number of sublots based on the anticipated total quantity of concrete to be placed and site conditions. A minimum of one subplot will be required for each day of production.

B. Sampling. QA sampling and testing will be conducted by the Engineer during concrete placement. Where practical, the random number method (as described in the "Random Sampling for Quality Control/Quality Assurance Projects" section of the Materials Quality Assurance Procedures Manual) will be used to determine the sampling locations. The sampling rate will be determined by the Engineer, based on the anticipated total quantity of concrete to be placed and site conditions, with a minimum of one sampling for each day of production.

At the option of the Engineer, small incidental quantities as defined in subsection a.1 of this special provision may be accepted (visually inspected and noted on the Inspector's Daily Report) without daily 28-day compressive strength QA test specimens provided there is a current acceptable strength test history of the JMF for the project prior to placement of the small incidental quantity. One set of compressive strength QA test specimens will then be molded for each small incidental quantity JMF at least once per week during production, thereafter, as determined by the Engineer (note the test results or identification number for the corresponding weekly QA compressive strength test result on the Inspector's Daily Report for each small incidental quantity). Quality control testing and daily QA testing for temperature, slump, and air content of fresh concrete are still required. Reduced QC for small incidental quantities, as described in subsection c.5.G of this special provision, may be considered.

The QA sampling rate and sample location will be based on cubic yard quantities.

Samples for acceptance will be taken at the point of discharge from the haul unit, at approximately the middle one-third of the load. Mix adjustments to the concrete contained within the haul unit selected for QA sampling and testing (beyond normal QC) will not be permitted prior to QA sampling and testing. QA sampling will be random and without prior notification.

The Engineer will perform QA sampling and testing for air content loss of fresh concrete that is either slipformed or pumped, (1) at least once during each day of production, (2) whenever the concrete pump is relocated, where applicable, or (3) whenever there is a significant change in the boom configuration or operation of the concrete pump, or there is a significant change in the characteristics of the paving operation during concrete placement. Concrete will be sampled from a representative haul unit immediately after its discharge but before the slipform paver or pump hopper, where applicable. The concrete representing the same haul unit will then be sampled and tested after the slipform paver or after discharge from the pump (without interruption or alteration of the pumping operation), where applicable. If the difference in measured air content between the two test locations for the same concrete is greater than 1.5 percent air by volume of concrete, the Engineer will issue a Notice of Non-Compliance with Contract Requirements (Form 1165), as described in subsection d.2.D of this special provision. The Contractor may resume concrete placement only after the necessary corrective action is taken to reduce the loss in air content of fresh concrete between the two test locations, as approved by the Engineer. Document the corrective action that was taken by the Contractor.

C. Testing. The location(s) within the project limits for QA testing of the fresh concrete and placement of curing facilities for initial curing of the 28-day compressive strength QA test cylinders will be determined by the Engineer in conformance with the following criteria:

(1) The elapsed time between obtaining the first and the final portion of the composite sample must not exceed 15 minutes.

(2) Testing for slump, temperature, and air content of fresh concrete must begin within 5 minutes after obtaining the final portion of the composite sample.

(3) Molding of the 28-day compressive strength QA test cylinders must begin within 15 minutes after obtaining the final portion of the composite sample.

(4) The concrete sample must be protected from the sun, wind, and other sources of rapid evaporation, and from contamination.

Two QA concrete strength test specimens per sample will be molded for 28-day compressive strength QA testing.

The Contractor will provide curing facilities equipped to ensure the proper environment for the Agencies QA concrete strength test specimens during initial cure. Each initial cure facility must provide ventilation or insulation, where applicable, to ensure the ambient temperature surrounding the specimens is maintained according to *AASHTO T23/ASTM C 31*. Failure by the Contractor to maintain the proper curing environment during initial cure will not be basis for rejection of samples or claims against the Department. Each initial curing facility must be capable of being locked, using an Department provided padlock. The Contractor will ensure that all initial curing facilities are accounted for at all time, and protected against theft and damage. The Contractor will place and secure each initial cure facility throughout the project limits in such a manner so as to minimize excessive transport of the test specimens prior to initial cure, as follows:

(5) Immediately after finishing molded specimens, the Engineer will move the QA concrete strength test specimens to the closest initial cure facility provided by the Contractor.

(6) Immediately after all QA concrete strength test specimens are placed into the cure facility and the proper initial curing conditions have been established, the Engineer will secure the facility using the Department provided padlock. Access to the QA concrete strength test specimens, thereafter, must be coordinated with the Engineer and will only be permitted in the presence of the Engineer.

(7) The Engineer will transport the QA concrete strength test specimens within 48 hours after molding, but not prior to 8 hours after final set of the concrete, from the initial curing facility to the Department's designated testing laboratory for final curing and strength testing. The specimens will be protected with a suitable cushioning material to prevent damage from jarring during transport. The total transportation time must not exceed 4 hours prior to commencement of final curing.

D. QA Stop Production Criteria. The Engineer will issue a Notice of Non-Compliance with Contract Requirements (Form 1165) and concrete production must stop when one or more of the following are observed.

(1) The QA testing shows that one or more of the suspension limits for quality characteristics defined in Table 2 are in non-compliance.

(2) The QC plan is not being followed.

(3) Segregation, excessive slumping of unsupported slipformed edges, or other notable changes in the fresh concrete properties is observed that may prevent proper placement, consolidation and finishing, or compromise the performance or long-term durability of the finished product.

(4) The required curing system is not being applied in a timely manner, as

specified by the contract.

(5) If the measured air content loss between the two testing locations for the same concrete is greater than 1.5 percent air by volume of concrete as described in subsections c.5.E and d.2.B of this special provision.

(6) If the air content of fresh concrete is less than 5.0 or greater than 9.0 percent after pump or paver, regardless of the recorded QC or QA air content loss through the pump or paver.

The Engineer will issue a Notice to Resume Work (Form 1165) only after all necessary adjustments are made to restore conformance with all applicable specifications, and the appropriate documentation is made in the QC records.

E. QA Records. The Engineer will maintain a complete record of all QA tests and inspections. The records will contain, as a minimum, signed originals of all QA test results and raw data, random numbers used (where applicable) and resulting calculations. The QA test results will not be provided to the Contractor until the corresponding QC test results are received by the Engineer.

3. Quality Index Analysis. The Engineer's QA test results will be used to determine the pay factor (PF) and price adjustment (ADJ). The Contractor's QC test results will not be used for pay factor and price adjustment analysis. The Engineer will complete pay factor and price adjustment analysis within 7 working days after completion of all 28-day compressive strength testing for the representative production lot or quantity of concrete. The quality index parameter specification limits are defined in Table 3. Unless otherwise specified in the contract, concrete not conforming to the requirements specified in Table 3 is rejectable and subject to further evaluation. All values of PF and OLPF in these formulae are decimal, not percent. All values of PF and OLPF are rounded to two decimal places.

Price adjustment for 28-day compressive strength deficiencies will be based on test results for the corresponding weekly QA test specimens and the pay factor (PFs) calculated according to the formula defined in subsection d.3.A. The price adjustment (ADJ) = (PFs – 1)(Price).

Table 3: Quality Index Parameter Specification Limits

Quality Characteristic	Specification Limits
Air Content of Fresh Concrete (percent)	5.5 – 8.5
Rejection Limit (percent)	<5.0 or >9.0
Conc. Temp. (deg. F)	45 - 90 at time of placement
Slump (max.) (inch)	See Table 1, footnote (g)
28-day Compressive Strength (psi)	For LSL see Table 1
Rejection Limit - 28-day Compressive Strength	See Table 1

A. Pay Factor for 28-Day Compressive Strength (PFs).

$$PFs = \frac{\text{Tested Strength}}{LSL}$$

Where:

PFs = Pay Factor for 28-day compressive strength (not to exceed 1.00)

Tested Strength = QA 28-day compressive strength sample test result

LSL = Lower specification limit (see Table 1)

If the tested strength does not meet the rejection limit specified in Table 1, the Engineer will require additional evaluation as described in subsection d.4 of this special provision.

B. Pay Factor for Air Content of Fresh Concrete (PFac). The pay factor for air content of fresh concrete (PFac) will be according to Table 4.

Table 4: Air Content of Fresh Concrete Pay Factor (PFac)

Air Content of Fresh Concrete (percent)	Pay Factor (PFac)
5.5 – 8.5	1.00
5.0 – 5.4	0.50
Below 5.0	Rejection
8.6 – 9.0	0.75
Above 9.0	Rejection

If the air content of fresh concrete is below 5.0 or above 9.0 percent, the Engineer will elect to do one of the following.

(1) Require removal and replacement of the entire quantity of concrete represented by the test with new testing conducted on the replacement concrete and repeat the evaluation procedure.

(2) Allow submittal of a corrective action plan for the Engineer's approval. If the Engineer does not approve the plan for corrective action, subsection d.3.B.(1) of this special provision will be applied. All costs associated with plan submittal and corrective action under this subsection will be borne by the Contractor.

C. Overall Lot Pay Factor (OLPF). The following formulae are used to calculate the OLPF and ADJ. The OLPF will not exceed 1.00.

$$\text{OLPF} = (0.60 \times \text{PFs}) + (0.40 \times \text{PFac})$$

$$\text{ADJ} = (\text{OLPF} - 1)(\text{Price})$$

ADJ = Price adjustment per pay unit to be applied to the quantity represented by the QA test

Price = Base price established for the pay item

4. Evaluation of Rejectable Concrete. The Engineer will require additional evaluation to decide what further action may be warranted, as described below. Acceptance for air content of fresh concrete will be based on QA test results reported at the time of concrete placement.

If the Engineer determines that non-destructive testing (NDT) is appropriate, this work will be done by the Contractor in the presence of the Engineer within 45 calendar days from concrete placement. All costs associated with this work will be borne by the Contractor. A complete set of non-destructive tests must be conducted (in accordance with the respective standard test method) at a minimum three randomly selected locations. If NDT is used to estimate the in-situ strength, a calibrated relationship between the project JMF under evaluation and the NDT apparatus must have been established prior to NDT testing according to its respective standard test method.

If the 28-day compressive strength QA test results show that the rejection limit (as specified in Table 1) has not been achieved, the quantity of concrete under evaluation will be rejected and the Engineer will require additional evaluation to decide what further action may be warranted.

Propose an evaluation plan and submit it to the Engineer for approval before proceeding. The results from NDT will be used only to decide what further action is required. This determination will be made by the Engineer, as follows:

A. For non-structural concrete. If no test result from non-destructive testing falls below the lower specification (LSL) 28-day compressive strength, the represented quantity of concrete under evaluation will remain in place and a pay factor for 28-day compressive strength (PFs) of 1.00 will be applied for overall lot pay factor (OLPF) and price adjustment (ADJ) determinations according to subsection d.3 of this special provision.

B. For structural concrete (including overhead sign foundations). If no test result from non-destructive testing falls below the lower specification limit 28-day compressive strength, the represented quantity of concrete under evaluation will remain in place and a pay factor for 28-day compressive strength (PFs) of 0.85 will be applied for overall lot pay factor (OLPF) and price adjustment (ADJ) determinations according to subsection d.3 of this special provision.

C. If one or more of the non-destructive test results fall below the lower specification limit (LSL) 28-day compressive strength, the Engineer may elect to do one of the following:

(1) Require removal and replacement of the entire rejected quantity of concrete, including new initial tests for pay factor (PF) determination and price adjustment conducted according to subsection d.3 of this special provision.

(2) Allow the Contractor to submit a plan for corrective action, for the Engineer's approval, to address the disposition of the rejected concrete. If the Engineer does not approve the plan for corrective action, subsection d.4.C.(1) of this special provision will be applied. All costs associated with plan submittal and corrective action under this subsection will be borne by the Contractor.

(3) Allow the in-situ quantity of concrete under evaluation to remain in place and a pay factor (PFs) of 0.50 will be applied for overall lot pay factor (OLPF) and price adjustment (ADJ) determinations according to subsection d.3 of this special provision.

e. Measurement and Payment. If a price adjustment is made for reasons included in this special provision, that adjustment will be made using the base price established for the specific item. If a contract unit price requires adjustment for other reasons not described in this special

provision, the adjustments will be made using the unit price and the adjustments will be cumulative.

Separate payment will not be made for providing, implementing, and maintaining an effective QC program. All costs associated with this work will be included in the applicable unit prices for the concrete items. Failure by the Contractor to maintain the proper curing environment during initial cure will not be basis for claim against the Department.

All costs associated with providing, locating, relocating, maintaining, and securing the adequate number of portable initial curing facilities for both the QC and QA strength test specimens will be included in the applicable unit prices for the concrete items. No additional payment will be permitted. The Contractor is responsible for damage, theft, subsequent replacement, and removal after completion of the work for each curing facility used on the project.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
SMALL QUANTITIES OF SPRAYABLE THERMOPLASTIC PAVEMENT MARKING
MATERIAL

OPR:JGM

1 of 1

APPR:BRZ:DBP:09-14-10
FHWA:APPR:06-01-11

a. Description. Place permanent pavement markings in accordance with section 811 of the Standard Specifications for Construction and this special provision.

b. Materials. Select pavement marking material from the Qualified Products List (811.03D6) in accordance with section 920 of the Standard Specifications for Construction.

c. Construction. On projects calling for 10,000 feet or less (per color) of sprayable thermoplastic pavement markings to be placed per workday, the Contractor, with approval of the Engineer, has the option of placing two applications of waterborne paint in lieu of the sprayable thermoplastic pavement markings. The second application is to be completed between 14 and 60 days after the initial application unless otherwise directed by the Engineer.

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

Pay Item	Pay Unit
Pavt Mrkg, Sprayable Thermopl, __ inch, (color)	Foot

This work will be measured and paid as **Pavt Mrkg, Sprayable Thermopl, __ inch, (color)** per subsection 811.04 of the Standard Specifications for Construction whether the Contractor uses sprayable thermoplastic or two applications of waterborne paint.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
PERMANENT PAVEMENT MARKINGS

PMK:MKB

1 of 3

APPR:MWB:CRB:02-05-19

FHWA:APPR:02-21-19

Add the following to the end of the list of materials in subsection 811.02, on page 588 of the Standard Specifications for Construction:

Modified Urethane Pavement Marking Material	920
Preformed Thermoplastic Pavement Marking Material	920

Ensure preformed thermoplastic materials for surface applications have a thickness of 90 mils and preformed thermoplastic materials for recessed applications have a thickness of 125 mils.

Add the following paragraph after the first paragraph of subsection 811.03.B, on page 589 of the Standard Specifications for Construction:

If pavement marking plan sheets and/or Witness, Log are included in the project the markings will be laid out by the Contractor prior to the permanent markings being applied. Layout is considered incidental to placement of permanent pavement markings. Provide the Engineer documented notice at least 2 calendar days prior to the Contractor pavement marking crew arriving onsite to layout and place the permanent pavement markings to enable the Engineer or a representative being onsite for review of the layout prior to the marking application. Notify the Engineer if it is discovered during layout that the pavement width or geometry has been altered or is different from the planned or logged configuration. The Contractor and Engineer will discuss and document the resolution for marking layout in such areas. If pavement marking plans and/or Witness, Log are not in the project, it is the responsibility of the Engineer to provide layout for the permanent pavement markings.

Add the following rows to Table 811-1 of subsection 811.03.B, on page 591 of the Standard Specifications for Construction:

Polyurea	20	Binder (gal)	5.5	8.25	11	17	22	33	44	66
		Bead (lb)	As directed by the manufacturer							
Modified Urethane	20	Binder (gal)	5.5	8.25	11	17	22	33	44	66
		Bead (lb)	As directed by the manufacturer							

Add the following paragraph after the fifth paragraph on page 592 of subsection 811.03.B, of the Standard Specifications for Construction:

Beads are not to be placed in liquid shadow markings.

Add the following subsections after the last paragraph of subsection 811.03.D.7.c, on page 595 of the Standard Specifications for Construction:

8. **Modified Urethane.** Ensure the pavement is free of excess surface and subsurface moisture that may affect bonding. The Engineer will not decide the suitability of specific days for the application of modified urethane.

Surface preparation requirements for special, and longitudinal modified urethane pavement markings depend on surface conditions.

Prepare new HMA surfaces and HMA surfaces open to traffic for 10 days or less with no oil drips, residue, debris, or temporary or permanent markings, by cleaning the marking area with compressed air.

Prepare new PCC surfaces and PCC surfaces free of oil drips, residue, and debris, temporary, or permanent markings, by removing the curing compound from the area required for pavement markings.

Prepare existing HMA or PCC surfaces that do not have existing markings, but may have oil drip areas, debris, or both, by scarifying the marking area using non-milling grinding teeth or shot blasting. The Engineer will allow the use of water blasting to scarify the marking area on PCC surfaces.

Prepare existing HMA or PCC surfaces with existing pavement markings and that may have oil drip areas, debris, or both, by using the following methods:

- a. For existing liquid pavement markings, scarify the proposed marking area using non-milling grinding teeth or shot blast. Occasionally existing liquid pavement markings will require complete removal, which will be determined by the Engineer.
 - b. For existing cold plastic markings, completely remove the existing markings.
9. **Preformed Thermoplastic.** Ensure the pavement is free of excess surface and subsurface moisture that may affect bonding. The Engineer will not decide the suitability of specific days for the application of preformed thermoplastic.

Heat and apply the preformed thermoplastic material as recommended by the manufacturer. Feather all edges of the material with a putty knife while the preformed thermoplastic is still soft.

Modify the following row in Table 811-2 of subsection 811.03.D, on page 596 of the Standard Specifications for Construction to read as follows:

Thermoplastic	50	50	May 1	Nov. 1
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Add the following rows to Table 811-2 of subsection 811.03.D, on page 596 of the Standard Specifications for Construction:

Modified Urethane	40	40	Apr. 15	Nov. 15
Preformed Thermoplastic	35	35	Apr. 15	Nov. 15

Add the following pay items to the list of pay items in subsection 811.04, on page 598 of the Standard Specifications for Construction:

Pavt Mrkg, Modified Urethane, (symbol).....	Each
Pavt Mrkg, Modified Urethane, (legend)	Each
Pavt Mrkg, Modified Urethane, ___ inch, Crosswalk.....	Foot
Pavt Mrkg, Modified Urethane, ___ inch, Stop Bar	Foot
Pavt Mrkg, Modified Urethane, ___ inch, Cross Hatching, (color)	Foot
Pavt Mrkg, Modified Urethane, ___ inch, (color).....	Foot
Pavt Mrkg, Ovly Cold Plastic, ___ inch, Shadow Tape, Black.....	Foot
Pavt Mrkg, Ovly Cold Plastic, ___ inch, Wet Reflective, (color)	Foot
Pavt Mrkg, Preformed Thermoplastic, (symbol)	Each
Pavt Mrkg, Preformed Thermoplastic, (route) Route Shield, ___ foot by ___ foot.....	Each
Pavt Mrkg, Preformed Thermoplastic, (legend).....	Each
Pavt Mrkg, Preformed Thermoplastic, ___ inch, Crosswalk	Each
Pavt Mrkg, Preformed Thermoplastic, ___ inch, Stop Bar	Foot
Pavt Mrkg, Preformed Thermoplastic, ___ inch, Cross Hatching, (color)	Each
Pavt Mrkg, (binder), ___ inch, Shadow Liquid, Black	Foot
Pavt Mrkg, Wet Reflective Waterborne, 2nd Application, ___ inch, (color).....	Foot

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
MOBILE ATTENUATOR

OFS:CGB

1 of 4

APPR:CT:CRB:04-19-13
FHWA:APPR:05-09-13

a. Description. This special provision sets the guidelines for when mobile attenuators are to be used to protect workers or work equipment from vehicular traffic. Throughout this special provision, mobile attenuators refer to truck mounted attenuators (TMA) and trailer mounted attenuators.

Use mobile attenuators in projects to protect personnel or equipment when one or more of the following conditions are met.

- The vehicle is designated as a protective vehicle (shadow vehicle or barrier vehicle) as part of the maintenance of traffic typicals, maintenance of traffic plans, or other contract documents.
- Aerial work is being performed on scaffolding, lifts, hoists, bucket trucks, etc., where workers using this equipment are in an occupied lane or shoulder and not protected by temporary concrete barrier. Mobile attenuators are not intended to be used for the removal, installation or maintenance of traffic signals.
- Mobile/short duration operations such as pavement marking convoys, grinding in rumble strips, permanent sign installations, luminescent installations, etc. Mobile attenuators are not intended to be used for the removal or installation of special markings.

Mobile attenuators cannot be mounted on the vehicle or equipment used by personnel to complete aerial work. Mobile attenuators cannot be used as a temporary/permanent barrier ending except during replacement of damaged temporary/permanent barrier ending. In the event that a mobile attenuator is used as a temporary safety measure for a damaged temporary/permanent barrier ending, the maximum length of time that it can be used for this purpose is 48 hours or as approved by the Engineer.

1. Stationary and Mobile Operation. This work consists of furnishing a vehicle with the required gross vehicle weight as shown in the tables below and furnishing, installing and operating a mobile attenuator according to the manufacturer's recommendations, the contract, and/or as directed by the Engineer. Locate the attenuator placement as detailed in the applicable maintaining traffic typical, maintenance of traffic plans or other contract documents.

Securely attach material loaded onto the vehicle to obtain the required gross weight, for transport or during work operations to the vehicle. Hazardous materials will not be allowed on this vehicle. Materials that will be off loaded and incorporated into the construction activities will not be considered part of the vehicle gross weight.

b. Materials and Design. Use mobile attenuators that meet or exceed the requirements of *National Cooperative Highway Research Program Report 350 (NCHRP 350) Test Level 2 (TL-2) or Test Level 3 (TL-3)*, or *Manual for Assessing Safety Hardware (MASH) TL-2 or TL-3*, as described below for work zone traffic control devices.

1. Utilize a mobile attenuator rated for *NCHRP 350, TL-2* or *MASH, TL-2* on non-freeway roadways with a normal posted speed of 40 miles per hour (mph) or less. TL-2 mobile attenuators are prohibited for use on all freeways, non-freeway roadways, and work zones with posted speed limits of 45 mph or greater.

2. Utilize a mobile attenuator rated for *NCHRP 350, TL-3* or *MASH, TL-3* on freeways, non-freeway roadways and work zones with posted speed limits of 45 mph or greater. TL-3 mobile attenuators may be used on all roadways and work zones regardless of the posted speed limit.

Supply to the Engineer a copy of the FHWA letter of eligibility for federal aid stating the mobile attenuator meets the appropriate *NCHRP 350* or *MASH* test level specified in the above stated criteria. In addition, supply a letter to the Engineer stating the mobile attenuator system has been installed and maintained according to manufacturer's specifications.

The face of the mobile attenuator, visible to approaching traffic must have reflectorized alternating yellow and black stripes, sloping downwards in both directions from the center of the attenuator.

c. Operating Details and Utilization. Operate the mobile attenuator as per manufacturer's recommendation, the contract, and/or as directed by the Engineer. This includes, but is not limited to, the following:

- Ensure the height from the bottom of the mobile attenuator to the roadway surface is 12 inches (± 2.5 inches) and within manufacturer's specifications.
- Ensure the mobile attenuator is parallel (level) with the roadway surface.
- Provide a shoulder harness and headrest for the mobile attenuator vehicle's operator.

For stationary operations, when operating the vehicle with the attenuator installed, ensure the vehicle is in second gear if it has a standard transmission (park if an automatic transmission), with the parking brakes set and steering wheels turned away from the work area and traffic, if possible. Place the mobile attenuator according to roll-ahead distance in Tables 1 or 2.

If the mobile attenuator is involved in a crash, supply pictures of the crash scene and the damage of the mobile attenuator to the Engineer within 3 days of the incident.

d. Measurement and Payment. Mobile attenuators will be furnished and operated at no cost to the Department for all contract items associated with pavement marking operations.

The cost for the equipment, mobilization and labor to furnish and operate this equipment will be included in other contract items. The Department will pay for repair or replacement of a mobile attenuator called for as part of the pavement marking operations if damaged by something other than the Contractor's own equipment, during contract operations as described below.

Measurement and payment for the use of mobile attenuators on all other contract items will be as described below.

Pay Item**Pay Unit**

Mobile AttenuatorEach

The Engineer will pay for the maximum number of mobile attenuators deployed per the maintenance of traffic typical, maintenance of traffic plans or other contract documents and in use at any one time during the life of the project or as approved by the Engineer. If the Contractor uses alternative construction operations or methods that require additional mobile attenuators that exceed the amount specified in the contract, the additional mobile attenuators will be provided at the Contractor's expense.

The Department will pay for repair or replacement of a mobile attenuator called for as part of the contract if damaged by something other than the Contractor's own equipment, during contract operations by contract modification with the name of the extra pay item to be defined as Mobile Attenuator, Repair or Mobile Attenuator, Replace if the following criteria are met:

1. The damaged or destroyed attenuator must meet all of the manufacturing and operating criteria of this special provision.
2. The Contractor must have the repaired/replaced attenuators inspected by the Manufacturer/Supplier to insure that the units are in good working order. Documentation of the inspection is to be provided to the Engineer prior to implementing the mobile attenuators for use.
3. Provide a crash report from the enforcement agency involved in the accident investigation.
4. Pictures of the accident scene and damage to the mobile attenuator are forwarded to the Engineer.
5. The attenuator repair or replacement will be for the actual unit as required by this special provision. The cost to perform the repairs or replace the attenuator including installation will be paid for by the Contractor. Provide to the Engineer a detailed invoice from the Supplier showing material costs for replacement or repair for payment. The repair or replacement cost must not exceed the Suppliers invoice cost for a new attenuator.
6. The Department will not pay for any costs that are required to replace or repair the attenuator vehicle and any other items which were used to operate the attenuator.
7. Attenuators that have been repaired or replaced as part of the contract are not eligible for additional payment using the Mobile Attenuator pay item once the attenuator is put back into service.

Table 1. Guidelines For Roll-Ahead Distance For Mobile Attenuator Vehicles Test Level 2

Weight of Mobile Attenuator Vehicle (Minimum)	Posted Speed (mph) (Posted Speed Prior to Work Zone)	Roll Ahead Distance(a) (Distance from front of Mobile Attenuator Vehicle to Work Area)
5.5 Tons (Stationary Operation)	40 or Less	25 feet
a. Roll ahead distances are calculated using a 4,410 pound impact vehicle weight.		

Table 2. Guidelines For Roll-Ahead Distance For Mobile Attenuator Vehicles Test Level 3

Weight of Mobile Attenuator Vehicle (Minimum)	Posted Speed (mph) (Posted Speed Prior to Work Zone)	Roll-Ahead Distance(a) (Distance from front of Mobile Attenuator Vehicle to Work Area)
5 Tons (Mobile Operation)	60-70	175 feet
	50-55	150 feet
	45	100 feet
12 Tons (Stationary Operation)	60-70	50 feet
	50-55	25 feet
	45	25 feet
a. Roll ahead distances are calculated using a 10,000 pound impact vehicle weight.		

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
TRAFFIC CONTROL QUALITY AND COMPLIANCE

OPR:JJG

1 of 2

APPR:CER:DBP:01-20-11
FHWA:APPR:06-20-11

Delete the subsection 812.03.C, Deficient Traffic Control Operations on page 601 of the Standard Specifications for Construction in its entirety, and replace with the following.

C. Deficient Traffic Control Operations.

1. Traffic Control Quality and Compliance. The following applies to all aspects of the traffic control plan and traffic control devices except the Type D lights on plastic drums which are covered elsewhere in the contract.

a. Traffic Control not Anticipated in Design. If at any time during the project, including the time during the seasonal suspension, the Engineer documents that the traffic control requires improvements beyond the scope of the Traffic Control Plan, the Engineer will provide written instructions to the Contractor and traffic control supplier what improvements are required. The Contractor must develop and submit to the Engineer for approval, a written implementation schedule for improvements. If the schedule is not approved, or if the schedule is approved but is not followed, the Department will adjust the contract according to subsection 812.03.C.1.c.iii. If the implementation schedule is not followed, the Engineer will notify the Contractor and traffic control supplier in writing that they are in violation of this subsection. The work of making traffic control improvements directed by the Engineer that are beyond the scope of the Traffic Control Plan will be paid for as extra work.

b. As Designed Traffic Control. If at any time during the project, including the time during the seasonal suspension, the Engineer documents that the traffic control is deficient, inadequate or improperly placed, the Engineer will provide written notification with instructions for corrective action to the Contractor and traffic control supplier. Upon receipt of the notification of corrective action, the Contractor has 4 hours to correct the traffic control. If the traffic control cannot be corrected within the 4 hour time period, the Contractor will develop a written implementation schedule for the corrective action and submit the schedule to the Engineer for approval within 1 hour of receiving the written notification. If the schedule is not approved, or if the schedule is approved but is not followed, the Department will adjust the contract according to subsection 812.03.C.1.c.iii. If the implementation schedule is not followed, the Engineer will notify the Contractor and traffic control supplier in writing that they are in violation of this subsection.

c. Corrective Action. The Engineer will give written notification to the Contractor as identified above. Failure to make corrections within the timeframe required may result in the following actions by the Engineer:

- i. Stop work on the project until the Contractor completes corrective action,
- ii. Order corrective action by others in accordance with subsection 107.07, subsection 108.02, subsection 812.03.B, and in the interest of public safety.
- iii. A contract price adjustment will be made in the amount of \$100 per hour for every hour or portion thereof the improvements or corrective action remains incomplete as described herein. If improvements or corrections have not been made to the satisfaction of the Department, the contract will be adjusted until the traffic control is acceptable.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
LIGHTING FOR NIGHT WORK SPECIFICATIONS

OPR:RAL

1 of 3

APPR:BMB:MB:02-02-18

FHWA:APPR:02-08-18

Delete subsection 812.03.H, on page 619 of the Standard Specifications for Construction in its entirety and replace it with the following:

H. Lighting for Night Work. Furnish, install, operate, maintain and replace, as needed, fixed, portable, or equipment mounted lighting systems that provide lighting to ensure worker and inspector safety on and around the worksite. Provide lighting that allows workers and inspectors to clearly conduct all operations and inspections during hours of darkness. Provided lighting systems must meet the requirements set forth in *MIOSHA Rule 408.40133 Illumination*, *MIOSHA Rule 408.42223 (7) Traffic Control*, section 706 of the Standard Specifications for Construction, and the contract.

Provide and position the lamps to meet the following lighting requirements: Provide a minimum illumination intensity of 10 foot-candles (108 lux) on a jobsite where construction work is being performed. Maintain a minimum of 5 foot-candles (54 lux) throughout the entire area of operation where workers may pass through on foot or are present but are not performing construction work. Vehicle or equipment headlights are not considered as an approved light source.

Lighting levels will be measured with an illuminance meter. Readings from smart-phones are not acceptable. Readings will be taken where the work is being performed, in a horizontal plane 3 feet above the pavement or ground surface. When necessary, provide additional lights to overlap the footprints of the lights so that the lighting requirements are continuous, and do not fall below the minimum lighting requirements throughout the work area.

Submit a "work area lighting plan" to the Engineer for review for approval a minimum of 14 calendar days prior to the start of work. The Engineer will have 7 calendar days to review the plan for approval or provide comments for plan revisions required to obtain approval. At a minimum, the plan must include the proposed lighting locations for construction equipment, vehicles and pedestrian paths, identification of a person or persons of authority (including contact information) on the project site responsible to execute the plan requirements, and measures that will be taken to ensure compliance with the plan. All costs and any additional time required to obtain an approved "work area lighting plan" will not be cause for delay or impact claims.

Design and operate the lighting system to avoid glare that interferes with traffic, workers, or inspection personnel. Aim flood, spot or stadium type luminaires downward at the work and rotated outward no greater than 30 degrees from nadir (straight down). Position balloon lights at least 12 feet above the roadway.

Design the lighting system to light the work area without spilling over to adjoining property. Modify the lighting system, if directed by the Engineer, by rearranging the lights or adding hardware to shield the lights when the lighting system is disturbing adjoining properties.

Provide a power source that adequately powers the lamps to their full capacity. Provide all lighting equipment in good operating condition and in accordance with applicable safety and design codes.

Provide backup lighting to replace lights and equipment during nighttime operations. Store the backup equipment on the project site and have it available for use at all times during the nighttime operations. The backup systems must meet the same criteria as the primary system.

Drive through and observe the lighted area from all traveled directions, including cross roads after initial lighting set up to determine the adequacy of placement and potential for glare. Adjust lighting alignment if necessary. Ensure that the alignment of the lighting does not interfere with or impede traffic on open roadways.

At any time during the course of the nighttime work, should the lighting not meet the requirements of this special provision, the work must be halted until adequate lighting is provided. This suspension of work will be at no additional cost to the Department and the Contractor cannot receive an extension of time to complete the work.

Use balloon lighting for nighttime traffic regulating operations. Position the balloon lighting for traffic regulators so that the light illuminates the front of the traffic regulator without casting a shadow on the front of the regulator, the light or equipment does not impair the regulator's vision, and the equipment does not impede the regulator's escape path. Position the lighting so that the light does not wash out the lighted arrow at the regulator's station and does not obscure the lighted arrow. Position lighting so that it does not create glare or shine directly in the eyes of oncoming drivers. Illuminate the traffic regulator's station with a minimum illumination intensity of 10 foot-candles (108 lux). Lighting devices used to illuminate nighttime traffic regulator operation that have failed or have been damaged are to be replaced immediately.

Mount the light fixtures on the construction equipment in a mobile operation, in such a way that the view of the equipment operator is not obstructed and a secure connection to the equipment is ensured, with minimum vibration.

Provide each paver with the minimum illumination as specified in this special provision so that the operator and paving crew can clearly see the material going into the hopper, the auger area, and for alignment. Provide a continuous power source to ensure the lighting is in operation at all times during work. The light should be adjustable up and down, and rotatable horizontally. The area behind the paver must be lighted so the work and operations can be seen clearly and inspected properly.

Equip each roller with four headlights, two facing in each direction of travel. Turn headlights off when facing oncoming traffic and only use them when moving equipment from one location to another.

Provide a continuous power source on each roller with a light tower. The light tower must be a minimum of 4 feet higher than the roller.

When light equipment is not in use, it must be removed from the work area.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
PRICE ADJUSTMENTS FOR AUTHORIZED EXTENSIONS OF TIME

CFS:MB

1 of 2

APPR:JJG:CRB:02-01-18
FHWA:APPR:02-02-18

Delete section 812.04.U, Price Adjustments for Authorized Extensions of Time, on page 631 and 632 of the Standard Specifications for Construction in its entirety and replace with the following.

U. Price Adjustments for Authorized Extensions of Time. The Department will not adjust the unit price for **TS, Temp, Furn** for authorized extensions of time.

The Department will not make price adjustments for temporary traffic control devices, **Minor Traf Devices**, and **Traf Regulator Control** during authorized extensions of time if liquidated damages are assessed in accordance with subsection 108.10. If liquidated damages are not assessed, the Department will adjust unit prices for the following:

1. **TS, Temp, Oper;**
2. **PTS System, Temp, Oper;**
3. Items designated as Furnished, Operated, or Standby, unless otherwise specified;
4. Items paid for as Each or Foot as documented by the Department and maintained on the Department website at:
http://www.michigan.gov/mdot/0,4616,7-151-9622_11044_11367---,00.html; and
5. Items measured as lump sum if they are used or required on the worksite during authorized extensions of time except that **Minor Traf Devices** will not be adjusted when conspicuity tape is the only minor traffic control device in service or required during the authorized extension of time.
6. Items not in use reserved by the Engineer as standby.

The Department will use the following formula to calculate the unit price adjustments. The adjustment for **Minor Traf Devices** will be at a daily rate of (A/B) not to exceed \$900.00 per calendar or work day and the adjustment for **Traf Regulator Control** will be at a daily rate of (A/B) not to exceed \$650.00 per calendar or work day. When calculating the adjustment, either calendar or working days will be used for both original contract time and additional days.

$(A/B) \times C = \text{unit price adjustment}$

Formula 812-1

where:

A = Original contract unit price

B = Original contract time

C = Additional days the item was in use or required to be on standby during the authorized extension of time.

The Department will determine the number of additional days the item is on standby or in use in calendar days.

For calendar date projects, the original contract time will be calculated as the number of calendar days from the actual start date to the following order of precedence date as identified within the contract:

- a. The latest Open to Traffic date if removal of all traffic control devices coincides with this date.
- b. The latest interim completion date for each season of work if all contract work must be completed in its entirety except turf establishment and watering and cultivating.
- c. The original contract completion date.

For work day projects if an authorized extension of time extends into the next construction season, including seasonal suspension periods during which a traffic control item is on standby or in use, the original contract time will be the calendar days between the first work day and the expiration of the original contract completion.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
PAYMENT FOR MINOR TRAFFIC DEVICES AND TRAFFIC REGULATOR CONTROL

OPR:JJG

1 of 1

APPR:BJO:DBP:07-19-11

FHWA:APPR:07-19-11

Delete Table 812-1 in subsection 812.04.E, on page 625 of the Standard Specifications for Construction, in its entirety and replace with the following.

Table 812-1 Partial Payment Schedule for Minor Traf Devices and Traffic Regulator Control

Percent of Original Contract Amount Earned	Total Percent of Unit Price Paid
First Use	15
25	30
50	55
75	80
90	100

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
SUPPORTS FOR TEMPORARY SIGNS

OPR:CRB

1 of 1

APPR:MWB:DBP:06-26-12
FHWA:APPR:08-18-12

Delete the last paragraph of subsection 812.03.D.3, on page 604 of the Standard Specifications for Construction in its entirety, and replace with the following.

Mount construction signs on portable sign support standards only if signs are to remain in place for 14 days or less, or as allowed by the Engineer if fixed supports are not possible.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
MEASUREMENT AND PAYMENT OF TEMPORARY TRAFFIC CONTROL DEVICES

OFS:CRB

1 of 1

APPR:MWB:JJG:02-27-14

FHWA:APPR:03-04-14

Delete subsection 812.04.A.4, on page 624 of the Standard Specifications for Construction in its entirety.

Delete the second paragraph of subsection 812.04.C, on page 624 of the Standard Specifications for Construction in its entirety, and replace with the following:

The Engineer will measure **Sign, Type __, Temp, Prismatic, Furn** as the total cumulative area of the maximum number of each sign legend that is in use during the course of the project unless previously paid. The unit price for **Sign, Type __, Temp, Prismatic, Furn** includes the cost of portable or driven sign supports.

Delete the second paragraph of subsection 812.04.D, on page 624 of the Standard Specifications for Construction in its entirety, and replace with the following:

The Engineer will measure **Sign, Type __, Temp, Prismatic, Oper** as the total cumulative area of the maximum number of each sign legend that is in use during the course of the project unless previously paid.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
TYPE III BARRICADES

DES:DBP

1 of 1

APPR:MWB:CRB:08-07-15

FHWA:APPR:08-23-15

Delete the first sentence for the second paragraph in subsection 812.03.D.8 on page 606 of the Standard Specifications for Construction, and replace with the following:

Light Type III barricades with two, Type C or Type D warning lights, fastened to the uprights above the top rail, provided these warning lights each weigh 3.3 pounds or less.

Delete the following pay items from the list in subsection 812.04 on page 622 of the Standard Specifications for Construction.

Barricade, Type III, High Intensity, Furn.....	Each
Barricade, Type III, High Intensity, Oper	Each
Barricade, Type III, High Intensity, Double Sided, Furn	Each
Barricade, Type III, High Intensity, Double Sided, Oper	Each

Renumber the existing subsection 812.04.A.5 on page 624 of the Standard Specifications for Construction, as follows:

4. The manufacturer's invoiced cost for damaged equipment included in a lump sum pay item for maintaining traffic.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
TEMPORARY PAVEMENT MARKING REVISIONS

OFS:CGB

1 of 4

APPR:MWB:MKB:04-30-18
FHWA:APPR:05-01-18

Delete subsection 812.03.D.11.a, on page 610 of the Standard Specifications for Construction, in its entirety and replace with the following:

- a. **Temporary Pavement Marking – Wet Reflective Type R.** Use temporary wet reflective pavement marking Type R (removable tape) when temporary pavement markings must be placed on finished pavements and are not in the exact location as future permanent markings or at the discretion of the Engineer when temporary markings must be removed during the life of a project.

Ensure prior to installation the pavement surface is air blown or brushed to remove surface dust and dirt. Remove curing compound from new concrete surfaces before applying Type R Tape.

Place wet reflective Type R tape when it is used as a 4-foot dash or full length skip line as defined in the contract to temporarily mark finished pavement prior to the placement of permanent markings according to the Manufacturer's specifications for existing temperature and pavement condition. Offset it 1 foot from the permanent marking so that the permanent markings can be placed prior to the removal of the 4-foot dashes or full length skip line. Do not use 4-foot dashes or full length skip lines to temporarily mark a solid edge line. Ensure damaged or missing tape of more than 2 consecutive skip lines, is replaced at no cost to the Department within 24 hours after notification by the Engineer. Failure to replace the tape within the 24 hour time period will result in a contract price adjustment as described in the Special Provision for Traffic Control Quality and Compliance.

- i. Between April 15 and November 1, place wet reflective Type R tape not used as a skip line according to the Manufacturer's specifications for existing temperature and pavement condition. Replace wet reflective Type R tape of more than 50 cumulative feet that fails, at no cost to the Department within 24 hours after notification by the Engineer. Failure to replace the tape within the 24 hour time period will result in a contract price adjustment as described in the Special Provision for Traffic Control Quality and Compliance.
- ii From November 2 to December 1 and March 15 to April 14, place wet reflective Type R tape for all temporary shifts and tapers when pavement surfaces are dry and air temperatures are 40 degrees Fahrenheit and rising. All wet reflective Type R tape placed during these times must be placed during approved daytime hours negotiated between the Engineer and the Contractor or daytime hours required in the contract. Do not place wet reflective Type R tape within 24 hours of predicted

precipitation, or 24 hours after any precipitation. The Contractor will be paid to repair locations that fail during these times unless the Engineer determines the failure is due to improper surface preparation, or failure to follow these requirements. Repairs, if required, will be paid for at a negotiated price between the Engineer and the Contractor for the associated work.

- iii Use temporary wet reflective pavement marking Type NR paint, for all tapers and shifts when ambient air temperature is less than 40 degrees Fahrenheit. To remove the wet reflective Type NR paint, use the least abrasive technique as directed by the Engineer to minimize scarring. If the approved pavement marking removal pay item is not part of the contract, the cost of the removal of Type NR pavement markings will be negotiated between the Engineer and the Contractor.
- iv Wet reflective Type R tape is not to be placed between December 2 and March 14.

Delete subsection 812.03.D.11.b, on page 610 of the Standard Specifications for Construction, in its entirety and replace with the following:

b. Temporary Pavement Marking – Wet Reflective Type NR.

- i. **Wet Reflective Type NR Paint.** Use temporary pavement marking Wet Reflective Type NR paint when temporary pavement markings must be placed on pavement to be removed or replaced during construction. They also must be used when temporary markings line up exactly with the placement of permanent markings and may be grooved out prior to recessing permanent markings. The temporary pavement marking material must be compatible with the material specified for the permanent markings if permanent markings are to be placed on top of temporary markings.

Place Wet Reflective Type NR paint in accordance with section 811. Place the material at a thickness of 18 mils while driving at a maximum rate of 8 miles per hour. Drop WR optics from the forward most bead applicator gun at a rate of 4 pounds per gallon. Drop glass beads at a rate of 6 pounds per gallon from the rear bead applicator gun.

Place Wet Reflective Type NR paint, used as a 4-foot dash or full length skip line as defined in the contract, to temporarily mark finished pavement prior to the placement of permanent markings, in the exact location as the permanent marking such that its removal is not necessary. Only use Wet Reflective Type NR markings compatible with the permanent pavement marking material specified on the project as a 4-foot dash or full length skip line. Do not use 4-foot dashes or full length skip lines to temporarily mark a solid edgeline.

- ii **Wet Reflective Type NR Tape.** Use temporary pavement marking Wet Reflective Type NR Tape as a 4-foot dash or full length skip line as defined in the contract to temporarily mark a white skip line or yellow centerline on base or leveling course of pavement. Wet Reflective Type NR tape must not be used to temporarily mark a solid edge line. Wet Reflective Type NR tape is not to be used on the wearing course of asphalt or on existing pavement.

Place Wet Reflective Type NR tape in accordance with section 811.

Delete the following pay items from the list of pay items in subsection 812.04, on page 623 of the Standard Specifications for Construction:

Pavt Mrkg, Type R, 4 inch, (color), Temp.....Foot
 Pavt Mrkg, Type NR, Paint, 4 inch, (color), TempFoot
 Pavt Mrkg, Type NR, Tape, 4 inch, (color), Temp.....Foot

Add the following pay items to the list of pay items in subsection 812.04, on page 623 of the Standard Specifications for Construction:

Pavt Mrkg, Wet Reflective, Type R, Tape, 4 inch, (color), Temp.....Foot
 Pavt Mrkg, Wet Reflective, Type NR, Paint, 4 inch, (color), TempFoot
 Pavt Mrkg, Wet Reflective, Type NR, Tape, 4 inch, (color), TempFoot

Delete subsection 812.04.N.2, on page 629 of the Standard Specifications for Construction, in its entirety and replace with the following:

2. **Non-Removable (Type NR) Pavement Markings.** The unit price for the relevant **Pavt Mrkg, Wet Reflective, Type NR, Paint, Temp** and **Pavt Mrkg, Wet Reflective, Type NR, Tape, Temp** pay items include the cost of providing and placing temporary pavement markings.

Delete subsection 812.04.N.3, on page 629 of the Standard Specifications for Construction, in its entirety and replace with the following:

3. **Removable (Type R) Pavement Markings.** The unit prices for **Pavt Mrkg, Wet Reflective, Type R, Tape, 4 inch, (color), Temp** and **Pavt Mrkg Cover, Type R, (color)** include the cost of providing, placing, maintaining, removing and disposing of temporary pavement marking. Payment will be per foot measured along the length of the placed pavement marking except for 8 inch gore markings and double solid lines which will be two times their measured length.

Delete subsection 922.06.A.1 on page 937 of the Standard Specifications for Construction in its entirety and replace with the following:

1. **Pavement Marking, Wet Reflective, Type R.** Provide wet reflective Type R temporary pavement marking as preformed tape. Select wet reflective Type R markings from the Qualified Products List (922.06A). Apply and remove preformed tape in accordance with the manufacturer's instructions. The tape must remain flexible and conform to the texture of the pavement surface during use.

Delete subsection 922.06.A.2, on page 937 of the Standard Specifications for Construction, in its entirety and replace with the following:

2. **Pavement Marking, Wet Reflective, Type NR Paint.** Provide Wet Reflective Type NR temporary pavement markings as paint reflectorized with glass beads and wet reflective optics, as required.
- a. **Wet Night Retro Reflective Optics.** Select WR optics from one of the following Manufacturers or a Department approved alternative that meets or exceeds the requirements in Table 922-2:

3M Corporation
Potter's Industries
Swarco

Table 922-2 Temporary Wet Reflective Type NR Pavement Markings		
Average Initial Retro reflectivity at 30 meter geometry in mcd/lux/sq m with flow of placement		
Test Method	Color	
	White	Yellow
Dry (ASTM E 1710)	700	500
Wet Recovery (ASTM E 2177)	250	200

Ship the material to the job site or Contractor's yard in sturdy containers marked in accordance with subsection 920.01.A.

Select glass beads for corresponding materials in accordance to subsection 920.02.

Submit to the Engineer prior to the start of work a general certification from the Manufacturer that when applied in accordance with the construction methods herein, the glass beads and optics will meet the minimum requirements shown in Table 922-2.

- b. **Binder Material for Temporary Wet Reflective Type NR Pavement Markings.** Select the liquid applied pavement marking from one of the following materials from the Qualified Products List to use as a binder for the WR optics or use an alternative as approved by the Engineer:

811.03D1 Waterborne, Liquid Pavement Marking Material
811.03D2 Low Temperature Waterborne, Liquid Pavement Marking Material
811.03D3 Regular Dry Paint, Liquid Pavement Marking Material

3. **Pavement Marking, Wet Reflective, Type NR Tape.** Provide Wet Reflective Type NR temporary pavement markings as preformed tape. The tape must remain flexible and conform to the texture of the pavement surface during use. Select wet reflective Type NR tape from the Qualified Products List (922.06A).

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
PAYMENT OF TEMPORARY TRAFFIC CONTROL DEVICES

OFS:CRB

1 of 1

APPR:CGB:MB:08-26-16

FHWA:APPR:09-13-16

Delete subsection 812.04.A Damage Compensation, on page 623 of the Standard Specifications for Construction, in its entirety and replace with the following:

A. Damage Compensation. Notify the Engineer of damaged temporary traffic control devices. Before replacement and disposal, allow the Engineer to verify the condition of damaged temporary traffic control devices eligible for payment. Damage will be assumed to have occurred from vehicular traffic unless otherwise documented. The Department will pay as follows, for replacing temporary traffic control devices or equipment that are placed appropriately and damaged by vehicular traffic, other than the Contractor's vehicles and equipment.. Devices will be assumed to be placed appropriately unless otherwise documented. Replacement will be made up to project completion (excluding water and cultivating), as follows:

1. The **Furnished** unit price for temporary traffic control devices paid for as furnished pay items, excluding Plastic Drums and 42 inch channelizing devices;
2. The unit price for devices not paid for as **Furnished**;
 - a. Plastic Drums and 42 inch Channelizing Devices will be paid for at a set rate of \$35 per Plastic Drum and \$18 per damaged 42 inch Channelizer.
 - i. Prior to payment the Plastic Drum or 42 inch Channeling Device must be classified as unacceptable, per the ATSSA Quality Guidelines for Temporary Traffic Control Devices and Features (ATSSA QG), and spray-painted with an X.
 - ii. All Plastic Drums and 42 inch Channelizing Devices that are classified as marginal, per the ATSSA QG, during the project, will have blue survey ribbon tied to the handle. MDOT will be responsible for marking marginal devices. Removal and replacement will take place as defined under the Quality Classifications and Requirements Section of the ATSSA QG and will be at no additional cost to the Department.
 - If at any time, any Contactor, is witnessed tampering with the marginal marking method, the Engineer may require all marginal devices on the project to be upgraded to acceptable outside the timeframes detailed in the ATSSA QG.
3. The manufacturer's invoice cost for devices required by the Engineer and not included in the unit price for other relevant pay items;
4. The manufacturer's invoiced cost for damaged equipment included in a lump sum pay item for maintaining traffic.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
INDUSTRIAL BY-PRODUCTS AND BENEFICIAL RE-USE

ENV:HLZ

1 of 1

APPR:JJG:JFS:09-11-14

APPR: FHWA: 09-11-14

a. Description. For this project, regardless of the application, the use of industrial by-products, covered in 2014 PA 178, is prohibited unless the use and application of a particular material is covered elsewhere in the contract.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
CRUSHED CONCRETE NEAR WATER

CFS:JFS

1 of 1

APPR:KAS:DBP:02-24-12
FHWA:APPR:02-24-12

Add the following paragraph after the first paragraph of Subsection 902.05 on page 743 of the Standard Specifications for Construction:

The use of crushed concrete is prohibited on the project within 100 feet of any water course (stream, river, county drain, etc.) and lake, regardless of the application or location of the water course or lake relative to the project limits.

Add the following paragraph after the first paragraph of Subsection 902.06 on page 743 of the Standard Specifications for Construction:

The use of crushed concrete is prohibited on the project within 100 feet of any water course (stream, river, county drain, etc.) and lake, regardless of the application or location of the water course or lake relative to the project limits.

Add the following paragraph after the fourth paragraph of Subsection 902.07 on page 744 of the Standard Specifications for Construction:

The use of crushed concrete is prohibited on the project within 100 feet of any water course (stream, river, county drain, etc.) and lake, regardless of the application or location of the water course or lake relative to the project limits.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
ALTERNATIVE GRANULAR MATERIALS FOR FILL AND SUBBASE

CFS:SAB

1 of 1

APPR:JFS:DMG:04-03-12
FHWA:APPR:04-09-12

Delete subsection 902.07.A, on page 744, of the Standard Specifications for Construction, in its entirety and replace with the following:

A. Class I, Class IIAA, or Dense-Graded Aggregate 21A, 21AA and 22A material for Class II material;

Delete subsection 902.07.B, on page 744, of the Standard Specifications for Construction, in its entirety and replace with the following:

B. Class I, Class II, Class IIA, Class IIAA, Class IIIA or Dense-Graded Aggregate 21A, 21AA and 22A material for Class III material;

Delete subsection 902.07.C, on page 744, of the Standard Specifications for Construction, in its entirety and replace with the following:

C. Class I material for Class IIAA material; and

Add the following subsection to Section 902.07, on page 744, of the Standard Specifications for Construction.

D. Dense-Graded Aggregate 21A, 21AA and 22A material for Class IIA.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
SUPERPAVE FINAL AGGREGATE BLEND REQUIREMENTS

CFS:KPK

1 of 2

APPR:JFS:CJB:05-31-18

FHWA:APPR:06-06-18

a. Description. This special provision establishes the Superpave final aggregate blend gradation requirements and the Superpave final aggregate blend physical requirements.

b. Materials. Replace Table 902-5 and Table 902-6 of the Standard Specifications for Construction with the following tables.

Table 902-5 Superpave Final Aggregate Blend Gradation Requirements						
Standard Sieve	Percent Passing Criteria (control points)					
	Mixture Number					
	5	4	3 Leveling Course	3 Base Course	2	LVSP (a)
1½ inch	—	—	—	—	100	—
1 inch	—	—	100	100	90–100	—
¾ inch	—	100	90–100	90–100	≤90	100
½ inch	100	90–100	≤90	≤90	—	75–95
⅜ inch	90–100	≤90	—	—	—	60–90
No. 4	≤90	—	—	—	—	45–80
No. 8	47–67	39–58	35–52	23–52	19–45	30–65
No. 16	—	—	—	—	—	20–50
No. 30	—	—	—	—	—	15–40
No. 50	—	—	—	—	—	10–25
No. 100	—	—	—	—	—	5–15
No. 200	2.0–10.0	2.0–10.0	2.0–8.0	2.0–8.0	1.0–7.0	3–6
a. For LVSP, less than 50 percent of the material passing the No. 4 sieve may pass the No. 30 sieve.						

Table 902-6 Superpave Final Aggregate Blend Physical Requirements													
Est. Traffic (million ESAL)	Mix Type	Percent Crushed Minimum Criteria		Fine Aggregate Angularity Minimum Criteria		% Sand Equivalent Minimum Criteria		Los Angeles Abrasion % Loss Maximum Criteria		% Soft Particles Maximum Criteria (a)		% Flat and Elongated Particles Maximum Criteria (b)	
		Top & Leveling Courses	Base Course	Top & Leveling Courses	Base Course	Top & Leveling Courses	Base Course	Top & Leveling Courses	Base Course	Top & Leveling Courses	Base Course	Top & Leveling Courses	Base Course
< 0.3	LVSP	55/—	—	—	—	40	40	45	45	10	10	—	—
< 0.3	E03	55/—	—	—	—	40	40	45	45	10	10	—	—
≥0.3 - <1.0	E1	65/—	—	40	—	40	40	40	45	10	10	—	—
≥1.0 - < 3	E3	75/—	50/—	43	40	40	40	35	40	5	5	10	10
≥3 - <10	E10	85/80	60/—	45	40	45	45	35	40	5	5	10	10
≥10 - <30	E30	95/90	80/75	45	40	45	45	35	35	3	4.5	10	10
≥30 - <100	E50	100/100	95/90	45	45	50	50	35	35	3	4.5	10	10
(a) Soft particles maximum is the sum of the shale, siltstone, ochre, coal, clay-ironstone and particles that are structurally weak or are non-durable in service. (b) Maximum by weight with a 1 to 5 aspect ratio.													
Note: "85/80" denotes that 85 percent of the coarse aggregate has one fractured face and 80 percent has at least two fractured faces.													

MICHIGAN
DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION
FOR
MISCELLANEOUS METAL PRODUCTS REVISIONS

STR:MJF

1 of 2

APPR:JSW:POJ:01-04-19
FHWA:APPR:01-10-19

Add the following paragraph to subsection 908.05, on page 782 of the Standard Specifications for Construction:

Ductile iron castings must meet the requirements of *AASHTO M306, Grade 70-50-05* or *Grade 80-55-06* when ductile iron is shown as an acceptable material on the plans. Castings must be certified by independent proof load testing at 50,000 pounds. Coat exposed surfaces with asphaltic paint. Ensure a smooth, tough, and tenacious coating when cold. Ensure the coating does not scale-off, tack, or become brittle.

Delete subsections 908.09.A and 908.09B, on pages 783 and 784 of the Standard Specifications for Construction in their entirety and replace with the following:

A. Base Plates, Angle, and Post Elements. Base plate, angle, rail splice, and non-tubular post elements must meet the material requirements of ASTM A36 and galvanizing requirements of ASTM A123. Tubular post elements must meet the material requirements of ASTM A500, Grade B and galvanizing requirements of ASTM A123. Silicon content must be less than 0.06 percent or from 0.15 percent to 0.25 percent. Base plate and post elements must meet the Charpy V-Notch impact requirements specified in subsection 906.04.A at a test temperature of 10 degrees Fahrenheit.

B. Rail Elements. Rail elements must meet the material requirements of ASTM A500, Grade B and galvanizing requirements of ASTM A123. Silicon content must be less than 0.06 percent or from 0.15 percent to 0.25 percent.

Provide the Engineer with one copy of the Mill Test Report (MTR) verifying chemical and physical requirements for structural steel rail elements. Provide an affidavit stating that the material meets specifications. If the MTR is unavailable, arrange for tests of chemical and physical properties and provide certified copies of the test reports and affidavits to the Engineer at no additional cost to the Department. The Contractor has the option of re-testing a rail sample if it failed elongation and passed all other chemical and physical requirements.

The Contractor must drop weight tear test rail elements from all heats supplied in accordance with ASTM E436 (Standard Test Method for Drop-Weight Tear Tests of Ferric Steels), except as modified herein. Drop weight tear testing is not required on TS 2 by 2 rail elements. Do not heat treat failed heats and do not provide failed heats to the fabricator. The Contractor must conduct the drop weight tear test on each heat at 0 degrees Fahrenheit on 2 inch by 9 inch specimens, supported to achieve a 7 inch span.

The Contractor must test three specimens from each of three sides that do not contain a weld to determine the percent shear area. The Contractor will disregard the shear areas of the three specimens from the side with the lowest average shear area and base the final average on the remaining six specimens. Material with an average percent shear area below 50 must be rejected by the Contractor; however, if the average percent shear area is between 30 and 50, the Department will allow the Contractor to retest the material. Retest sampling frequency is three times that of the first test and all sample test results must be included in calculating the average. The Contractor must reject material not having a minimum average percent shear area of 50 upon retest.

The manufacturer of the tubular railing must identify the product as follows:

1. Place identification before galvanizing;
2. Include heat number or other code traceable to the heat number;
3. Include manufacturer's unique identification code;
4. Place identification on only one section face;
5. Repeat identification at no more than 4-foot intervals;
6. Do not extend identification into the curved surfaces at corners of section; and
7. Do not place identification on side facing traffic or side opposite traffic.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
WATER

CFS:TEB

1 of 2

APPR:JFS:LML:03-13-18
FHWAAPPR:03-14-18

Delete section 911, on page 814 of the Standard Specifications for Construction, in its entirety and replace with the following:

911.01. General Requirements. Water must be clean, clear, and free of oil, salt, acid, alkali, organic matter, chlorides, or other deleterious material.

911.02. Turf, Turf Establishment, and Landscape Plants. Provide water for turf, turf establishment, and landscape plants from a potable or non-potable water source approved by the Engineer. Use irrigation quality water, free of elements harmful to plant growth.

911.03. Mixing or Curing Concrete, Mortar, Grout, and Other Cementitious Products. Potable water, from sources approved by the State Department of Public Health or equivalent approved by the Engineer, is acceptable without testing.

Surface water from sources including, but not limited to ditches, lakes, ponds, quarries, rivers, streams, wetlands, and other similar untreated sources, is prohibited for mixing or curing concrete, mortar, grout, and other cementitious products. Stationary concrete batch plants may use surface water if the facility has established at least a 5-year history of producing consistent concrete products meeting the required specifications. Stationary concrete batch plants using surface water are required to meet the non-potable water sampling and testing requirements.

Non-potable must meet the requirements of Table 911-1. Do not use non-potable water unless approved by the Engineer. Test non-potable water prior to use, once per month (once per six months for stationary concrete batch plants), thereafter, and at any time the water source may be deemed out of compliance due to changing site conditions, as determined by the Engineer. Water must be sampled and tested by a qualified independent testing laboratory, having no association with the supply or production of materials produced by that concrete facility, at the expense of the Contractor. Submit test results to the Engineer for approval prior to use, and within 3 days of completion of testing. If water fails to meet the requirements of this specification, immediately suspend use of water source, bring water into compliance, and retest. Do not resume use of the water source until approved by the Engineer.

Table 911-1 Non-Potable Water Requirements		
Property	Test Method	Specifications
Total Solids (TS)	<i>ASTM C 1602</i>	≤0.30%
Total Organic Content/Carbon (TOC)	<i>SM 2540 E</i>	≤0.05%
Alkalinity-Acidity (pH)	<i>ASTM D 1067</i>	5.5 - 8.5
Chloride (CL ⁻)	<i>ASTM D 512</i>	≤0.05%
Time of Setting	<i>ASTM C 1602</i>	-1:00 hours to +1:30 hours of control
7-Day Compressive Strength	<i>ASTM C 1602</i>	≥90% of control

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
ELECTRICAL AND LIGHTING CONDUIT

UTL:SJU

1 of 1

APPR:MWB:LWB:01-13-15
FHWA:APPR:01-27-15

Delete the first sentence in subsection 918.01, on page 857 of the Standard Specifications for Construction, and replace with the following:

Provide conduits listed and appropriately labeled by a Nationally Recognized Testing Laboratory (NRTL), as recognized by the Occupational Safety and Health Administration (OSHA), with ultraviolet protection and manufactured for use at temperatures of at least 194 degrees F unless otherwise required.

Delete the second sentence in subsection 918.01.A, on page 857 of the Standard Specifications for Construction, and replace with the following:

Provide galvanized steel conduit manufactured in accordance with UL 6.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
PERMANENT PAVEMENT MARKING MATERIALS

PMK:MKB

1 of 4

APPR:MWB:CRB:02-05-19
FHWA:APPR:02-21-19

Delete the content of section 920, on page 890 of the 2012 Standard Specifications for Construction in its entirety and replace it with the following:

920.01. Marking Materials. Select pavement marking materials from the Qualified Products List unless specified otherwise by special provision in the contract.

When selecting preformed thermoplastic products, ensure preformed thermoplastic materials have a thickness of 90 mils for surface applications and a thickness of 125 mils for recessed applications. For black liquid shadow markings and blue markings used in parking areas, choose a specified binder material and color from the Qualified Products List or select a white specified binder material from the Qualified Products List and tint the product to the appropriate color.

Use liquid applied pavement marking materials manufactured in the previous 12 months or within the shelf-life directed by the manufacturer, whichever is less. Use solid applied materials within the shelf-life directed by the manufacturer. Provide certification that liquid and solid applied pavement marking materials have been stored per the manufacturer's requirements. Materials not in compliance will be rejected and removed at the Contractor's expense.

Pavement marking materials must meet the general packaging and labeling requirements of subsection 920.01.A, and applicable specific material requirements of subsection 920.01.B.

A. General Packaging and Labeling. Material containers or packages must be marked on the tops and sides, using a durable, weather-resistant marking. Include the following information:

1. Manufacturer's name and address,
2. Description of the material,
3. Product identification number,
4. Lot or Batch number,
5. Date of manufacture,
6. Volume and
7. Weight.

B. Packaging and Labeling for Cold Plastic and Thermoplastic Markings.

1. **Cold Plastic.** Containers or packages of cold plastic material and the core of each roll must be marked with the information specified in subsection 920.01.A.
2. **Thermoplastic.** In addition to the requirements of subsection 920.01.A, thermoplastic material must be packaged in non-stick containers, and labeled with "heat to manufacturer-recommended temperature range," or a Department-approved equal.

920.02. Glass Beads and Wet Reflective Optics.

A. Glass Bead and Wet Reflective Optics Packaging and Labeling. Glass beads and wet reflective (WR) optics must be packaged in moisture resistant bags and labeled to include the following information:

1. Manufacturer's name and address,
2. Shipping point,
3. Trademark or name,
4. The wording "Glass Beads" or "the appropriate optic type",
5. Specification number,
6. Weight,
7. Lot or Batch number, and
8. Date of manufacture.

Drop-on AASHTO M247 Type I beads, herein referred to as standard glass beads, must meet the general requirements of subsection 920.02.B and the applicable requirements for specific applications of subsection 920.02.D. WR optics must meet the general requirements of subsection 920.02.C and the applicable requirements for specific applications of subsection 920.02.D. Large glass beads must meet federal specification TTB-1325 for a Type 4 glass bead.

All glass beads and WR optics to be used on Federal-aid projects must contain no more than 200 parts per million of arsenic or lead, as determined in accordance with Environmental Protection Agency testing methods 3052, 6010B, or 6010C.

B. General Requirements for Standard Glass Beads. Standard glass beads must meet the physical characteristics and gradation requirements specified in Table 920-1, unless otherwise specified in subsection 920.02.D for specific applications.

Table 920-1	
General Requirements for Standard Glass Bead	
Physical characteristics (MTM 711)	
General Appearance	Transparent, clean, smooth, free from milkiness, pits, or excessive air bubbles
Shape	Spherical with $\geq 75\%$ true spheres

Color	Colorless, very light gray, very light gray tinge, or bright white
Index of Refraction	≥ 1.50
Alkalinity	≤ 2.0
Gradation Requirements (MTM 711)	
Sieve Size (No.)	Total Percent Passing
20	100
30	75–95
50	15–35
100	0–5

C. **General Requirements for WR Optics.** WR optics must meet the retroreflectivity requirements specified in Table 920-2.

Table 920-2 General WR Optics Requirements Average Initial Retroreflectivity at 30 meter geometry in mcd/lux/m²		
Test Method	Color	
	White	Yellow
Dry (ASTM E 1710)	700	500
Wet Recovery (ASTM E 2177)	250	200
Wet Continuous (ASTM E 2832)	100	75

D. **Glass Bead and WR Optics Requirements for Specific Applications.** For specific applications, glass beads and WR optics must be as follows:

1. For recessed longitudinal markings, use a double drop system of large and standard glass beads, a double drop system of WR optics and standard glass beads, or an Engineer-approved alternate.
2. **Waterborne and Low Temperature Waterborne.** Standard and large glass beads for use with waterborne marking material and low temperature waterborne marking material require a moisture resistant coating and a silane coating. The type, gradation, and application rates for WR optics used with waterborne and low temperature waterborne marking materials must meet the waterborne manufacturer's recommendations.
3. **Regular Dry.** Standard and large glass beads for use with regular dry marking material may have a moisture resistant coating, a silane coating, or both. The type, gradation, and application rates for WR optics used with regular dry marking materials must meet the regular dry manufacturer's recommendations.
4. **Thermoplastic.** Standard and large glass beads for thermoplastic marking material must have a moisture resistant coating. The type, gradation, and application rates for WR optics

used with thermoplastic marking materials must meet the thermoplastic manufacturer's recommendations.

5. **Sprayable Thermoplastic.** The type, gradation, and application rates for standard and large glass beads and WR optics used with sprayable thermoplastic marking material must meet the sprayable thermoplastic manufacturer's recommendation.
6. **Polyurea.** The type, gradation, and application rates for standard and large glass beads and WR optics used with polyurea marking material must meet the polyurea manufacturer's recommendation.
7. **Modified Urethane.** The type, gradation, and application rates for standard and large glass beads and WR optics used with modified urethane marking material must meet the modified urethane manufacturer's recommendation.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

NOTICE TO BIDDERS
FOR
MULTIPLE DAVIS-BACON WAGE DECISIONS

CSD:JDM

1 of 1

APPR:MAS:11-21-14

This proposal may contain multiple Davis-Bacon Wage Decisions. In order to clarify the work covered by each decision, the following explanations are offered:

General Decision MI__0001 covers all airport construction, bridge construction, highway construction, and sewer and watermain work that are incidental to highway projects. The construction type indicated on this decision is "HIGHWAY (HIGHWAY, AIRPORT & BRIDGE xxxxx and SEWER/INCID. TO HWY.)". This wage decision is the most commonly used wage decision in MDOT's federally funded projects.

In accordance with the U.S. Department of Labor's All Agency Memorandums No. 130 and No. 131, multiple wage decisions will be included in those projects in which a second category of work is substantial in relation to project cost – more than approximately 20% or \$1,000,000. Sewer and watermain work is considered to fall under the Heavy Construction work classification by the DOL, therefore when that work type is more than 20% of the engineer's estimate or \$1,000,000, the wage decision with the construction type "HEAVY CONSTRUCTION PROJECTS" will also be included in the proposal and is to be used for the sewer and watermain work in the proposal. All other work performed on the project will be covered by the "HIGHWAY (HIGHWAY, AIRPORT & BRIDGE xxxxx and SEWER/INCID. TO HWY.)" wage decision.

Also, when the landscape work is more than 20% of the project cost or \$1,000,000, the "HEAVY CONSTRUCTION PROJECTS" wage decision will be included in the proposal to cover all landscape work. All other work performed on the project will be covered by the "HIGHWAY (HIGHWAY, AIRPORT & BRIDGE xxxxx and SEWER/INCID. TO HWY.)" wage decision. If the project is a total landscape project, only the "HEAVY CONSTRUCTION PROJECTS" wage decision will be in the proposal.

Rest area building projects will include the construction type "BUILDING" wage decision when the building portion of the work is more than 20% of the project cost or \$1,000,000. The other work performed on the project will be covered by the "HIGHWAY (HIGHWAY, AIRPORT & BRIDGE xxxxx and SEWER/INCID. TO HWY.)" wage decision and/or the "HEAVY CONSTRUCTION PROJECTS" wage decision (landscape and/or sewer and watermain work) if either or both are greater than 20% or \$1,000,000.

Although there is only one wage decision for "HIGHWAY (HIGHWAY, AIRPORT & BRIDGE xxxxx and SEWER/INCID. TO HWY.)", work (MI__0001), the "HEAVY CONSTRUCTION PROJECTS" and "BUILDING" wage decisions vary from county to county.

NOTICE TO BIDDERS

BID RIGGING

To report bid rigging activities call:

1-800-424-9071

The U.S. Department of Transportation (DOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., Eastern Time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

NOTICE TO CONTRACTORS/CONSULTANTS

Fraud and Abuse Hotline

The Michigan Department of Transportation (MDOT) has established a Fraud and Abuse Hotline for employees, contractors, consultants, and others to report suspected fraud or abuse, such as: prevailing wage non-compliance, theft, kickbacks, wrongful claims, contract fraud, use of materials that do not comply with specifications, unapproved substitution of materials, commodities, or test samples, or failure to follow contract procedures.

Anyone with knowledge of any activity involving the potential for fraud or abuse is requested to call the Hotline at (toll free) **1-866-460-6368** or **517-241-2256**.

CITY OF DETRIOT

**COORDINATION CLAUSE
FOR
WORK ON CSX RAILROAD PROPERTY**

1 of 1

03/01/19

The following information may be pertinent to the determination of construction methods and railroad protective insurance rates.

RAILROAD COMPANY

CSX Transportation
Amanda DeCesare
CSX Project Manager II – Public Projects
500 Meijer Drive, Suite 305
Florence, KY 41042
859-372-6124

See below link for information on applying for Right of Entry Permit Application:
<http://csx.com/index.cfm/customers/non-freight-services/propertyreal-estate/permitting-utility-installations-and-rights-of-entry/>

CSX Transportation must be the named insured on the Railroad Protective Liability Insurance Policy. The named insured's address should be listed as:

CSX Transportation
500 Water Street, C-907
Jacksonville, FL 32202

Contractor must submit the complete Railroad Protective Liability policy, Certificates of Insurance and all notices and correspondence regarding the insurance policies in an electronic format to:

insurancedocuments@csx.com

Neither Agency nor Contractor may begin work on or about CSXT property until written approval of the required insurance has been received from CSXT.

TRAIN MOVES

Burt Rd. (NI# 234281J)

There are approximately 20 freight train moves at 45 mph and 10 switching moves daily; maximum time table is 45 mph.

The train movement and speed information does not represent a commitment by the Railroad and is subject to change without notice.

CITY OF DETROIT
NOTICE TO BIDDER
FOR
UTILITY COORDINATION

Page 1 of 3

DET: PAL

Revised: 06-29-2017

The Contractor shall cooperate and coordinate construction activities with the owners of utilities as stated in Section 104.08 of the 2012 Michigan Department of Transportation (MDOT) Standard Specifications for Construction. In addition, for the protection of underground utilities, the Contractor shall follow the requirements in Section 107.12 of the 2012 MDOT Standard Specifications for Construction. Contractor delay claims, resulting from a utility, will be determined based upon Section 108.08 of the 2012 MDOT Standard Specifications for Construction.

The existing utilities listed below and shown on the plans represent the best information available.

This information does not relieve the Contractor of the responsibility to satisfy themselves as to its accuracy, or of their responsibility in case utilities have been constructed or removed since the most recent surveys.

NAME AND ADDRESS OF OWNER

KIND OF UTILITY

Miss Dig
Call three (3) working days before you dig
1-800-482-7171

All Underground Utilities

City of Detroit
Public Lighting Authority
65 Cadillac Square Suite 3100
Detroit, MI 48226
(313) 324-8290, ext. 216
Mohamed Abbas
abbasm@detroitmi.gov

Street Lighting and Traffic Signals

City of Detroit
Detroit Water & Sewerage Department
Contract Services Facility
6425 Huber
Detroit, MI 48211
General: (313) 267-4863
Fax: (313) 842-6480

Water Mains & Sewers

NAME AND ADDRESS OF OWNER

KIND OF UTILITY

City of Detroit
Traffic Engineering, D.P.W.
2633 Michigan Avenue
Detroit, MI 48207
General: (313) 224-1610
Fax: (313)224-1304
Prasad Nannapaneni (313) 628-5603
prasadn@detroitmi.gov
Sunny Jacobs (313) 628-5604
sunjac@detroitmi.gov
Jubi Chackunkal (313) 224-1315
JubCha@detroitmi.gov

Pavement Markings, Signs &Traffic Signals

Sign Shop
2425 Fenkell
Detroit, MI 48238
Willie Riley (313) 628-2923
Fax (313) 628-4966

Sign Removals & Installations

City of Detroit
Detroit Fire Department
1301 3rd Street
Detroit, MI 48226
General: (313) 596-2900
Fax: (313) 224-4128
communityrelations@detroitmi.gov

KNOX Boxes and Fire Hydrants

City of Detroit
Detroit Police Department
1301 3rd Street
Detroit, MI 48226
General: (313) 596-2200
Fax: (313)596-1450
publicinfo@detroitmi.gov

Police Call Boxes

DTE
One Energy Plaza
Detroit, MI 48226
Gas Leak 1-800-947-5000
Electrical 1-800-477-4747

Electric and Gas

Contact DTE ten working days prior to the construction start date to coordinate adjustments for DTE electric and gas manhole frames and covers.

NAME AND ADDRESS OF OWNER

KIND OF UTILITY

AT&T
17651 Michigan Ave,
Dearborn, MI 48126
Joe Raczak
Legal Mandate Engineer
(313) 240-5314
JR1983@att.com
or
Mark Braham
OSP Engineer - Metro South
(313) 240-5390
MB6352@att.com

Telephone
For adjusting Frames and Covers

AT&T will require five to seven business days
advance notice prior to adjusting frames and
covers.

Detroit Thermal LLC
3575 E Palmer St
Detroit, MI 48201
Ed LaRosa (313) 921-1922
Fax (313) 921-1972

Steam Lines

CSX TRANSPORTATION INC.
SPECIAL PROVISION
FOR
RAILROAD INSURANCE REQUIREMENTS

RAL:DGT

1 of 2

APPR:JLD:SMR:01-19-18

a. Description. This work consists of providing Railroad Protective Liability Insurance before work is commenced and keeping it in effect until all work required to be performed under the terms of the contract is satisfactorily completed as evidenced by the formal acceptance by the Michigan Department of Transportation (Department).

b. Insurance Requirements. Carry the following insurance, in a form, and with an insurer or insurers, acceptable to the Department and CSX Transportation Inc. (CSXT) on all insurance forms listed below with the railroad contact information as noted in Coordination Clause for Work on Railroad Property.

1. Railroad Protective Liability Insurance in behalf of CSX Transportation Inc., as the named insured.

The Contractor must furnish to the Department and to the Railroad copies of policies as evidence that, with respect to Contractor and, if applicable, subcontractor operations, standard Railroad Protective Liability Insurance is carried providing for limits of liability in the amount of five million dollars (\$5,000,000) combined single limit per occurrence for bodily injury, death, and property damage with an aggregate limit of ten million dollars (\$10,000,000) applying separately to each annual period. Said insurance must conform to the regulations prescribed therefore in the Federal-Aid Policy Guide, Part 646, Subpart A of the Federal Highway Administration dated December 9, 1991, and amendments thereto.

A. The Railroad Protective Insurance Policy must be on the ISO/RIMA Form of Railroad Protective Insurance - Insurance Services Office (ISO) Form CG 00 35.

B. Name and Address of Contractor and Agency must appear on the Declarations page.

C. Description of operations must appear on the Declarations page and must match the Project description.

D. Authorized endorsements must include the Pollution Exclusion Amendment - CG 28 31, unless using form CG 00 35 version 96 and later.

E. Authorized endorsements may include:

- (1) Broad Form Nuclear Exclusion - IL 00 21
- (2) 30-day Advance Notice of Non-renewal or cancellation
- (3) Required State Cancellation Endorsement
- (4) Quick Reference or Index - CL/IL 240

F. Authorized endorsements may not include:

- (1) A Pollution Exclusion Endorsement except CG 28 31
- (2) A Punitive or Exemplary Damages Exclusion
- (3) A "Common Policy Conditions" Endorsement
- (4) Any endorsement that is not named in Section D or E above.
- (5) Policies that contain any type of deductible

2. Provide insurance as required in subsection 107.10 of the Standard Specifications for

Construction except with the modifications stated herein.

A. Commercial General Liability coverage at their sole cost and expense with limits of not less than \$5,000,000 in combined single limits for bodily injury and/or property damage per occurrence, and such policies shall name CSXT as an additional named insured. The policy shall include endorsement ISO CG 24 17 evidencing that coverage is provided for work within 50 feet of a railroad. If such endorsement is not included, railroad protective liability insurance must be provided as described above.

B. Statutory Worker's Compensation and Employers Liability Insurance with limits of not less than \$1,000,000, which insurance must contain a waiver of subrogation against CSXT and its affiliates.

C. Commercial automobile liability insurance with limits of not less than \$1,000,000 combined single limit for bodily injury and/or property damage per occurrence, and such policies shall name CSXT as an additional named insured. The policy shall include endorsement ISO CA 20 70 evidencing that coverage is provided for work within 50 feet of a railroad. If such endorsement is not included, railroad protective liability insurance must be provided as described above.

D. All insurance companies must be A. M. Best rated A- and Class VII or better.

E. The CSXT OP number or CSXT contract number, as applicable, must appear on each Declarations page and/or certificates of insurance.

F. Such additional or different insurance as CSXT may require.

G. Each policy must contain the following endorsement:

"It is hereby agreed that 30 days prior written notice of cancellation, expiration, termination, or reduction of coverage provided by this policy will be given to the Department and CSX Transportation Inc."

c. Construction. If any of the insurance is canceled, all operations must cease as of the date of cancellation and cannot resume until new insurance is in force.

d. Measurement and Payment. The Contractor must pay for all railroad insurance. Insurance costs as described in this special provision will be included as part of other pay items.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
WORK NEAR RAILROAD CROSSING

RAL:DGT

1 of 1

APPR:CRB:JJG:06-25-15

a. Description. This work consists of the Contractor consulting with the representative of the CSX Transportation, Inc. (herein after called the Railroad) to determine the necessity for, the type of, and cost of protection required for ensuring the safety and continuity of Railroad traffic and payment to the Railroad for protective services when doing work on, above, or below the Railroad property.

b. Materials. None specified.

c. Construction. Contact the Railroad 30 calendar days prior to starting work in the vicinity of their tracks. Provide documentation to the Engineer with the details of the contact including the person contacted, phone number or email used and the specific time and date. Ensure construction methods are in compliance with the requirements in the contract and as directed by the Engineer.

Pay (or pre-pay when required by the Railroad) the cost for right of entry permit, flagpersons, watchpersons, training, and other protective services and devices furnished or required by the Railroad and made necessary in the judgment of the representative of the Railroad because of the Contractors' operations which are within 25 feet of each side of centerline of track or impacted by traffic control operations. All Railroad bills for such protection costs must be paid within 14 days if not prepaid.

Monitor and provide immediate preference to clearing any traffic which backs up over the crossing as a result of flag control away from the crossing.

d. Measurement and Payment. Review the accuracy of costs from the Railroad and resolve any inconsistencies prior to submitting to Engineer for reimbursement. Submit satisfactory evidence or certification to the Engineer indicating all bills for protective services and devices furnished by the Railroad have been paid.

The Department will reimburse the Contractor for the costs incurred that have satisfactory evidence of payment to the Railroad using the following pay item.

Railroad Protection, at Grade Crossing Dollar

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION
FOR
ERRATA TO THE 2012 STANDARD SPECIFICATIONS

1 of 30

03-04-19

Page	Subsection	Errata
N/A	N/A	In the very beginning of the book on the page where we list the MDOT publications included by reference delete the following manual. "Work Zone Safety and Mobility Manual"
N/A*	N/A	In the very beginning of the book on the page where we list the MDOT publications included by reference replace the Field Manual of Soil Engineering (out of Print) with the following manual. "Geotechnical Manual"
3	101.02	Modify the abbreviation reading "AIS" to read "AISI".
4*	101.02	Delete the following abbreviations and the long forms MDELEG MDNRE Add the following abbreviations and the long forms MDNR Michigan Department of Natural Resources MDEGLE Michigan Department of Environmental Great Lakes, and Energy MDLARA Michigan Department of Licensing and Regulatory Affairs NESC National Electrical Safety Code
27	103.02.B.2	Change the last sentence of the first paragraph to read "For decreases below 75 percent, the maximum allowable payment for work performed, including any adjustment, will not exceed an amount equal to 75 percent of the original contract quantity times the contract unit price."
34	104.05	The first sentence of this subsection should read "If the Contractor performs unauthorized work (work performed without the inspections required by the contract, extra work performed without Department approval, work performed contrary to the inspectors direction, or work performed while under suspension by the inspector), the Engineer may reject the unauthorized work."
46	104.12	Add the following to the end of the first paragraph "The use of right-of-way in wetlands and floodplains, or the crossing of water courses by construction equipment is prohibited."
53	105.09	Add the following to the end of the second paragraph "Any specifically produced material not purchased by the Department, will remain the

An asterisk (*) indicates an entry which has been revised from an earlier version of this Supplemental Specification.

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		Contractors and must be removed from the project prior to final acceptance."		
56	107.02.B.2	This sentence should read "U.S.Army Corps of Engineers' Section 404, Dredge and Fill; and Section 10, Navigable Waterway."		
56*	107.02.B	Add the subsection reading as follows: "3. U.S. Coast Guard Section 9, Navigable Waterway."		
		Change "MDNRE" to "MDEGLE" in this subsection.		
64	107.12	Change the first sentence of the first paragraph to read: "For protection of underground utilities and in accordance with 2013 PA 174, the Contractor must notify Miss Dig at least 3 work days, excluding Saturdays, Sundays and holidays, before beginning each excavation in areas where public utilities have not been previously located."		
65*	107.15.A	Change "MDNRE" to "MDEGLE" in four instances in this subsection.		
66	107.15.A.3	Add the following to the end of the paragraph "Note that a burn permit from the MDNR is required for any open burning whenever the ground is not snow covered. Any individuals that allow a fire to escape will be in violation of the Natural Resources and Environmental Protection Act and will be required to reimburse the costs of suppressing the wild fire."		
67*	107.16	The third sentence should read "In State Forests, the Contractor must contact the local Unit Manager, Forest Management Division, MDNR, regarding the work to be performed within or adjacent to the forest land." Delete the last sentence of the first paragraph of this subsection.		
80	108.08.F	Delete the second paragraph in its entirety.		
80	108.08.G	Add the following new subsection: "G. The Contractor may propose and the Engineer may approve another equitable method, supported by an acceptable rationale to determine time extensions for any of the excusable delays listed in subsection 108.08.		
83	108.10.C	Change the last sentence of the first paragraph to read: "The liquidated damages may contain one or more components of damages added together."		
83	108.10.C.1	In Table 108-1 delete the last row of the table and replace it with the following: <table><tr><td>≥50,000,000</td><td>4,500</td></tr></table>	≥50,000,000	4,500
≥50,000,000	4,500			
102	109.05.E.1	Change the second sentence of the third paragraph to read: "Provide the content specified in subsection 109.05.D.11 for the applicable items in this statement and as follows:"		

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107	150.04	Change the following pay item reading "Mobilization, Max ____" to read "Mobilization, Max (dollar)" at nine locations throughout the subsection.
112	201.03.A.3.b	Change "MDNRE" to "MDNR" in three instances in this subsection.
123	204.04	Change the following pay item reading "Structures, Rem" to read "Structures, Rem (Structure No.)"
123	204.04	Change the following pay item reading "Concrete Barrier, Rem" to read "Conc Barrier, Rem"
150*	208.01	Change "MDNRE" to "MDEGLE" in this subsection.
180	308.03.A	Change the first sentence of the second paragraph to read: "Do not operate equipment required to place backfill directly on geotextile products."
185	401.03.A	Change the first sentence of the second paragraph to read: Where unstable soil conditions, or obstructions other than rock, require excavation of the trench below the elevation detailed on the plans; undercut, backfill, and compact the trench as directed by the Engineer.
188	401.03.H	Change the second sentence of the paragraph to read "Jack steel pipes in place in accordance with subsection 401.03.G".
189	401.03.N	Add the following sentence to the end of the first paragraph "Where possible, maintain the stream flow thru a temporary channel or temporary culvert." The second sentence of the second paragraph should read "Direct water from the dewatering operations through a filter bag before discharging to an existing drainage facility."
189	401.04	Change the fourth pay item from the end of the list to read as follows: "Culv, Reinf Conc Ellip, (shape) CI ___, (rise) inch x (span) inch".
190	401.04	Change the fourth pay item from the end of the list to read as follows: "Steel Casing Pipe, ___ inch, Tr Det ___."
195	402.03.C	Change the third sentence of the first paragraph to read as follows: "Wrap pipe joints, with a diameter greater than 24 inches, using geotextile blanket."
200	402.04	Change the third pay item from the top of the list to read as follows: "Sewer, CI ___, ___ inch, Jacked in Place"
200	402.04.A	Change the last sentence of the subsection to read as follows: "The unit price for Sewer and Sewer, Reinf Conc, Ellip includes the cost of excavation, backfill, geotextile blanket and mandrel testing."

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201*	402.04.H	Change the last sentence of the first paragraph to read "The Department will not make an adjustment in the pay items of Minor Traf Devices or Traf Regulator Control ."
208	403.04.D.3	Change the sentence to read: "Removing and replacing pavement adjacent to the adjusted cover per Standard Plan R-37 Series."
218	406.03.A.2	Change the first sentence of the first paragraph to read: "Design precast box culverts less than 10 feet in span length measured along the centerline of the roadway in accordance with current AASHTO LRFD Bridge Design Specifications and ASTM C 1577." Add the following sentence to the end of the first paragraph: "Design precast box culverts greater than or equal to 10 feet in span length measured along the centerline of the roadway for HL-93 Modified live load."
219	406.03.B	Change the first sentence of the first paragraph to read: "Submit shop drawings for culverts greater than or equal to 10 feet in span length measured along the centerline of the roadway to the Engineer, for review and approval in accordance with subsection 104.02."
219	406.03.C.1	Change the second sentence of the first paragraph to read: "Before manufacture, perform load ratings on precast three-sided, arch or box culverts greater than or equal to 10 feet in span length measured along the centerline of the roadway, in accordance with the AASHTO Manual of Bridge Evaluation, Section 6, Part A, the Michigan Bridge Analysis Guide current at the time load rating is performed, and the Michigan Structure Inventory and Appraisal Guide."
223	406.03.G	Add the following after the first sentence of the second paragraph: "Where possible, maintain the stream flow thru the existing channel, temporary channel, or temporary culvert."
224	406.03.G	Replace the fifth paragraph of this subsection with the following: "The Contractor may use cast-in-place wing walls, headwalls, and aprons, as alternatives to precast wing walls, headwalls, and aprons. Attach cast-in-place wing walls or headwalls as shown on the shop drawings."
225	406.03.G.2	Change the third sentence of the first paragraph to read: "Before placing the open-graded aggregate 34R, compact the coarse aggregate 6A using at least three passes of a vibrating plate compactor."
226	406.03.G.2	Change the first sentence of the second paragraph of this subsection to read:

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		"Fill the space between the box culvert joints during placement of box sections with closed-cell rubber extrusion type gaskets in accordance with ASTM C 990."
226	406.04.A.9	Change the sentence to read: "Providing plan modifications including design, additional plan quantities and pay items to accommodate any changes to the precast units as shown on the plans."
226*	406.04.A	Add the following paragraph after the last paragraph of the subsection: "The substructure design is specific to the three-sided or arch culvert detailed on the plans. The Contractor must use approved MDOT service vendors qualified in Hydraulics, Geotechnical Engineering Services, and Short and Medium Span Bridges to perform the required design and plan modifications, as directed by the Engineer, if the Contractor selects a culvert shape different than shown on the plans."
227	406.04.B	Add the following new item in the list of items in this subsection: 2. Headwalls, wingwalls, aprons, and curtain walls, precast or cast-in-place; Renumber the exist items 2 through 4 in this list to read 3 through 5. Delete existing item numbered 5 and replace with the following: 6. Inserts for bars and connection hardware; and Renumber the existing item 6 in this list to read 7.
227	406.04.B	Delete the first and second paragraphs following the list of items in this subsection and replace with the following: "The Department will pay separately for cast-in-place concrete, other than for culvert segments, wing walls, and headwalls; excavation; protective coating; providing and placing backfill material; by plan quantity in accordance with subsection 109.01.A."
239	501.03.C.6	The first sentence of this subsection should read "Except as specified in subsection 501.03.C.4, removing HMA surface applies to removing HMA overlying a material designated for removal or that is required to remain in place."
247	501.03.O	Change footnote e in Table 501-5 to read: "Flushing severe enough to significantly affect surface friction (Friction Number <35)."
249	501.04.H	The first sentence of this subsection should read "The Engineer will measure, and the Department will pay for removing HMA surface, no greater than 12 inches thick, overlying a material designated for removal or that is required to remain in place, as HMA Surface, Rem. "

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		The second paragraph of this subsection should read "The Engineer will measure, and the Department will pay for removing HMA surface, greater than 12 inches thick, overlying a material designated for removal or that is required to remain in place, as Pavt , Rem in accordance with subsection 204.04."
257	503.03.E	Delete this subsection in its entirety.
265	504.03.E.3	Delete this subsection in its entirety.
269	504.04.A	This subsection should read "The unit prices for Micro-Surface , regardless of the type required, include cleaning existing pavement; applying a bond coat; temporary pavement markings; stationing; corrective action; and traffic control to complete corrective action."
299	601.04	In table 601-2 delete the row for Grade P-NC concrete in its entirety.
300	601.04	In table 601-2, the first sentence of footnote b. should read: "Use coarse aggregate 6A, 6AA or 6AAA for Grades P1, P2 and M." In table 601-2, footnote c. should read: "The mix design basis for bulk volume (dry, loose) of course aggregate per unit volume of concrete is 72% for Grade P1; 74% for Grade P2."
308	602.03.F	Note c. in Table 602-1 should read "Refer to Section D6 of the Materials Quality Assurance Procedures Manual for inspection procedure."
320	602.04.C.3	The last paragraph in this subsection should read "If the Engineer approves a substitution of a higher concrete grade for a lesser grade (e.g., P1 for P2), the Department will pay for the higher grade of concrete using the original bid and pay items of the lesser grade."
327	603.02	Change the second material in the list to read: "Concrete, Grade P-NC.....603" Change the third material in the list to read: "Base Course Aggregate, 4G, 21AA, 22A.....902"
334	603.03.B.10	Change the last sentence of the second paragraph to read "Apply the required curing compound in two coats, at a rate of at least 1 gallon per 25 square yards for each coat."
342	603.04.G.3	Change "D1" to "W" in two instances in this subsection.
351	701.04	Replace Tables 701-1A and 701-1B with the Table 701-1 below.
362*	704.03.C	Change the last sentence in the first paragraph of this subsection to read: "The Engineer will consider approval after receiving applicable MDEGLE permits for the alternate method."

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372	705.03.C.1	Add the following sentence after the first paragraph of this subsection: "Do not drive piles within a radius of 25 feet of newly placed concrete until the concrete attains at least 75 percent of its specified minimum strength."
374	705.03.C.2.c	Change the last sentence of the second paragraph to read "Drive test piles to the minimum pile length or practical refusal, whichever is greater".
379	705.04	Change the fifth item down the list to read: "Pile, Galv (Structure No.)"
380	705.04	Change the last item in the list to read: "Pile Driving Equipment, Furn (Structure No.)"
383	706.02	The fourth paragraph following the list of materials should read "Provide AASHTO M 270, Grade 36 steel, meeting the requirements of ASTM A 786, galvanized in accordance with section 707, for expansion joint cover plates. Provide plates at least 3/8 inch thick. Use plates with a slip resistance equal to or greater than those meeting the requirements of ASTM A 786 and must be approved by the Engineer. Provide ASTM F 593 (Type 304) stainless steel, 3/4-inch or 1/2-inch diameter, flathead countersunk screws with 3/4-inch or 1/2-inch diameter inserts for use in expansion joint cover plates."
389	706.03.D.4.b	Change the first sentence of the fourth paragraph to read "Design forms, form supports, and attachments to carry dead loads, and resultant horizontal loads due to forming of cantilever overhangs."
390	706.03.E.4	Change the forth sentence of the first paragraph to read: "Use wire ties to secure all bar intersections for the top mat. Use wire ties to secure all bar intersections for other mats where the product of the length and width of bar intersection spacing exceeds 120 square inches."
391	706.03.E.8	Change the first sentence of the second paragraph of this subsection to read: "Patch sawed or sheared ends and visible defects in accordance with ASTM A 775."
392	706.03.E.8	Change the last sentence of the third paragraph of this subsection to read: "Coat mechanical splices after splice installation in accordance with ASTM A 775 for patching damaged epoxy coating."
394	706.03.H.1	Delete the last paragraph on page 394 and replace it with the following: "Do not cast sidewalk, curb, or barrier pours until the deck concrete attains at least the minimum specified 7-day flexural or compressive strength, and after completion of the 7-day continuous wet cure. The

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		forming of succeeding portions may occur, provided the wet cure is maintained."
406*	706.03.N.1.b	Add the following to the end of the last paragraph of the subsection: "Do not discontinue wet cure nor cast succeeding portions onto the bridge deck prior to completion of the 7-day two-phase continuous wet cure. Ensure excess or ponding cure water is removed prior to casting of succeeding structure portions."
416	707.03.C.1	Change the title of the subsection from "Shop Plans to read "Shop Drawings". Change the second sentence of this subsection to read: "Do not use design drawings in lieu of shop drawings."
426	707.03.C.17	Change the second sentence in the first paragraph of this subsection to read: "Tap oversized galvanized nuts in accordance with ASTM A 563 or AASHTO M 292 and meet Supplementary Requirement S1 of ASTM A 563 or AASHTO M 292."
430	707.03.D.7.b	Delete the first sentence of the last paragraph of this subsection.
430*	707.03.D.7.b	Change the title of the Table 707-4 to read: "Minimum Bolt Tension for ASTM F 3125 Grade A 325"
430	707.03.D.7.b	Change "104,000" to "103,000" in the last row under the column titled Minimum Bolt Tension.
431	707.03.D.7.c	Add the following sentence to the end of the first paragraph of this subsection: "If using impact wrenches, provide wrenches sufficient to tighten each bolt in approximately 10 seconds."
431*	707.03.D.7.c	Change the first sentence of the second paragraph to read: "Do not reuse ASTM F 3125 Grade A 325 bolts and nuts.."
434	707.04.A	Change the first sentence of the first paragraph of this subsection to read: "The Engineer will measure structural steel by the calculated weight of metal in the finished structure, excluding filler metal in welding, as shown on the shop drawings or working drawings."
438	708.03.A.2	Change the title of the subsection from "Shop Plans to read "Shop Drawings". Change the first sentence to read: "Submit shop drawings in accordance with subsection 104.02." Change the fourth sentence to read:

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		"Do not start production until the Engineer approves the shop drawings."
441*	708.03.A.11	Change the last sentence of the first paragraph to read "Cure concrete at temperatures from 70 °F to 150 °F until concrete attains the release strength shown on the shop drawings".
441	708.03.A.11	Change the fourth sentence of the fourth paragraph to read "Do not exceed a maximum concrete temperature of 150 °F during the curing cycle."
458	711.03.A	Change the first sentence in the first paragraph to read: "Shop drawings for structural steel and pipe railings are not required."
460	711.04.A	Change the second sentence of the first paragraph to read: "The unit price for Bridge Barrier Railing includes the cost of placing steel reinforcement, providing and placing concrete, constructing joints, and forming, finishing, curing and protecting the concrete."
461	711.04.F	The title of this subsection should read " Reflective Marker, Permanent Barrier. "
467	712.03.C	Add the following to the end of the third paragraph of the subsection: "Notify the Engineer of any saw cuts in the top flange. Saw cuts equal to or less than 1/32 inch deep in steel beams must be repaired by grinding, to a surface roughness no greater than 125 micro-inches per inch rms, and tapering to the original surface using a 1:10 slope. Saw cuts in excess of 1/32 inch deep in steel beams require a welded repair to be submitted to the Engineer for approval. Weld in accordance with subsection 707.03.D.8 and provide adequate notice to allow the Engineer to witness the repair work. Inspect and test all saw cut repairs (including grinding repairs) using ultrasonic testing in accordance with 707.03.D.8.c at no additional cost to the Department."
471	712.03.J	Add the following to the end of the second paragraph of the subsection: "Select adhesive anchor systems from the Qualified Products List."
471	712.03.J.1	Delete the first paragraph in this subsection and replace it with the following: "Propose complete details of drilling, cleaning, and bonding systems for anchoring reinforcement and submit for the Engineer's approval before use. The minimum embedment depth must be nine times the anchor diameter for threaded rod or bolt and twelve times the anchor diameter for reinforcing bar. Propose a drilling method that does not cut or damage existing reinforcing steel. Prepare at least three proof tests per anchor diameter and type in the same orientation in which they will be installed on the existing structure, on a separate concrete block, in the presence of the Engineer. The Engineer will proof test the proposed systems. The Engineer will base approval of the anchoring system on the following criteria:"
471	712.03.J.2	Change the third sentence of the first paragraph to read:

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		"Use a tension testing device for unconfined testing, in accordance with ASTM E 488."
473	712.03.L.2	Change the first sentence in the second paragraph of this subsection to read: "If using epoxy coated steel reinforcement, epoxy coat mechanical reinforcement splices in accordance with ASTM A 775."
473	712.03.L.3	Delete the existing first sentence in the first paragraph.
473	712.03.L.3	Change the third sentence of the first paragraph to read "Provide two test splices on the largest bar size."
473*	712.03.L.3	Change the sentence beginning "Demonstrate to the.... to read: "Demonstrate to the Engineer that splices have a tensile strength of 125 percent of the bar yield strength and high strength splices have a tensile strength of 150 percent of the bar yield strength."
488	713.02	Add the following as subsection 713.02.C: "C. Structural Steel for Retrofitting and Welded Repairs. Structural steel material used for retrofitting and welded repairs of primary members as defined in subsection 707.01.B must meet longitudinal Charpy V-Notch impact test requirements."
501	715.02	Add the following material reference above the two existing items: "Sealant for Perimeter of Beam Plates.....713"
508	715.03.D.1	Add the following sentence after the second paragraph of the subsection: "Apply sealant for perimeter of beam plates in accordance with subsection 713.03.F."
515	716.03.A	Delete the second paragraph of this subsection in its entirety. Change the last sentence of the last paragraph of this subsection to read: "Provide a primer dry film thickness for the top flange between 4 mils and 10 mils."
519	716.04	Change the second sentence of the first paragraph of this subsection to read: "The unit price for Field Repair of Damaged Coating (Structure No.) includes the costs of making field repairs to the shop applied coating system; prime coat surfaces and exposed surfaces of bolts, nuts, and washers; and repairing stenciling."
521	717.04.B	This subsection should read "The unit price for Drain Casting Assembly includes the cost of providing and installing the downspout and, if necessary, the lower bracket to the drain casting."

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522	718.02	Change the section number "906" in the third material in the list to read "919."
533	718.04	Delete the following pay item from the list: Temp Casing.....Foot
533	718.04.B.2	Delete this subsection in its entirety.
533	718.04.B.3	Renumber this subsection as follows: "2. Permanent Casing. "
540	802.04	Change "Non reinf" in the last pay item of the list with "Nonreinf".
545*	803.04.E	Change the second sentence of the second paragraph to read: "The unit price for Railing for Steps includes the cost of providing, fabricating, installing, and grouting the railing."
560	807.04	Delete the following pay item from the list: Guardrail Buffered EndEach
560	807.04.B	Change the fifth paragraph of this subsection to read: "The Engineer will measure Guardrail Salv and Guardrail, Mult, Salv along the face of the rail (one face for multiple beams), including terminals and end shoes."
567	808.04.C	Change the first paragraph of this subsection to read: "The Department will not pay separately for protective fence required in accordance with subsection 104.07."
569	809.04.A	Change the first sentence to read: "The unit price for Field Office, CI __ includes the cost of setup, providing access, grading, maintaining, plowing snow, and utility hook-up charges."
570	809.04.B	Delete the existing second and third sentences in the first paragraph and replace them with the following: "The unit price for Field Office, Utility Fees includes the cost of monthly usage fees for electricity, gas, telephone service and charges, fuel for the stove, monthly water and sanitary service."
570	809.04.B	Change the existing fourth sentence in the first paragraph to read: "The Department will reimburse the Contractor for monthly usage fees for electricity, gas, telephone, water and sanitary charges incurred by the Department."
575	810.03.K	Change the subsection to read "K. Drilled Piles for Cantilever and Truss Foundations. Construct drilled piles for cantilever and truss foundations in accordance with section 718."

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578	810.03.N.2	Add the following sentence after the first sentence of the second paragraph on this page: "Mark each nut and bolt to reference the required rotation."
584	810.04	Delete the last pay item in the list: Truss Fdn Anchor Bolts, Replace.....Each
585	810.04.B.1	Change the second paragraph to read: "The unit prices for Fdn, Truss Sign Structure Type __, __ inch Dia, Cased and Fdn, Cantilever Sign Structure Type __, __ inch Dia, Cased include the cost of concrete, slurry, steel reinforcement, permanent casings, anchor bolts, excavation, and disposal of excavated material."
585	810.04.B.2	Change the second sentence of the first paragraph to read: "The unit prices for Fdn, Truss Sign Structure Type __, __ inch Dia, Uncased and Fdn, Cantilever Sign Structure Type __, __ inch Dia, Uncased include the cost of concrete, slurry, steel reinforcement, temporary casings, anchor bolts, excavation, and disposal of excavated material."
596	811.03.G	Delete this subsection in its entirety.
597*	811.03.H	Rename this subsection as follows: "G. Raised Pavement Marker (RPM) Removal. "
597*	811.04	Change "Crosshatching" in the last pay item of the list on this page to "Cross Hatching".
598*	811.04	Delete the following pay items from the list: Pavt Mrkg, (material), 4 inch, SRSM, (color).....Foot Pavt Mrkg, (material), 4 inch, SRSM, 2 nd Application, (color).....Foot Add the following pay items to the list: "Pavt Mrkg, Polyurea, (legend).....Each Pavt Mrkg, Polyurea, (symbol).....Each" Change the sixth item down the list to read: "Pavt Mrkg, Polyurea, __ inch, Cross Hatching, (color)" Change the eleventh item down the list to read: "Rem Curing Compound, for Longit Mrkg, __ inch.....Foot"
599	811.04.B	Delete this subsection in its entirety.
599	811.04	Rename the following subsections as follows: "B. Call Back. C. Pavement Marking Removal. D. Material Deficiency. "

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602	812.03.D	Change the first sentence to read "Provide and maintain traffic control devices meeting the requirements in the ATSSA Quality Guidelines for Work Zone Traffic Control Devices and Features."
603	812.03.D.1	The last sentence on this page should read "Lay the sign behind the guardrail, with the uprights pointing downstream from the traffic, and place the support stands and ballasts close to the guardrail."
604	812.03.D.2	The first sentence of the fourth paragraph should read "Do not use burlap or similar material to cover Department or Local Government owned signs."
604	812.03.D.5	The fifth sentence of the first paragraph should read "Do not mix drums and cones within a traffic channeling sequence."
605	812.03.D.6.b	Change the first sentence of the first paragraph to read: "The Department will allow the nighttime use of 42-inch channelizing devices, in the tangent area only, on CPM and pavement marking of any duration where the use of plastic drums restricts proposed lane widths to less than 11 feet, including shy distance."
605	812.03.D.7	Add the following sentence after the first sentence of the first paragraph: "Place a shoulder closure taper in advance of the lighted arrows placed on the shoulders."
607	812.03.D.9	Delete the second paragraph of this subsection and replace with the following: "Link sections together to fully engage the connection between sections. Maintain the barrier with end-attachments engaged and within 2 inches of the alignment shown on the plans."
608	812.03.D.10.b	Delete the second sentence of the second paragraph of this subsection beginning with "Install sand module attenuators..."
608	812.03.D.10.b	Add the following sentence after the second paragraph of this subsection: "Install impact attenuation devices as shown on the plans, as directed by the Engineer, or both."
609	812.03.D.10.e	Delete the second paragraph of this subsection.
612	812.03.D.13	Delete the third paragraph of this subsection and replace it with the following: "Perform work on signals in accordance with the contract and to the requirements of NEMA TS-5 standard for those items not identified in the contract."
613*	812.03.D.14.a.iii	Change the sentence in this subsection to read "Place a terminal end shoe, in accordance with Standard Plan R-66-Series, and of appropriate type based on existing guardrail, on both blunt guardrail ends."

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615	812.03.F	The second sentence of the second paragraph of this subsection should read: "The Contractor may use a Type R temporary pavement marking cover, per subsection 812.03.D.12 when authorized by the Engineer."
616	812.03.F.2	The last sentence of the first paragraph should read: "If the removal equipment cannot collect all removal debris, operate a self-propelled sweeper capable of continuously vacuuming up the removal debris immediately behind the removal equipment."
617	812.03.G.3	The first sentence of the second paragraph should read: "Sweep the shoulder and remove debris prior to placing traffic on the shoulder and throughout the time the shoulder is used to maintain traffic."
617	812.03.G.4.a	Delete "48 inch by 48 inch" from the first sentence of this subsection.
618*	812.03.G.7	The first sentence of the first paragraph should read: "Clean barrier reflectors, plastic drums, 42 inch channelizing devices, tubular markers, signs, barricades, and attached lights in operation on the project to ensure they meet required luminosity."
619	812.03.G.8	The second sentence of the third paragraph from the end of the subsection should read: "Illuminate traffic regulator stations at night per subsection 812.03.H."
621	812.03.I.6	Delete "48 inch by 48 inch" from the second sentence of this subsection.
622*	812.03.J	The second paragraph should read "Apply one 2-inch wide horizontal stripe of red and white conspicuity tape along at least 50 percent of each side of, and across the full width of the rear of the vehicle or equipment."
622	812.04	Change the second item down the list to read: "Traf Regulator Control"
		Change the sixth item down the list to read: "Sign Cover, Type I"
626	812.04.I	Change the reference "812.04.E" in the first sentence to "812.04.D".
628	812.04.M.4	Add the following as the first sentence of this subsection: "The Engineer will not measure a temporary barrier ending move as Conc Barrier Ending, Temp, Relocated if it involves work defined in subsection 812.04.M.3."
629	812.04.N.1	Change the reference "811.04.D" in the second paragraph of this subsection to read "811.04.C".
630	812.04.S	Change the first sentence to read: "The Department will not make additional payments for traffic regulating, signing, arrow boards, and lighting systems for traffic regulator stations operated at night due to a temporary PTS system failure."

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634	813.03.C.3	Change the reference "903.07.A" in the paragraph of this subsection to read "907.07.B".
638	814.03.D	Change the second sentence to read: "Place the HMA mixture on the prepared base to a thickness of at least 2 inches, and to at least 220 pounds per square yard."
646	815.04	Change the first, third and fourth pay items in the list to read: "Site Preparation, Max (dollar) Lump Sum Watering and Cultivating, First Season, Min (dollar)..... Lump Sum Watering and Cultivating, Second Season, Min (dollar) Lump Sum"
646	815.04.C.1	Change the following pay item reading: "Watering and Cultivating, First Season, Min. (dollar)" to read "Watering and Cultivating, First Season, Min (dollar)" at two locations throughout the subsection.
646	815.04.C.1.b	Delete this subsection in its entirety.
646	815.04.C.1.c	Rename this subsection to read: "b. Removal and disposal of unacceptable plants."
646	815.04.C.2	Change the following pay item reading: "Watering and Cultivating, Second Season, Min. (dollar)" to read "Watering and Cultivating, Second Season, Min (dollar)" at three locations throughout the subsection.
647	815.04.C.2	Change the last paragraph of this subsection to read: "For each unacceptable plant identified, the Engineer will calculate a 50 percent reduction in the unit price for the relevant (Botanical Name) pay item, and will process a negative assessment for each unacceptable plant for that amount."
650	816.03.B	Delete the first paragraph of this subsection and replace with the following: "Conduct soil tests when called for in the contract or when directed by the Engineer. Provide soils tests results to the Engineer when testing is required. Provide and place fertilizer as indicated below and as indicated in the soils tests, if required."
650	816.03.B.1	Change the sentence to read: "For Class A fertilizer, evenly apply 176 pounds of chemical fertilizer nutrient per acre on a prepared seed bed."
650	816.03.B.2	Change the sentence to read: "For Class B fertilizer, evenly apply 120 pounds of chemical fertilizer nutrient per acre on a prepared seed bed."
650*	816.03.B.3	Change the sentence to read: "For Class C fertilizer, evenly apply 80 pounds of chemical fertilizer nutrient per acre on established turf."

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663*	819.01	Delete the first paragraph in the subsection and replace it with the following: "This work consists of providing operating electrical and lighting units; removing, salvaging, or disposing of existing electrical and lighting components; excavating, backfilling, restoring the site in accordance with section 816; and disposing of waste excavated materials. Complete this work in accordance with this section, section 820, and the contract and to the requirements of the NEC, the National Electrical Safety Code, and the MDLARA for those items not identified in the contract." Change the third sentence of the second paragraph in this subsection to read: "Contact the MDLARA for electrical service inspection and pay the applicable fees."
671	819.03.F.1	Change the paragraph to read: "Install light standard foundations as shown on the plans and the standard plans, as applicable."
673	819.03.G.4.b	Change the last sentence of the first paragraph to read: "Tighten the anchor bolts to a snug tight condition as described in the third paragraph of subsection 810.03.N.2 ensuring the lock washer is completely compressed."
673	819.03.G.4.b	Delete the first two sentences of the second paragraph and replace with the following: "Tighten bolts connecting the pole to the frangible base to a snug tight condition. Snug tight is the tightness attained by a few impacts of an impact wrench, or the full effort of a person using an ordinary spud wrench. The lock washers must be fully compressed."
678	819.04	Change the ninth pay item in the list to read: "DB Cable, 600V, 1/C# (size) Foot"
678*	819.04	Delete the last item in the list on this page reading: "DB Cable, in Conduit, 600 Volt, (number) 1/C# (size) Foot"
679	819.04	Change the first pay item in the list to read: "DB Cable, in Conduit, 600V, 1/C# (size) Foot"
679	819.04	Change the sixth pay item in the list to read: "Cable, P.J., 600V, 1, (size) Foot"
679	819.04	Change the second pay item from the bottom of the list to read: "Conc Pole, Fit Up, (type) Each"
680	819.04	Change the first paragraph to read: "Unless otherwise required, the unit prices for the pay items listed in this subsection include the cost of excavation, granular material, backfill,

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		and disposal of waste excavated material. If the contract does not include pay items for restoring the site in kind in accordance with section 816, the Department will consider the cost of restoration included in the pay items listed in this subsection."
680	819.04.A	Add the following paragraph after the first paragraph of the subsection. "The unit prices for Conduit, Rem include the cost of removing the type, number, and size of conduit shown on the plans." Change the third paragraph of the subsection to read: "The unit prices for Conduit, (type), __ inch and Conduit, DB, (number), __ inch include the cost of installing the type, number, and size of conduit shown on the plans, and installing marking tape."
681	819.04.B	Change the last paragraph of the subsection to read: "The unit price for DB Cable, in Conduit, Rem includes the cost of removing all cables from the existing conduit measured per lineal foot of conduit."
681	819.04.C	Change the first paragraph of the subsection to read: "The unit prices for Cable, Rem and Cable, (type), Rem include the cost of dead ending, circuit cutting, installing guying, work required to leave circuits operable, and disposing of the removed cables, wire, hardware, and other appurtenances."
681	819.04.D	Change the first paragraph of the subsection to read: "The unit price for Cable, Pole, (type), Dismant includes the cost of dismantling and off-site disposal of the following:"
685	820.01.D	Change the sentence to read: "Excavate, backfill, restore the site in kind in accordance with section 816, and dispose of excess or unsuitable material;"
688	820.03.C	Change the seventh paragraph of this subsection to read: "Tighten top anchor bolt nuts, snug, in accordance with the first four paragraphs of subsection 810.03.N.2, except beeswax will not be required."
696	820.04	Add the following pay items to the list: "Pedestal, Pushbutton, Alum.....Each Pedestal, Pushbutton, Rem.....Each"
697	820.04.A.2	Change the sentence to read: "If the contract does not include pay items for restoring the site in kind in accordance with section 816, the Department will consider the cost of restoration included in the pay items listed in this subsection."
698	820.04.B	Delete the second paragraph of this subsection found on this page.
698	820.04.C	Change " Fdns " to read " Fdn " in four instances in this subsection.

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701	820.04.J.3	Change the sentence to read: "Installing wires in the saw slots and to the handholes;"
701.	820.04.J	Add the following as a new subsection: "7. A 3/4 inch minimum flexible conduit (non-metallic and rated for underground use) from the pavement to the handhole."
706	821.01.B	Change the website address listed after the second paragraph on this page to read: <u>"http://www.ngs.noaa.gov/heightmod/GuidelinesPublications.shtml"</u>
711	822.03.B	Change the second paragraph to read: "If corrugations are required on concrete shoulders and the method of installation is not shown on the plans or directed by the Engineer, construct corrugations by grinding, or cutting."
718*	823.03.U	Change "MDNRE" to "MDEGLE" in four instances in this subsection.
720	823.04	Change the pay item seventh from the bottom of the list to read: "Water Shutoff, Adj, Temp, Case ____"
730	824.03.Q	Change the third sentence of the fourth paragraph to read: "Ensure placement of monumentation in accordance with section 821."
730	824.03.Q	Change the first sentence of the last paragraph to read: "The Department will not pay for work dependent on lost or destroyed stakes until the Contractor replaces the stakes."
732	824.04	Change the first sentence of the first paragraph following the list of pay items to read: "If the Engineer determines the Contractor will perform staking as extra work, the Department will pay for staking in accordance with section 103."
733	824.04	Change the left column header in Table 824-2 to read: "Percent of Original Contract Amount Earned"
739	902.02	Change the last aggregate testing description to read: "Determining Specific Gravity and Absorption of Fine Aggregates.....MTM 321"
742	902.03.C.1.a	Change the sentence to read: "Coarse aggregate includes all aggregate particles greater than or retained on the 3/4-inch sieve."
742	902.03.C.2.a	Change the sentence to read: "Intermediate aggregate includes all aggregate particles passing the 3/4-inch sieve through those retained on the No. 4 sieve."

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742	902.03.C.2.b.iii	Change the sentence to read as follows: "Maximum Loss by Washing per MTM 108 of 3.0 percent".
744	902.07	Delete the fourth paragraph of the subsection and replace it with the following: "The Engineer will only allow the use of granular material produced from crushed portland cement concrete for embankment and as trench backfill for non-metallic culvert and sewer pipes without associated underdrains. However, granular material produced from crushed portland cement concrete is not permitted as swamp backfill, nor within the top 3 feet below subgrade regardless of the application.
746*	902.11	Change the Item of Work by Section Number column in Table 902-1 for the 6AA row to read: "406, 601, 602, 706, 708, 806". Change the Item of Work by Section Number column in Table 902-1 for the 6A row to read: "206, 401, 402, 406, 601, 602, 603, 706, 806". Change the Item of Work by Section Number column in Table 902-1 for the 34R row to read: "401, 404, 406".
751*	902.11	Replace Table 902-6 with the Table 902-6 below.
751	Table 902-7	Under the Material column in the fourth row change the "FA2" to read "2FA".
751	Table 902-7	Under the Material column in the fifth row change the "FA3" to read "3FA".
752	Table 902-8	Under the Material column in the fourth row change the "FA2" to read "2FA".
752	Table 902-8	Under the Material column in the fifth row change the "FA3" to read "3FA".
761	Table 904-2	Delete the footnote f and any other reference to footnote f from the table.
767	905.03	Change the first sentence of the first paragraph to read: "Deformed bars, must meet the requirements of ASTM A 706, ASTM A 615, or ASTM A 996 (Type R or Type A only) for Grade 60 steel bars, unless otherwise required".
767*	905.03	Change the first sentence of the second paragraph to read: "Unless otherwise specified, spiral reinforcement must meet the requirements of plain or deformed Grade 40 steel bars of ASTM A 615, ASTM A 996 (Type A), or the requirements of cold-drawn wire of ASTM A 1064".
767	905.03	Change the first sentence of the third paragraph to read: "Bar reinforcement for prestressed concrete beams must meet the requirements of ASTM A 996 (Type R) for Grade 60 steel bars, except

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		the Engineer will allow bar reinforcement that meets the requirements of ASTM A 615 or ASTM A 996 (Type A) for Grade 40 steel bars for stirrups in prestressed concrete beams".
768	905.03.C	Change the first sentence in the subsection to read: "Epoxy coated steel reinforcement, if required, must be coated in accordance with ASTM A 775, with the following exceptions and additions."
768	905.03.C.3	Change the first sentence of this subsection to read: "Include written certification that the coated reinforcing bars were cleaned, coated, and tested in accordance with ASTM A 775 with the coating applicator."
768	905.05	Change the first sentence of the first paragraph to read: "Deformed steel bars must meet the requirements of ASTM A 706 or the requirements for Grade 40, Grade 50, or Grade 60 of ASTM A 615 or ASTM A 996 (Type R or Type A only)".
768	905.06	Delete this subsection in its entirety and replace it with the following: "Deformed wire fabric for prestressed concrete and fabric for concrete pavement reinforcement must meet the requirements of ASTM A 1064 and fabricated as required."
772*	906.07	Change the first paragraph to read: "High-strength bolt fasteners for structural joints must meet the requirements of ASTM F 3125 Grade A 325 Type 1 bolts. High-strength nuts for structural joints must meet the requirements of ASTM A 563 Grade DH or AASHTO M 292 Grade 2H. High-strength washers for structural joints must meet the requirements of ASTM F 436 Type 1 for circular, beveled, clipped circular, and clipped beveled washers." Change the second sentence of the second paragraph of this subsection to read: "Galvanized nuts must be tapped oversize in accordance with ASTM A 563 and meet Supplementary Requirements S1, Lubricant and Rotational Capacity Test for Coated Nuts and S2, Lubricant Dye."
777*	907.03.D.2.a	Change the first sentence of the second paragraph to read: "Angle sections must be nominal 2½ inch by 2½ inch by ¼ inch."
777*	907.03.D.2.b	Change the first sentence of the first paragraph to read: "Angle section braces must be nominal 1¾ inch by 1¾ inch by ¼ inch or nominal 2 inch by 2 inch ³ / ₁₆ inch."
782	908.04	Change the first sentence of the first paragraph of this subsection to read: "Steel castings for steel construction must meet the requirements of ASTM A 148 for Grade 60/90 carbon steel castings, as shown on the plans, unless the Engineer approves an alternate in writing."

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784*	908.09.C	Change this subsection to read: "C. Hardware. Railing anchor studs must meet the requirements of ASTM A 449 Type 1. Heavy hex nuts must meet the requirements of ASTM A 563. Bolts, used as rail fasteners, must meet the requirements of ASTM F 3125 Grade A 325, Type 1. Where called for, round head bolts must meet the requirements of ASTM A 449 Type 1. The material for the railing hand hole screws must meet the requirements of ASTM A 276, Type 304. All nuts must meet the requirements of ASTM A 563 Grade DH or AASHTO M 292 Grade 2H. All flat washers must meet the requirements of ASTM F 436. Lock washers must be steel, regular, helical spring washers meeting the requirements of ANSI B18.21.1 - 1972. Bolts, nuts, washers and other hardware must be hot-dip galvanized in accordance with AASHTO M 232. Galvanized nuts must be tapped oversize in accordance with ASTM A 563, and meet Supplementary Requirements S1, Lubricant and Rotational Capacity Test for Coated Nuts, and S2, Lubricant Dye."
784	908.11.A	Change the first sentence of the first paragraph to read: "Steel beam sections, backup elements, terminal end shoes, and special end shoes must meet the requirements of AASHTO M 180, for Class A guardrail."
785*	908.11.B	Change the second paragraph to read: "Bolts, nuts, and round washers for guardrail, other than at bridge barrier railings, must meet the requirements of ASTM A 307 (Grade A), ASTM A 563 (Grade A with Supplementary Requirements S1 of ASTM A 563), and ASTM F 436, respectively." Change the third paragraph to read: "Washers, other than round washers, for guardrail must meet the requirements for circular washers in ASTM F 436 except that the dimensions must be as shown on the plans." Change the fifth paragraph to read: "Bolts, nuts, and washers for connections at bridge barrier railings must conform to ASTM F 3125 Grade A 325 Type 1 galvanized high-strength structural bolts with suitable nuts and hardened washers."
787	908.14.B	Add the following sentence to the end of the third paragraph of this subsection: "Exposed threaded ends of anchor bolts must be galvanized a minimum of 20 inches." Change the sixth paragraph in this subsection to read: "Provide washers meeting the requirements of ASTM F 436 for circular washers."
787	908.14.B	Change the second sentence of the fourth paragraph to read "After coating, the maximum limit of pitch and major diameter for bolts with a

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		diameter no greater than 1 inch may exceed the Class 2A limit by no greater than 0.021 inch, and by no greater than 0.031 inch for bolts greater than 1 inch in diameter”.
787*	908.14.C	Change the first paragraph to read "Provide either four or six high strength anchor bolts per the contract plans, meeting the mechanical requirements of ASTM F 1554, for Grade 105, with each standard. Anchor bolts for traffic signal strain poles must meet the requirements of subsection 908.14.B with the following exceptions and additions:"
789	909.03	Change the second sentence of the second paragraph to read: "As an alternative to the AASHTO M 36 requirements for metal pipe, the Contractor may use gasket material meeting the low temperature flexibility and elevated temperature flow test requirements of ASTM C 990, excluding the requirements for softening point, flashpoint and fire point."
793	909.06	Change the first sentence of the second paragraph of this subsection to read: "Provide Corrugated Polyvinyl Chloride Pipe (CPV) and required fittings meeting the requirements of AASHTO M 304."
793*	909.05.D	Change the second sentence of the paragraph to read "Provide a continuous welded joint to create a watertight casing that is capable of withstanding handling and installation stresses. Perform field welding by the SMAW process using E7018 electrodes."
794*	909.08.A	Change the first sentence to read: "Provide bridge deck downspouts of PE pipe meeting the requirements of ASTM F 714, PE 4710, DR 26."
804	Table 909-9	In the note area at the bottom of the table change the designation of the second note from "c." to "b."
811	910.04	Add the following sentence to the end of this subsection: "Fabricate silt fence according to subsection 916.02."
814	Table 911-1	In the 4 th row of the 5 rows in the table change the Property listed as "Total Organic Content (TOC)" to read "Total Organic Carbon (TOC)".
829*	912.08.K	Replace Table 912-10 with the Table 912-10 below.
833*	913.03.B	Change the first sentence of the first paragraph to read: "Clay brick, to construct manholes, catch basins, and similar structures, must meet the requirements of ASTM C 32, for Grade MS."
837*	914.04	Add the following as subsection 914.04.C: "C. Lubricant-Adhesive for Neoprene Joint Seals. The lubricant-adhesive must be a single-component moisture-curing polyurethane and aromatic hydrocarbon solvent mixture meeting ASTM D 2835, Type

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		I. Ship in containers plainly marked with the lot or batch number of the material and date of manufacture. Store at temperatures between 58 and 80°F. Do not exceed 12 months shelf-life prior to use."
840	914.08	Change the first sentence of the second paragraph to read: "Straight tie bars for end-of-pour joints must consist of bars of the diameter and length shown on the plans meeting the requirements of ASTM A 615, ASTM A 706, or ASTM A 996 (Type R or Type A only)".
840*	914.09.A	Change the first sentence of the first paragraph to read: "Straight tie bars for longitudinal pavement joints must consist of bars of the diameter and length shown on the plans meeting the requirements of ASTM A 615, ASTM A 706, or ASTM A 996 (Type R or Type A only)".
840	914.09.B	Change the first sentence of the first paragraph to read: "Bent tie bars for bulkhead joints must consist of bars of the diameter and length shown on the plans."
841*	914.13	In the first sentence of this subsection change "ASTM D 1248, for Type III, Class B" to read "ASTM D 4976, Group 2, Class 4, Grade 4".
844	916.01.A	Change the first sentence to read: "Cobblestone must consist of rounded or semi-rounded rock fragments with an average dimension from 3 inches to 10 inches."
845	916.01.D.1	Change the second sentence to read: "Checkdams for ditch grades 2 percent or greater must be constructed using cobblestone or broken concrete ranging from 3 inches to 10 inches in size."
851*	917.10.B.1	Delete the paragraph and replace it with the following: "1. Class A. Provide and apply Class A chemical nutrient fertilizer either according to MSU Soil Testing Lab Recommendations for Phosphorus Applications to Turfgrass, except the maximum single application rate of nutrient will be 48 pounds per acre, when soil tests are required or as indicated in subsections 917.10.B.1.a and 917.10.B.1.b."
851	917.10.B.1	Add the MSU Soil Testing Lab Recommendations for Phosphorus Applications to Turfgrass, found below, after the first paragraph of this subsection.
853	917.15.B.1	Change the second sentence of the subsection to read: "The net must meet the requirements of subsection 917.15.D and be capable of reinforcing the blanket to prevent damage during shipping, handling, and installation."
857	918.01	Add the following two paragraphs following the first paragraph of this subsection: "Wall thickness and outside diameter dimensions must conform to ASTM D 1785 for smooth-wall schedule 40 and 80 PVC conduit

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		material. The Department will allow no more than 3 percent deviation from the minimum wall thickness specified.
		Wall thickness range must be within 12 percent in accordance with ASTM D 3035 for smooth-wall coilable schedule 40 and 80 PE conduit."
858	918.01.E	Delete the first three sentences of the second paragraph shown on page 858.
863	918.06.F.1	Delete the third paragraph in this subsection in its entirety and replace it with the following: "Provide smooth or deformed welded wire fabric in accordance with ASTM A 1064."
864	918.07.C	Change the first sentence of the first paragraph to read: "Provide anchor bolts, nuts, and washers meeting the requirements of subsection 908.14.A and subsection 908.14.B."
864	918.07.C	Delete the second sentence of the second paragraph.
864	918.07.C	Change the third sentence to read: "Provide anchor bolts threaded 4 inches beyond the anchor bolt projection shown on the plans."
867	918.08.C	Change the last sentence of the first paragraph on this page to read: "Galvanize bolts, nuts, washers, and lock washers as specified in subsection 908.14.B."
867	918.08.C	Change the last sentence of the subsection to read: "Provide each frangible base with manufacturer access covers as shown on the plans."
867*	918.08.D	Delete this subsection in its entirety and replace with the following: "Provide galvanized anchor bolts, studs, nuts, couplings, and washers in accordance with subsection 908.14."
879	918.10.J	Change the third sentence of the second paragraph of this subsection to read: "Provide anchor bolts and associated nuts, washers, and hardware meeting the requirements of subsection 908.14."
887	919.06	Change the second paragraph to read: "Shims must be fabricated from brass shim stock or brass strip meeting the requirements of ASTM B 36, for copper alloy UNS No. C26000, half-hard rolled temper, or fabricated from galvanized sheeting meeting the requirements of ASTM A 653, for Coating Designation G 90."
887	919.07.C	Change the sentence to read:

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		"Galvanized high-strength steel bolts, nuts, and washers for connecting arm connection flanges must meet the requirements of subsection 906.07."
903	921.03.D	Delete the last three sentences of the first paragraph of this subsection.
914	921.05.D	Change the first sentence of this subsection to read: "Provide anchor bolts meeting the requirements of subsection 908.14.C, including elongation and reduction of area requirements."
916	921.07	Change the first sentence of the first paragraph to read: "Provide LED case signs internally illuminated by LEDs and changeable message case signs internally illuminated with LED light sources."
936	922.04.B	In the first sentence of the first paragraph change the "R-52" to "R-126".
936	922.04.B	Add the following to the end of the first paragraph: "Hardware used to connect the end section to the barrier must meet the requirements of NCHRP 350 or MASH (Test Level 3 or higher)."
936	922.04.B	In the first sentence of the second paragraph delete "R-52".
936	922.04.B	Change the fourth paragraph of this subsection to read as follows: For all endings requiring impact attenuators provide a NCHRP-350 Test Level 3 or MASH Test Level 3 approved impact attenuation system, unless otherwise approved by the Engineer.
952	Pay Item Index	Change the following pay items to read: "Conc Barrier, Rem123 204" "Conc Pole, Fit Up, (type)679 819"
953*	Pay Item Index	Delete the following pay item reading: "DB Cable, in Conduit, 600 Volt, (number) 1/C# (size)678 819"
957	Pay Item Index	Delete the following pay item from the list: Guardrail Buffered End560 807
960	Pay Item Index	Change the following pay item to read: "Mobilization, Max (dollar)107 150"
961	Pay item Index	Delete the following pay items from the list: Pavt Mrkg, (material), 4 inch, SRSM, (color).....598.....811 Pavt Mrkg, (material), 4 inch, SRSM, 2 nd Application, (color).....598.....811
961	Pay Item Index	Change the following pay items in the list to read: Pavt Mrkg, Ovly Cold Plastic, 12 inch, Cross Hatching, (color) Pavt Mrkg, Polyurea, __ inch, Cross Hatching, (color) Add the following pay items to the list:

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		"Pavt Mrkg, Polyurea, (legend).....	598.....	811
		Pavt Mrkg, Polyurea, (symbol).....	598.....	811
		Pedestal, Pushbutton, Alum.....	696.....	820
		Pedestal, Pushbutton, Rem.....	696.....	820"
962	Pay Item Index	Change the following pay items in the list to read: "Pile Driving Equipment, Furn (Structure No.) Pile, Galv (Structure No.)"		
963	Pay Item Index	Change the following pay item to read: "Rem Curing Compound, for Longit Mrkg, __ inch	598	811"
964	Pay Item Index	Change the following pay item to read: "Sewer, CI __, __ inch, Jacked in Place	200	402"
		"Sign Cover, Type I.....	622	812"
965*	Pay Item Index	Change the following pay item in the list to read: "Steel Casing Pipe, __ inch, Tr Det __ Site Preparation, Max (dollar)	646	815"
966	Pay Item Index	Change the following pay item to read: "Structures, Rem (Structure No.).....	123	204"
966	Pay Item Index	Delete the following pay item form the list; Temp Casing.....	533.....	718
967*	Pay Item Index	Delete the following pay item from the list; Truss Fdn Anchor Bolts, Replace.....	584.....	810
967	Pay Item Index	Change the following pay item in the list to read: "Traf Regulator Control"		
968*	Pay item Index	Change the following pay item in the list to read: "Water Shutoff, Adj, Temp, Case __ Watering and Cultivating, First Season, Min (dollar).....	646	815
		Watering and Cultivating, Second Season, Min (dollar)	646	815"
993	General Index	Change "Shop Plans (see Plans and Working Drawings)" to read "Shop Drawings (see Plans and Working Drawings)".		

Table 701-1 Concrete Structure Mixtures													
Concrete Structure Mixtures				Slump (inches)		Minimum Strength of Concrete (f)							
Concrete Grade (e,h)	Section Number Reference (i)	Cement Content per cyd (b,c)		Type A, D Admixture or no	Type MR, F, or G Admixtures (g)			Flexural (psi)			Compressive (psi)		
		lb	sack		Before Admixture	After Admixture (Type MR)	After Admixture (Type F or G)	7 Day	14 Day	28 Day (Class Design Strength)	7 Day	14 Day	28 Day (Class Design Strength)
D (a)	706, 711, 712	658 (d)	7.0	0 - 3	0 - 3	0 - 6	0 - 7	625	700	725	3,200	4,000	4,500
S1	705	611	6.5	3 - 5	0 - 3	3 - 6	3 - 7	600	650	700	3,000	3,500	4,000
T	705, 706	611	6.5	3 - 7	0 - 4	3 - 7	3 - 8	550	600	650	2,600	3,000	3,500
S2 (a)	401, 705, 706, 712, 713, 801, 802, 803, 810	564	6.0	0 - 3	0 - 3	0 - 6	0 - 7	550	600	650	2,600	3,000	3,500
S3	402, 403, 803, 804, 806	526 (d)	5.6	0 - 3	0 - 3	0 - 6	0 - 7	500	550	600	2,200	2,600	3,000
		517	5.5										
		489 (d)	5.2										
Unless otherwise required, use Coarse Aggregate 6AA or 17A for exposed structural concrete in bridges, retaining walls, and pump stations.													
Do not place concrete mixtures containing supplemental cementitious materials unless the local average minimum temperature for the next 10 consecutive days is forecast to be above 40 °F. Adjustments to the time required for opening to construction or vehicular traffic may be necessary. Cold weather protection may be required, as described in the quality control plan. The restriction does not apply to Grade S1 concrete in foundation piling below ground level or Grade T concrete in tremie construction.													
Type III cement is not permitted													
Use admixture quantities specified by the Qualified Products Lists to reduce mixing water. Admixture use is required for Grade D, Grade S2, and Grade S3, concrete with a reduced cement content. Use a water-reducing retarding admixture at the required dosage for Grade D concrete to provide the setting retardation required. When the maximum air temperature is not forecast to exceed 60 °F for the day, the Contractor may use a water-reducing admixture or a water-reducing retarding admixture. Ensure Grade D concrete in concrete diaphragms contains a water-reducing admixture, or a water-reducing retarding admixture. For night casting, the Contractor may use a water-reducing admixture in lieu of water-reducing retarding admixture, provided that the concrete can be placed and finished prior to initial set.													
The mix design basis for bulk volume (dry, loose) of coarse aggregate per unit volume of concrete is 68% for Grade S1, and 70% for Grade D, Grade S2, Grade T, and Grade S3.													
The Contractor may use flexural strength to determine form removal. Use compressive strength for acceptance in other situations.													
MR = Mid-range.													
The Engineer will allow the use of an optimized aggregate gradation as specified in section 604.													
Section Number Reference:													
401	Culverts	711	Bridge Railings	803	Concrete Sidewalk, Sidewalk Ramps, and Steps								
402	Storm Sewers	712	Bridge Rehabilitation-Concrete	804	Concrete Barriers and Glare Screens								
403	Drainage Structures	713	Bridge Rehabilitation-Steel	806	Bicycle Paths								
705	Foundation Piling	801	Concrete Driveways	810	Permanent Traffic Signs and Supports								
706	Structural Concrete Construction	802	Concrete Curb, Gutter and Dividers										

An asterisk (*) indicates an entry which has been revised from an earlier version of this Supplemental Specification.

**Table 902-6
Superpave Final Aggregate Blend Physical Requirements**

Est. Traffic (million ESAL)	Mix Type	Percent Crushed Minimum Criteria		Fine Aggregate Angularity Minimum Criteria		% Sand Equivalent Minimum Criteria		Los Angeles Abrasion % Loss Maximum Criteria		% Soft Particles Maximum Criteria (b)		% Flat and Elongated Particles Maximum Criteria (c)	
		Top & Leveling Courses	Base Course	Top & Leveling Courses	Base Course	Top & Leveling Courses	Base Course	Top & Leveling Courses	Base Course	Top & Leveling Courses	Base Course	Top & Leveling Courses	Base Course
< 0.3	LVSP	55/—	—	—	—	40	40	45	45	10	10	—	—
< 0.3	E03	55/—	—	—	—	40	40	45	45	10	10	—	—
≥0.3 -<1.0	E1	65/—	—	40	—	40	40	40	45	10	10	—	—
≥1.0 - < 3	E3	75/—	50/—	40(a)	40(a)	40	40	35	40	5	5	10	10
≥3 - <10	E10	85/80	60/—	45	40	45	45	35	40	5	5	10	10
≥10 - <30	E30	95/90	80/75	45	40	45	45	35	35	3	4.5	10	10
≥30 - <100	E50	100/100	95/90	45	45	50	50	35	35	3	4.5	10	10

- (a) For an E3 mixture type that enters the restricted zone as defined in Table 902-5, the minimum is 43. If these criteria are satisfied, acceptance criteria and associated incentive/disincentive or pay adjustment tied to this gradation restricted zone requirement included in contract, do not apply. Otherwise, final gradation blend must be outside of the restricted zone.
- (b) Soft particles maximum is the sum of the shale, siltstone, ochre, coal, clay-ironstone and particles that are structurally weak or are non-durable in service.
- (c) Maximum by weight with a 1 to 5 aspect ratio.

Note: "85/80" denotes that 85 percent of the coarse aggregate has one fractured face and 80 percent has at least two fractured faces.

Table 912-10 Minimum Retention Requirements				
Preservative	Minimum Retention, (pcf)			AWPA Standard
	Guardrail Posts	Sign Posts	Blocks	
Pentachlorophenol	0.60	0.50	0.40	A6
CCA, ACZA	0.60	0.50	0.40	A11
ACQ (a)	0.60	Not Allowed	0.40	A11
CA-B (a)	0.31	Not Allowed	0.21	A11
CA-A (a)	0.31	Not Allowed	0.15	A11
Other Waterborne preservatives	AWPA Commodity Specification A, Table 3.0, Use Category 4B	Not Allowed	AWPA Commodity Specification A, Table 3.0, Use Category 4A	A11
a. Non-Metallic washers or spacers are required for timber and lumber treated with ACQ or CA placed in direct contact with aluminum. Do not use with sign posts.				

MSU Soil Testing Lab Recommendations for Phosphorus Applications to Turfgrass
3/8/2012

		Sand based rootzone establishment	Golf greens and tees est. or mature; Kentucky bluegrass or perennial ryegrass athletic fields est. or mature; sand based rootzone mature	Lawns, golf course fairways; establishment or mature	Establishment without soil test
Bray P1, Mehlich 3 Soil Test Value (ppm): pH<7.4	Olsen Soil Test Value (ppm) pH>7.4	Recommendation (lbs. P ₂ O ₅ /1000 ft. ²)	Recommendation (lbs. P ₂ O ₅ /1000 ft. ²)	Recommendation (lbs. P ₂ O ₅ /1000 ft. ²)	Recommendation (lbs. P ₂ O ₅ /1000 ft. ²)
0	0	4.4	3.4	2.5	
2	1.3	4.1	3.1	2.2	
4	2.7	3.9	2.7	1.9	
6	4	3.6	2.4	1.6	
8	5.3	3.4	2.0	1.3	
10	6.7	3.1	1.7	1.0	
12	8	2.8	1.4	0.7	
14	9.3	2.6	1.0	0.4	
16	10.7	2.3	0.7	0.1	
18	12	2.1	0.3	0.0	
20	13.3	1.8	0.0		
22	14.7	1.5			
24	16	1.3			
26	17.3	1.0			
28	18.7	0.8			
30	20	0.5			
32	21.3	0.2			
34	22.7	0.0			

2.5 lbs. year
(Maximum single
application of 1.5
lbs.)

109 lbs/acre year
(maximum single
application of 65
lbs/acre)

Web resources: www.turf.msu.edu or www.bephosphorusmart.msu.edu

**TITLE SHEET
CITY OF DETROIT**

**MAYOR
MIKE DUGGAN**

**DEPARTMENT OF PUBLIC WORKS
RON BRUNDIDGE, DIRECTOR
OLADAYO AKINYEMI, DEPUTY DIRECTOR**

	Job No.	Control Section
Citywide	205935	STU 82000

LOCAL AGENCY: City of Detroit, Wayne County

CONTRACT FOR: Approximately 11.23 miles of Cold Milling, HMA Resurfacing, Conc Curbs, Sidewalks, ADA Ramps, HMA Approaches, Drainage Structure Adjustments, Pavement Markings, and other Misc Construction.

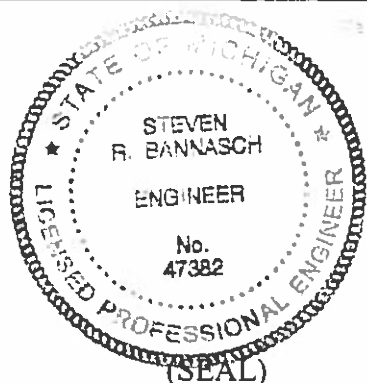
LOCATION: CITYWIDE

STANDARD PLANS

R-28-J* R-29-I R-100-H
R-44-F WZD-100-A*
R-83-C R-30-G WZD-125-E*

*** Denotes Special Details**

THE IMPROVEMENTS COVERED BY THESE PLANS ARE BASED ON THE MICHIGAN DEPARTMENT OF TRANSPORTATION LOCAL AGENCY PROGRAM GUIDE LINES FOR GEOMETRICS (3R) DATED MARCH 4, 2014 EXCEPT WHERE OTHERWISE INDICATED ON THESE PLANS OR IN THE PROPOSAL AND SUPPLEMENTAL SPECIFICATIONS CONTAINED THEREIN, ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, 2012 VERSION AND MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, 2009 EDITION.



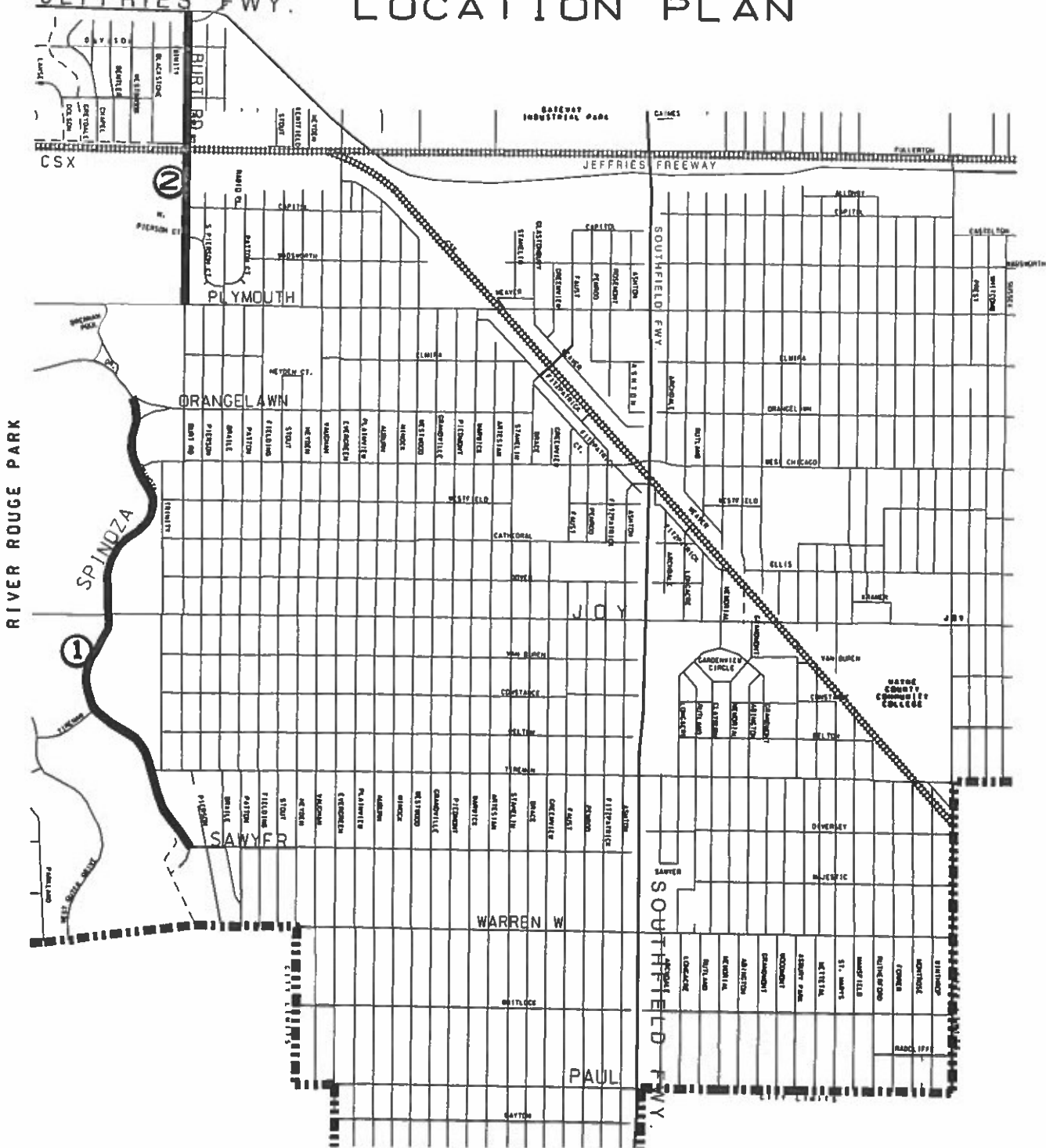
**LOCAL AUTHORITY APPROVAL
CITY OF DETROIT
GOVERNMENTAL AGENCY**

A large, stylized handwritten signature in black ink, which appears to read "Steven R. Bannasch".

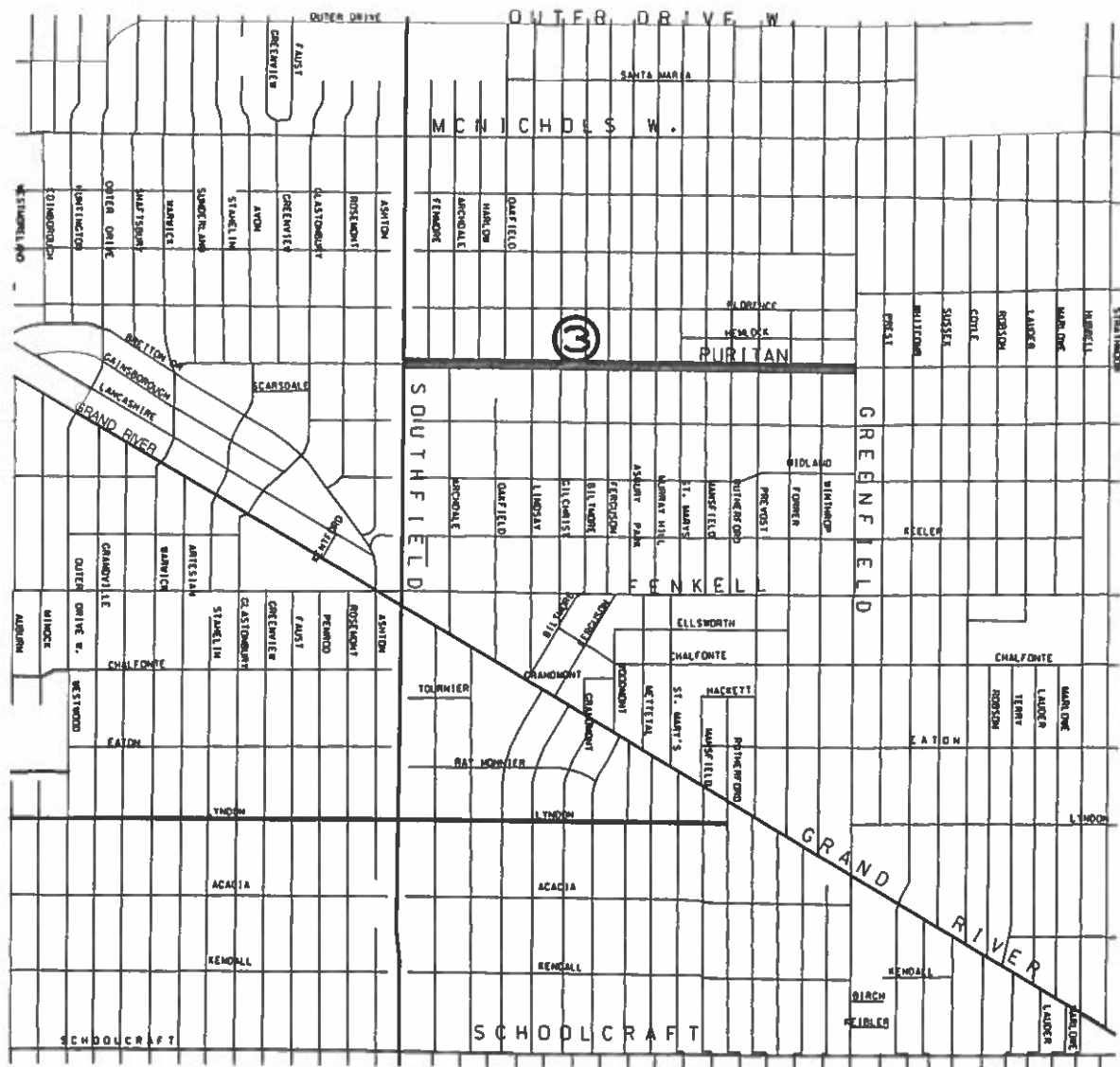
APPROVED: Steven R. Bannasch, P.E.
ENGINEER

**APRIL 23, 2019
DATE**

JEFFRIES FWY. LOCATION PLAN

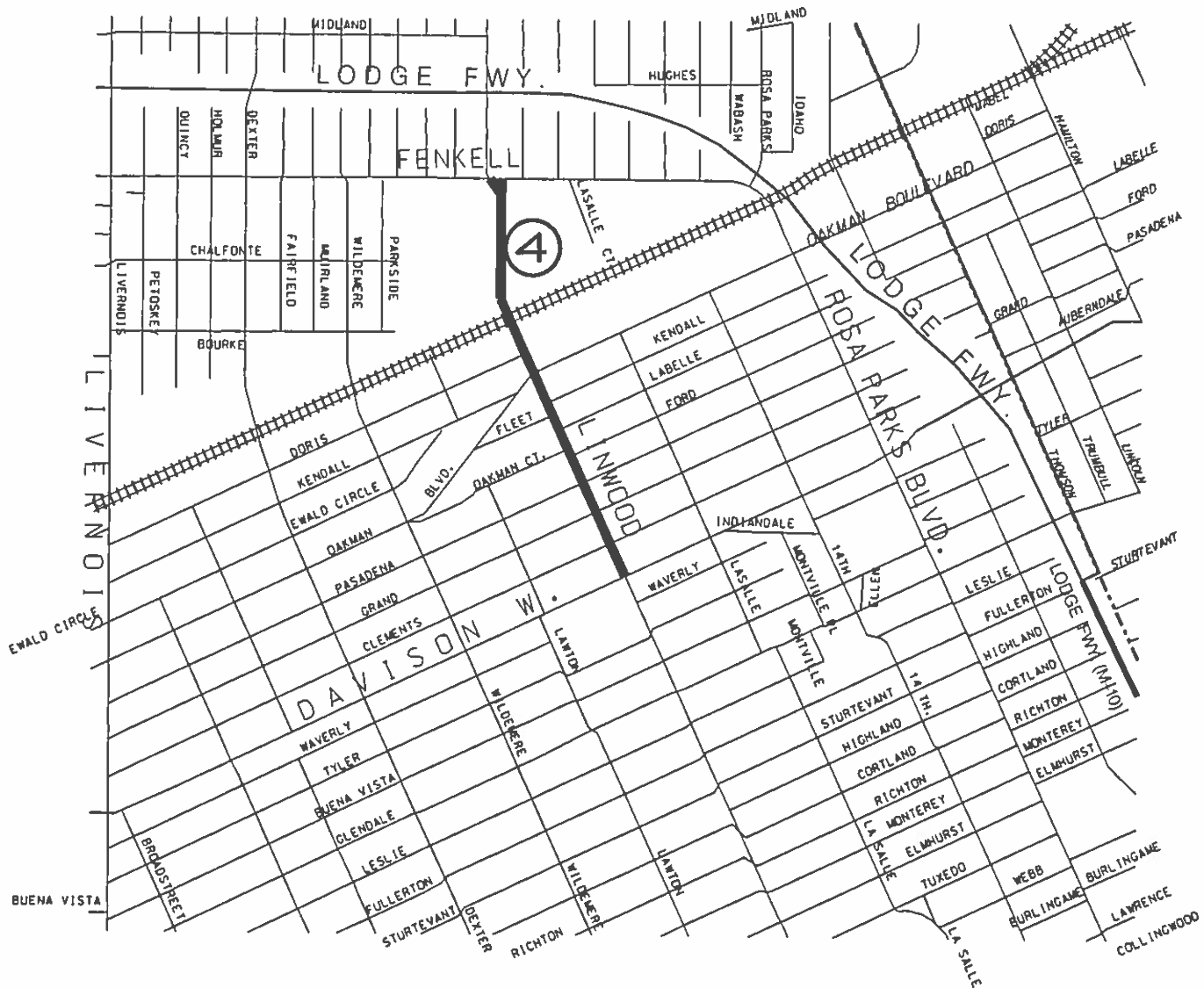


- 1 SPINOZA FROM SAWYER TO ORANGELAWN
- 2 BURT FROM 1-96 JEFFRIES FWY TO PLYMOUTH



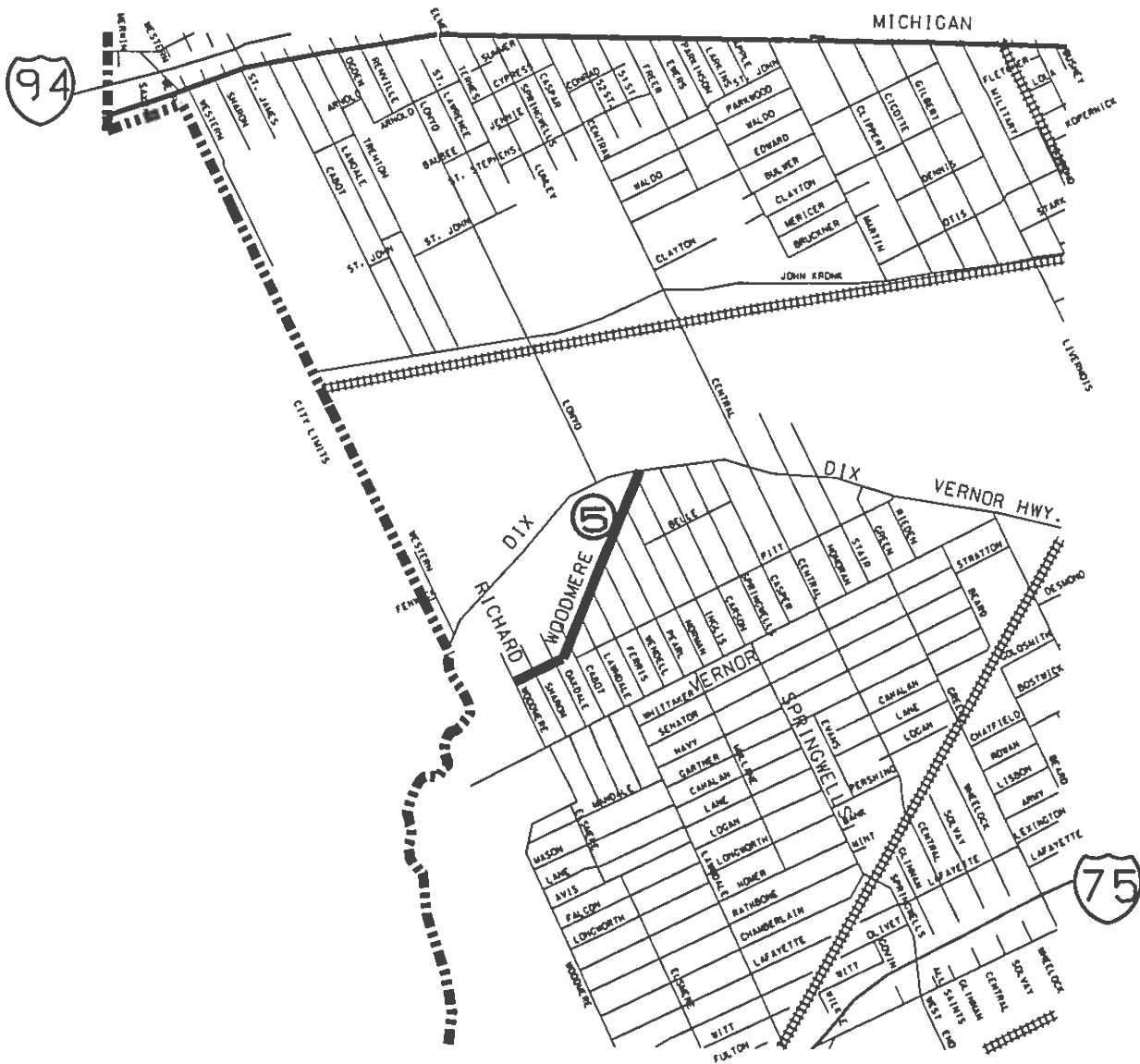
246

LOCATION PLAN



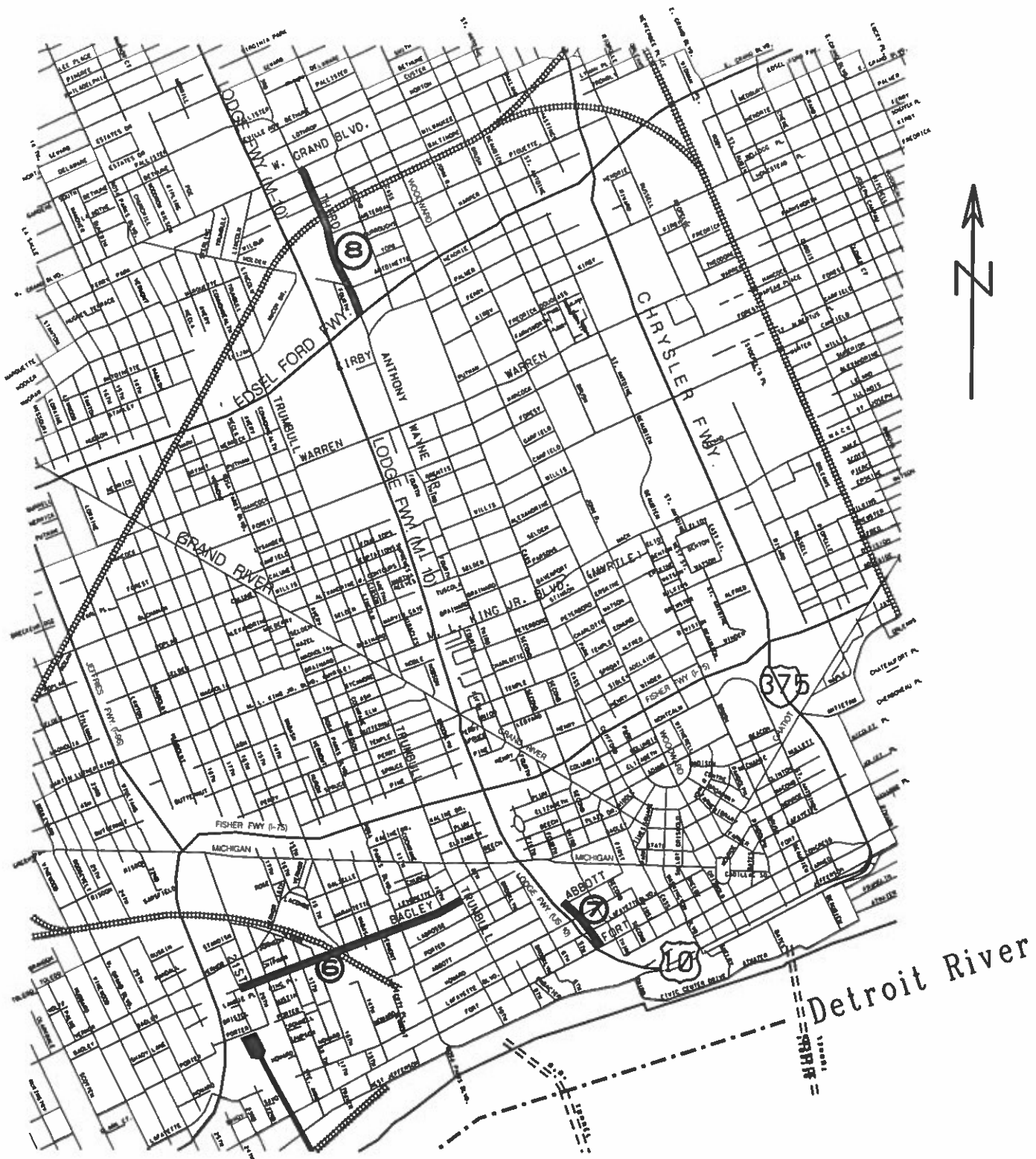
4 LINWOOD FROM FENKELL
TO W DAVISON

LOCATION PLAN



5 WOODMERE FROM DIX TO RICHARD

LOCATION PLAN

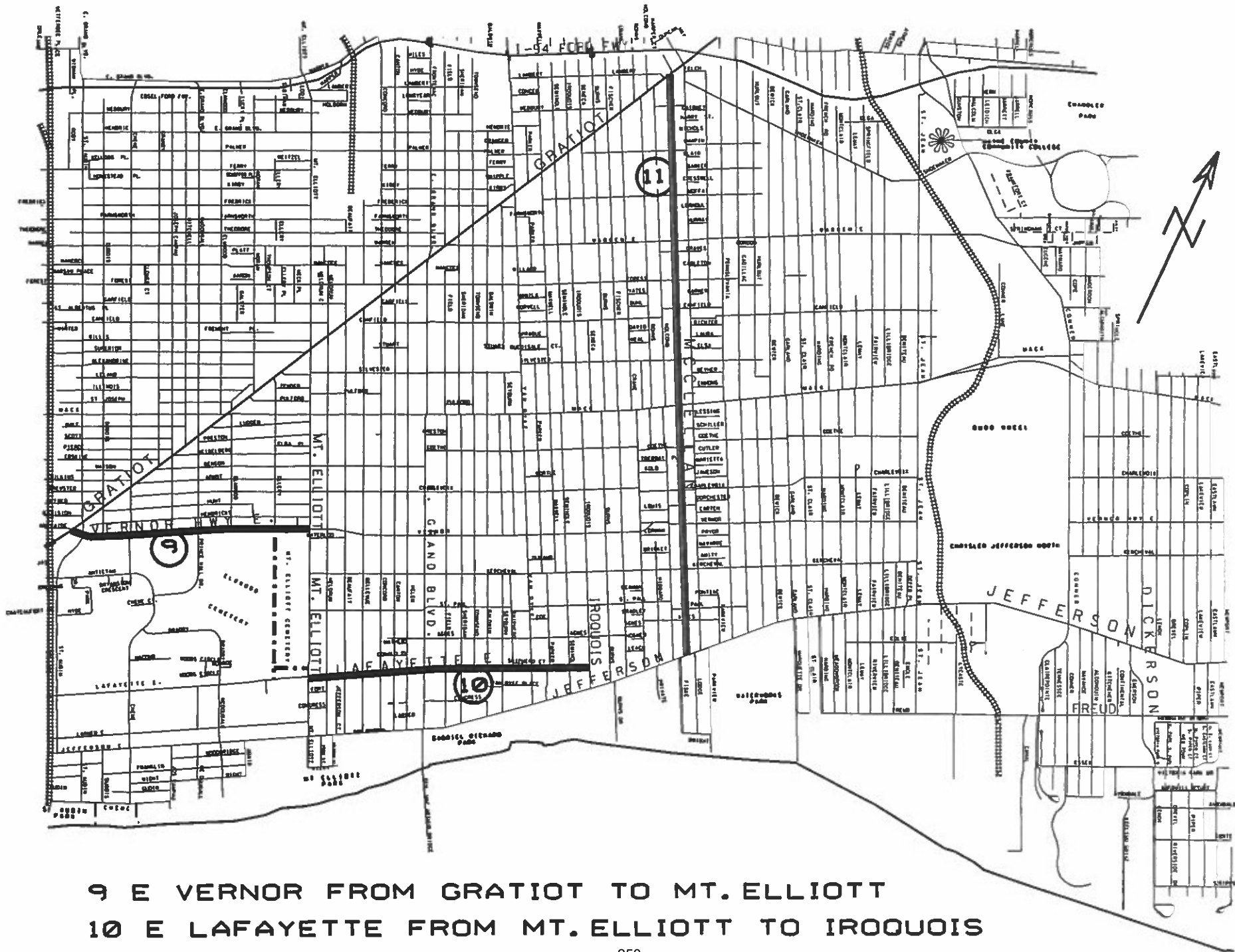


6 BAGLEY FROM 21st+ TO TRUMBULL

7 NB JC LODGE SD FROM FORT TO 50' N OF ABBOTT

8 THIRD FROM W GRAND BLVD. TO I-94

LOCATION PLAN



9 E VERNOR FROM GRATIOT TO MT. ELLIOTT
10 E LAFAYETTE FROM MT. ELLIOTT TO IROQUOIS
11 McCLELLAN FROM E. JEFFERSON TO GRATIOT

E I G H T M I L E E .



THIRD

W GRAND

TO

I-94

JN: 205935
LOCATION MAP: #12

TRAFFIC DATA:

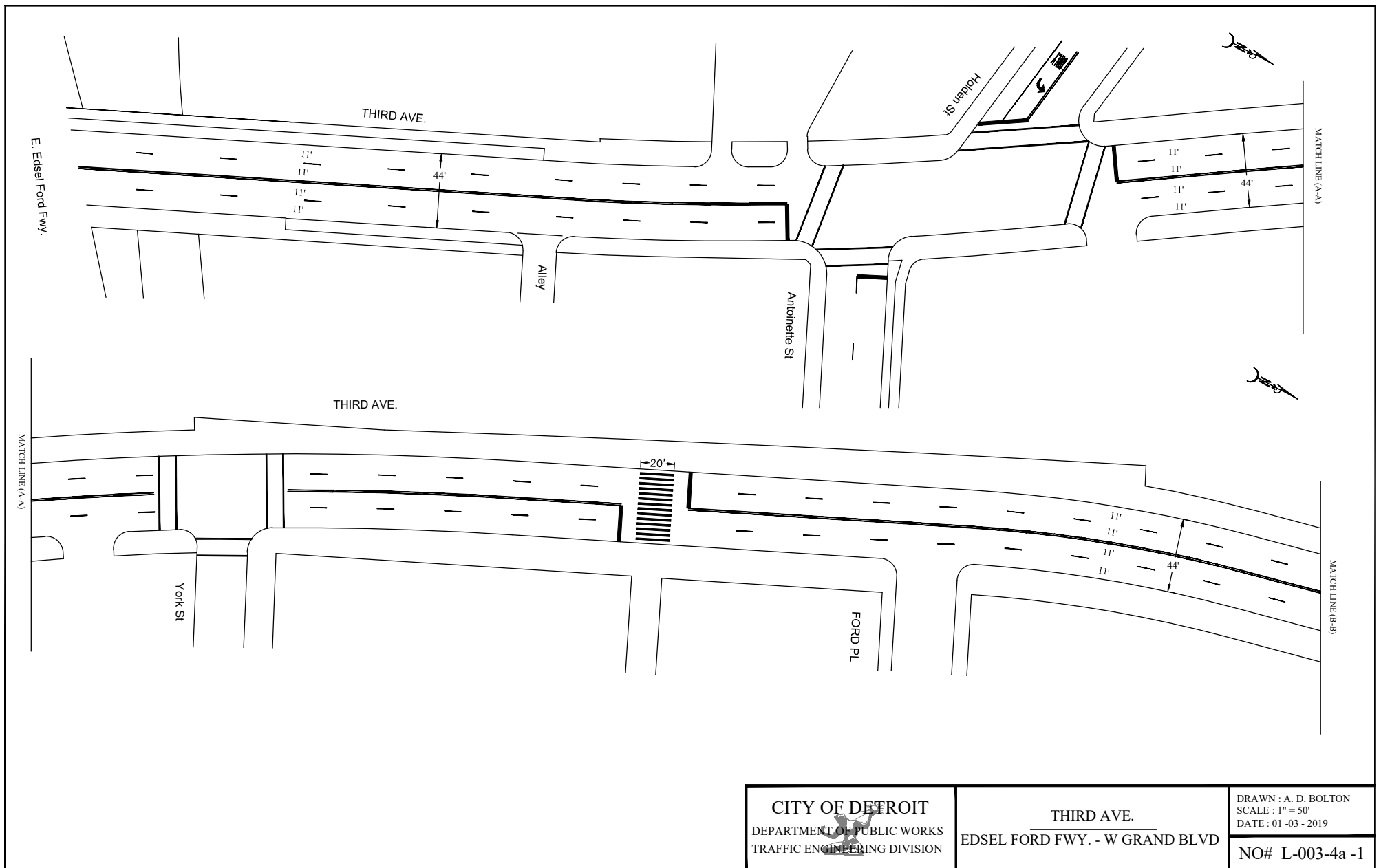
2018 PRESENT: 2,852
2032 FUTURE: 3,708
2018 PRESENTCOMMERCIAL: 5 %
2032 FUTURE COMMERCIAL: 5 %
POSTED SPEED: 25 MPH
DESIGN SPEED: 30 MPH

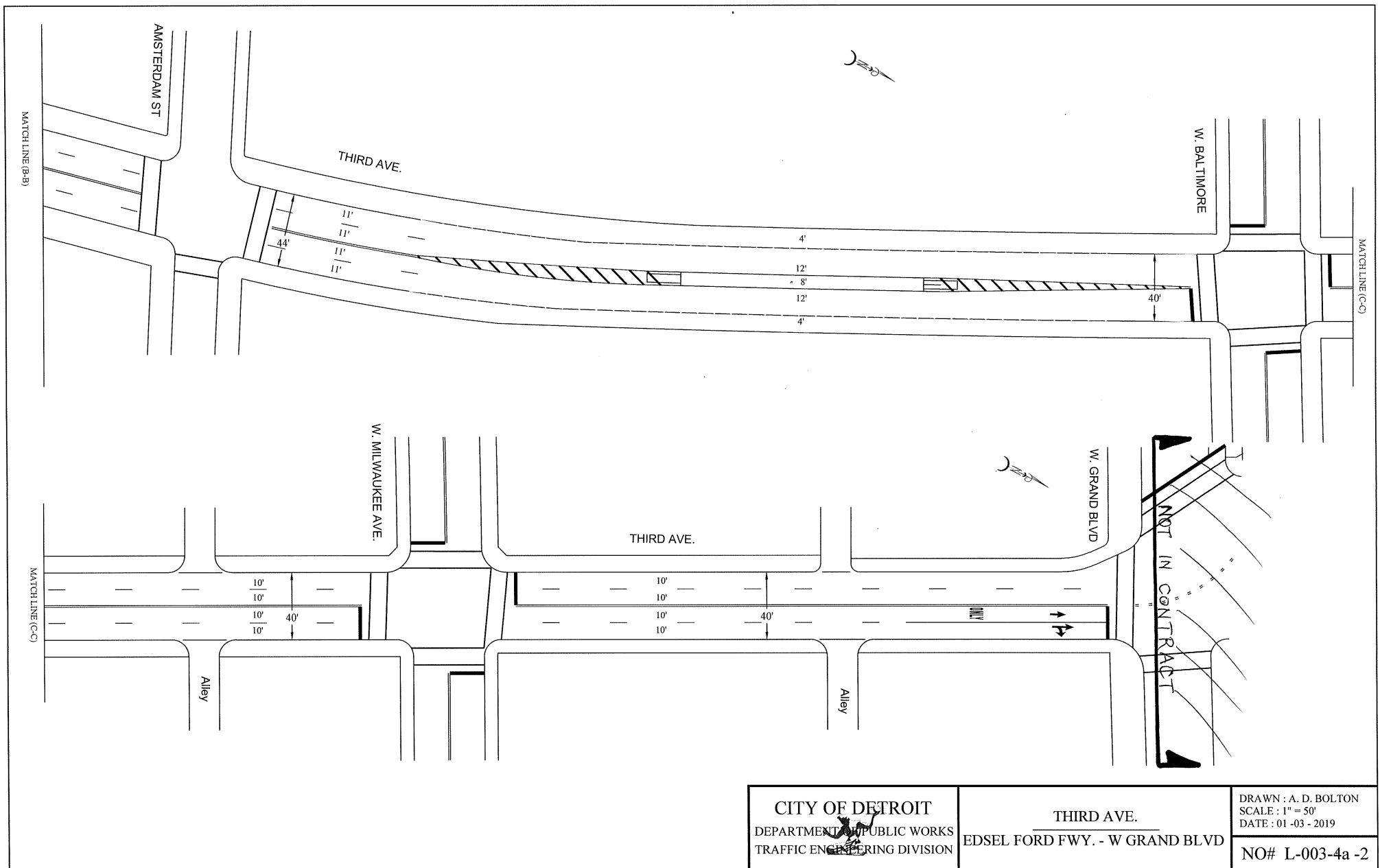
TYPE OF PAVEMENT	ASPHALT OVER CONCRETE
LENGTH	2857 FT
PAVEMENT WIDTH	(46...44...41) FT (VARIES)

SCHEDULE OF ITEMS

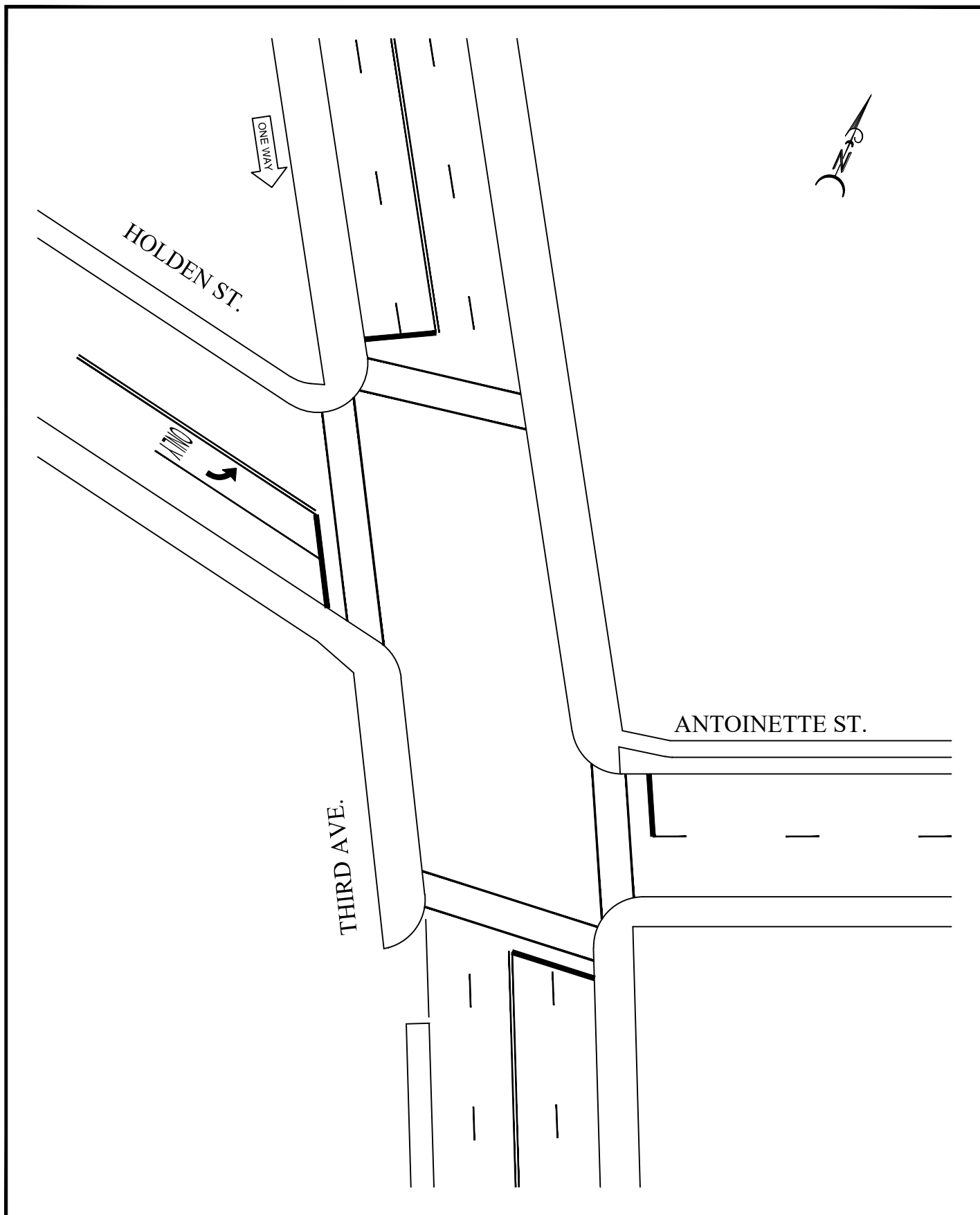
LOCATION: 3RD
LIMITS: W Grand Blvd to I-94
LENGTH: 2,857 FT
WIDTH: 46-44-41 FT VARIES
WORK TYPE: Cold Milling, HMA Resurfacing, Concrete Curb, Sidewalk, Drive Approach, Drainage Improvement and Misc. Construction

ITEM CODE	DESCRIPTION OF WORK	ITEM UNIT	ESTIMATED QUANTITY
2040055	Sidewalk, Rem	Syd	216.00
2047001	_ Curb, Rem, Modified	Ft	503.00
2047001	_ Integral Curb and Sidewalk, 2 feet, Rem, Modified	Ft	273.00
4037001	_ Dr Structure Lead, Cleaning, Modified	Ft	640.00
4037030	_ Dr Structure Cover, Modified	Lb	17600.00
4037050	_ Dr Structure Cleaning, Modified	Ea	64.00
4037050	_ Dr Structure Cover, Adj, Case 1, Modified	Ea	58.00
4037050	_ Dr Structure Cover, Adj, Case 2, Modified	Ea	2.00
4037050	_ Reconstructing Dr Structure, Case 1, Modified	Ea	4.00
5010005	HMA Surface, Rem	Syd	727.00
5010008	Pavt for Butt Joints, Rem	Syd	207.00
5010051	HMA, 4E3	Ton	1461.00
5010057	HMA, 5E3	Ton	1095.00
5017011	_ Cold Milling HMA Surface, Modified	Syd	13278.00
5017031	_ Conditioning Existing Pavement, Modified	Ton	179.00
5017031	_ HMA Approach, Modified	Ton	140.00
5017031	_ HMA Shoulder, Modified	Ton	8.00
6027011	_ Pavt Repr, Nonreinf Conc, 10 inch, Modified	Syd	40.00
6037001	_ Curb, Conc, Detail CD, Modified	Ft	359.00
6037011	_ Pavt Repr, Rem, Modified	Syd	40.00
8027001	_ Detectable Warning Surface Tile, Modified	Ft	35.00
8027010	_ Sidewalk Ramp, ADA, Modified	Sft	900.00
8027010	_ Sidewalk, Conc, 4 inch, Modified	Sft	1044.00
8030030	Curb Ramp Opening, Conc	Ft	144.00
8037001	_ Integral Curb and Sidewalk, 2 feet, Modified	Ft	273.00
8110024	Pavt Mrkg, Ovly Cold Plastic, 6 inch, Crosswalk	Ft	1574.00
8110041	Pavt Mrkg, Ovly Cold Plastic, 12 inch, Crosswalk	Ft	280.00
8110044	Pavt Mrkg, Ovly Cold Plastic, 18 inch, Stop Bar	Ft	250.00
8110068	Pavt Mrkg, Ovly Cold Plastic, Only	Ea	1.00
8110077	Pavt Mrkg, Ovly Cold Plastic, Thru and Rt Turn Arrow Sym	Ea	1.00
8110078	Pavt Mrkg, Ovly Cold Plastic, Thru Arrow Sym	Ea	1.00
8110153	Pavt Mrkg, Spray Thermopl, 4 inch, White	Ft	870.00
8110154	Pavt Mrkg, Spray Thermopl, 4 inch, Yellow	Ft	4495.00
8117001	_ Pavt Mrkg, Modified Urethane, 12 inch, Cross Hatching, Yellow	Ft	141.00
8117001	_ Recessing Pavt Mrkg, 12 inch	Ft	280.00
8117001	_ Recessing Pavt Mrkg, 18 inch	Ft	250.00
8117001	_ Recessing Pavt Mrkg, 6 inch	Ft	1574.00
8160055	Sodding	Syd	78.00
8160090	Water, Sodding/Seeding	Unit	4.00
8167021	_ Topsoil Surface, Furn, LM, Modified	Cyd	7.00
8210001	Monument Box	Ea	1.00
8237050	_ Water Shutoff, Adj, Modified	Ea	4.00





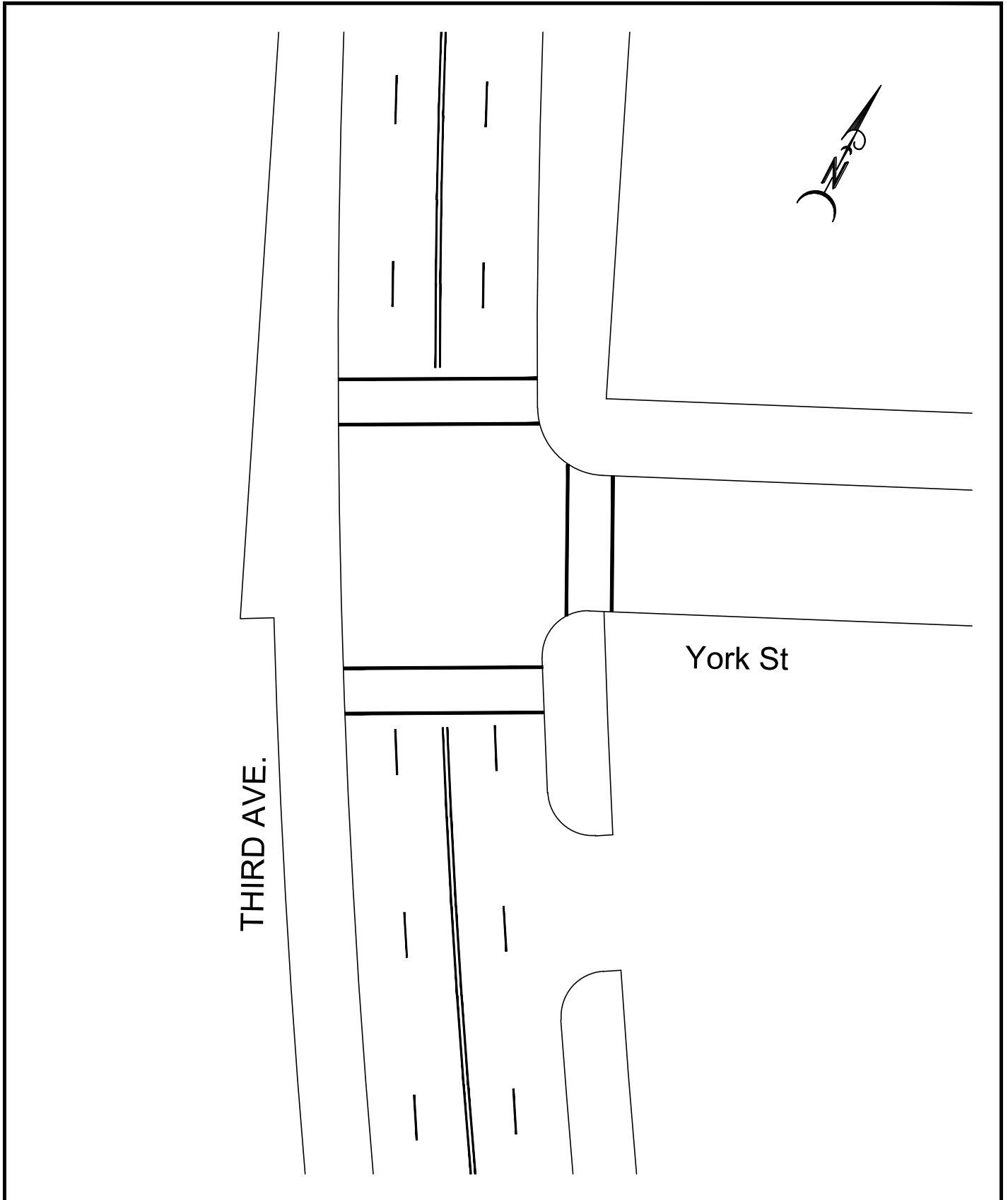
CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS TRAFFIC ENGINEERING DIVISION	THIRD AVE. EDESEL FORD FWY. - W GRAND BLVD	DRAWN : A. D. BOLTON SCALE : 1" = 50' DATE : 01 -03 - 2019 NO# L-003-4a -2
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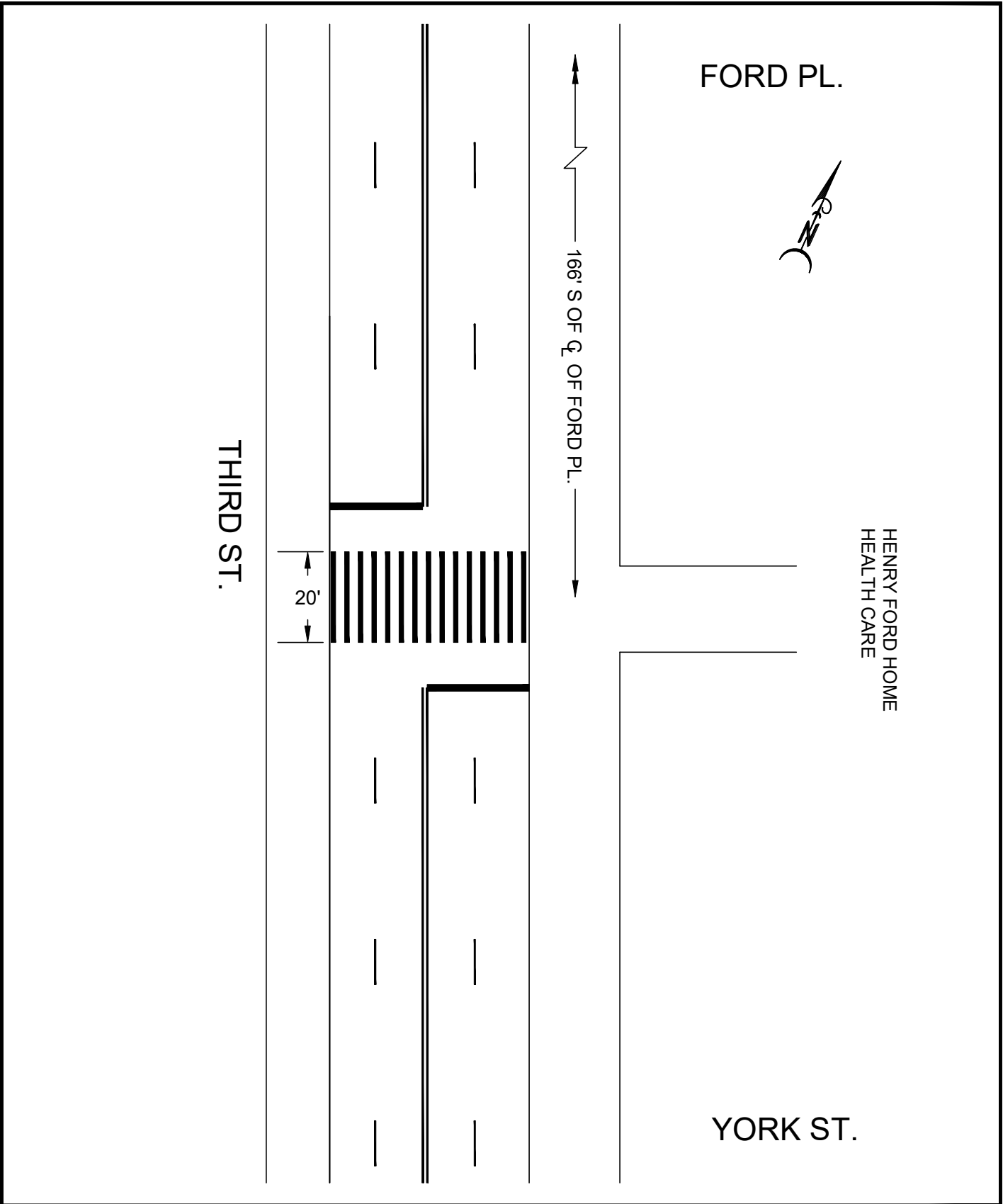
CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 TRAFFIC ENGINEERING DIVISION

**THIRD AVE.
 ANTOINETTE ST. -
 HOLDEN ST.**

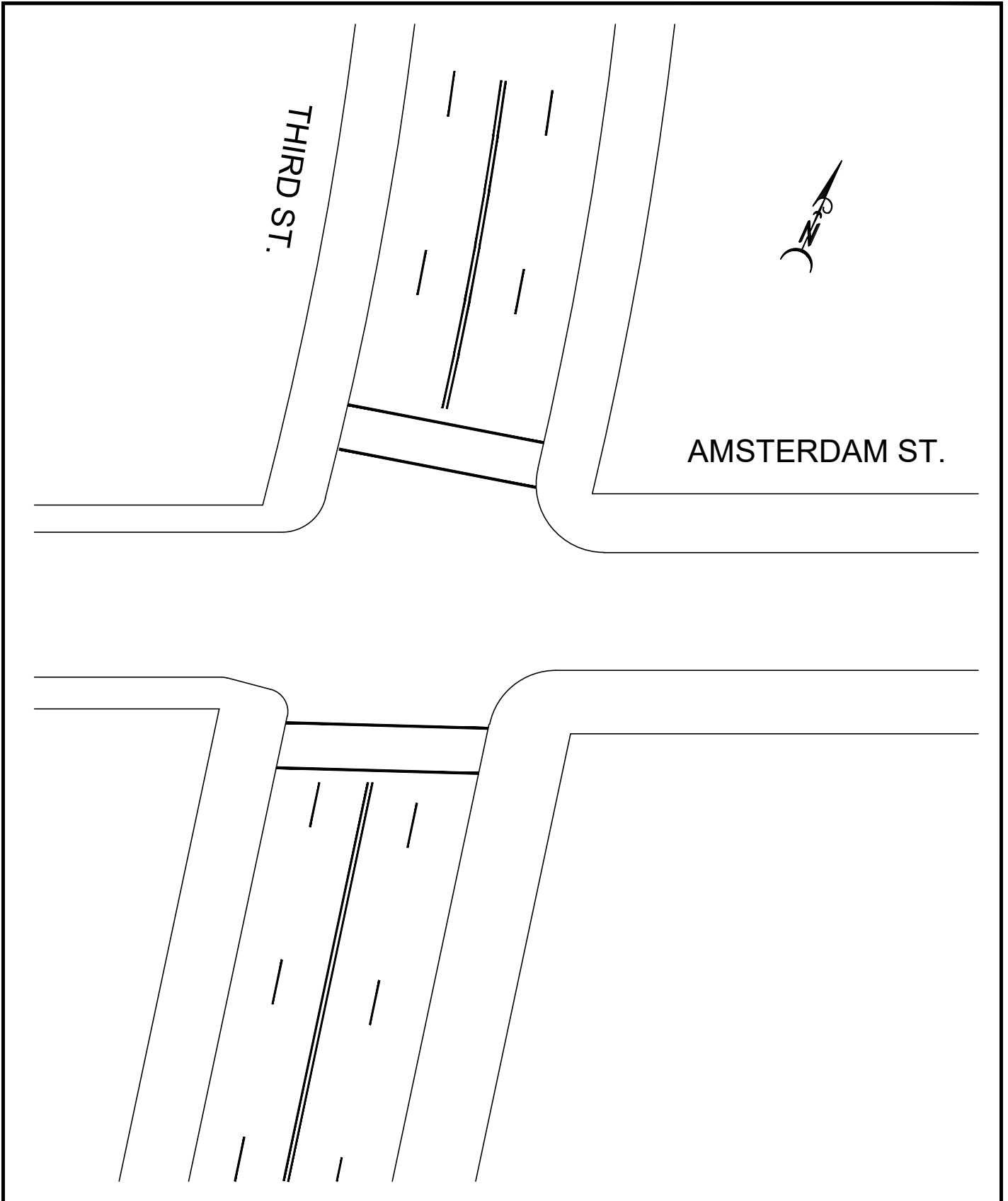
DRAWN : A.D. BOLTON
 SCALE : 1" = 40'
 DATE : 01-03-2019
NO. C-083



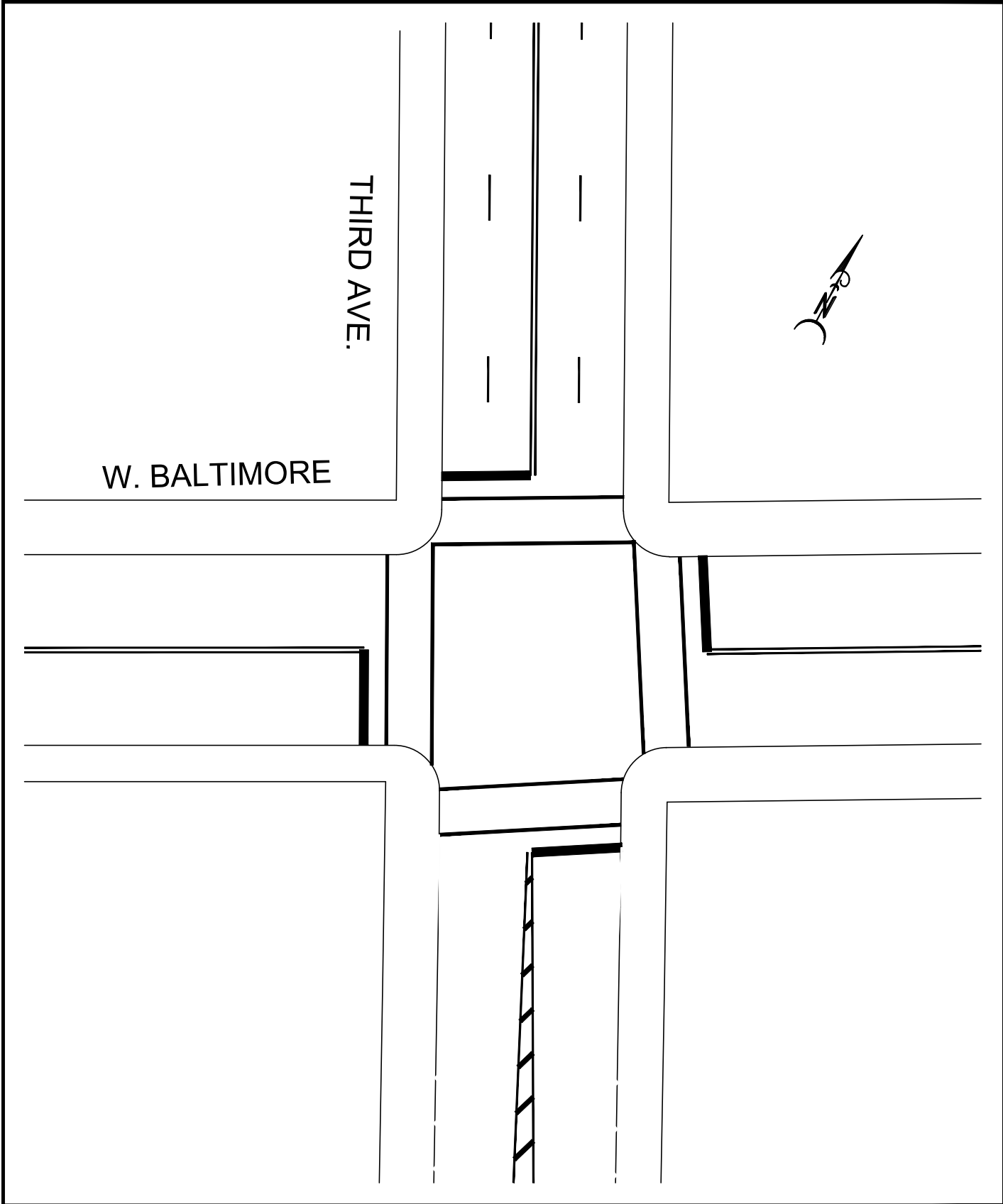
CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS TRAFFIC ENGINEERING DIVISION	THIRD ST. YORK ST.	DRAWN : A.D. Bolton SCALE : 1" = 30' DATE : 01 - 16 - 2019 NO. C-127
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CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS TRAFFIC ENGINEERING DIVISION	THIRD ST. S /of FORD PL / N/of YORK ST.	DRAWN : A.D. Bolton SCALE : 1" = 30' DATE : 01 - 11 - 2019 NO.C-159
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CITY OF DETROIT  DEPARTMENT OF PUBLIC WORKS TRAFFIC ENGINEERING DIVISION	<u>AMSTERDAM ST.</u> THIRD ST.	DRAWN : A.D. Bolton SCALE : 1" = 30' DATE : 01 - 11 - 2019 NO. C-303
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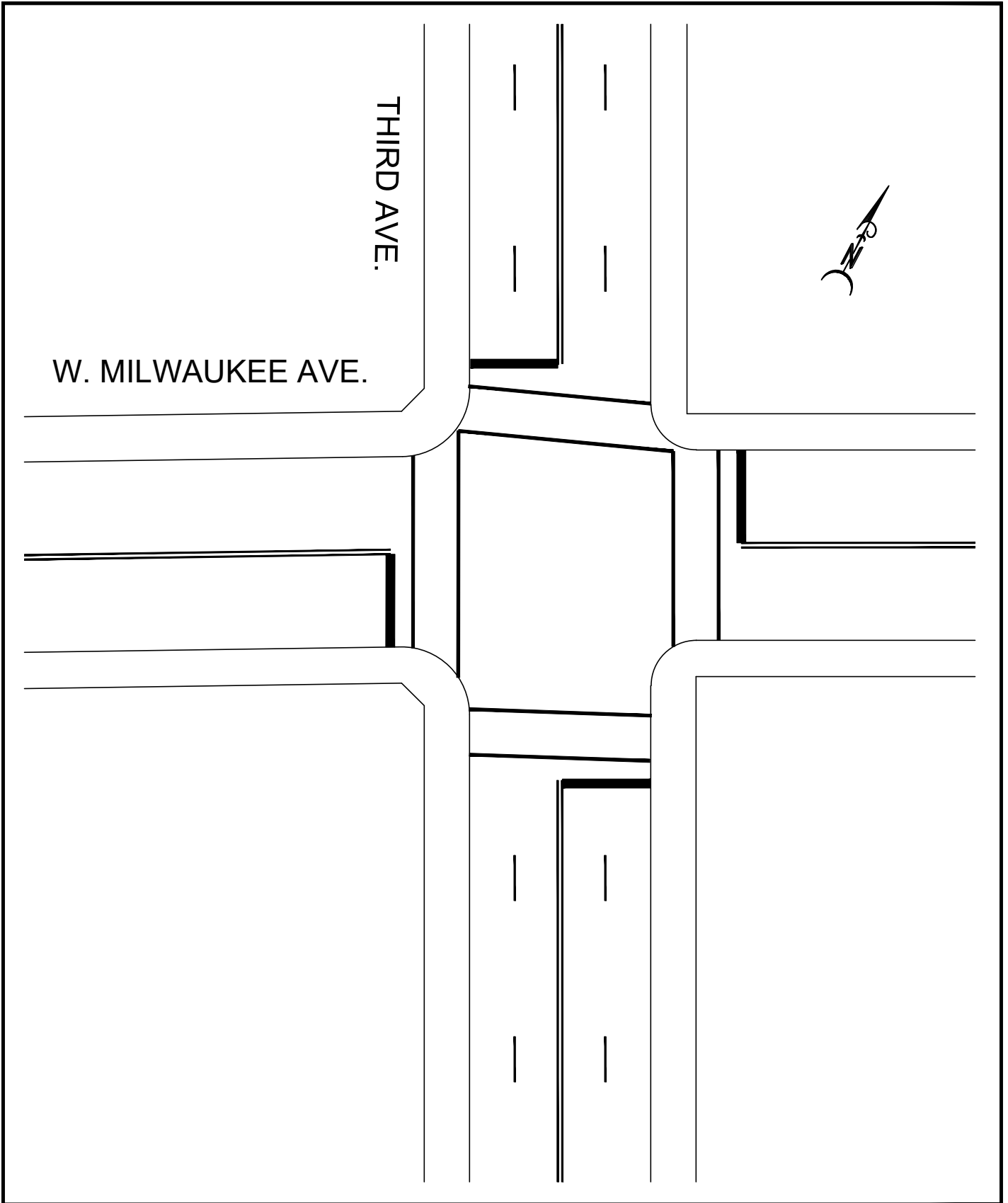


CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

W. BALTIMORE ST.
THIRD AVE.

DRAWN : A.D. Bolton
SCALE : 1" = 30'
DATE : 01 - 03 - 2019

NO. C-091



CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

W. MILWAUKEE AVE.
THIRD AVE.

DRAWN : A.D. Bolton
SCALE : 1" = 30'
DATE : 01 - 03 - 2019

NO. C-121

BAGLEY

21ST TO TRUMBULL

JN: 205935
LOCATION MAP: #8

TRAFFIC DATA:

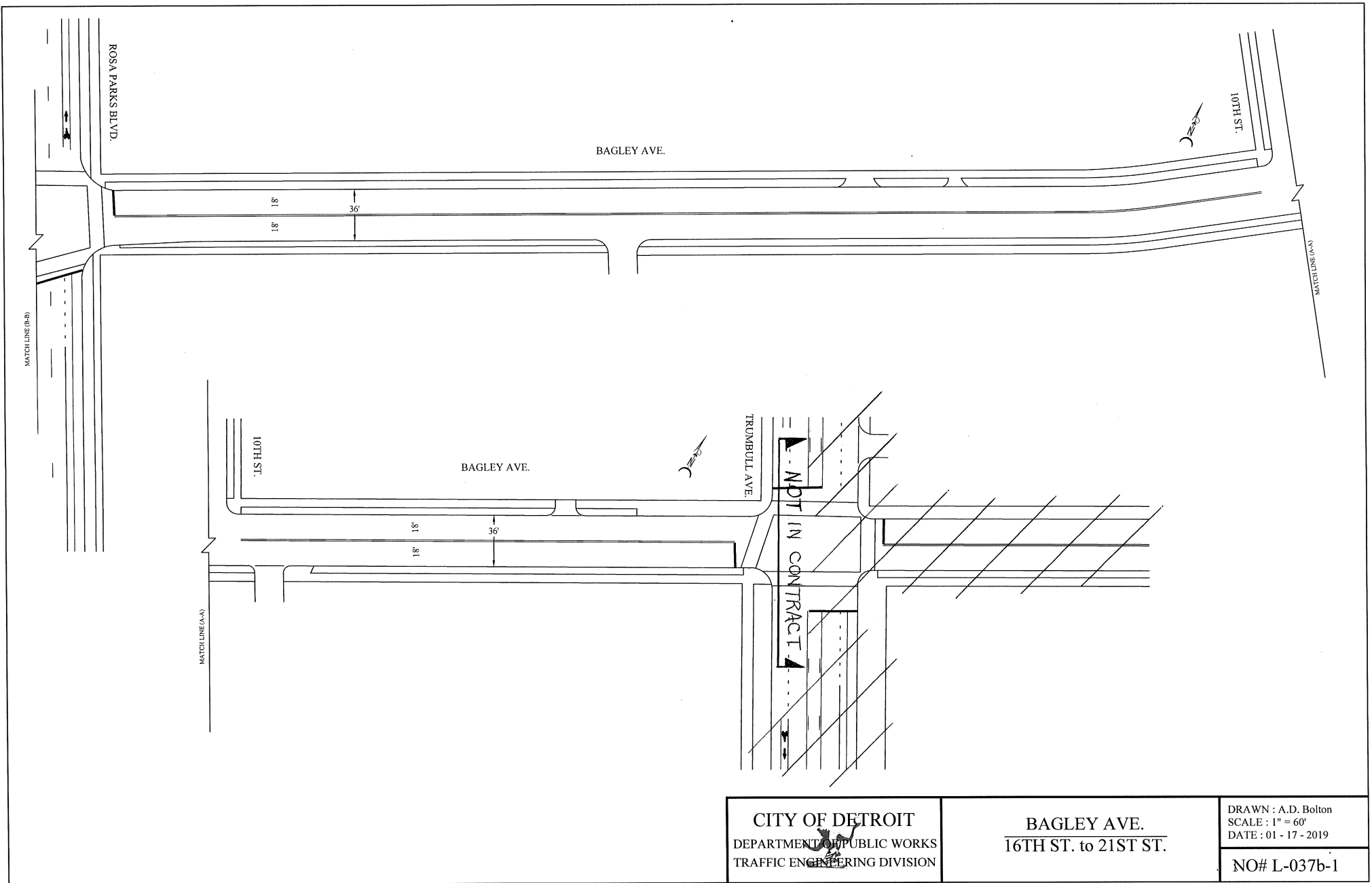
2018 PRESENT: 3,392
2032 FUTURE: 4,410
2018 PRESENTCOMMERCIAL: 5 %
2032 FUTURE COMMERCIAL: 5 %
POSTED SPEED: 25 MPH
DESIGN SPEED: 30 MPH

TYPE OF PAVEMENT	ASPHALT OVER CONCRETE
LENGTH	4158 FT
PAVEMENT WIDTH	(35...55...38...36) FT (VARIES)

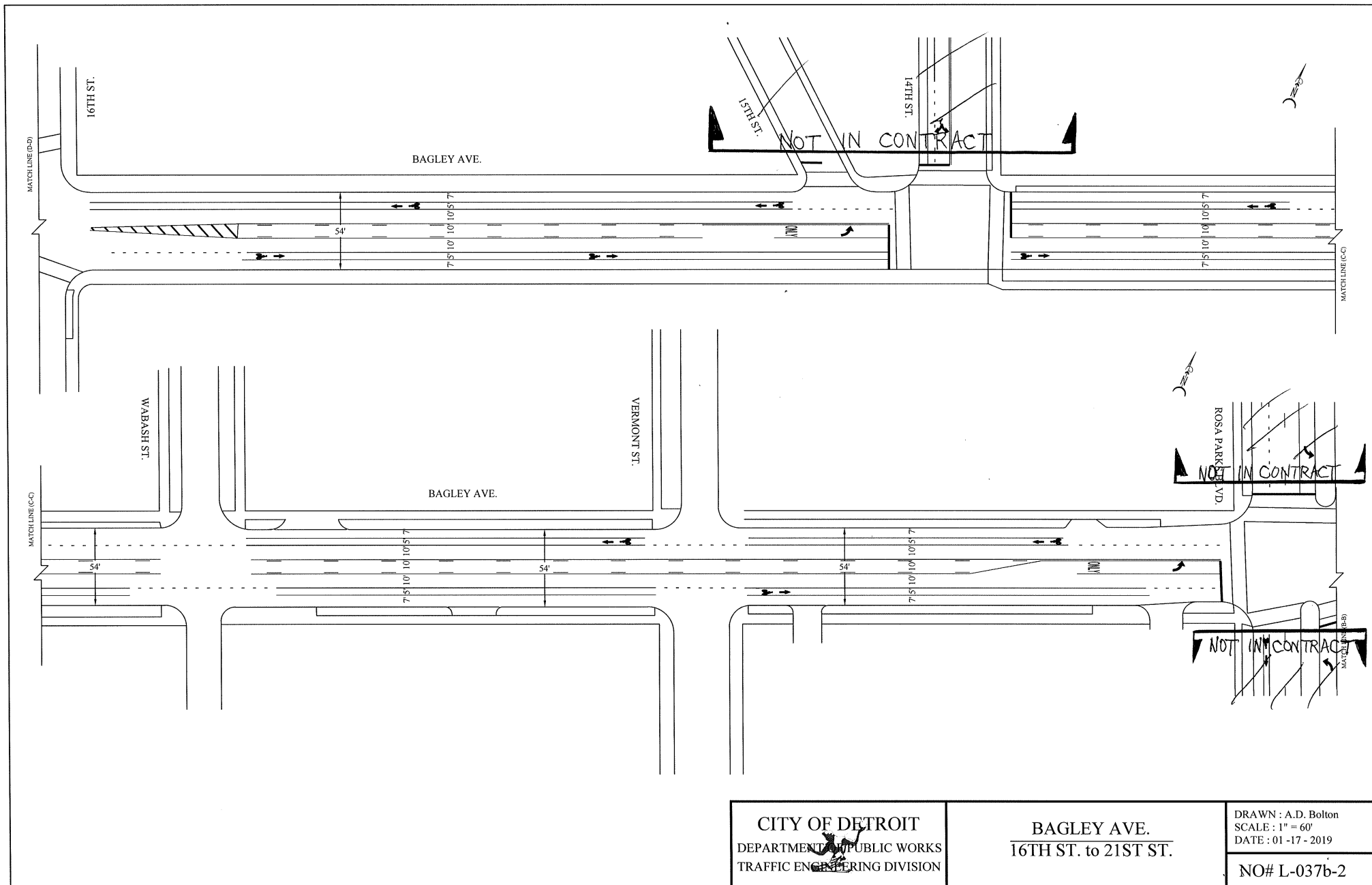
SCHEDULE OF ITEMS

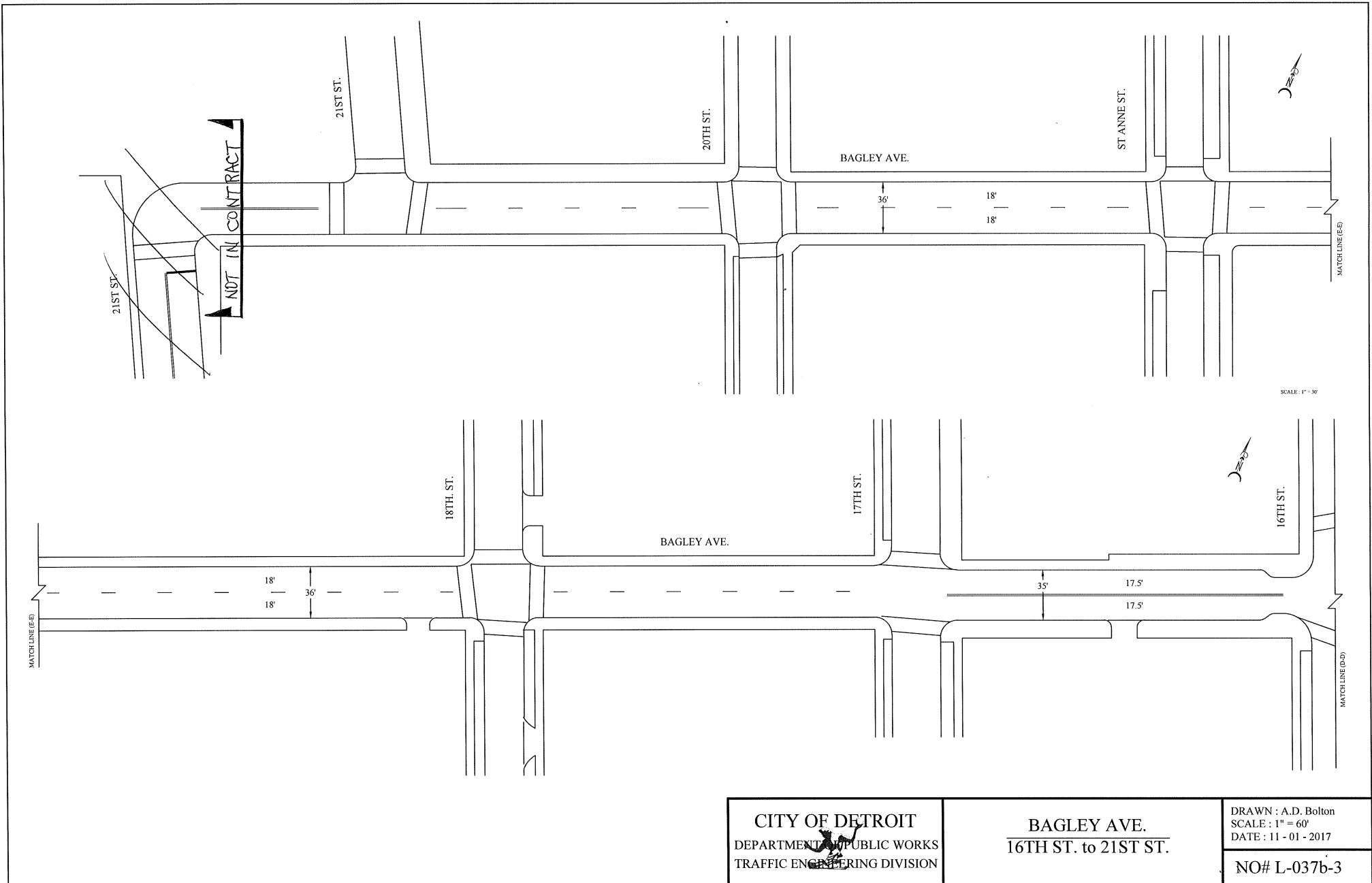
LOCATION: BAGLEY
LIMITS: 21st to Trumbull
LENGTH: 4,158 FT
WIDTH: 35-55-38-36 FT VARIES
WORK TYPE: Cold Milling, HMA Resurfacing, Concrete Curb, Sidewalk, Drive Approach, Drainage Improvement and Misc. Construction

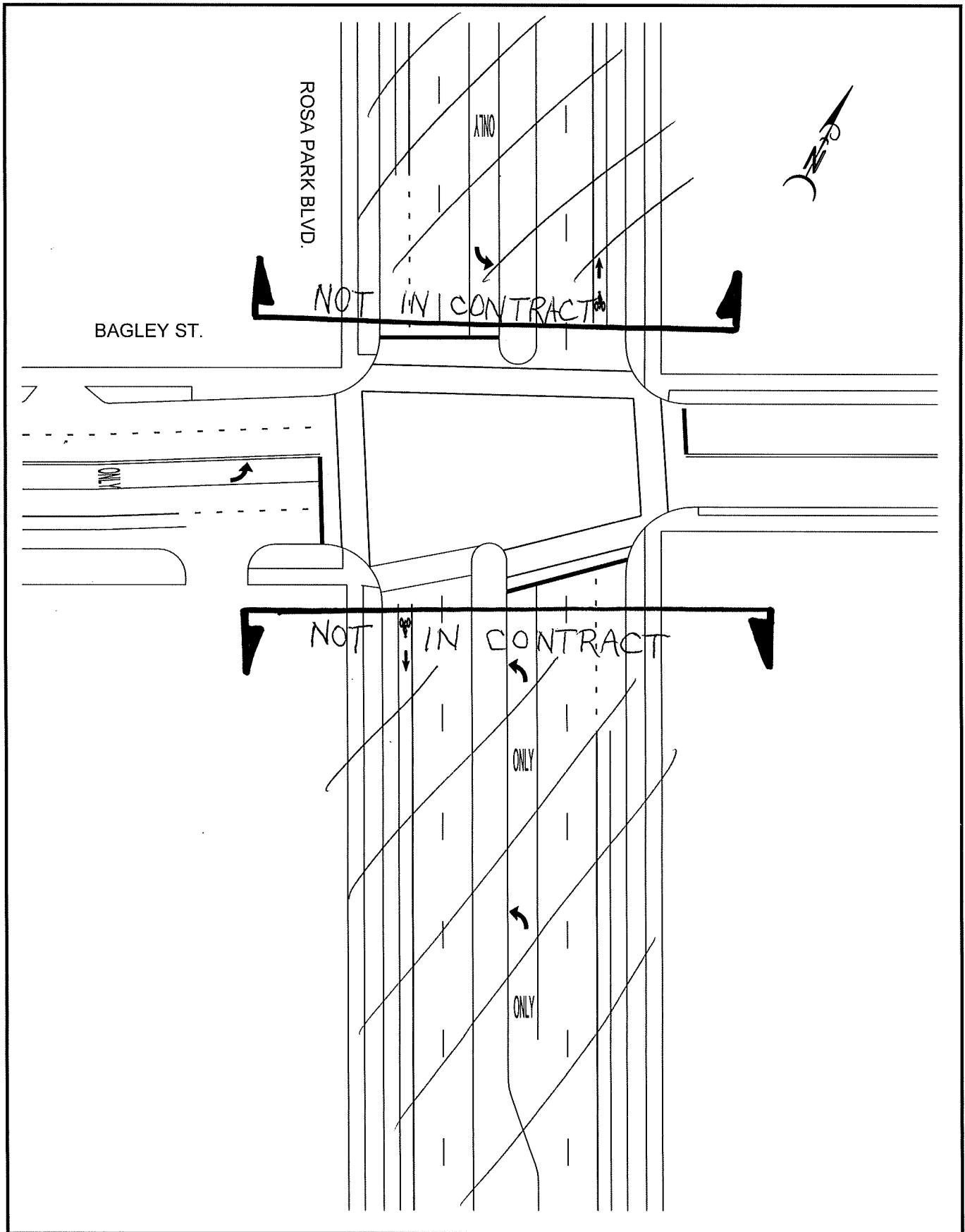
ITEM CODE	DESCRIPTION OF WORK	ITEM UNIT	ESTIMATED QUANTITY
2040055	Sidewalk, Rem	Syd	649.00
2047001	_ Curb, Rem, Modified	Ft	546.00
4037001	_ Dr Structure Lead, Cleaning, Modified	Ft	890.00
4037030	_ Dr Structure Cover, Modified	Lb	24475.00
4037050	_ Dr Structure Cleaning, Modified	Ea	89.00
4037050	_ Dr Structure Cover, Adj, Case 1, Modifie d	Ea	82.00
4037050	_ Dr Structure Cover, Adj, Case 2, Modifie d	Ea	2.00
4037050	_ Reconstructing Dr Structure, Case 1, Mod ified	Ea	5.00
5010005	HMA Surface, Rem	Syd	1762.00
5010008	Pavt for Butt Joints, Rem	Syd	286.00
5010051	HMA, 4E3	Ton	2113.00
5010057	HMA, 5E3	Ton	1585.00
5017011	_ Cold Milling HMA Surface, Modified	Syd	19211.00
5017031	_ Conditioning Existing Pavement, Modified	Ton	259.00
5017031	_ HMA Approach, Modified	Ton	339.00
5017031	_ HMA Shoulder, Modified	Ton	16.00
6027011	_ Pavt Repr, Nonreinf Conc, 10 inch, Modified	Syd	55.00
6037001	_ Curb, Conc, Detail CD, Modified	Ft	258.00
6037011	_ Pavt Repr, Rem, Modified	Syd	55.00
8027001	_ Detectable Warning Surface Tile, Modifie d	Ft	130.00
8027010	_ Sidewalk Ramp, ADA, Modified	Sft	1512.00
8027010	_ Sidewalk, Conc, 4 inch, Modified	Sft	3284.00
8030030	Curb Ramp Opening, Conc	Ft	288.00
8037010	_ Sidewalk, Conc with Tree Roots, 4 inch, Modified	Sft	1044.00
8110024	Pavt Mrkg, Ovly Cold Plastic, 6 inch, Crosswalk	Ft	1295.00
8110063	Pavt Mrkg, Ovly Cold Plastic,Lt Turn Arrow Sym	Ea	1.00
8110068	Pavt Mrkg, Ovly Cold Plastic, Only	Ea	1.00
8110153	Pavt Mrkg, Spray Thermopl, 4 inch, White	Ft	3065.00
8110154	Pavt Mrkg, Spray Thermopl, 4 inch, Yellow	Ft	6590.00
8110155	Pavt Mrkg, Spray Thermopl, 6 inch, White	Ft	2565.00
8110197	Pavt Mrkg, Thermopl, 6 inch, Crosswalk	Ft	1273.00
8110214	Pavt Mrkg, Thermopl, 12 inch, Crosswalk	Ft	9420.00
8110217	Pavt Mrkg, Thermopl, 18 inch, Stop Bar	Ft	317.00
8117001	_ Pavt Mrkg, Modified Urethane, 12 inch, Cr oss Hatching, Yellow	Ft	100.00
8117001	_ Recessing Pavt Mrkg, 12 inch	Ft	9420.00
8117001	_ Recessing Pavt Mrkg, 18 inch	Ft	317.00
8117001	_ Recessing Pavt Mrkg, 6 inch	Ft	2568.00
8117050	_ Pavt Mrkg, Waterborne, Bike Sym and Arro w, White, Modified	Ea	10.00
8160090	Water, Sodding/Seeding	Unit	4.00
8237050	_ Water Shutoff, Adj, Modified	Ea	9.00

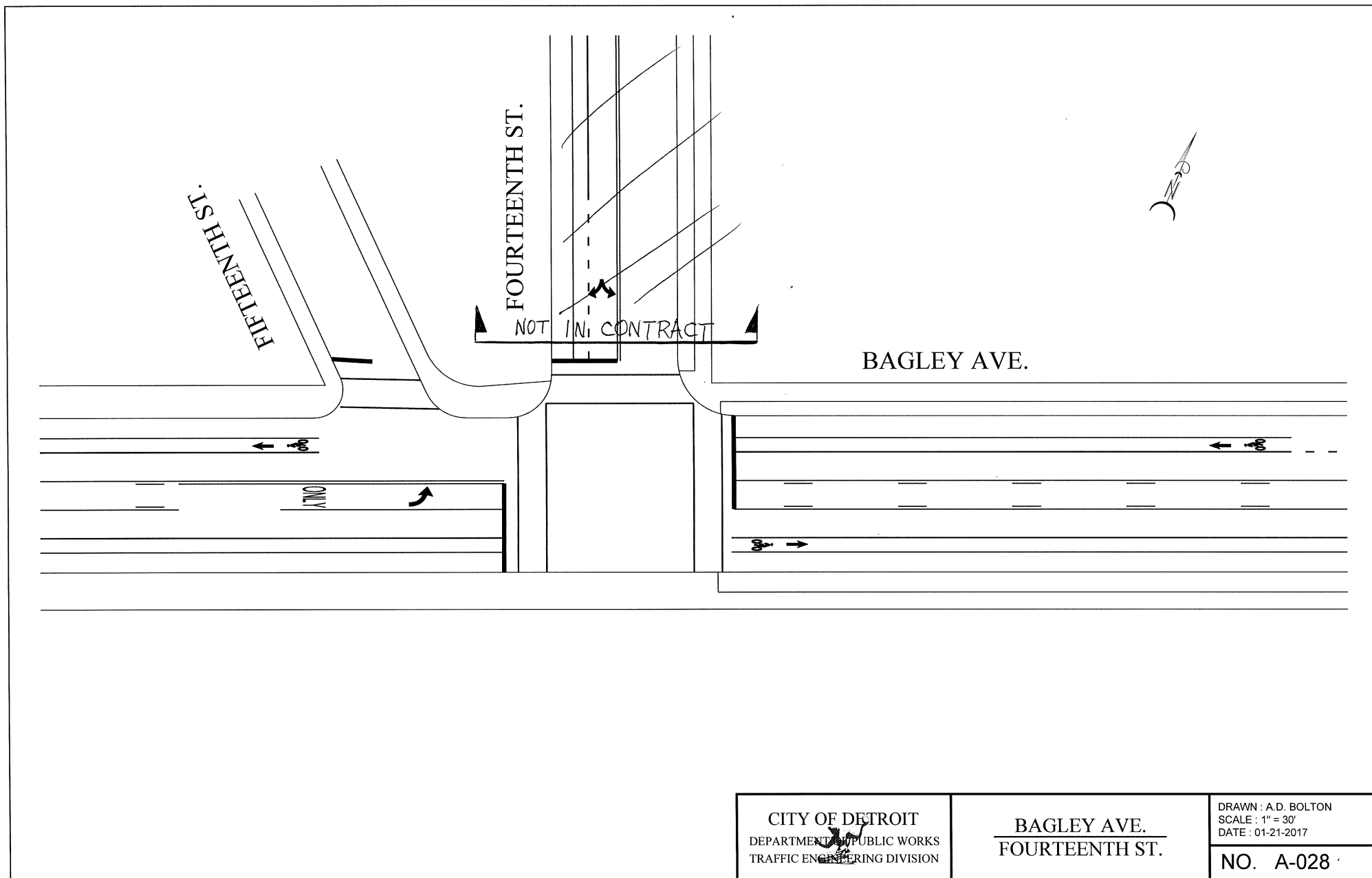


CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS TRAFFIC ENGINEERING DIVISION	BAGLEY AVE. 16TH ST. to 21ST ST.	DRAWN : A.D. Bolton SCALE : 1" = 60' DATE : 01 - 17 - 2019
		NO# L-037b-1





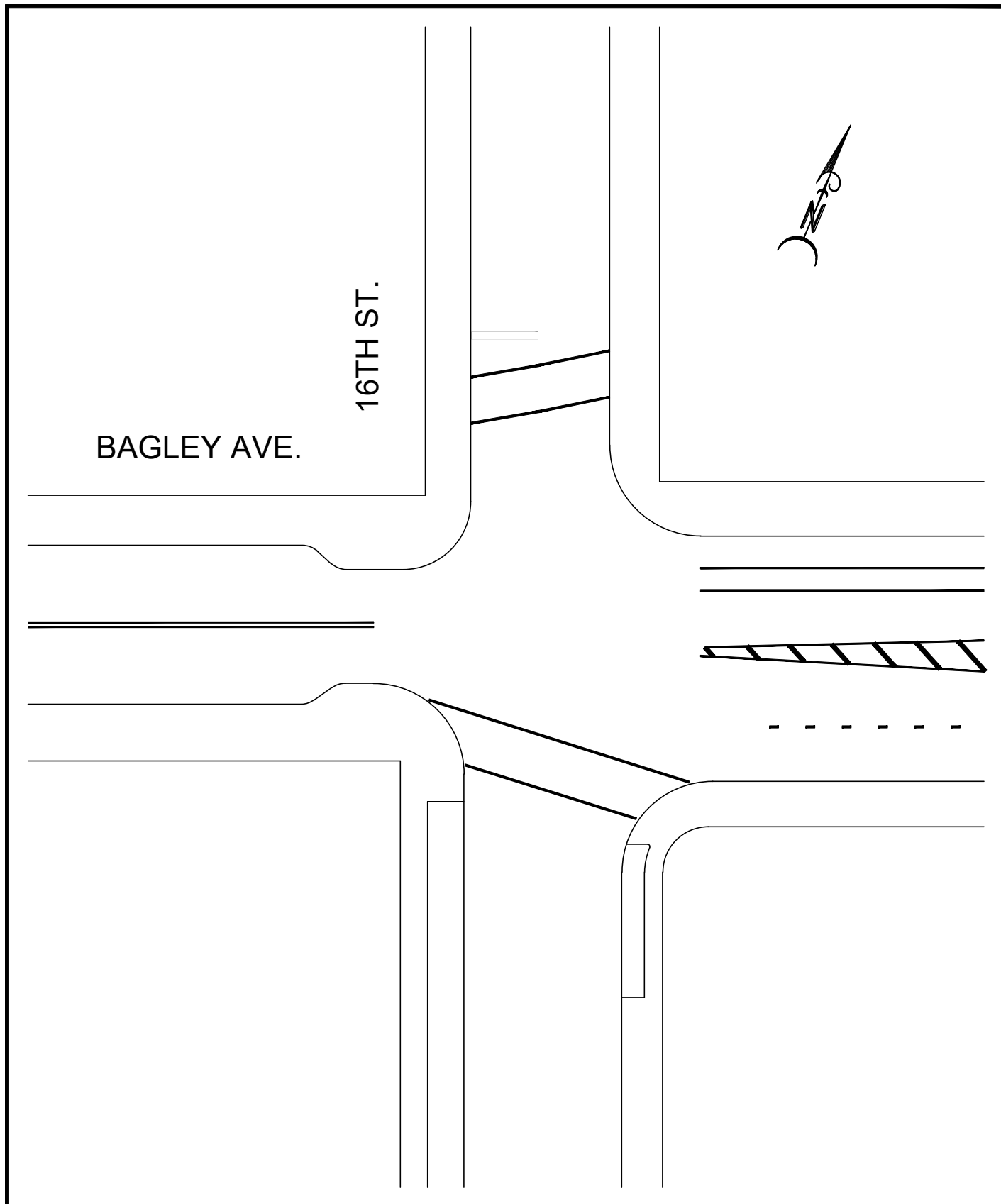




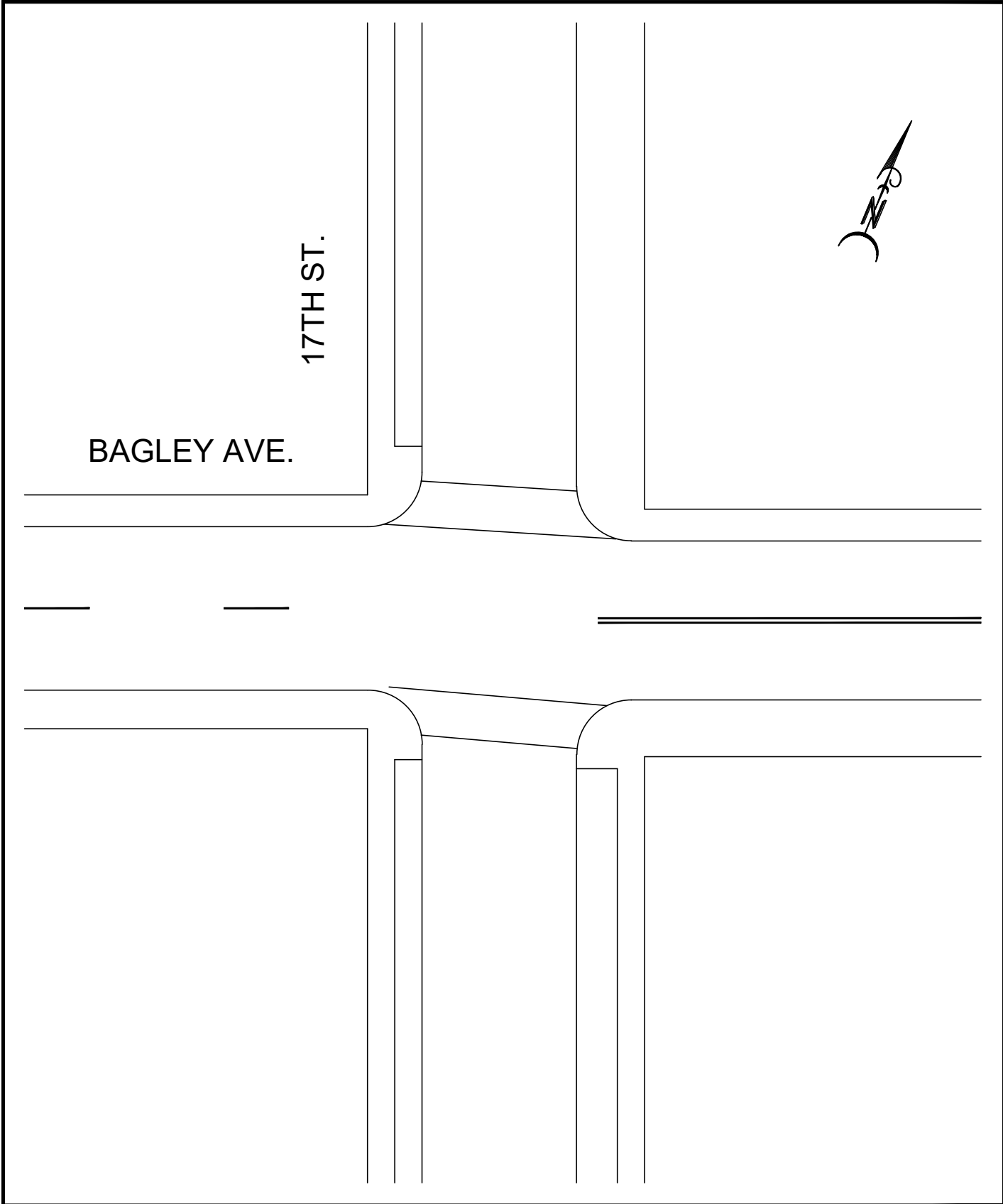
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

BAGLEY AVE.
FOURTEENTH ST.

DRAWN : A.D. BOLTON
SCALE : 1" = 30'
DATE : 01-21-2017
NO. A-028



CITY OF DETROIT  DEPARTMENT OF PUBLIC WORKS TRAFFIC ENGINEERING DIVISION	<u>BAGLEY AVE.</u> <u>16TH ST.</u>	DRAWN : A.D. Bolton SCALE : 1" = 30' DATE : 01 - 17 - 2019 NO. A-085
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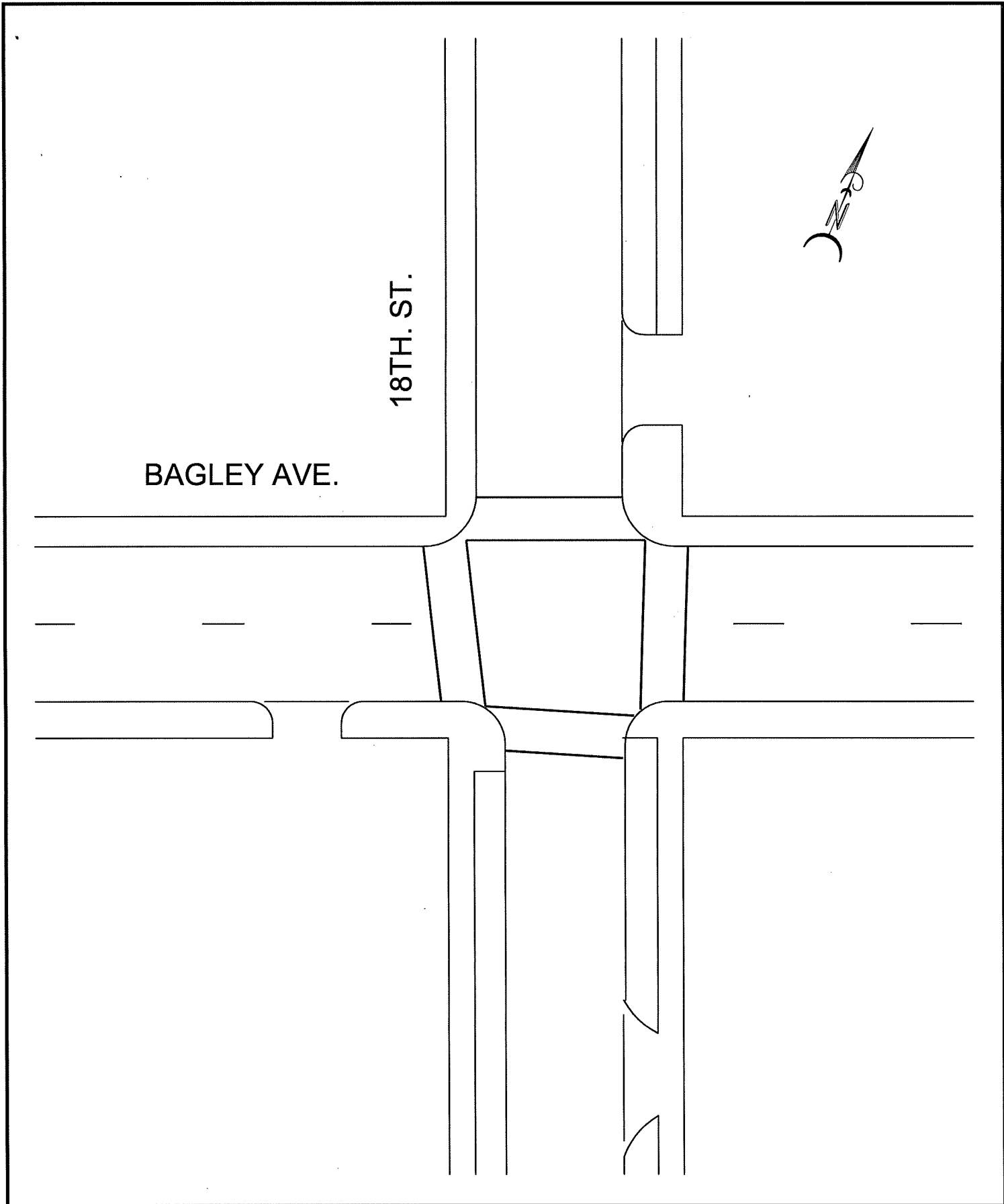


CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

BAGLEY AVE.
17TH ST.

DRAWN : A.D. Bolton
SCALE : 1" = 30'
DATE : 01 - 17 - 2019

NO. I-020



CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

BAGLEY AVE.
18TH ST.

DRAWN : A.D. Bolton
SCALE : 1" = 30'
DATE : 11 - 03 - 2017

NO. I-16B

ST ANNE ST.

BAGLEY AVE.



CITY OF DETROIT

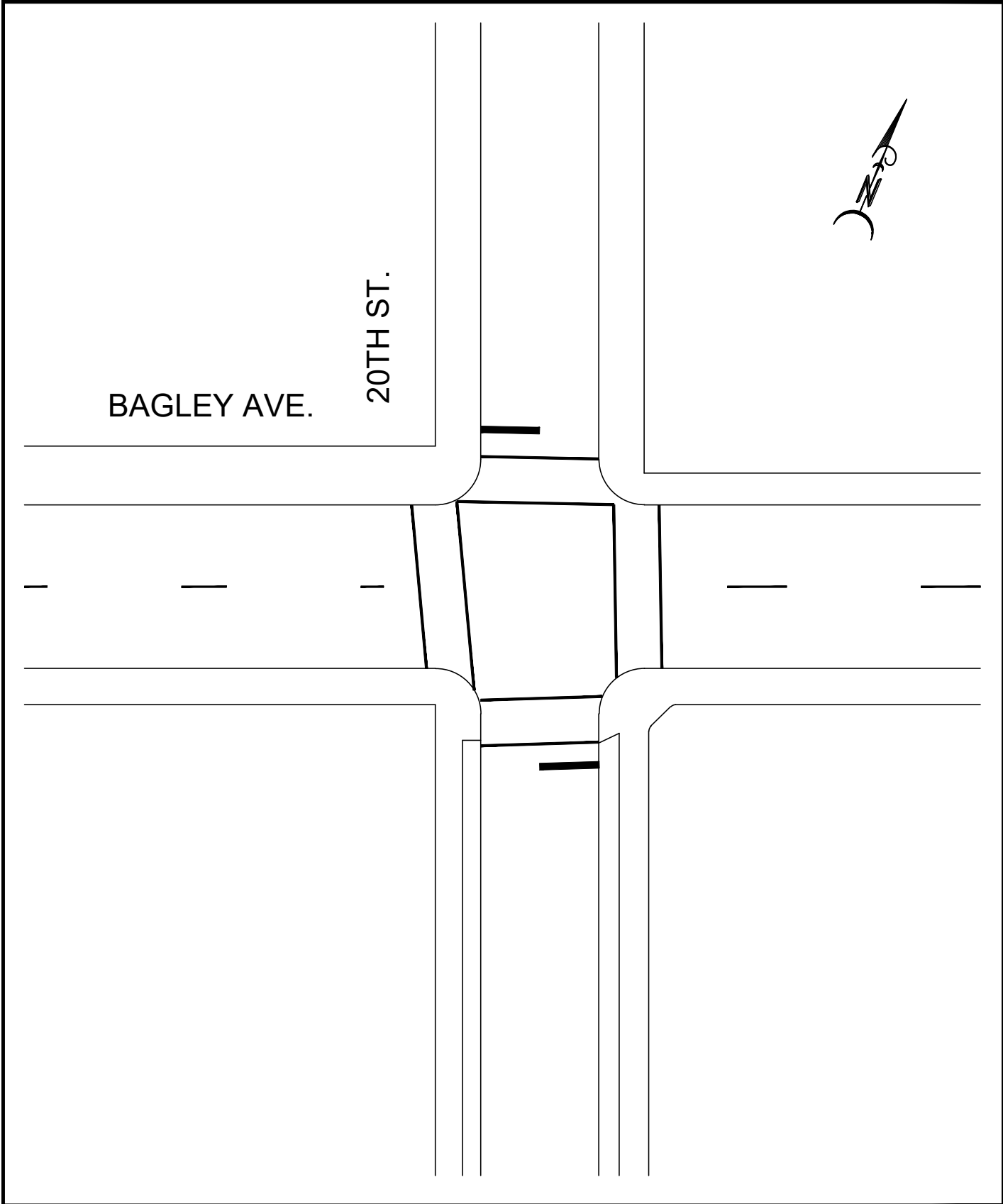
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

BAGLEY AVE.
ST ANNE ST.

274

DRAWN : A.D. Bolton
SCALE : 1" = 30'
DATE : 11 - 03 - 2017

NO. I-015



CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

BAGLEY AVE.
20TH ST.

DRAWN : A.D. Bolton
SCALE : 1" = 30'
DATE : 01 - 17 - 2019

NO. IV-023c

NOT IN CONTRACT

BREAK LINE

21ST ST.

21ST ST.

BREAKLINE

CITY OF DETROIT

DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

BAGLEY
TWENTY - FIRST

DRAWN : A.D. Bolton
SCALE : 1" = 30'
DATE : 01 - 17 - 2019

NO. A-026

BURT

I-96 JEFFRIES FWY TO PLYMOUTH

JN: 205935
LOCATION MAP: #2

TRAFFIC DATA:

2018 PRESENT: 6,976
2032 FUTURE: 9,069
2018 PRESENTCOMMERCIAL: 5 %
2032 FUTURE COMMERCIAL: 5 %
POSTED SPEED: 30 MPH
DESIGN SPEED: 35 MPH

TYPE OF PAVEMENT	ASPHALT OVER CONCRETE
LENGTH	4652 FT
PAVEMENT WIDTH	40 FT

SCHEDULE OF ITEMS

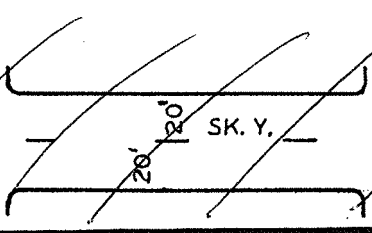
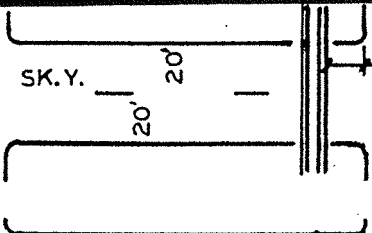
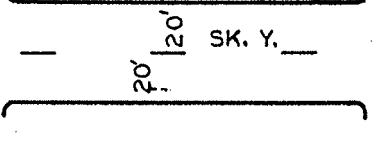
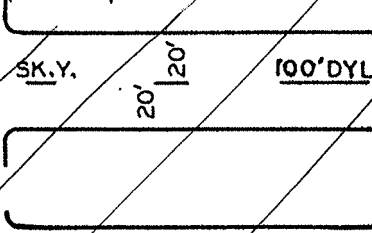
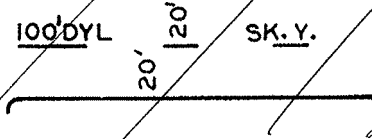
LOCATION: BURT
LIMITS: I-96 to Plymouth
LENGTH: 4,652 FT
WIDTH: 40 FT
WORK TYPE: Cold Milling, HMA Resurfacing, Concrete Curb, Sidewalk, Drive Approach, Drainage Improvement and Misc. Construction

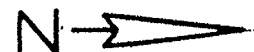
ITEM CODE	DESCRIPTION OF WORK	ITEM UNIT	ESTIMATED QUANTITY
2040055	Sidewalk, Rem	Syd	285.00
2047001	_ Curb, Rem, Modified	Ft	105.00
2047001	_ Integral Curb and Sidewalk, 2 feet, Rem, Modified	Ft	155.00
4037001	_ Dr Structure Lead, Cleaning, Modified	Ft	500.00
4037030	_ Dr Structure Cover, Modified	Lb	13750.00
4037050	_ Dr Structure Cleaning, Modified	Ea	50.00
4037050	_ Dr Structure Cover, Adj, Case 1, Modified	Ea	46.00
4037050	_ Dr Structure Cover, Adj, Case 2, Modified	Ea	1.00
4037050	_ Reconstructing Dr Structure, Case 1, Modified	Ea	3.00
5010005	HMA Surface, Rem	Syd	406.00
5010008	Pavt for Butt Joints, Rem	Syd	145.00
5010051	HMA, 4E3	Ton	2274.00
5010057	HMA, 5E3	Ton	1706.00
5017011	_ Cold Milling HMA Surface, Modified	Syd	20676.00
5017031	_ Conditioning Existing Pavement, Modified	Ton	279.00
5017031	_ HMA Approach, Modified	Ton	78.00
5017031	_ HMA Shoulder, Modified	Ton	33.00
6027011	_ Pavt Repr, Nonreinf Conc, 10 inch, Modified	Syd	100.00
6037001	_ Curb, Conc, Detail CD, Modified	Ft	105.00
6037011	_ Pavt Repr, Rem, Modified	Syd	100.00
8037001	_ Integral Curb and Sidewalk, 2 feet, Modified	Ft	155.00
8037010	_ Sidewalk, Conc with Tree Roots, 4 inch, Modified	Sft	1516.00
8037010	_ Sidewalk, Conc with Tree Roots, 6 inch, Modified	Sft	306.00
8110024	Pavt Mrkg, Ovly Cold Plastic, 6 inch, Crosswalk	Ft	574.00
8110154	Pavt Mrkg, Spray Thermopl, 4 inch, Yellow	Ft	1510.00
8110197	Pavt Mrkg, Thermopl, 6 inch, Crosswalk	Ft	88.00
8110214	Pavt Mrkg, Thermopl, 12 inch, Crosswalk	Ft	270.00
8110217	Pavt Mrkg, Thermopl, 18 inch, Stop Bar	Ft	18.00
8110218	Pavt Mrkg, Thermopl, 24 inch, Stop Bar	Ft	110.00
8110411	Pavt Mrkg, Polyurea, Railroad Sym	Ea	2.00
8117001	_ Recessing Pavt Mrkg, 12 inch	Ft	270.00
8117001	_ Recessing Pavt Mrkg, 18 inch	Ft	18.00
8117001	_ Recessing Pavt Mrkg, 24 inch	Ft	110.00
8117001	_ Recessing Pavt Mrkg, 6 inch	Ft	662.00
8160055	Sodding	Syd	86.00
8160090	Water, Sodding/Seeding	Unit	4.00
8167021	_ Topsoil Surface, Furn, LM, Modified	Cyd	7.00
8237050	_ Water Shutoff, Adj, Modified	Ea	9.00

Estimated quantities for use at the discretion of the Engineer

Maintenance of traffic quantities not included

BURT RD.

FROM	TO	LENGTH		SKETCH	WIDTH
		ACTUAL	CHARGE		
			CL	LL	
CHICAGO	PLYMOUTH	2600'	650'		40'
NOT IN CONTRACT					
PLYMOUTH	FULLERTON	2900'	725'		40'
FULLERTON - 100' S/O JEFFERIES (SCHOOLCRAFT)		1990'	498'		40'
JEFFERIES SSD - JEFFERIES NSD (SCHOOLCRAFT)		610'	153'	SEE DWG NO B-101	
NOT IN CONTRACT					
100' N/O JEFFERIES - OUTER DR.		4150'	1212'		40'
OUTER DR.	FENKELL	1000'	425'		40'



REV. 4/3/98.JL. ADDED GRAND RIVER TO EIGHT MILE.

SHT: 1 OF 2



CITY OF DETROIT
DEPARTMENT OF
TRANSPORTATION

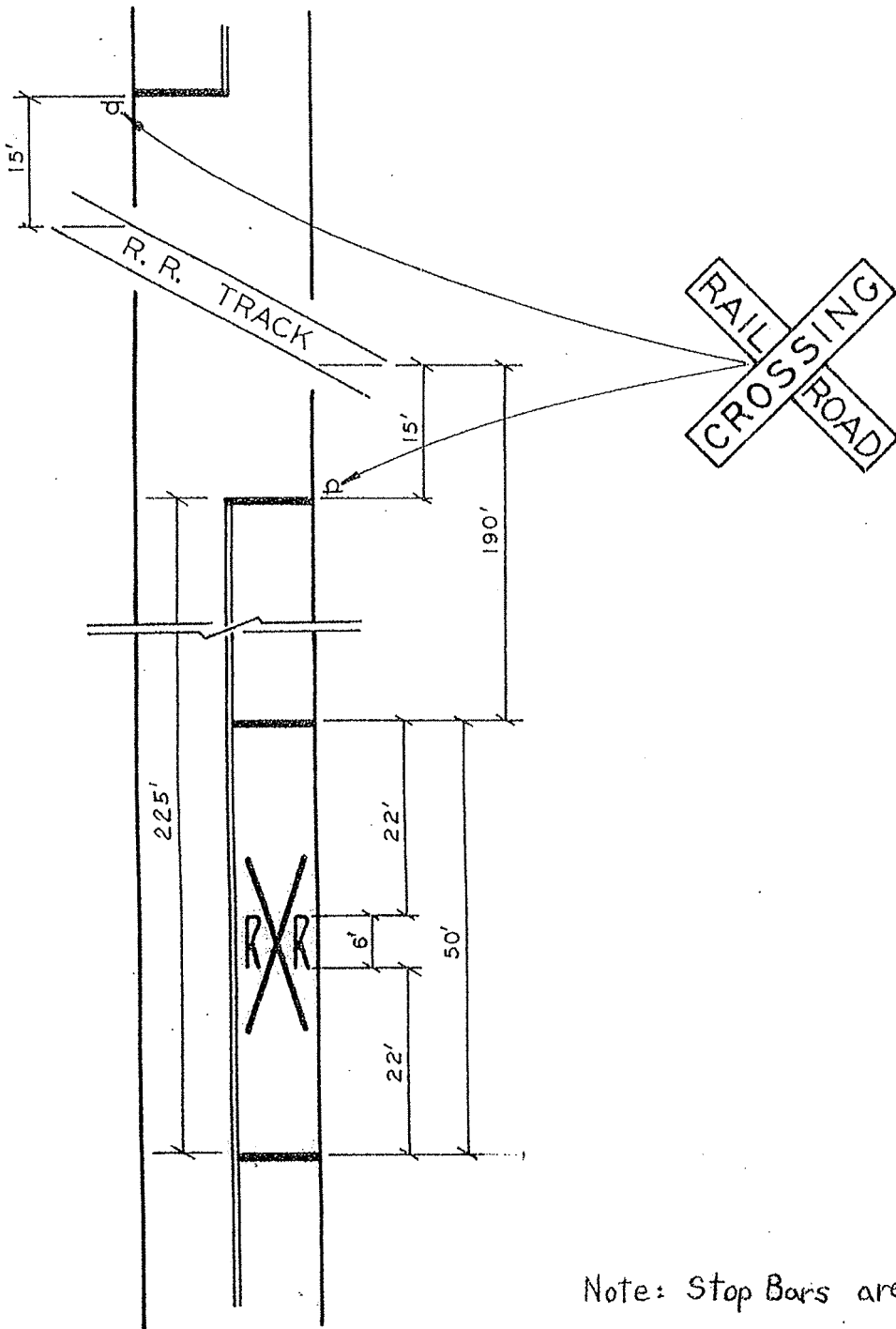
Transportation Engineering

BURT RD
CHICAGO - EIGHT MILE

279

DRAWN Δ Brown
SCALE N/A
DATE 5/17/94

NO.CL-112



Note: Stop Bars are 24" wide

BURT RD, 90' S/O FULLERTON

BRUNING 76577 FORM # 1260



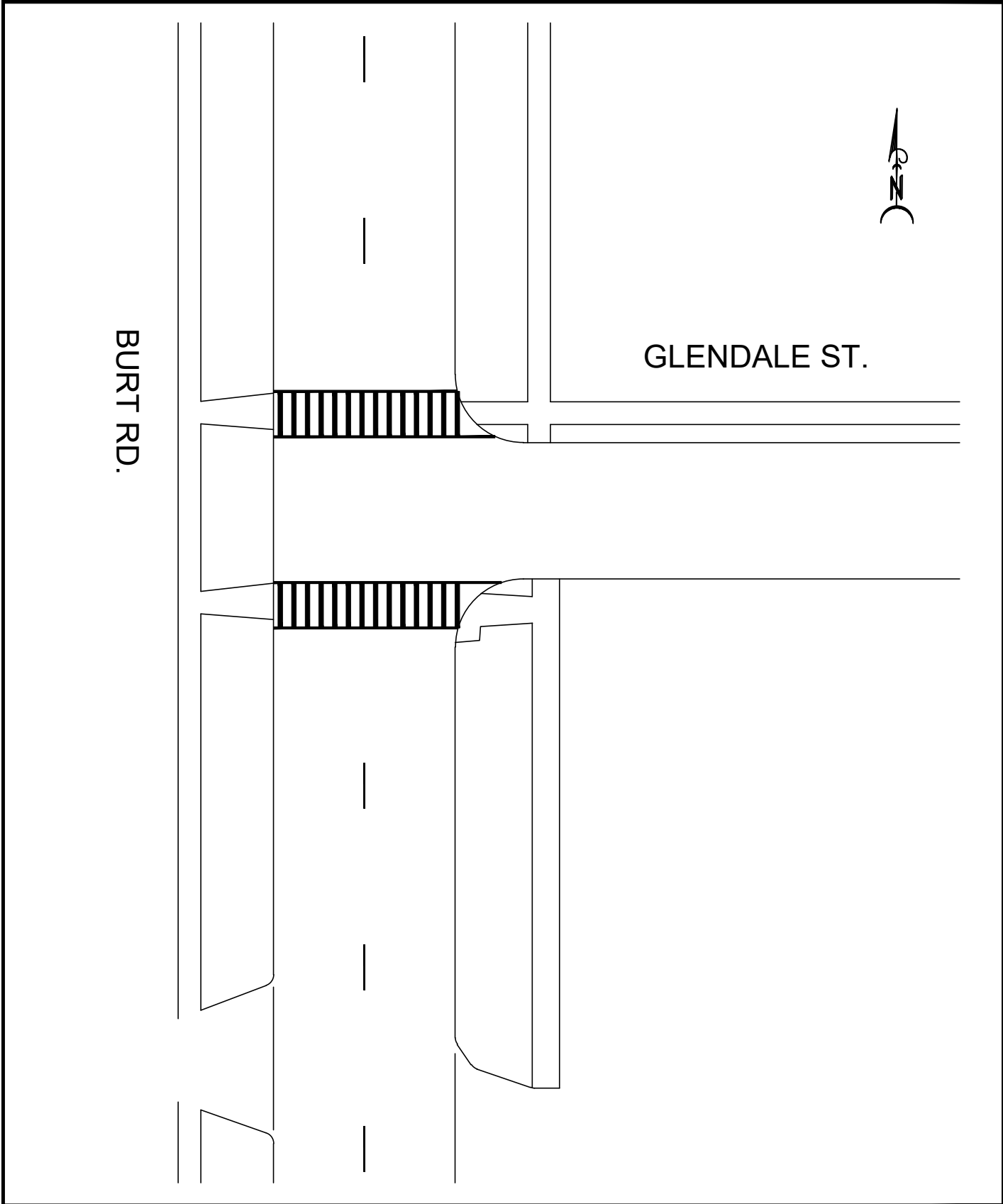
CITY OF DETROIT
DEPARTMENT OF
TRANSPORTATION
Transportation Engineering

TYPICAL PAVEMENT
MARKING AT R.R. CROSSING

AP

DRAWN A. Brown
SCALE 1" = 20'
DATE 7-16-94

NO. SG-80

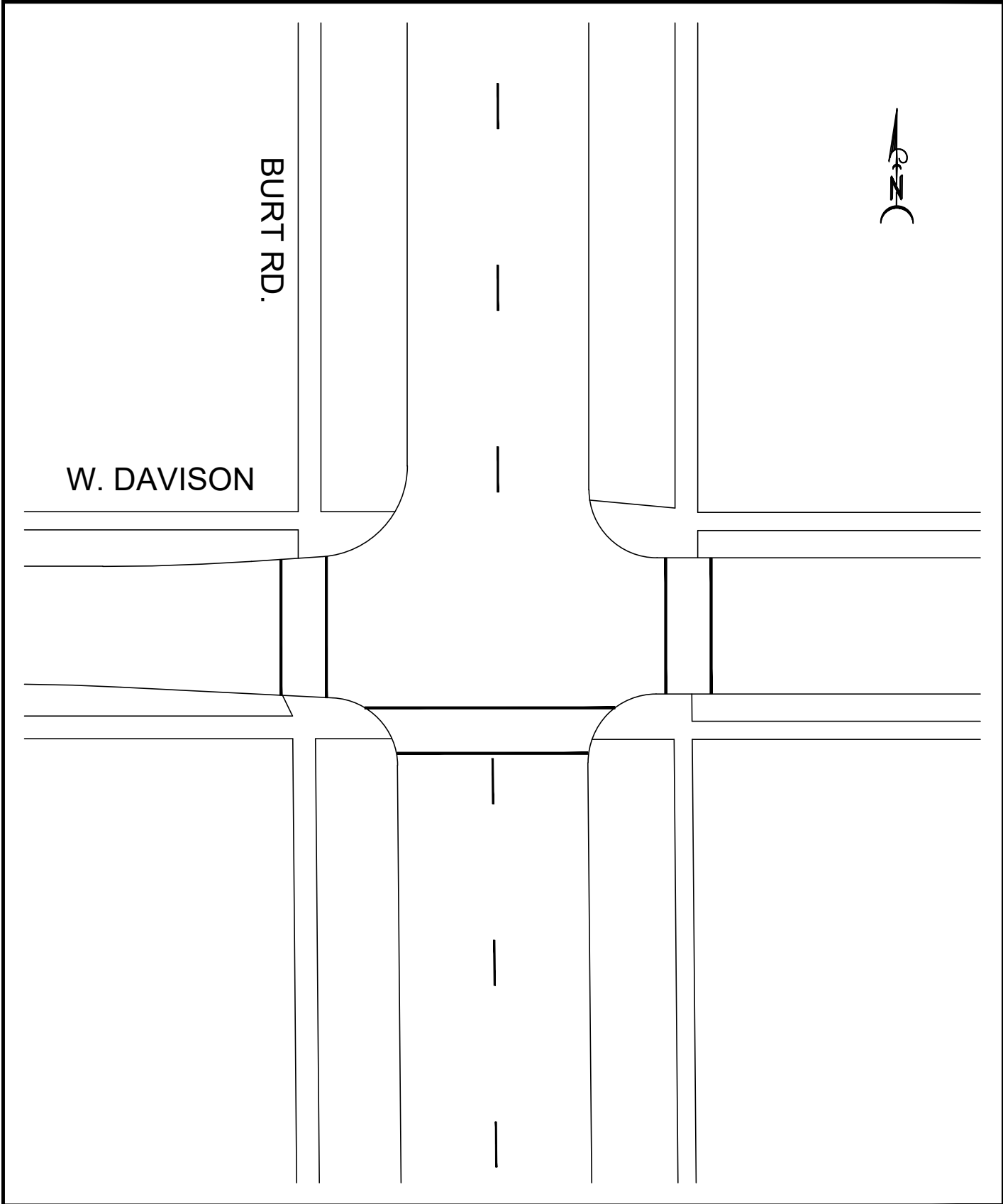


CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

BURT
GLENDALE

DRAWN : A.D. Bolton
SCALE : 1" = 30'
DATE : 01 - 17 - 2019

NO. IV-136

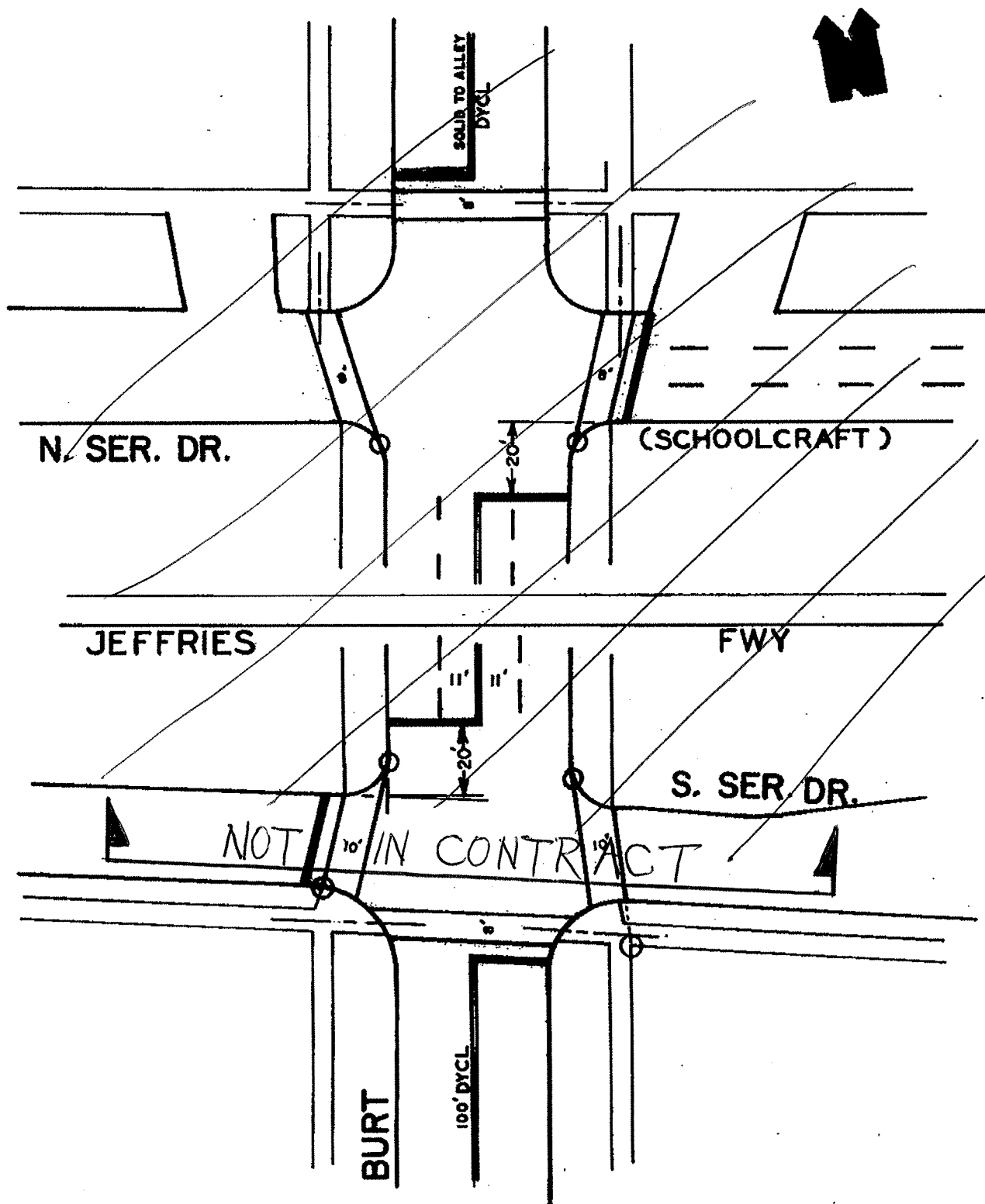


CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

BURT RD.
W. DAVISON

DRAWN : A.D. Bolton
SCALE : 1" = 30'
DATE : 12 - 26 - 2018

NO. IV-023c



CITY OF DETROIT
DEPARTMENT OF STREETS AND TRAFFIC

BURT - SCHOOLCRAFT

DESIGNED JRZ
APPROVED

CHECKED ST.
SCALE 1" = 40'
DATE 6-26-72

NO. B-101

E LAFAYETTE

MT. ELLIOTT TO IROQUOIS

JN: 205935
LOCATION MAP: #14

TRAFFIC DATA:

2018 PRESENT: 4,290
2032 FUTURE: 5,577
2018 PRESENTCOMMERCIAL: 5 %
2032 FUTURE COMMERCIAL: 5 %
POSTED SPEED: 30 MPH
DESIGN SPEED: 35 MPH

TYPE OF PAVEMENT	ASPHALT OVER CONCRETE
LENGTH	6015 FT
PAVEMENT WIDTH	(34...27...29) FT (VARIES)

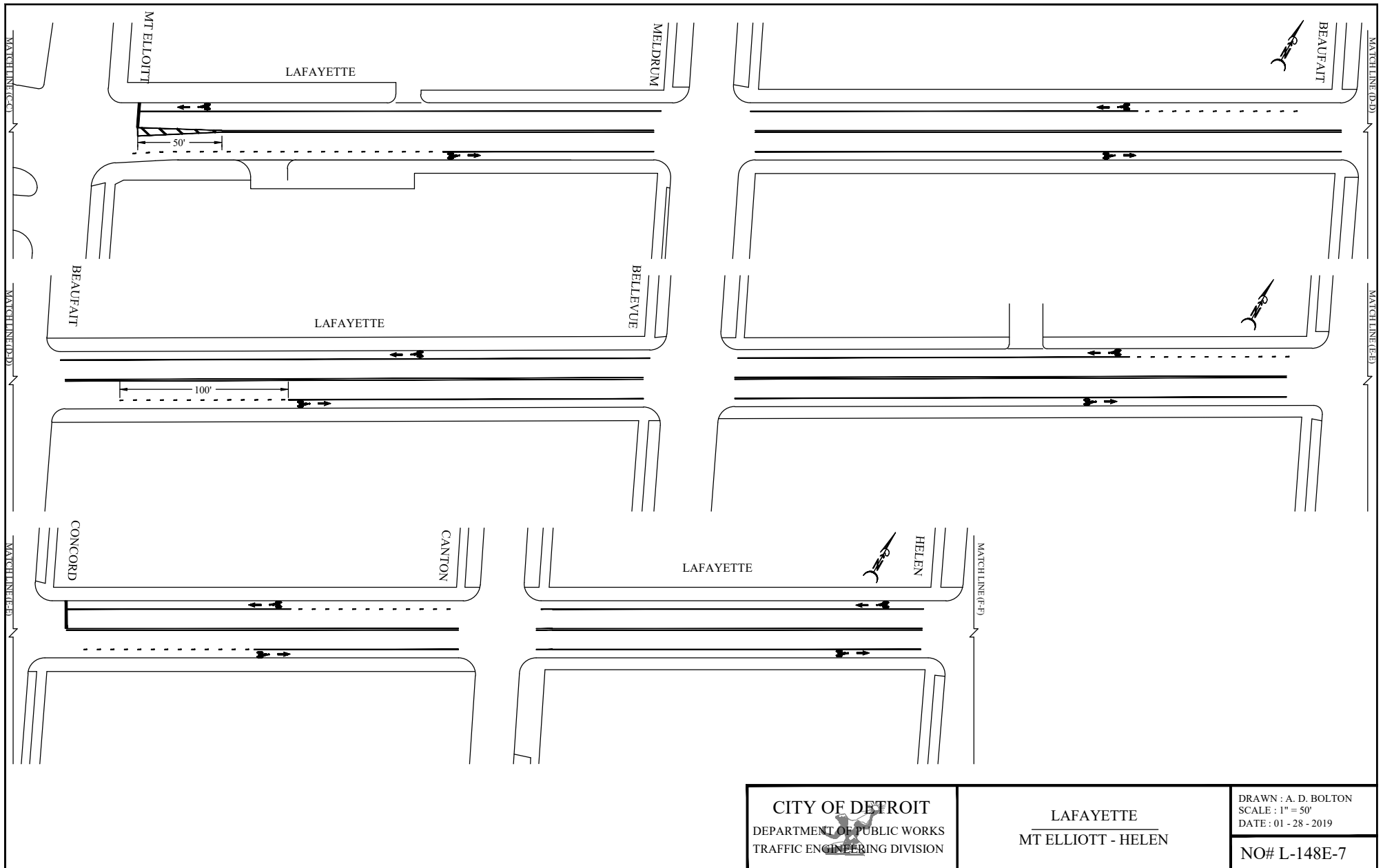
SCHEDULE OF ITEMS

LOCATION: E. LAFAYETTE
LIMITS: Mt. Elliott to Iroquois
LENGTH: 6,015 FT
WIDTH: 34-27-29 FT VARIES
WORK TYPE: Cold Milling, HMA Resurfacing, Concrete Curb, Sidewalk, Drive Approach, Drainage Improvement and Misc. Construction

ITEM CODE	DESCRIPTION OF WORK	ITEM UNIT	ESTIMATED QUANTITY
2040055	Sidewalk, Rem	Syd	1697.00
2047001	_ Curb, Rem, Modified	Ft	927.00
2047001	_ Integral Curb and Sidewalk, 2 feet, Rem, Modified	Ft	543.00
4037001	_ Dr Structure Lead, Cleaning, Modified	Ft	1300.00
4037030	_ Dr Structure Cover, Modified	Lb	35750.00
4037050	_ Dr Structure Cleaning, Modified	Ea	130.00
4037050	_ Dr Structure Cover, Adj, Case 1, Modifie d	Ea	116.00
4037050	_ Dr Structure Cover, Adj, Case 2, Modifie d	Ea	4.00
4037050	_ Reconstructing Dr Structure, Case 1, Mod ified	Ea	10.00
5010005	HMA Surface, Rem	Syd	1185.00
5010008	Pavt for Butt Joints, Rem	Syd	396.00
5010051	HMA, 4E3	Ton	2317.00
5010057	HMA, 5E3	Ton	1737.00
5017011	_ Cold Milling HMA Surface, Modified	Syd	21060.00
5017031	_ Conditioning Existing Pavement, Modified	Ton	284.00
5017031	_ HMA Approach, Modified	Ton	228.00
5017031	_ HMA Shoulder, Modified	Ton	5.00
6027011	_ Pavt Repr, Nonreinf Conc, 10 inch, Modified	Syd	78.00
6037001	_ Curb, Conc, Detail CD, Modified	Ft	513.00
6037011	_ Pavt Repr, Rem, Modified	Syd	78.00
8027001	_ Detectable Warning Surface Tile, Modifie d	Ft	315.00
8027010	_ Sidewalk Ramp, ADA, Modified	Sft	5874.00
8027010	_ Sidewalk, Conc, 4 inch, Modified	Sft	9396.00
8030030	Curb Ramp Opening, Conc	Ft	552.00
8037001	_ Integral Curb and Sidewalk, 2 feet, Modified	Ft	405.00
8110154	Pavt Mrkg, Spray Thermopl, 4 inch, Yellow	Ft	8232.00
8110155	Pavt Mrkg, Spray Thermopl, 6 inch, White	Ft	3223.00
8110197	Pavt Mrkg, Thermopl, 6 inch, Crosswalk	Ft	362.00
8110217	Pavt Mrkg, Thermopl, 18 inch, Stop Bar	Ft	68.00
8117001	_ Pavt Mrkg, Modified Urethane, 12 inch, Cr oss Hatching, Yellow	Ft	14.00
8117001	_ Recessing Pavt Mrkg, 18 inch	Ft	68.00
8117001	_ Recessing Pavt Mrkg, 6 inch	Ft	362.00
8117050	_ Pavt Mrkg, Waterborne, Bike Sym and Arro w, White, Modified	Ea	16.00
8160055	Sodding	Syd	180.00
8160090	Water, Sodding/Seeding	Unit	4.00
8167021	_ Topsoil Surface, Furn, LM, Modified	Cyd	15.00
8237050	_ Water Shutoff, Adj, Modified	Ea	12.00

Estimated quantities for use at the discretion of the Engineer

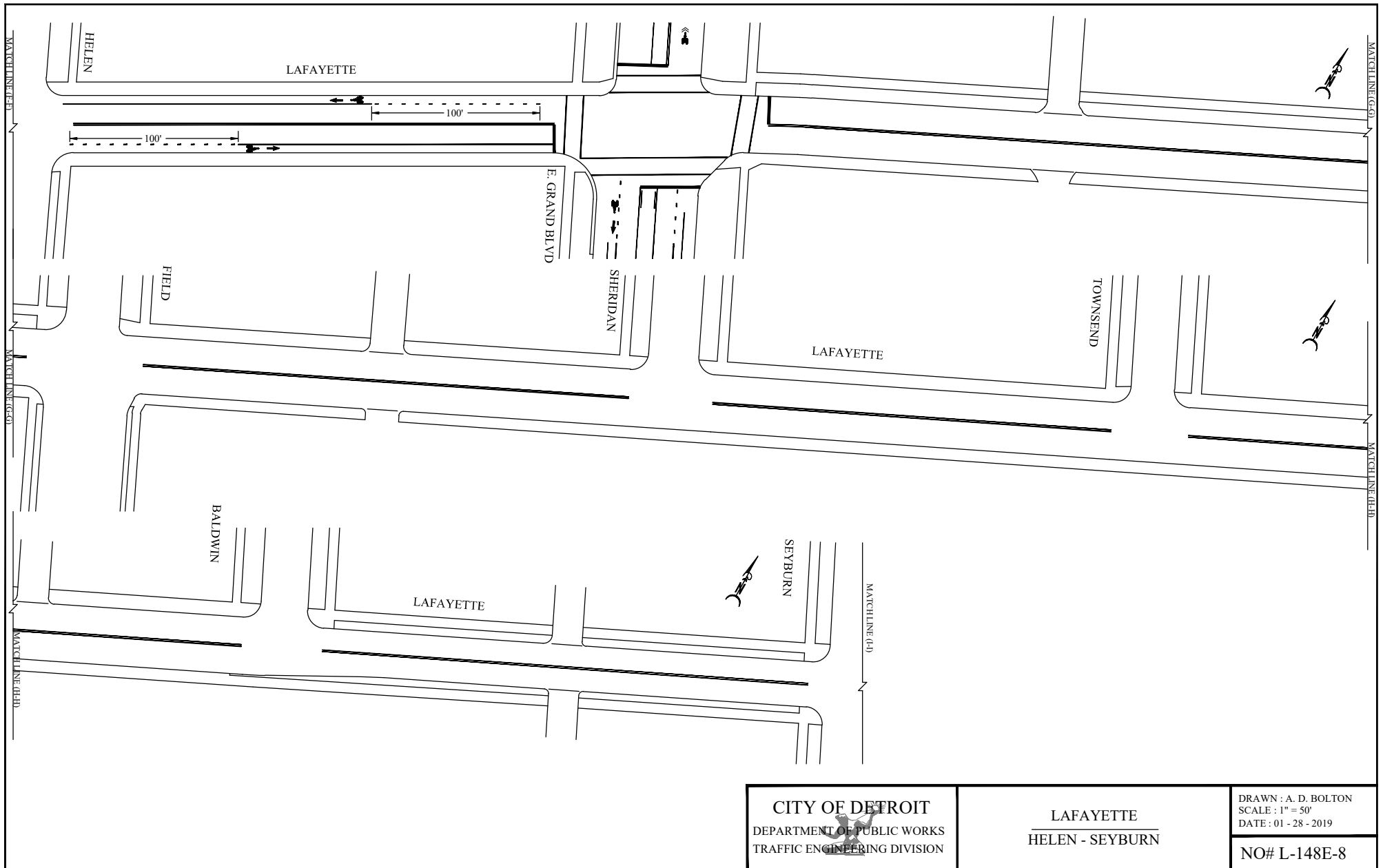
Maintenance of traffic quantities not included



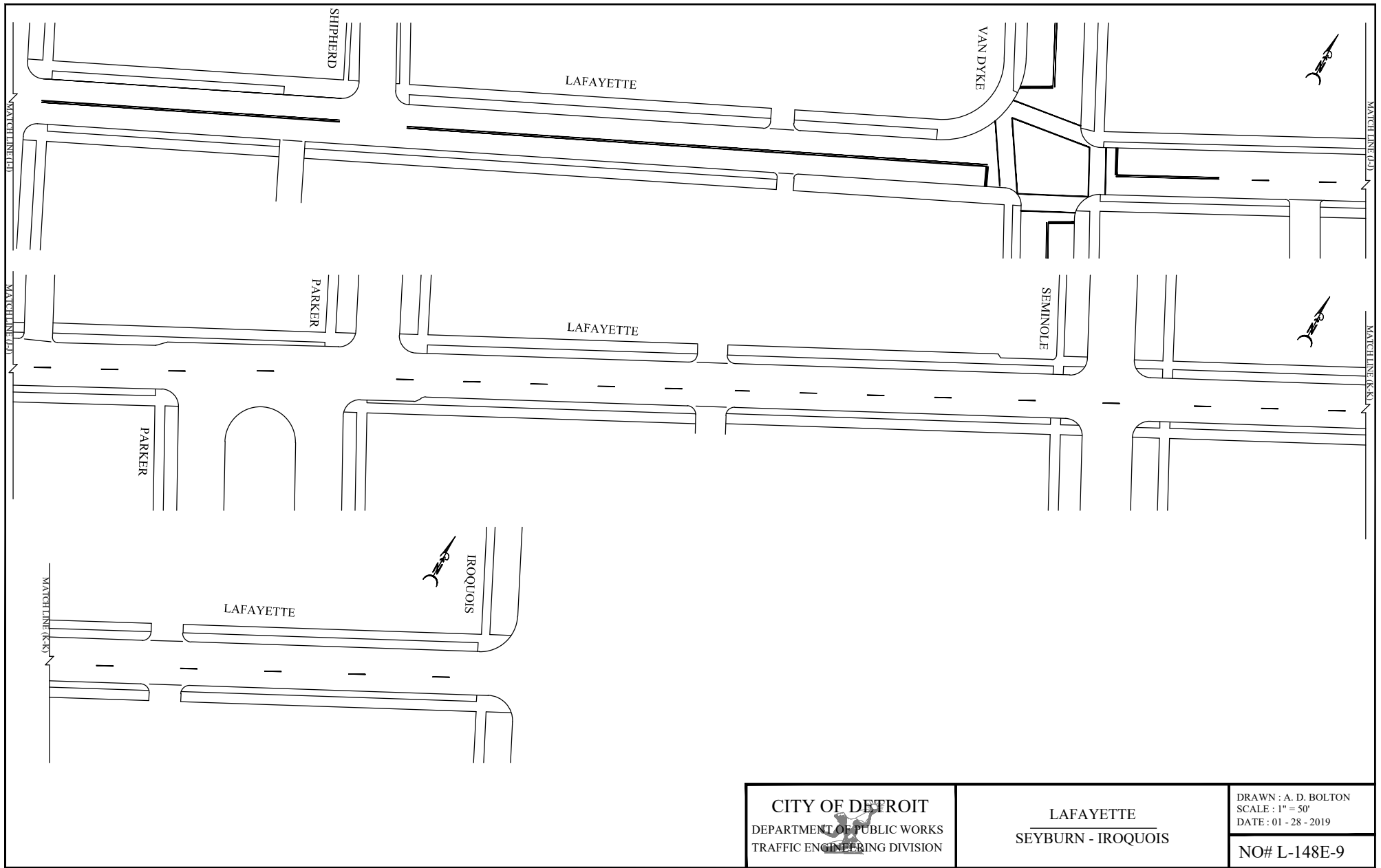
CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 TRAFFIC ENGINEERING DIVISION

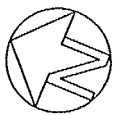
LAFAYETTE
 MT ELLIOTT - HELEN

DRAWN : A. D. BOLTON
 SCALE : 1" = 50'
 DATE : 01 - 28 - 2019
 NO# L-148E-7



CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS TRAFFIC ENGINEERING DIVISION	LAFAYETTE HELEN - SEYBURN	DRAWN : A. D. BOLTON SCALE : 1" = 50' DATE : 01 - 28 - 2019 NO# L-148E-8
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LAFAYETTE

NOT IN CONTACT

MT. ELLOITT

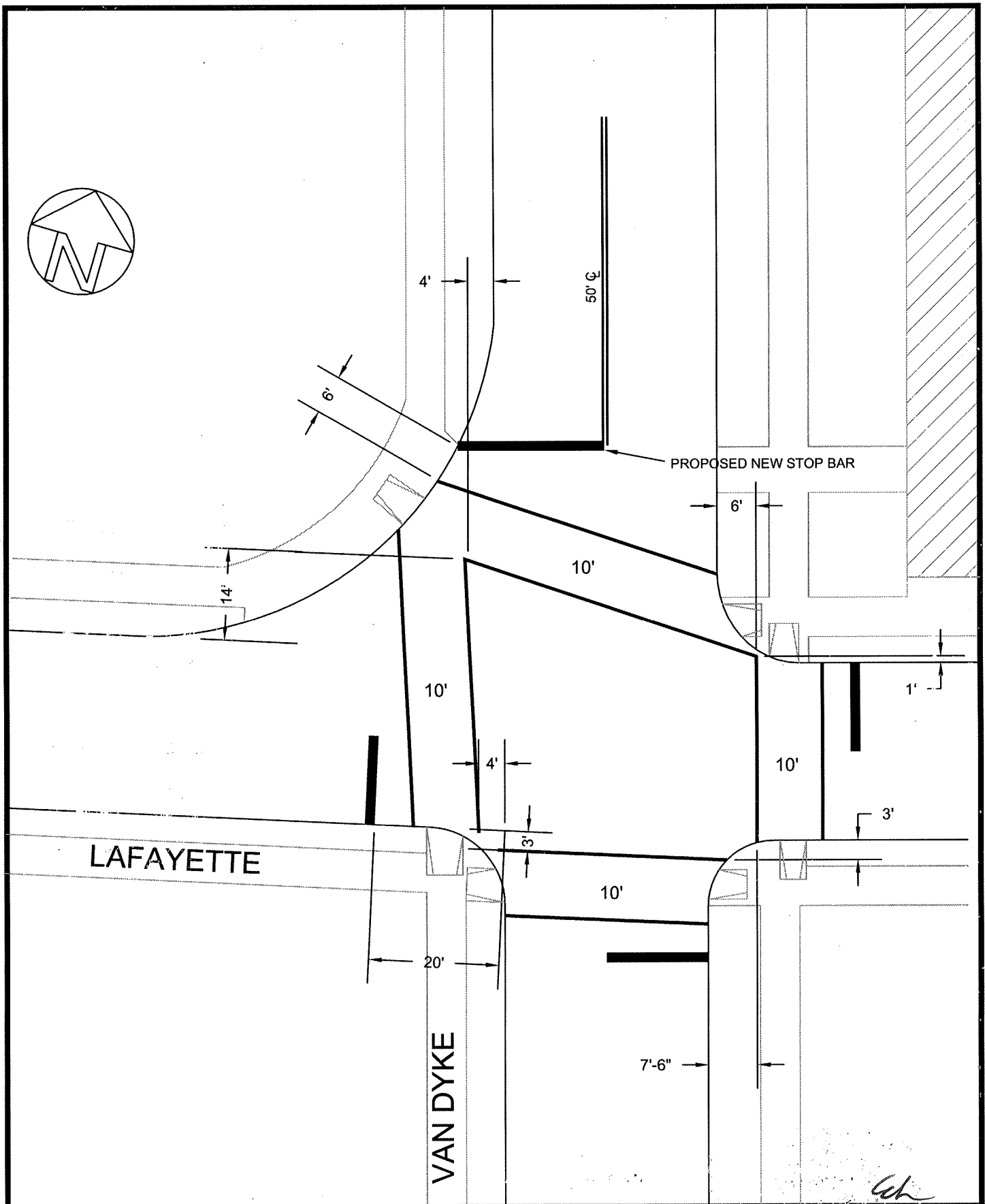
REVISED: 03/19/2014 W.L. WILLIAMS

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

LAFAYETTE
MT. ELLIOTT

DRAWN : J. LAPPIN
SCALE : 1" = 40'
DATE : 10 - 10 - 2006

NO. E-158



CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

LAFAYETTE
VAN DYKE

DRAWN: J. LAPPIN
SCALE: 1" = 20'
DATE: 09-20-2009

NO. E-101

E VERNOR GRATIOT TO MT. ELLIOTT

**JN: 205935
LOCATION MAP: #13**

TRAFFIC DATA:

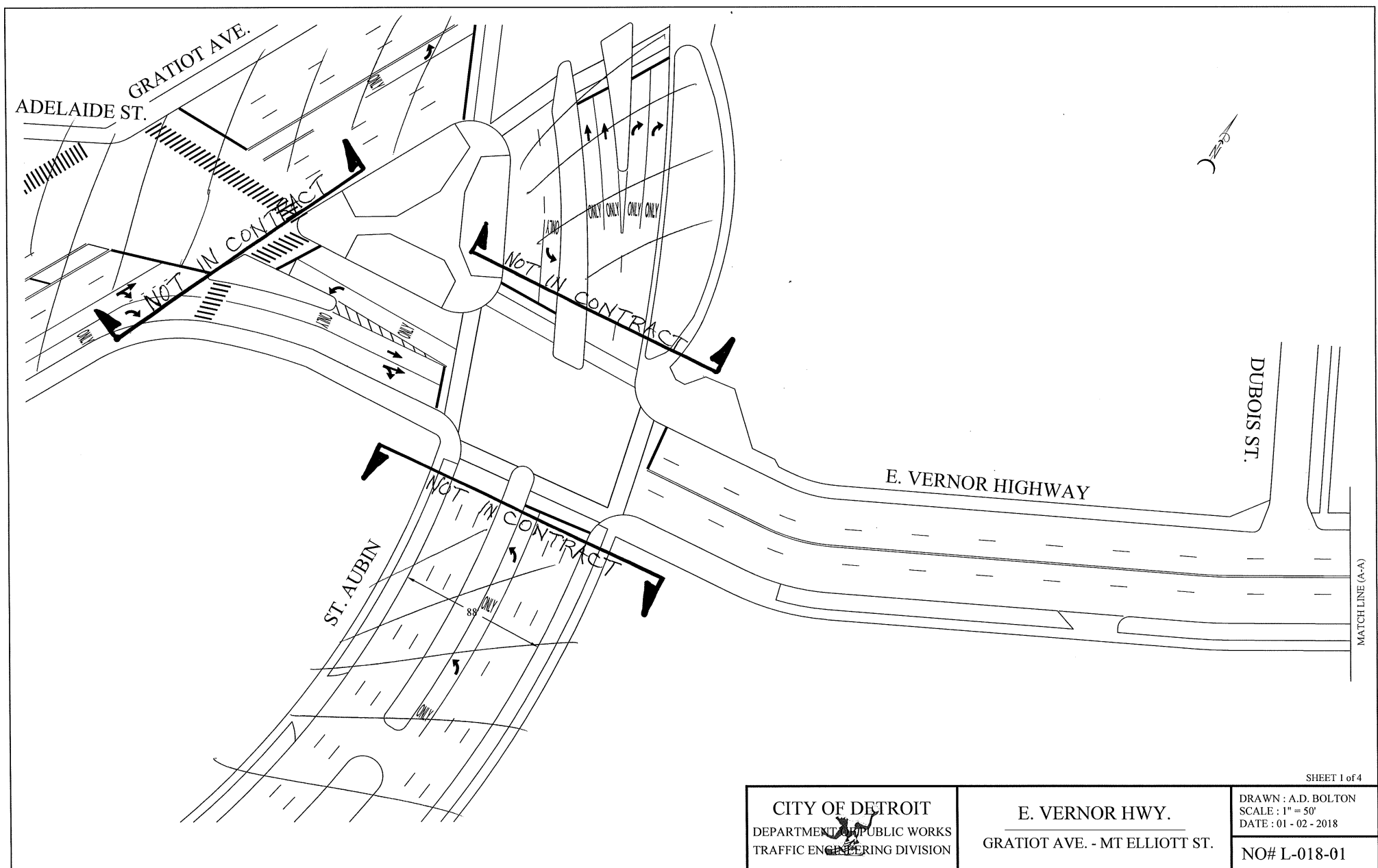
**2018 PRESENT: 10,285
2032 FUTURE: 13,371
2018 PRESENTCOMMERCIAL: 5 %
2032 FUTURE COMMERCIAL: 5 %
POSTED SPEED: 30 MPH
DESIGN SPEED: 35 MPH**

TYPE OF PAVEMENT	ASPHALT OVER CONCRETE
LENGTH	5205 FT
PAVEMENT WIDTH	(56...60) FT (VARIES)

SCHEDULE OF ITEMS

LOCATION: E. VERNOR
LIMITS: Gratiot to Mt. Elliott
LENGTH: 5,205 FT
WIDTH: 56-60 FT VARIES
WORK TYPE: Cold Milling, HMA Resurfacing, Concrete Curb, Sidewalk, Drive Approach, Drainage Improvement and Misc. Construction

ITEM CODE	DESCRIPTION OF WORK	ITEM UNIT	ESTIMATED QUANTITY
2040055	Sidewalk, Rem	Syd	1036.00
2047001	_ Curb, Rem, Modified	Ft	666.00
2047001	_ Integral Curb and Sidewalk, 2 feet, Rem, Modified	Ft	770.00
4037001	_ Dr Structure Lead, Cleaning, Modified	Ft	1440.00
4037030	_ Dr Structure Cover, Modified	Lb	39600.00
4037050	_ Dr Structure Cleaning, Modified	Ea	144.00
4037050	_ Dr Structure Cover, Adj, Case 1, Modifie d	Ea	132.00
4037050	_ Dr Structure Cover, Adj, Case 2, Modifie d	Ea	3.00
4037050	_ Reconstructing Dr Structure, Case 1, Mod ified	Ea	9.00
5010005	HMA Surface, Rem	Syd	1473.00
5010008	Pavt for Butt Joints, Rem	Syd	376.00
5010051	HMA, 4E3	Ton	3760.00
5010057	HMA, 5E3	Ton	2820.00
5017011	_ Cold Milling HMA Surface, Modified	Syd	34184.00
5017031	_ Conditioning Existing Pavement, Modified	Ton	461.00
5017031	_ HMA Approach, Modified	Ton	284.00
5017031	_ HMA Shoulder, Modified	Ton	22.00
6027011	_ Pavt Repr, Nonreinf Conc, 10 inch, Modified	Syd	100.00
6037001	_ Curb, Conc, Detail CD, Modified	Ft	324.00
6037011	_ Pavt Repr, Rem, Modified	Syd	100.00
8027001	_ Detectable Warning Surface Tile, Modifie d	Ft	170.00
8027010	_ Sidewalk Ramp, ADA, Modified	Sft	2724.00
8027010	_ Sidewalk, Conc, 4 inch, Modified	Sft	6600.00
8030030	Curb Ramp Opening, Conc	Ft	426.00
8037001	_ Integral Curb and Sidewalk, 2 feet, Modified	Ft	674.00
8110024	Pavt Mrkg, Ovly Cold Plastic, 6 inch, Crosswalk	Ft	429.00
8110044	Pavt Mrkg, Ovly Cold Plastic,18 inch,Stop Bar	Ft	71.00
8110063	Pavt Mrkg, Ovly Cold Plastic,Lt Turn Arrow Sym	Ea	1.00
8110068	Pavt Mrkg, Ovly Cold Plastic, Only	Ea	2.00
8110077	Pavt Mrkg, Ovly Cold Plastic,Thru and Rt Turn Arrow Sym	Ea	1.00
8110078	Pavt Mrkg, Ovly Cold Plastic,Thru Arrow Sym	Ea	1.00
8110153	Pavt Mrkg, Spray Thermopl, 4 inch, White	Ft	2580.00
8110154	Pavt Mrkg, Spray Thermopl, 4 inch,Yellow	Ft	9145.00
8110197	Pavt Mrkg, Thermopl, 6 inch, Crosswalk	Ft	1209.00
8110214	Pavt Mrkg, Thermopl, 12 inch, Crosswalk	Ft	160.00
8110217	Pavt Mrkg, Thermopl, 18 inch, Stop Bar	Ft	282.00
8117001	_ Pavt Mrkg, Modified Urethane, 12 inch, Cr oss Hatching, Yello	Ft	37.00
8117001	_ Recessing Pavt Mrkg, 12 inch	Ft	160.00
8117001	_ Recessing Pavt Mrkg, 18 inch	Ft	353.00
8117001	_ Recessing Pavt Mrkg, 6 inch	Ft	1638.00
8160055	Sodding	Syd	71.00
8160090	Water, Sodding/Seeding	Unit	4.00
8167021	_ Topsoil Surface, Furn, LM, Modified	Cyd	6.00
8210001	Monument Box	Ea	1.00
8237050	_ Water Shutoff, Adj, Modified	Ea	10.00



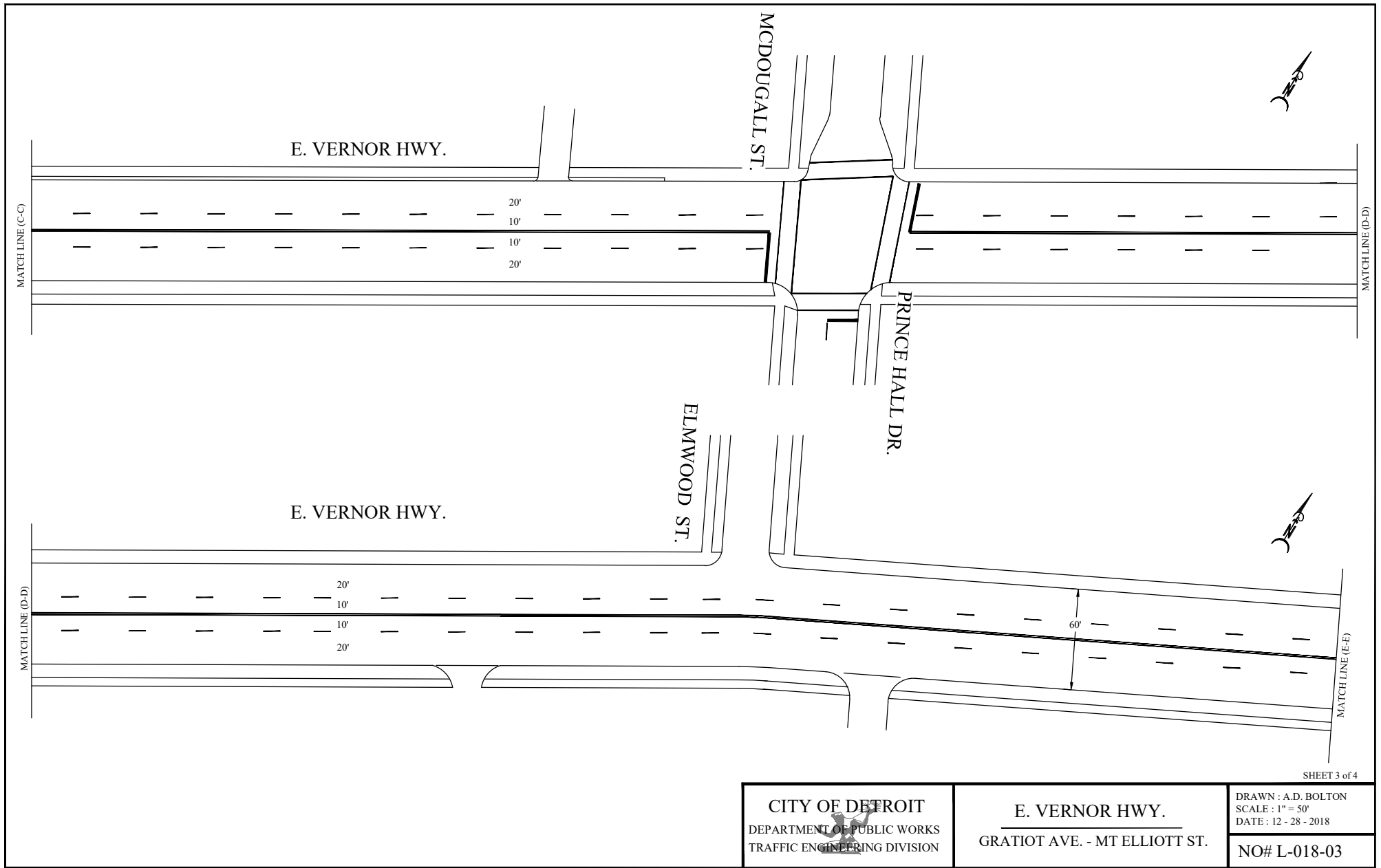
SHEET 1 of 4

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

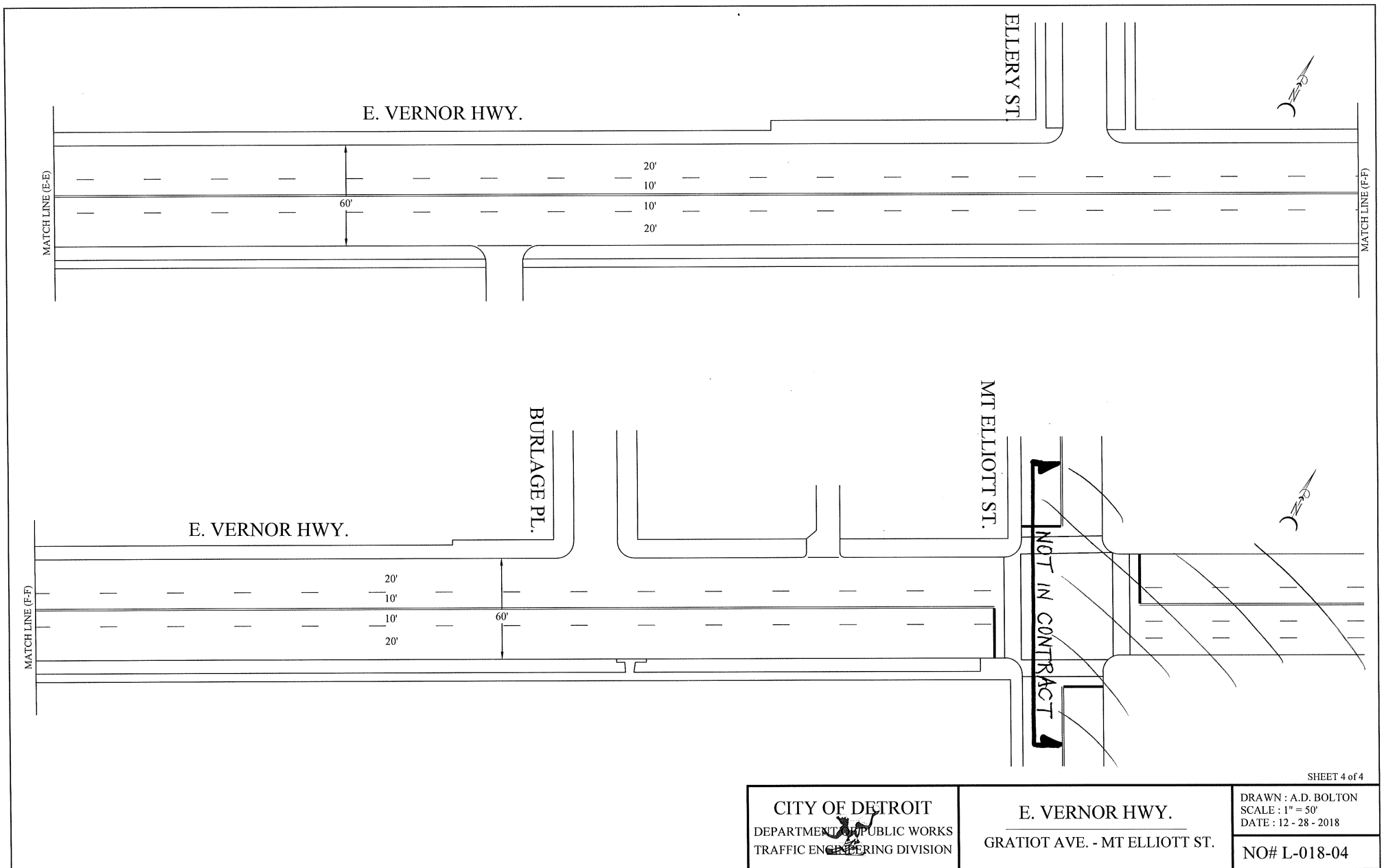
E. VERNOR HWY.
GRATIOT AVE. - MT ELLIOTT ST.

DRAWN : A.D. BOLTON
SCALE : 1" = 50'
DATE : 01 - 02 - 2018

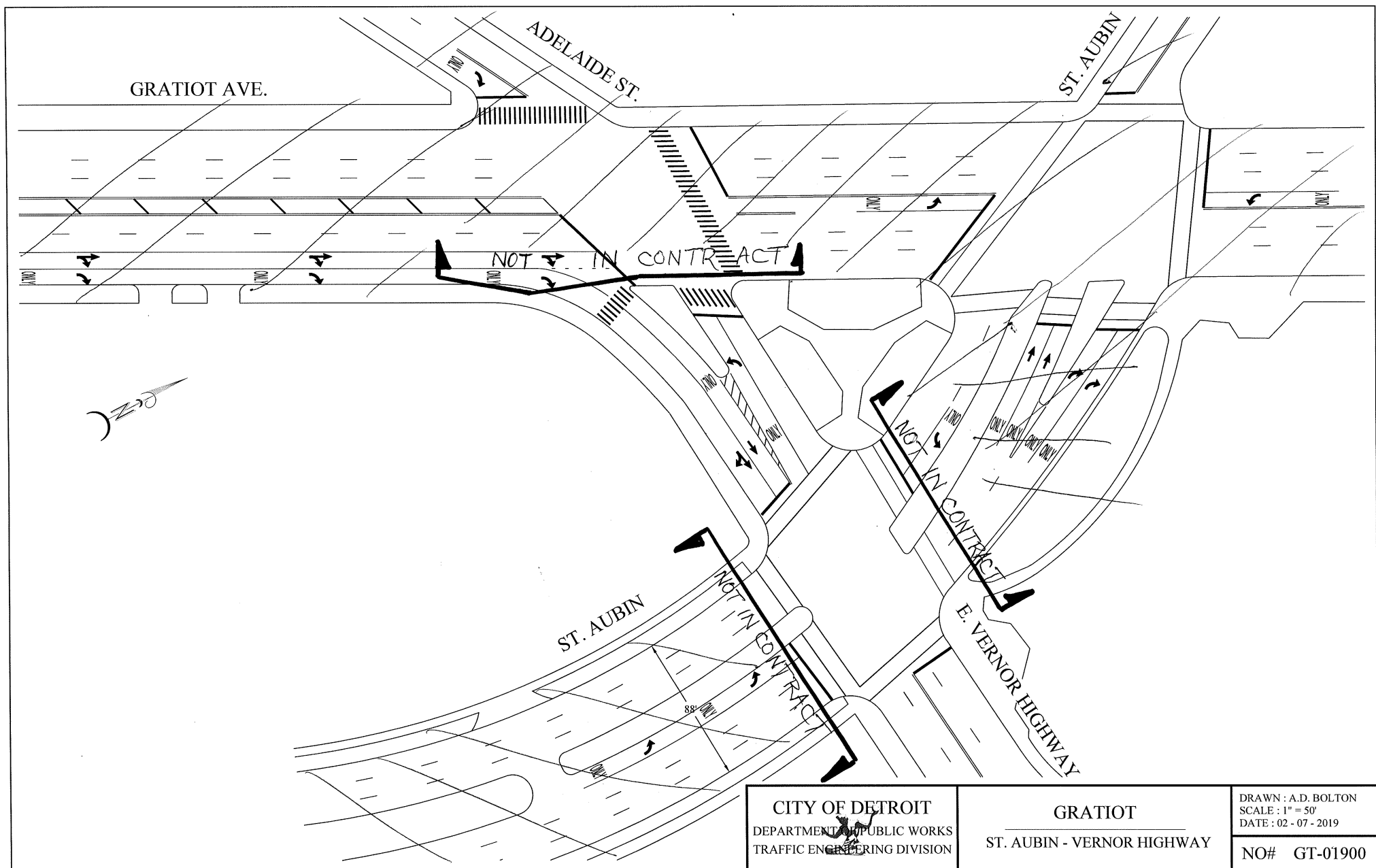
NO# L-018-01

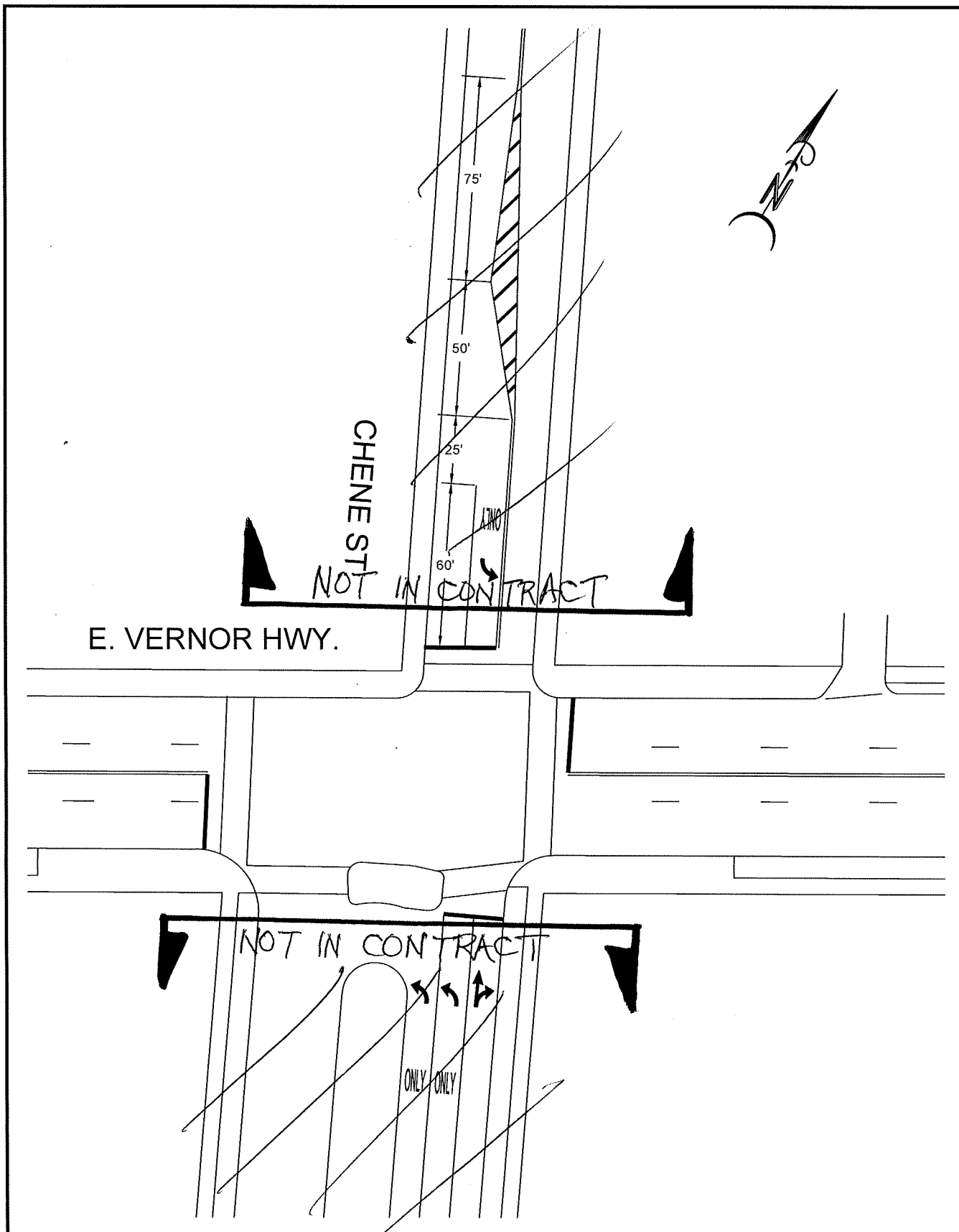


CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS TRAFFIC ENGINEERING DIVISION	E. VERNOR HWY. GRATIOT AVE. - MT ELLIOTT ST.	SHEET 3 of 4 DRAWN : A.D. BOLTON SCALE : 1" = 50' DATE : 12 - 28 - 2018 NO# L-018-03
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CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS TRAFFIC ENGINEERING DIVISION		E. VERNOR HWY. GRATIOT AVE. - MT ELLIOTT ST.		SHEET 4 of 4
				DRAWN : A.D. BOLTON SCALE : 1" = 50' DATE : 12 - 28 - 2018
				NO# L-018-04

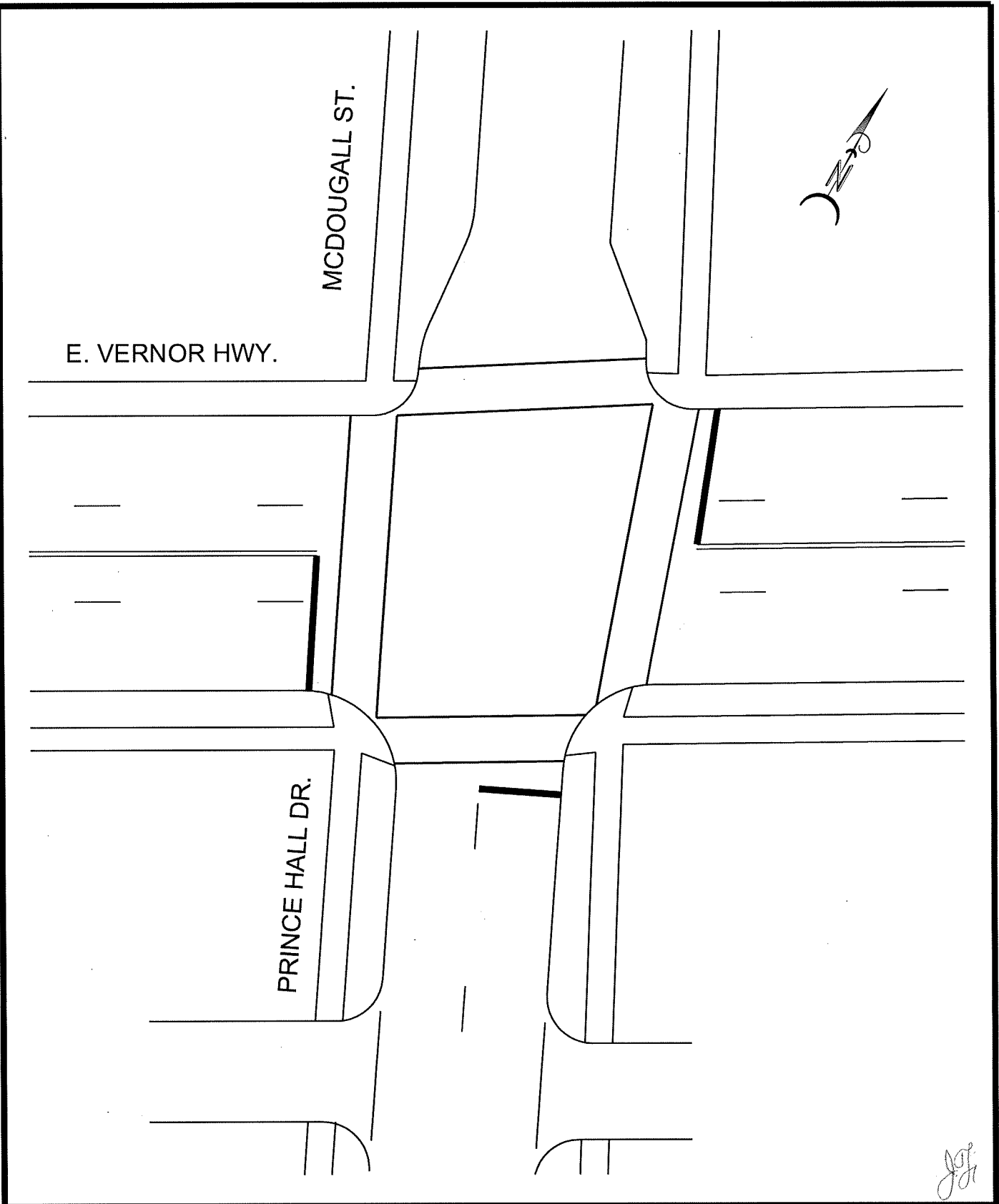





 CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 TRAFFIC ENGINEERING DIVISION

CHENE ST.
 E. VERNOR HWY.

DRAWN : A.D. BOLTON
 SCALE : 1" = 50'
 DATE : 12-28-2018
 NO. E-138



JB

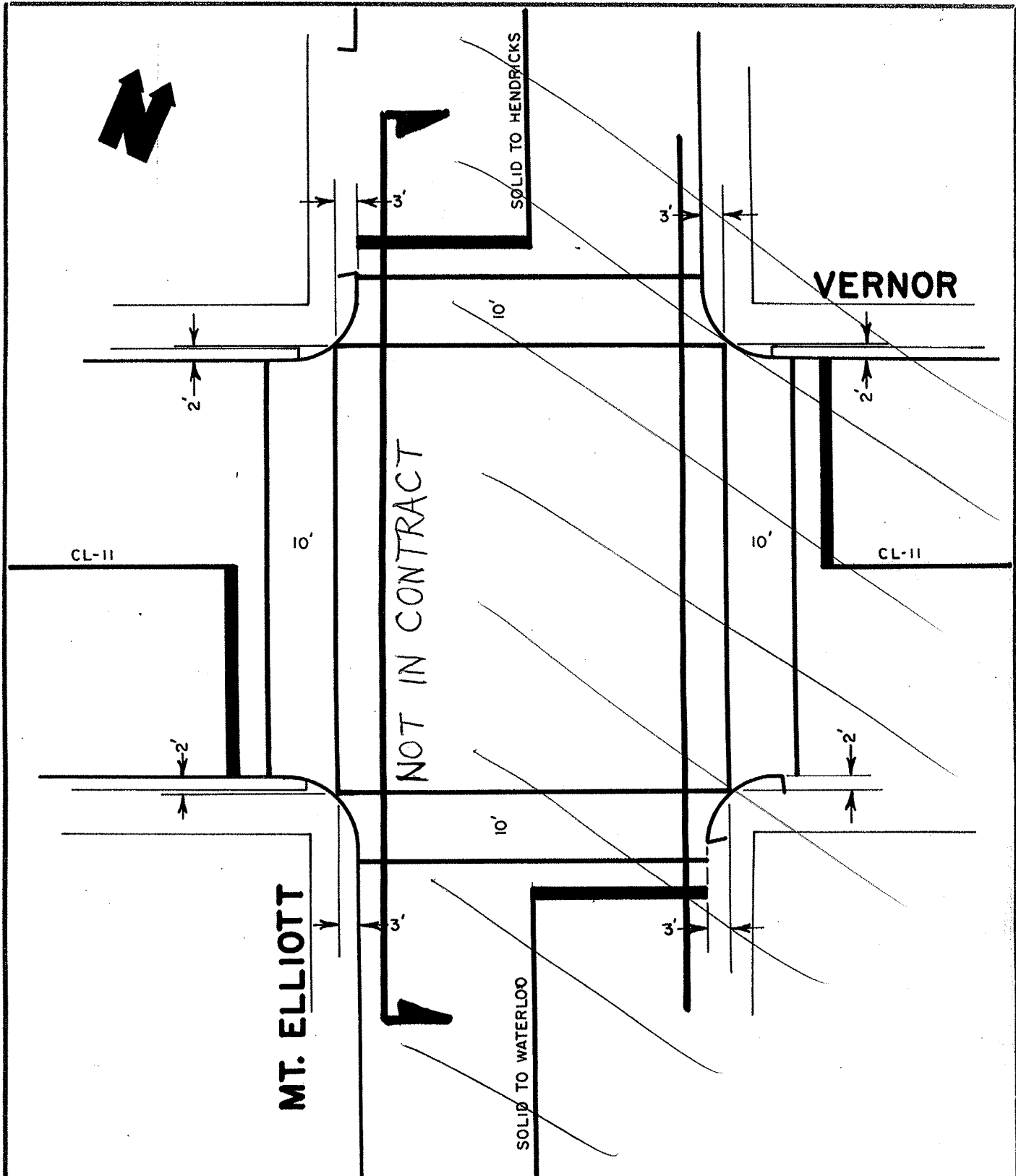
CITY OF DETROIT

DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

E. VERNOR HWY.
PRINCE HALL DR. -
MCDUGALL ST.

DRAWN : A.D. BOLTON
SCALE : 1" = 30'
DATE : 02 - 15 - 2017

NO E-067



CITY OF DETROIT
DEPARTMENT OF STREETS AND TRAFFIC

MT. ELLIOTT-VERNOR HWY.

DRAWN J R Z
APPROVED *[Signature]*

CHECKED *[Signature]*
SCALE 1" = 20'
DATE 11-18-70

NO. **E-169**

JC LODGE SD NB

FORT TO

50' N OF ABBOTT

JN: 205935
LOCATION MAP: #9

TRAFFIC DATA:

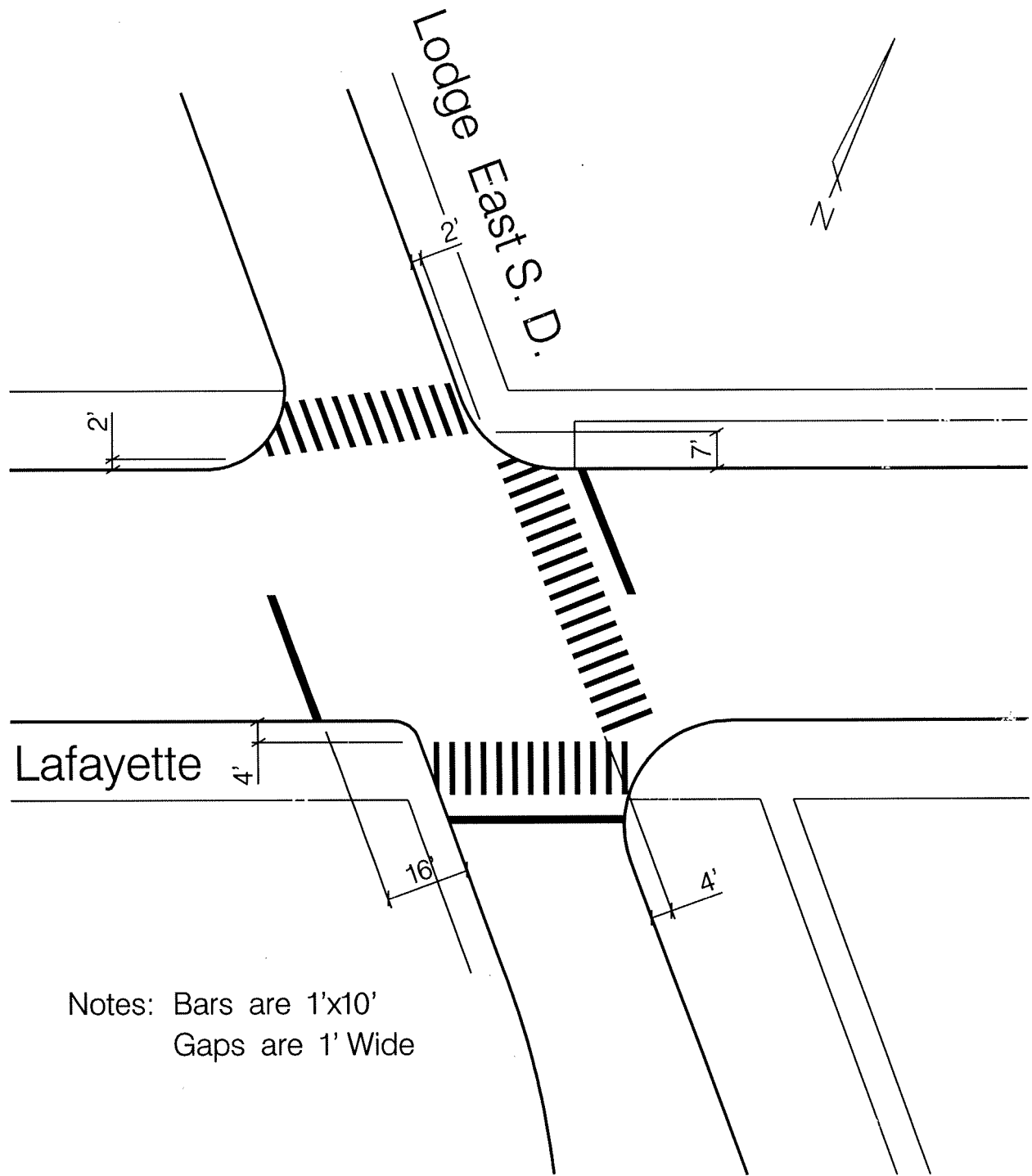
2018 PRESENT: 9,196
2032 FUTURE: 11,955
2018 PRESENTCOMMERCIAL: 5 %
2032 FUTURE COMMERCIAL: 5 %
POSTED SPEED: 25 MPH
DESIGN SPEED: 30 MPH

TYPE OF PAVEMENT	ASPHALT OVER CONCRETE
LENGTH	1087 FT
PAVEMENT WIDTH	(30...40) FT (VARIES)

SCHEDULE OF ITEMS

LOCATION: NB JC LODGE SD
LIMITS: Fort to 50' N of Abbott
LENGTH: 1,087 FT
WIDTH: 30-40 FT VARIES
WORK TYPE: Cold Milling, HMA Resurfacing, Concrete Curb, Sidewalk, Drive Approach, Drainage Improvement and Misc. Construction

ITEM CODE	DESCRIPTION OF WORK	ITEM UNIT	ESTIMATED QUANTITY
4037001	_ Dr Structure Lead, Cleaning, Modified	Ft	390.00
4037030	_ Dr Structure Cover, Modified	Lb	10725.00
4037050	_ Dr Structure Cleaning, Modified	Ea	39.00
4037050	_ Dr Structure Cover, Adj, Case 1, Modified	Ea	28.00
4037050	_ Dr Structure Cover, Adj, Case 2, Modified	Ea	8.00
4037050	_ Reconstructing Dr Structure, Case 1, Modified	Ea	3.00
5010005	HMA Surface, Rem	Syd	550.00
5010008	Pavt for Butt Joints, Rem	Syd	133.00
5010051	HMA, 4E3	Ton	419.00
5010057	HMA, 5E3	Ton	314.00
5017011	_ Cold Milling HMA Surface, Modified	Syd	3806.00
5017031	_ Conditioning Existing Pavement, Modified	Ton	51.00
5017031	_ HMA Approach, Modified	Ton	106.00
6027011	_ Pavt Repr, Nonreinf Conc, 10 inch, Modified	Syd	15.00
6037011	_ Pavt Repr, Rem, Modified	Syd	15.00
8110153	Pavt Mrkg, Spray Thermopl, 4 inch, White	Ft	360.00
8110214	Pavt Mrkg, Thermopl, 12 inch, Crosswalk	Ft	730.00
8110217	Pavt Mrkg, Thermopl, 18 inch, Stop Bar	Ft	163.00
8117001	_ Recessing Pavt Mrkg, 12 inch	Ft	730.00
8117001	_ Recessing Pavt Mrkg, 18 inch	Ft	163.00
8160090	Water, Sodding/Seeding	Unit	4.00
8237050	_ Water Shutoff, Adj, Modified	Ea	6.00



Notes: Bars are 1'x10'
Gaps are 1' Wide

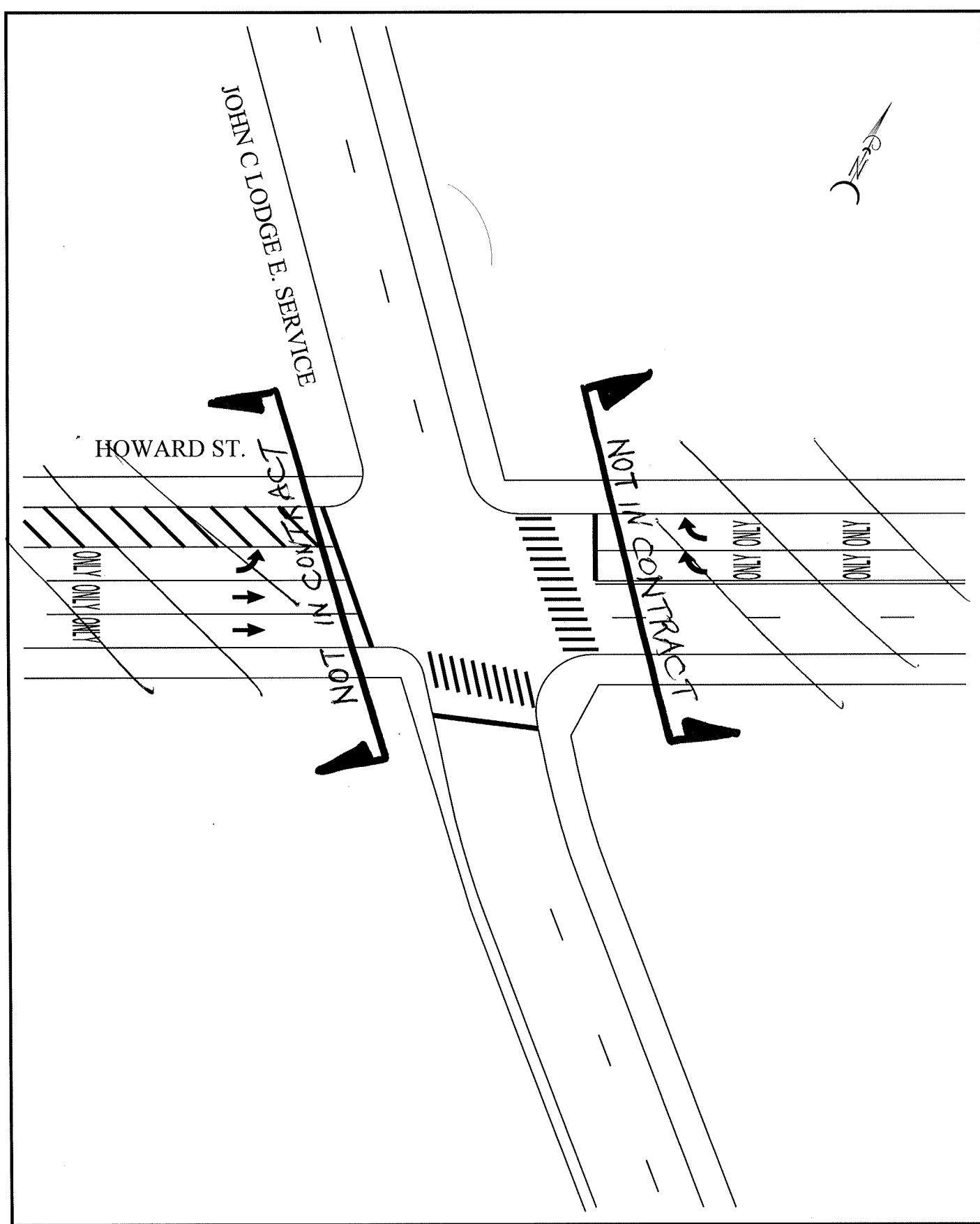
City of Detroit
Department of
Public Works
Traffic Engineering Div.

Lafayette-Lodge East S. D.

305

Drawn A.L. Brown
Scale 1"=30'
Date 1-1-07

NO. F-140



CITY OF DETROIT

DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

HOWARD ST.

JOHN C LODGE E SERVICE DR.

DRAWN : A.D. BOLTON
SCALE : 1" = 40'
DATE : 01-15-2019

NO.F-127

JOS CAMPAU

E DAVISON TO CARPENTER

JN: 205935
LOCATION MAP: #16

TRAFFIC DATA:

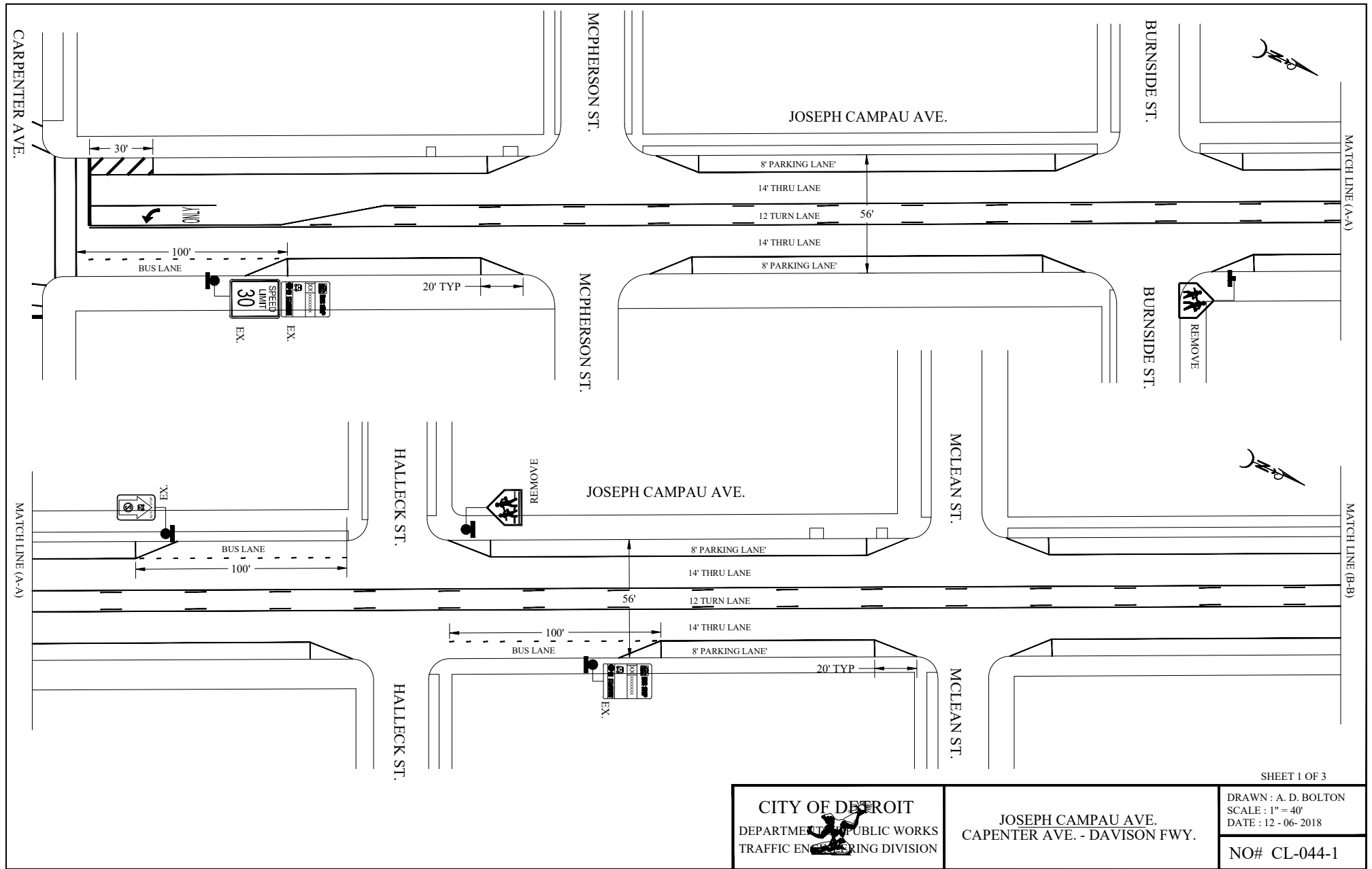
2018 PRESENT: 4,796
2032 FUTURE: 6,235
2018 PRESENTCOMMERCIAL: 5 %
2032 FUTURE COMMERCIAL: 5 %
POSTED SPEED: 30 MPH
DESIGN SPEED: 35 MPH

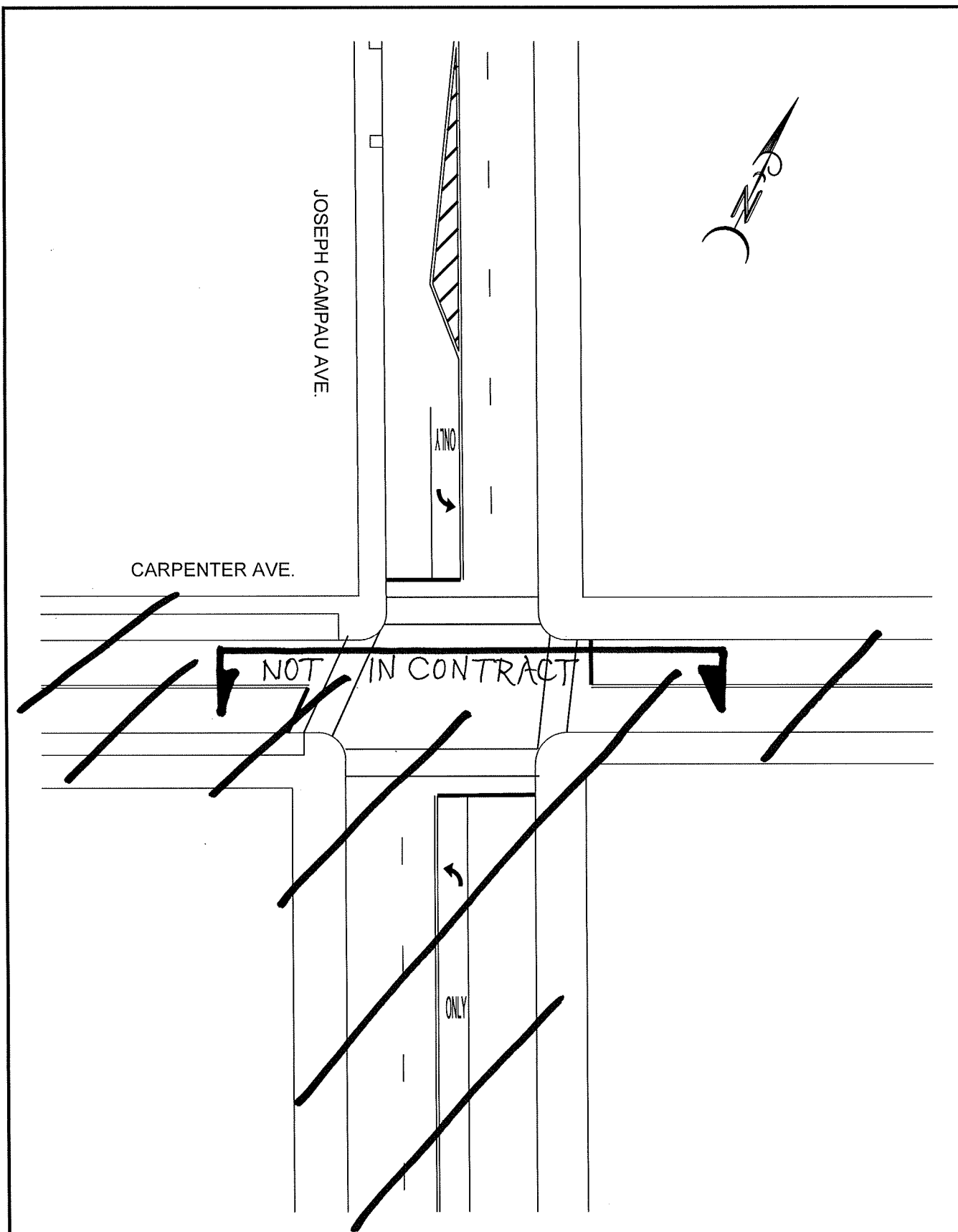
TYPE OF PAVEMENT	ASPHALT OVER CONCRETE
LENGTH	2580 FT
PAVEMENT WIDTH	56 FT

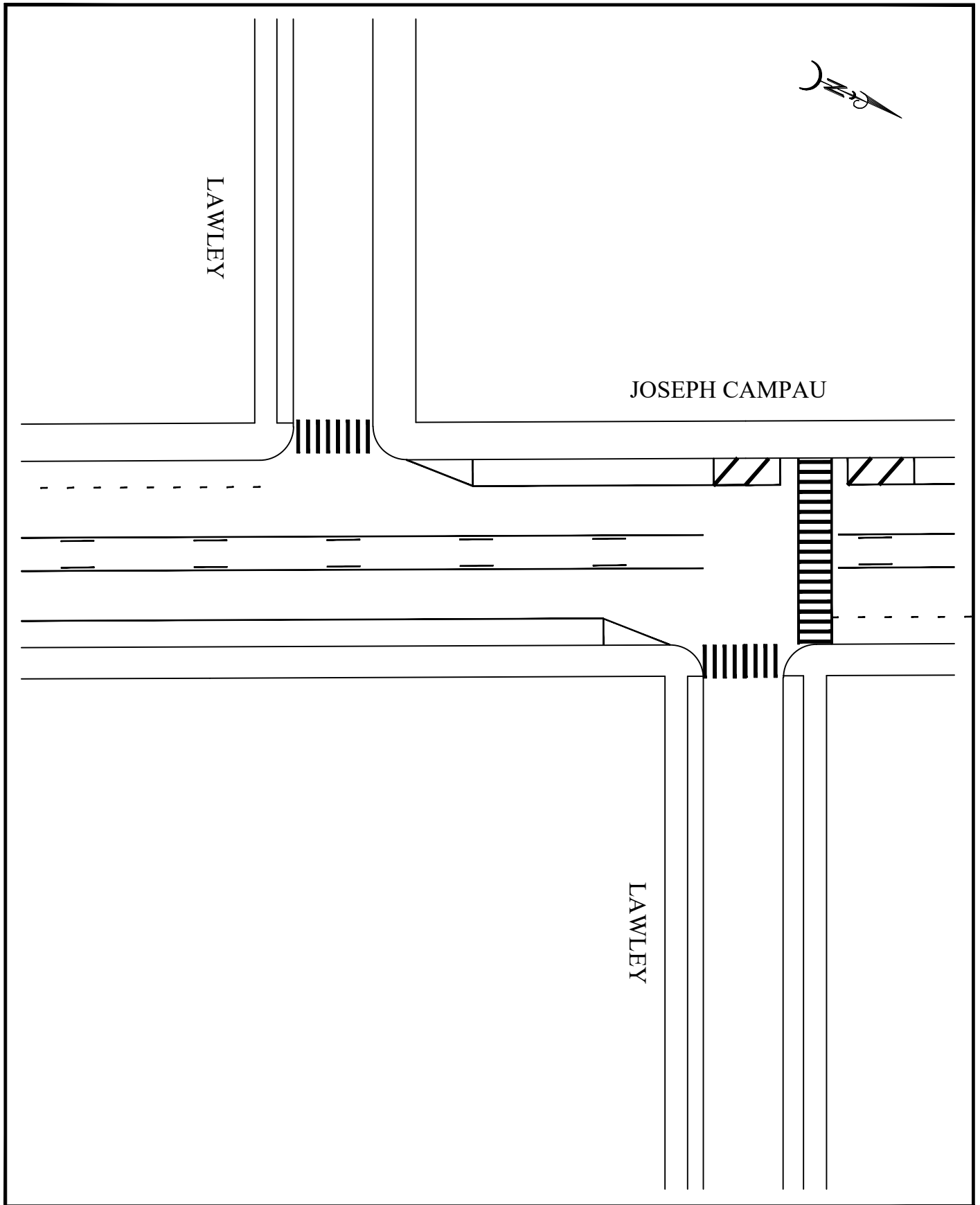
SCHEDULE OF ITEMS

LOCATION: JOS CAMPAU
LIMITS: E. Davison to Carpenter
LENGTH: 2,580 FT
WIDTH: 56 FT
WORK TYPE: Cold Milling, HMA Resurfacing, Concrete Curb, Sidewalk, Drive Approach, Drainage Improvement and Misc. Construction

ITEM CODE	DESCRIPTION OF WORK	ITEM UNIT	ESTIMATED QUANTITY
2040055	Sidewalk, Rem	Syd	2725.00
2047001	_ Curb, Rem, Modified	Ft	1927.00
2047001	_ Integral Curb and Sidewalk, 2 feet, Rem, Modified	Ft	2060.00
4037001	_ Dr Structure Lead, Cleaning, Modified	Ft	400.00
4037030	_ Dr Structure Cover, Modified	Lb	11000.00
4037050	_ Dr Structure Cleaning, Modified	Ea	40.00
4037050	_ Dr Structure Cover, Adj, Case 1, Modified	Ea	29.00
4037050	_ Dr Structure Cover, Adj, Case 2, Modified	Ea	9.00
4037050	_ Reconstructing Dr Structure, Case 1, Modified	Ea	2.00
5010005	HMA Surface, Rem	Syd	971.00
5010008	Pavt for Butt Joints, Rem	Syd	271.00
5010051	HMA, 4E3	Ton	1325.00
5010057	HMA, 5E3	Ton	1766.00
5017011	_ Cold Milling HMA Surface, Modified	Syd	16054.00
5017031	_ Conditioning Existing Pavement, Modified	Ton	216.00
5017031	_ HMA Approach, Modified	Ton	187.00
5017031	_ HMA Shoulder, Modified	Ton	7.00
6027011	_ Pavt Repr, Nonreinf Conc, 10 inch, Modified	Syd	65.00
6037001	_ Curb, Conc, Detail CD, Modified	Ft	805.00
6037011	_ Pavt Repr, Rem, Modified	Syd	65.00
8027001	_ Detectable Warning Surface Tile, Modified	Ft	410.00
8027010	_ Sidewalk Ramp, ADA, Modified	Sft	9960.00
8027010	_ Sidewalk, Conc, 4 inch, Modified	Sft	13184.00
8027010	_ Sidewalk, Conc, 6 inch, Modified	Sft	336.00
8030030	Curb Ramp Opening, Conc	Ft	1332.00
8037001	_ Integral Curb and Sidewalk, 2 feet, Modified	Ft	1850.00
8037010	_ Sidewalk, Conc with Tree Roots, 4 inch, Modified	Sft	1048.00
8110024	Pavt Mrkg, Ovly Cold Plastic, 6 inch, Crosswalk	Ft	112.00
8110044	Pavt Mrkg, Ovly Cold Plastic, 18 inch, Stop Bar	Ft	26.00
8110063	Pavt Mrkg, Ovly Cold Plastic, Lt Turn Arrow Sym	Ea	1.00
8110068	Pavt Mrkg, Ovly Cold Plastic, Only	Ea	1.00
8110153	Pavt Mrkg, Spray Thermopl, 4 inch, White	Ft	3133.00
8110154	Pavt Mrkg, Spray Thermopl, 4 inch, Yellow	Ft	6356.00
8110197	Pavt Mrkg, Thermopl, 6 inch, Crosswalk	Ft	110.00
8110214	Pavt Mrkg, Thermopl, 12 inch, Crosswalk	Ft	380.00
8110217	Pavt Mrkg, Thermopl, 18 inch, Stop Bar	Ft	26.00
8117001	_ Pavt Mrkg, Modified Urethane, 4 inch, Cross Hatching, White	Ft	1131.00
8117001	_ Pavt Mrkg, Modified Urethane, 4 inch, Cross Hatching, Yellow	Ft	10.00
8117001	_ Pavt Mrkg, Modified Urethane, 12 inch, Cross Hatching, Yellow	Ft	35.00
8117001	_ Recessing Pavt Mrkg, 12 inch	Ft	380.00
8117001	_ Recessing Pavt Mrkg, 18 inch	Ft	52.00
8117001	_ Recessing Pavt Mrkg, 6 inch	Ft	222.00
8160055	Sodding	Syd	220.00
8160090	Water, Sodding/Seeding	Unit	4.00
8167021	_ Topsoil Surface, Furn, LM, Modified	Cyd	18.00
8237050	_ Water Shutoff, Adj, Modified	Ea	3.00







CITY OF DETROIT

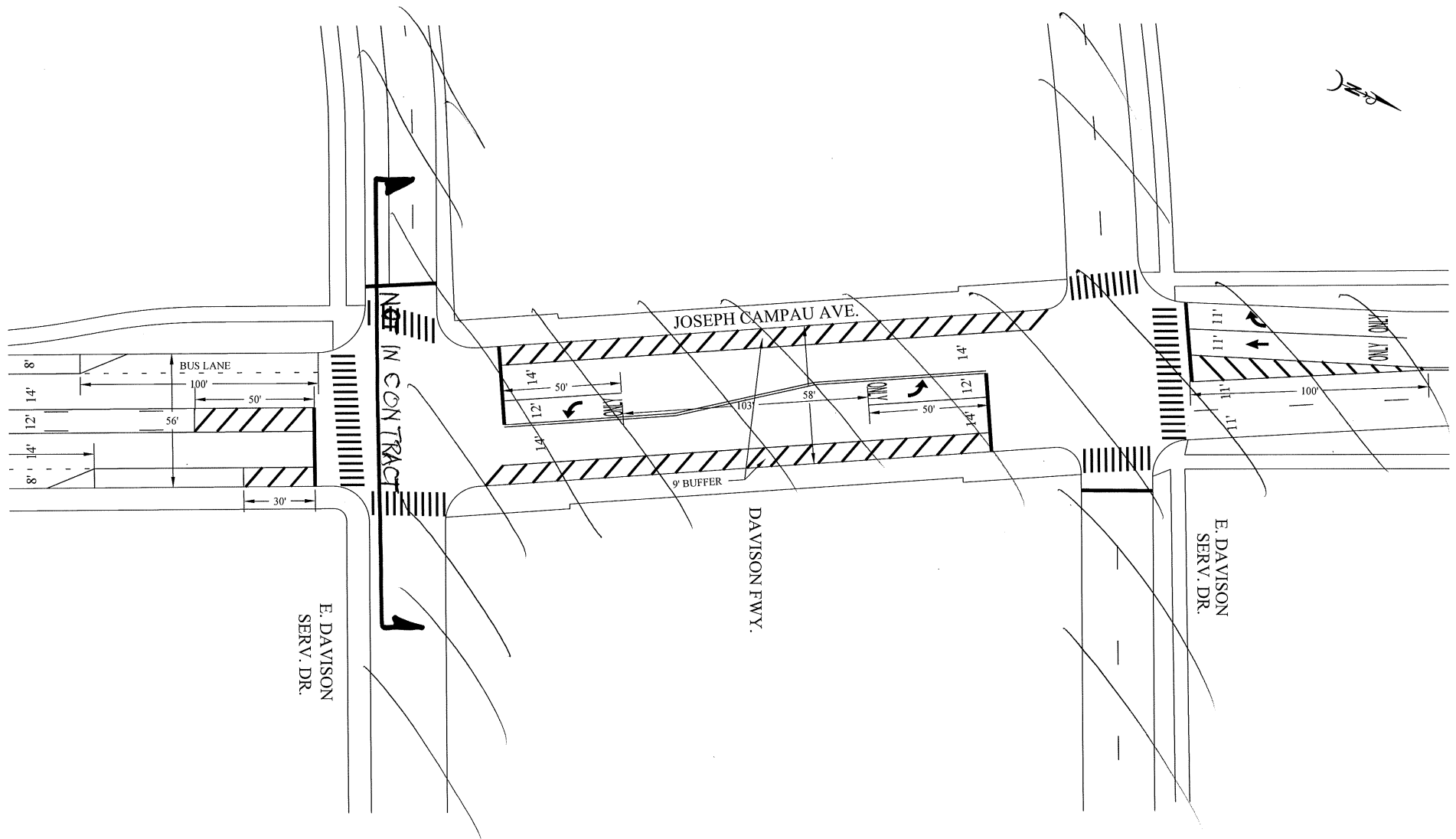
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

JOSEPH CAMPAU

LAWLEY

DRAWN : A.D. BOLTON
SCALE : 1" = 40'
DATE : 01-31-2019

NO. III-157



CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 TRAFFIC ENGINEERING DIVISION

E. DAVISON
 JOSEPH CAMPAU AVE.

DRAWN : A. D. BOLTON
 SCALE : 1" = 40'
 DATE : 01 - 15 - 2019

NO: D-052

LINWOOD FENKELL TO W DAVISON

**JN: 205935
LOCATION MAP: #6**

TRAFFIC DATA:

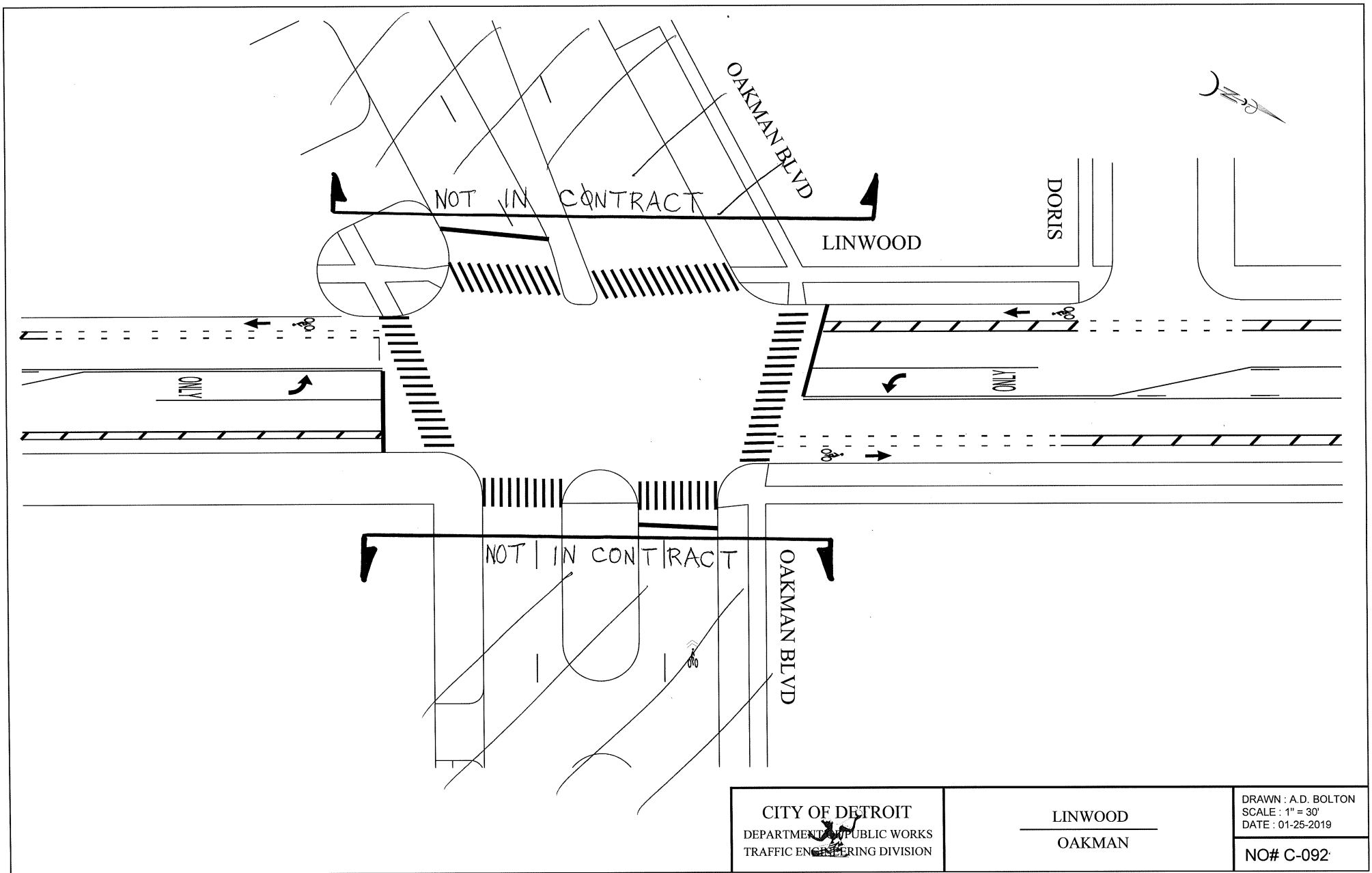
**2018 PRESENT: 8,829
2032 FUTURE: 11,478
2018 PRESENTCOMMERCIAL: 5 %
2032 FUTURE COMMERCIAL: 5 %
POSTED SPEED: 30 MPH
DESIGN SPEED: 35 MPH**

TYPE OF PAVEMENT	ASPHALT OVER CONCRETE
LENGTH	3842 FT
PAVEMENT WIDTH	(73...57...48...60...66) FT (VARIES)

SCHEDULE OF ITEMS

LOCATION: LINWOOD
LIMITS: Fenkell to W. Davison
LENGTH: 3,842 FT
WIDTH: 73-57-48-60-66 FT VARIES
WORK TYPE: Cold Milling, HMA Resurfacing, Concrete Curb, Sidewalk, Drive Approach, Drainage Improvement and Misc. Construction

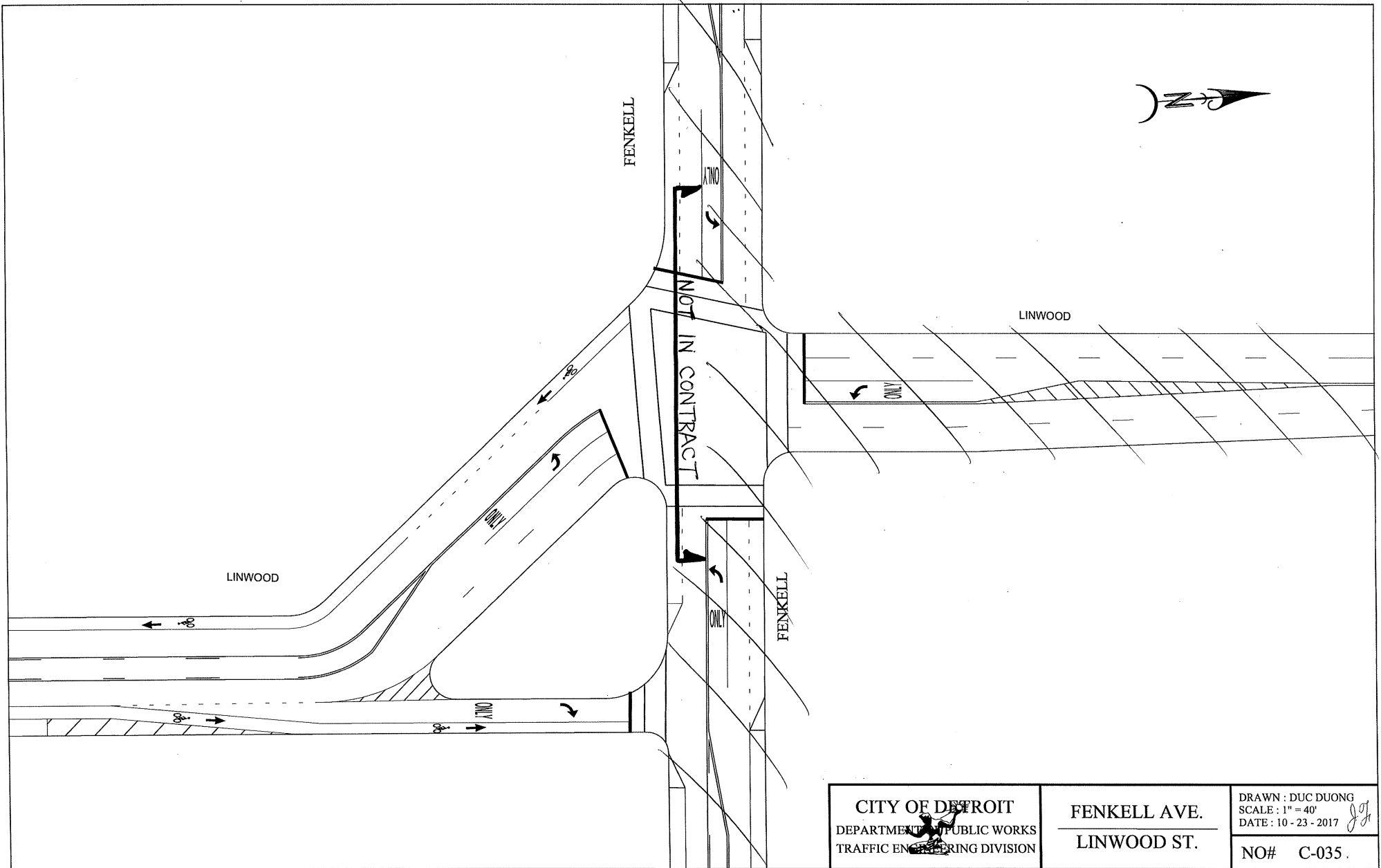
ITEM CODE	DESCRIPTION OF WORK	ITEM UNIT	ESTIMATED QUANTITY
2040050	Pavt, Rem	Syd	56.00
2040055	Sidewalk, Rem	Syd	1938.00
2047001	_ Curb, Rem, Modified	Ft	2054.00
4037001	_ Dr Structure Lead, Cleaning, Modified	Ft	650.00
4037030	_ Dr Structure Cover, Modified	Lb	17875.00
4037050	_ Dr Structure Cleaning, Modified	Ea	65.00
4037050	_ Dr Structure Cover, Adj, Case 1, Modified	Ea	61.00
4037050	_ Reconstructing Dr Structure, Case 1, Modified	Ea	4.00
5010005	HMA Surface, Rem	Syd	850.00
5010008	Pavt for Butt Joints, Rem	Syd	293.00
5010051	HMA, 4E3	Ton	2572.00
5010057	HMA, 5E3	Ton	1929.00
5017011	_ Cold Milling HMA Surface, Modified	Syd	23380.00
5017031	_ Conditioning Existing Pavement, Modified	Ton	315.00
5017031	_ HMA Approach, Modified	Ton	164.00
5017031	_ HMA Shoulder, Modified	Ton	19.00
6027011	_ Pavt Repr, Nonreinf Conc, 10 inch, Modified	Syd	70.00
6037001	_ Curb, Conc, Detail CD, Modified	Ft	1574.00
6037011	_ Pavt Repr, Rem, Modified	Syd	70.00
8027001	_ Detectable Warning Surface Tile, Modified	Ft	290.00
8027010	_ Sidewalk Ramp, ADA, Modified	Sft	7920.00
8027010	_ Sidewalk, Conc, 4 inch, Modified	Sft	9522.00
8030030	Curb Ramp Opening, Conc	Ft	480.00
8110063	Pavt Mrkg, Ovly Cold Plastic, Lt Turn Arrow Sym	Ea	4.00
8110068	Pavt Mrkg, Ovly Cold Plastic, Only	Ea	5.00
8110071	Pavt Mrkg, Ovly Cold Plastic, Rt Turn Arrow Sym	Ea	1.00
8110153	Pavt Mrkg, Spray Thermopl, 4 inch, White	Ft	10731.00
8110154	Pavt Mrkg, Spray Thermopl, 4 inch, Yellow	Ft	8975.00
8110197	Pavt Mrkg, Thermopl, 6 inch, Crosswalk	Ft	222.00
8110214	Pavt Mrkg, Thermopl, 12 inch, Crosswalk	Ft	1030.00
8110217	Pavt Mrkg, Thermopl, 18 inch, Stop Bar	Ft	262.00
8117001	_ Pavt Mrkg, Modified Urethane, 12 inch, Cross Hatching, White	Ft	1770.00
8117001	_ Recessing Pavt Mrkg, 12 inch	Ft	1030.00
8117001	_ Recessing Pavt Mrkg, 18 inch	Ft	262.00
8117001	_ Recessing Pavt Mrkg, 6 inch	Ft	222.00
8117050	_ Pavt Mrkg, Waterborne, Bike Sym and Arrow, White, Modified	Ea	20.00
8160055	Sodding	Syd	508.00
8160090	Water, Sodding/Seeding	Unit	4.00
8167021	_ Topsoil Surface, Furn, LM, Modified	Cyd	42.00
8210001	Monument Box	Ea	1.00
8237050	_ Water Shutoff, Adj, Modified	Ea	6.00



CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 TRAFFIC ENGINEERING DIVISION

LINWOOD
 OAKMAN

DRAWN : A.D. BOLTON
 SCALE : 1" = 30'
 DATE : 01-25-2019
 NO# C-092



MCCLELLAN E JEFFERSON TO GRATIOT

JN: 205935
LOCATION MAP: #15

TRAFFIC DATA:

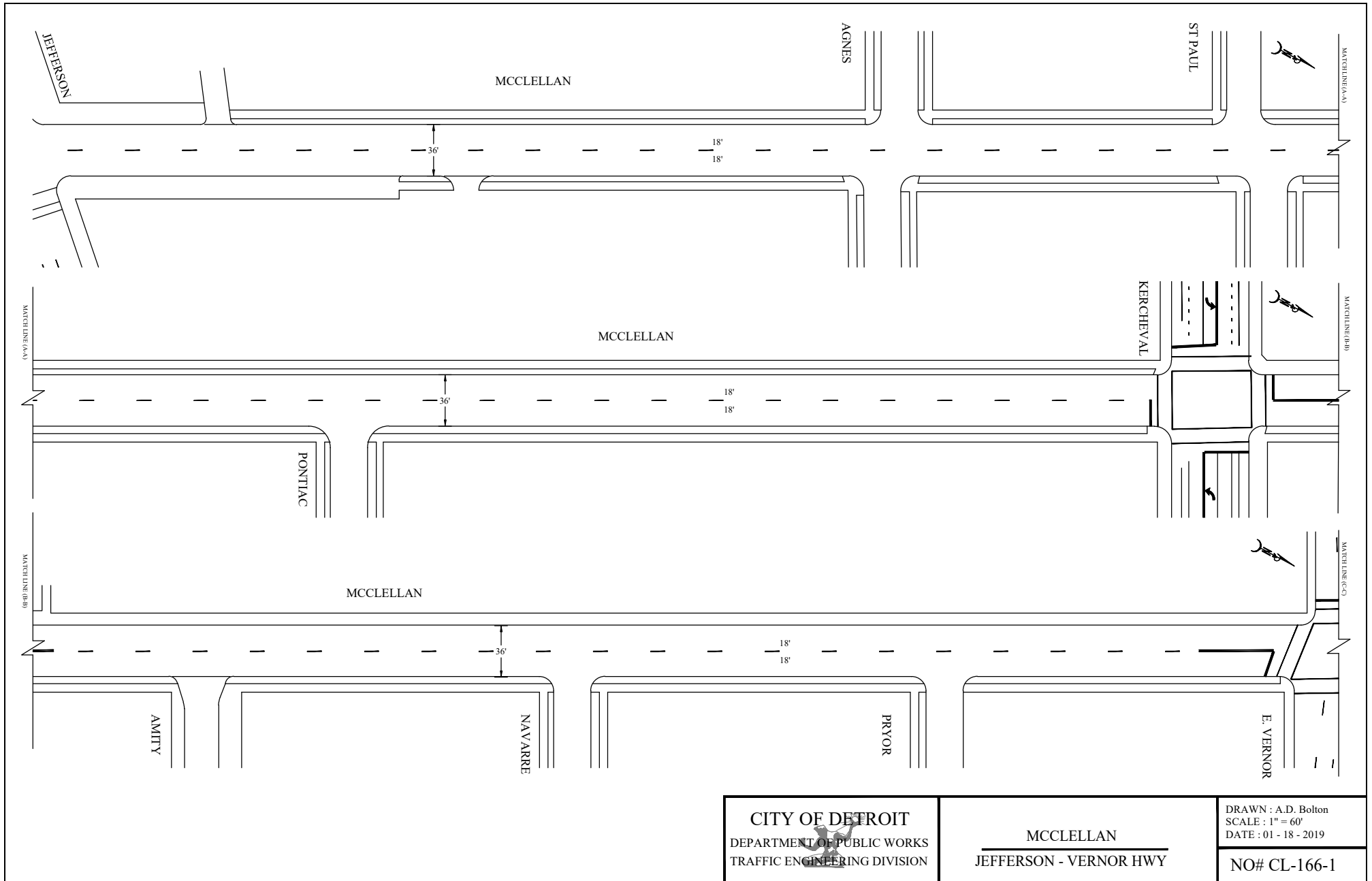
2018 PRESENT: 3,872
2032 FUTURE: 5,034
2018 PRESENTCOMMERCIAL: 5 %
2032 FUTURE COMMERCIAL: 5 %
POSTED SPEED: 25 MPH
DESIGN SPEED: 30 MPH

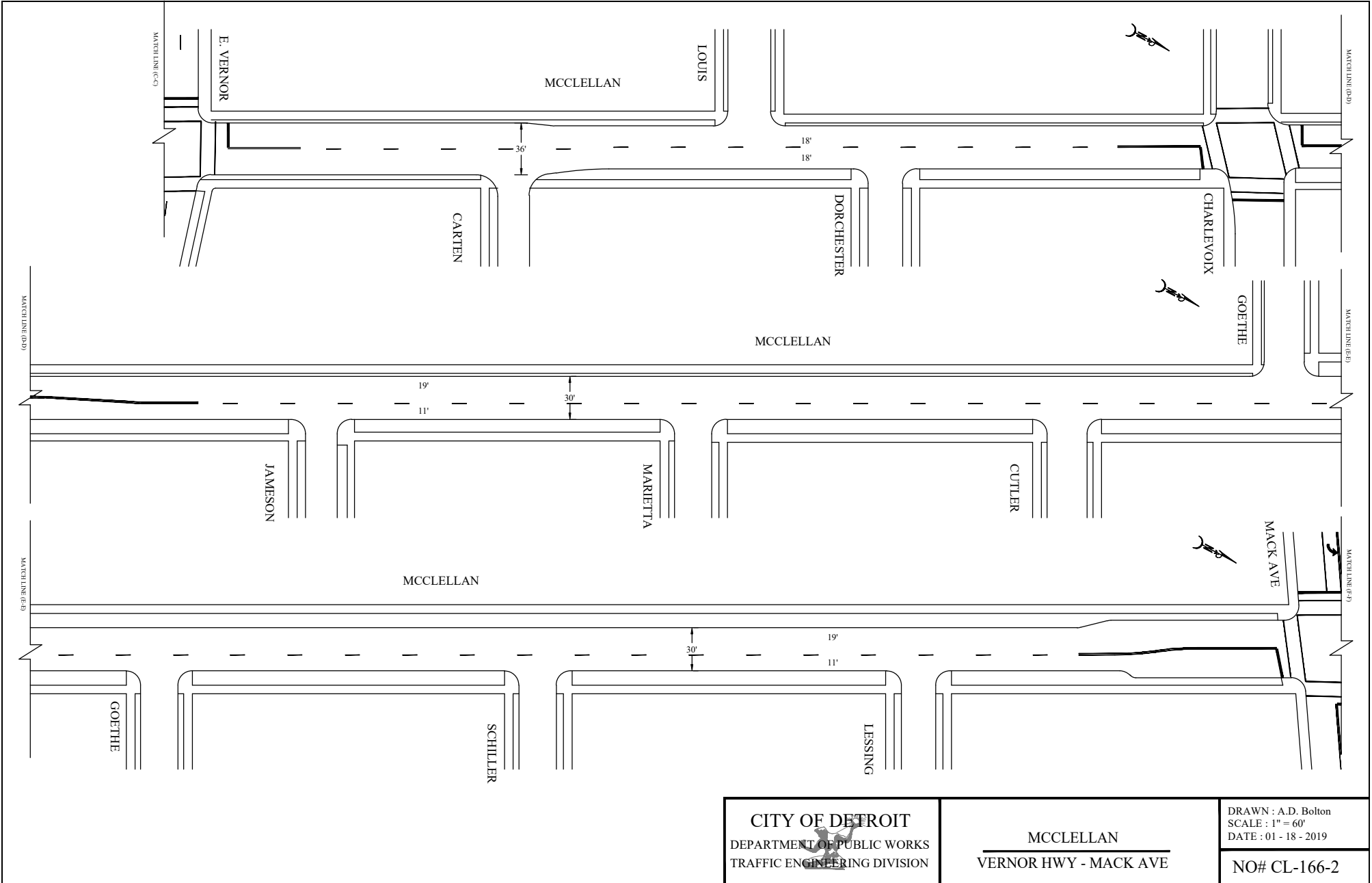
TYPE OF PAVEMENT	ASPHALT OVER CONCRETE
LENGTH	12883 FT
PAVEMENT WIDTH	(36...30...43) FT (VARIES)

SCHEDULE OF ITEMS

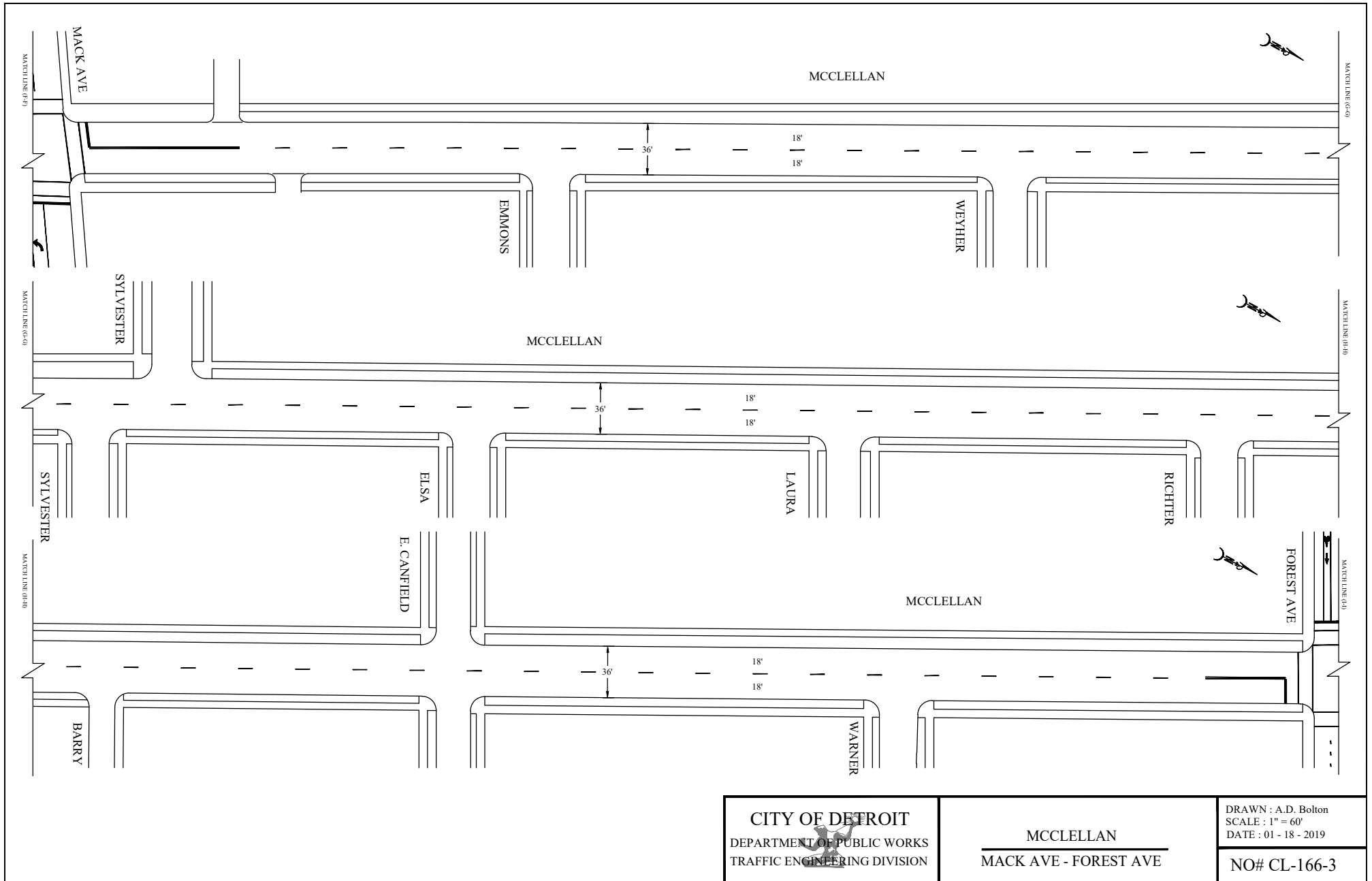
LOCATION: MCCLELLAN
LIMITS: E. Jefferson to Gratiot
LENGTH: 12,883 FT
WIDTH: 36-30-43 FT VARIES
WORK TYPE: Cold Milling, HMA Resurfacing, Concrete Curb, Sidewalk, Drive Approach, Drainage Improvement and Misc. Construction

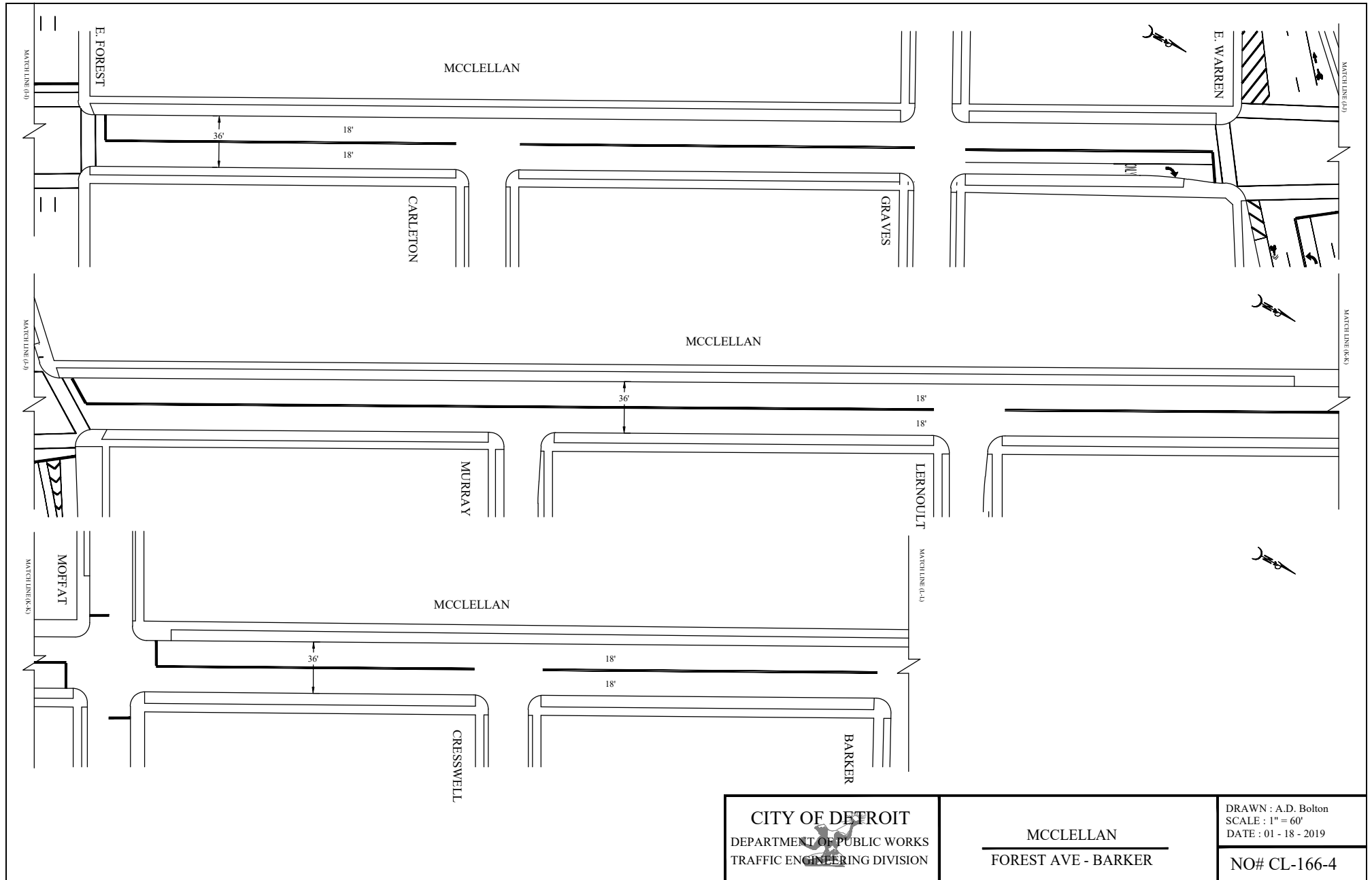
ITEM CODE	DESCRIPTION OF WORK	ITEM UNIT	ESTIMATED QUANTITY
2040055	Sidewalk, Rem	Syd	7926.00
2047001	_ Curb, Rem, Modified	Ft	6939.00
2047001	_ Integral Curb and Sidewalk, 2 feet, Rem, Modified	Ft	108.00
4037001	_ Dr Structure Lead, Cleaning, Modified	Ft	1970.00
4037030	_ Dr Structure Cover, Modified	Lb	54175.00
4037050	_ Dr Structure Cleaning, Modified	Ea	197.00
4037050	_ Dr Structure Cover, Adj, Case 1, Modifie d	Ea	174.00
4037050	_ Dr Structure Cover, Adj, Case 2, Modifie d	Ea	8.00
4037050	_ Reconstructing Dr Structure, Case 1, Mod ified	Ea	15.00
5010005	HMA Surface, Rem	Syd	3628.00
5010008	Pavt for Butt Joints, Rem	Syd	698.00
5010051	HMA, 4E3	Ton	5505.00
5010057	HMA, 5E3	Ton	4129.00
5017011	_ Cold Milling HMA Surface, Modified	Syd	50050.00
5017031	_ Conditioning Existing Pavement, Modified	Ton	674.00
5017031	_ HMA Approach, Modified	Ton	741.00
5017031	_ HMA Shoulder, Modified	Ton	77.00
6027011	_ Pavt Repr, Nonreinf Conc, 10 inch, Modified	Syd	140.00
6037001	_ Curb, Conc, Detail CD, Modified	Ft	4611.00
6037011	_ Pavt Repr, Rem, Modified	Syd	140.00
8027001	_ Detectable Warning Surface Tile, Modifie d	Ft	1115.00
8027010	_ Sidewalk Ramp, ADA, Modified	Sft	35334.00
8027010	_ Sidewalk, Conc, 4 inch, Modified	Sft	34984.00
8030030	Curb Ramp Opening, Conc	Ft	2328.00
8037001	_ Integral Curb and Sidewalk, 2 feet, Modified	Ft	108.00
8037010	_ Sidewalk, Conc with Tree Roots, 4 inch, Modified	Sft	1020.00
8110068	Pavt Mrkg, Ovly Cold Plastic, Only	Ea	1.00
8110071	Pavt Mrkg, Ovly Cold Plastic, Rt Turn Arrow Sym	Ea	1.00
8110153	Pavt Mrkg, Spray Thermopl, 4 inch, White	Ft	60.00
8110154	Pavt Mrkg, Spray Thermopl, 4 inch, Yellow	Ft	10240.00
8110197	Pavt Mrkg, Thermopl, 6 inch, Crosswalk	Ft	2363.00
8110217	Pavt Mrkg, Thermopl, 18 inch, Stop Bar	Ft	575.00
8117001	_ Recessing Pavt Mrkg, 18 inch	Ft	575.00
8117001	_ Recessing Pavt Mrkg, 6 inch	Ft	2363.00
8160055	Sodding	Syd	662.00
8160090	Water, Sodding/Seeding	Unit	4.00
8167021	_ Topsoil Surface, Furn, LM, Modified	Cyd	83.00
8210001	Monument Box	Ea	6.00
8237050	_ Water Shutoff, Adj, Modified	Ea	45.00



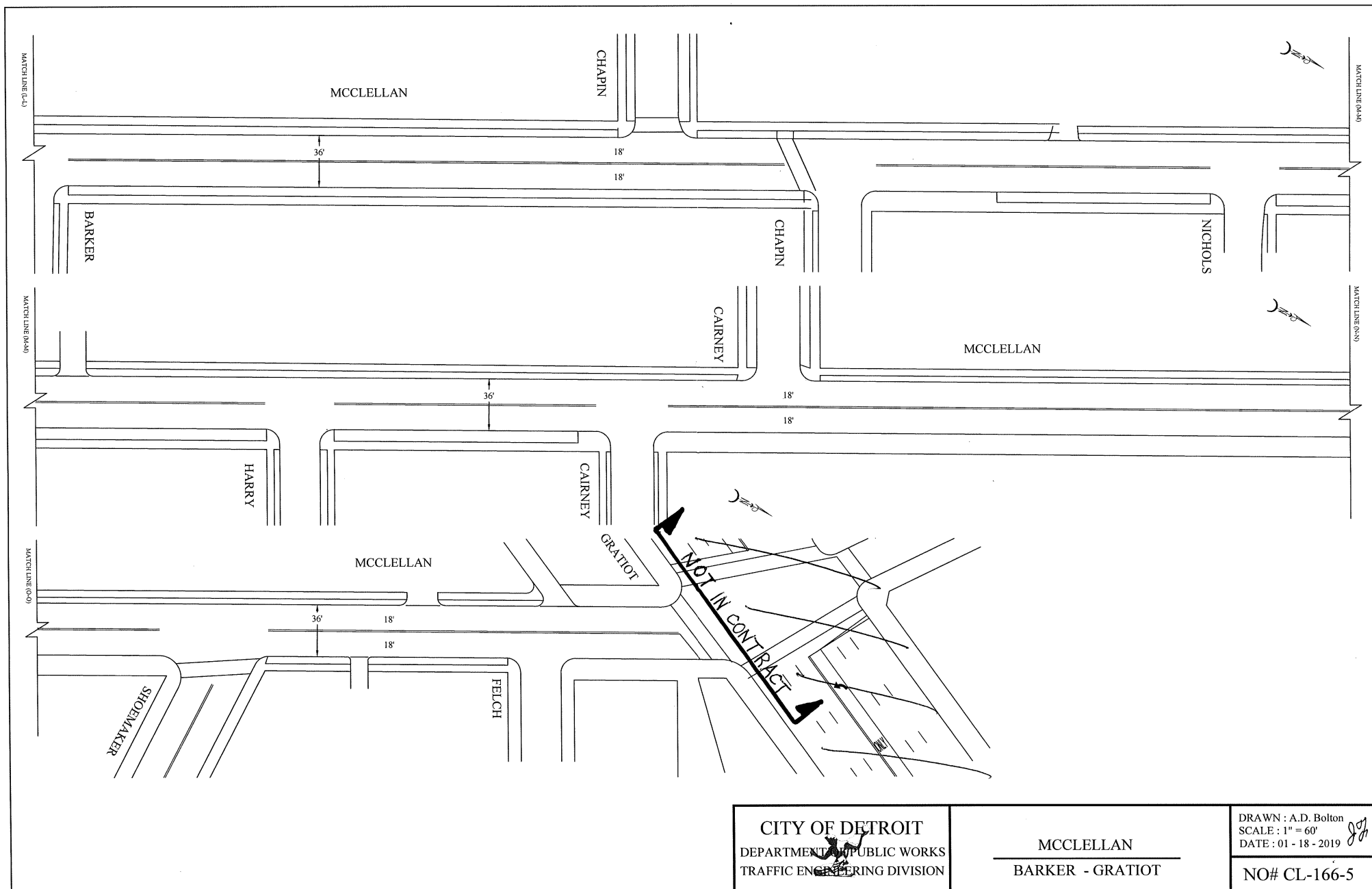


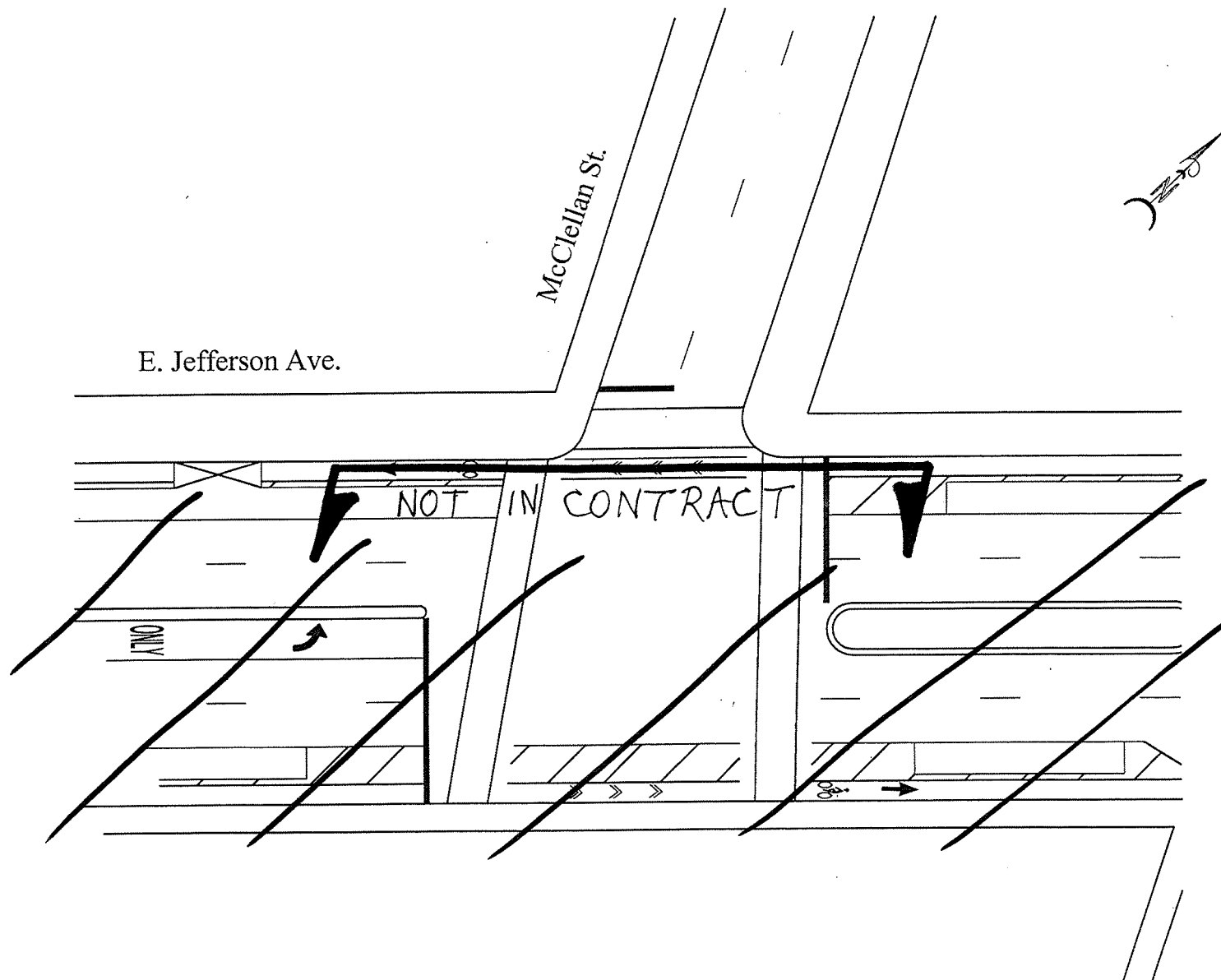
CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS TRAFFIC ENGINEERING DIVISION	MCCLELLAN VERNOR HWY - MACK AVE	DRAWN : A.D. Bolton SCALE : 1" = 60' DATE : 01 - 18 - 2019
		NO# CL-166-2





CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS TRAFFIC ENGINEERING DIVISION	MCCLELLAN FOREST AVE - BARKER	DRAWN : A.D. Bolton SCALE : 1" = 60' DATE : 01 - 18 - 2019
		NO# CL-166-4





CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 TRAFFIC ENGINEERING DIVISION

E. JEFFERSON AVE.
 MCCLELLAN ST.

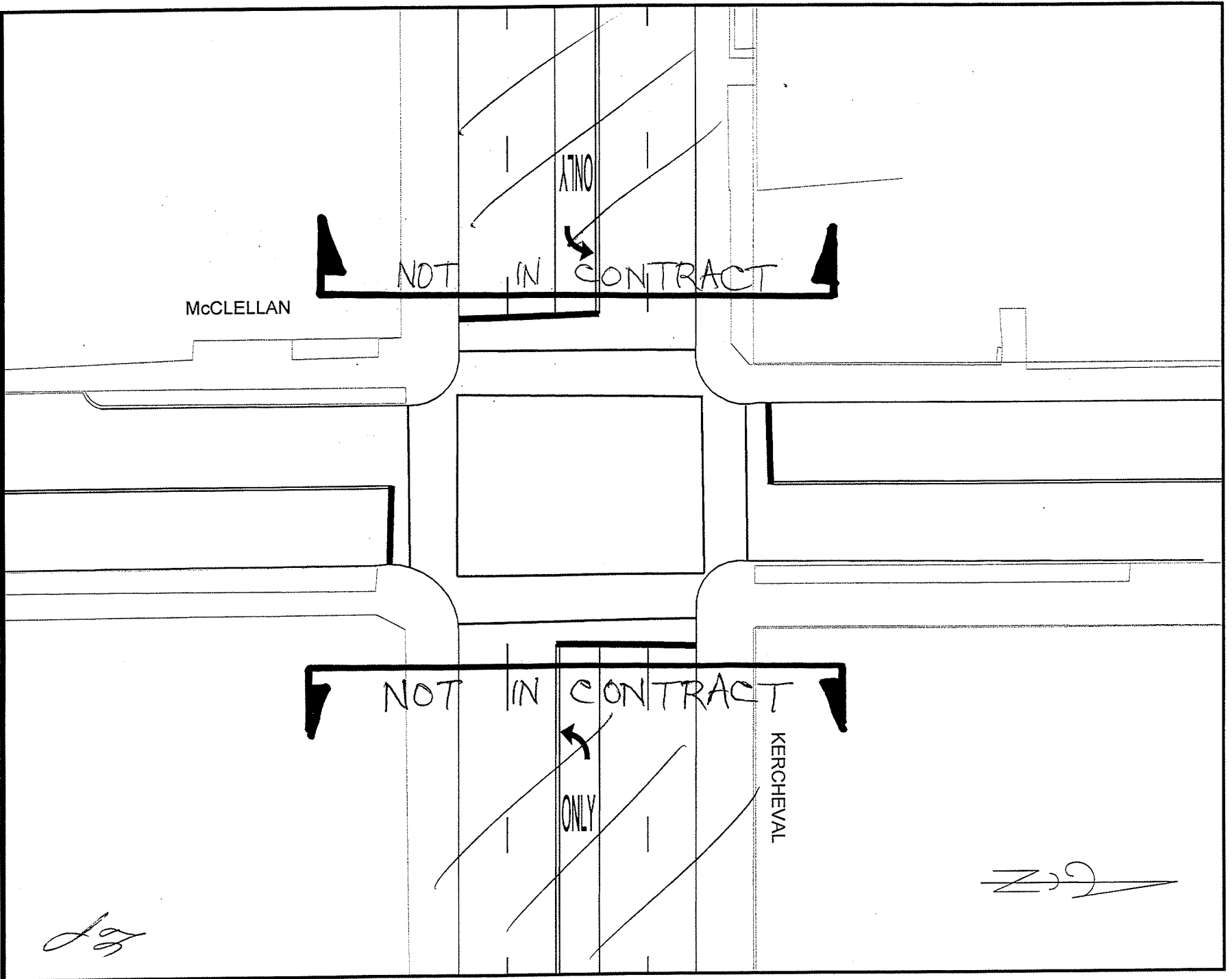
DRAWN : A.D. BOLTON
 SCALE : 1" = 40'
 DATE : 06-20-2016

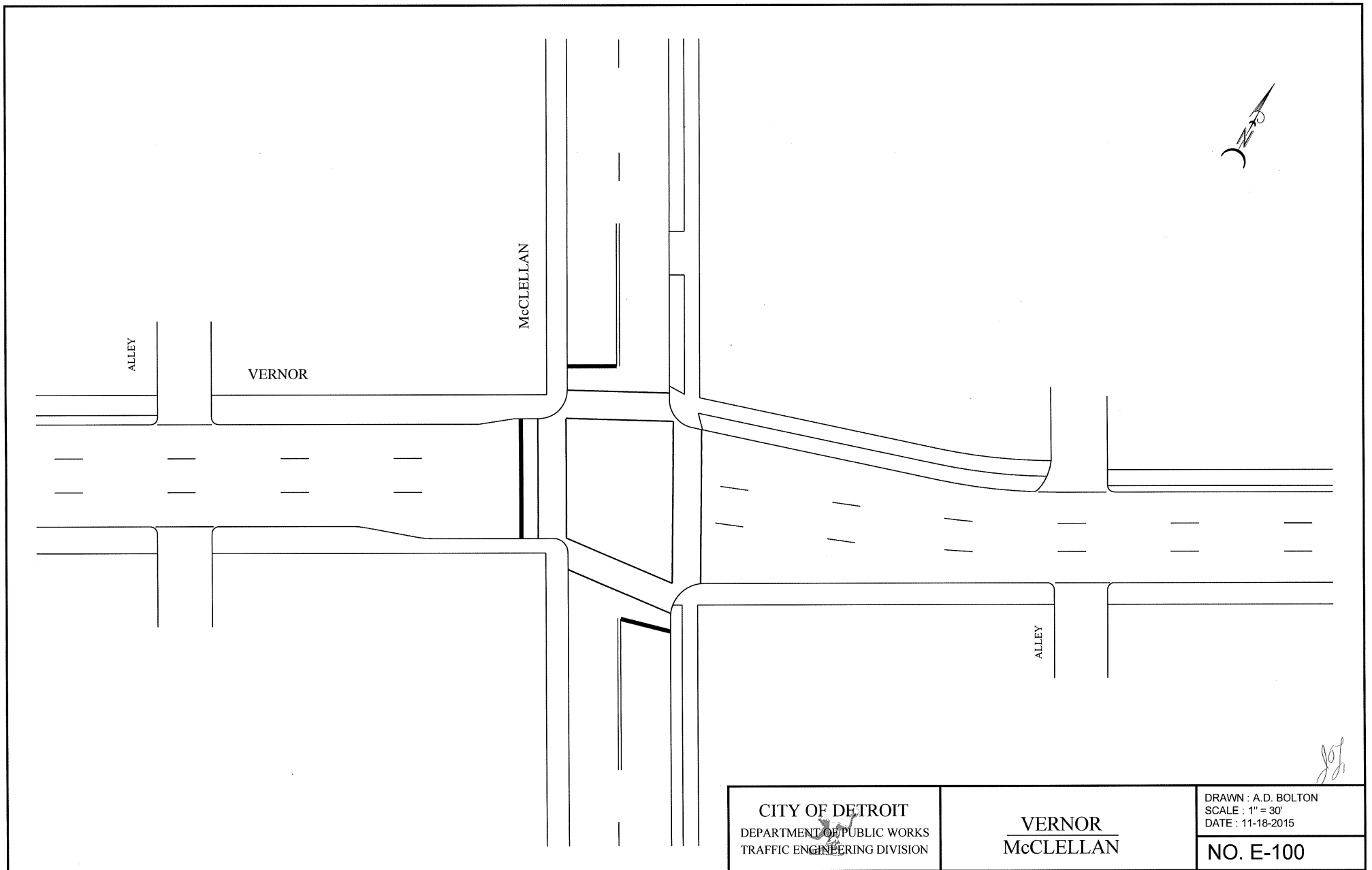
NO. JE-9300

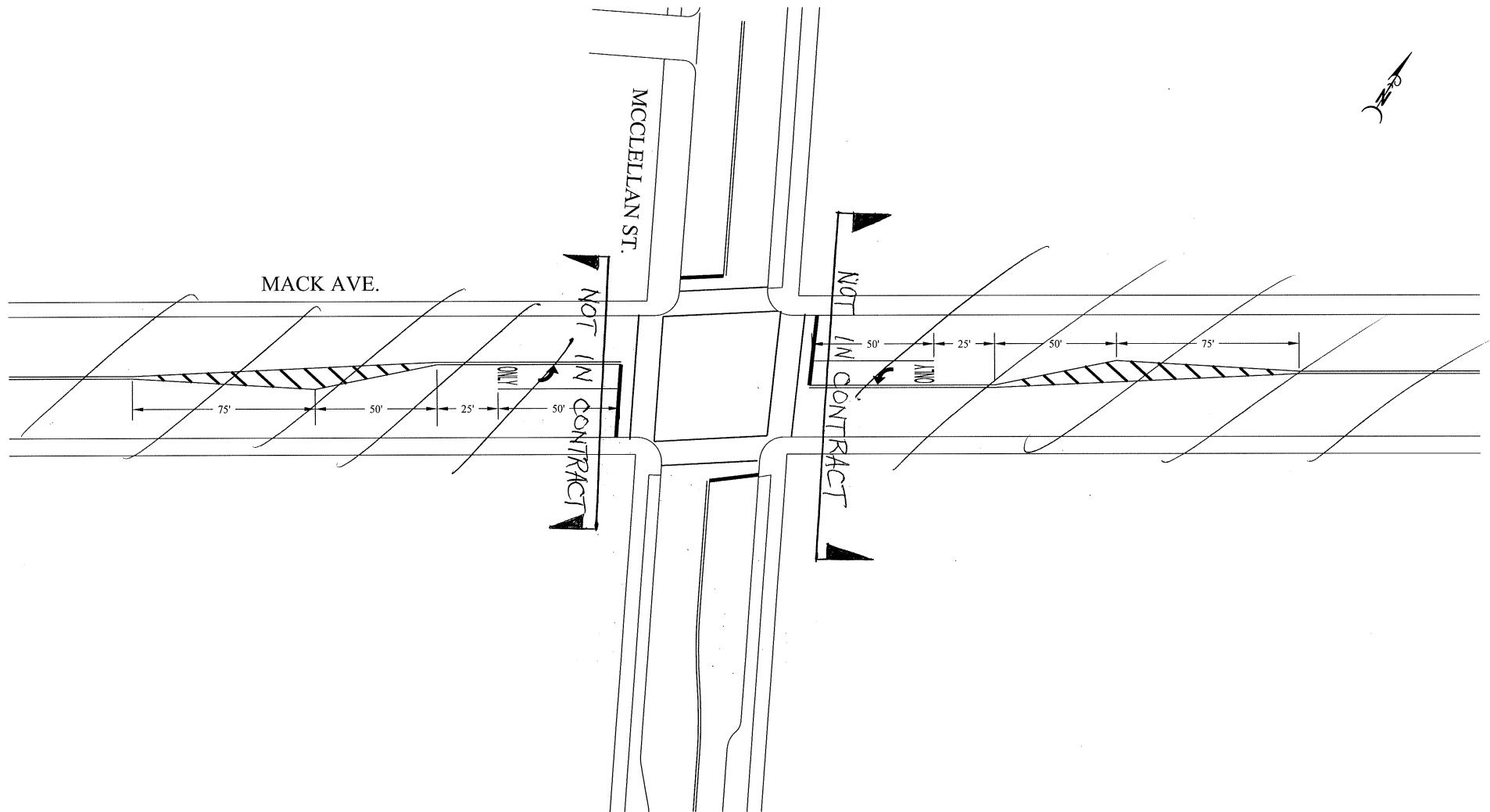
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

KERCHEVAL - McCLELLAN

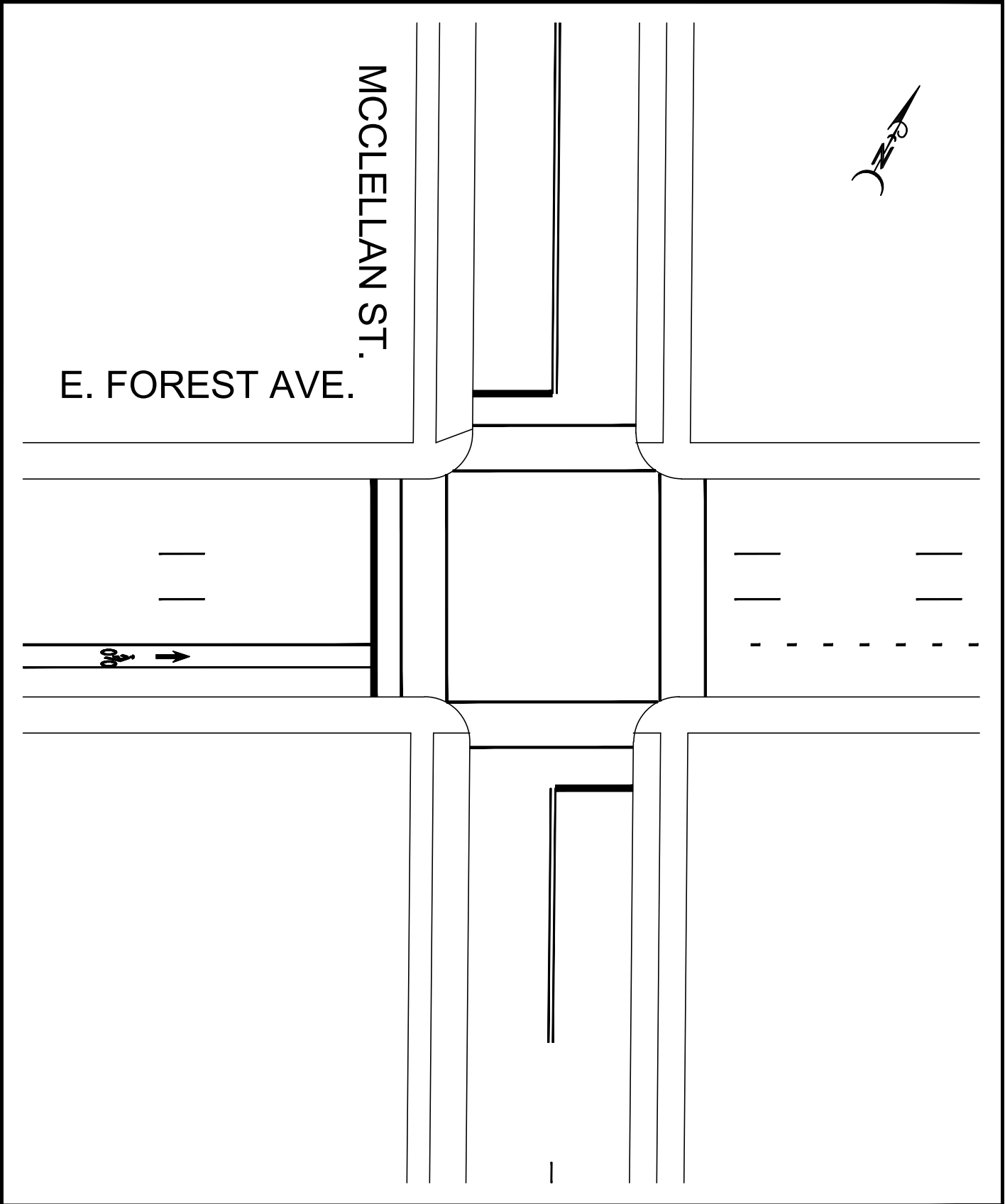
DRAWN : W.L. WILLIAMS
SCALE : 1" = 30'
DATE : 04 - 26 - 2013
NO. E - 149







CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS TRAFFIC ENGINEERING DIVISION	MACK AVE. MCCLELLAN ST.	DRAWN : A. D. BOLTON SCALE : 1" = 40' DATE : 01 - 17- 2019
		NO: E-179



CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

E. FOREST AVE.
MCCLELLAN ST.

DRAWN : A.D. Bolton
SCALE : 1" = 30'
DATE : 01 - 17 - 2019
NO. E-040



NO# E-041

MCCLELLAN AVE.

SHOEMAKER ST.

BLACKWELL
ACADEMY



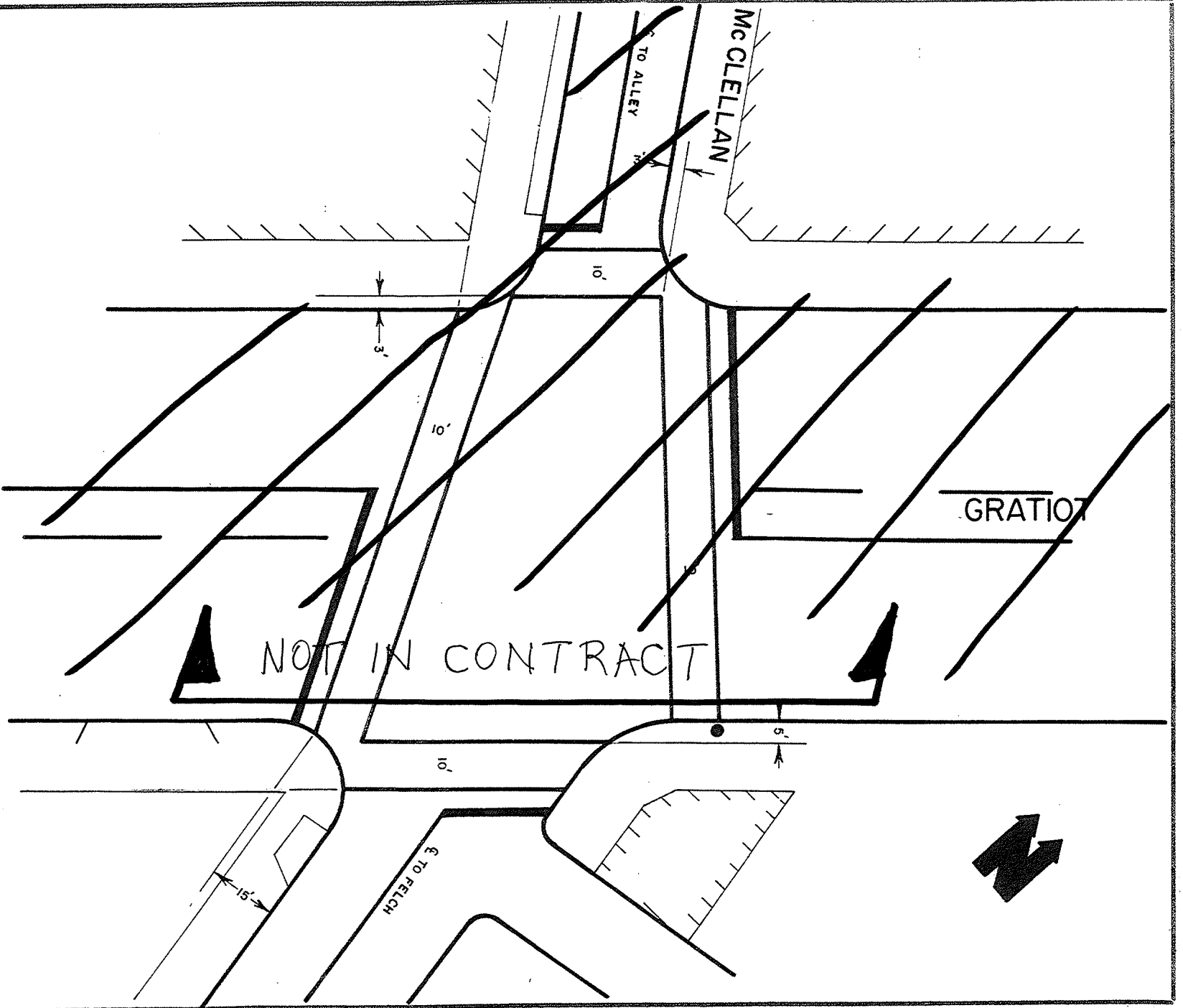
CITY OF DETROIT

DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

MCCLELLAN AVE.
SHOEMAKER ST.

DRAWN : A.D. Bolton
SCALE : 1" = 30'
DATE : 02 - 27 - 2018

NO. II-157



CITY OF DETROIT
DEPARTMENT OF STREETS AND TRAFFIC

GRATIOT - McCLELLAN

DRAWN J R Z	CHECKED S S	NO. GT - 9300
APPROVED [Signature]	SCALE 1" = 30'	
DATE 1-29-69		

PURITAN

SOUTHFIELD FWY TO GREENFIELD

JN: 205935
LOCATION MAP: #5

TRAFFIC DATA:

2018 PRESENT: 9,156
2032 FUTURE: 11,903
2018 PRESENTCOMMERCIAL: 5 %
2032 FUTURE COMMERCIAL: 5 %
POSTED SPEED: 30 MPH
DESIGN SPEED: 35 MPH

TYPE OF PAVEMENT	ASPHALT OVER CONCRETE
LENGTH	5080 FT
PAVEMENT WIDTH	(37...42) FT (VARIES)

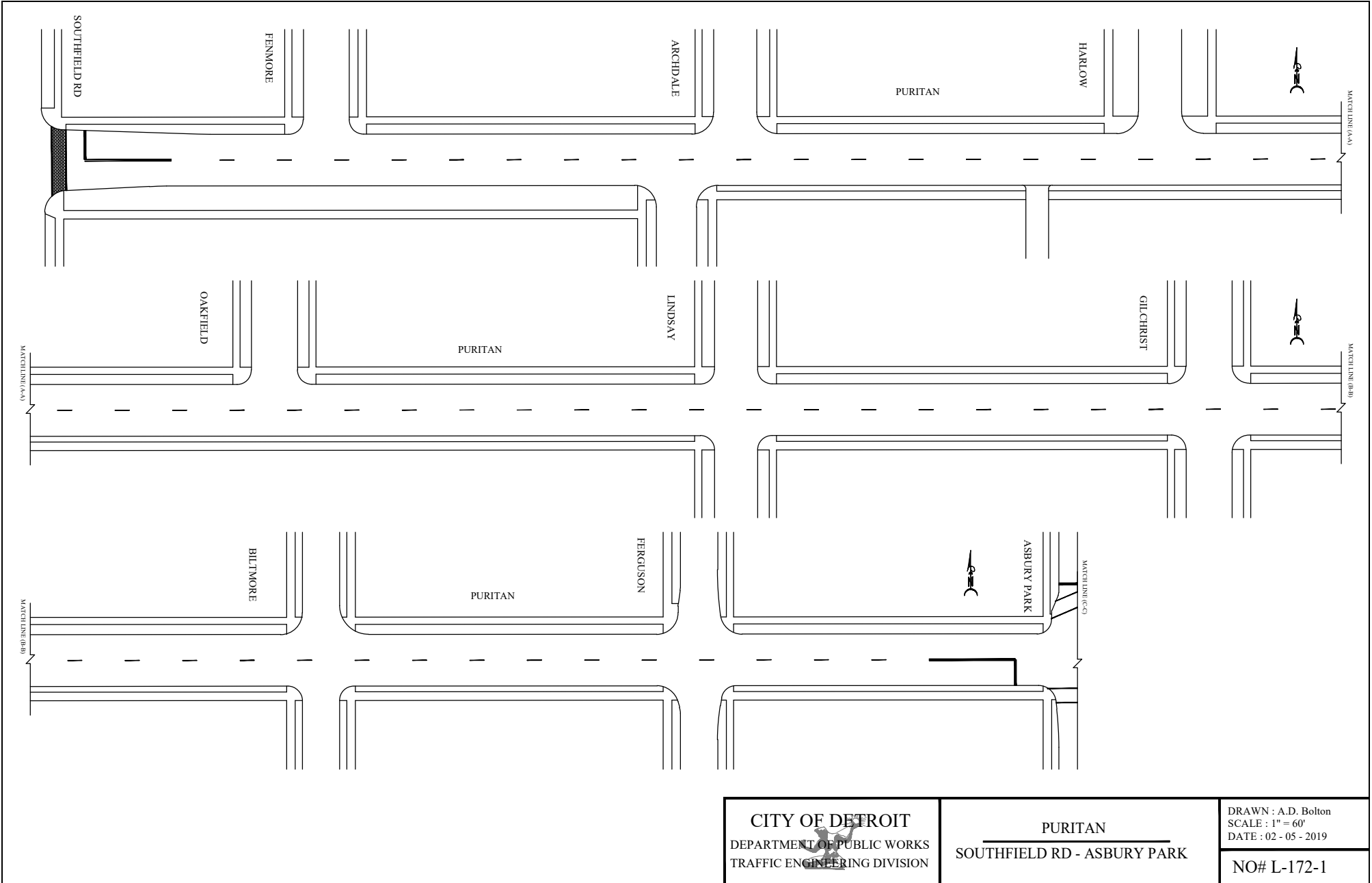
SCHEDULE OF ITEMS

LOCATION: PURITAN
LIMITS: Southfield Fwy to Greenfield
LENGTH: 5,080 FT
WIDTH: 35-55-38-36 FT VARIES
WORK TYPE: Cold Milling, HMA Resurfacing, Concrete Curb, Sidewalk, Drive Approach, Drainage Improvement and Misc. Construction

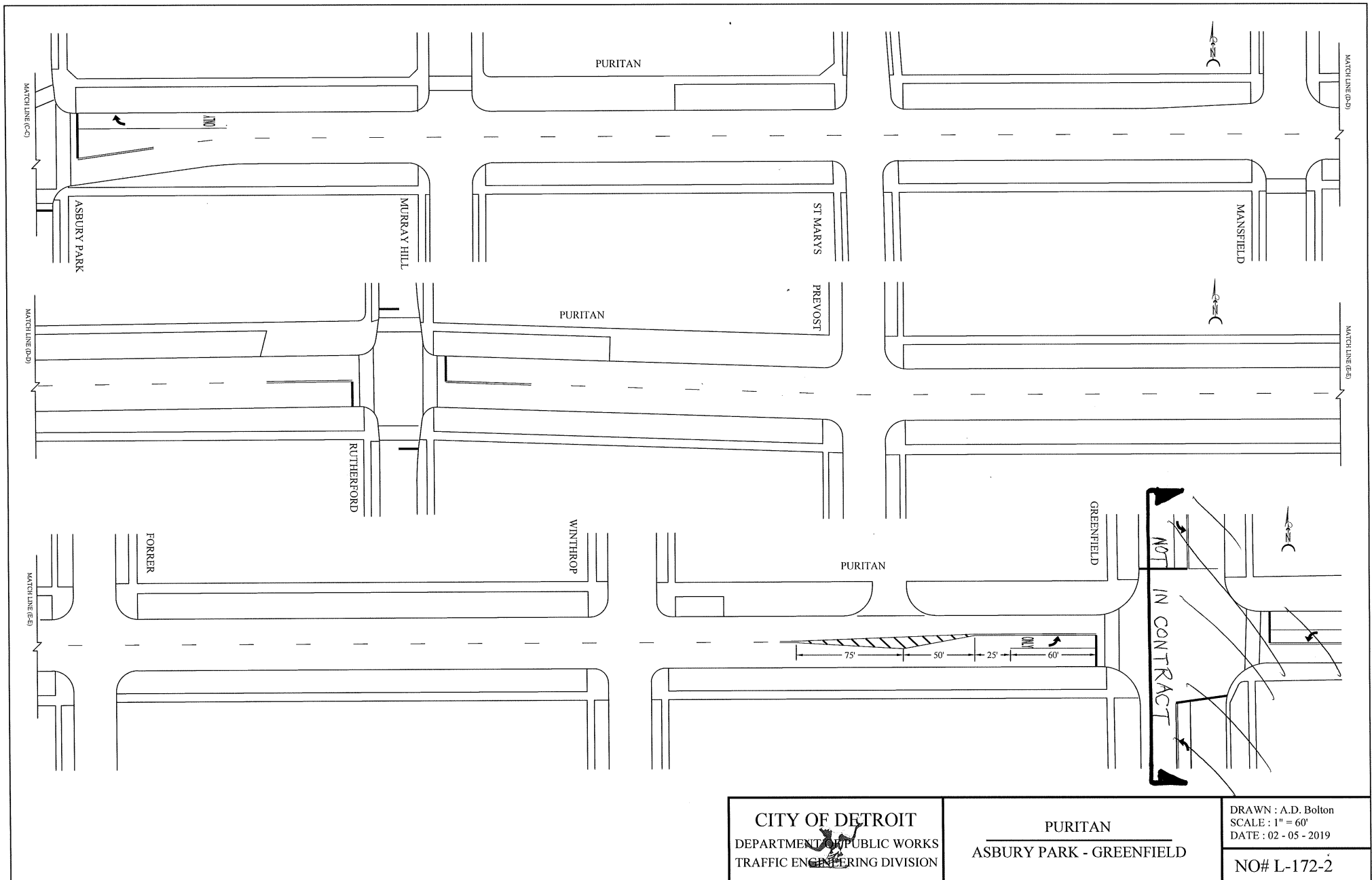
ITEM CODE	DESCRIPTION OF WORK	ITEM UNIT	ESTIMATED QUANTITY
2040055	Sidewalk, Rem	Syd	2291.00
2047001	_ Curb, Rem, Modified	Ft	2429.00
4037001	_ Dr Structure Lead, Cleaning, Modified	Ft	580.00
4037030	_ Dr Structure Cover, Modified	Lb	15950.00
4037050	_ Dr Structure Cleaning, Modified	Ea	58.00
4037050	_ Dr Structure Cover, Adj, Case 1, Modified	Ea	55.00
4037050	_ Reconstructing Dr Structure, Case 1, Modified	Ea	3.00
5010005	HMA Surface, Rem	Syd	1903.00
5010008	Pavt for Butt Joints, Rem	Syd	359.00
5010051	HMA, 4E3	Ton	2306.00
5010057	HMA, 5E3	Ton	1729.00
5017011	_ Cold Milling HMA Surface, Modified	Syd	20959.00
5017031	_ Conditioning Existing Pavement, Modified	Ton	282.00
5017031	_ HMA Approach, Modified	Ton	366.00
5017031	_ HMA Shoulder, Modified	Ton	26.00
6027011	_ Pavt Repr, Nonreinf Conc, 10 inch, Modified	Syd	60.00
6037001	_ Curb, Conc, Detail CD, Modified	Ft	1661.00
6037011	_ Pavt Repr, Rem, Modified	Syd	60.00
8027001	_ Detectable Warning Surface Tile, Modified	Ft	540.00
8027010	_ Sidewalk Ramp, ADA, Modified	Sft	8640.00
8027010	_ Sidewalk, Conc, 4 inch, Modified	Sft	11188.00
8027010	_ Sidewalk, Conc, 6 inch, Modified	Sft	288.00
8030030	Curb Ramp Opening, Conc	Ft	768.00
8037010	_ Sidewalk, Conc with Tree Roots, 4 inch, Modified	Sft	504.00
8110024	Pavt Mrkg, Ovly Cold Plastic, 6 inch, Crosswalk	Ft	236.00
8110044	Pavt Mrkg, Ovly Cold Plastic, 18 inch, Stop Bar	Ft	72.00
8110063	Pavt Mrkg, Ovly Cold Plastic, Lt Turn Arrow Sym	Ea	1.00
8110068	Pavt Mrkg, Ovly Cold Plastic, Only	Ea	2.00
8110071	Pavt Mrkg, Ovly Cold Plastic, Rt Turn Arrow Sym	Ea	1.00
8110153	Pavt Mrkg, Spray Thermopl, 4 inch, White	Ft	180.00
8110154	Pavt Mrkg, Spray Thermopl, 4 inch, Yellow	Ft	1970.00
8110197	Pavt Mrkg, Thermopl, 6 inch, Crosswalk	Ft	168.00
8110217	Pavt Mrkg, Thermopl, 18 inch, Stop Bar	Ft	41.00
8117001	_ Recessing Pavt Mrkg, 18 inch	Ft	113.00
8117001	_ Recessing Pavt Mrkg, 6 inch	Ft	404.00
8160055	Sodding	Syd	148.00
8160090	Water, Sodding/Seeding	Unit	4.00
8167021	_ Topsoil Surface, Furn, LM, Modified	Cyd	12.00
8237050	_ Water Shutoff, Adj, Modified	Ea	3.00

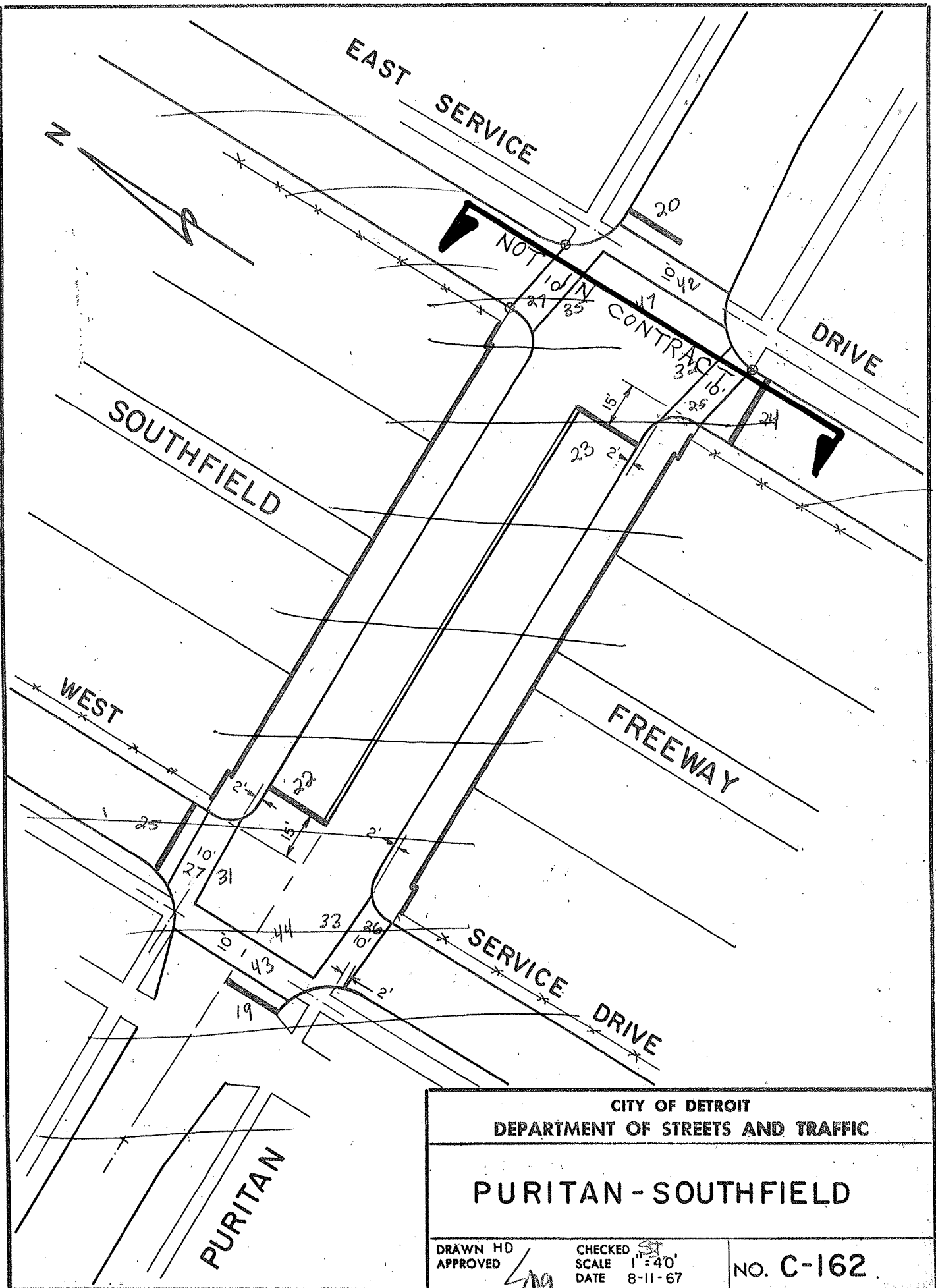
Estimated quantities for use at the discretion of the Engineer

Maintenance of traffic quantities not included



CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS TRAFFIC ENGINEERING DIVISION	PURITAN SOUTHFIELD RD - ASBURY PARK	DRAWN : A.D. Bolton SCALE : 1" = 60' DATE : 02 - 05 - 2019 NO# L-172-1
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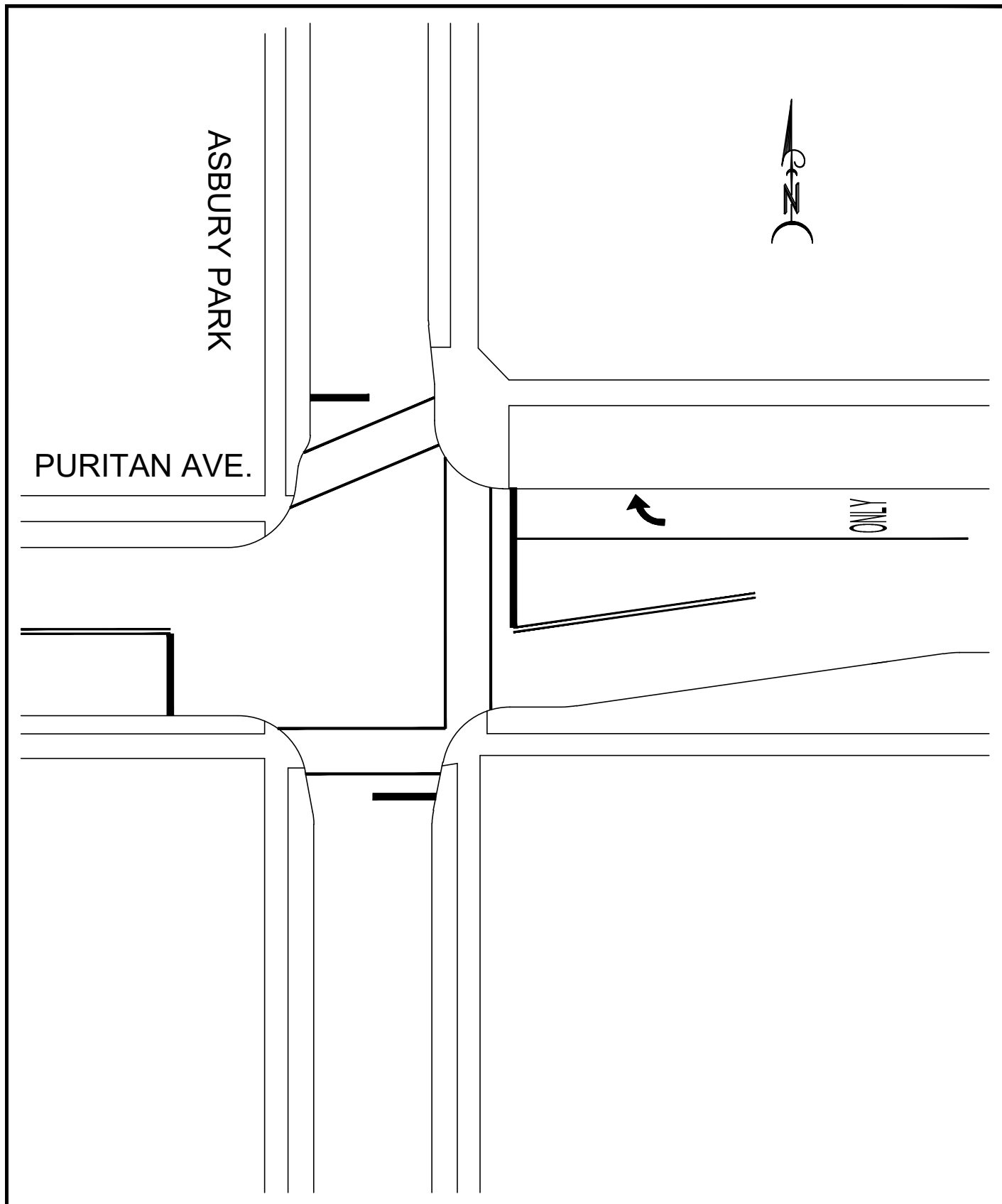
CITY OF DETROIT
DEPARTMENT OF STREETS AND TRAFFIC

PURITAN - SOUTHFIELD

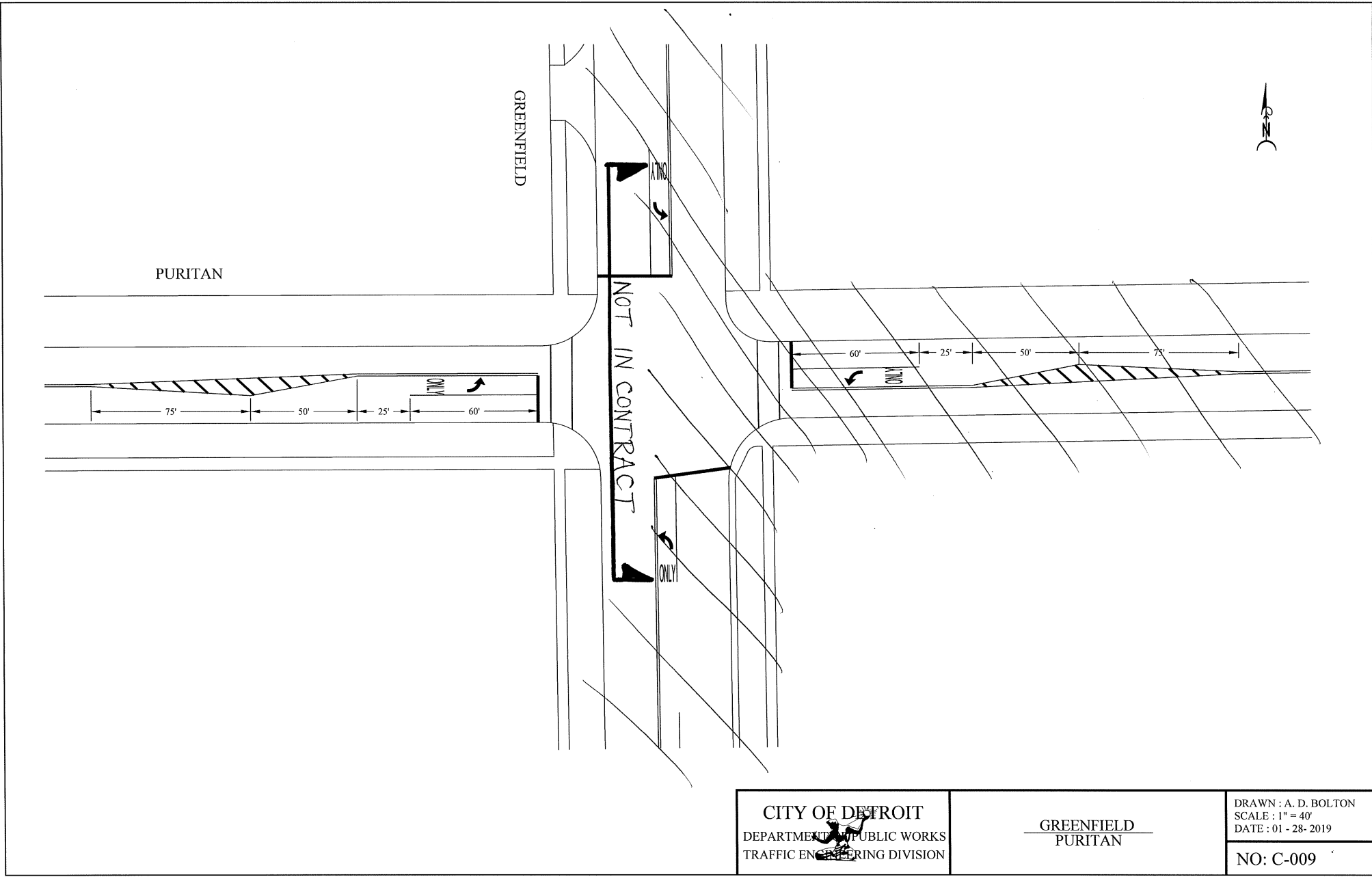
DRAWN HD
APPROVED

CHECKED *ST*
SCALE 1"=40'
DATE 8-11-67

NO. C-162



CITY OF DETROIT  DEPARTMENT OF PUBLIC WORKS TRAFFIC ENGINEERING DIVISION	ASBURY PARK PURITAN AVE.	DRAWN : A.D. Bolton SCALE : 1" = 30' DATE : 11 - 07 - 2018 NO. C-353
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CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

GREENFIELD
PURITAN

DRAWN : A. D. BOLTON
SCALE : 1" = 40'
DATE : 01 - 28 - 2019
NO: C-009

SPINOZA SAWYER TO ORANGELAWN

JN: 205935
LOCATION MAP: #1

TRAFFIC DATA:

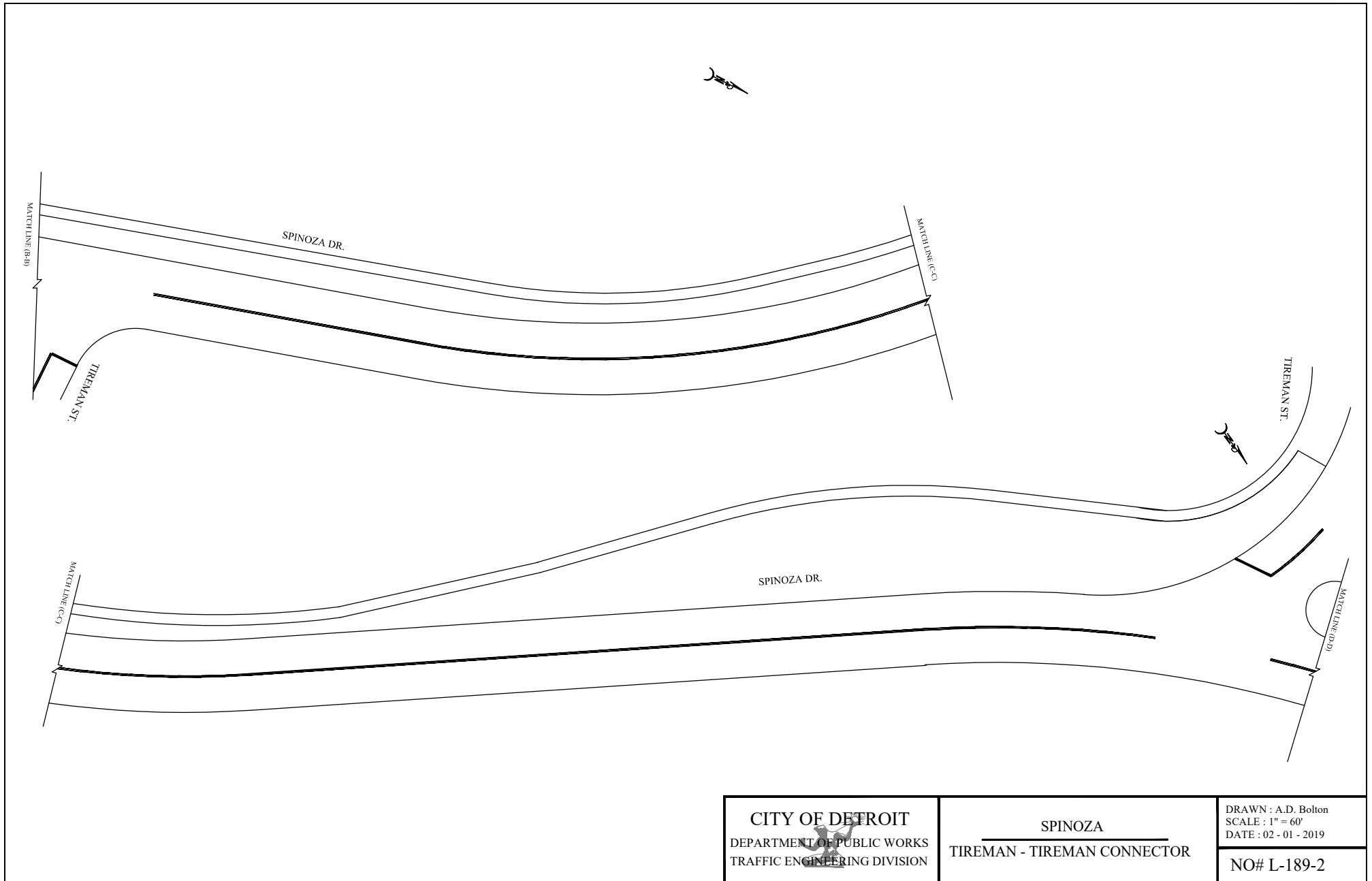
2018 PRESENT: 2,232
2032 FUTURE: 2,902
2018 PRESENTCOMMERCIAL: 5 %
2032 FUTURE COMMERCIAL: 5 %
POSTED SPEED: 25 MPH
DESIGN SPEED: 30 MPH

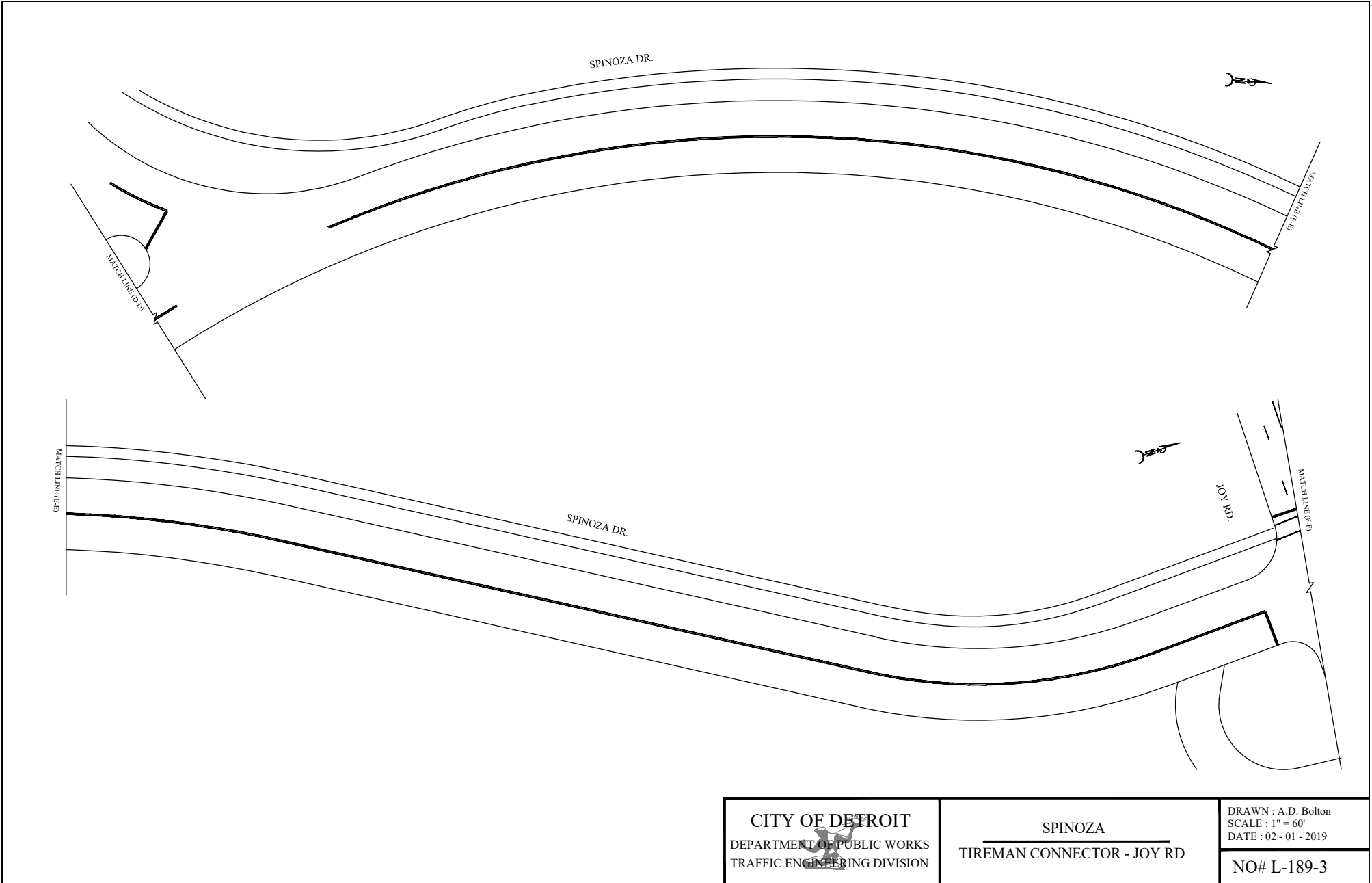
TYPE OF PAVEMENT	ASPHALT OVER CONCRETE
LENGTH	7970 FT
PAVEMENT WIDTH	50 FT

SCHEDULE OF ITEMS

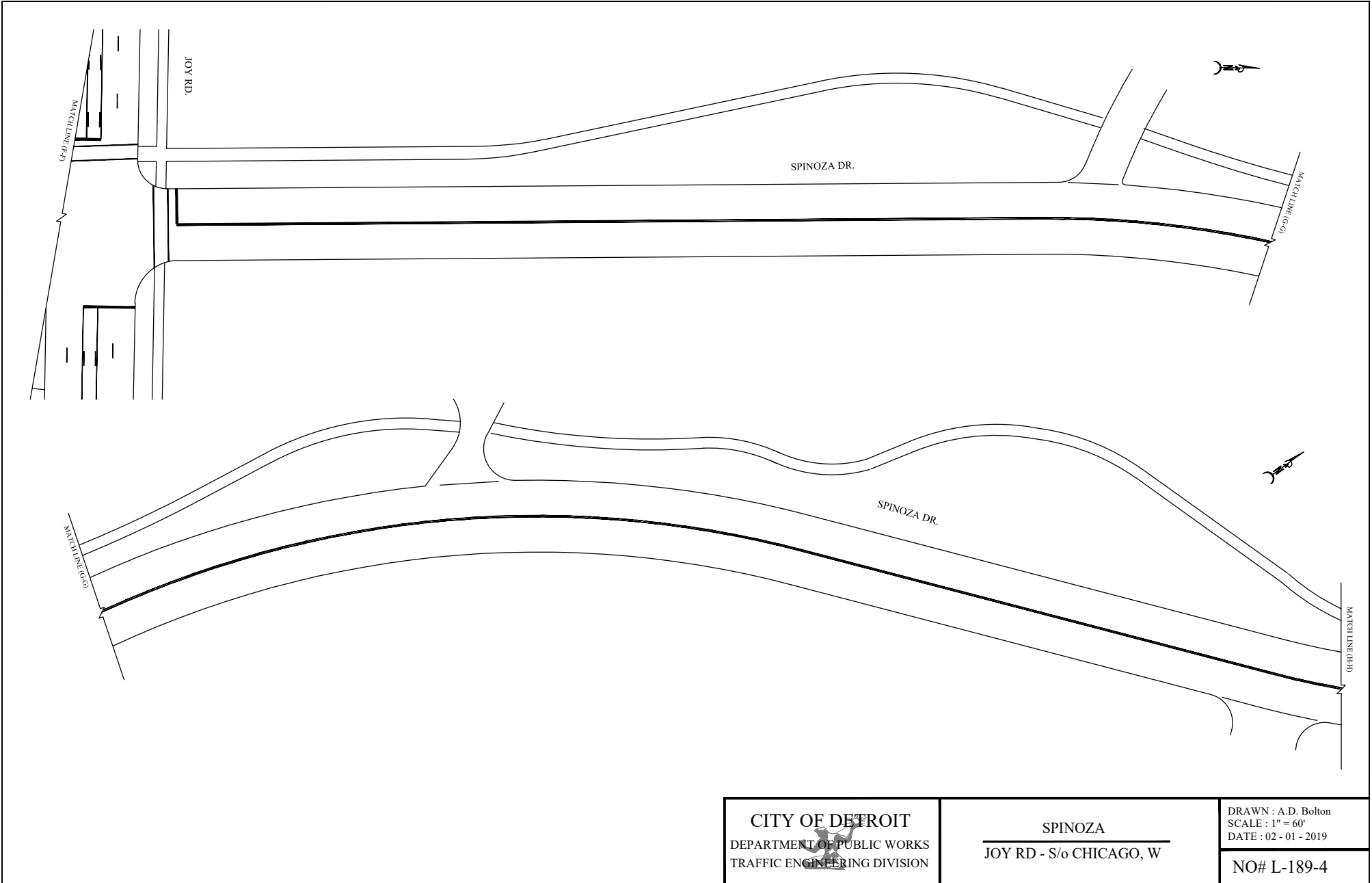
LOCATION: SPINOZA
LIMITS: Sawyer to Orangelawn
LENGTH: 7,970 FT
WIDTH: 50 FT
WORK TYPE: Cold Milling, HMA Resurfacing, Concrete Curb, Sidewalk, Drive Approach, Drainage Improvement and Misc. Construction

ITEM CODE	DESCRIPTION OF WORK	ITEM UNIT	ESTIMATED QUANTITY
4037001	_ Dr Structure Lead, Cleaning, Modified	Ft	420.00
4037030	_ Dr Structure Cover, Modified	Lb	11550.00
4037050	_ Dr Structure Cleaning, Modified	Ea	42.00
4037050	_ Dr Structure Cover, Adj, Case 1, Modified	Ea	40.00
4037050	_ Reconstructing Dr Structure, Case 1, Modified	Ea	2.00
5010005	HMA Surface, Rem	Syd	308.00
5010008	Pavt for Butt Joints, Rem	Syd	169.00
5010051	HMA, 4E3	Ton	5008.00
5010057	HMA, 5E3	Ton	3756.00
5017011	_ Cold Milling HMA Surface, Modified	Syd	45520.00
5017031	_ Conditioning Existing Pavement, Modified	Ton	614.00
5017031	_ HMA Approach, Modified	Ton	59.00
6027011	_ Pavt Repr, Nonreinf Conc, 10 inch, Modified	Syd	120.00
6037011	_ Pavt Repr, Rem, Modified	Syd	120.00
8107050	_ Delineator Post, 36 Inch, White	Ea	538.00
8110153	Pavt Mrkg, Spray Thermopl, 4 inch, White	Ft	19696.00
8110154	Pavt Mrkg, Spray Thermopl, 4 inch, Yellow	Ft	21407.00
8110197	Pavt Mrkg, Thermopl, 6 inch, Crosswalk	Ft	232.00
8110217	Pavt Mrkg, Thermopl, 18 inch, Stop Bar	Ft	115.00
8117001	_ Pavt Mrkg, Modified Urethane, 4 inch, Cross Hatching, White	Ft	696.00
8117001	_ Pavt Mrkg, Modified Urethane, 12 inch, Cross Hatching, White	Ft	3513.00
8117001	_ Recessing Pavt Mrkg, 18 inch	Ft	115.00
8117001	_ Recessing Pavt Mrkg, 6 inch	Ft	232.00
8117010	_ Pavt Mrkg, Methyl Methacrylate (MMA), Green	Sft	52.00
8117050	_ Pavt Mrkg, Methyl Methacrylate (MMA), Bike Directional Arrow	Ea	26.00
8117050	_ Pavt Mrkg, Methyl Methacrylate (MMA), Bike Sym, White	Ea	26.00
8160090	Water, Sodding/Seeding	Unit	4.00

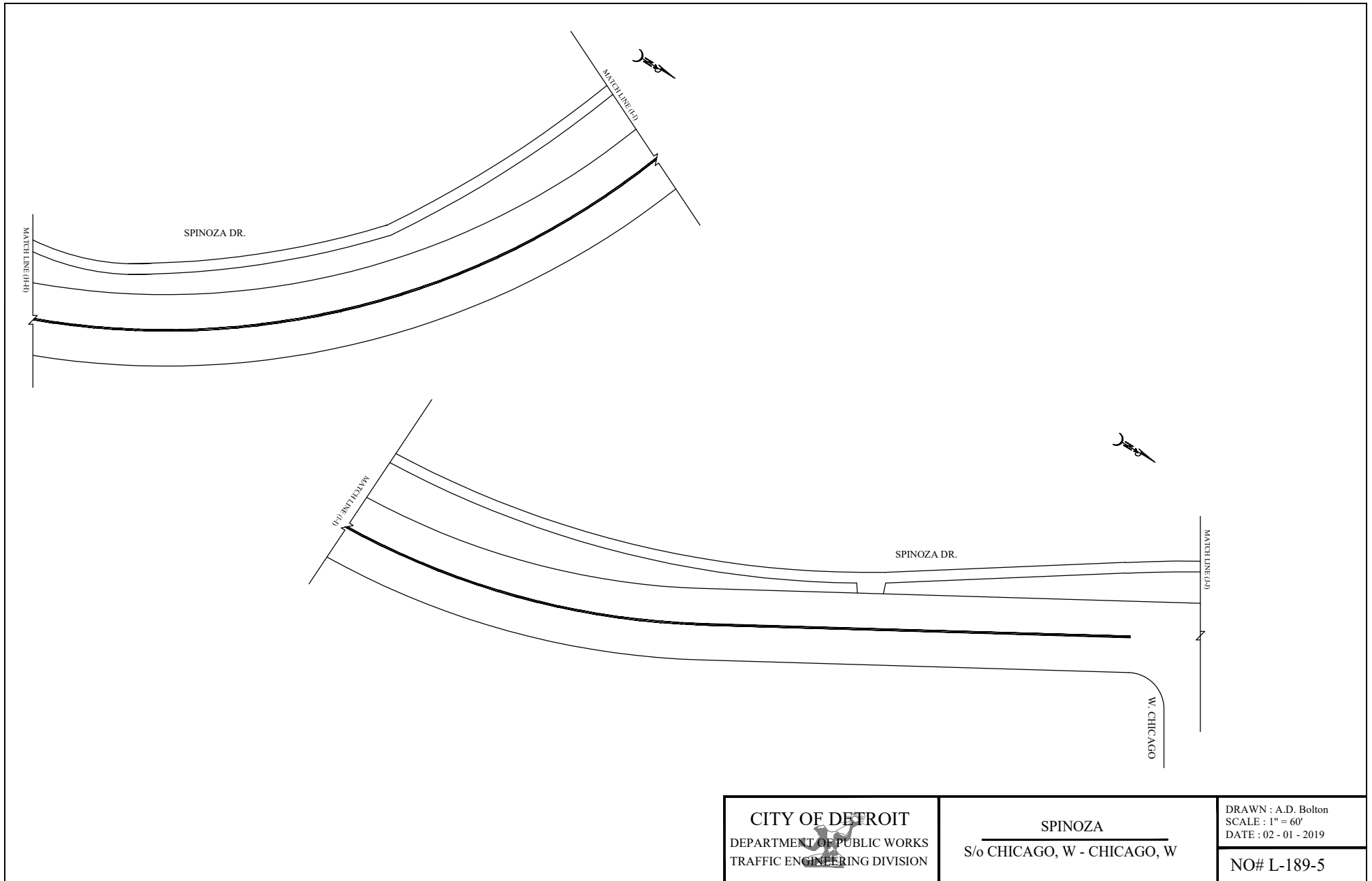


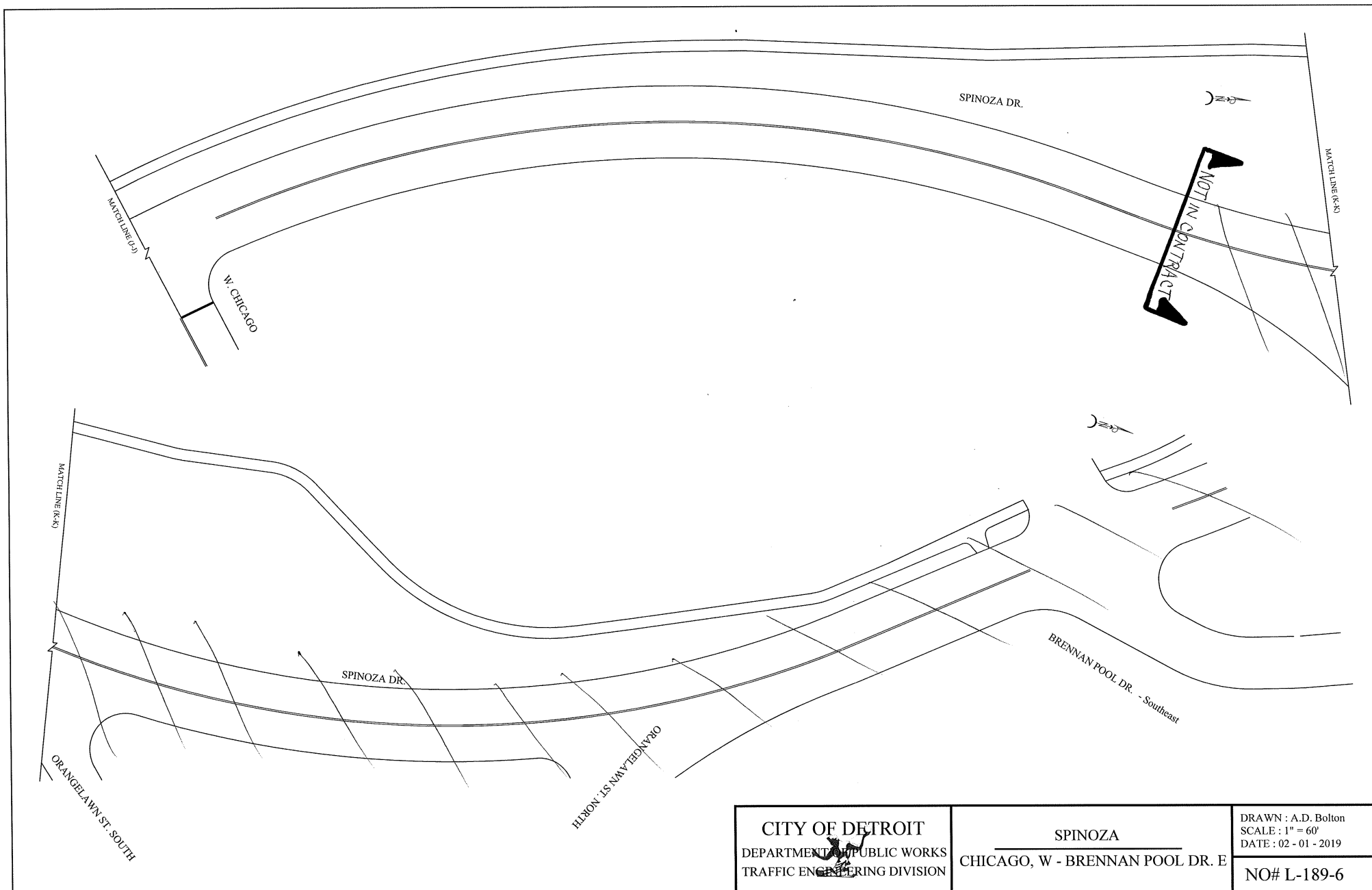


CITY OF DETROIT  DEPARTMENT OF PUBLIC WORKS TRAFFIC ENGINEERING DIVISION	SPINOZA TIREMAN CONNECTOR - JOY RD	DRAWN : A.D. Bolton SCALE : 1" = 60' DATE : 02 - 01 - 2019 NO# L-189-3
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CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS TRAFFIC ENGINEERING DIVISION	SPINOZA JOY RD - S/o CHICAGO, W	DRAWN : A.D. Bolton SCALE : 1" = 60' DATE : 02 - 01 - 2019
		NO# L-189-4



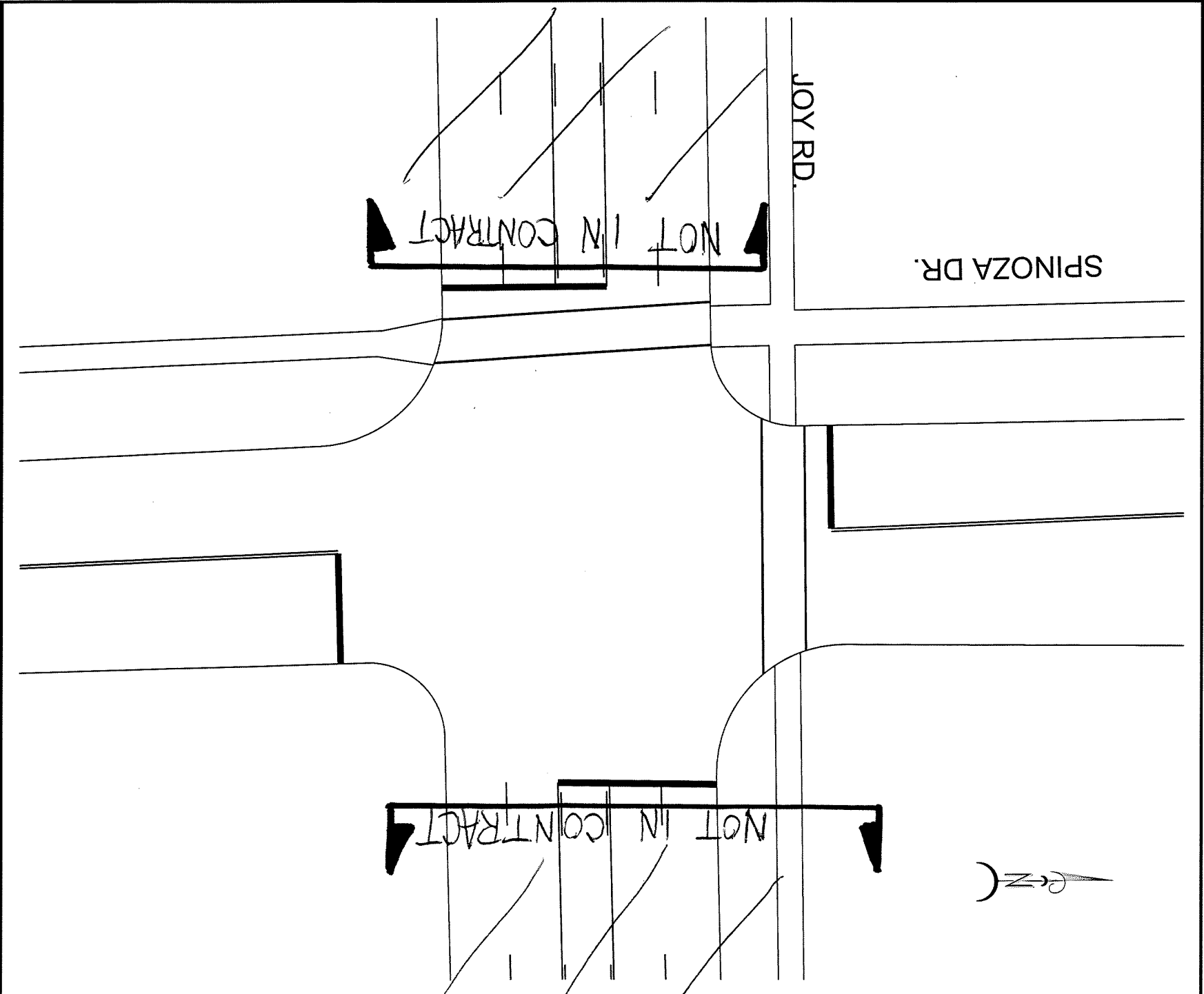


CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS TRAFFIC ENGINEERING DIVISION	SPINOZA CHICAGO, W - BRENNAN POOL DR. E	DRAWN : A.D. Bolton SCALE : 1" = 60' DATE : 02 - 01 - 2019 NO# L-189-6
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CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

JOY RD.
SPINOZA DR.

DRAWN : A.D. Bolton
SCALE : 1" = 30'
DATE : 01 - 22 - 2018
NO. B-224



WOODMERE

DIX TO RICHARD

JN: 205935
LOCATION MAP: #7

TRAFFIC DATA:

2018 PRESENT: 3,691
2032 FUTURE: 4,798
2018 PRESENTCOMMERCIAL: 5 %
2032 FUTURE COMMERCIAL: 5 %
POSTED SPEED: 25 MPH
DESIGN SPEED: 30 MPH

TYPE OF PAVEMENT	ASPHALT OVER CONCRETE
LENGTH	2970 FT
PAVEMENT WIDTH	36 FT

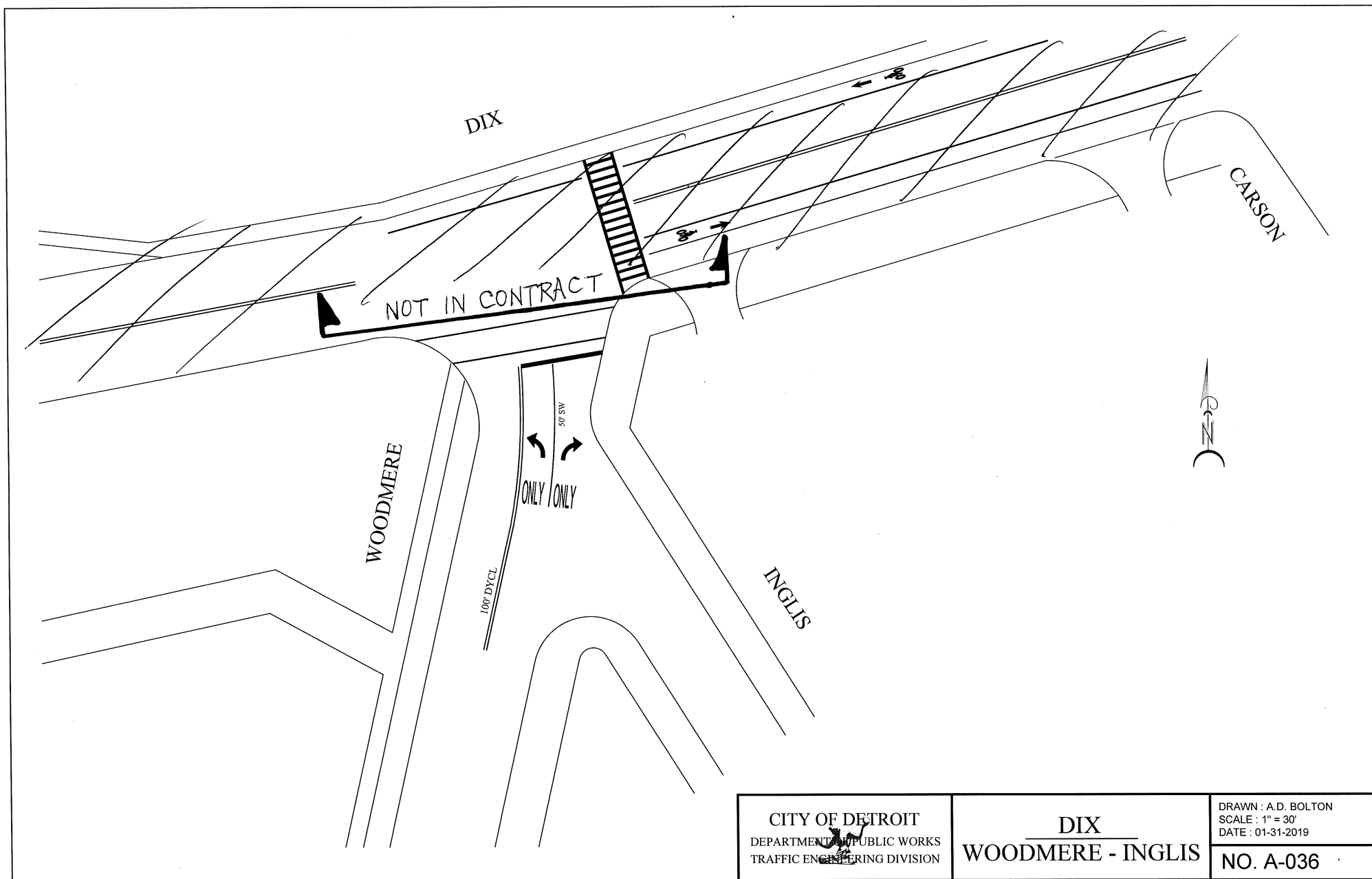
SCHEDULE OF ITEMS

LOCATION: WOODMERE
LIMITS: Dix to Richard
LENGTH: 2,970 FT
WIDTH: 36 FT
WORK TYPE: Cold Milling, HMA Resurfacing, Concrete Curb, Sidewalk, Drive Approach, Drainage Improvement and Misc. Construction

ITEM CODE	DESCRIPTION OF WORK	ITEM UNIT	ESTIMATED QUANTITY
2040055	Sidewalk, Rem	Syd	1438.00
2047001	_ Curb, Rem, Modified	Ft	1326.00
4037001	_ Dr Structure Lead, Cleaning, Modified	Ft	280.00
4037030	_ Dr Structure Cover, Modified	Lb	7700.00
4037050	_ Dr Structure Cleaning, Modified	Ea	28.00
4037050	_ Dr Structure Cover, Adj, Case 1, Modifie d	Ea	25.00
4037050	_ Dr Structure Cover, Adj, Case 2, Modifie d	Ea	1.00
4037050	_ Reconstructing Dr Structure, Case 1, Mod ified	Ea	2.00
5010005	HMA Surface, Rem	Syd	894.00
5010008	Pavt for Butt Joints, Rem	Syd	231.00
5010051	HMA, 4E3	Ton	1307.00
5010057	HMA, 5E3	Ton	980.00
5017011	_ Cold Milling HMA Surface, Modified	Syd	11880.00
5017031	_ Conditioning Existing Pavement, Modified	Ton	160.00
5017031	_ HMA Approach, Modified	Ton	172.00
5017031	_ HMA Shoulder, Modified	Ton	7.00
6027011	_ Pavt Repr, Nonreinf Conc, 10 inch, Modified	Syd	36.00
6037001	_ Curb, Conc, Detail CD, Modified	Ft	852.00
6037011	_ Pavt Repr, Rem, Modified	Syd	36.00
8027001	_ Detectable Warning Surface Tile, Modifie d	Ft	280.00
8027010	_ Sidewalk Ramp, ADA, Modified	Sft	5058.00
8027010	_ Sidewalk, Conc, 4 inch, Modified	Sft	7524.00
8027010	_ Sidewalk, Conc, 6 inch, Modified	Sft	216.00
8030030	Curb Ramp Opening, Conc	Ft	474.00
8037010	_ Sidewalk, Conc with Tree Roots, 4 inch, Modified	Sft	144.00
8110063	Pavt Mrkg, Ovly Cold Plastic,Lt Turn Arrow Sym	Ea	1.00
8110068	Pavt Mrkg, Ovly Cold Plastic, Only	Ea	2.00
8110071	Pavt Mrkg, Ovly Cold Plastic, Rt Turn Arrow Sym	Ea	1.00
8110197	Pavt Mrkg, Thermopl, 6 inch, Crosswalk	Ft	156.00
8110217	Pavt Mrkg, Thermopl, 18 inch, Stop Bar	Ft	29.00
8117001	_ Recessing Pavt Mrkg, 18 inch	Ft	29.00
8117001	_ Recessing Pavt Mrkg, 6 inch	Ft	156.00
8160055	Sodding	Syd	47.00
8160090	Water, Sodding/Seeding	Unit	4.00
8167021	_ Topsoil Surface, Furn, LM, Modified	Cyd	12.00
8210001	Monument Box	Ea	1.00
8237050	_ Water Shutoff, Adj, Modified	Ea	4.00

Estimated quantities for use at the discretion of the Engineer

Maintenance of traffic quantities not included



CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

DIX
WOODMERE - INGLIS

DRAWN : A.D. BOLTON
SCALE : 1" = 30'
DATE : 01-31-2019
NO. A-036

TITLE SHEET CITY OF DETROIT

**MAYOR
MIKE DUGGAN**

DEPARTMENT OF PUBLIC WORKS
RON BRUNDIDGE, DIRECTOR
OLADAYO AKINYEMI, DEPUTY DIRECTOR

	Job No.	Control Section
Citywide	207914	STU 82000

LOCAL AGENCY: City of Detroit, Wayne County

CONTRACT FOR: Approximately 4.59 miles of Cold Milling, HMA Resurfacing, Conc Curbs, Sidewalks, ADA Ramps, HMA Approaches, Drainage Structure Adjustments, Pavement Markings, and other Misc Construction.

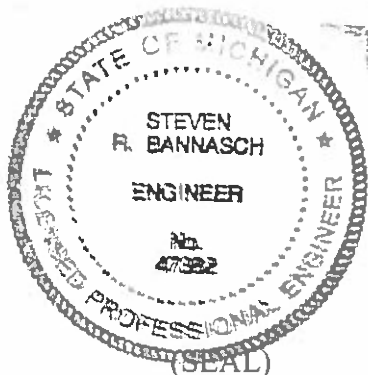
LOCATION: CITYWIDE

STANDARD PLANS

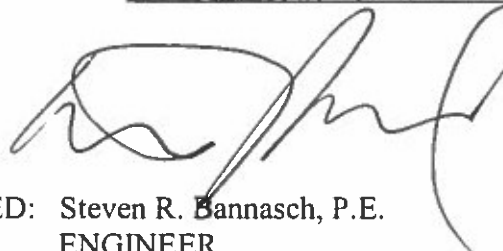
R-28-J* R-29-I R-100- H
R-44-F WZD-100-A*
R-83-C R- 30-G WZD-125-E*

*** Denotes Special Details**

THE IMPROVEMENTS COVERED BY THESE PLANS ARE BASED ON THE MICHIGAN DEPARTMENT OF TRANSPORTATION LOCAL AGENCY PROGRAM GUIDE LINES FOR GEOMETRICS (3R) DATED MARCH 4, 2014 EXCEPT WHERE OTHERWISE INDICATED ON THESE PLANS OR IN THE PROPOSAL AND SUPPLEMENTAL SPECIFICATIONS CONTAINED THEREIN, ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, 2012 VERSION AND MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, 2009 EDITION.



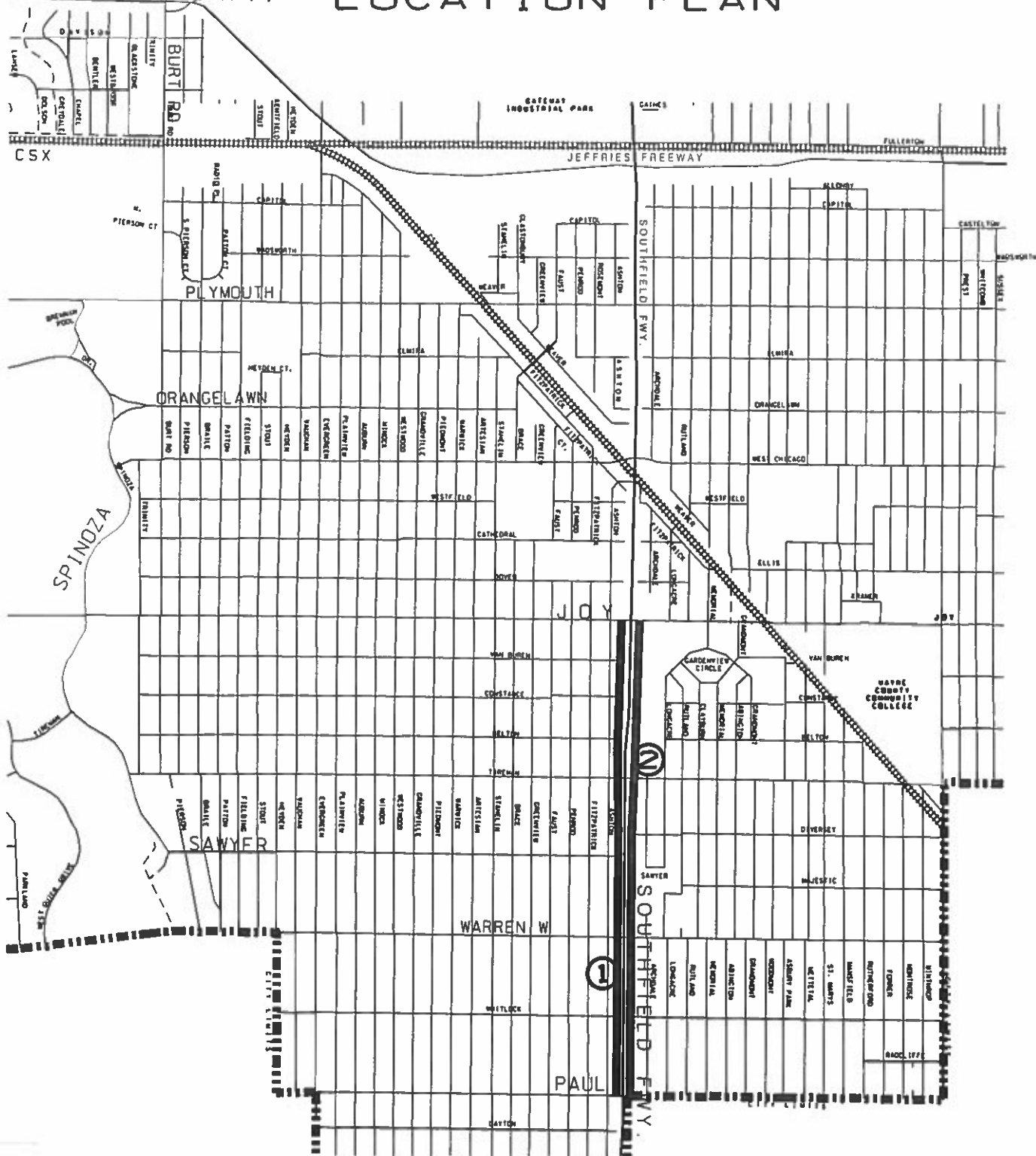
LOCAL AUTHORITY APPROVAL
CITY OF DETROIT
GOVERNMENTAL AGENCY


APPROVED: Steven R. Bannasch, P.E.
ENGINEER

APRIL 23, 2019
DATE

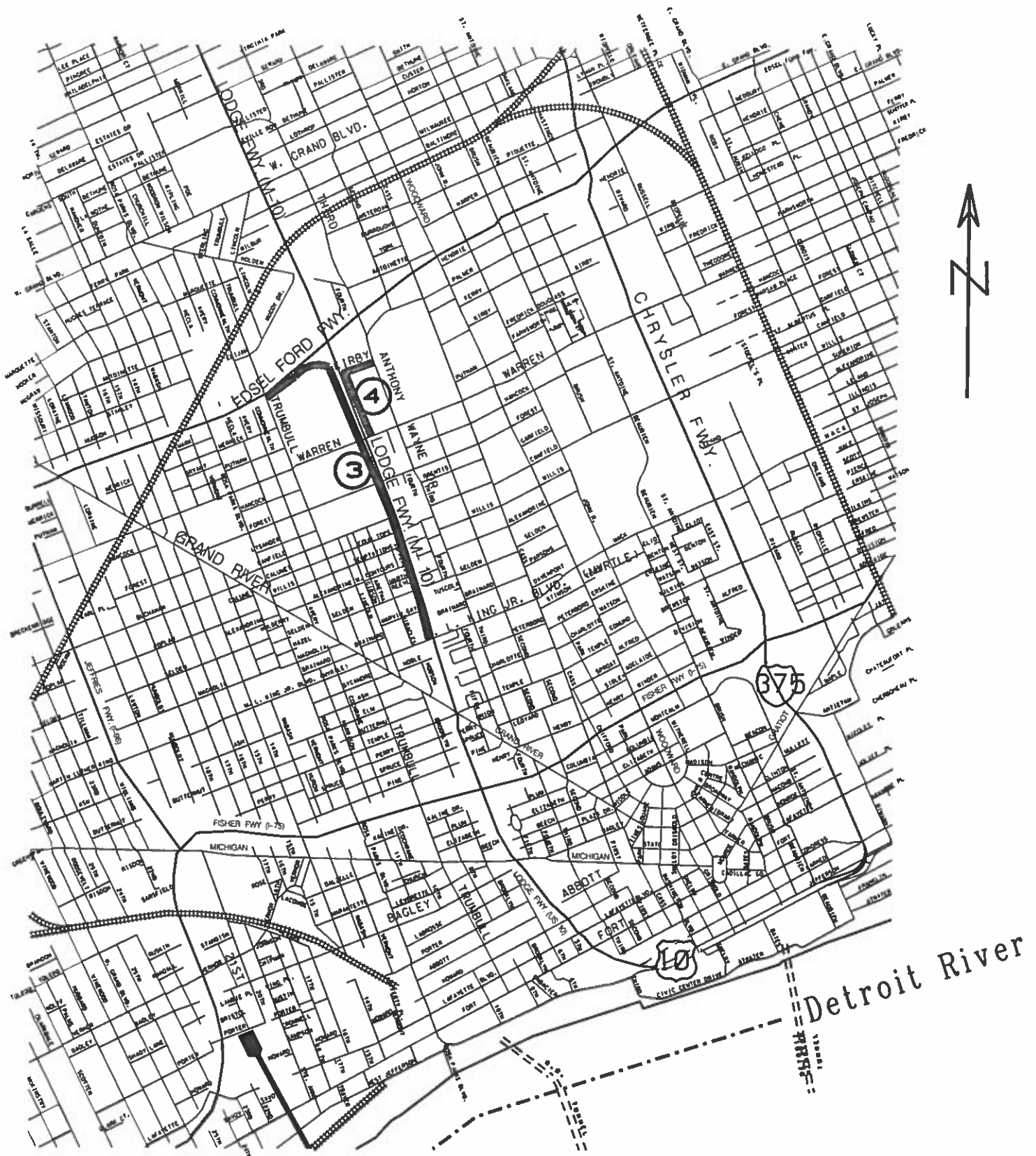
JEFFRIES FWY.

LOCATION PLAN



- 1 SB SOUTHFIELD SD FROM JOY TO PAUL
- 2 NB SOUTHFIELD SD FROM JOY TO PAUL

LOCATION PLAN



3 SB LODGE SD FROM TRUMBULL TO MLK
 4 NB JC LODGE SD FROM WARREN TO THIRD

JC LODGE SD NB

WARREN TO THIRD

JN: 205935
LOCATION MAP: #11

TRAFFIC DATA:

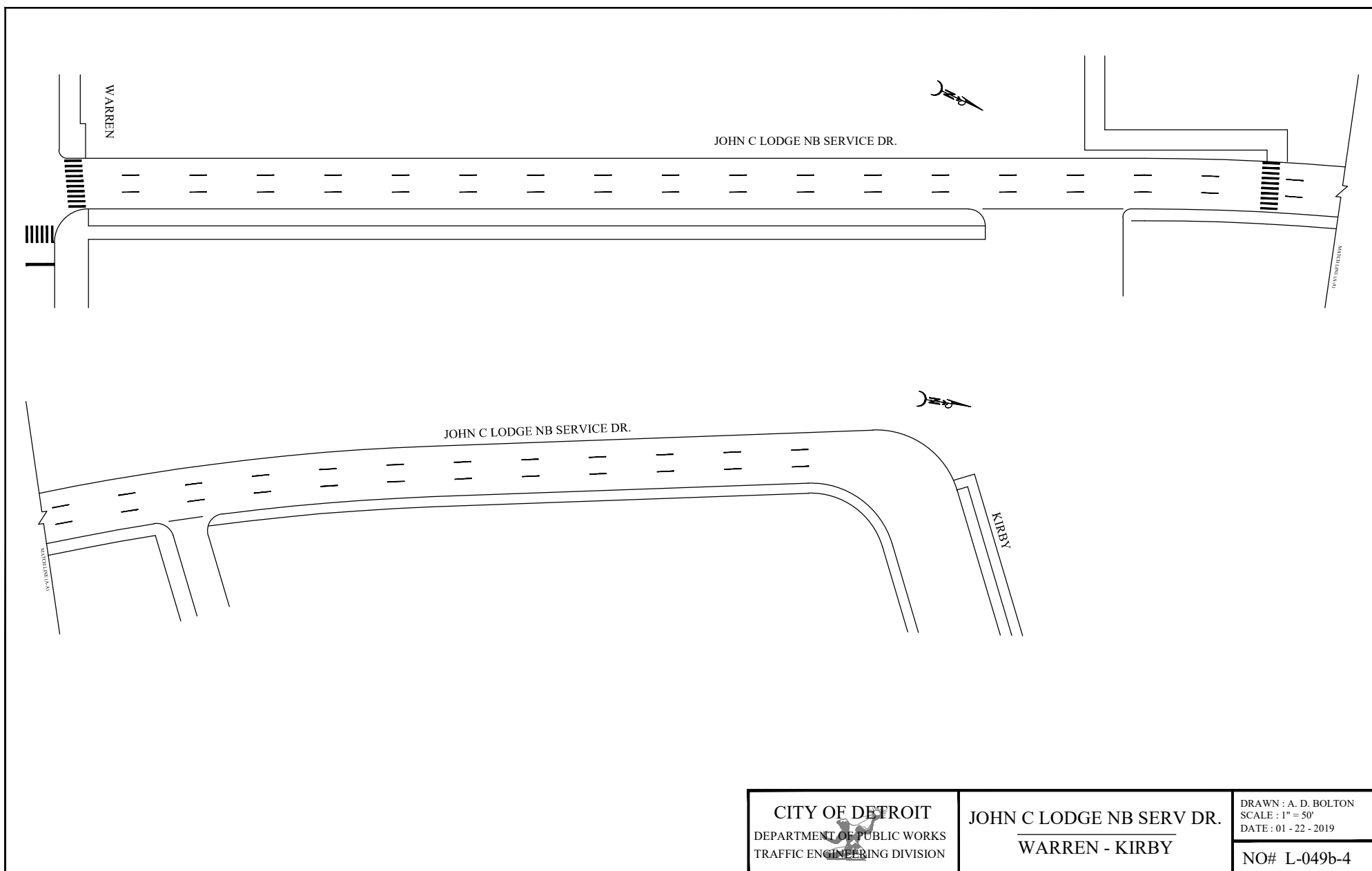
2018 PRESENT: 6,413
2032 FUTURE: 8,337
2018 PRESENTCOMMERCIAL: 5 %
2032 FUTURE COMMERCIAL: 5 %
POSTED SPEED: 25 MPH
DESIGN SPEED: 30 MPH

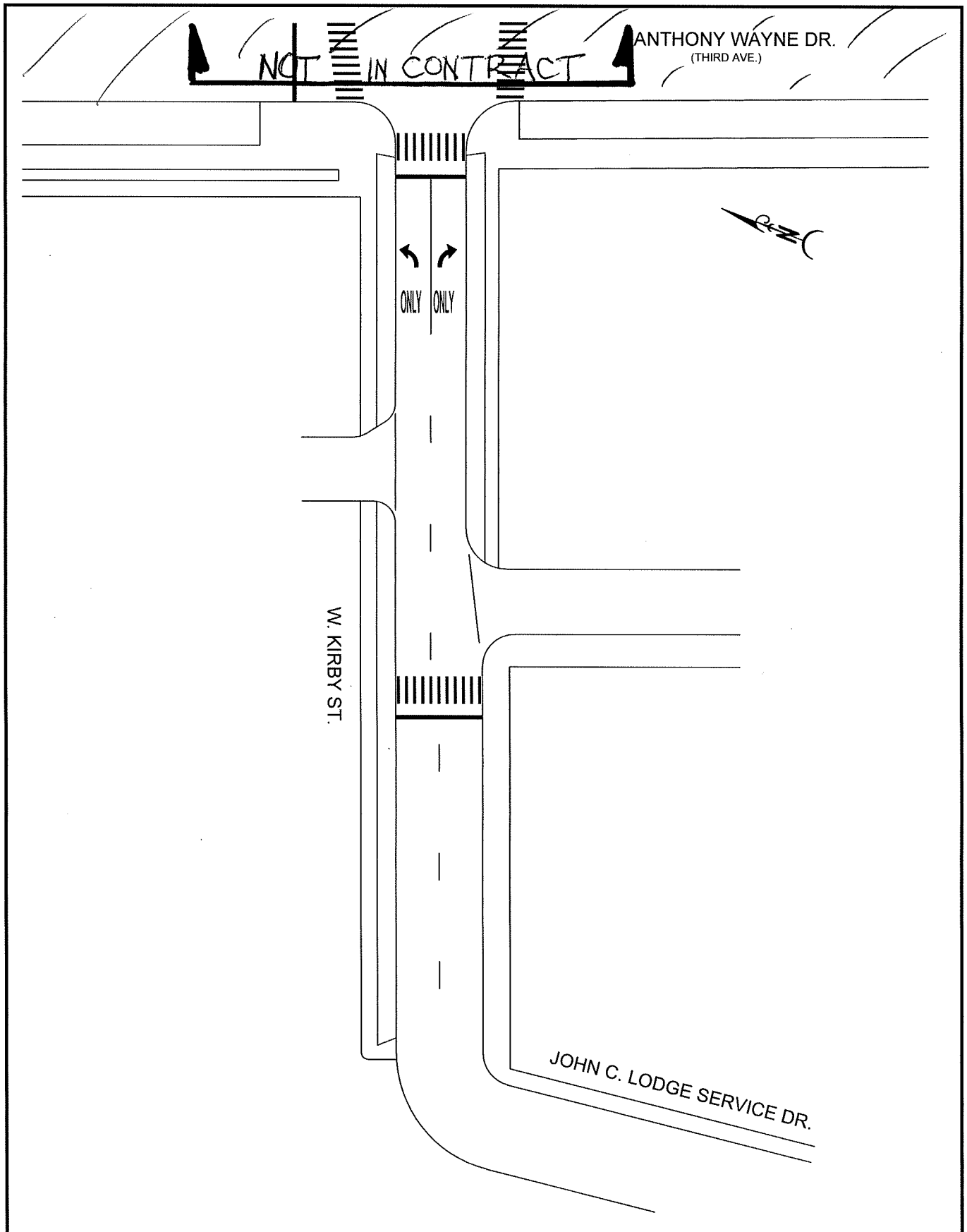
TYPE OF PAVEMENT	ASPHALT OVER CONCRETE
LENGTH	1690 FT
PAVEMENT WIDTH	30 FT

SCHEDULE OF ITEMS

LOCATION: NB JC LODGE SD
LIMITS: Warren to 3rd
LENGTH: 1,690 FT
WIDTH: 30 FT
WORK TYPE: Cold Milling, HMA Resurfacing, Concrete Curb, Sidewalk, Drive Approach, Drainage Improvement and Misc. Construction

ITEM CODE	DESCRIPTION OF WORK	ITEM UNIT	ESTIMATED QUANTITY
2040055	Sidewalk, Rem	Syd	72.00
2047001	_ Curb, Rem, Modified	Ft	517.00
4037001	_ Dr Structure Lead, Cleaning, Modified	Ft	270.00
4037030	_ Dr Structure Cover, Modified	Lb	7425.00
4037050	_ Dr Structure Cleaning, Modified	Ea	27.00
4037050	_ Dr Structure Cover, Adj, Case 1, Modified	Ea	25.00
4037050	_ Reconstructing Dr Structure, Case 1, Modified	Ea	2.00
5010008	Pavt for Butt Joints, Rem	Syd	67.00
5010051	HMA, 4E3	Ton	599.00
5010057	HMA, 5E3	Ton	449.00
5017011	_ Cold Milling HMA Surface, Modified	Syd	5443.00
5017031	_ Conditioning Existing Pavement, Modified	Ton	73.00
5017031	_ HMA Shoulder, Modified	Ton	7.00
6027011	_ Pavt Repr, Nonreinf Conc, 10 inch, Modified	Syd	15.00
6037001	_ Curb, Conc, Detail CD, Modified	Ft	499.00
6037011	_ Pavt Repr, Rem, Modified	Syd	15.00
8027001	_ Detectable Warning Surface Tile, Modified	Ft	15.00
8027010	_ Sidewalk Ramp, ADA, Modified	Sft	216.00
8027010	_ Sidewalk, Conc, 4 inch, Modified	Sft	432.00
8030030	Curb Ramp Opening, Conc	Ft	18.00
8110041	Pavt Mrkg, Ovly Cold Plastic, 12 inch, Crosswalk	Ft	90.00
8110063	Pavt Mrkg, Ovly Cold Plastic, Lt Turn Arrow Sym	Ea	1.00
8110068	Pavt Mrkg, Ovly Cold Plastic, Only	Ea	2.00
8110071	Pavt Mrkg, Ovly Cold Plastic, Rt Turn Arrow Sym	Ea	1.00
8110153	Pavt Mrkg, Spray Thermopl, 4 inch, White	Ft	740.00
8110197	Pavt Mrkg, Thermopl, 6 inch, Crosswalk	Ft	58.00
8110214	Pavt Mrkg, Thermopl, 12 inch, Crosswalk	Ft	210.00
8110217	Pavt Mrkg, Thermopl, 18 inch, Stop Bar	Ft	25.00
8117001	_ Recessing Pavt Mrkg, 12 inch	Ft	300.00
8117001	_ Recessing Pavt Mrkg, 18 inch	Ft	25.00
8117001	_ Recessing Pavt Mrkg, 6 inch	Ft	58.00
8160055	Sodding	Syd	136.00
8160090	Water, Sodding/Seeding	Unit	4.00
8167021	_ Topsoil Surface, Furn, LM, Modified	Cyd	12.00





CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

ANTHONY WAYNE DR.
(THIRD AVE.)
W. KIRBY ST.

DRAWN : A.D. BOLTON
SCALE : 1" = 50'
DATE : 08-01-2015
NO. L-164

The site plan illustrates the intersection of Kirby and Anthony Wayne Drive. Kirby is a one-way street running horizontally, with traffic flow indicated by arrows and 'ONLY' labels. Anthony Wayne Drive runs vertically. The plan shows existing conditions with dashed lines and proposed conditions with solid lines. Key features include:

- Intersection Area:** A central area marked 'NOT IN CONTRACT' with diagonal hatching.
- Dimensions:** Various measurements are provided, such as 10.5' for sidewalk widths, 12' for travel lane widths, and 5' for curb widths.
- Proposed Features:** New sidewalks, crosswalks with bollards, and a new traffic signal at the intersection.
- Existing Features:** Existing sidewalks, crosswalks, and a traffic signal.
- Other Details:** A 'KIRBY' label, a 'ONE WAY' sign, and a north arrow pointing towards the top right.

DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

ANTHONY WAYNE DR.
KIRBY

DRAWN : W.L. WILLIAMS
SCALE : 1" = 40'
DATE : 04 - 25 - 2013

NO. C-049

SOUTHFIELD SD NB

JOY TO PAUL

JN: 205935
LOCATION MAP: #4

TRAFFIC DATA:

2018 PRESENT: 2,650
2032 FUTURE: 3,445
2018 PRESENTCOMMERCIAL: 5 %
2032 FUTURE COMMERCIAL: 5 %
POSTED SPEED: 30 MPH
DESIGN SPEED: 35 MPH

TYPE OF PAVEMENT	ASPHALT OVER CONCRETE
LENGTH	7697 FT
PAVEMENT WIDTH	(24...33...30...32...27) FT (VARIES)

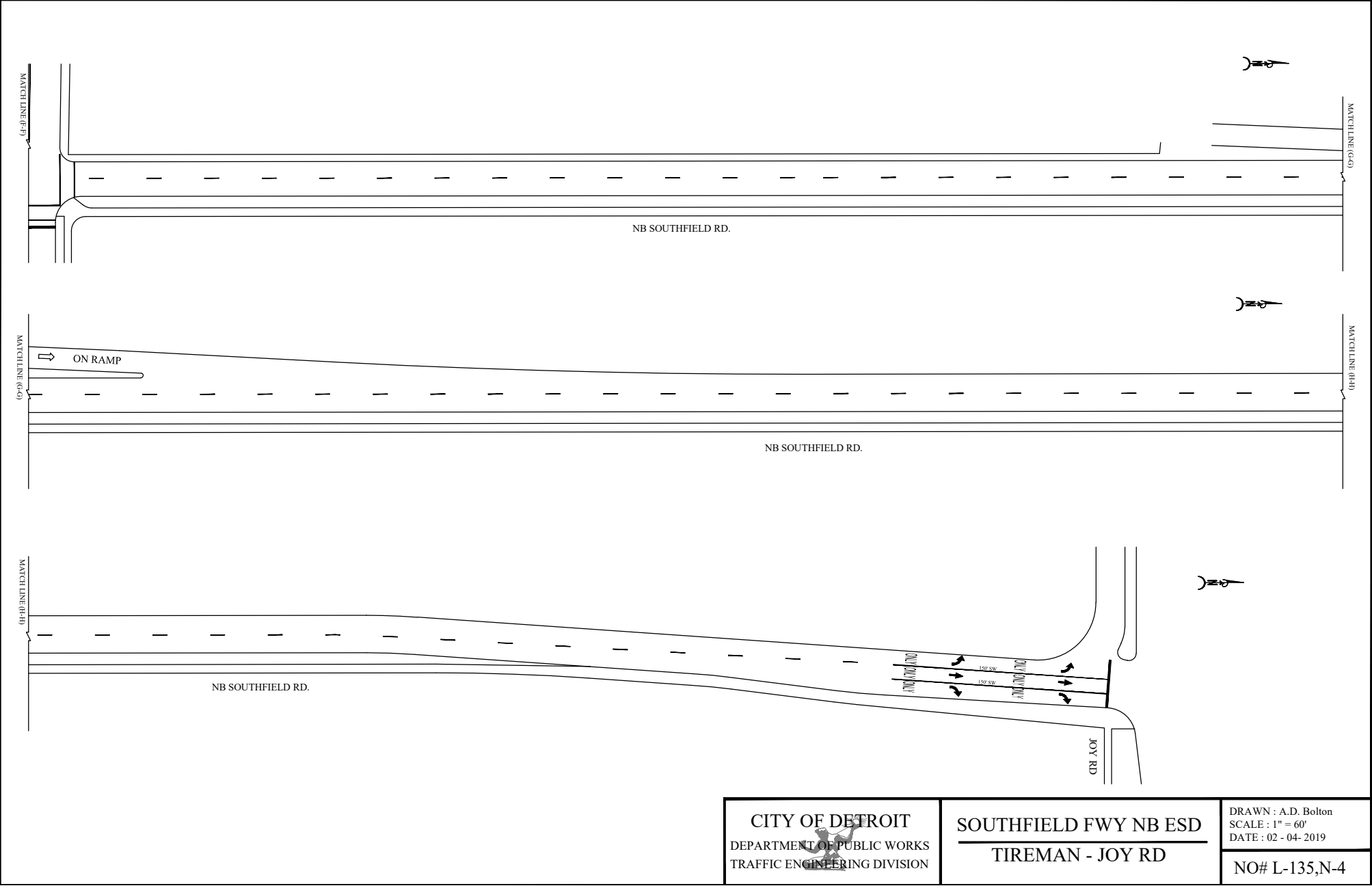
SCHEDULE OF ITEMS

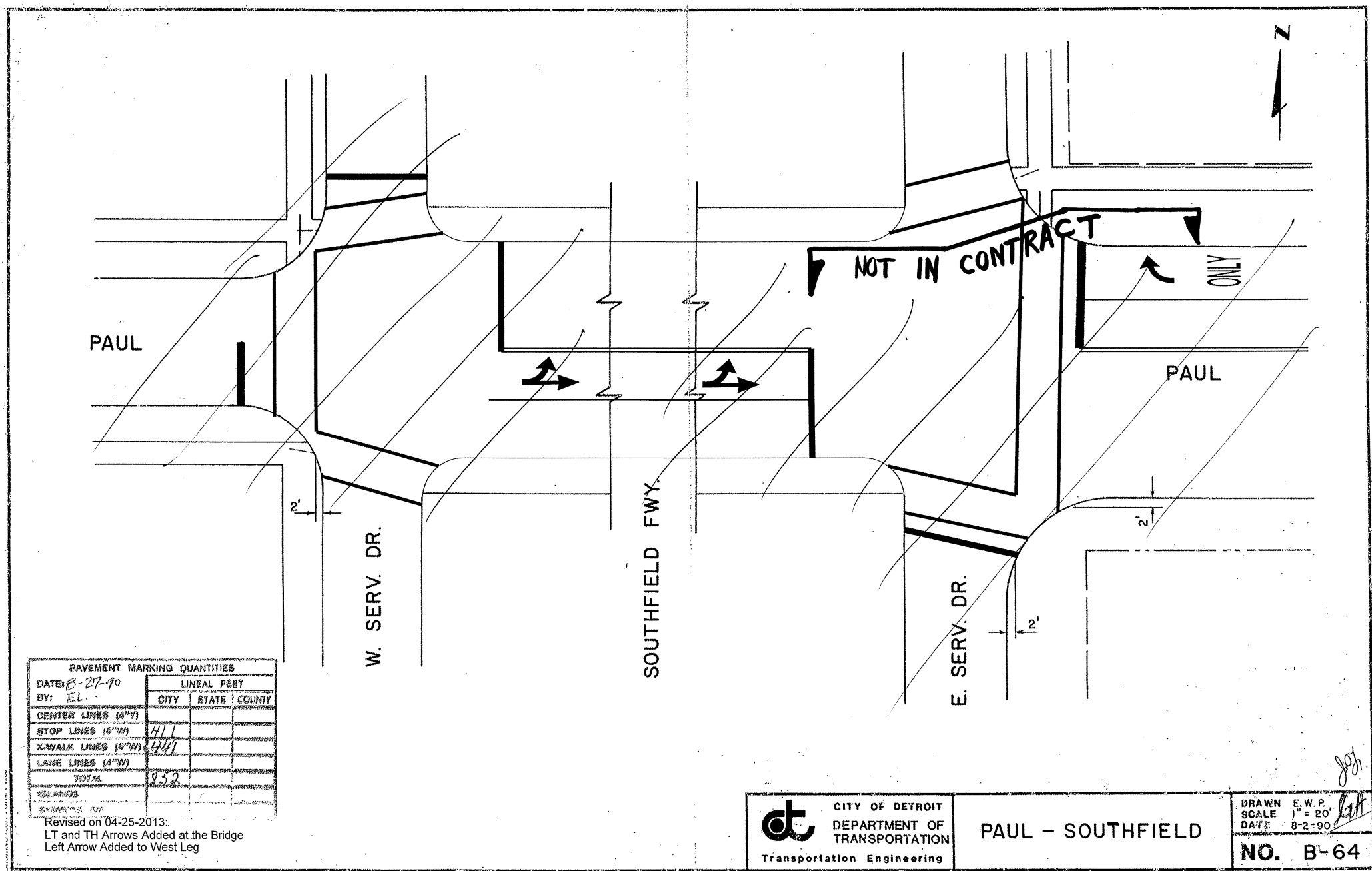
LOCATION: NB SOUTHFIELD SD
LIMITS: Joy to Paul
LENGTH: 7,697 FT
WIDTH: 24-33-30-32-27 FT VARIES
WORK TYPE: Cold Milling, HMA Resurfacing, Concrete Curb, Sidewalk, Drive Approach, Drainage Improvement and Misc. Construction

ITEM CODE	DESCRIPTION OF WORK	ITEM UNIT	ESTIMATED QUANTITY
2040055	Sidewalk, Rem	Syd	230.00
2047001	_ Curb, Rem, Modified	Ft	326.00
4037001	_ Dr Structure Lead, Cleaning, Modified	Ft	1450.00
4037030	_ Dr Structure Cover, Modified	Lb	39875.00
4037050	_ Dr Structure Cleaning, Modified	Ea	145.00
4037050	_ Dr Structure Cover, Adj, Case 1, Modifie d	Ea	137.00
4037050	_ Dr Structure Cover, Adj, Case 2, Modifie d	Ea	2.00
4037050	_ Reconstructing Dr Structure, Case 1, Mod ified	Ea	6.00
5010005	HMA Surface, Rem	Syd	216.00
5010008	Pavt for Butt Joints, Rem	Syd	91.00
5010051	HMA, 4E3	Ton	2432.00
5010057	HMA, 5E3	Ton	1824.00
5017011	_ Cold Milling HMA Surface, Modified	Syd	22111.00
5017031	_ Conditioning Existing Pavement, Modified	Ton	298.00
5017031	_ HMA Approach, Modified	Ton	42.00
5017031	_ HMA Shoulder, Modified	Ton	38.00
6027011	_ Pavt Repr, Nonreinf Conc, 10 inch, Modified	Syd	160.00
6037001	_ Curb, Conc, Detail CD, Modified	Ft	266.00
6037011	_ Pavt Repr, Rem, Modified	Syd	160.00
8027001	_ Detectable Warning Surface Tile, Modifie d	Ft	40.00
8027010	_ Sidewalk Ramp, ADA, Modified	Sft	504.00
8027010	_ Sidewalk, Conc, 4 inch, Modified	Sft	1560.00
8030030	Curb Ramp Opening, Conc	Ft	60.00
8110063	Pavt Mrkg, Ovly Cold Plastic,Lt Turn Arrow Sym	Ea	4.00
8110068	Pavt Mrkg, Ovly Cold Plastic, Only	Ea	4.00
8110076	Pavt Mrkg, Ovly Cold Plastic,Thru and Lt Turn Arrow Sym	Ea	2.00
8110077	Pavt Mrkg, Ovly Cold Plastic,Thru and Rt Turn Arrow Sym	Ea	2.00
8110153	Pavt Mrkg, Spray Thermopl, 4 inch, White	Ft	2600.00
8110159	Pavt Mrkg, Spray Thermopl, 12 inch, White	Ft	390.00
8110197	Pavt Mrkg, Thermopl, 6 inch, Crosswalk	Ft	612.00
8110217	Pavt Mrkg, Thermopl, 18 inch, Stop Bar	Ft	189.00
8117001	_ Recessing Pavt Mrkg, 18 inch	Ft	189.00
8117001	_ Recessing Pavt Mrkg, 6 inch	Ft	612.00
8160055	Sodding	Syd	34.00
8160090	Water, Sodding/Seeding	Unit	4.00
8167021	_ Topsoil Surface, Furn, LM, Modified	Cyd	3.00
8237050	_ Water Shutoff, Adj, Modified	Ea	12.00

Estimated quantities for use at the discretion of the Engineer

Maintenance of traffic quantities not included





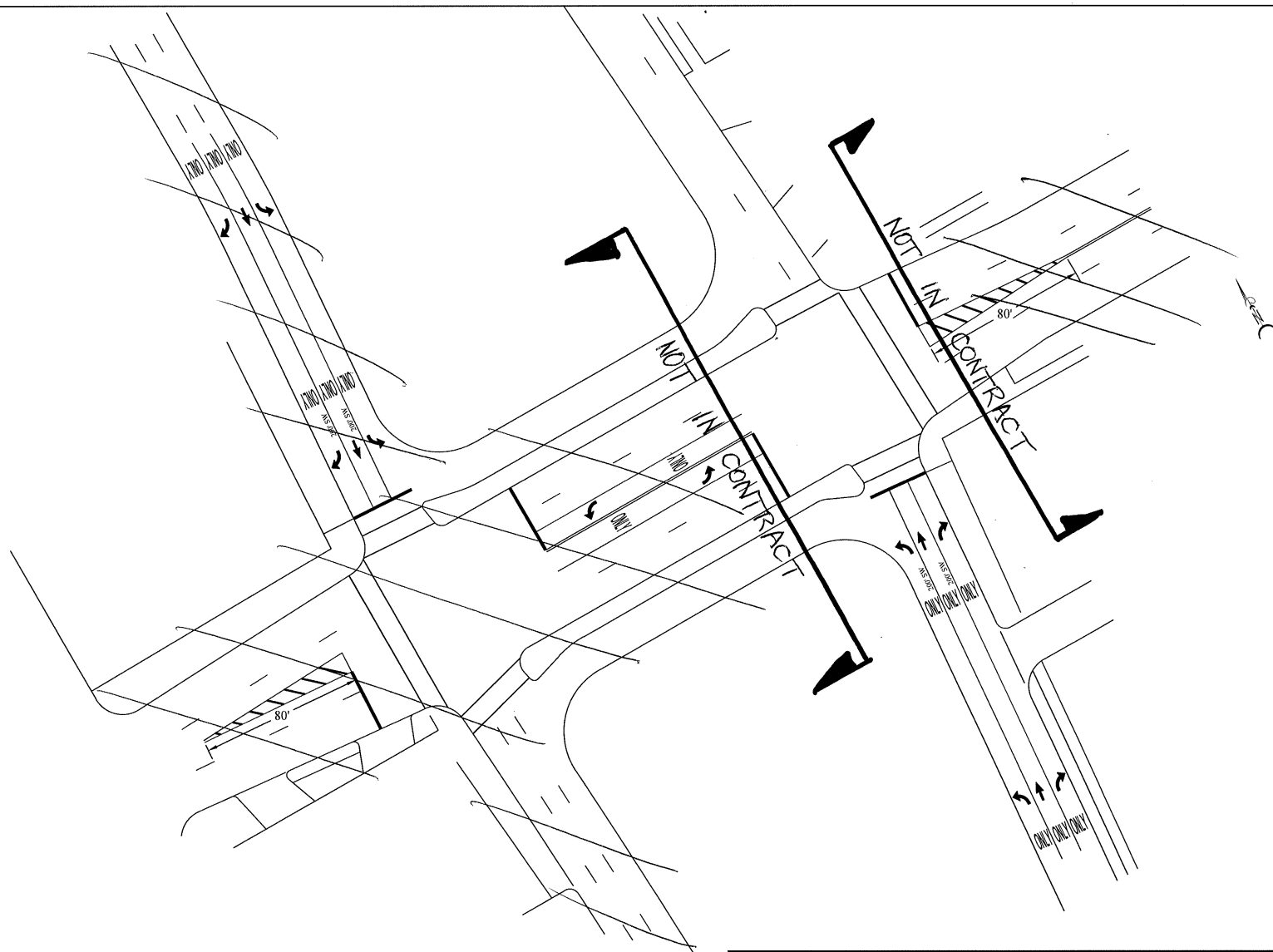
PAVEMENT MARKING QUANTITIES			
DATE: 8-27-90	LINEAL FEET		
BY: E.L.	CITY	STATE	COUNTY
CENTER LINES (4" W)			
STOP LINES (16" W)	411		
X-WALK LINES (16" W)	441		
LANE LINES (4" W)			
TOTAL	852		
ISLANDS			
ISLANDS (4" W)			

Revised on 04-25-2013:
 LT and TH Arrows Added at the Bridge
 Left Arrow Added to West Leg

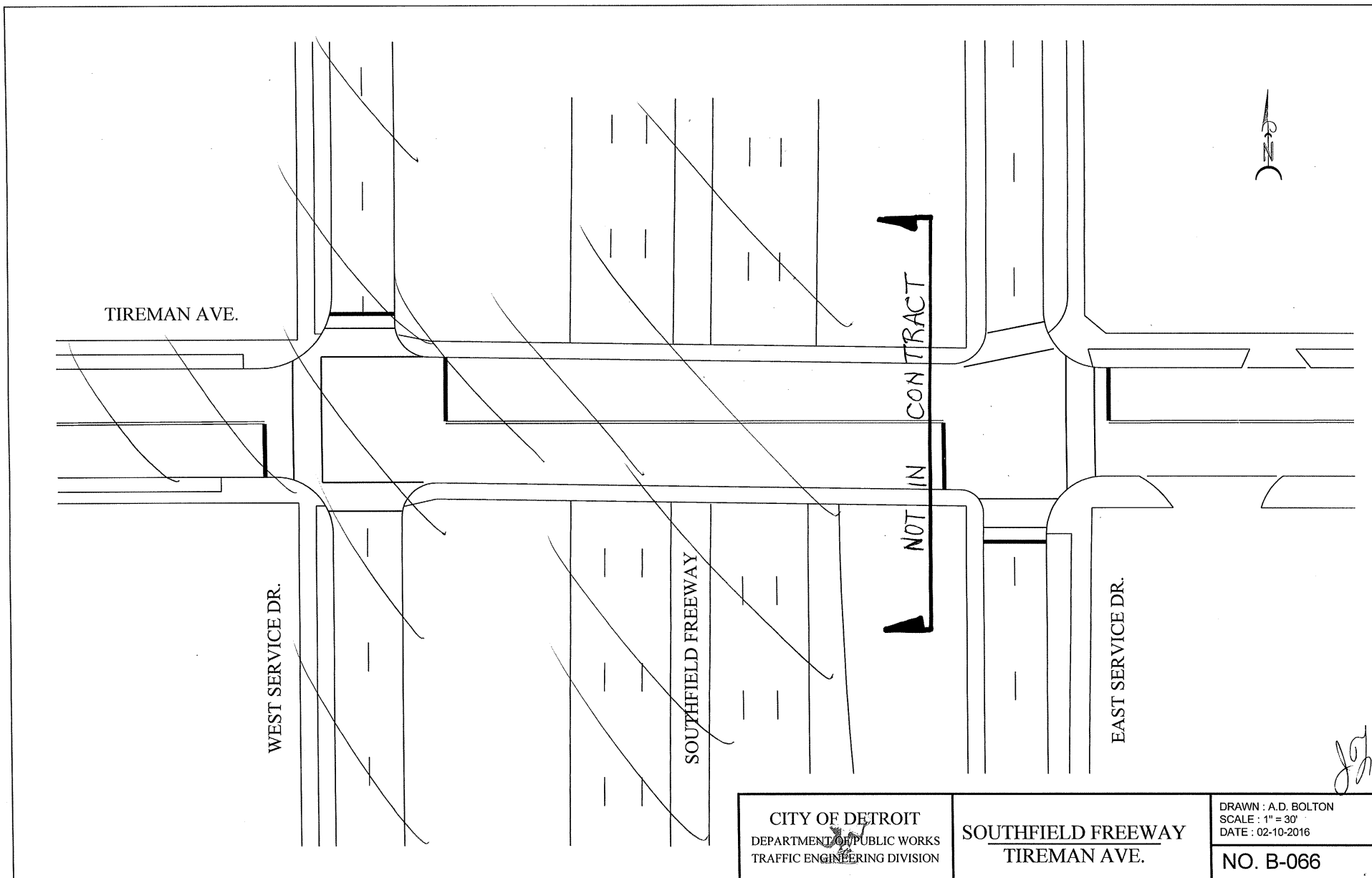
 CITY OF DETROIT
 DEPARTMENT OF
 TRANSPORTATION
 Transportation Engineering

PAUL - SOUTHFIELD

DRAWN E.W.P.
 SCALE 1" = 20'
 DATE 8-2-90
 NO. B-64



CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS TRAFFIC ENGINEERING DIVISION	SOUTHFIELD FWY WARREN	DRAWN : A. D. BOLTON SCALE : 1" = 50' DATE : 2 -05 - 2019 NO# B-050
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JC LODGE SD SB

TRUMBULL TO MLK

JN: 205935
LOCATION MAP: #10

TRAFFIC DATA:

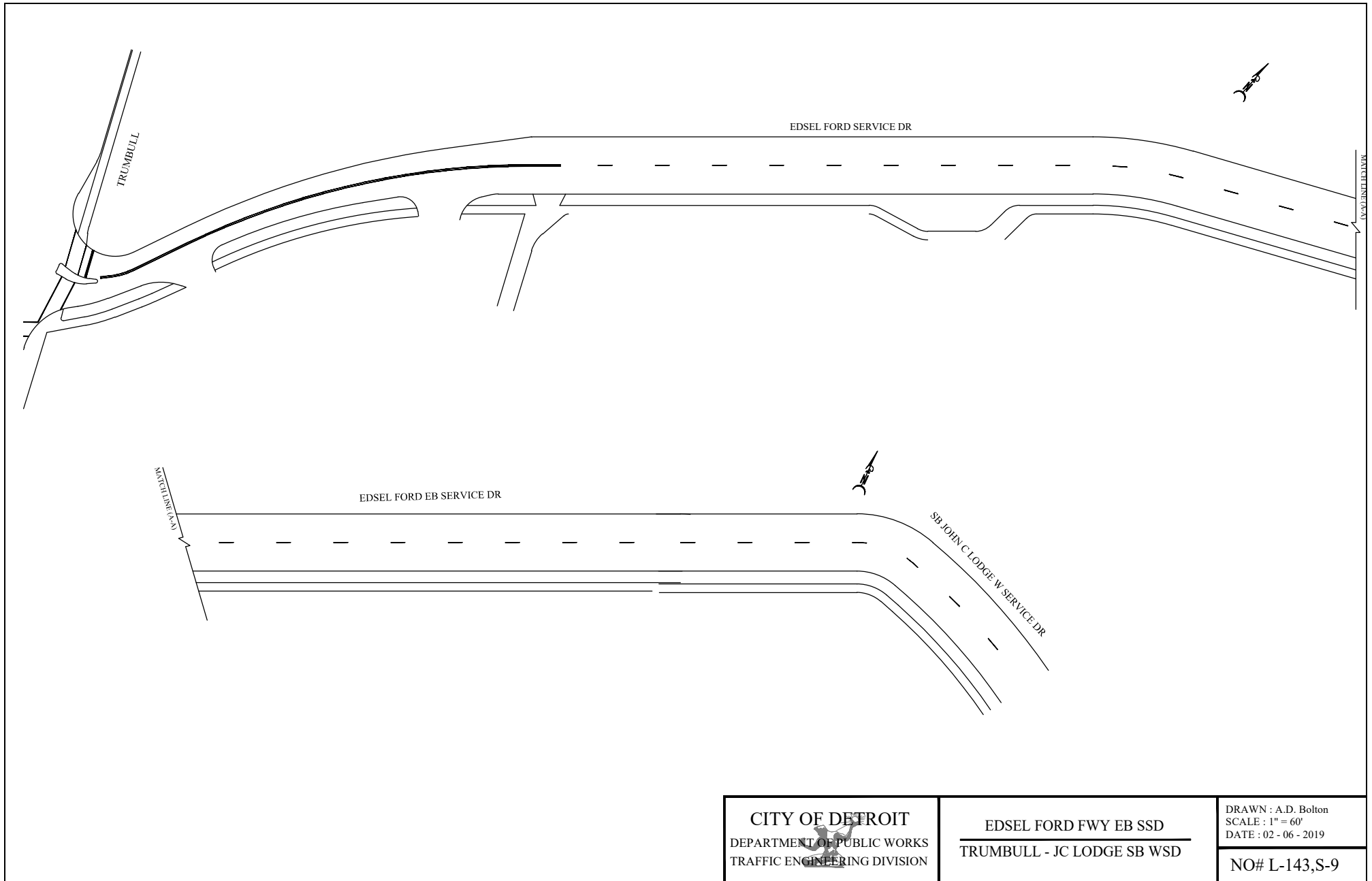
2018 PRESENT: 2,976
2032 FUTURE: 3,869
2018 PRESENTCOMMERCIAL: 5 %
2032 FUTURE COMMERCIAL: 5 %
POSTED SPEED: 30 MPH
DESIGN SPEED: 35 MPH

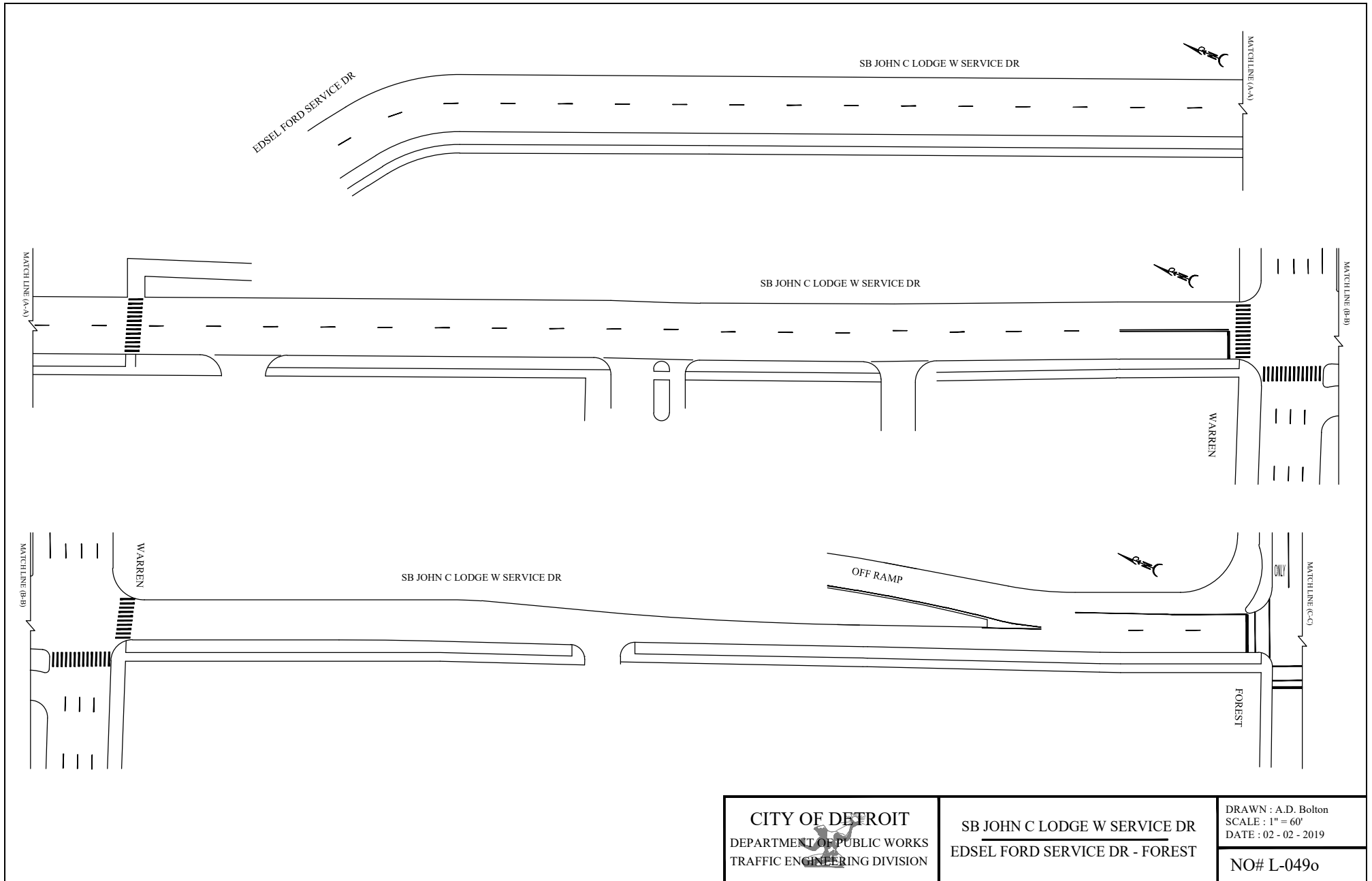
TYPE OF PAVEMENT	ASPHALT OVER CONCRETE
LENGTH	6998 FT
PAVEMENT WIDTH	(24...32...40...30...31...35...33 ...45...53) FT (VARIES)

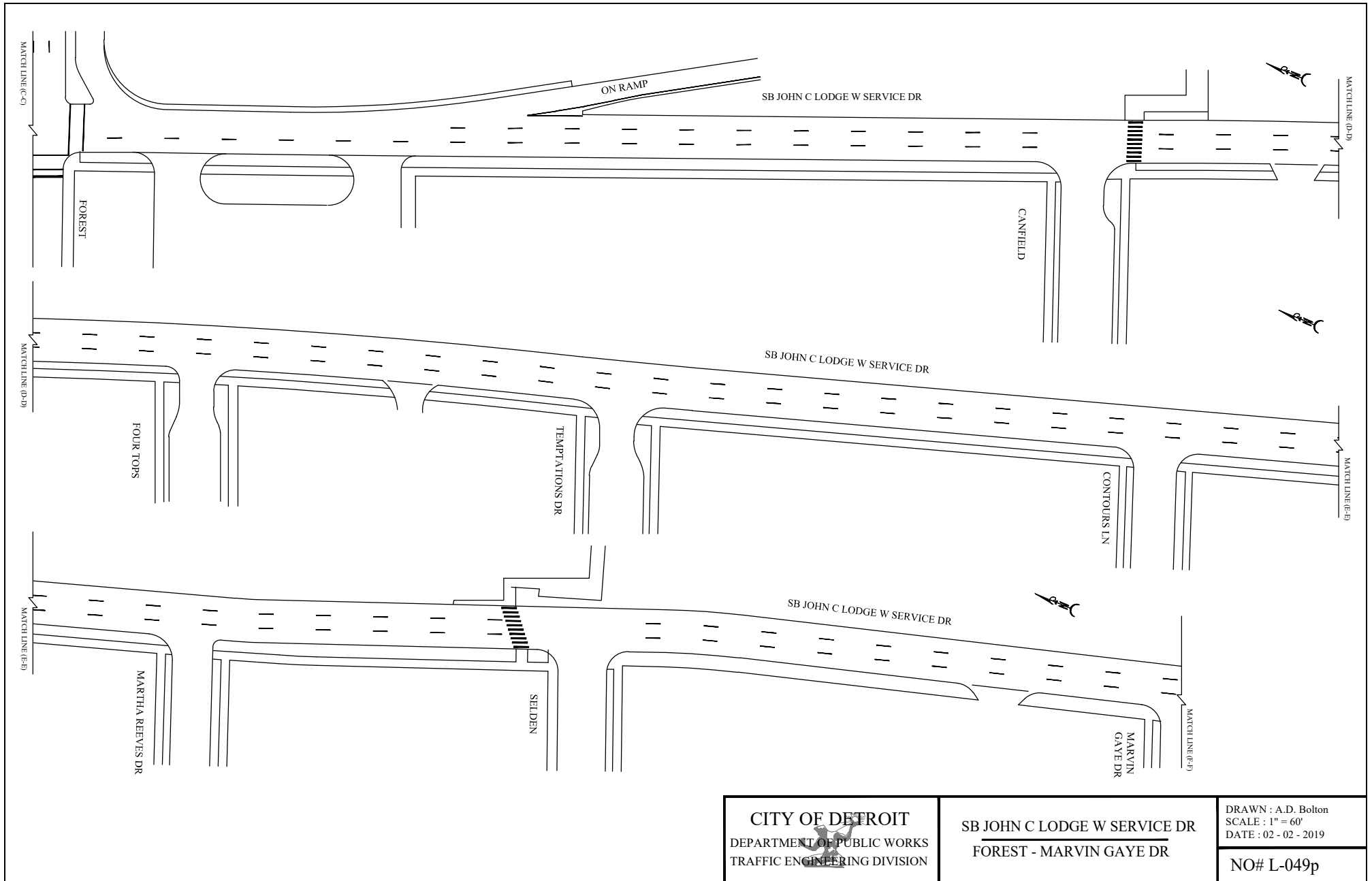
SCHEDULE OF ITEMS

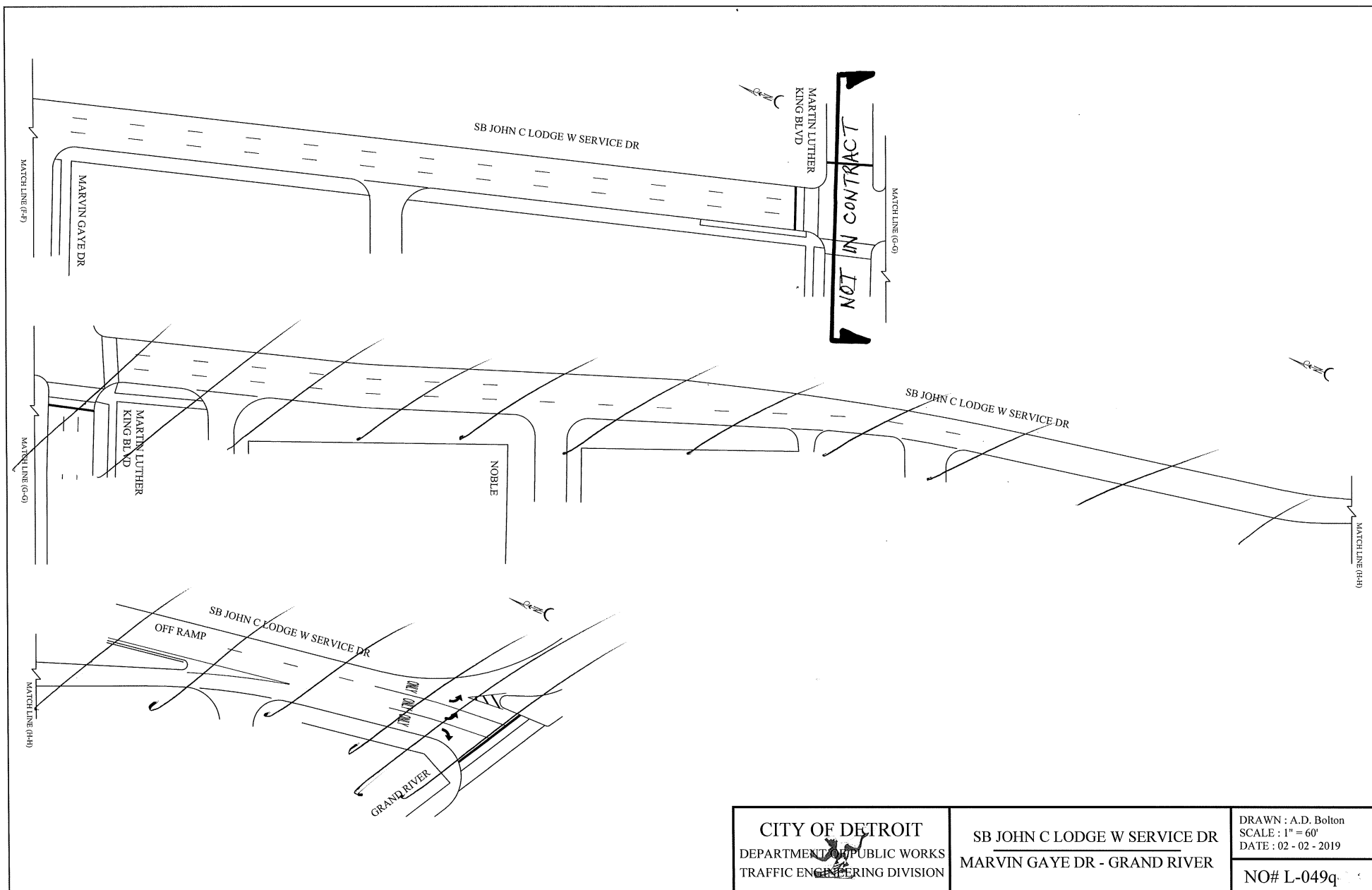
LOCATION: SB JC LODGE SD
LIMITS: Trumbull to MLK
LENGTH: 6,998 FT
WIDTH: 24-32-40-30-31-35-33-45-53 FT VARIES
WORK TYPE: Cold Milling, HMA Resurfacing, Concrete Curb, Sidewalk, Drive Approach, Drainage Improvement and Misc. Construction

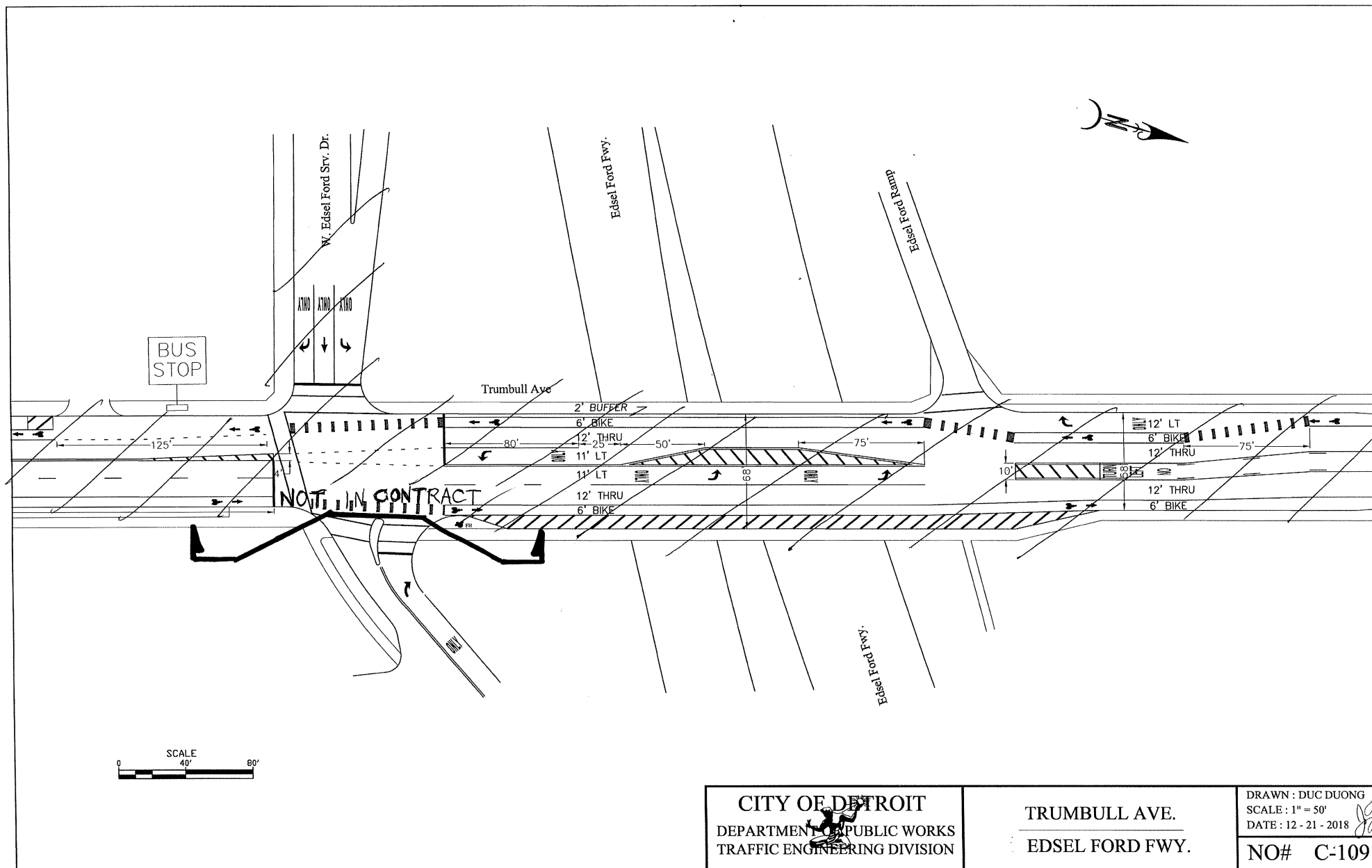
ITEM CODE	DESCRIPTION OF WORK	ITEM UNIT	ESTIMATED QUANTITY
2040055	Sidewalk, Rem	Syd	373.00
2047001	_ Curb, Rem, Modified	Ft	1240.00
4037001	_ Dr Structure Lead, Cleaning, Modified	Ft	1150.00
4037030	_ Dr Structure Cover, Modified	Lb	31625.00
4037050	_ Dr Structure Cleaning, Modified	Ea	115.00
4037050	_ Dr Structure Cover, Adj, Case 1, Modified	Ea	107.00
4037050	_ Reconstructing Dr Structure, Case 1, Modified	Ea	8.00
5010005	HMA Surface, Rem	Syd	2347.00
5010008	Pavt for Butt Joints, Rem	Syd	370.00
5010051	HMA, 4E3	Ton	3166.00
5010057	HMA, 5E3	Ton	2374.00
5017011	_ Cold Milling HMA Surface, Modified	Syd	28779.00
5017031	_ Conditioning Existing Pavement, Modified	Ton	388.00
5017031	_ HMA Approach, Modified	Ton	452.00
5017031	_ HMA Shoulder, Modified	Ton	18.00
6027011	_ Pavt Repr, Nonreinf Conc, 10 inch, Modified	Syd	70.00
6037001	_ Curb, Conc, Detail CD, Modified	Ft	970.00
6037011	_ Pavt Repr, Rem, Modified	Syd	70.00
8027001	_ Detectable Warning Surface Tile, Modified	Ft	45.00
8027010	_ Sidewalk Ramp, ADA, Modified	Sft	1620.00
8027010	_ Sidewalk, Conc, 4 inch, Modified	Sft	1740.00
8030030	Curb Ramp Opening, Conc	Ft	270.00
8110024	Pavt Mrkg, Ovly Cold Plastic, 6 inch, Crosswalk	Ft	146.00
8110041	Pavt Mrkg, Ovly Cold Plastic, 12 inch, Crosswalk	Ft	330.00
8110063	Pavt Mrkg, Ovly Cold Plastic, Lt Turn Arrow Sym	Ea	1.00
8110068	Pavt Mrkg, Ovly Cold Plastic, Only	Ea	1.00
8110153	Pavt Mrkg, Spray Thermopl, 4 inch, White	Ft	1730.00
8110154	Pavt Mrkg, Spray Thermopl, 4 inch, Yellow	Ft	1390.00
8110159	Pavt Mrkg, Spray Thermopl, 12 inch, White	Ft	80.00
8110197	Pavt Mrkg, Thermopl, 6 inch, Crosswalk	Ft	482.00
8110214	Pavt Mrkg, Thermopl, 12 inch, Crosswalk	Ft	490.00
8110217	Pavt Mrkg, Thermopl, 18 inch, Stop Bar	Ft	300.00
8117001	_ Recessing Pavt Mrkg, 12 inch	Ft	820.00
8117001	_ Recessing Pavt Mrkg, 18 inch	Ft	300.00
8117001	_ Recessing Pavt Mrkg, 6 inch	Ft	628.00
8160055	Sodding	Syd	233.00
8160090	Water, Sodding/Seeding	Unit	4.00
8167021	_ Topsoil Surface, Furn, LM, Modified	Cyd	19.00
8237050	_ Water Shutoff, Adj, Modified	Ea	1.00

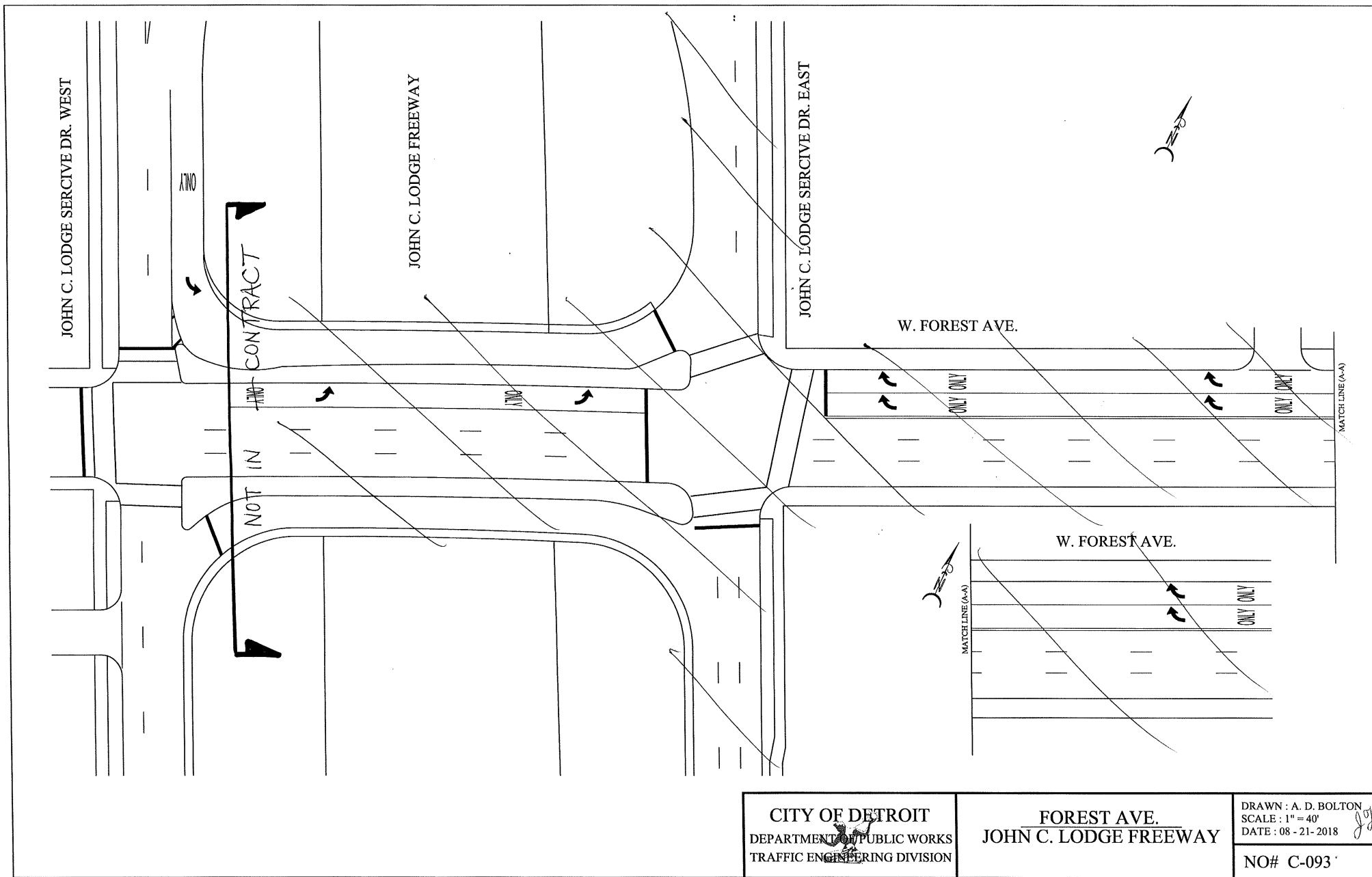










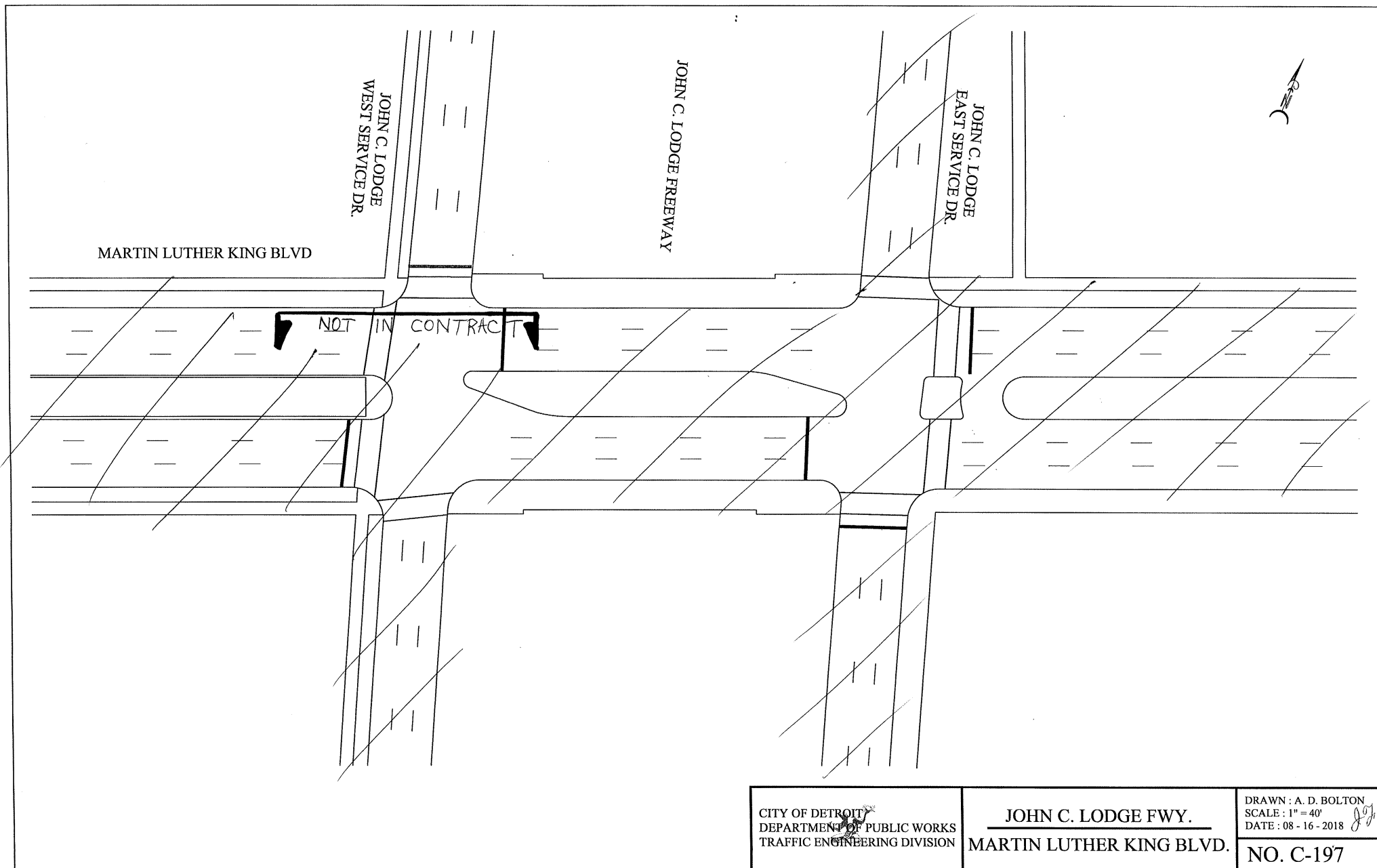


CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 TRAFFIC ENGINEERING DIVISION

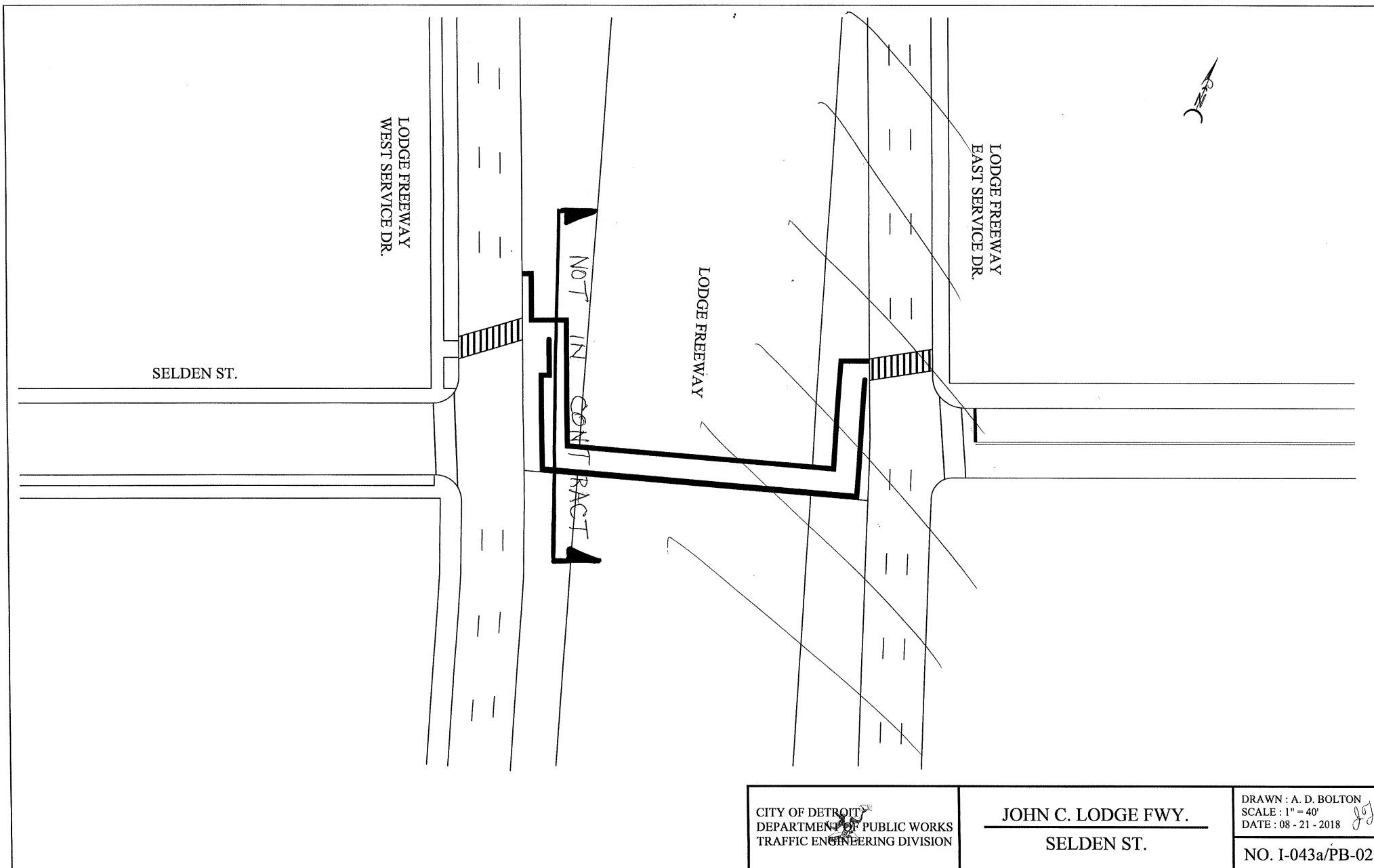
FOREST AVE.
JOHN C. LODGE FREEWAY

DRAWN : A. D. BOLTON
 SCALE : 1" = 40'
 DATE : 08 - 21 - 2018

NO# C-093



CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS TRAFFIC ENGINEERING DIVISION	<u>JOHN C. LODGE FWY.</u> MARTIN LUTHER KING BLVD.	DRAWN : A. D. BOLTON SCALE : 1" = 40' DATE : 08 - 16 - 2018 NO. C-197
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JOHN C. LODGE FREEWAY

JOHN C. LODGE W
SERVICE DR.

W CANFIELD ST.



Pedestrian Bridges X-Walks

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

CANFIELD ST.
JOHN C. LODGE SERVICE
DR. W.

DRAWN : A.D. Bolton
SCALE : 1" = 30'
DATE : 02 - 13 - 2018

NO. PB-003-W

SOUTHFIELD SD SB

JOY TO PAUL

**JN: 205935
LOCATION MAP: #3**

TRAFFIC DATA:

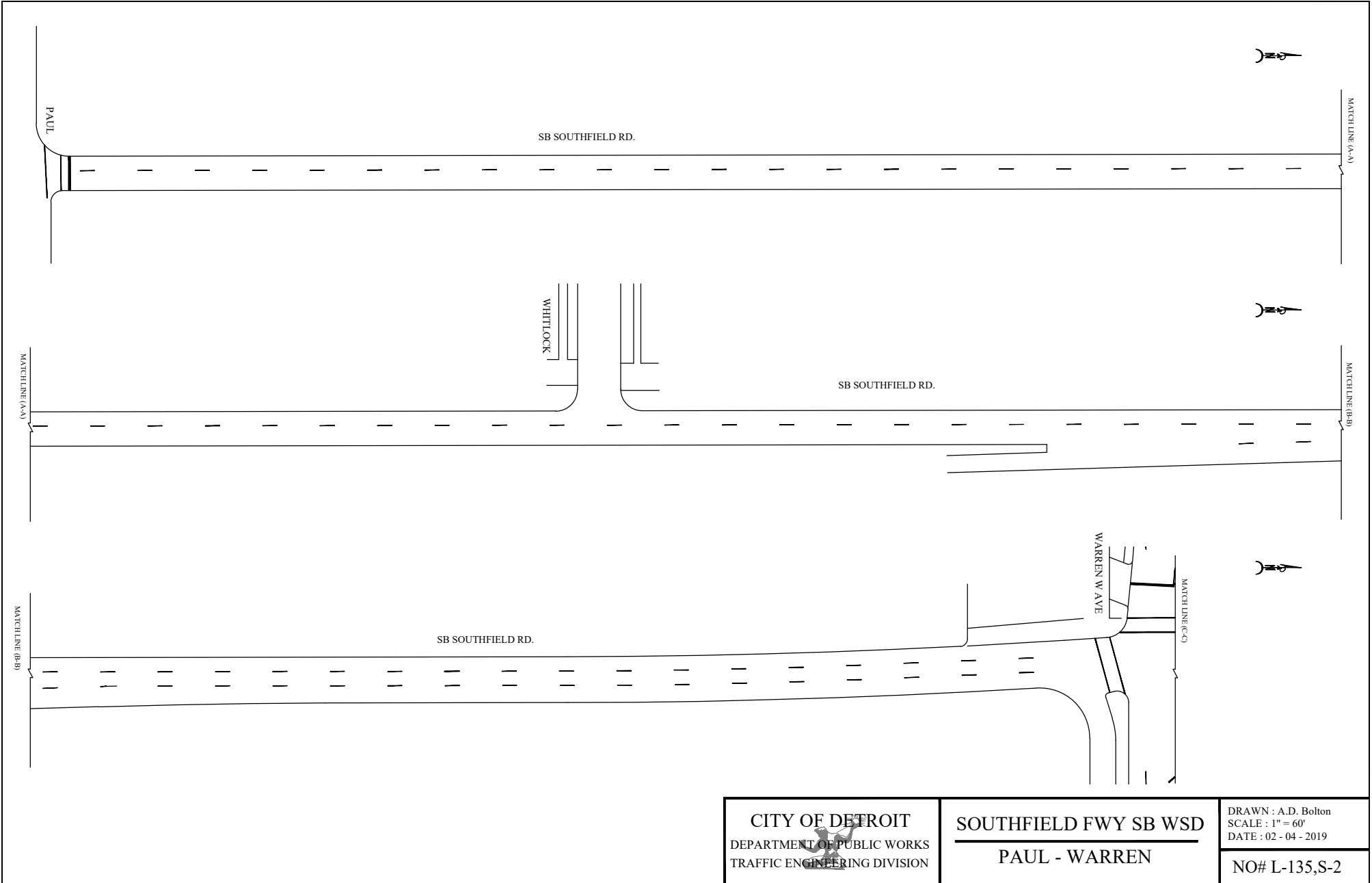
**2018 PRESENT: 3,614
2032 FUTURE: 4,698
2018 PRESENTCOMMERCIAL: 5 %
2032 FUTURE COMMERCIAL: 5 %
POSTED SPEED: 30 MPH
DESIGN SPEED: 35 MPH**

TYPE OF PAVEMENT	ASPHALT OVER CONCRETE
LENGTH	7830 FT
PAVEMENT WIDTH	(24...30...31...33) FT (VARIES)

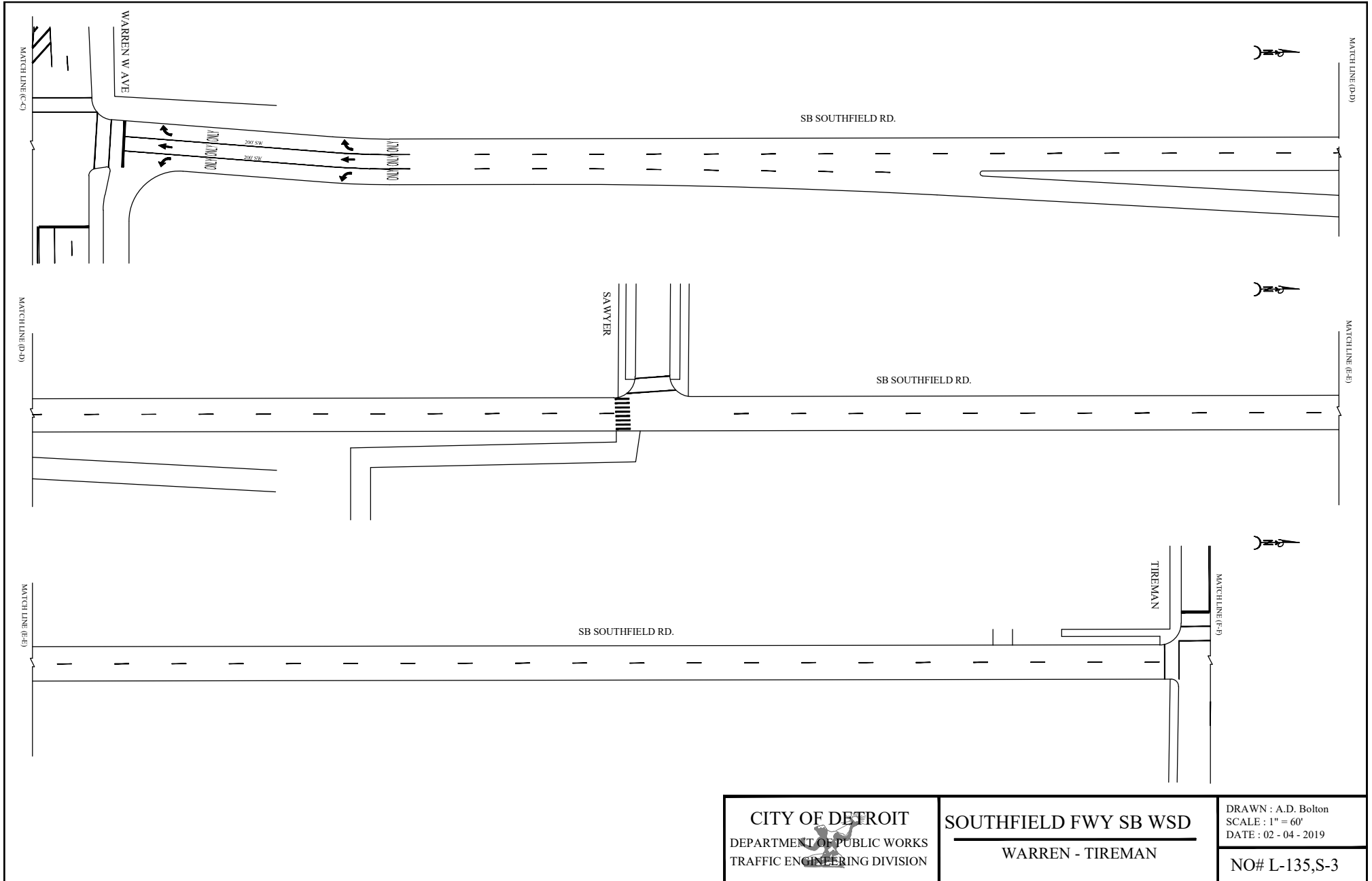
SCHEDULE OF ITEMS

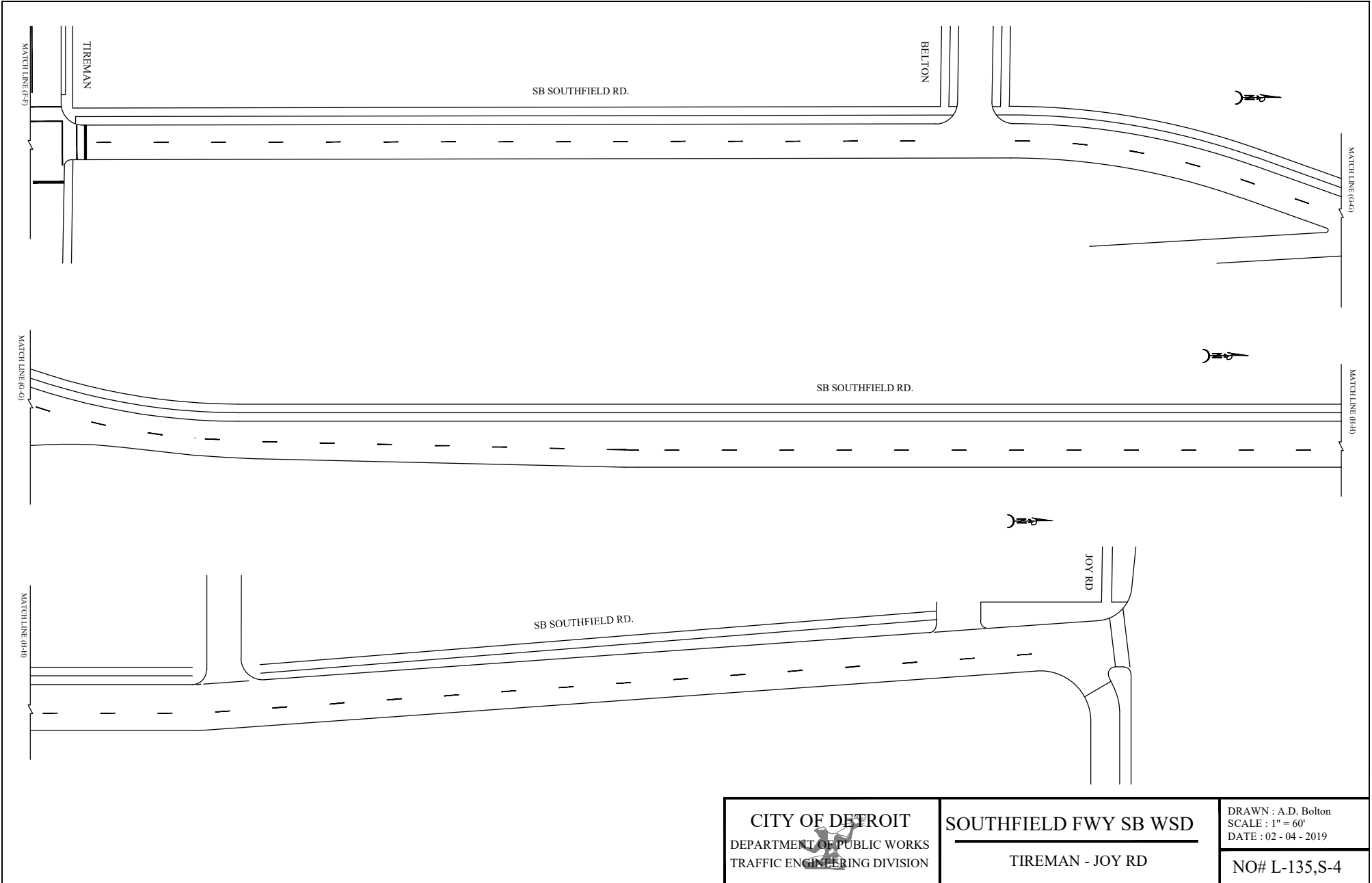
LOCATION: SB SOUTHFIELD SD
LIMITS: Joy to Paul
LENGTH: 7,830 FT
WIDTH: 24-30-31-33 FT VARIES
WORK TYPE: Cold Milling, HMA Resurfacing, Concrete Curb, Sidewalk, Drive Approach, Drainage Improvement and Misc. Construction

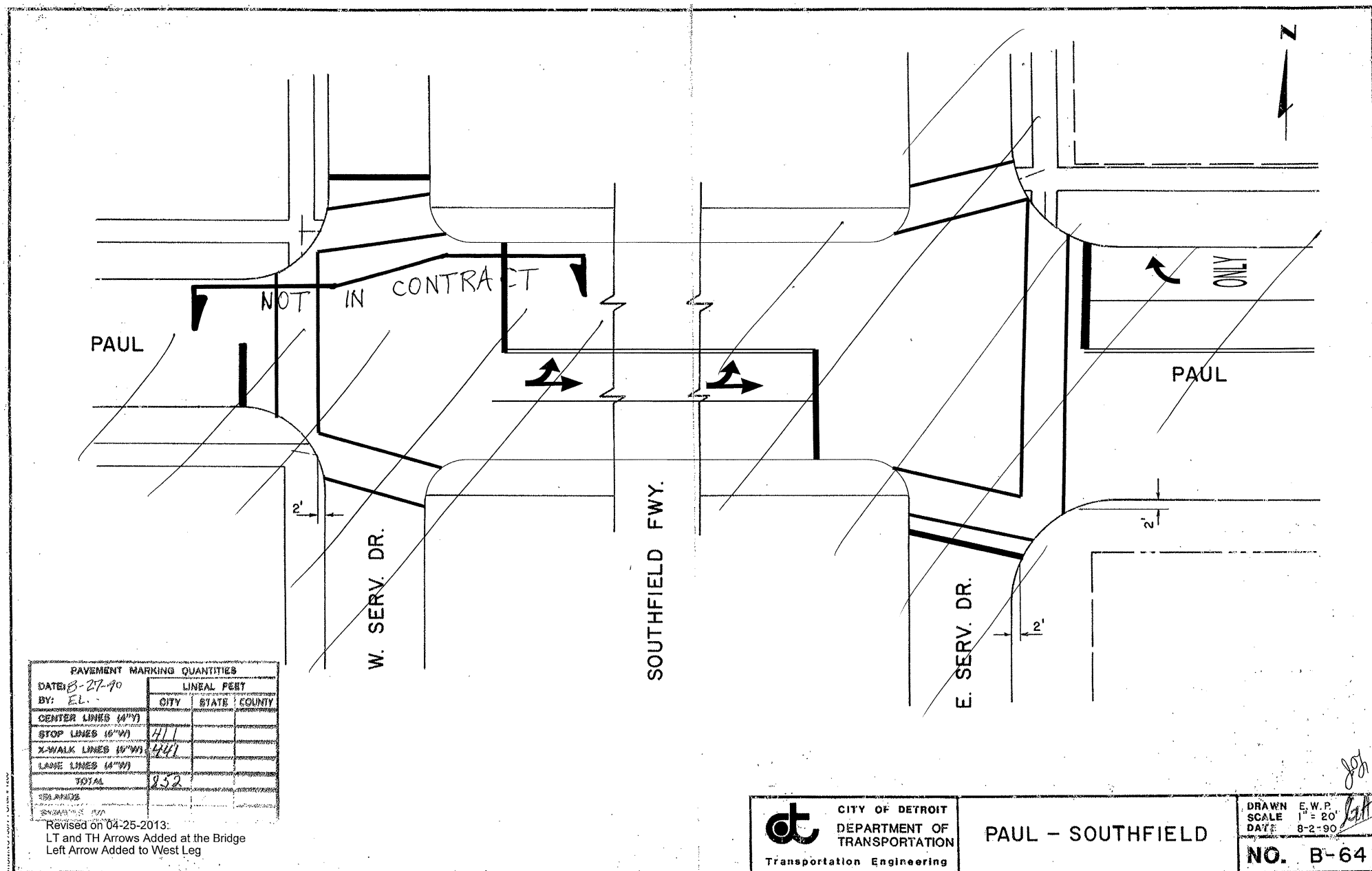
ITEM CODE	DESCRIPTION OF WORK	ITEM UNIT	ESTIMATED QUANTITY
2040055	Sidewalk, Rem	Syd	379.00
2047001	_ Curb, Rem, Modified	Ft	3170.00
4037001	_ Dr Structure Lead, Cleaning, Modified	Ft	1310.00
4037030	_ Dr Structure Cover, Modified	Lb	36025.00
4037050	_ Dr Structure Cleaning, Modified	Ea	131.00
4037050	_ Dr Structure Cover, Adj, Case 1, Modifie d	Ea	121.00
4037050	_ Dr Structure Cover, Adj, Case 2, Modifie d	Ea	1.00
4037050	_ Reconstructing Dr Structure, Case 1, Mod ified	Ea	9.00
5010005	HMA Surface, Rem	Syd	827.00
5010008	Pavt for Butt Joints, Rem	Syd	377.00
5010051	HMA, 4E3	Ton	2552.00
5010057	HMA, 5E3	Ton	1914.00
5017011	_ Cold Milling HMA Surface, Modified	Syd	23204.00
5017031	_ Conditioning Existing Pavement, Modified	Ton	313.00
5017031	_ HMA Approach, Modified	Ton	159.00
5017031	_ HMA Shoulder, Modified	Ton	15.00
6027011	_ Pavt Repr, Nonreinf Conc, 10 inch, Modified	Syd	150.00
6037001	_ Curb, Conc, Detail CD, Modified	Ft	3170.00
6037011	_ Pavt Repr, Rem, Modified	Syd	150.00
8027001	_ Detectable Warning Surface Tile, Modifie d	Ft	35.00
8027010	_ Sidewalk Ramp, ADA, Modified	Sft	1260.00
8027010	_ Sidewalk, Conc, 4 inch, Modified	Sft	1788.00
8030030	Curb Ramp Opening, Conc	Ft	210.00
8110063	Pavt Mrkg, Ovly Cold Plastic, Lt Turn Arrow Sym	Ea	2.00
8110068	Pavt Mrkg, Ovly Cold Plastic, Only	Ea	4.00
8110071	Pavt Mrkg, Ovly Cold Plastic, Rt Turn Arrow Sym	Ea	2.00
8110076	Pavt Mrkg, Ovly Cold Plastic, Thru and Lt Turn Arrow Sym	Ea	2.00
8110153	Pavt Mrkg, Spray Thermopl, 4 inch, White	Ft	1750.00
8110159	Pavt Mrkg, Spray Thermopl, 12 inch, White	Ft	120.00
8110197	Pavt Mrkg, Thermopl, 6 inch, Crosswalk	Ft	701.00
8110214	Pavt Mrkg, Thermopl, 12 inch, Crosswalk	Ft	80.00
8110217	Pavt Mrkg, Thermopl, 18 inch, Stop Bar	Ft	200.00
8117001	_ Recessing Pavt Mrkg, 12 inch	Ft	80.00
8117001	_ Recessing Pavt Mrkg, 18 inch	Ft	200.00
8117001	_ Recessing Pavt Mrkg, 6 inch	Ft	701.00
8160055	Sodding	Syd	928.00
8160090	Water, Sodding/Seeding	Unit	4.00
8167021	_ Topsoil Surface, Furn, LM, Modified	Cyd	77.00
8237050	_ Water Shutoff, Adj, Modified	Ea	3.00



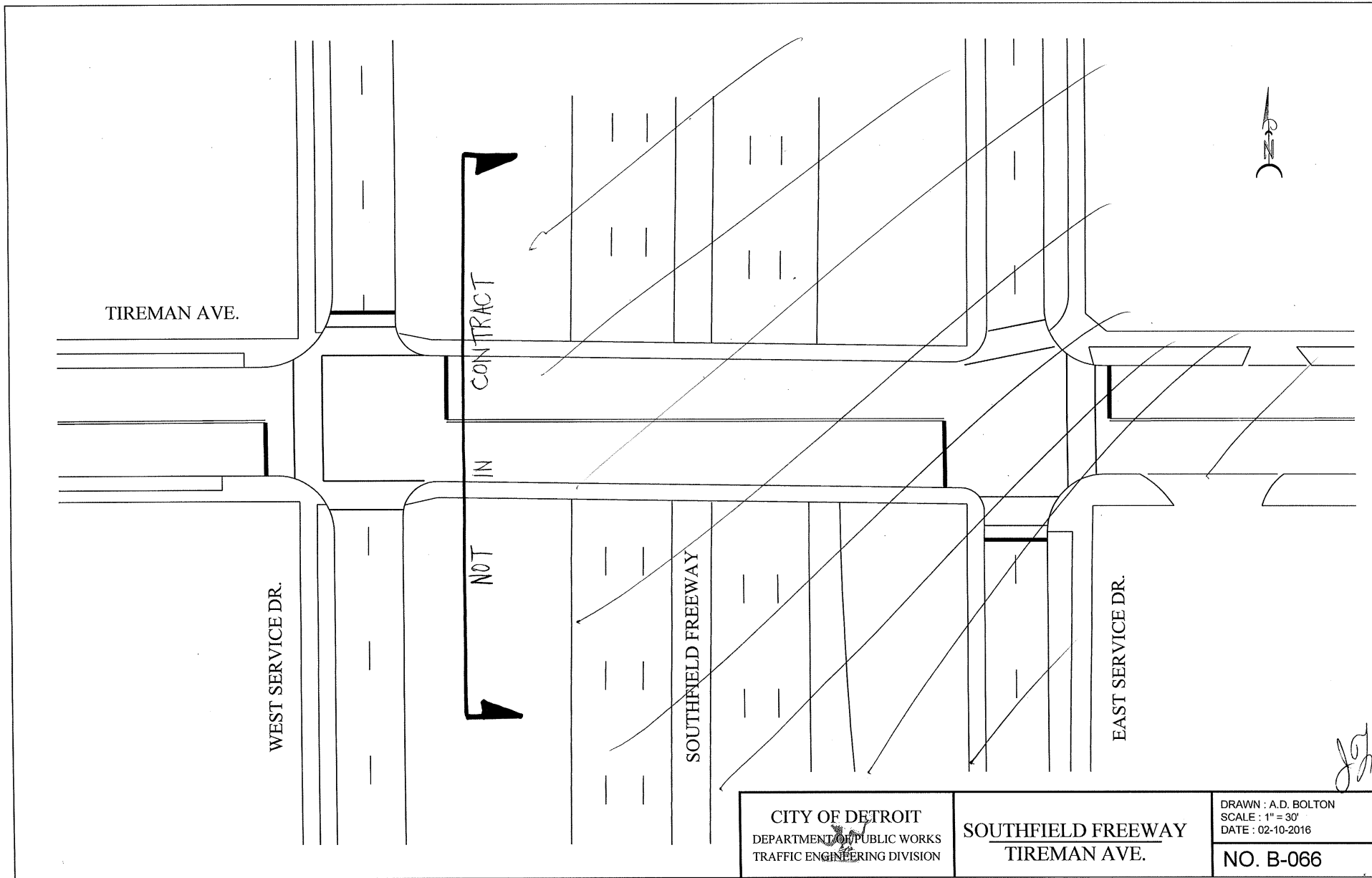
CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS TRAFFIC ENGINEERING DIVISION	SOUTHFIELD FWY SB WSD PAUL - WARREN	DRAWN : A.D. Bolton SCALE : 1" = 60' DATE : 02 - 04 - 2019
		NO# L-135,S-2



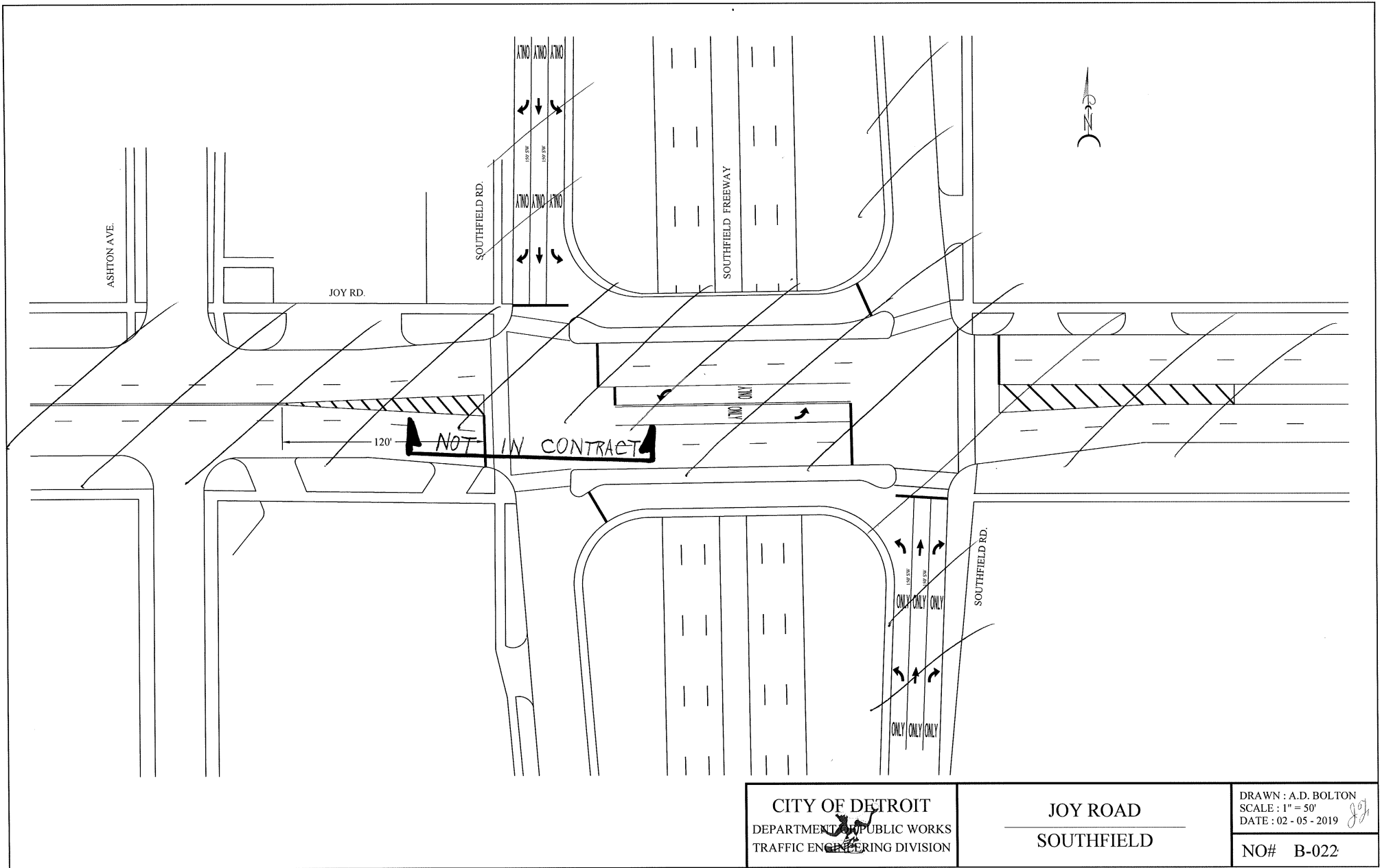








CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS TRAFFIC ENGINEERING DIVISION	SOUTHFIELD FREEWAY TIREMAN AVE.	DRAWN : A.D. BOLTON SCALE : 1" = 30' DATE : 02-10-2016 NO. B-066
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DATE: Feb 13, 2019

JN205935
ADA RAMPS INFORMATION WORKSHEET

X-EXISTING ADA RAMPS
1 OR 2- ADA RAMPS TO BE INSTALLED
0 or BLANK -RAMPS NOT REQUIRED

STREET	CROSS STREETS	NE	NW	SE	SW	MEDIAN	COMMENTS
THIRD	W.MILWAUKEE	X	X	X	X		
	W.BALTIMORE	X	X	X	X		
	AMSTERDAM	X	1-X	X	1-X		T INTERSECTION
	FORD PL	1-X	1	1-X	1		T INTERSECTION
	YORK STREET	X	X	X	X		T INTERSECTION
	HOLDEN STREET		X		X		T INTERSECTION
	ANTOINETTE	1-X	1-X	X	X		T INTERSECTION
BAGLEY	21ST STREET						
	20TH STREET	X	X	X	X		
	ST. ANNE	X	X	X	X		
	18TH STREET	X	X	X	X		
	17TH STREET	X	X	X	X		
	14TH STREET	X	X	X	X		JOGGED
	WABASH	2	1	2	1		COUNTY ROAD
	VERMONT	2	2	2	2		
	ROSA PARK	2	2	2			
	10TH STREET	2	2	1	1		
BURT	DAVISON W	X	X	X	X		T INTERSECTION
	GLENDALE	X	x	X	X		
	CAPITOL	X	X	X	X		T INTERSECTION
	PIERSON	X	X	X	X		
E LAFAYETTE	SEMINOLE ST.	2	2	2	2		
	PARKER ST.	2	2	2	2		
	VANDYKE	2	1	1	1		
	SHIPHERD ST.	2	2	2	2		
	SEYBURN ST.	2	2	1	1		
	BALDWIN ST	1	1	1	1		
	TOWNSEND ST.	2	2	1	1		
	SHRIDAN ST.	2	2	2	2		
	FIELD ST.	X	X	X	X		
	E.GRAND BLVD	1	X	1	X		
	HELEN ST.	X	1	X	1		
	CONCORD AV.	X	X	X	X		
	BELLEVUE ST.	1	X	1	X		
	BEAUFIT ST.	1	X	1	X		
	MELDRUM ST.	X	X	1	1		
E VERNOR	BURLAGE PL.	2	2	1	1		
	ELLERY ST.	2	2	1	1		
	ELMWOOD ST.	2	2	1	1		
	McDOUGAL ST.	X	X	2	2		
	PRINCE HALL DR.	X	X	2	2		
	JOSEPH CAMPAU	2	1	2	1		
	CHENE NB	X	X	X	X		
	CHENE SB	X	X	X	X		
	DUBOIS	2	1	2	1		
	ST AUNBIN SB	X	X	X	X		
	ST AUBIN NB	X	X	X	X		
NB JC LODGE SD	ABBOTT	X		X			
	HOWARD ST.	X	X	X	X		
	W. LAFAYETTE BLVD	X	X	X	X		
JOS CAMPAU	McPHERSON	2	2	2	2		
	BURNSIDE	2	2	2	2		

	HALLECK	2	2	2	2		
	McLELLAN ST.	2	2	2	2		
	MEADE AVE	2	2	2	2		
	S.CODY	2	1	2	1		
	N.CODY	2	1	2	1		
	S .LAWLEY ST.	1	2	1	2		
	N .LAWLEY ST.	1	2	1	2		
	S.DEARING	1	2	1	2		
	N.DEARING	2	1	2	1		
	GRANT ST.	2	1	2	1		
LINWOOD	CLEMENT	2	X-1	2	X-1		
	GRAND	2	2	2	2		
	PASADENA	2	2	2	2		
	FORD PL	2		2			
	OAKMAN CT	1	2	1	2	X	
	LABELLE	2	1	2	1		
	FLEET	1	2	1	2		
	KENDALL	2	1	2	1		
	OAKMAN BLVD	X	X	X	X	X	
	OAKMAN BLVD	X	X	X	X	X	
	DORIS	1	2	1	2		
McCLELLAN	AGNES	X	X	X	X		
	ST.PAUL	X	X	X	X		
	PONTIAC	2	1	2	1		T-INTERSECTION
	KERCHEVAL	X	X	X	X		
	AMITY	2	1	2	1		T-INTERSECTION
	NAVARRE	2	1	2	1		T-INTERSECTION
	PRYOR	2	1	2	1		T-INTERSECTION
	E VERNOR HWY	X	X	2	2		
	CARTEN	2	1	2	1		T-INTERSECTION
	LOUIS	1	2	1	2		T-INTERSECTION
	DORCHESTOR	2	1	2	1		T-INTERSECTION
	CHARLEVOIX	2	2	2	2		
	JAMESON	2	1	2	1		T-INTERSECTION
	MARIETTA	2	1	2	1		T-INTERSECTION
	CUTLER	2	1	2	1		T-INTERSECTION
	GOETHE	2	2	2	2		JOGGED
	SCHILLER	2	1	2	1		T-INTERSECTION
	LESSING	2	1	2	1		T-INTERSECTION
	MACK	X	X	X	X		
	EMMONS ST.	2	1	2	1		
	WEYHER ST.	2	1	2	1		
	SELVESTOR ST.	X-1	X-1	X-1	X-1		
	ELSA ST.	2	1	2	1		
	LAURA ST.	2	1	2	1		
	RICHTER ST.	2	1	2	1		
	BARRY ST.	2	1	2	1		
	E CANFIELD ST.	2	2	2	2		
	WARNER ST.	2	1	2	1		
	E FOREST ST.CARLETON	2	1	2	1		
	GRAVES	X-1	X-1	X-1	X-1		
	E WARREN	X	X	X	X		
	MURRAY	2	1	2	1		
	LERNAULT	2	1	2	1		
	MOFFAT	2	2	2	2		
	GRESSWELL	2	1	2	1		

	BARKER	1	1	2	1		
	CHAPIN	2	2	2	2		JOGGED
	NICHOLS	2	1	2	1		T-INTERSECTION
	HARRY	2	1	2	1		T-INTERSECTION
	CAIRNEY	2	X-1	2	X		
	SHOEMAKER	2	1	2	1		
	FELTCH	2	2	X-1	2		
NB JC LODGE SD	PARKING LOT ENTRANC	0	1	0	x		
	PEDESTRIAN BRIDGE	1	1	0	0		
NB SOUTHFIELD SD	WHITLOCK AVE	1	X	1	X		
	DIVERSEY AVE	1	X	1	X		
	TIREMAN AVE	2	X	2	X		
PURITAN	FENMORE	2	2	1	1		
	ARCHDALE	2	2	2	2		
	HARLOW	2	2	1	1		
	OAKFIELD	2	2	1	1		
	LINDSAY	2	2	2	2		
	GILCHRIST	2	2	2	2		
	BILTMORE	2	2	2	2		
	FERGUSON	2	2	2	2		
	ASBURY	X	X	X	X		
	MURRAY HILL	2	2	2	2		
	ST MARYS	2	2	2	2		
	MANSFIELD	2	2	2	2		
	RUTHERFORD	X	X	X	X		
	PREVOST	2	2	2	2		
	WINTHROP	2	2	2	2		
SB JC LODGE SD	WARREN AVE	0	X	0	X		
	W.FOREST AVE.	1	X	X	X		
	GREENFIELD	0	X	1	1		
	TEMPTATION DR.	0	X	0	X		
	FOUR TOPS	0	1	0	X		
	MARTHS REEVES	0	X	0	X		
	SELDEN ST.	1	X-1	1	X-1		
	MARVIN GAYE DR.	0	X-1	0	X		
SB SOUTHFIELD SD	VAN BUREN		X-1		X-1		
	CONSTANCE AVE		X-1		X-1		
	BELTON AVE.		X		X		
	TIREMAN ST	X	X-1	X	X-1		
	SAWYER ST		X	1	X		
	W.WAREEN		X		X		
	WHITLOCK AVE		1	X	1		
SPINOZA	W CHICAGO						
WOODMERE	ENGLISH	1		X	1		
	NORMAN	2	1	X	1		
	PEARL	2	1	2	1		
	WENDELL	2	1	2	1		
	FERRIS	2	1	2	1		
	LAWNDALE	2	2	2	2		
	CABOT	2	2	2	2		
	OAKDALE ST.	2	2	2	2		
	SHARON	2	2	2	2		

BUS STOP INFORMATION WORKSHEET

STREET # - NAME	FROM	TO	BUS STOP LOCATIONS (ONE SIDE)	BUS STOP LOCATIONS (OTHER SIDE)	COMMENTS (PROVIDE INFORMATION FOR EACH)
Third	W. Grand Blvd	W. Milwaukee	0	0	
Third	W. Milwaukee	W. Baltimore	1	0	Bus Stop on westside & pad is ok
Third	W. Baltimore	Amsterdam	0	0	
Third	Amsterdam	Ford PI	0	0	
Third	Ford PI	York st	1	0	Bus Stop on westside & pad is ok
Third	York st	Holden st	0	0	
Third	York st	Antoinette	0	0	
Third	Antoinette	I-94	1	0	Bus Stop on westside & pad is ok
Bagley	21st street	20th street	1	0	Bus Stop on southside & pad is ok
Bagley	20th street	St. Anne	1	0	Bus Stop on northside & pad is ok
Bagley	St. Anne	Johnson	0	0	
Bagley	Johnson	18th strret	0	0	
Bagley	18th strret	17th strret	1	1	Bus Stops on northside & southside & pad is ok
Bagley	17th strret	16th strret	0	0	
Bagley	16th strret	15th strret	0	0	
Bagley	14th strret	Wabash	1	0	Berm is 4.5' & requires a 4.5' x 8' bus pad
Bagley	Wabash	Vermont	1	0	Bus Stop on northside & a 5' x 8' is required
Bagley	Vermont	Rosa Park BLVD	1	0	Bus Stop on southside & a 5' x 8' is required
Bagley	Rosa Park BLVD	10 th street	1	0	Bus Stop on northside & a 5' x 8' is required
Bagley	10 th street	Trumbull	1	0	Bus Stop on southside & pad is ok

BUS STOP INFORMATION WORKSHEET

Burt	I-96 (Schoolcraft)	Davison	0	0	
Burt	Davison	Glendale	0	0	
Burt	Glendale	Fullerton	0	0	
Burt	Fullerton	Capitol	0	0	
Burt	Capitol	N. Pierson	0	0	
Burt	N. Pierson	Plymouth	0	0	
E Lafayette	Mt. Elliott	Meldrum	1	1	Meets requirment
E Lafayette	Meldrum	Beaufait	1	0	Meets requirment
E Lafayette	Beaufait	Bellevue	1	0	Meets requirment
E Lafayette	Concord	Canton	1	1	Meets requirment
E Lafayette	Helen	E Grand Blvd	1		Meets requirment
E Lafayette	E Grand Blvd	Field	1		Meets requirment
E Lafayette	Field	Sheridan	1	1	Meets requirment
E Lafayette	Townsend	Baldwin	1	1	Meets requirment
E Vernor	Gratiot	Mt Elliott	0	0	
NB JC Lodge SD	Howard St	Fort St	0	0	
Jos Compau	Carpenter	McPherson St	1	0	Bus Stop is ok
Jos Compau	McPherson St	Burnside	0	0	
Jos Compau	Burnside	Halleck St.	0	1	pad 8' x5'
Jos Compau	Halleck St.	McLean St.	1	0	Bus Stop is ok
Jos Compau	McLean St.	Cody	0	0	
Jos Compau	Cody	Lawley St.	0	1	Bus Stop is ok
Jos Compau	Lawley St.	Grant St.	0	0	

BUS STOP INFORMATION WORKSHEET

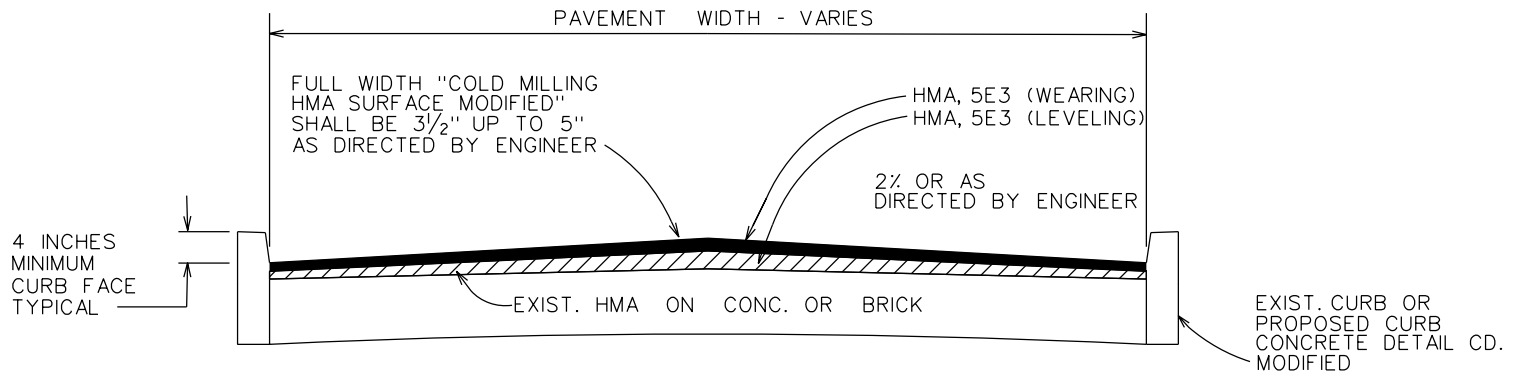
Jos Compau	Grant St.	E Davison	0	1	pad 8' x5'
Linwood	W. Davison	Clement	1	0	Bus Stop is ok
Linwood	Clement	Grand	0	0	
Linwood	Grand	Pasadena	1	1	Bus Stop on eastside is ok, & westside need 5'x8' pad
Linwood	Pasadena	Oakman Ct	1	0	Bus Stop on westside need 5'x8' pad
Linwood	Ford	La Belle	1	0	Bus Stop on eastside need 5'x8' pad & 3'x6' bus walk
Linwood	La Belle	Fleet	0	0	
Linwood	Fleet	Kendall	0	0	
Linwood	Kendall	Oakman Blvd	1	0	Bus Stop on westside is ok
Linwood	Oakman Blvd	Doris	1	0	Bus Stop on eastside need 5'x8' pad
Linwood	Doris	Fenkell	1	0	Bus Stop on westside need 5'x8' pad
Linwood	Doris	Fenkell	1	0	Bus Stop on westside need 5'x8' pad
McClellan	E. Jefferson	Agnes	1	0	Bus Stop is ok
McClellan	Agnes	Kercheval	0	0	
McClellan	Kercheval	Amity	1	1	Bus Stop is ok
McClellan	Amity	E Vernor Hwy	0	0	
McClellan	E Vernor Hwy	Carten	1	0	Bus Stop is ok
McClellan	Carten	Charlevoix	0	0	
McClellan	Charlevoix	Jameson	1	0	100' from Charlevoix 8'x5' pad
McClellan	Jameson	Marietta	0	0	
McClellan	Marietta	Cutler	1	0	100' from Marietta 8'x5' pad
McClellan	Cutler	Goethe	0	0	
McClellan	Goethe	Schiller	1	0	100' from Goethe 8'x5' pad
McClellan	Schiller	Lessing	0	0	
McClellan	Lessing	Mack	1	0	30' from Mack 8'x5' pad
McClellan	Mack	Gratiot	0	0	

BUS STOP INFORMATION WORKSHEET

NB JC Lodge SD	W. Kirby St	3rd Ave	0	0	
NB Southfield SD	Paul Ave	Whitlock	0	0	
NB Southfield SD	Whitlock	Warren	1	0	6x8 Pad Needed
NB Southfield SD	NB JC Lodge SD	Diversey	2	0	6x8 Pad Needed & another is ok
NB Southfield SD	Diversey	Tireman	1	0	6x8 Pad Needed
NB Southfield SD	Tireman	Joy Rd	1	0	6x8 Pad Needed
Puritan	Southfield FWY	Fenmore	1	1	South side needs pad, 8'x6'
Puritan	Fenmore	Archdale	1	0	Pad needs replace, 8'x6'
Puritan	Archdale	Harlow	0	0	No Stop
Puritan	Harlow	Oakfield	1	1	Need Pads, 8'x6'x2
Puritan	Oakfield	Lindsay	0	0	No Stop
Puritan	Lindsay	Gilchrist	1	1	Need Pads 8
Puritan	Gilchrist	Biltmore	0	0	No Stop
Puritan	Biltmore	Ferguson	1	1	North side Needs Pad 2' x 15'
Puritan	Ferguson	Asbury	0	0	No Stop
Puritan	Asbury	Murray Hill	1	1	Need Pads, 8'x6'x2
Puritan	Murray Hill	St Marys	0	0	No Stop
Puritan	St Marys	Mansfield	1	1	Need Pads 8'x16'x2
Puritan	Mansfield	Rutherford	0	0	No Stop
Puritan	Rutherford	Prevost	1	0	Need Pad 8' x 16'
Puritan	Prevost	Forrer	1	0	Pad 14' x 8'
Puritan	Forrer	Winthrop	1	1	No Pad on south side 16'xx8'
Puritan	Winthrop	Greenfield	1	0	
SB JC Lodge SD	Trumbull Ave	Warren	0	0	
SB JC Lodge SD	Warren Ave	Forest Ave	1	0	Pad 8' x 6'
SB JC Lodge SD	Forest Ave	MLK	0	0	
SB Southfield SD	Paul	Witlock Ave	1	0	Pad 8' x 6'
SB Southfield SD	Witlock Ave	Warren Ave	1	0	Pad 8' x 6'

BUS STOP INFORMATION WORKSHEET

SB Southfield SD	Warren Ave	Sawyer	1	0	Pad 8' x 6'
SB Southfield SD	Sawyer	Tireman	1	0	Pad 8' x 6'
SB Southfield SD	Tireman	Belton St	0	0	No Stop
SB Southfield SD	Belton St	Constance St	1	0	Pad 8' x 6'
SB Southfield SD	Constance St	Joy Rd	0	0	No Bus Stop
Spinoza	Sawyer	Orangelawn	0	0	No Bus Stop
Woodmere	Dix	Richard	0	0	No Bus Stop



TYPICAL CROSS SECTION COLD MILLING HMA SURFACE AND RESURFACING

NOTES:

1. THE CONTRACTOR SHALL PLACE ADDITIONAL HMA MIXTURE AT VARIOUS LOCATIONS WHERE NEEDED, IN ORDER TO MAKE A UNIFORM CROSS-SECTION. AN ADDITIONAL 10% OF HMA 5E3 HAS BEEN ESTIMATED TO PROVIDE MATERIAL TO RE-ESTABLISH THE PAVEMENT CROSS-SECTION AND FOR WEDGING AT MILLED STREET INTERSECTIONS.
2. "COLD-MILLING HMA SURFACE MODIFIED" SHALL APPLY ACROSS THE FULL PAVEMENT WIDTH AS SHOWN ON THE PLAN PAVEMENT WIDTH AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
3. IF EXISTING HMA OVERLAY IS LESS THAN $3\frac{1}{2}$ ", COLD MILL THE FULL WIDTH OR AS DIRECTED BY THE ENGINEER.

PROJECT SUMMARY:

COLD MILL FROM $3\frac{1}{2}$ INCHES UP TO 5 INCHES, AS DIRECTED BY THE ENGINEER OF EXISTING HMA SURFACE AND REPLACED WITH 2 INCHES OF 4E3 HMA LEVELING COURSE MIXTURE WITH A YIELD OF 220 LBS PER SQUARE YARD AND $1\frac{1}{2}$ INCHES OF 55E3HMA WEARING COURSE MIXTURE WITH A YIELD OF 165 LBS PER SQUARE YARD. THE PROJECT ALSO INCLUDED CONCRETE CURB, SIDEWALK, CURB RAMPS, DRIVEWAY APPROACHES, DRAINAGE STRUCTURES, EXCAVATION, PAVEMENT REMOVAL, LANE TIES, PAVEMENT MARKINGS AND MISCELLANEOUS CONSTRUCTION.

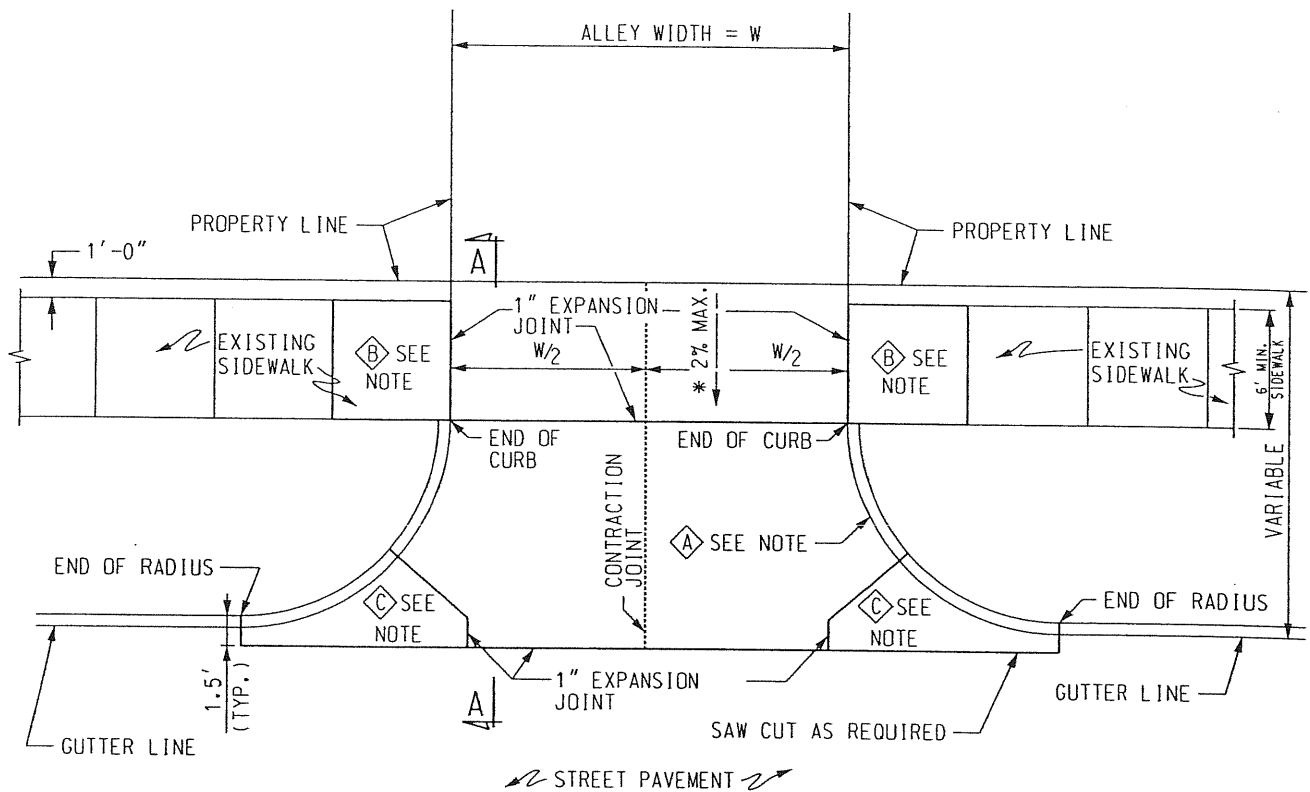
HMA APPLICATION ESTIMATE					
I.D. No.	Item	Rate Per Syd	Est. Thick.	Performance Grade	Remarks
HMA, 5E3	HMA mix. - 5E3	165 LBS	$1\frac{1}{2}$ "	64-22	USE 5E3 FOR WEDGING
HMA, 4E3	HMA mix. - 4E3	220 LBS	2"	64-22	
HAND PATCHING	HMA mix. - 5E3	330 LBS	3"	64-22	IN TWO LIFTS. FOR RATE AND PG SEE HMA APPLICATION ESTIMATE
HMA APPROACH, MODIFIED	HMA mix. - 5E3 & 4E3	165 LBS	$1\frac{1}{2}$ "	64-22	
HMA SHOULDER MODIFIED	HMA mix. - 4E3	220 LBS	2"	64-22	IN TWO LIFTS
	HMA mix. - 5E3	330 LBS	3"	64-22	

HMA Bond Coat 0.05 to 0.10 Gal./Syd. - Included in the pay item "HMA, 4E3"
Also Applies to Bit. Approaches for Street Intersections

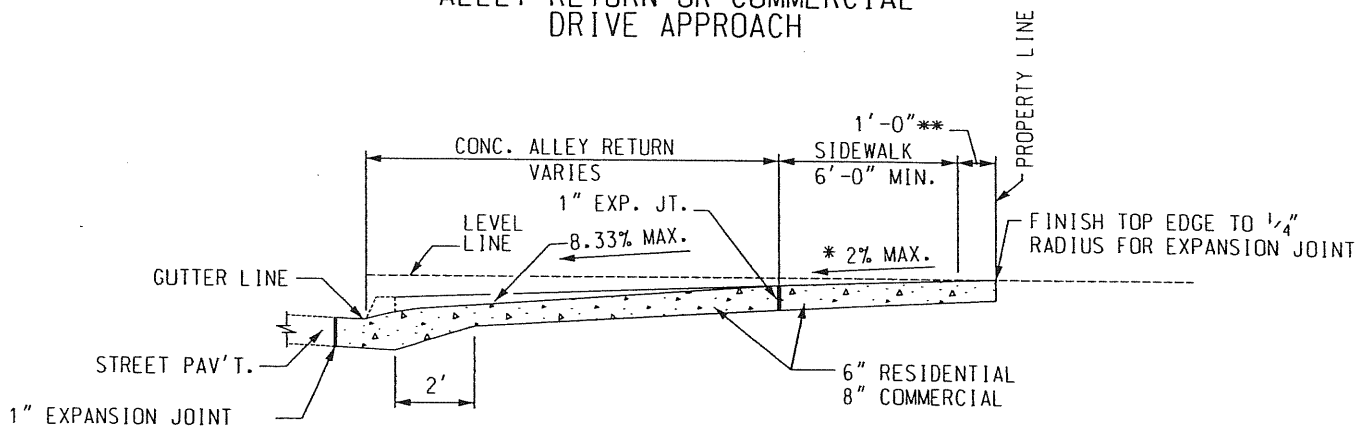
B									
A									
DESCRIPTION	DRWN	CHKD	APPD	DATE					
REVISIONS									
DRAWN BY	CHECKED								
W/LW	KSM								
DATE	APPROVED								
APR 2018	SRB								

TYPICAL CROSS SECTION COLD MILLING HMA SURFACE AND RESURFACE

CITY OF DETROIT CITY ENGINEERING DEPARTMENT SURVEY BUREAU	JOB NO. DRWG. NO.
--	--



ALLEY RETURN OR COMMERCIAL DRIVE APPROACH



SECTION A-A

REVISIONS	DESCRIPTION	Drawn	Chkd	Appd	Date
C					
B	* SIDEWALK CROSS SLOPE	KSM	J.J.		2/7/07
A	METRIC TO ENGLISH UNIT SYSTEM	KSM	M.S.	N.H.	12/02



PREPARED BY
BUREAU OF STREETS
AND HIGHWAYS

K.S.M.

DRAWN BY:

J.J.

CHECKED BY:

APPROVED

Sam Patel

ENGINEER OF STREETS

HEAD ENGINEER

Jerry Jacob
CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION, D.P.W.

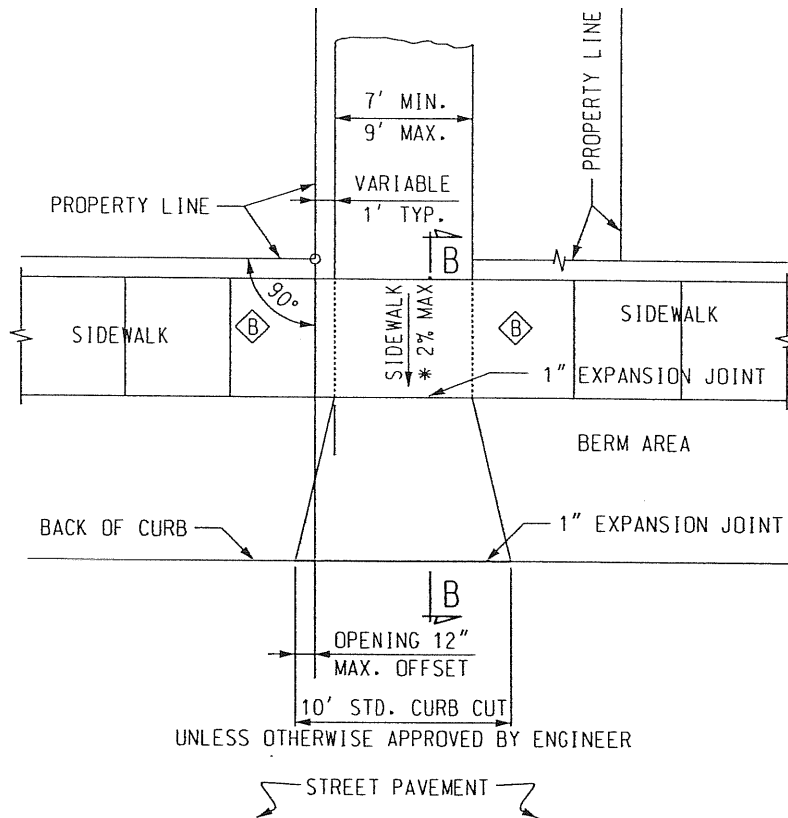
STANDARD PLAN FOR
DETAIL OF ALLEY RETURN
AND DRIVE APPROACH

03/07/98
PLAN DATE

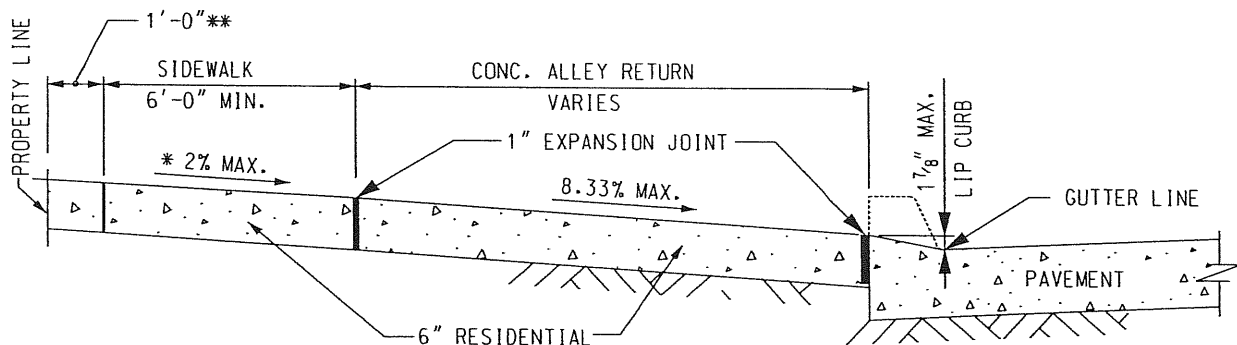
DRAWING NO.
7

DETAIL STANDARD NO.
C-4384

SHEET
1 OF 2



DETAIL OF CURB CUT OPENINGS
FOR RESIDENTIAL DRIVEWAY



SECTION B-B

NOTES:

IF ALLEY IS PAVED, CONSTRUCT RETURN WITH 1" EXPANSION JOINT ON PROPERTY LINE.

- Ⓐ RADIUS TO BE 10' UNLESS OTHERWISE SHOWN ON PAVING PLAN.
 - Ⓑ SIDEWALK FLAGS ABUTTING ALLEY SHALL BE 6" THICK. SIDEWALK SHALL BE REPLACED FOR A SMOOTH TRANSITION AND TO ATTAIN A CROSS SLOPE OF 2% MAX. OR AS DIRECTED BY THE ENGINEER.
 - Ⓒ KEY JOINT OR "B" JOINT IF REINFORCED PAVEMENT.
- ALL DIMENSIONS ARE IN INCHES(") UNLESS OTHERWISE NOTED.

* SIDEWALK CROSS SLOPE SHALL BE 2% MAX. OR AS DIRECTED BY THE ENGINEER.

** THE SLOPE OF THE DRIVEWAY IN THE 1 FT. SPACE ADJACENT TO THE PROPERTY LINE MAY BE ALTERED UP TO 10% TO MEET EXISTING CONDITIONS.

REVISED DATE (METRIC TO ENGLISH UNIT SYSTEM): DEC. 2002 404

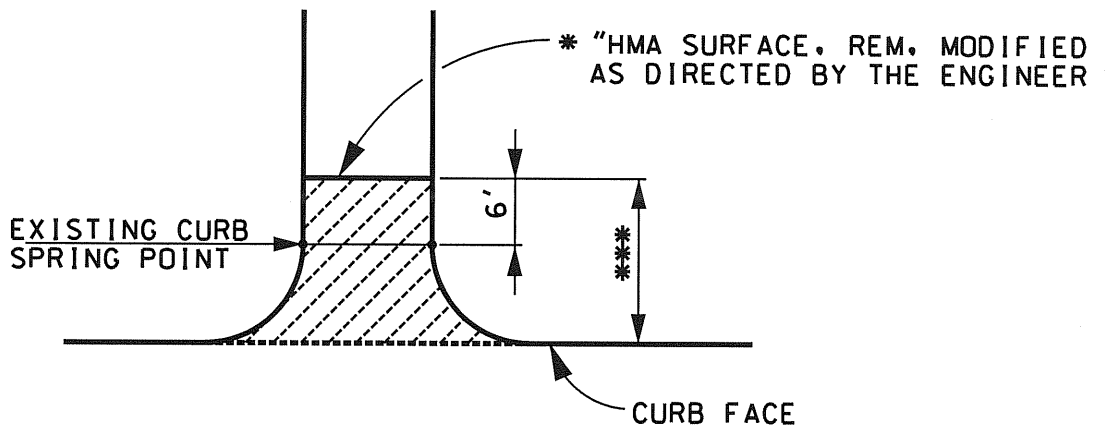
C	DESCRIPTION	Dwn	Chkd	Appd	Date
B	* SIDEWALK CROSS SLOPE	KSM	J.J.		2/7/07
A	Chgd. THICKNESS NOTE	KSM	N.H.	W.T.	10/06

REVISIONS

CITY OF DETROIT
CITY ENGINEERING DIVISION, D.P.W.

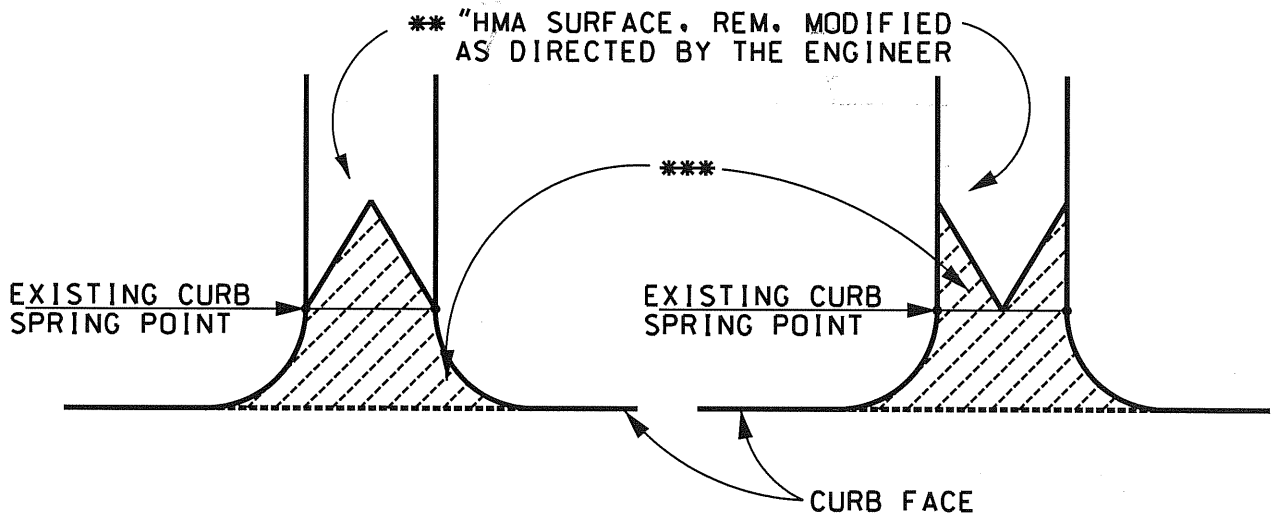
STANDARD PLAN FOR
DETAIL OF ALLEY RETURN
AND DRIVE APPROACH

03/07/98 PLAN DATE	DRAWING NO. 7	DETAIL STANDARD NO. C-4384	SHEET 2 OF 2
-----------------------	------------------	-------------------------------	-----------------



*** RESURFACING STREET RETURNS SHALL BE PAID FOR AS
"HMA APPROACH, MODIFIED"

* REMOVING HMA SURFACE AREA MAY BE A 6' $\pm$ WIDE STRIP
BACK OF THE SPRING POINT (SOLID LINES) OR THE ENTIRE
RETURN AREA (SOLID AND DASHED LINES) AS DIRECTED BY
THE ENGINEER.



** REMOVING HMA SURFACE AREA MAY BE DEFINED BY
TRIANGULAR CUTS SHOWN OR MAY OTHERWISE VARY AS DIRECTED
BY THE ENGINEER TO SATISFY CROWN TRANSITION OR DRAINAGE
CONDITIONS.

(THESE DETAILS SHALL BE USED AT MAJOR CROSS STREETS AND
ELWHERE AS DIRECTED BY THE ENGINEER.)

B					
A					
DESCRIPTION		Drwn	Chkd	Appd	Date
REVISIONS					
DRAWN BY	K.S.M.	APPROVED			
TRACED BY		APPROVED			
CHECKED BY	J.J.	APPROVED			
		CITY ENGINEER			

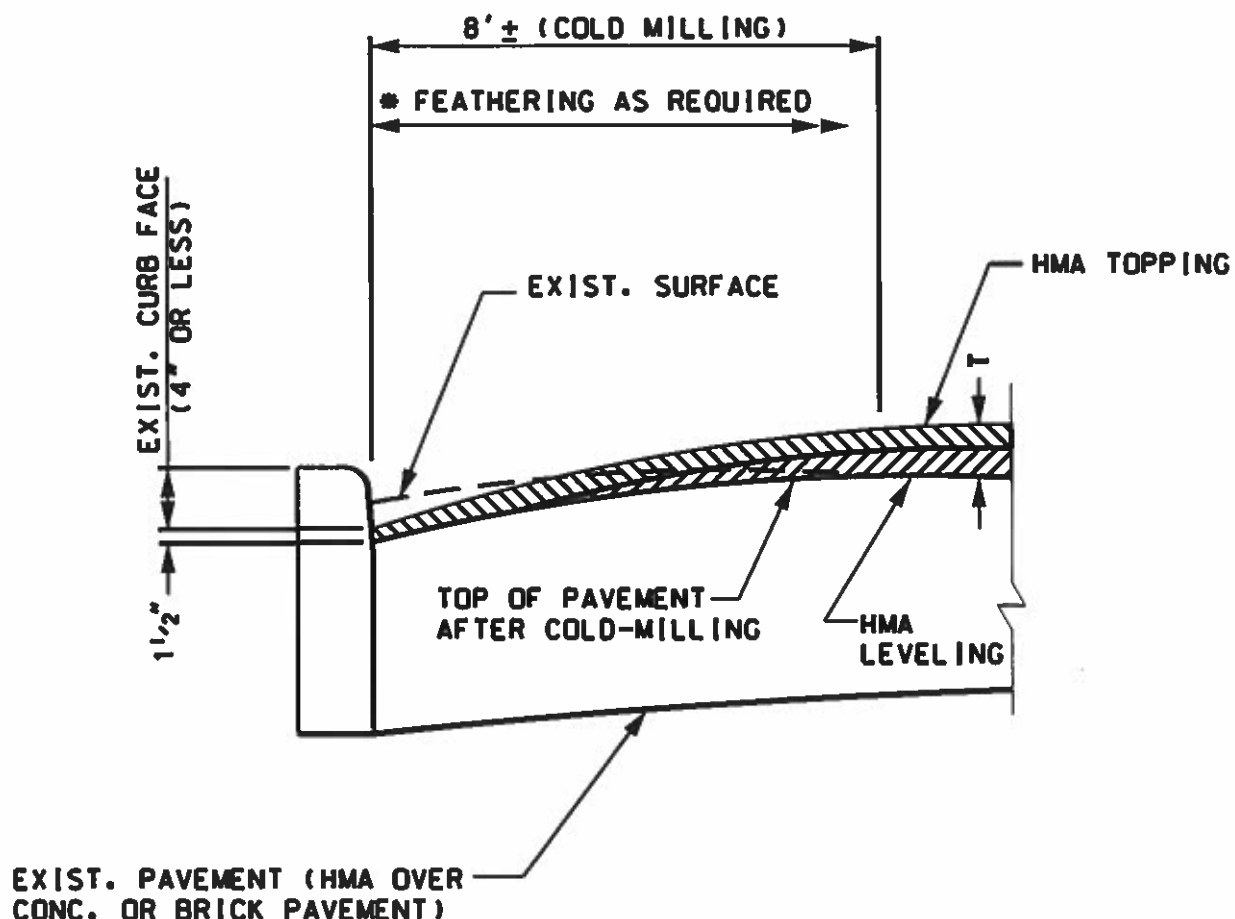
**HMA APPROACH,
MODIFIED**

CITY OF DETROIT
City Engineering
Division

Job No.

Drwg. No.

Date **DEC. 06**



*"COLD MILLING HMA SURFACE MODIFIED", SO AS TO GET A 5 1/2" EXPOSED (VERTICAL) FACE OF CURB. FEATHER RESURFACING TO 1 1/2" THICKNESS AT THE CURB LEAVING A MINIMUM OF 4" EXPOSED CURB FACE.

T = THICKNESS OF HMA RESURFACING.

NOTE:

THIS DETAIL SHALL BE USED WHERE DIRECTED BY THE ENGINEER. TO OBTAIN ADDITIONAL CURB FACE EXPOSURE. (CURB FACE EXPOSURE AFTER RESURFACING SHALL BE A MINIMUM OF 4" THIS SHALL APPLY THROUGHOUT THE LENGTH OF THE PROJECT.)

B					
A					
DESCRIPTION		Drawn	Chkd	Appd	Date
REVISIONS					
DRAWN BY	K.S.M.	APPROVED			
TRACED BY		APPROVED			
CHECKED BY	A.A.	APPROVED CITY ENGINEER			

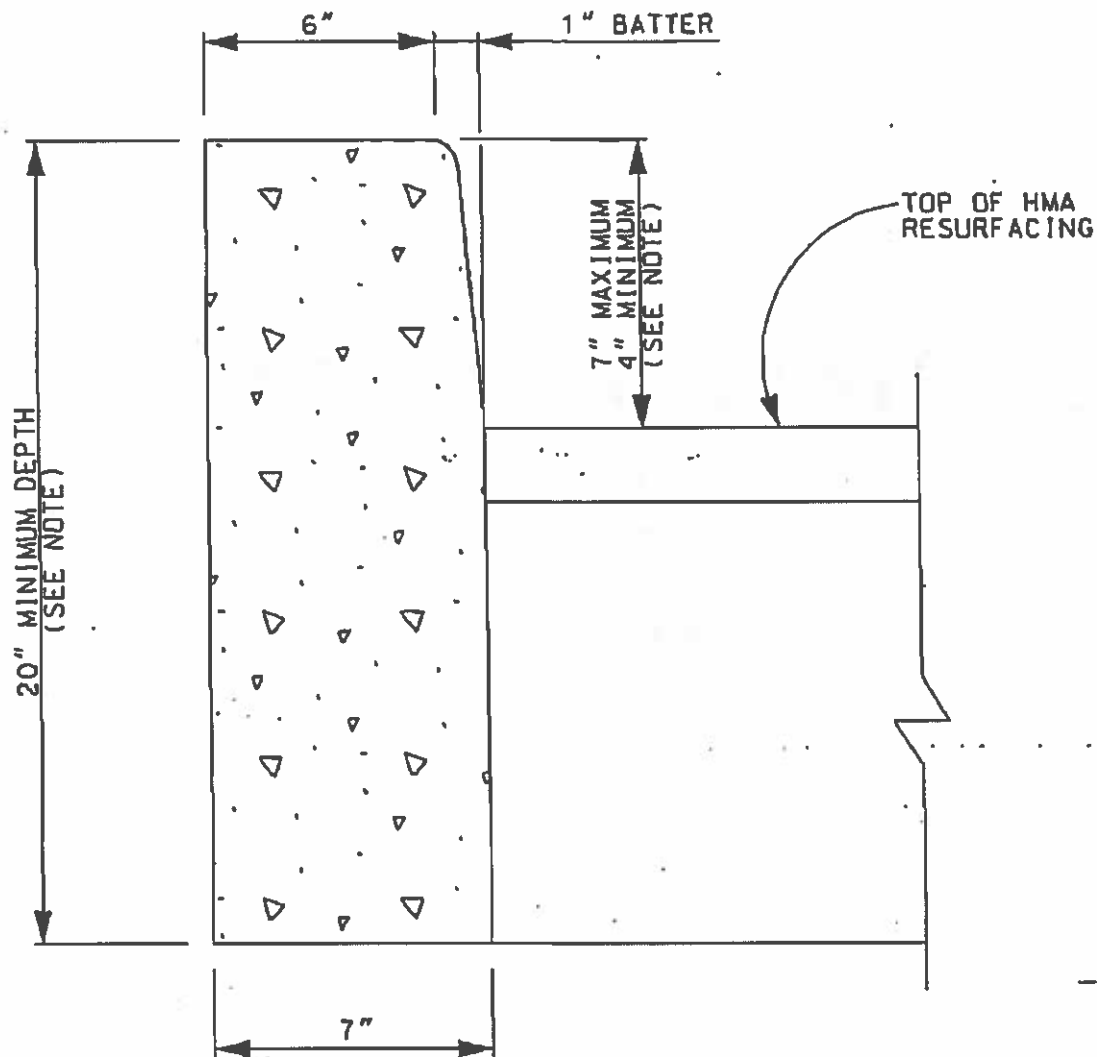
**HMA
FEATHERING
DETAIL**

CITY OF DETROIT
City Engineering
Division

Job No.

Drwg. No.

Date **JAN. 13**



NOTE:

DEPTH OF CURB SHALL BE 20" UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

B					
A					
DESCRIPTION		Drawn	Chd	Appd	Date
REVISIONS					
DRAWN BY	K.S.M.	APPROVED			
TRACED BY		APPROVED			
CHECKED BY	N.H.	APPROVED			
		CITY ENGINEER			

CURB, CONC., DETAIL CD,

MODIFIED

CITY OF DETROIT
City Engineering
Division

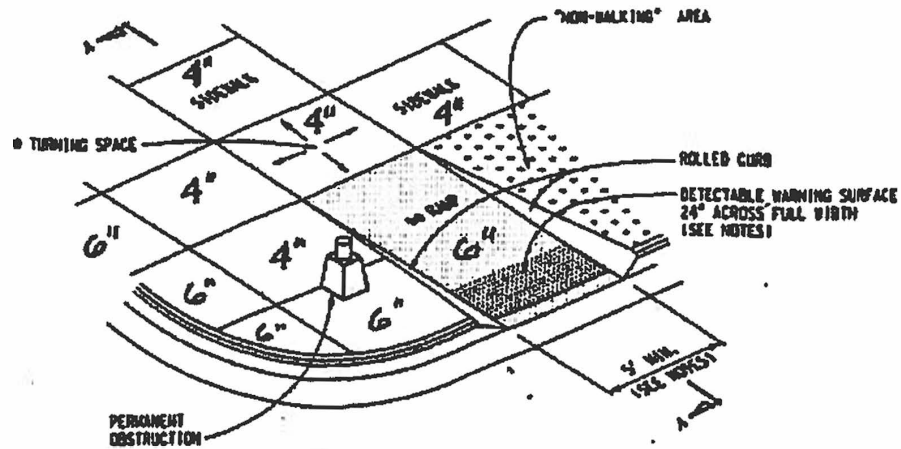
Job. No.

Drwg. No.

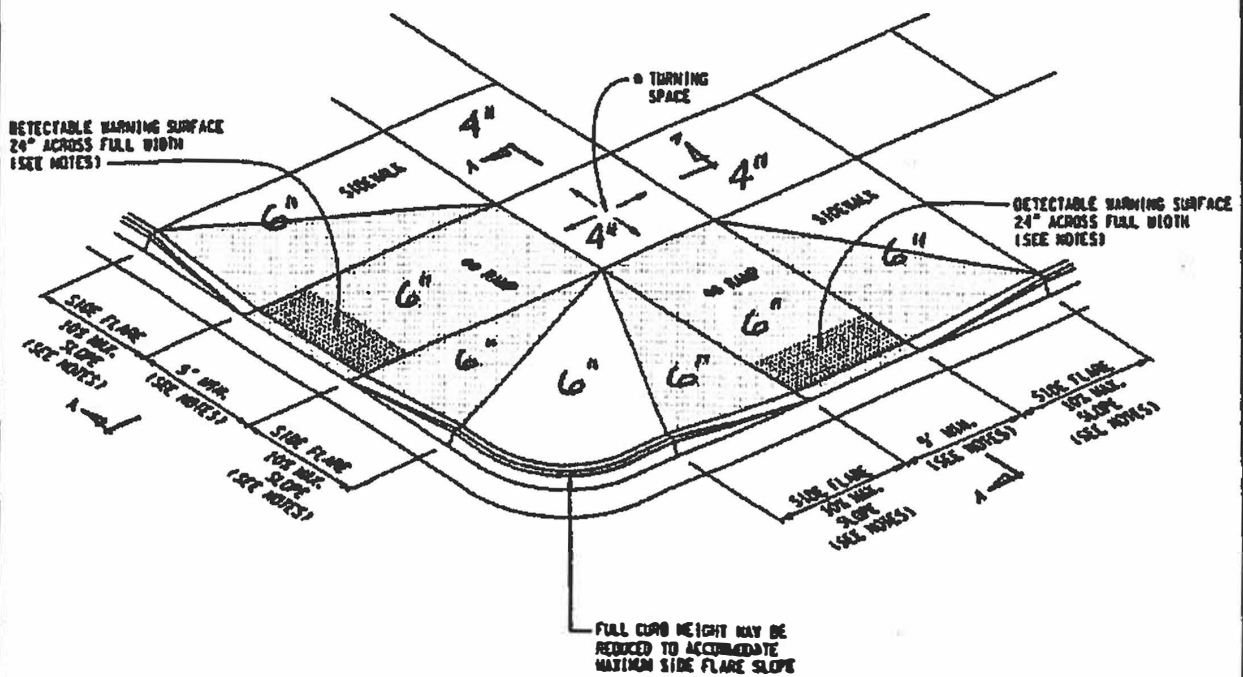
Date JAN. 06

• MAXIMUM TURNING SPACE SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

• MAXIMUM RAMP CROSS SLOPE IS 2.0%. RUNNING SLOPE 5% - 7% (0.3% MAXIMUM). SEE NOTES.



SIDEWALK RAMP TYPE R
(ROLLED SIDES)



SIDEWALK RAMP TYPE F
(FLARED SIDES, TWO RAMPS SHOWN)



CITY OF DETROIT

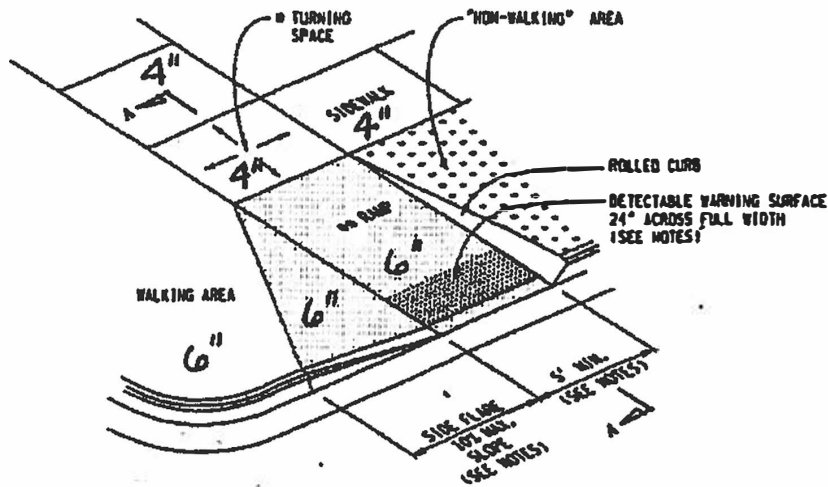
DEPARTMENT OF PUBLIC WORKS, CITY ENGINEERING DIVISION
**SIDEWALK RAMP AND
DETECTABLE WARNING DETAILS**
R-28 WITH CITY OF DETROIT
THICKNESS AMENDMENT

4/19/2017

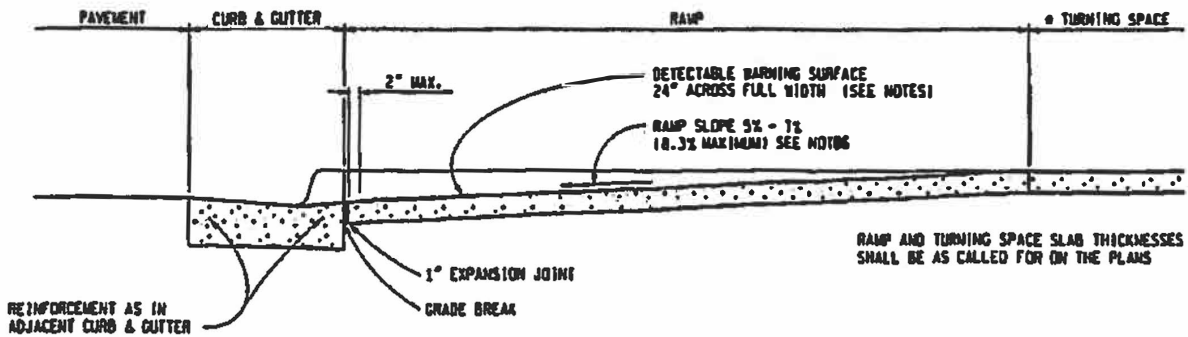
SHEET 1 OF 7

• MAXIMUM TURNING SPACE SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

•• MAXIMUM RAMP CROSS SLOPE IS 2.0%. RUNNING SLOPE 5% - 7% (0.3% MAXIMUM). SEE NOTES.

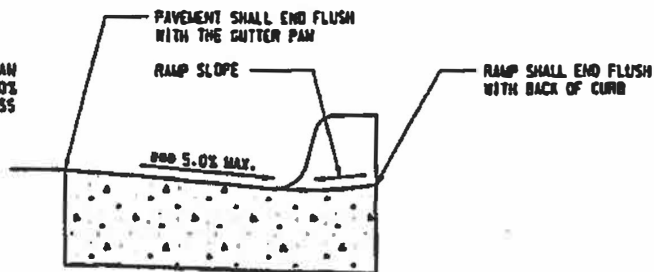


SIDEWALK RAMP TYPE RF
(ROLLED / FLARED SIDES)



SECTION A-A

••• TRANSITION ADJACENT CUTTER PAN CROSS SECTION TO PROVIDE 5.0% MAXIMUM COUNTER SLOPE ACROSS THE RAMP OPENING.



SECTION THROUGH CURB CUT
(TYPICAL ALL RAMP TYPES)



CITY OF DETROIT

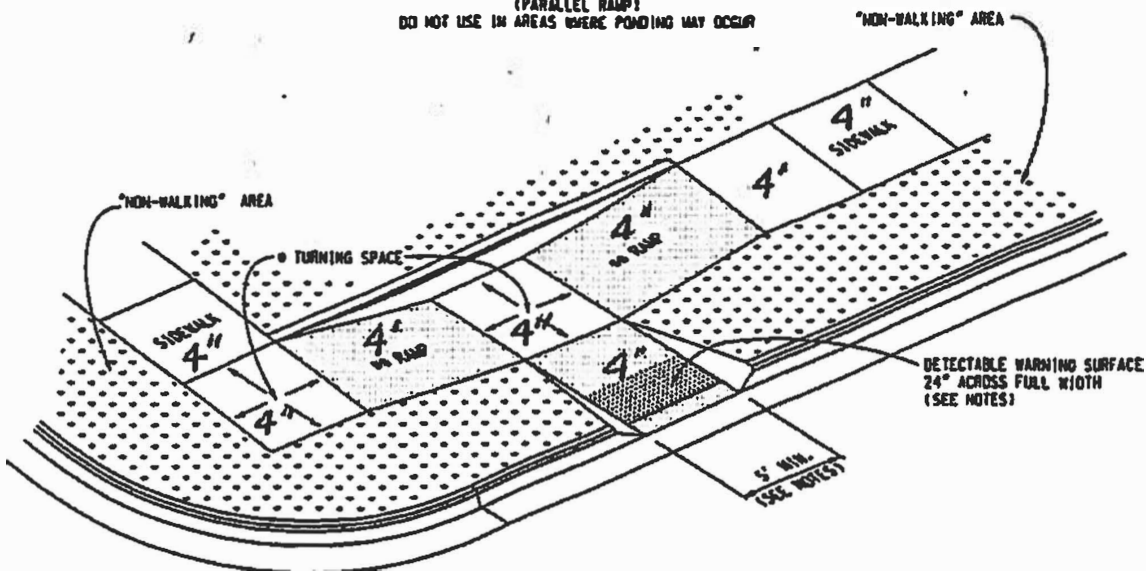
DEPARTMENT OF PUBLIC WORKS, CITY ENGINEERING DIVISION
**SIDEWALK RAMP AND
DETECTABLE WARNING DETAILS**
R-28 WITH CITY OF DETROIT
THICKNESS AMENDMENT

4/19/2017

SHEET 2 OF 7

-

(PARALLEL RAMP)
DO NOT USE IN AREAS WHERE PONDING MAY OCCUR



COMBINATION RAMP?



WARNINGS IF MEDIAN
OTHERWISE NO
REQUIRED.

6"

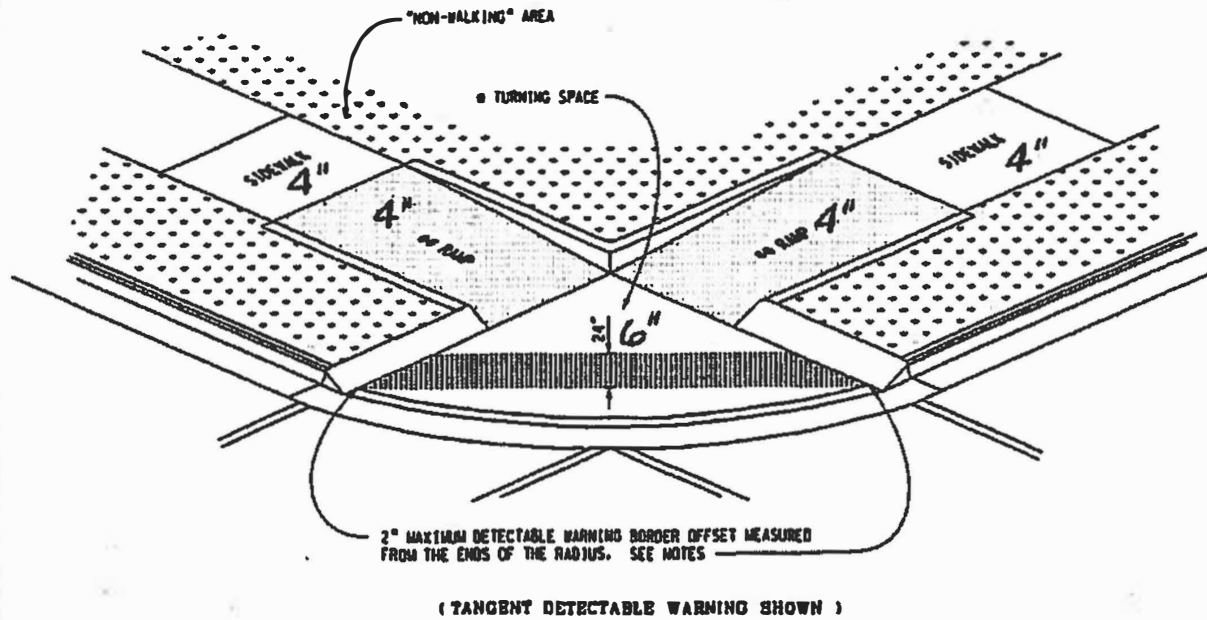
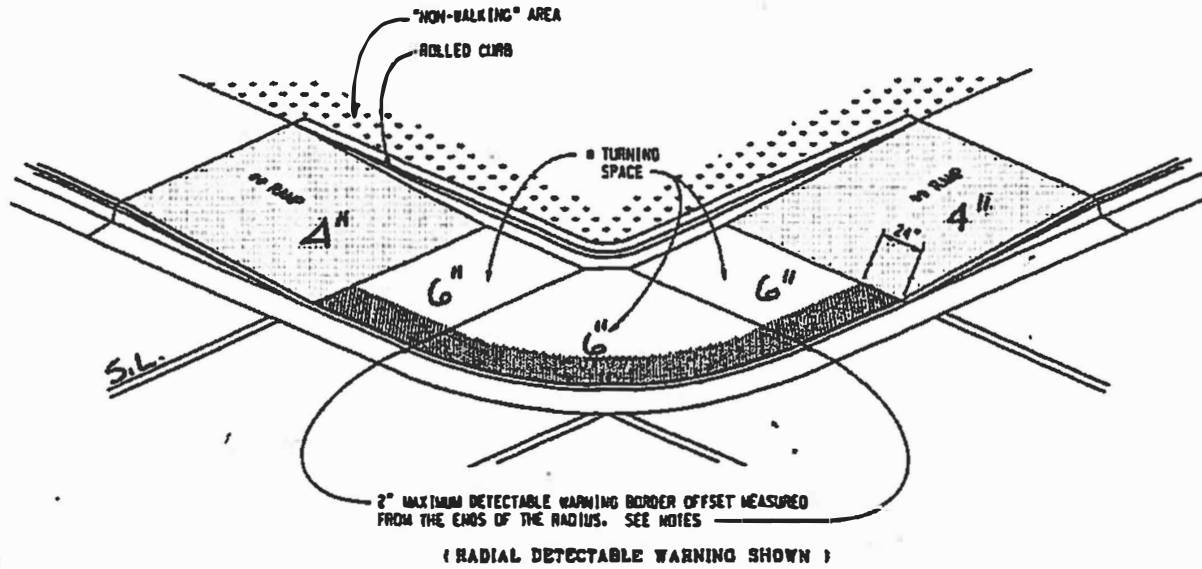
5' MIN.

DEPARTMENT OF PUBLIC WORKS, CITY ENGINEERING DIVISION
SIDEWALK RAMP AND
DETECTABLE WARNING DETAILS
R-28 WITH CITY OF DETROIT
THICKNESS AMENDMENT

SHEET 3 OF 7

• MAXIMUM TURNING SPACE SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

• MAXIMUM RAMP CROSS SLOPE IS 2.0%. RUNNING SLOPE 5% - 7% (0.3% MAXIMUM). SEE NOTES.



SIDEWALK RAMP TYPE D (DEPRESSED CORNER)



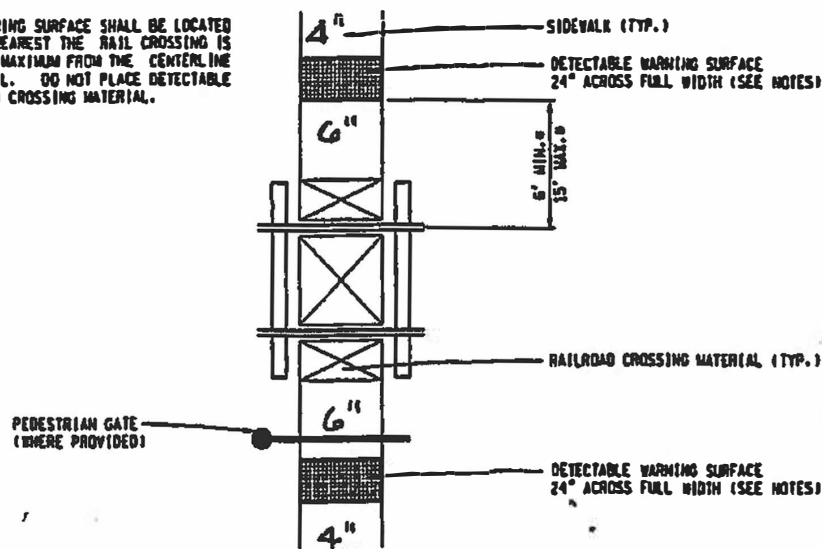
CITY OF DETROIT

DEPARTMENT OF PUBLIC WORKS, CITY ENGINEERING DIVISION
**SIDEWALK RAMP AND
 DETECTABLE WARNING DETAILS**
 R-28 WITH CITY OF DETROIT
 THICKNESS AMENDMENT

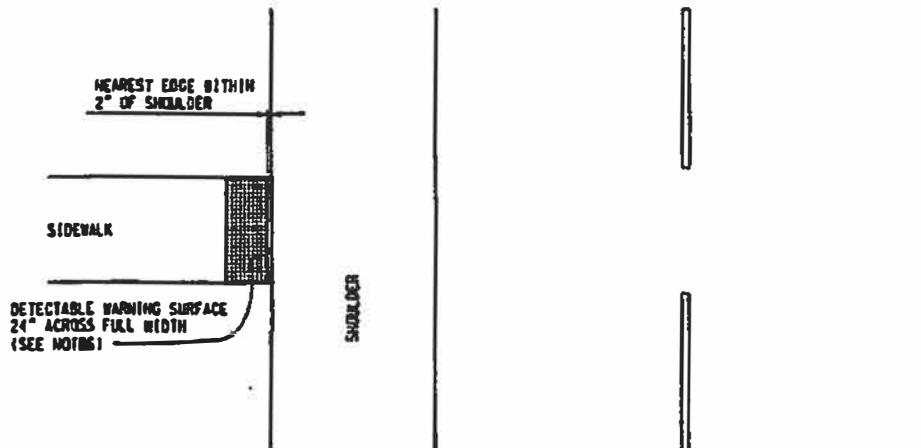
4/19/2017

SHEET 4 OF 7

- THE DETECTABLE WARNING SURFACE SHALL BE LOCATED SO THAT THE EDGE NEAREST THE RAIL CROSSING IS 6' MINIMUM AND 15' MAXIMUM FROM THE CENTERLINE OF THE NEAREST RAIL. DO NOT PLACE DETECTABLE WARNING ON RAILROAD CROSSING MATERIAL.



DETECTABLE WARNING AT RAILROAD CROSSING



DETECTABLE WARNING AT FLUSH SHOULDER OR ROADWAY

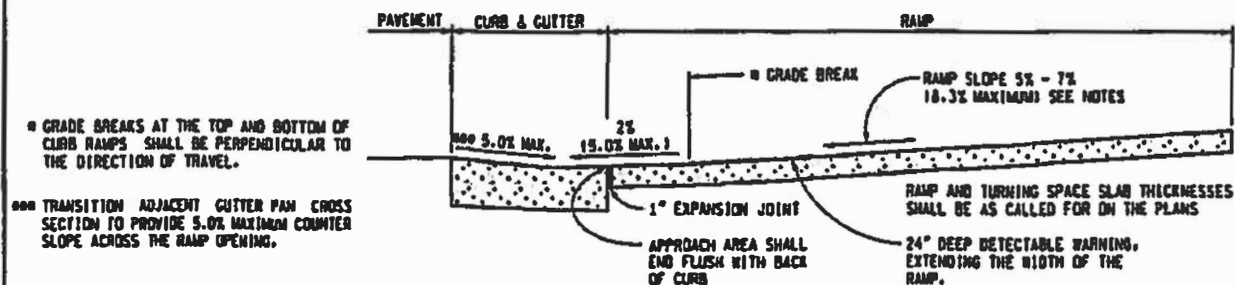
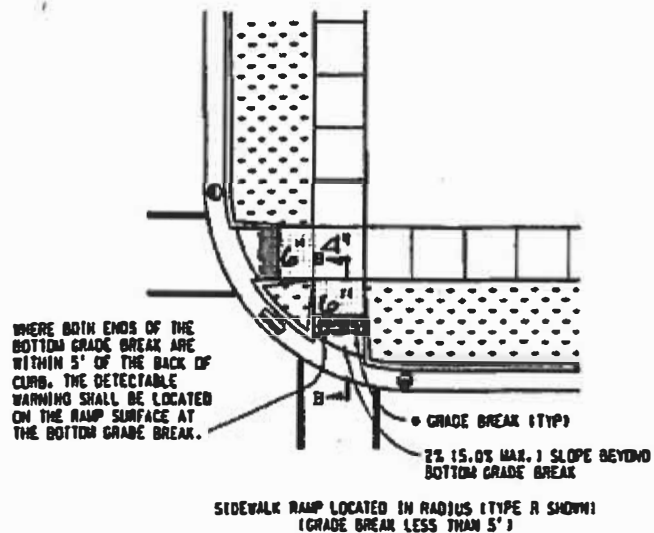
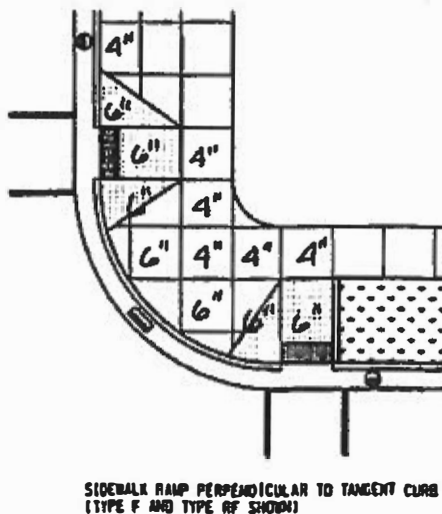
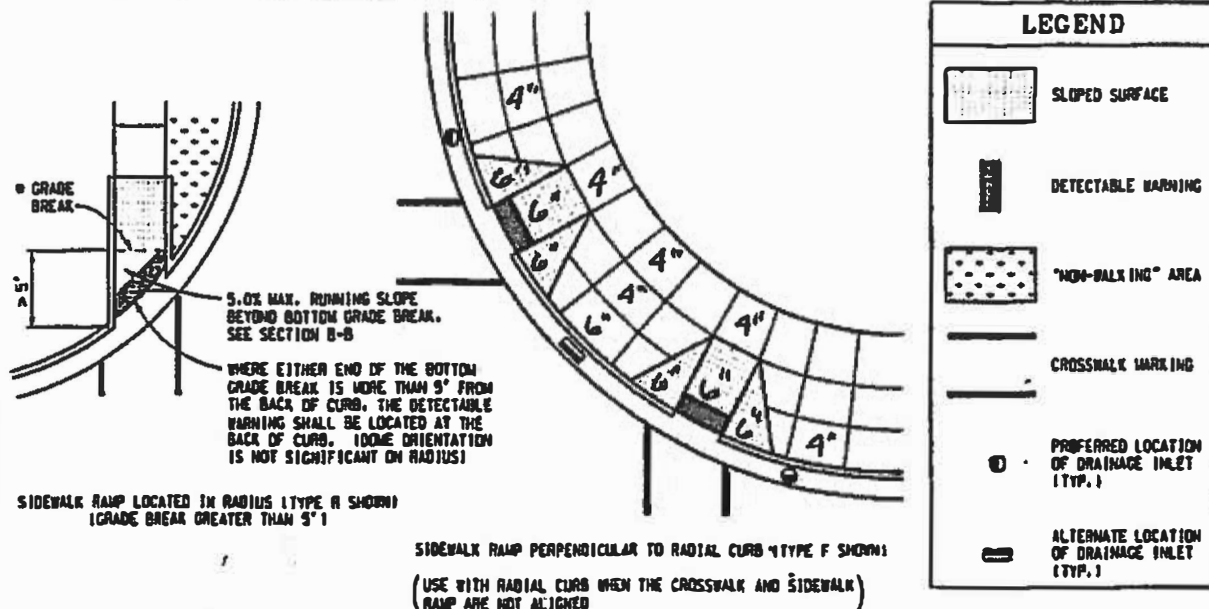


CITY OF DETROIT

DEPARTMENT OF PUBLIC WORKS, CITY ENGINEERING DIVISION
**SIDEWALK RAMP AND
 DETECTABLE WARNING DETAILS**
 R-28 WITH CITY OF DETROIT
 THICKNESS AMENDMENT

4/19/2017

SHEET 5 OF 7



SECTION B-B SIDEWALK RAMP ORIENTATION

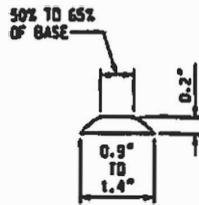


CITY OF DETROIT

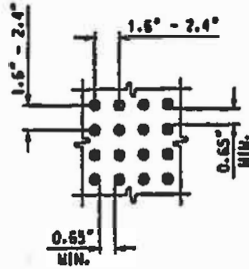
DEPARTMENT OF PUBLIC WORKS, CITY ENGINEERING DIVISION
SIDEWALK RAMP AND
DETECTABLE WARNING DETAILS
R-28 WITH CITY OF DETROIT
THICKNESS AMENDMENT

4/19/2017

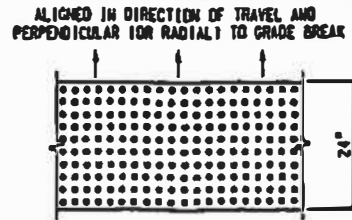
SHEET 6 OF 7



DOME SECTION



DOME SPACING



DOME ALIGNMENT

DETECTABLE WARNING DETAILS

NOTES:

DETAILS SPECIFIED ON THIS PLAN APPLY TO ALL CONSTRUCTION, RECONSTRUCTION, OR ALTERATION OF STREETS, CURBS, OR SIDEWALKS IN THE PUBLIC RIGHT OF WAY.

SIDEWALK RAMPS ARE TO BE LOCATED AS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

RAMPS SHALL BE PROVIDED AT ALL CORNERS OF AN INTERSECTION WHERE THERE IS EXISTING OR PROPOSED SIDEWALK AND CURB. RAMPS SHALL ALSO BE PROVIDED AT MARKED AND/OR SIGNALIZED MID-BLOCK CROSSINGS.

SURFACE TEXTURE OF THE RAMP SHALL BE THAT OBTAINED BY A COARSE BROOMING, TRANSVERSE TO THE RUNNING SLOPE.

SIDEWALK SHALL BE RAMPED WHERE THE DRIVEWAY CURB IS EXTENDED ACROSS THE WALK.

CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON THE RAMP, WHERE CONDITIONS PERMIT. IT IS DESIRABLE THAT THE SLOPE OF THE RAMP BE IN ONLY ONE DIRECTION, PARALLEL TO THE DIRECTION OF TRAVEL.

RAMP WIDTH SHALL BE INCREASED, IF NECESSARY, TO ACCOMMODATE SIDEWALK SNOW REMOVAL EQUIPMENT NORMALLY USED BY THE MUNICIPALITY.

PROVIDE TURNING SPACES WHERE PEDESTRIAN TURNING MOVEMENTS ARE REQUIRED.

WHEN 5' MINIMUM WIDTHS ARE NOT FEASIBLE, RAMP WIDTH MAY BE REDUCED TO NOT LESS THAN 4' AND TURNING SPACES TO NOT LESS THAN 4' x 4'.

DETECTABLE WARNING SURFACE COVERAGE IS 24" MINIMUM IN THE DIRECTION OF RAMP/PATH TRAVEL AND THE FULL WIDTH OF THE RAMP/PATH OPENING EXCLUDING CURBED OR FLARED CURB TRANSITION AREAS. A BORDER OFFSET NOT GREATER THAN 2" MEASURED ALONG THE EDGES OF THE DETECTABLE WARNING IS ALLOWABLE. FOR RADIAL CURB THE OFFSET IS MEASURED FROM THE ENDS OF THE RADIUS.

FOR NEW ROADWAY CONSTRUCTION, THE RAMP CROSS SLOPE MAY NOT EXCEED 2.0%. FOR ALTERATIONS TO EXISTING ROADWAYS, THE CROSS SLOPE MAY BE TRANSITIONED TO MEET AN EXISTING ROADWAY GRADE. THE CROSS SLOPE TRANSITION SHALL BE APPLIED UNIFORMLY OVER THE FULL LENGTH OF THE RAMP.

THE MAXIMUM RUNNING SLOPE OF 0.3% IS RELATIVE TO A FLAT 10% REFERENCE. HOWEVER, IT SHALL NOT REQUIRE ANY RAMP OR SERIES OF RAMPS TO EXCEED 15 FEET IN LENGTH.

DRAINAGE STRUCTURES SHOULD NOT BE PLACED IN LINE WITH RAMPS. THE LOCATION OF THE RAMP SHOULD TAKE PRECEDENCE OVER THE LOCATION OF THE DRAINAGE STRUCTURE. WHERE EXISTING DRAINAGE STRUCTURES ARE LOCATED IN THE RAMP PATH OF TRAVEL, USE A MANUFACTURER'S ADA COMPLIANT GRATE. OPENINGS SHALL NOT BE GREATER THAN 1/2". ELONGATED OPENINGS SHALL BE PLACED SO THAT THE LONG DIMENSION IS PERPENDICULAR TO THE DOMINANT DIRECTION OF TRAVEL.

TRANSITION THE GUTTER PAN CROSS SECTION SUCH THAT THE COUNTER SLOPE IN THE DIRECTION OF RAMP TRAVEL IS NOT GREATER THAN 5.0%. MAINTAIN THE NORMAL GUTTER PAN CROSS SECTION ACROSS DRAINAGE STRUCTURES.

THE TOP OF THE JOINT FILLER FOR ALL RAMP TYPES SHALL BE FLUSH WITH THE ADJACENT CONCRETE.

CROSSWALK AND STOP LINE MARKINGS, IF USED, SHALL BE SO LOCATED AS TO STOP TRAFFIC SHORT OF RAMP CROSSINGS. SPECIFIC DETAILS FOR MARKING APPLICATIONS ARE GIVEN IN THE "MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES".

FLARED SIDES WITH A SLOPE OF 10% MAXIMUM, MEASURED ALONG THE ROADSIDE CURB LINE, SHALL BE PROVIDED WHERE AN UNOBSTRUCTED CIRCULATION PATH LATERALLY CROSSES THE SIDEWALK RAMP. FLARED SIDES ARE NOT REQUIRED WHERE THE RAMP IS BORDERED BY LANDSCAPING, UNPAVED SURFACE OR PERMANENT FIXED OBJECTS. WHERE THEY ARE NOT REQUIRED, FLARED SIDES CAN BE CONSIDERED IN ORDER TO AVOID SHARP CURB RETURNS AT RAMP OPENINGS.

DETECTABLE WARNING PLATES MUST BE INSTALLED USING FABRICATED OR FIELD CUT UNITS CAST AND/OR ANCHORED IN THE PAVEMENT TO RESIST SHIFTING OR HEAVING.

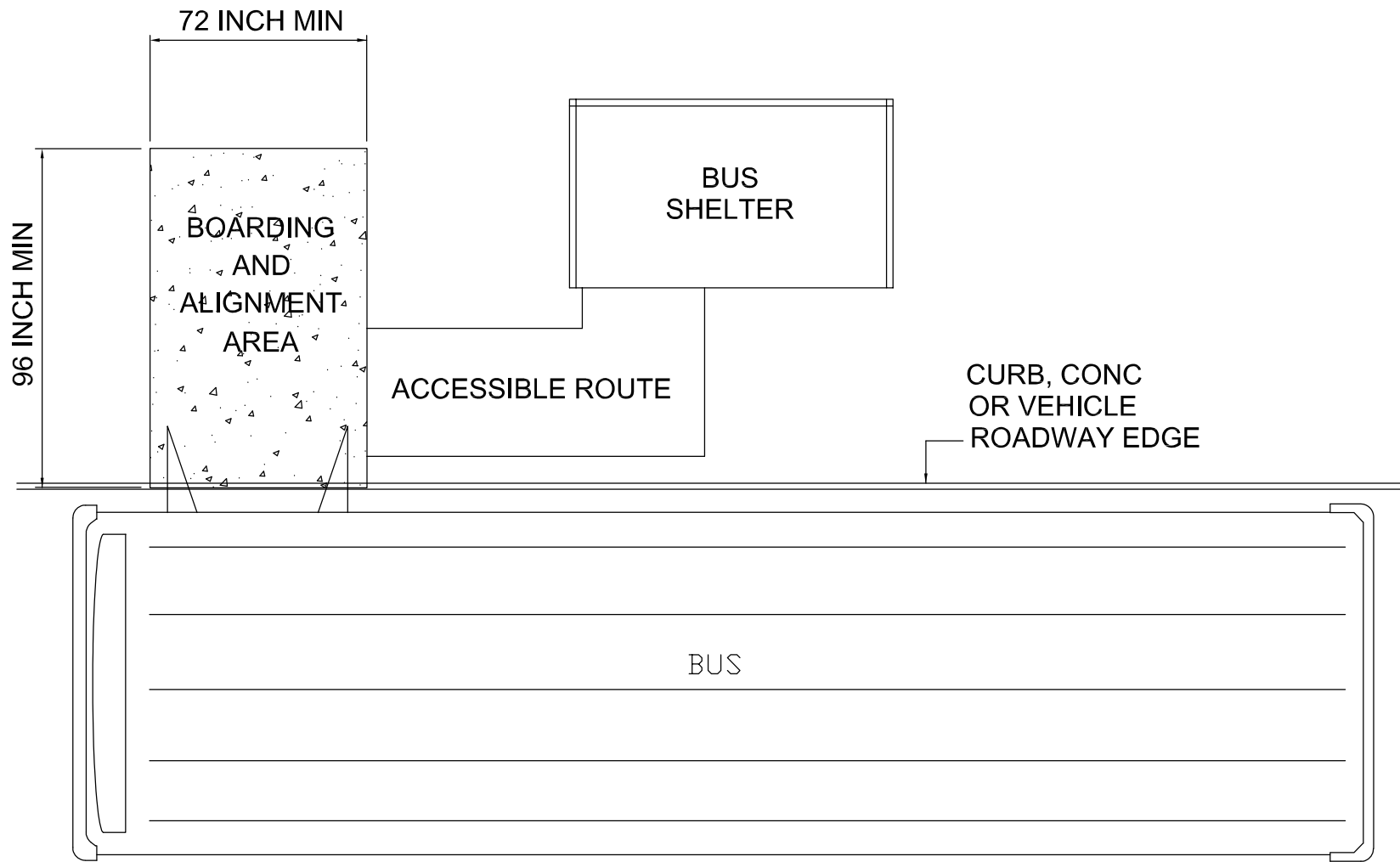


CITY OF DETROIT

DEPARTMENT OF PUBLIC WORKS, CITY ENGINEERING DIVISION
SIDEWALK RAMP AND
DETECTABLE WARNING DETAILS
R-28 WITH CITY OF DETROIT
THICKNESS AMENDMENT

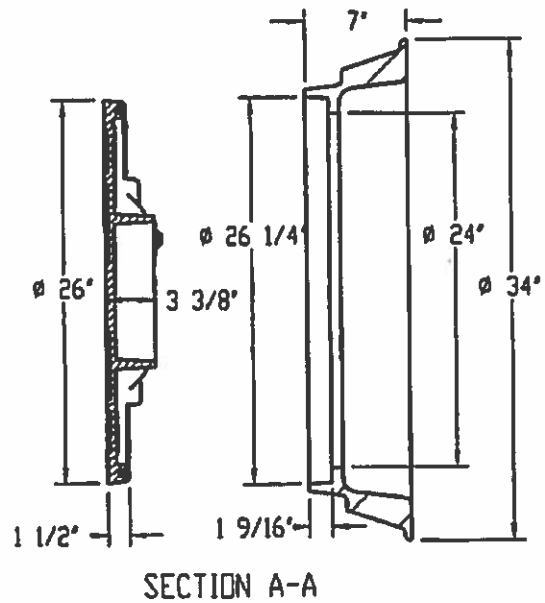
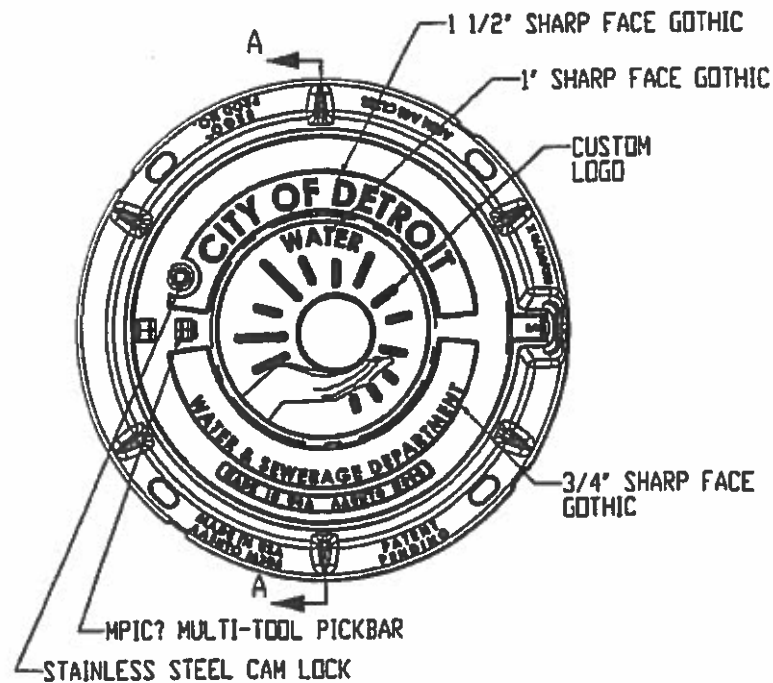
4/19/2017

SHEET 7 OF 7



DIMENSIONS OF BUS BOARDING AREA

ERGO Assembly



DESIGN FEATURES

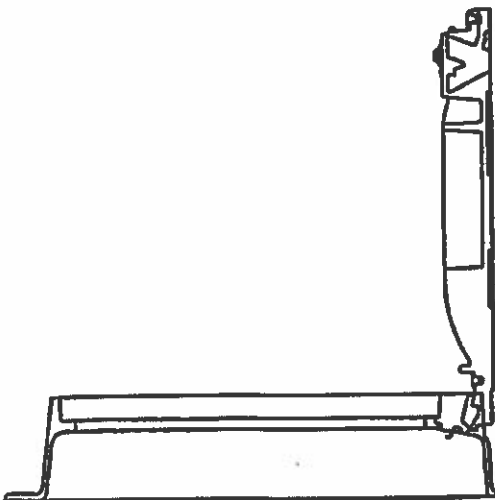
MATERIALS

COVER: DUCTILE IRON (80-55-08)
FRAME: GRAY IRON (CL35)

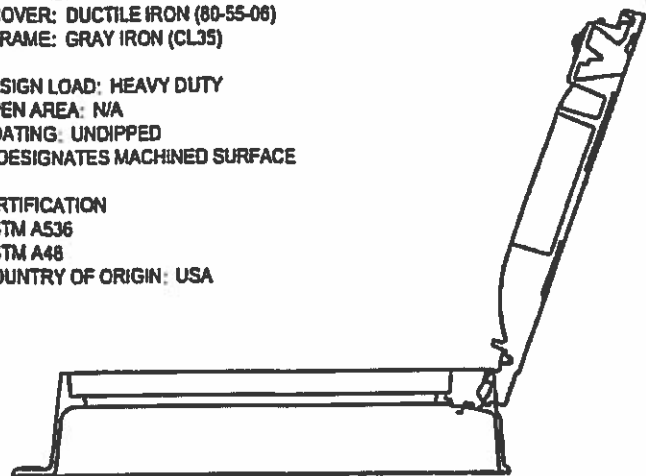
-DESIGN LOAD: HEAVY DUTY
-OPEN AREA: N/A
-COATING: UNDIPPED
- DESIGNATES MACHINED SURFACE

CERTIFICATION

-ASTM A536
-ASTM A48
-COUNTRY OF ORIGIN: USA



SAFETY LOCK @ 90°



FULLY OPENED & REMOVAL POSITION @ 120°

DWSD APPROVAL: *L. Angler*

DATE: *04/16/14*



CITY OF DETROIT
CITY ENGINEERING DIVISION
DPW

DWSD MANHOLE
ERGO ASSEMBLY

APPROVED:

4/16/14
ENGINEER OF STREETS
9/16/14
CITY ENGINEER

SHEET 1 OF 1

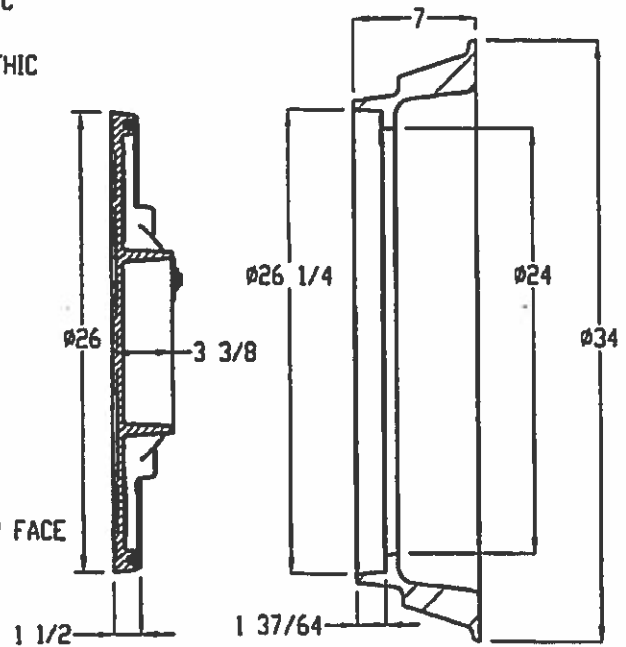
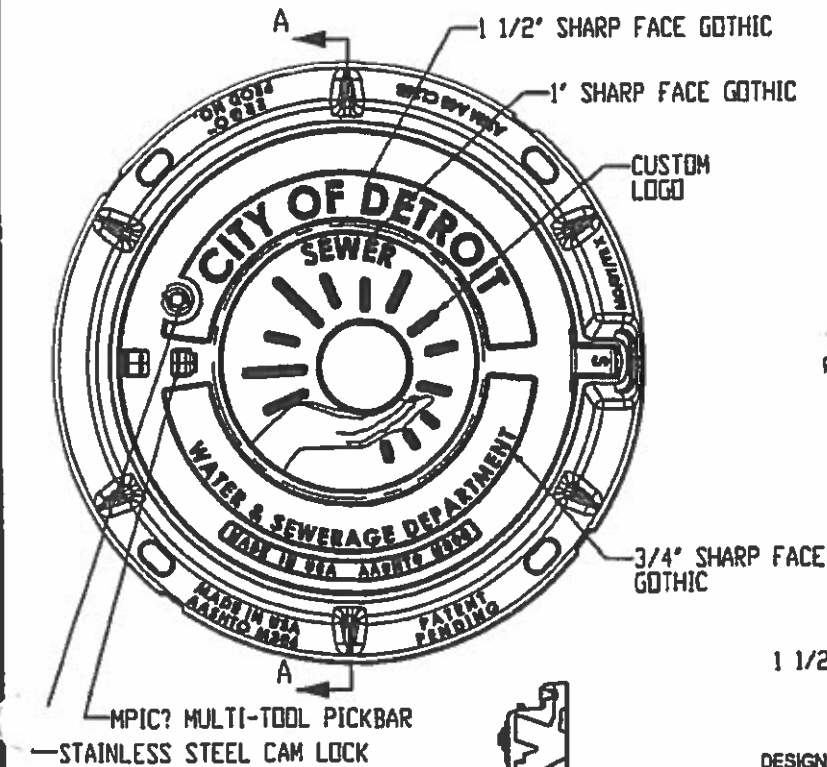
DETAIL STD. No.

DRAWING No. 101

DRAWN BY: NLY SANTOS

DATE: 01/15/2014

ERGO Assembly



SECTION A-A

DESIGN FEATURES

MATERIALS

COVER: DUCTILE IRON (80-55-06)
FRAME: GRAY IRON (CL35)

DESIGN LOAD: HEAVY DUTY

-OPEN AREA: N/A

-COATING: UNDIPPED

- DESIGNATES MACHINED SURFACE

CERTIFICATION

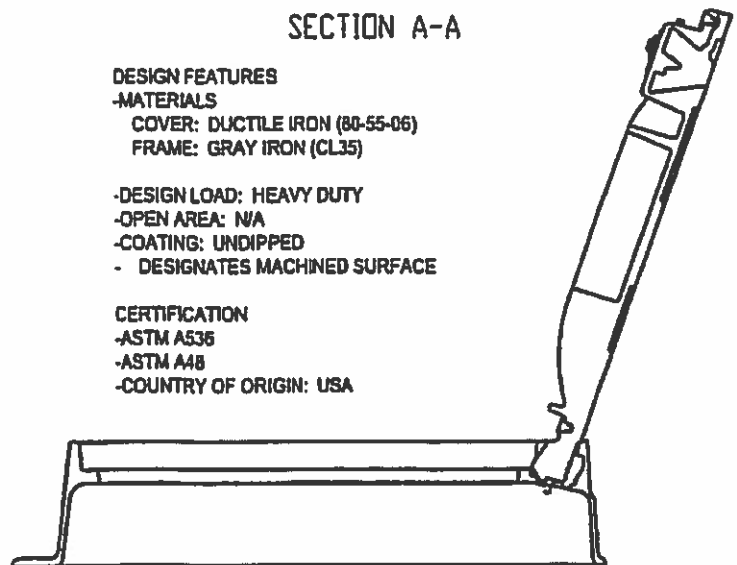
-ASTM A536

-ASTM A48

-COUNTRY OF ORIGIN: USA



SAFETY LOCK @ 90°



FULLY OPENED & REMOVAL POSITION @ 120°

DWSD APPROVAL:

[Signature]

DATE:

04/16/14

Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.



CITY OF DETROIT
CITY ENGINEERING DIVISION
DPW

DWSD MANHOLE
ERGO ASSEMBLY

APPROVED:

[Signature] 4/15/14
ENGINEER OF STREETS
[Signature] 4/16/14
CITY ENGINEER

SHEET 1 OF 1

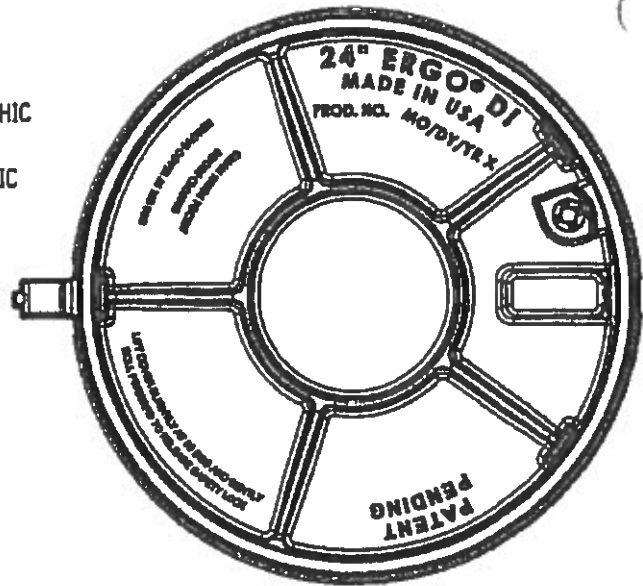
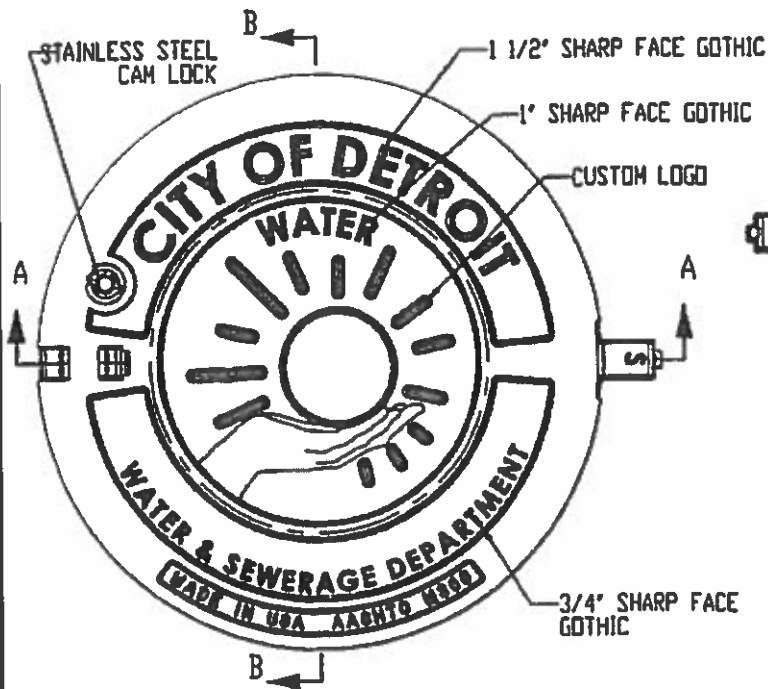
DETAIL STD No.

DRAWING No. 102

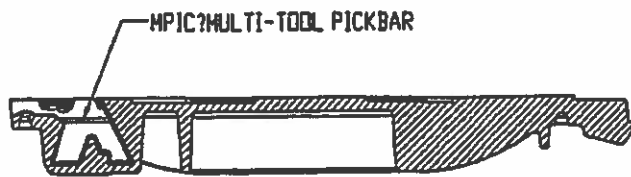
DRAWN BY: N.Y. SANTOS

DATE: 0/15/2014

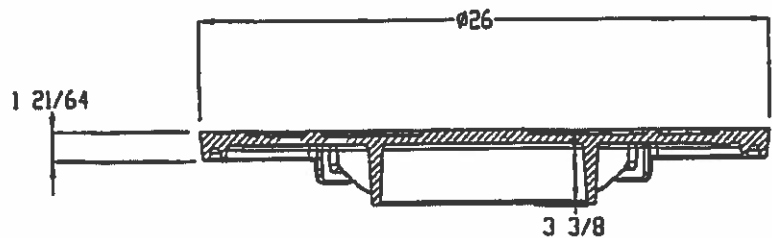
ERGO Cover



BOTTOM VIEW



SECTION A-A



SECTION B-B

DESIGN FEATURES

- MATERIALS
COVER: DUCTILE IRON (80-55-06)
- DESIGN LOAD: HEAVY DUTY
- OPEN AREA: N/A
- COATING: UNDIPPED
- ✓ DESIGNATES MACHINED SURFACE

CERTIFICATION

- ASTM A536
- COUNTRY OF ORIGIN: USA

DWSD APPROVAL: *[Signature]* DATE: *04/16/14*



CITY OF DETROIT
CITY ENGINEERING DIVISION
DPW

DWSD MANHOLE
ERGO COVER

APPROVED:

[Signature] 4/16/14
ENGINEER OF STREETS
[Signature] 4/16/14
CITY ENGINEER

SHEET 1 OF 1

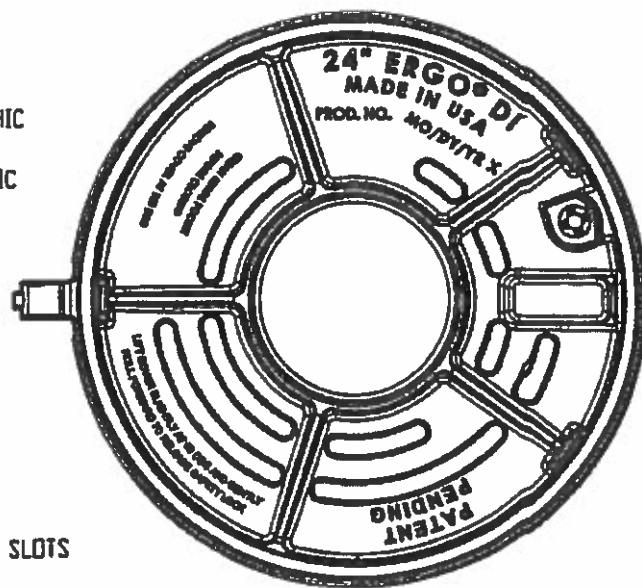
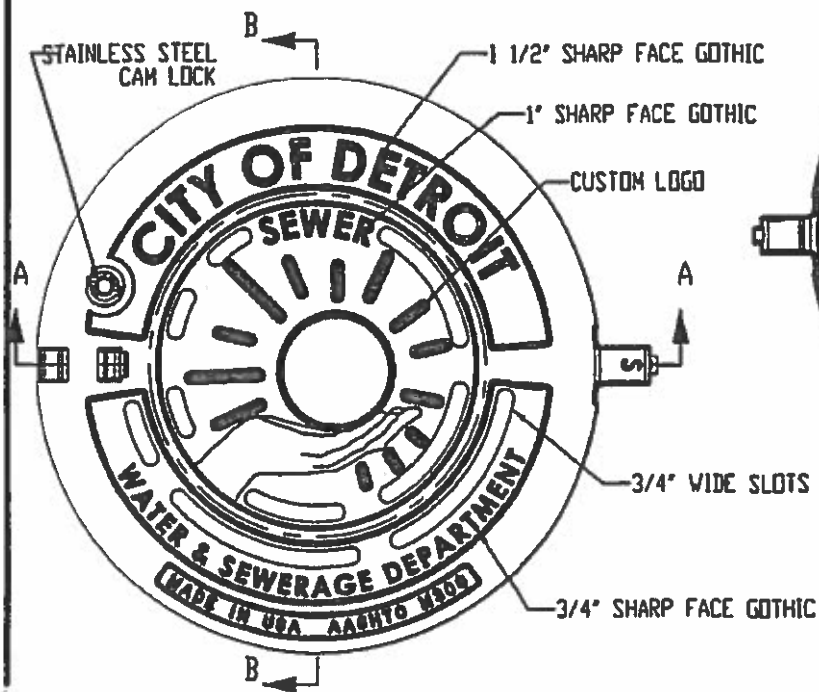
DETAIL STD. No.

DRAWING No. 111

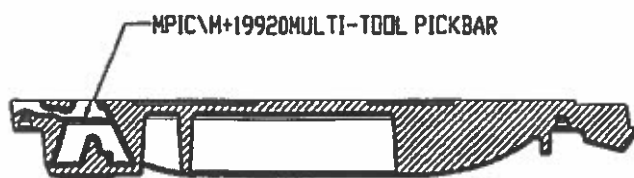
DRAWN BY: N.Y. SANTOS

DATE: 01/3/2014

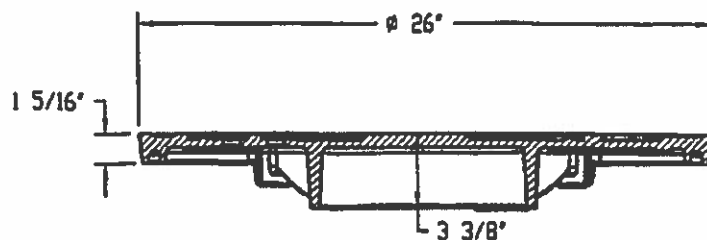
ERGO Cover



BOTTOM VIEW



SECTION A-A



SECTION B-B

DESIGN FEATURES

-MATERIALS
COVER: DUCTILE IRON (80-55-06)

-DESIGN LOAD: HEAVY DUTY
-OPEN AREA: N/A
-GOATING: UNDIPPED
- DESIGNATES MACHINED SURFACE

CERTIFICATION

-ASTM A536
-COUNTRY OF ORIGIN: USA

DWSD APPROVAL: *R. Single*

DATE: *04/16/14*



CITY OF DETROIT
CITY ENGINEERING DIVISION
DPW

DWSD MANHOLE
ERGO COVER

APPROVED:

updated 4/16/14
ENGINEER OF STREETS
R. Single 4/16/14
CITY ENGINEER

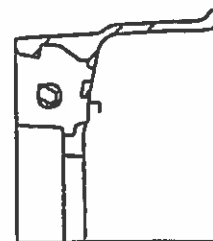
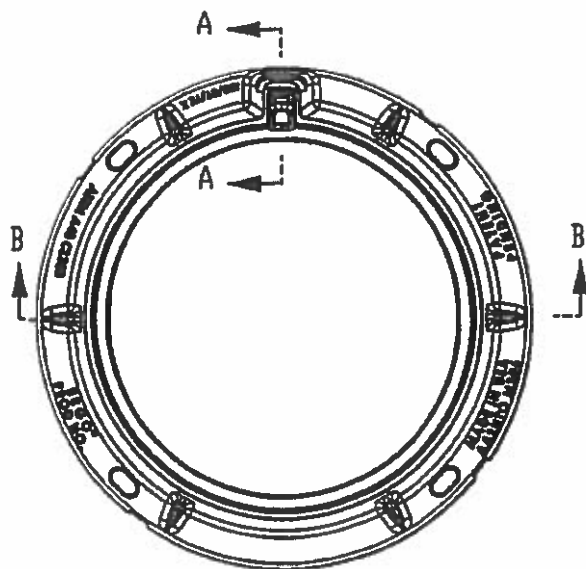
SHEET 1 OF 1

DETAIL STD. No.

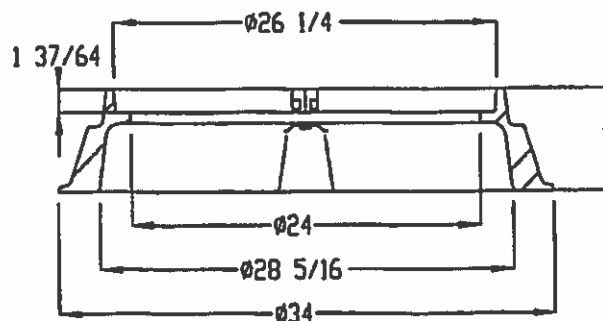
DRAWING No. 112

DRAWN BY: N.Y. SANTOS

DATE: 07/15/2014



SECTION A-A
SCALE 1 : 6



SECTION B-B

DESIGN FEATURES

- MATERIALS
FRAME: DUCTILE IRON (70-50-05)
- DESIGN LOAD: HEAVY DUTY
- OPEN AREA: N/A
- COATING: UNDIPPED
- ✓ DESIGNATES MACHINED SURFACE

CERTIFICATION

- ASTM A538
- COUNTRY OF ORIGIN: USA

DWSD APPROVAL: *R. Singh* DATE: 04/16/14



CITY OF DETROIT
CITY ENGINEERING DIVISION
DPW

DWSD MANHOLE
FRAME

APPROVED:

updated 4/16/14
ENGINEER OF STREETS
R. Singh 4/16/14
CITY ENGINEER

SHEET 1 OF 1

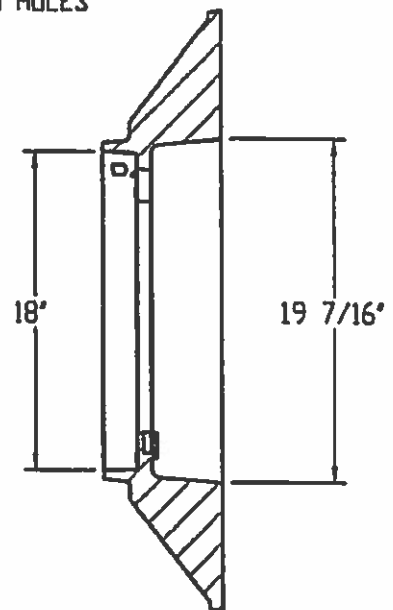
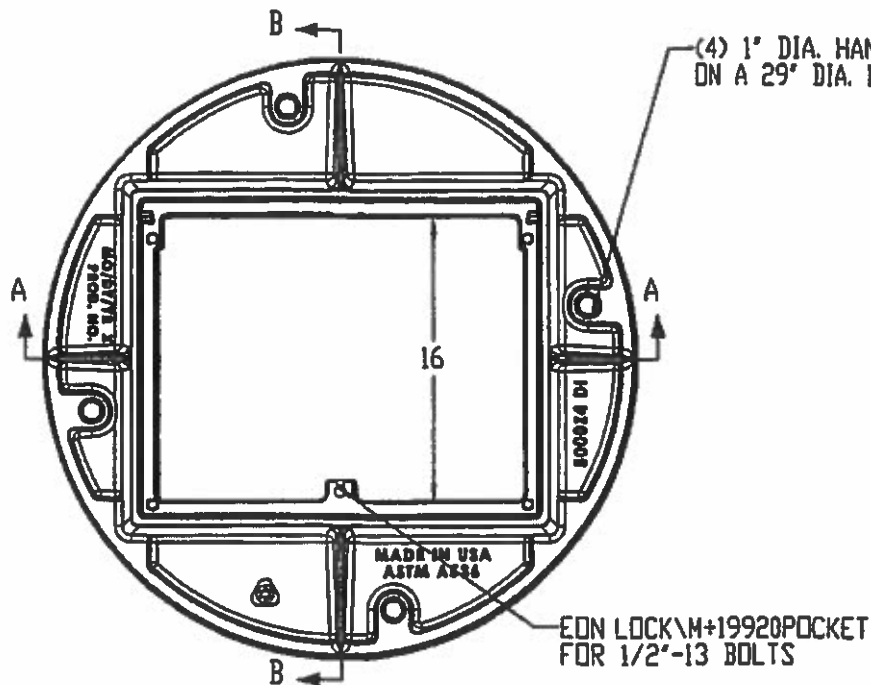
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DRAWING No. 113

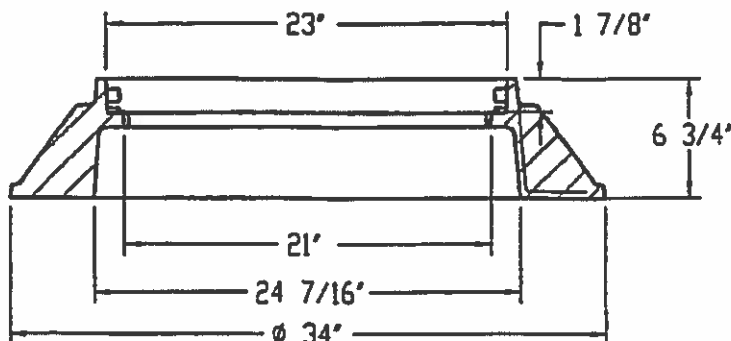
DRAWN BY: N.Y. SANTOS

DATE: 01/3/2014

5000 Frame



SECTION B-B



SECTION A-A

DESIGN FEATURES

-MATERIALS
FRAME: DUCTILE IRON (70-50-05)

-DESIGN LOAD: HEAVY DUTY
-COATING: UNDIPPED
-✓ DESIGNATES MACHINED SURFACE

CERTIFICATION

-ASTM A536
-COUNTRY OF ORIGIN: USA

DWSD APPROVAL: *D. Singel*

DATE: *04/16/14*



CITY OF DETROIT
CITY ENGINEERING DIVISION
DPW

DWSD MANHOLE
5000 FRAME

APPROVED:

rephal 4/16/14
ENGINEER OF STREETS
4/16/14
CITY ENGINEER

SHEET 1 OF 1

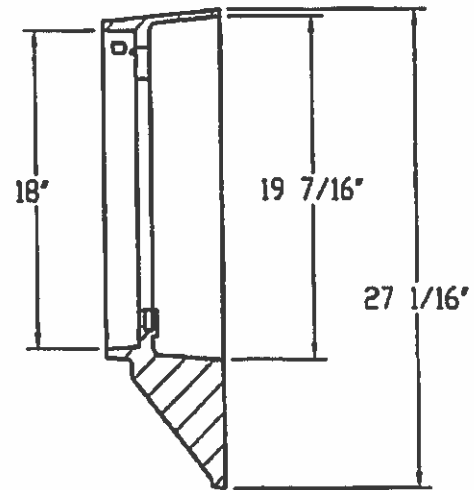
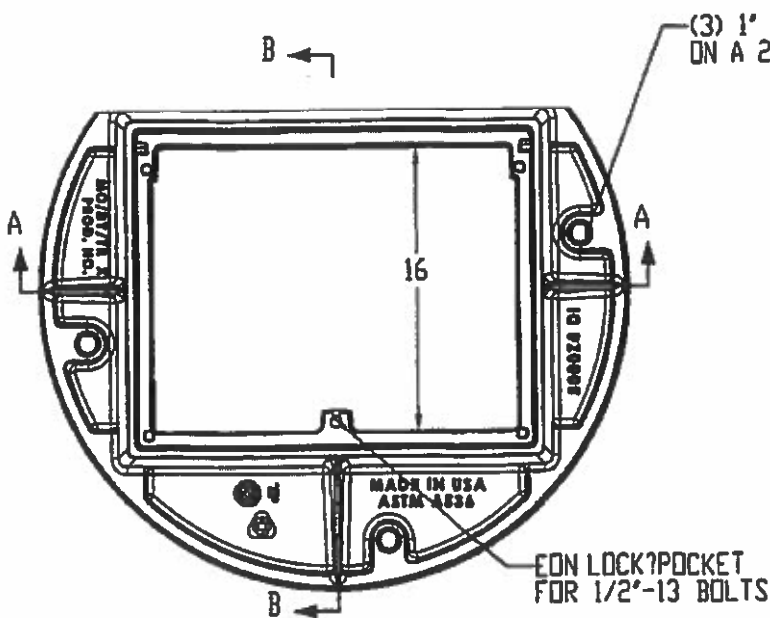
DETAIL STD. No.

DRAWING No. 103

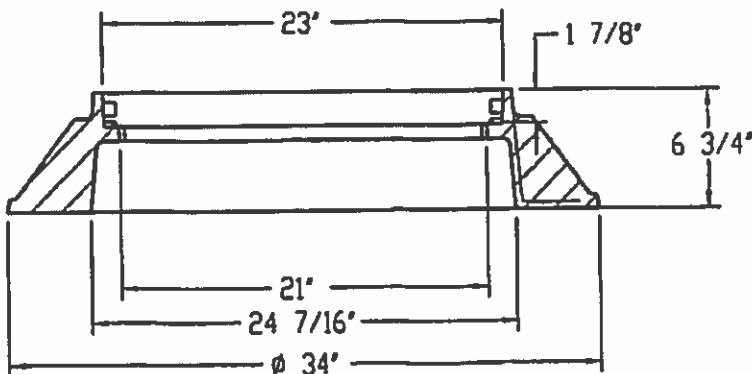
DRAWN BY: N.Y. SANTOS

DATE: 01/15/2014

5000 Frame



SECTION B-B



SECTION A-A

DESIGN FEATURES

MATERIALS

FRAME: DUCTILE IRON (70-50-05)

DESIGN LOAD: HEAVY DUTY

COATING: UNDIPPED

✓ DESIGNATES MACHINED SURFACE

CERTIFICATION

ASTM A536

COUNTRY OF ORIGIN: USA

DWSD APPROVAL:

R. Singh

DATE:

04/16/14

APPROVED:

4/16/14
CITY ENGINEER

SHEET 1 OF 1

DETAIL STD. No.

DRAWING No. 104

DRAWN BY: N.Y. SANTOS

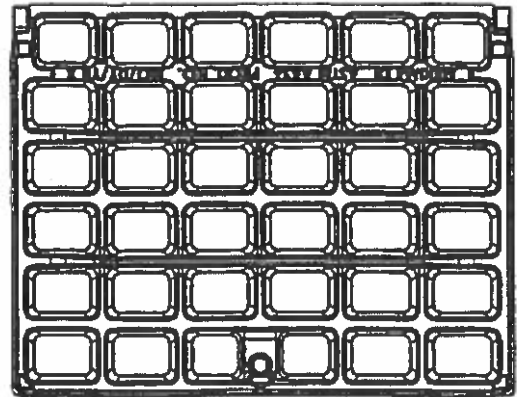
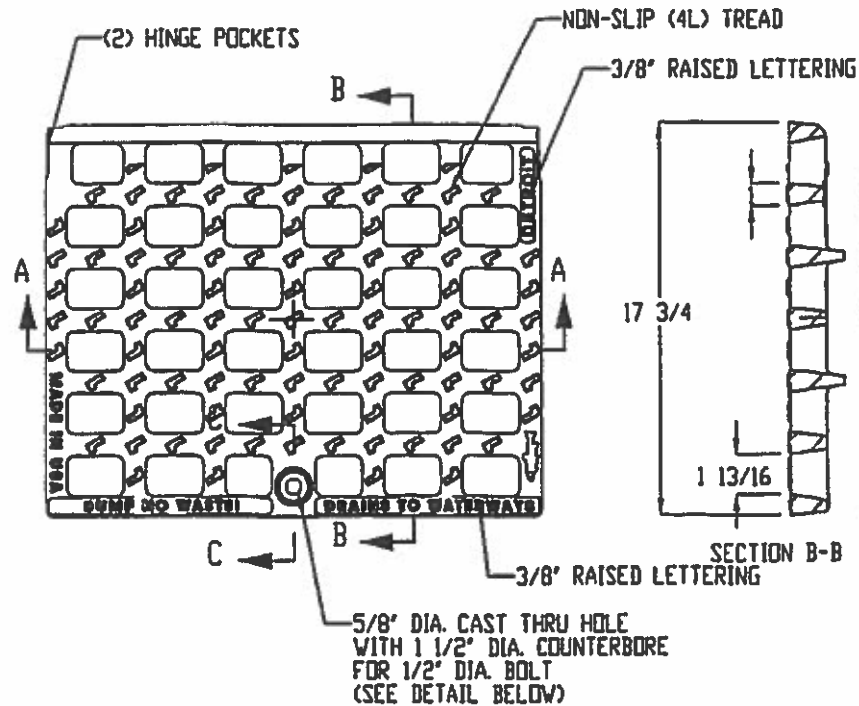
DATE: 07/13/2014



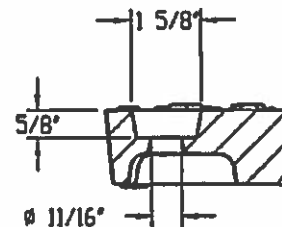
CITY OF DETROIT
CITY ENGINEERING DIVISION
DPW

DWSD MANHOLE
5000 FRAME

5000M4 Grate



BOTTOM VIEW



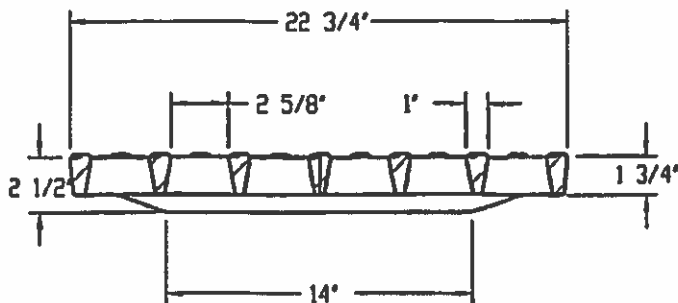
SECTION C-C

DESIGN FEATURES

- MATERIALS
COVER: DUCTILE IRON (80-55-06)
- DESIGN LOAD: HEAVY DUTY
- OPEN AREA: 160 SQ IN
- COATING: UNDIPPED
- DESIGNATES MACHINED SURFACE

CERTIFICATION

- ASTM A536
- COUNTRY OF ORIGIN: USA



SECTION A-A

DWSD APPROVAL:

P. Singley

DATE:

04/16/14



CITY OF DETROIT
CITY ENGINEERING DIVISION
DPW

CATCH BASIN
5000 M4 GRATE

APPROVED:

revised 4/16/14
Paul J. Santos
CITY ENGINEER

SHEET 1 OF 1

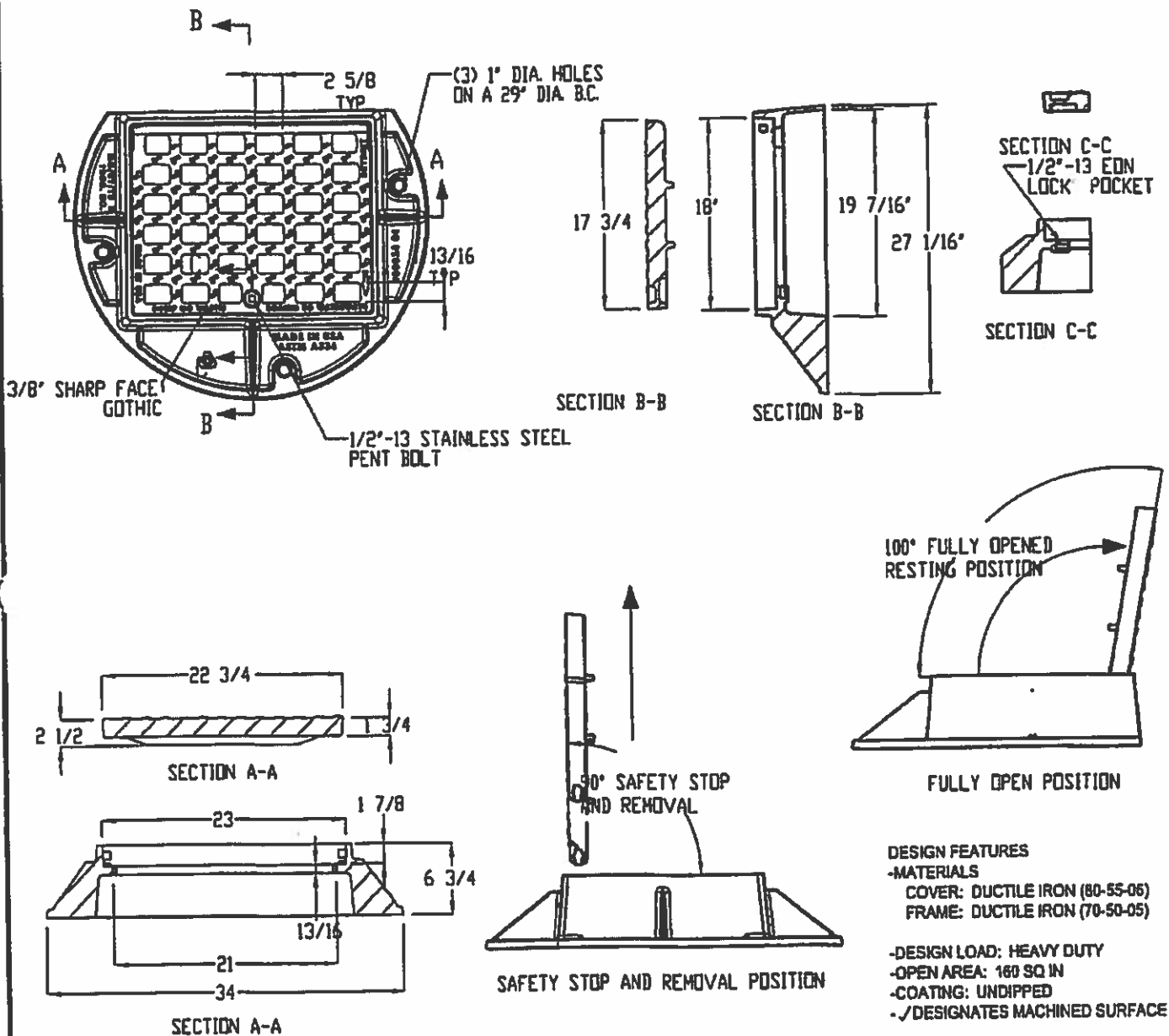
DETAIL STD. No.

DRAWING No. 105

DRAWN BY: N.Y. SANTOS

DATE: 07/15/2014

5000Z4 5000M4 Assembly



DWSD APPROVAL: *[Signature]* DATE: 04/16/14

Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.



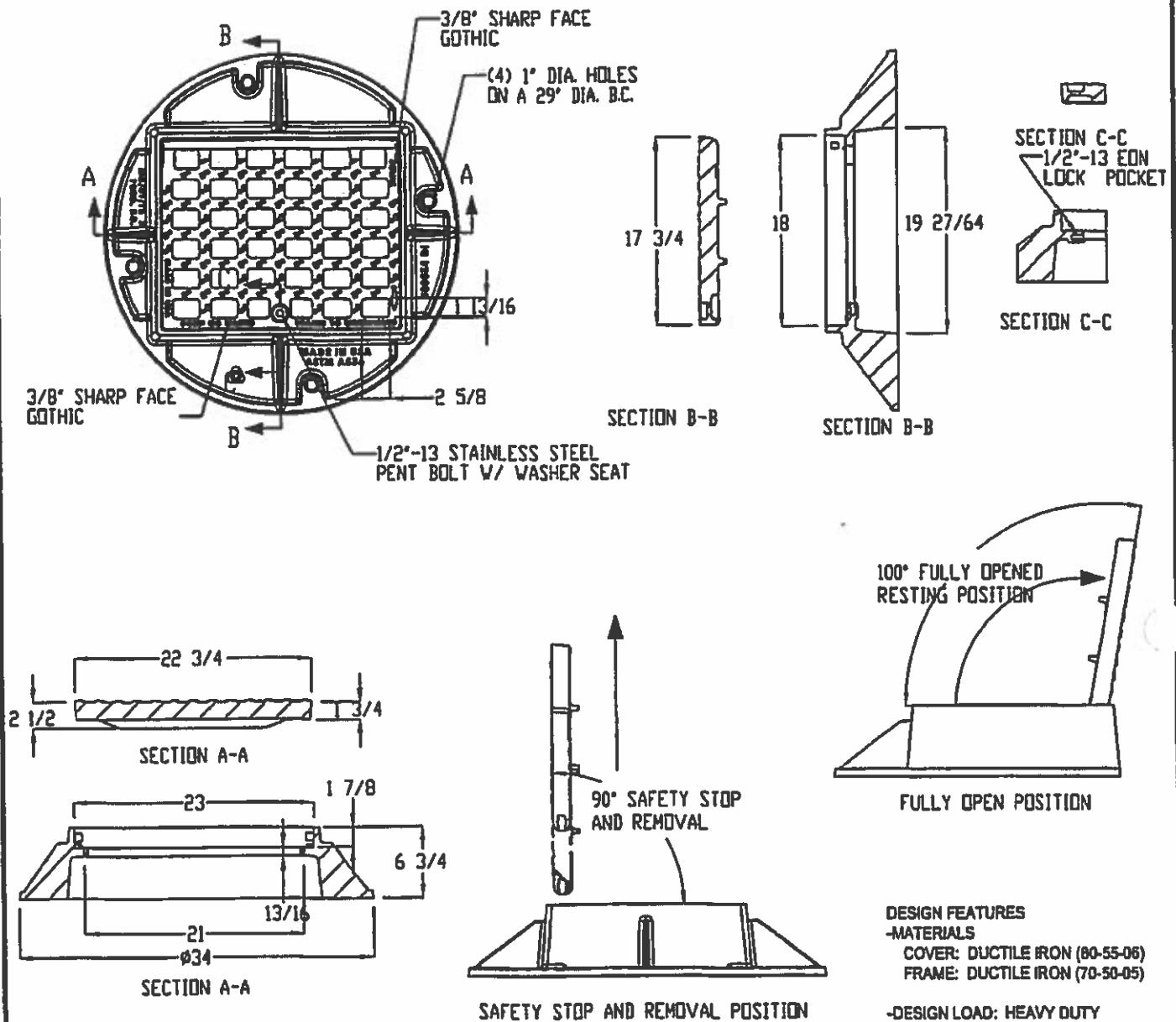
CITY OF DETROIT
CITY ENGINEERING DIVISION
DPW

CATCH BASIN
5000Z4 5000M4 ASSEMBLY

APPROVED: *[Signature]* 4/16/14
ENGINEER OF STREETS
[Signature] 4/16/14
CITY ENGINEER

SHEET 1 OF 1
DETAIL STD No.
DRAWING No. 108
DRAWN BY: RLY. SANTOS
DATE: 3/15/2014

5000 Assembly



DWSD APPROVAL: *[Signature]*

DATE: 04/16/14



CITY OF DETROIT
CITY ENGINEERING DIVISION
DPW

CATCH BASIN
5000 ASSEMBLY

APPROVED:

[Signature] 4/16/14
CITY ENGINEER

SHEET 1 OF 1

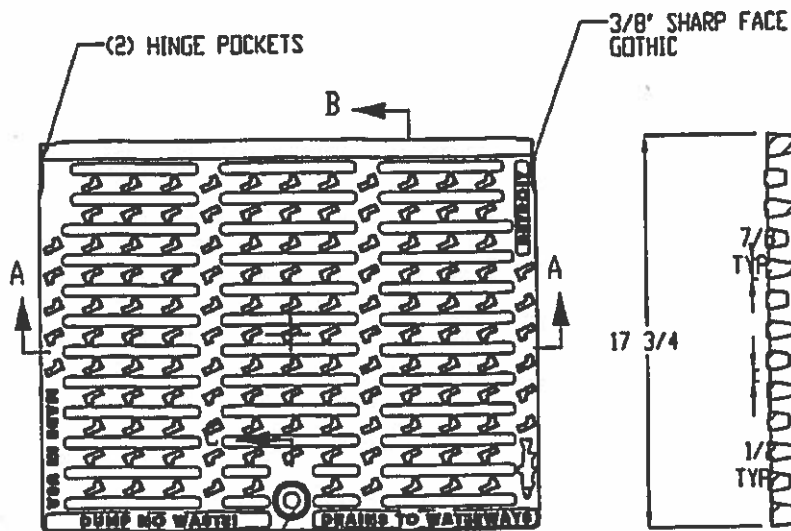
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DRAWING No. 107

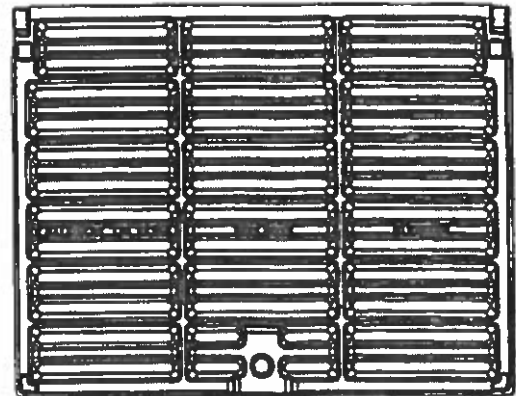
DRAWN BY: N.Y. SANTOS

DATE: 01/15/2014

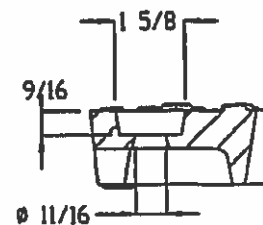
5000M5 Grate



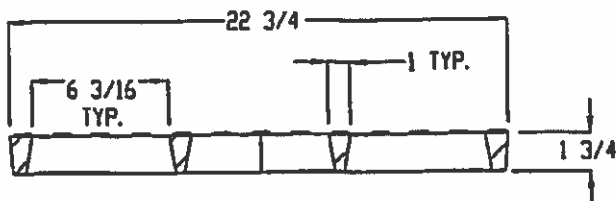
SECTION B-B



BOTTOM VIEW



SECTION C-C



SECTION A-A

DESIGN FEATURES

- MATERIALS
COVER: DUCTILE IRON (80-55-06)
- DESIGN LOAD: HEAVY DUTY
- COATING: UNDIPPED
- DESIGNATES MACHINED SURFACE

CERTIFICATION

- ASTM A536
- COUNTRY OF ORIGIN: USA

DWSD APPROVAL:

D. Singh

DATE:

04/16/14



CITY OF DETROIT
CITY ENGINEERING DIVISION
DPW

A.D.A. CATCH BASIN
5000M5 GRATE

APPROVED:

4/15/14
ENGINEER OF STREETS
[Signature]
CITY ENGINEER

SHEET 1 OF 1

DETAIL STD. No.

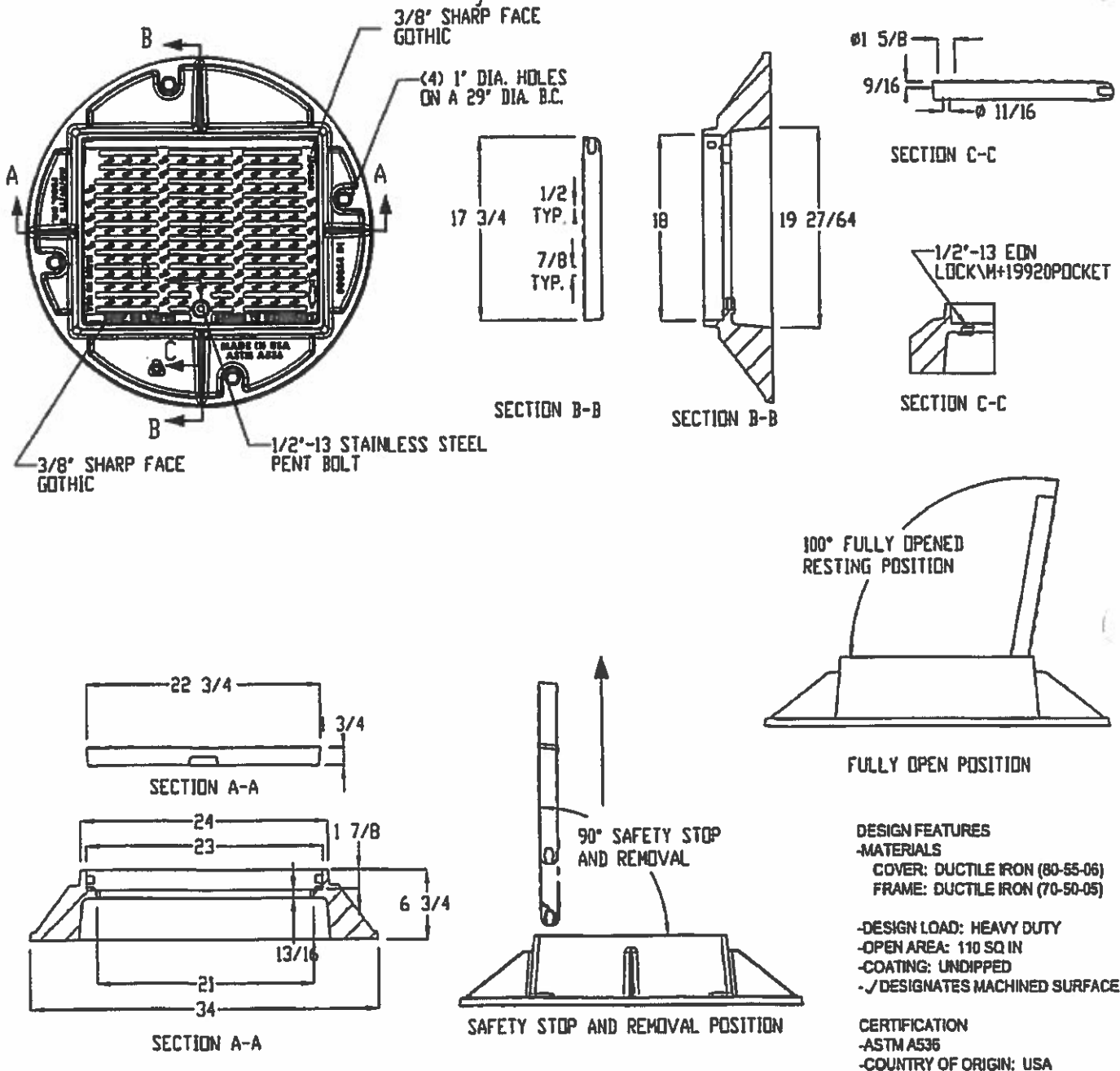
DRAWING No. 108

DRAWN BY: N.Y. SANTOS

DATE: 6/15/2014

5000Z4 5000M5

Assembly



DWSD APPROVAL:

P. Singleton

DATE:

04/16/14

Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.



CITY OF DETROIT
CITY ENGINEERING DIVISION
DPW

A.D.A. CATCH BASIN
5000Z4 5000M5 ASSEMBLY

APPROVED:

uppedel 4/16/14
ENGINEER OF STREETS

Bel 4/16/14
CITY ENGINEER

SHEET 1 OF 1

DETAIL STD. No.

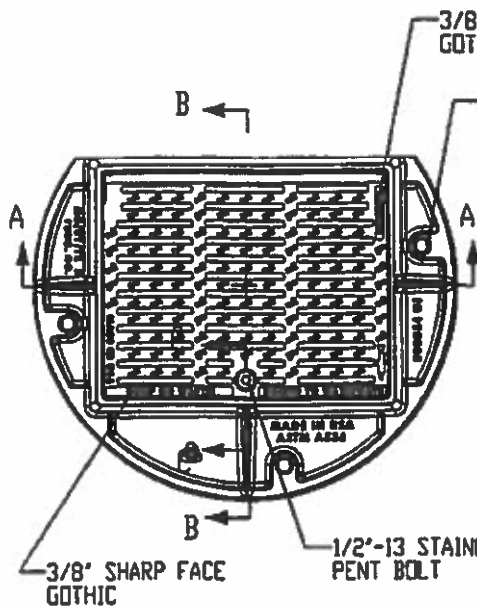
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DRAWN BY: N.Y. SANTOS

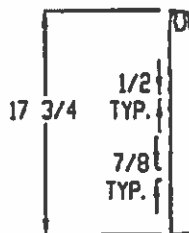
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5000Z4 5000M5

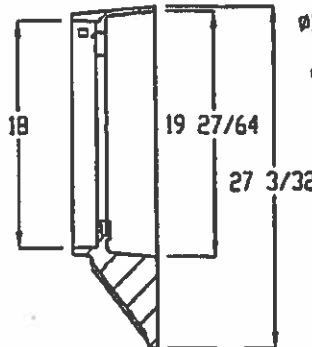
Assembly



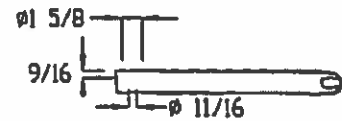
(4) 1" DIA. HOLES
ON A 29" DIA. B.C.



SECTION B-B



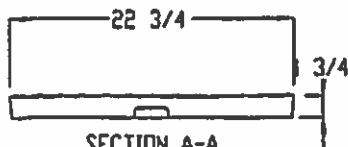
SECTION B-B



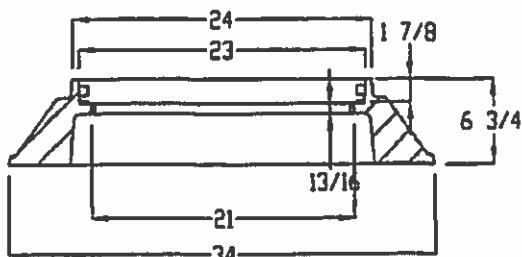
1/2"-13 EON
LOCK\M+19920POCKET



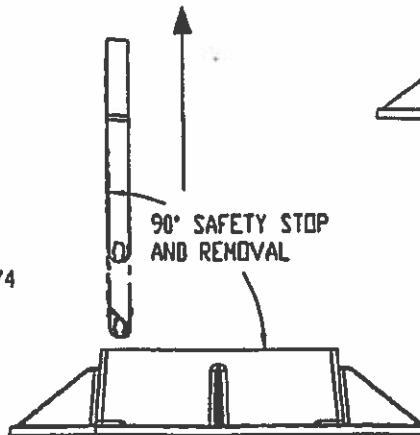
SECTION C-C



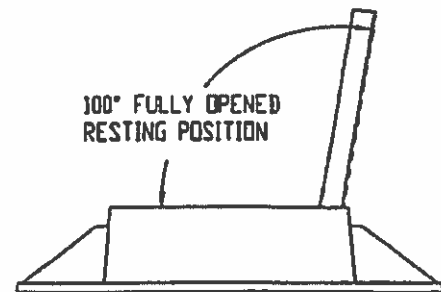
SECTION A-A



SECTION A-A



SAFETY STOP AND REMOVAL POSITION



FULLY OPEN POSITION

DESIGN FEATURES

-MATERIALS

COVER: DUCTILE IRON (80-55-06)
FRAME: DUCTILE IRON (70-50-05)

-DESIGN LOAD: HEAVY DUTY

-OPEN AREA: 110 SQ IN

-COATING: UNDIPTED

-✓ DESIGNATES MACHINED SURFACE

CERTIFICATION

-ASTM A536

-COUNTRY OF ORIGIN: USA

DWSD APPROVAL:

A. Single

DATE:

04/16/14

APPROVED:

updated 4/16/14
CITY ENGINEER

SHEET 1 OF 1

DETAIL STD. No.

DRAWING No. 110

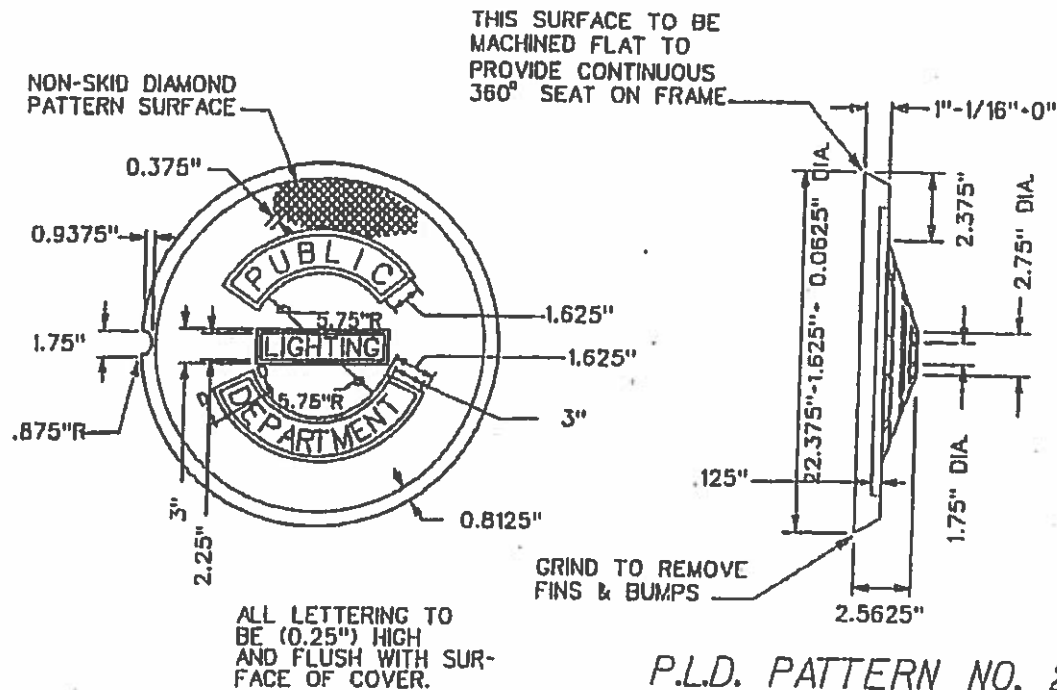
DRAWN BY: N.Y. SANTOS

DATE: 01/15/2014



CITY OF DETROIT
CITY ENGINEERING DIVISION
DPW

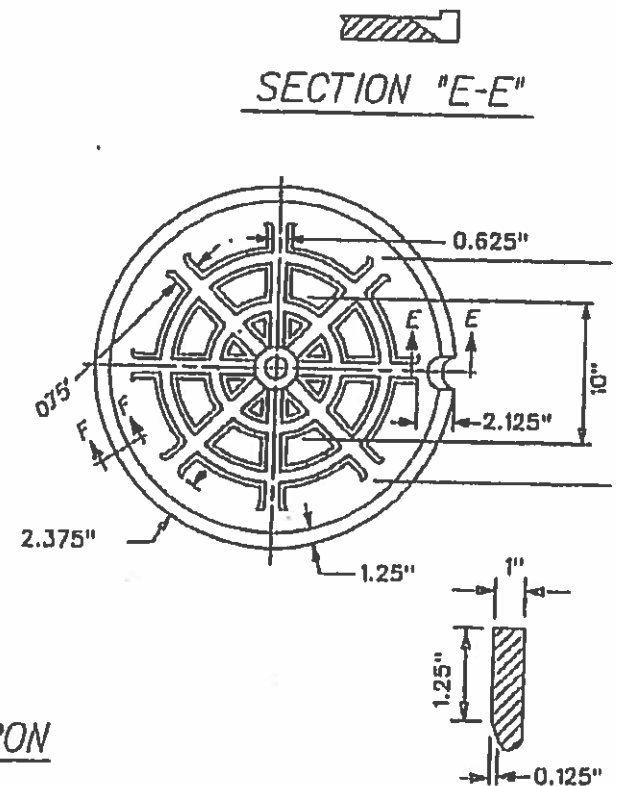
A.D.A. CATCH BASIN
5000Z4 5000M5 ASSEMBLY



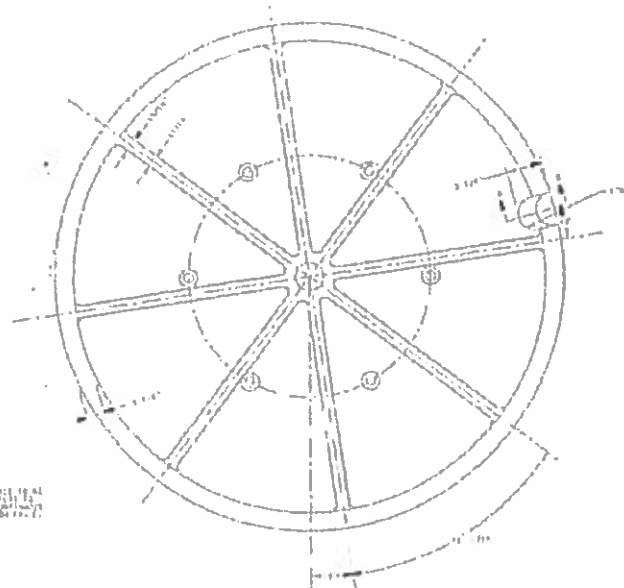
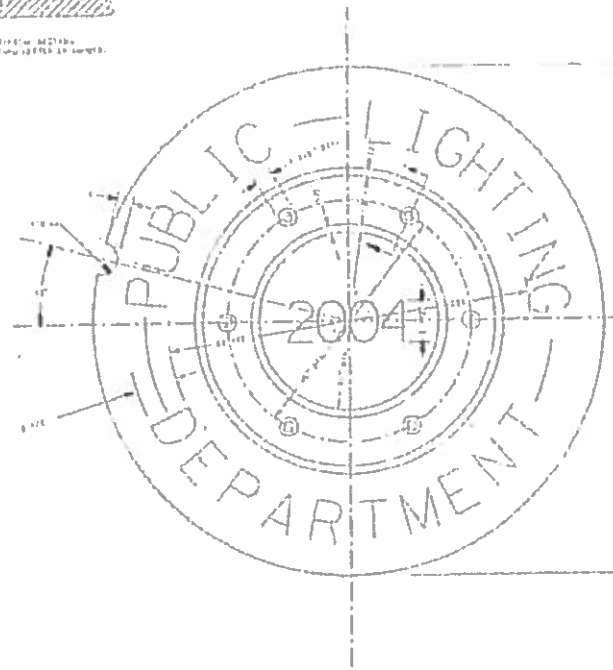
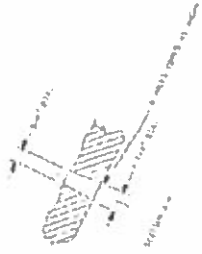
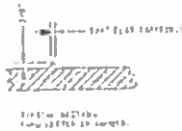
SECTION "D-D"

P.L.D. PATTERN NO. 2A
A.S.T.M. CLASS 30 GRAY IRON
APPROX. WT. 145 LBS.

STREET TYPE COVER
TO BE USED IN STREETS & DRIVES



SECTION "F-F"



SEE ELEVATION AND SIDE ELEVATION FOR DIMENSIONS
 NOTES:
 1. SEE ELEVATION FOR DIMENSIONS OF SETTING
 2. SEE ELEVATION FOR DIMENSIONS OF SETTING

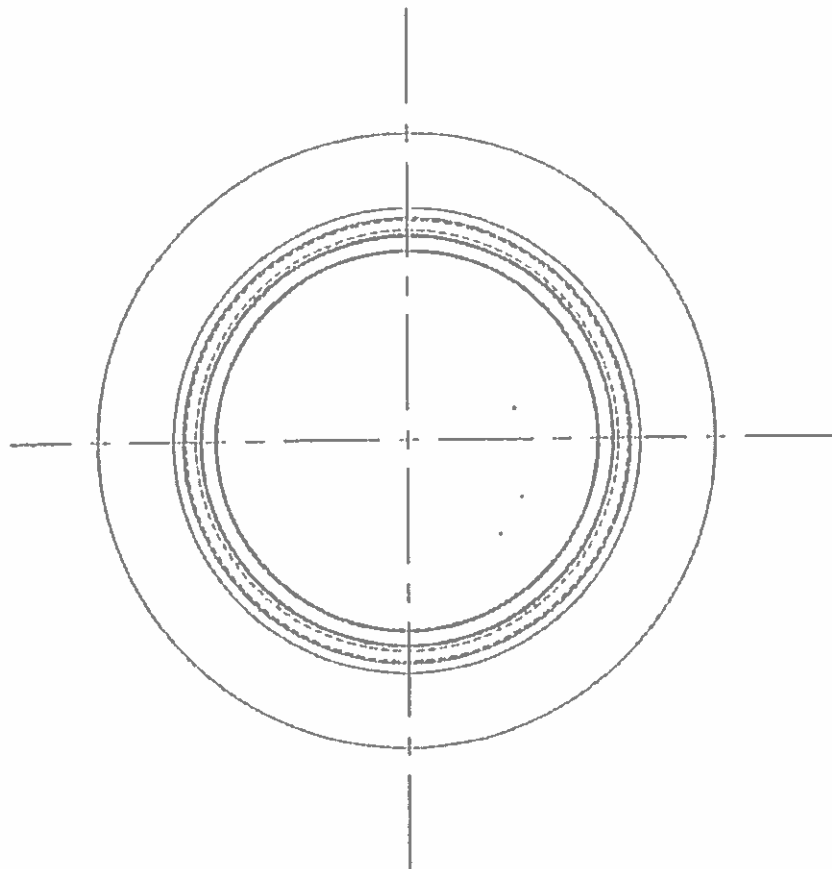
MATERIAL - GRAY IRON CLASS NO. 30
 PATTERN NO. 418A

NOT TO SCALE

MANHOLE COVER

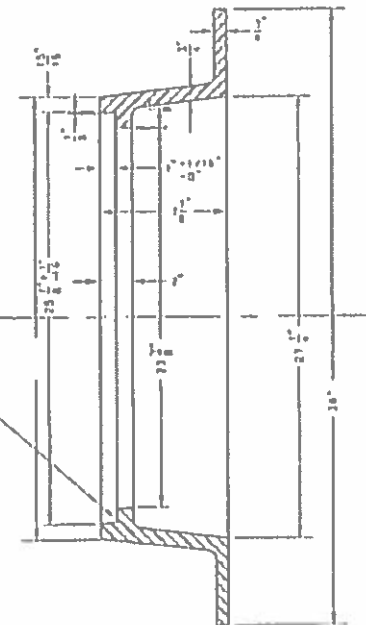
DATE	BY	CHKD BY	APP'D BY
10/1/00	W. J. B. / J. B. B.	W. J. B. / J. B. B.	W. J. B. / J. B. B.
10/1/00	W. J. B. / J. B. B.	W. J. B. / J. B. B.	W. J. B. / J. B. B.
10/1/00	W. J. B. / J. B. B.	W. J. B. / J. B. B.	W. J. B. / J. B. B.
10/1/00	W. J. B. / J. B. B.	W. J. B. / J. B. B.	W. J. B. / J. B. B.
10/1/00	W. J. B. / J. B. B.	W. J. B. / J. B. B.	W. J. B. / J. B. B.
10/1/00	W. J. B. / J. B. B.	W. J. B. / J. B. B.	W. J. B. / J. B. B.
10/1/00	W. J. B. / J. B. B.	W. J. B. / J. B. B.	W. J. B. / J. B. B.
10/1/00	W. J. B. / J. B. B.	W. J. B. / J. B. B.	W. J. B. / J. B. B.
10/1/00	W. J. B. / J. B. B.	W. J. B. / J. B. B.	W. J. B. / J. B. B.

APV-MCH 630	MARTIN DESIGNED BY W. J. B. / J. B. B.	PUBLIC LIGHTING DEPARTMENT W. J. B. / J. B. B.	10/1/00
			10/1/00



THIS SURFACE TO BE
MACHINED FLAT TO PROVIDE
TIGHTNESS AND SEAL FOR COVER

ALL FALLETS ARE 1/2" RADIUS
AND ALL ROUNDS ARE 1/4" RADIUS



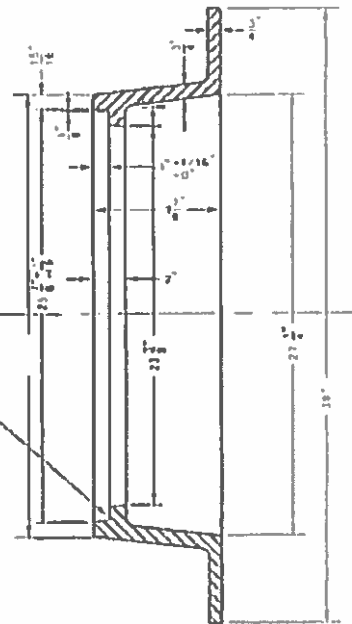
MATERIAL - GRAY IRON - CLASS MD. 20 OR 30
PATTERN NO. 1-A

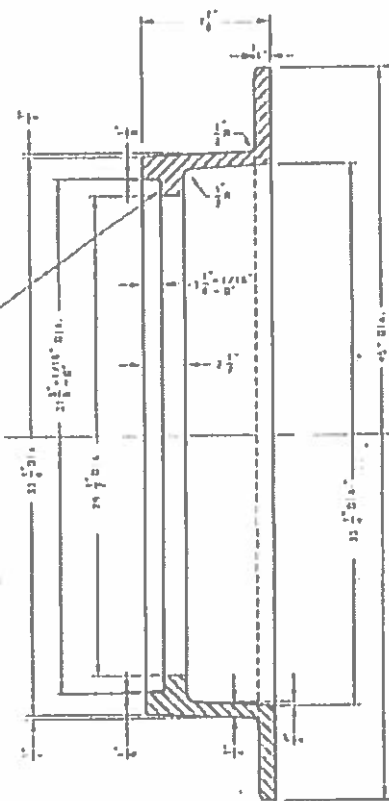
NOT TO SCALE

HANDHOLE FRAME

NO.	REVISION	DATE
1	AS SHOWN	1942

MAR 10	PUBLIC LIGHTING DEPARTMENT	42 0129A
		1 OF 1
		85 P 0, 64





1-13 3000 25 10 05
4000-1000 25 10 10 05
(2000-1000) 150 10 10 05

MATERIAL - GRAY IRON - CLASS NO. 20 OR 30
PATTERN NO. 417

NOT TO SCALE

MANHOLE FRAME



SIDEWALK REPLACEMENT PROGRAM PROGRAMA DE REEMPLAZO DE BANQUETAS

برنامج استبدال الرصيف

3-DAY NOTICE

The Detroit Department of Public Works, through our contractor(s), will soon be replacing damaged sidewalks on your block. One (1) or 2 days before work begins, a city inspector will mark the damaged sidewalk with pink paint. It's not mandatory, but we ask that you move your vehicle from the front of your home, so that the contractor has easier access to the sidewalk. If the markings include the sidewalk across your driveway, you will need to move your vehicle from your driveway before work begins. Otherwise, the vehicle could be trapped in the driveway for up to 7 days, while the concrete is strengthening.

It will take approx. 3 days for the concrete walks to strengthen and approx. 7 days for the concrete across the driveway to strengthen. Please do not walk across, mark or otherwise damage the sidewalk while it hardens, as it may require that it be replaced again.

Following replacement of the sidewalk, crews will return to restore the areas adjacent to the sidewalks. This includes removing debris, repairing lawn sprinklers, if damaged by the contractor, and applying soil and seed in the lawn damaged by the work. The restoration should occur within 4 weeks after replacement of the sidewalks. All costs associated with this work will be paid by the City of Detroit.

We apologize for the inconvenience and appreciate your patience as we work quickly to make these improvements. Please call the City Engineering Division at (313) 224-3947 to report any work related issues.

Thanks again for your cooperation.

AVISO DE 3 DÍAS

El Departamento de Obras Públicas de Detroit, a través de nuestro (s) contratista (s), pronto reemplazará las banquetas dañadas en su cuadra. Un (1) o 2 días antes de que el trabajo comience, un inspector de la ciudad marcará la banqueta dañada con pintura rosa. Aunque no es obligatorio, le pedimos que mueva su vehículo del frente de su casa para que el contratista tenga mejor acceso a la banqueta. Si las marcas incluyen la banqueta en su camino de entrada, tendrá que mover su vehículo de la entrada antes de que puede comenzar el trabajo. Si no, el vehículo podría quedar atrapado en el camino de entrada por hasta 7 días, mientras que el concreto se fortalezca.

Tomará aprox. 3 días para que el concreto en las banquetas se fortalezca y aprox. 7 días para el concreto en el camino de entrada. No camine, marque ni dañe la banqueta mientras se endurece, ya que puede ser necesario volver a reemplazarlas.

(over)

SIDEWALK REPLACEMENT PROGRAM PROGRAMA DE REEMPLAZO DE BANQUETAS برنامج استبدال الرصيف

Después del reemplazo de la banqueta, un equipo regresará para restaurar las áreas adyacentes a las banquetas. Esto incluye remover escombros, reparar aspersores en el patio (si el contratista lo dañó) y agregar tierra y semillas en el patio dañado por el trabajo. La restauración ocurrirá dentro de las 4 semanas posteriores al reemplazo de las banquetas. Todos los costos asociados con este trabajo serán pagados por la Ciudad de Detroit.

Nos disculpamos por la inconveniencia y agradecemos su paciencia mientras trabajamos rápidamente para realizar estos mejoramientos. Llame a la División de Ingeniería de la Ciudad al (313) 224-3947 para reportar cualquier problema relacionado con este trabajo.

Gracias de nuevo por su cooperación.

إشعار مدته 3 أيام

ستقوم Detroit – Department of Public Works (دائرة الأشغال العامة بمدينة ديترويت) قريباً، من خلال مقاولينا، باستبدال الأرصفة التالفة بمنطقة سكنية. ولكن قبل بدء العمل بيوم واحد (1) أو يومين (2) سيقوم أحد مفتشي المدينة بوضع علامات على الرصيف التالف بطلاء وردي. وإننا نطلبكم، ولا نلزمكم، بنقل سيارتكم من أمام منزلكم، حتى يتمكن المقاول من الوصول بسهولة إلى الرصيف. وإذا كانت العلامات تشمل الرصيف المتقاطع مع ممر كراجتكم، ستحتاجون إلى نقل سيارتكم من هذا الممر قبل أن يبدأ العمل. وإلا، قد تُحبس سيارتكم في الممر لمدة تصل إلى 7 أيام، أثناء تصلب الباطون.

سيستغرق الأمر 3 أيام تقريباً حتى تتصلب أرصفة الباطون، و7 أيام تقريباً حتى يتصلب الباطون عند ممر كراجتكم. يرجى عدم المشي على الرصيف أو وضع علامات عليه أو إتلافه أثناء تصلب الباطون، لأن ذلك قد يضطرننا لاستبداله مرة أخرى.

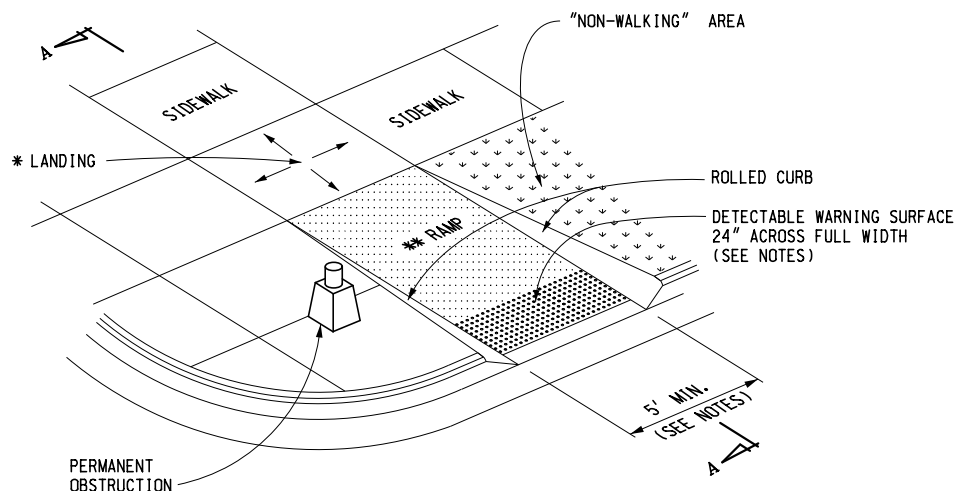
وبعد استبدال الرصيف، ستعود فرق العمل لإعادة المناطق المتاخمة للأرصفة لحالتها الأصلية. وسيشمل ذلك إزالة الحطام، وإصلاح رشاشات العشب، إذا تضررت من المقاول، وإضافة التربة ورمي البذور في الحديقة التي تضررت بسبب العمل. وينبغي أن تتم عملية الاستعادة هذه في غضون 4 أسابيع من استبدال الأرصفة. وستدفع مدينة ديترويت جميع التكاليف المرتبطة بهذا العمل.

إننا نعتذر عن إزعاجكم ونقدر لكم سعة صدركم أثناء عملنا سريعاً لإجراء هذه التحسينات. يرجى الاتصال بـ City Engineering Division (قسم هندسة المدينة) على رقم (313) 224-3947 للإبلاغ عن أية مشكلات متعلقة بالعمل.

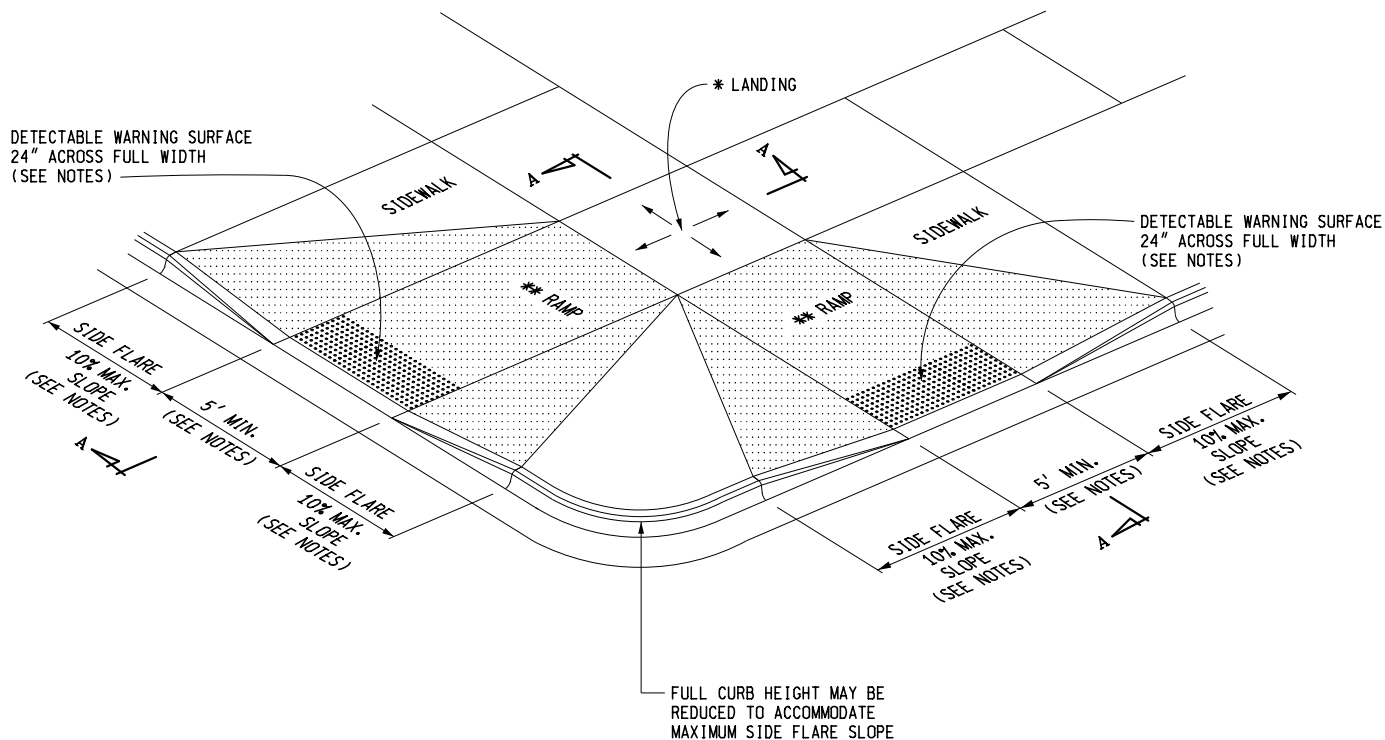
شكراً لكم مرة أخرى على تعاونكم معنا.

* MAXIMUM LANDING SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES. IF THE RAMP RUNNING SLOPE IS LESS THAN 5% A TOP LANDING IS NOT REQUIRED.

** MAXIMUM RAMP CROSS SLOPE IS 2.0%, RUNNING SLOPE 5% - 7% (8.3% MAXIMUM). SEE NOTES.



SIDEWALK RAMP TYPE R
(ROLLED SIDES)



SIDEWALK RAMP TYPE F
(FLARED SIDES, TWO RAMPS SHOWN)



PREPARED
BY
DESIGN DIVISION

DRAWN BY: B.L.T.

CHECKED BY: W.K.P.

DEPARTMENT DIRECTOR
Kirk T. Steudle

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT 436

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

SIDEWALK RAMP AND DETECTABLE WARNING DETAILS

F.H.W.A. APPROVAL

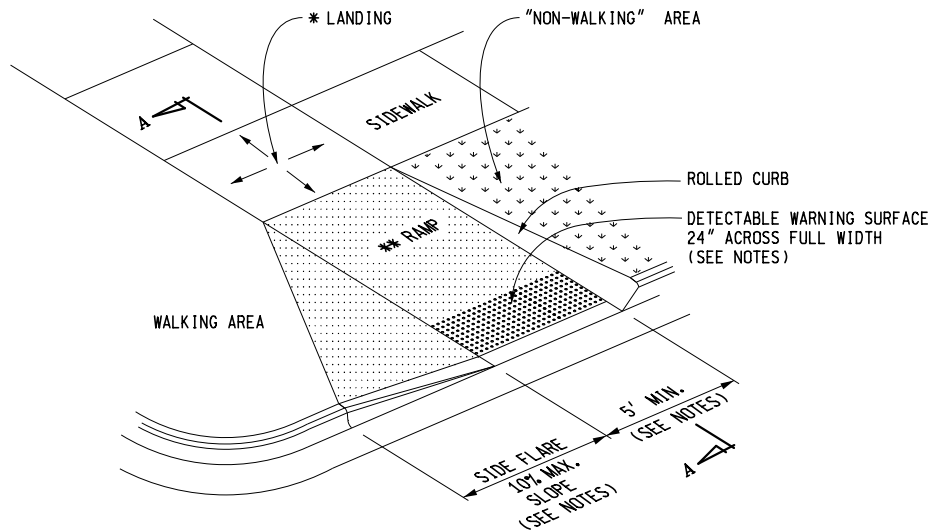
10-20-2017
PLAN DATE

R-28-J

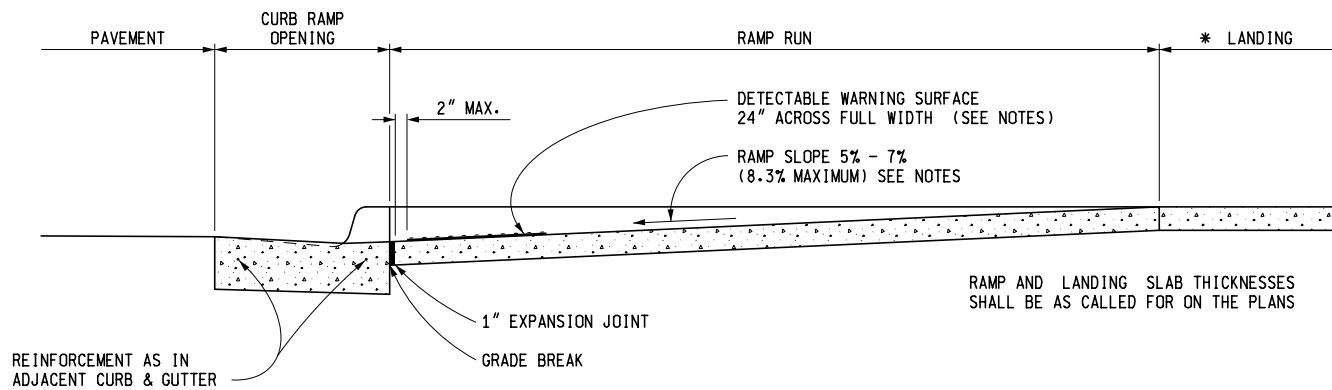
SHEET
1 OF 7

* MAXIMUM LANDING SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES. IF THE RAMP RUNNING SLOPE IS LESS THAN 5% A TOP LANDING IS NOT REQUIRED.

** MAXIMUM RAMP CROSS SLOPE IS 2.0%, RUNNING SLOPE 5% - 7% (8.3% MAXIMUM). SEE NOTES.

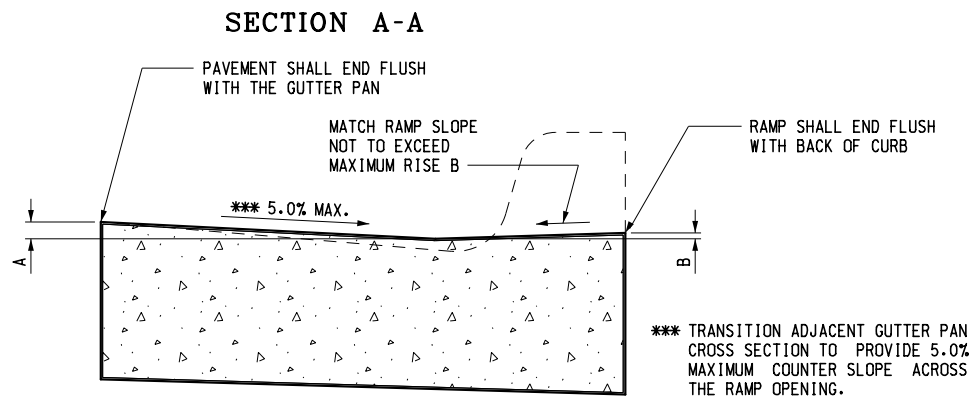


SIDEWALK RAMP TYPE RF
(ROLLED / FLARED SIDES)



CURB TYPE	MAXIMUM RISE (INCHES)	
	A	B
B1	3/4	1
B2	3/4	1
B3	3/4	1
D1	3/4	1
D2	3/4	1
D3	3/4	1
C1	1/2	1/2
C2	1/2	1/2
C3	3/4	1/2
C4	3/4	1/2
C5	1	1/2
C6	1	1/2
F1	1/2	1/2
F2	1/2	1/2
F3	3/4	1/2
F4	3/4	1/2
F5	1	1/2
F6	1	1/2

FOR CURB TYPES SEE
STANDARD PLAN R-30-SERIES



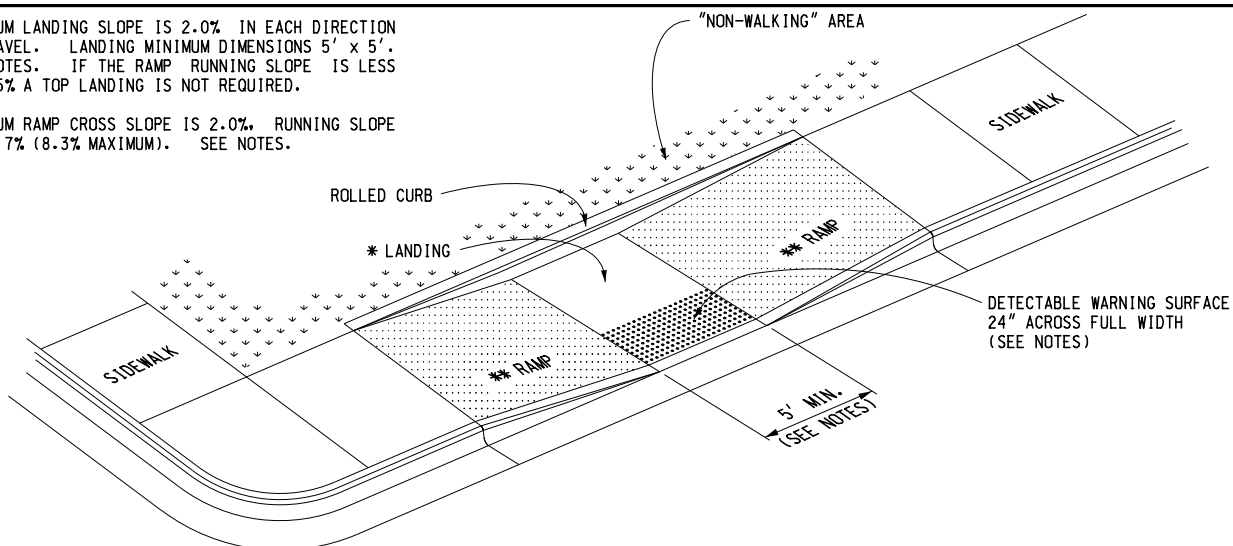
SECTION THROUGH CURB RAMP OPENING
(TYPICAL ALL RAMP TYPES)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

**SIDEWALK RAMP AND
DETECTABLE WARNING DETAILS**

* MAXIMUM LANDING SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES. IF THE RAMP RUNNING SLOPE IS LESS THAN 5% A TOP LANDING IS NOT REQUIRED.

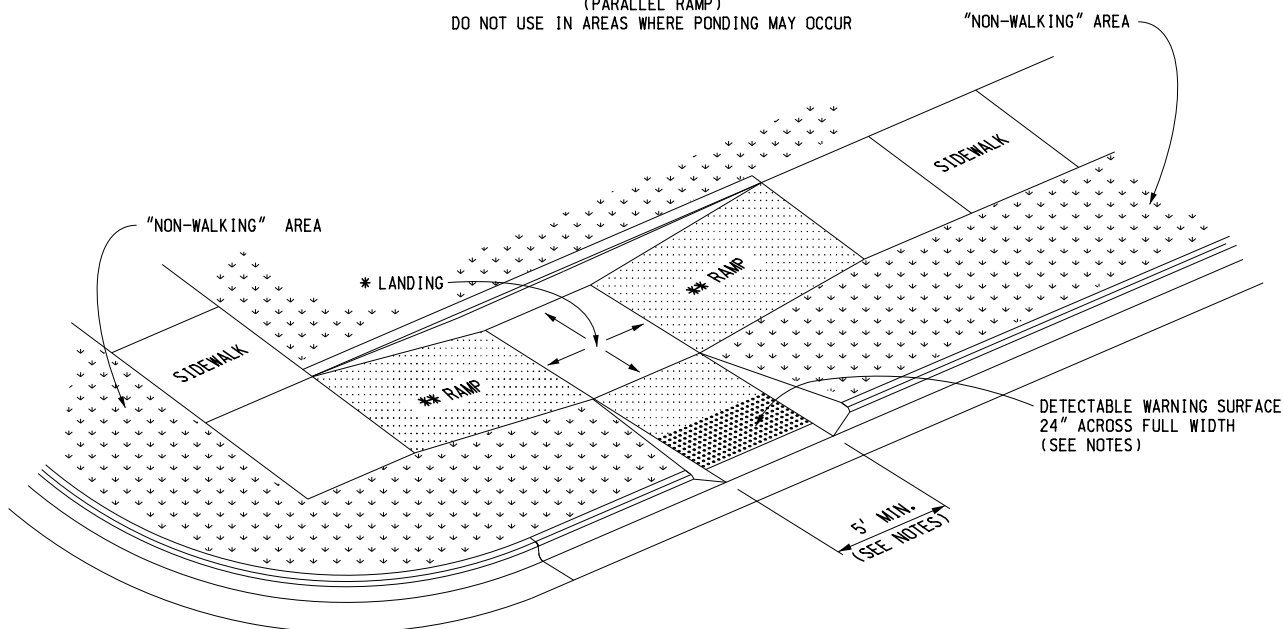
** MAXIMUM RAMP CROSS SLOPE IS 2.0%, RUNNING SLOPE 5% - 7% (8.3% MAXIMUM). SEE NOTES.



SIDEWALK RAMP TYPE P

(PARALLEL RAMP)

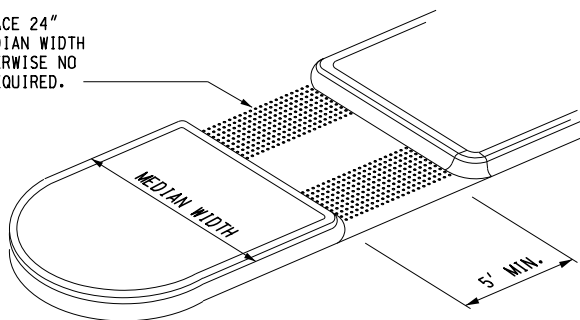
DO NOT USE IN AREAS WHERE PONDING MAY OCCUR



SIDEWALK RAMP TYPE C

(COMBINATION RAMP)

DETECTABLE WARNING SURFACE 24" ACROSS FULL WIDTH IF MEDIAN WIDTH IS AT LEAST 6'-0". OTHERWISE NO DETECTABLE WARNING IS REQUIRED.



SIDEWALK RAMP TYPE M

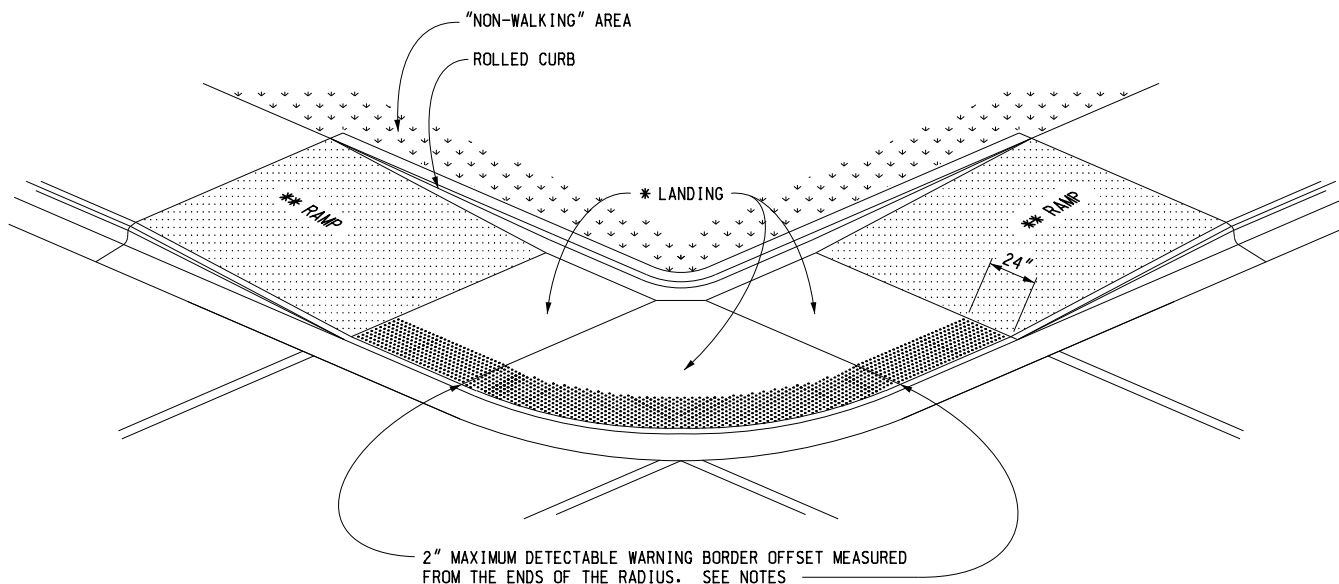
(MEDIAN ISLAND)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

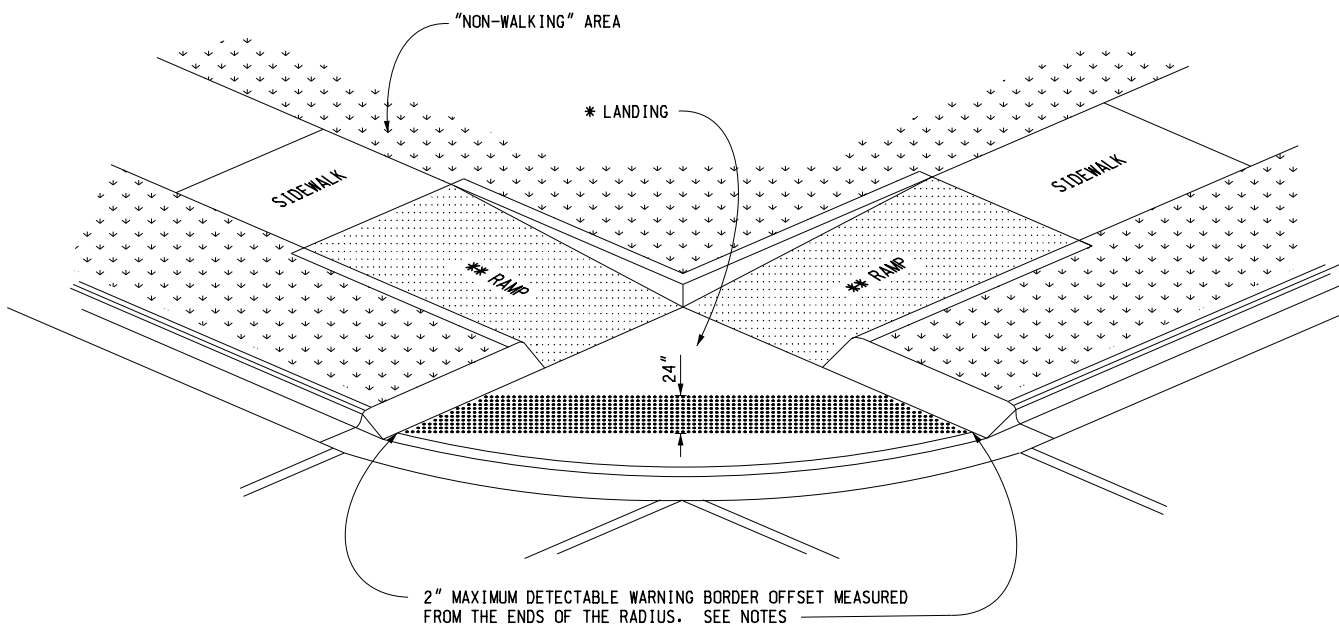
SIDEWALK RAMP AND DETECTABLE WARNING DETAILS

* MAXIMUM LANDING SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES. IF THE RAMP RUNNING SLOPE IS LESS THAN 5% A TOP LANDING IS NOT REQUIRED.

** MAXIMUM RAMP CROSS SLOPE IS 2.0%, RUNNING SLOPE 5% - 7% (8.3% MAXIMUM). SEE NOTES.



(RADIAL DETECTABLE WARNING SHOWN)



(TANGENT DETECTABLE WARNING SHOWN)

SIDEWALK RAMP TYPE D

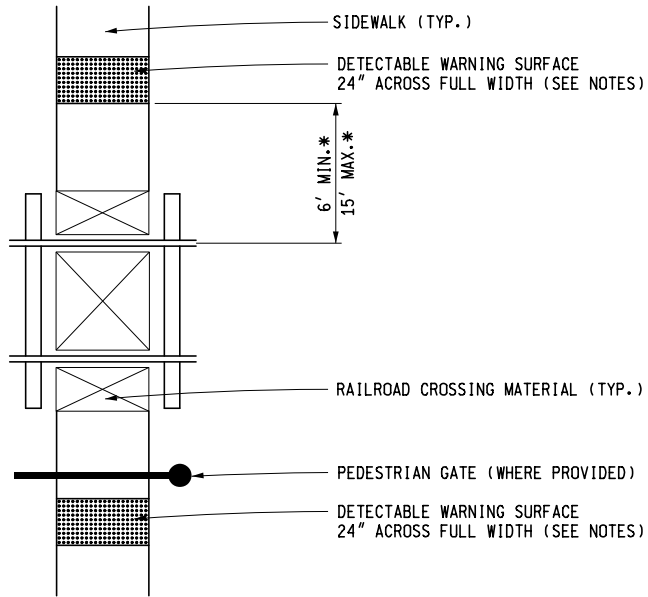
(DEPRESSED CORNER)

USE ONLY WHEN INDEPENDENT DIRECTIONAL RAMPS CAN NOT BE CONSTRUCTED FOR EACH CROSSING DIRECTION

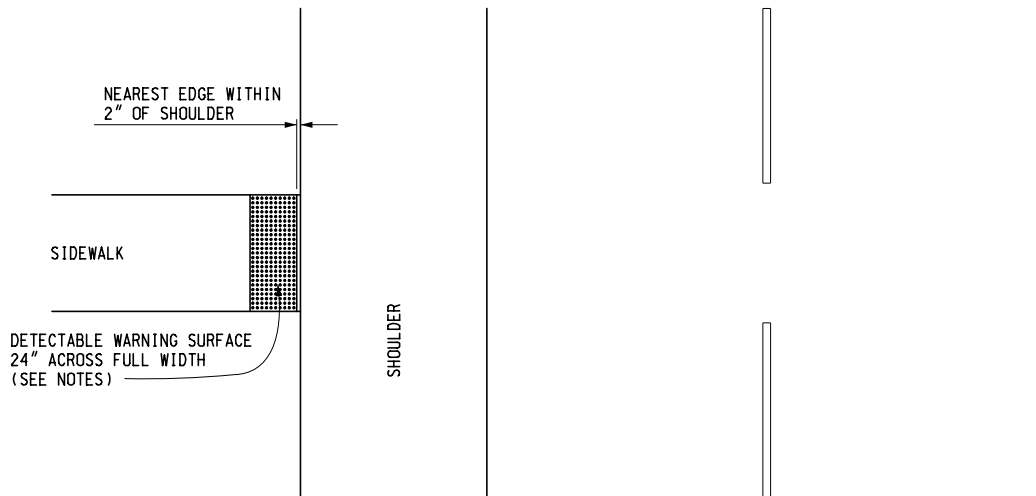
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

SIDEWALK RAMP AND DETECTABLE WARNING DETAILS

* THE DETECTABLE WARNING SURFACE SHALL BE LOCATED SO THAT THE EDGE NEAREST THE RAIL CROSSING IS 6' MINIMUM AND 15' MAXIMUM FROM THE CENTERLINE OF THE NEAREST RAIL. DO NOT PLACE DETECTABLE WARNING ON RAILROAD CROSSING MATERIAL.



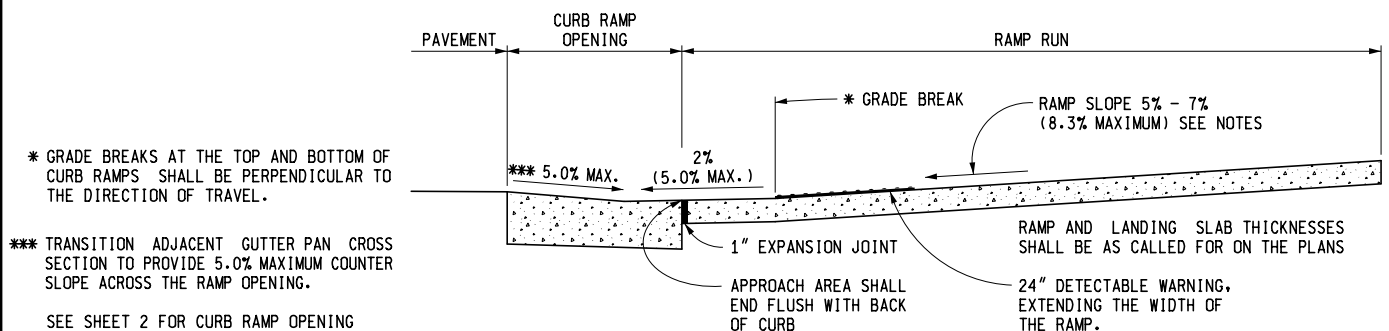
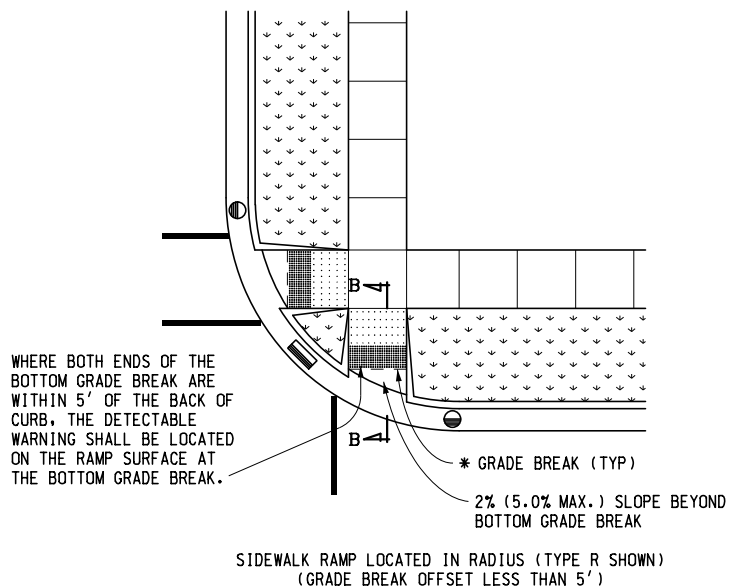
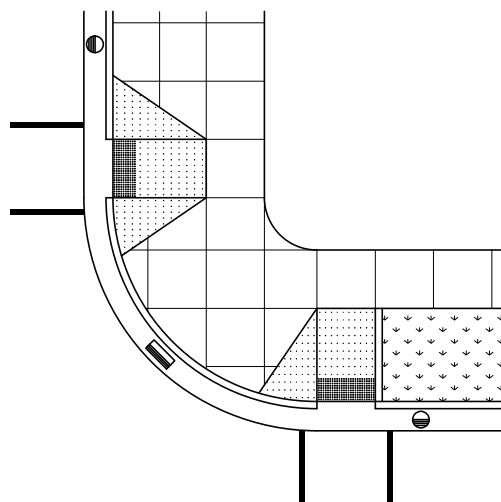
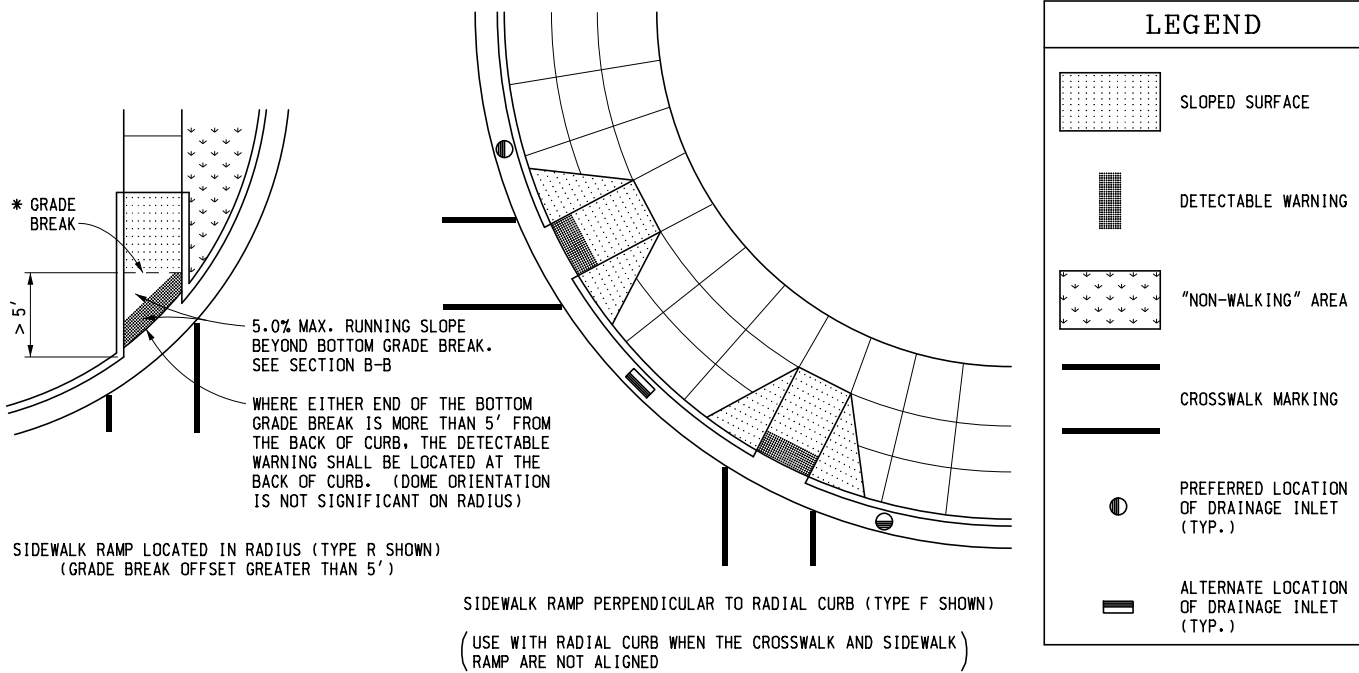
DETECTABLE WARNING AT RAILROAD CROSSING



DETECTABLE WARNING AT FLUSH SHOULDER OR ROADWAY

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

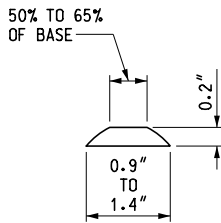
SIDEWALK RAMP AND DETECTABLE WARNING DETAILS



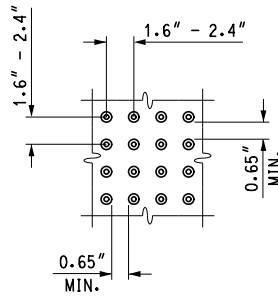
SECTION B-B SIDEWALK RAMP ORIENTATION

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

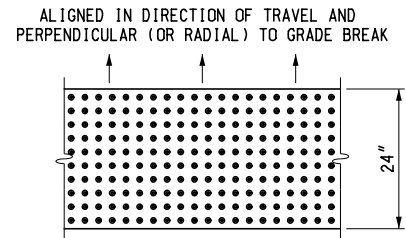
SIDEWALK RAMP AND DETECTABLE WARNING DETAILS



DOME SECTION



DOME SPACING



DOME ALIGNMENT

DETECTABLE WARNING DETAILS

NOTES:

DETAILS SPECIFIED ON THIS PLAN APPLY TO ALL CONSTRUCTION, RECONSTRUCTION, OR ALTERATION OF STREETS, CURBS, OR SIDEWALKS IN THE PUBLIC RIGHT OF WAY.

SIDEWALK RAMPS ARE TO BE LOCATED AS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

RAMPS SHALL BE PROVIDED AT ALL CORNERS OF AN INTERSECTION WHERE THERE IS EXISTING OR PROPOSED SIDEWALK AND CURB. RAMPS SHALL ALSO BE PROVIDED AT MARKED AND/OR SIGNALIZED MID-BLOCK CROSSINGS.

SURFACE TEXTURE OF THE RAMP SHALL BE THAT OBTAINED BY A COARSE BROOMING, TRANSVERSE TO THE RUNNING SLOPE.

SIDEWALK SHALL BE RAMPED WHERE THE DRIVEWAY CURB IS EXTENDED ACROSS THE WALK.

CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON THE RAMP. WHERE CONDITIONS PERMIT, IT IS DESIRABLE THAT THE SLOPE OF THE RAMP BE IN ONLY ONE DIRECTION, PARALLEL TO THE DIRECTION OF TRAVEL.

RAMP WIDTH SHALL BE INCREASED, IF NECESSARY, TO ACCOMMODATE SIDEWALK SNOW REMOVAL EQUIPMENT NORMALLY USED BY THE MUNICIPALITY.

WHEN 5' MINIMUM WIDTHS ARE NOT PRACTICABLE, RAMP WIDTH MAY BE REDUCED TO NOT LESS THAN 4' AND LANDINGS TO NOT LESS THAN 4' x 4'.

DETECTABLE WARNING SURFACE COVERAGE IS 24" MINIMUM IN THE DIRECTION OF RAMP/PATH TRAVEL AND THE FULL WIDTH OF THE RAMP/PATH OPENING EXCLUDING CURBED OR FLARED CURB TRANSITION AREAS. A BORDER OFFSET NOT GREATER THAN 2" MEASURED ALONG THE EDGES OF THE DETECTABLE WARNING IS ALLOWABLE. FOR RADIAL CURB THE OFFSET IS MEASURED FROM THE ENDS OF THE RADIUS.

FOR NEW ROADWAY CONSTRUCTION, THE RAMP CROSS SLOPE MAY NOT EXCEED 2.0%. FOR ALTERATIONS TO EXISTING ROADWAYS, THE CROSS SLOPE MAY BE TRANSITIONED TO MEET AN EXISTING ROADWAY GRADE. THE CROSS SLOPE TRANSITION SHALL BE APPLIED UNIFORMLY OVER THE FULL LENGTH OF THE RAMP.

THE MAXIMUM RUNNING SLOPE OF 8.3% IS RELATIVE TO A FLAT (0%) REFERENCE. HOWEVER, IT SHALL NOT REQUIRE ANY RAMP OR SERIES OF RAMPS TO EXCEED 15 FEET IN LENGTH NOT INCLUDING LANDINGS OR TRANSITIONS.

DRAINAGE STRUCTURES SHOULD NOT BE PLACED IN LINE WITH RAMPS. THE LOCATION OF THE RAMP SHOULD TAKE PRECEDENCE OVER THE LOCATION OF THE DRAINAGE STRUCTURE. WHERE EXISTING DRAINAGE STRUCTURES ARE LOCATED IN THE RAMP PATH OF TRAVEL, USE A MANUFACTURER'S ADA COMPLIANT GRATE. OPENINGS SHALL NOT BE GREATER THAN 1/2". ELONGATED OPENINGS SHALL BE PLACED SO THAT THE LONG DIMENSION IS PERPENDICULAR TO THE DOMINANT DIRECTION OF TRAVEL.

THE TOP OF THE JOINT FILLER FOR ALL RAMP TYPES SHALL BE FLUSH WITH THE ADJACENT CONCRETE.

CROSSWALK AND STOP LINE MARKINGS, IF USED, SHALL BE SO LOCATED AS TO STOP TRAFFIC SHORT OF RAMP CROSSINGS. SPECIFIC DETAILS FOR MARKING APPLICATIONS ARE GIVEN IN THE "MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

FLARED SIDES WITH A SLOPE OF 10% MAXIMUM, MEASURED ALONG THE ROADSIDE CURB LINE, SHALL BE PROVIDED WHERE AN UNOBSTRUCTED CIRCULATION PATH LATERALLY CROSSES THE SIDEWALK RAMP. FLARED SIDES ARE NOT REQUIRED WHERE THE RAMP IS BORDERED BY LANDSCAPING, UNPAVED SURFACE OR PERMANENT FIXED OBJECTS. WHERE THEY ARE NOT REQUIRED, FLARED SIDES CAN BE CONSIDERED IN ORDER TO AVOID SHARP CURB RETURNS AT RAMP OPENINGS.

DETECTABLE WARNING PLATES MUST BE INSTALLED USING FABRICATED OR FIELD CUT UNITS CAST AND/OR ANCHORED IN THE PAVEMENT TO RESIST SHIFTING OR HEAVING.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

SIDEWALK RAMP AND DETECTABLE WARNING DETAILS

F.H.W.A. APPROVAL

10-20-2017
PLAN DATE

R-28-J

SHEET
7 OF 7

NOTICE TO BIDDERS – INQUIRY

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

George Masinda

Name

Urban Staff Engineer

Title

masindag@michigan.gov

E-mail Address

517-335-4523

Phone

All inquiries must be made by E-mail through the electronic proposal system at MDOT's e-Proposal website – www.michigan.gov/mdot-eprop. Telephone inquiries will not be answered. To be able to process and distribute an addendum, if required, all inquiries shall be made at least seven (7) calendar days before the letting. Inquiries made after this date will be considered by MDOT, but will not require a response.

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

Proposal Item Number

Contract ID

Name of Inquiring Person

Company Name

Phone # and E-mail address

Detailed question(s) with reference to proposal page and plan sheet number

Other employees of MDOT have been instructed to direct all inquiries to the person mentioned above.

2/11/2009

Job(s): 205935A

General Decision Number: **MI190001 03/08/2019 MI1**

Superseded General Decision Number: MI20180001

State: Michigan

Construction Types: Highway (Highway, Airport & Bridge xxxxx
and Sewer/Incid. to Hwy.)

Counties: Michigan Statewide.

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.60 for calendar year 2019 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.60 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2019. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/04/2019
1	01/25/2019
2	03/08/2019

CARP0004-004 06/01/2018

REMAINDER OF STATE

	Rates	Fringes
CARPENTER (Piledriver).....	\$ 27.12	20.19

CARP0004-005 06/01/2018

LIVINGSTON (Townships of Brighton, Deerfield, Genoa, Hartland, Ocala & Tyrone), MACOMB, MONROE, OAKLAND, SANILAC, ST. CLAIR AND WAYNE COUNTIES

	Rates	Fringes
CARPENTER (Piledriver).....	\$ 30.50	27.28

STATEWIDE

	Rates	Fringes
Line Construction		
Groundman/Driver.....	\$ 28.33	6.45+29%
Journeyman Signal Tech, Communications Tech, Tower		
Tech & Fiber Optic Splicers..	\$ 39.31	6.45+29%
Journeyman Specialist.....	\$ 45.21	6.45+29%
Operator A.....	\$ 33.22	6.45+29%
Operator B.....	\$ 31.02	6.45+29%

Classifications

Journeyman Specialist: Refers to a crew of only one person working alone.

Operator A: Shall be proficient in operating all power equipment including: Backhoe, Excavator, Directional Bore and Boom/Digger truck.

Operator B: Shall be proficient in operating any 2 of the above mentioned pieces of equipment listed under Operator A.

 ENGI0324-003 06/01/2018

ALCONA, ALPENA, ARENAC, BAY, CHEBOYGAN, CLARE, CLINTON, CRAWFORD, GENESEE, GLADWIN, GRATIOT, HURON, INGHAM, IOSCO, ISABELLA, JACKSON, LAPEER, LENAWEE, LIVINGSTON, MACOMB, MIDLAND, MONROE, MONTMORENCY, OAKLAND, OGEMAW, OSCODA, OTSEGO, PRESQUE ISLE, ROSCOMMON, SAGINAW, ST. CLAIR, SANILAC, SHIAWASSEE, TUSCOLA, WASHTENAW AND WAYNE COUNTIES:

	Rates	Fringes
OPERATOR: Power Equipment (Steel Erection)		
GROUP 1.....	\$ 45.37	23.85
GROUP 2.....	\$ 46.37	23.85
GROUP 3.....	\$ 43.87	23.85
GROUP 4.....	\$ 44.87	23.85
GROUP 5.....	\$ 42.37	23.85
GROUP 6.....	\$ 43.37	23.85
GROUP 7.....	\$ 42.10	23.85
GROUP 8.....	\$ 43.10	23.85
GROUP 9.....	\$ 41.65	23.85
GROUP 10.....	\$ 42.65	23.85
GROUP 11.....	\$ 40.92	23.85
GROUP 12.....	\$ 41.92	23.85
GROUP 13.....	\$ 40.56	23.85
GROUP 14.....	\$ 41.56	23.85
GROUP 15.....	\$ 39.92	23.85
GROUP 16.....	\$ 37.82	23.85
GROUP 17.....	\$ 23.64	11.00
GROUP 18.....	\$ 27.08	11.00

FOOTNOTE:

Paid Holidays: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Engineer when operating combination of boom and jib
400' or longer

GROUP 2: Engineer when operating combination of boom and jib
400' or longer on a crane that requires an oiler

GROUP 3: Engineer when operating combination of boom and jib
300' or longer

GROUP 4: Engineer when operating combination of boom and jib
300' or longer on a crane that requires an oiler

GROUP 5: Engineer when operating combination of boom and jib
220' or longer

GROUP 6: Engineer when operating combination of boom and jib
220' or longer on a crane that requires an oiler

GROUP 7: Engineer when operating combination of boom and jib
140' or longer

GROUP 8: Engineer when operating combination of boom and jib
140' or longer on a crane that requires an oiler

GROUP 9: Tower crane & derrick operator (where operator's
work station is 50 ft. or more above first sub-level)

GROUP 10: Tower crane & derrick operator (where operator's
work station is 50 ft. or more above first sub-level) on a
crane that requires an oiler

GROUP 11: Engineer when operating combination of boom and jib
120' or longer

GROUP 12: Engineer when operating combination of boom and jib
120' or longer on a crane that requires an oiler

GROUP 13: Crane operator; job mechanic and 3 drum hoist and
excavator

GROUP 14: Crane operator on a crane that requires an oiler

GROUP 15: Hoisting operator; 2 drum hoist and rubber tired
backhoe

GROUP 16: Forklift and 1 drum hoist

GROUP 17: Compressor or welder operator

GROUP 18: Oiler

ENGI0324-004 06/01/2018

AREA 1: ALLEGAN, BARRY, BERRIEN, BRANCH, CALHOUN, CASS, EATON,
HILLSDALE, IONIA, KALAMAZOO, KENT, LAKE, MANISTEE, MASON,
MECOSTA, MONTCALM, MUSKEGON, NEWAYGO, OCEANA, OSCEOLA, OTTAWA,
ST. JOSEPH, VAN BUREN

AREA 2: ANTRIM, BENZIE, CHARLEVOIX, EMMET, GRAND TRAVERSE,
KALKASKA, LEELANAU, MISSAUKEE AND WEXFORD COUNTIES:

	Rates	Fringes
OPERATOR: Power Equipment (Steel Erection)		
AREA 1		
GROUP 1.....	\$ 45.37	23.85
GROUP 2.....	\$ 42.10	23.85
GROUP 3.....	\$ 40.56	23.85
GROUP 4.....	\$ 37.82	23.85
GROUP 5.....	\$ 23.64	11.00
GROUP 6.....	\$ 27.08	11.00
AREA 2		
GROUP 1.....	\$ 45.37	23.85
GROUP 2.....	\$ 42.10	23.85
GROUP 3.....	\$ 40.56	23.85
GROUP 4.....	\$ 37.82	23.85
GROUP 5.....	\$ 23.64	11.00
GROUP 6.....	\$ 27.08	11.00

FOOTNOTES:

Crane operator with main boom and jib 300' or longer: \$1.50 additional to the group 1 rate. Crane operator with main boom and jib 400' or longer: \$3.00 additional to the group 1 rate.

PAID HOLIDAYS: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS:

GROUP 1: Crane Operator with main boom & jib 400', 300', or 220' or longer.

GROUP 2: Crane Operator with main boom & jib 140' or longer, Tower Crane; Gantry Crane; Whirley Derrick.

GROUP 3: Regular Equipment Operator, Crane, Dozer, Loader, Hoist, Straddle Wagon, Mechanic, Grader and Hydro Excavator.

GROUP 4: Air Tugger (single drum), Material Hoist Pump 6" or over, Elevators, Brokk Concrete Breaker.

GROUP 5: Air Compressor, Welder, Generators, Conveyors

GROUP 6: Oiler and fire tender

ENGI0324-005 09/01/2018

AREA 1: GENESEE, LAPEER, LIVINGSTON, MACOMB, MONROE, OAKLAND, ST. CLAIR, WASHTENAW AND WAYNE COUNTIES

AREA 2: ALCONA, ALLEGAN, ALGER, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KWEENAW, LAKE, LEELANAU, LENAWEE, LUCE, MACKINAC, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE,

ROSCOMMON, SAGINAW, SANILAC, SCHOOLCRAFT, SHIAWASSEE, ST.
JOSEPH, TUSCOLA, VAN BUREN AND WEXFORD COUNTIES

	Rates	Fringes
OPERATOR: Power Equipment (Underground construction (including sewer))		
AREA 1:		
GROUP 1.....	\$ 32.53	23.85
GROUP 2.....	\$ 27.80	23.85
GROUP 3.....	\$ 27.07	23.85
GROUP 4.....	\$ 26.50	23.85
AREA 2:		
GROUP 1.....	\$ 30.82	23.85
GROUP 2.....	\$ 25.93	23.85
GROUP 3.....	\$ 25.43	23.85
GROUP 4.....	\$ 25.15	23.85

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Backfiller tamper; Backhoe; Batch plant operator (concrete); Clamshell; Concrete paver (2 drums or larger); Conveyor loader (Euclid type); Crane (crawler, truck type or pile driving); Dozer; Dragline; Elevating grader; Endloader; Gradall (and similar type machine); Grader; Mechanic; Power shovel; Roller (asphalt); Scraper (self-propelled or tractor drawn); Side boom tractor (type D-4 or equivalent and larger); Slip form paver; Slope paver; Trencher (over 8 ft. digging capacity); Well drilling rig; Concrete pump with boom operator; Hydro Excavator

GROUP 2: Boom truck (power swing type boom); Crusher; Hoist; Pump (1 or more - 6-in. discharge or larger - gas or diesel- powered or powered by generator of 300 amperes or more - inclusive of generator); Side boom tractor (smaller than type D-4 or equivalent); Tractor (pneu-tired, other than backhoe or front end loader); Trencher (8-ft. digging capacity and smaller); Vac Truck

GROUP 3: Air compressors (600 cfm or larger); Air compressors (2 or more-less than 600 cfm); Boom truck (non-swinging, non- powered type boom); Concrete breaker (self-propelled or truck mounted - includes compressor); Concrete paver (1 drum-1/2 yd. or larger); Elevator (other than passenger); Maintenance person; Pump (2 or more-4-in. up to 6-in. discharge-gas or diesel powered - excluding submersible pumps); Pumpcrete machine (and similar equipment); Wagon drill (multiple); Welding machine or generator (2 or more-300 amp. or larger - gas or diesel powered)

GROUP 4: Boiler; Concrete saw (40 hp or over); Curing machine (self-propelled); Farm tractor (with attachment); Finishing machine (concrete); Fire person; Hydraulic pipe pushing machine; Mulching equipment; Oiler; Pumps (2 or more up to 4-in. discharge, if used 3 hours or more a day, gas or diesel powered - excluding submersible pumps); Roller (other than asphalt); Stump remover; Trencher (service); Vibrating compaction equipment, self-propelled (6 ft. wide or over); End dump operator; Sweeper (Wayne type); Water wagon and Extend-a boom forklift

AREA 1: GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES

AREA 2: ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LIVINGSTON, LUCE, MACKINAC, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, ST. CLARE, ST. JOSEPH, SANILAC, SCHOOLCRAFT, SHIAWASSEE, TUSCOLA, VAN BUREN AND WEXFORD COUNTIES

	Rates	Fringes
Power equipment operators: (AIRPORT, BRIDGE & HIGHWAY CONSTRUCTION)		
AREA 1		
GROUP 1.....	\$ 33.36	23.90
GROUP 2.....	\$ 26.63	23.90
GROUP 3.....	\$ 27.93	23.90
GROUP 4.....	\$ 25.90	23.90
GROUP 5.....	\$ 20.70	11.00
AREA 2		
GROUP 1.....	\$ 33.36	23.90
GROUP 2.....	\$ 26.63	23.90
GROUP 3.....	\$ 27.93	23.90
GROUP 4.....	\$ 25.90	23.90
GROUP 5.....	\$ 20.70	11.00

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Asphalt plant operator; Crane operator (does not include work on bridge construction projects when the crane operator is erecting structural components); Dragline operator; Shovel operator; Locomotive operator; Paver operator (5 bags or more); Elevating grader operator; Pile driving operator; Roller operator (asphalt); Blade grader operator; Trenching machine operator (ladder or wheel type); Auto-grader; Slip form paver; Self-propelled or tractor-drawn scraper; Conveyor loader operator (Euclid type); Endloader operator (1 yd. capacity and over); Bulldozer; Hoisting engineer; Tractor operator; Finishing machine operator (asphalt); Mechanic; Pump operator (6-in. discharge or over, gas, diesel powered or generator of 300 amp. or larger); Shouldering or gravel distributing machine operator (self- propelled); Backhoe (with over 3/8 yd. bucket); Side boom tractor (type D-4 or equivalent or larger); Tube finisher (slip form paving); Gradall (and similar type machine); Asphalt paver (self- propelled); Asphalt planer (self-propelled); Batch plant (concrete-central mix); Slurry machine (asphalt); Concrete pump (3 in. and over); Roto-mill; Swinging boom truck (over 12 ton capacity); Hydro demolisher (water blaster); Farm-type tractor with attached pan

GROUP 2: Screening plant operator; Washing plant operator; Crusher operator; Backhoe (with 3/8 yd. bucket or less); Side boom tractor (smaller than D-4 type or equivalent); Sweeper (Wayne type and similar equipment); Vacuum truck operator; Batch plant (concrete dry batch)

GROUP 3: Grease Truck

GROUP 4: Air compressor operator (600 cu. ft. per min or more); Air compressor operator (two or more, less than 600 cfm); Wagon drill operator; Concrete breaker; Tractor operator (farm type with attachment)

GROUP 5: Boiler fire tender; Oiler; Fire tender; Trencher (service); Flexplane operator; Cleftplane operator; Grader operator (self-propelled fine-grade or form (concrete)); Finishing machine operator (concrete); Boom or winch hoist truck operator; Endloader operator (under 1 yd. capacity); Roller operator (other than asphalt); Curing equipment operator (self-propelled); Concrete saw operator (40 h.p. or over); Power bin operator; Plant drier operator (asphalt); Vibratory compaction equipment operator (6 ft. wide or over); Guard post driver operator (power driven); All mulching equipment; Stump remover; Concrete pump (under 3-in.); Mesh installer (self- propelled); Tractor operator (farm type); End dump; Skid steer

 ENGI0324-007 05/01/2018

ALGER, BARAGA, CHIPPEWA, DELTA, DICKINSON, GOGEBIC, HOUGHTON, IRON, KEWEENAW, LUCE, MACKINAC MARQUETTE, MENOMINEE, ONTONAGON AND SCHOOLCRAFT COUNTIES:

	Rates	Fringes
OPERATOR: Power Equipment (Steel Erection)		
Compressor, welder and forklift.....	\$ 29.58	23.60
Crane operator, main boom & jib 120' or longer.....	\$ 35.57	23.60
Crane operator, main boom & jib 140' or longer.....	\$ 35.85	23.60
Crane operator, main boom & jib 220' or longer.....	\$ 36.39	23.60
Mechanic with truck and tools.....	\$ 34.76	23.60
Oiler and fireman.....	\$ 28.16	23.60
Regular operator.....	\$ 33.12	23.60

 ENGI0324-008 10/01/2015

ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GENESEE, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LIVINGSTON, LUCE, MACKINAC, MACOMB, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MONROE, MUSKEGON, NEWAYGO, OAKLAND, OCEANA, OGEMAW, ONTONAGON, OSCEOLA,

OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, ST.
CLARE, ST. JOSEPH, SANILAC, SCHOOLCRAFT, SHIAWASSEE, TUSCOLA,
VAN BUREN, WASHTENAW, WAYNE AND WEXFORD COUNTIES

	Rates	Fringes
OPERATOR: Power Equipment (Sewer Relining)		
GROUP 1.....	\$ 30.70	12.93
GROUP 2.....	\$ 29.17	12.93

SEWER RELINING CLASSIFICATIONS

GROUP 1: Operation of audio-visual closed circuit TV system,
including remote in-ground cutter and other equipment used
in connection with the CCTV system

GROUP 2: Operation of hot water heaters and circulation
systems, water jetters and vacuum and mechanical debris
removal systems

ENGI0325-012 05/01/2018

	Rates	Fringes
Power equipment operators - gas distribution and duct installation work:		
GROUP 1.....	\$ 30.68	23.85
GROUP 2.....	\$ 30.56	23.85
GROUP 3.....	\$ 28.85	23.85

SCOPE OF WORK: The construction, installation, treating and
reconditioning of pipelines transporting gas vapors within
cities, towns, subdivisions, suburban areas, or within
private property boundaries, up to and including private
meter settings of private industrial, governmental or other
premises, more commonly referred to as "distribution work,"
starting from the first metering station, connection,
similar or related facility, of the main or cross country
pipeline and including duct installation.

Group 1: Backhoe, crane, grader, mechanic, dozer (D-6
equivalent or larger), side boom (D-4 equivalent or
larger), trencher(except service), endloader (2 yd.
capacity or greater).

GROUP 2: Dozer (less than D-6 equivalent), endloader (under
2 yd. capacity), side boom (under D-4 capacity),
backfiller, pumps (1 or 2 of 6-inch discharge or greater),
boom truck (with powered boom), tractor (wheel type other
than backhoe or front endloader). Tamper (self-propelled),
boom truck (with non-powered boom), concrete saw (20 hp or
larger), pumps (2 to 4 under 6-inch discharge), compressor
(2 or more or when one is used continuously into the second
day) and trencher(service).

GROUP 3: Oiler, hydraulic pipe pushing machine, grease
person and hydrostatic testing operator.

* IRON0008-007 06/01/2018

ALGER, BARAGA, CHIPPEWA, DELTA, DICKINSON, GOGEBIC, HOUGHTON,
IRON, KEWEENAW, LUCE, MACKINAC MARQUETTE, MENOMINEE, ONTONAGON
AND SCHOOLCRAFT COUNTIES:

	Rates	Fringes
Ironworker - pre-engineered metal building erector.....	\$ 23.70	6.95
IRONWORKER		
General contracts \$10,000,000 or greater.....	\$ 30.92	26.97
General contracts less than \$10,000,000.....	\$ 30.92	26.97

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor
Day, Thanksgiving Day & Christmas Day.

IRON0025-002 06/01/2018

ALCONA, ALPENA, ARENAC, BAY, CHEBOYGAN, CLARE, CLINTON,
CRAWFORD, GENESEE, GLADWIN, GRATIOT, HURON, INGHAM, IOSCO,
ISABELLA, JACKSON, LAPEER, LIVINGSTON, MACOMB, MIDLAND,
MONTMORENCY, OAKLAND, OGEMAW, OSCODA, OTSEGO, PRESQUE ISLE,
ROSCOMMON, SAGINAW, SANILAC, SHIAWASSEE, ST. CLAIR, TUSCOLA,
WASHTENAW AND WAYNE COUNTIES:

	Rates	Fringes
Ironworker - pre-engineered metal building erector		
Alcona, Alpena, Arenac, Cheboygan, Clare, Clinton, Crawford, Gladwin, Gratiot, Huron, Ingham, Iosco, Isabella, Jackson, Lapeer, Livingston (west of Burkhardt Road), Montmorency, Ogemaw, Oscoda, Otsego, Presque Isle, Roscommon, Sanilac, Shiawassee, Tuscola & Washtenaw (west of U.S. 23)...	\$ 24.26	22.11
Bay, Genesee, Lapeer, Livingston (east of Burkhardt Road), Macomb, Midland, Oakland, Saginaw, St. Clair, The University of Michigan, Washtenaw (east of U.S. 23) & Wayne...	\$ 25.48	23.11
IRONWORKER		
Ornamental and Structural...	\$ 35.52	28.65
Reinforcing.....	\$ 29.48	27.74

* IRON0055-005 07/01/2018

LENAAWEE AND MONROE COUNTIES:

	Rates	Fringes
IRONWORKER		
Pre-engineered metal		
buildings.....	\$ 23.59	19.35
All other work.....	\$ 30.13	23.25

* IRON0292-003 06/01/2018

BERRIEN AND CASS COUNTIES:

	Rates	Fringes
IRONWORKER (Including		
pre-engineered metal building		
erector).....	\$ 29.75	22.01

IRON0340-001 06/19/2017

ALLEGAN, ANTRIM, BARRY, BENZIE, BRANCH, CALHOUN, CHARLEVOIX,
EATON, EMMET, GRAND TRAVERSE, HILLSDALE, IONIA, KALAMAZOO,
KALKASKA, KENT, LAKE, LEELANAU, MANISTEE, MASON, MECOSTA,
MISSAUKEE, MONTCALM, MUSKEGON, NEWAYGO, OCEANA, OSCEOLA,
OTTAWA, ST. JOSEPH, VAN BUREN AND WEXFORD COUNTIES:

	Rates	Fringes
IRONWORKER (Including		
pre-engineered metal building		
erector).....	\$ 24.43	24.67

LABO0005-006 10/01/2017

	Rates	Fringes
Laborers - hazardous waste		
abatement: (ALCONA, ALPENA,		
ANTRIM, BENZIE, CHARLEVOIX,		
CHEBOYGAN, CRAWFORD, EMMET,		
GRAND TRAVERSE, IOSCO,		
KALKASKA, LEELANAU,		
MISSAUKEE, MONTMORENCY,		
OSCODA, OTSEGO, PRESQUE ISLE		
AND WEXFORD COUNTIES - Zone		
10)		
Levels A, B or C.....	\$ 17.45	12.75
class b.....	\$ 18.00	12.85
Work performed in		
conjunction with site		
preparation not requiring		
the use of personal		
protective equipment;		
Also, Level D.....	\$ 16.45	12.75
class a.....	\$ 17.00	12.85

Zone 10

Laborers - hazardous waste
abatement: (ALGER, BARAGA,
CHIPPEWA, DELTA, DICKINSON,
GOGEbic, HOUGHTON, IRON,
KEWEENAW, LUCE, MACKINAC,
MARQUETTE, MENOMINEE,
ONTONAGON AND SCHOOLCRAFT

COUNTIES - Zone 11)		
Levels A, B or C.....\$ 21.63	12.88	
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;		
Also, Level D.....\$ 20.63	12.88	
Laborers - hazardous waste abatement: (ALLEGAN, BARRY, BERRIEN, BRANCH, CALHOUN, CASS, IONIA COUNTY (except the city of Portland); KALAMAZOO, KENT, LAKE, MANISTEE, MASON, MECOSTA, MONTCALM, MUSKEGON, NEWAYGO, OCEANA, OSCEOLA, OTTAWA, ST. JOSEPH AND VAN BUREN COUNTIES - Zone 9)		
Levels A, B or C.....\$ 20.95	12.85	
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;		
Also, Level D.....\$ 19.95	12.85	
Laborers - hazardous waste abatement: (ARENAC, BAY, CLARE, GLADWIN, GRATIOT, HURON, ISABELLA, MIDLAND, OGEMAW, ROSCOMMON, SAGINAW AND TUSCOLA COUNTIES - Zone 8)		
Levels A, B or C.....\$ 20.65	12.85	
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;		
Also, Level D.....\$ 19.65	12.85	
Laborers - hazardous waste abatement: (CLINTON, EATON AND INGHAM COUNTIES; IONIA COUNTY (City of Portland); LIVINGSTON COUNTY (west of Oak Grove Rd., including the City of Howell) - Zone 6)		
Levels A, B or C.....\$ 24.65	12.85	
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;		
Also, Level D.....\$ 23.65	12.85	
Laborers - hazardous waste abatement: (GENESEE, LAPEER AND SHIAWASSEE COUNTIES - Zone 7)		
Levels A, B or C.....\$ 23.61	13.41	
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;		

Also, Level D.....\$ 22.61	13.41
Laborers - hazardous waste	
abatement: (HILLSDALE,	
JACKSON AND LENAWEE COUNTIES	
- Zone 4)	
Levels A, B or C.....\$ 24.19	12.85
Work performed in	
conjunction with site	
preparation not requiring	
the use of personal	
protective equipment;	
Also, Level D.....\$ 23.19	12.85
Laborers - hazardous waste	
abatement: (LIVINGSTON COUNTY	
(east of Oak Grove Rd. and	
south of M-59, excluding the	
city of Howell); AND	
WASHTENAW COUNTY - Zone 3)	
Levels A, B or C.....\$ 29.70	14.20
Work performed in	
conjunction with site	
preparation not requiring	
the use of personal	
protective equipment;	
Also, Level D.....\$ 28.70	14.20
Laborers - hazardous waste	
abatement: (MACOMB AND WAYNE	
COUNTIES - Zone 1)	
Levels A, B or C.....\$ 28.35	16.75
Work performed in	
conjunction with site	
preparation not requiring	
the use of personal	
protective equipment;	
Also, Level D.....\$ 27.35	16.75
Laborers - hazardous waste	
abatement: (MONROE COUNTY -	
Zone 4)	
Levels A, B or C.....\$ 30.85	14.45
Work performed in	
conjunction with site	
preparation not requiring	
the use of personal	
protective equipment;	
Also, Level D.....\$ 29.84	14.45
Laborers - hazardous waste	
abatement: (OAKLAND COUNTY	
and the Northeast portion of	
LIVINGSTON COUNTY bordered by	
Oak Grove Road on the West	
and M-59 on the South - Zone	
2)	
Level A, B, C.....\$ 28.85	16.75
Work performed in	
conjunction with site	
preparation not requiring	
the use of personal	
protective equipment;	
Also, Level D.....\$ 27.85	16.75
Laborers - hazardous waste	
abatement: (SANILAC AND ST.	
CLAIR COUNTIES - Zone 5)	
Levels A, B or C.....\$ 25.19	15.86

Work performed in
 conjunction with site
 preparation not requiring
 the use of personal
 protective equipment;
 Also, Level D.....\$ 24.19 15.86

LABO0259-001 09/01/2018

AREA 1: MACOMB, OAKLAND AND WAYNE COUNTIES
 AREA 2: ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA,
 BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX,
 CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA,
 DICKINSON, EATON, EMMET, GENESEE, GLADWIN, GOGEBIC, GRAND
 TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA,
 IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT,
 KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LIVINGSTON, LUCE,
 MACKINAC, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE,
 MIDLAND, MISSAUKEE, MONROE, MONTCALM, MONTMORENCY, MUSKEGON,
 NEWAYGO, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO,
 OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, ST. CLARE, ST.
 JOSEPH, SANILAC, SCHOOLCRAFT, SHIAWASSEE, TUSCOLA, VAN BUREN,
 WASHTENAW AND WEXFORD COUNTIES

	Rates	Fringes
Laborers - tunnel, shaft and caisson:		
AREA 1		
GROUP 1.....	\$ 22.57	16.80
GROUP 2.....	\$ 22.68	16.80
GROUP 3.....	\$ 22.74	16.80
GROUP 4.....	\$ 22.92	16.80
GROUP 5.....	\$ 23.17	16.80
GROUP 6.....	\$ 23.50	16.80
GROUP 7.....	\$ 16.78	16.80
AREA 2		
GROUP 1.....	\$ 24.10	12.85
GROUP 2.....	\$ 24.19	12.85
GROUP 3.....	\$ 24.29	12.85
GROUP 4.....	\$ 24.45	12.85
GROUP 5.....	\$ 24.71	12.85
GROUP 6.....	\$ 25.02	12.85
GROUP 7.....	\$ 17.29	12.85

SCOPE OF WORK: Tunnel, shaft and caisson work of every type
 and description and all operations incidental thereto,
 including, but not limited to, shafts and tunnels for
 sewers, water, subways, transportation, diversion,
 sewerage, caverns, shelters, aquifers, reservoirs, missile
 silos and steel sheeting for underground construction.

TUNNEL LABORER CLASSIFICATIONS

GROUP 1: Tunnel, shaft and caisson laborer, dump, shanty, hog
 house tender, testing (on gas) and watchman

GROUP 2: Manhole, headwall, catch basin builder, bricklayer
 tender, mortar machine and material mixer

GROUP 3: Air tool operator (jackhammer, bush hammer and
 grinder), first bottom, second bottom, cage tender, car
 pusher, carrier, concrete, concrete form, concrete repair,

cement invert laborer, cement finisher, concrete shoveler, conveyor, floor, gasoline and electric tool operator, gunite, grout operator, welder, heading dinky person, inside lock tender, pea gravel operator, pump, outside lock tender, scaffold, top signal person, switch person, track, tugger, utility person, vibrator, winch operator, pipe jacking, wagon drill and air track operator and concrete saw operator (under 40 h.p.)

GROUP 4: Tunnel, shaft and caisson mucker, bracer, liner plate, long haul dinky driver and well point

GROUP 5: Tunnel, shaft and caisson miner, drill runner, key board operator, power knife operator, reinforced steel or mesh (e.g. wire mesh, steel mats, dowel bars, etc.)

GROUP 6: Dynamite and powder

GROUP 7: Restoration laborer, seeding, sodding, planting, cutting, mulching and top soil grading; and the restoration of property such as replacing mailboxes, wood chips, planter boxes, flagstones, etc.

LABO0334-001 09/01/2018

	Rates	Fringes
Laborers - open cut:		
ZONE 1 - MACOMB, OAKLAND AND WAYNE COUNTIES:		
GROUP 1.....	\$ 22.42	16.80
GROUP 2.....	\$ 22.53	16.80
GROUP 3.....	\$ 22.58	16.80
GROUP 4.....	\$ 22.66	16.80
GROUP 5.....	\$ 22.72	16.80
GROUP 6.....	\$ 20.17	16.80
GROUP 7.....	\$ 16.79	16.80
ZONE 2 - LIVINGSTON COUNTY (east of M-151 (Oak Grove Rd.)); MONROE AND WASHTENAW COUNTIES:		
GROUP 1.....	\$ 23.75	12.85
GROUP 2.....	\$ 23.86	12.85
GROUP 3.....	\$ 23.98	12.85
GROUP 4.....	\$ 24.05	12.85
GROUP 5.....	\$ 24.20	12.85
GROUP 6.....	\$ 21.50	12.85
GROUP 7.....	\$ 18.14	12.85
ZONE 3 - CLINTON, EATON, GENESEE, HILLSDALE AND INGHAM COUNTIES; IONIA COUNTY (City of Portland); JACKSON, LAPEER AND LENAWEE COUNTIES; LIVINGSTON COUNTY (west of M-151 Oak Grove Rd.); SANILAC, ST. CLAIR AND SHIAWASSEE COUNTIES:		
GROUP 1.....	\$ 21.94	12.85
GROUP 2.....	\$ 22.08	12.85
GROUP 3.....	\$ 22.20	12.85
GROUP 4.....	\$ 22.25	12.85
GROUP 5.....	\$ 22.39	12.85

GROUP 6.....	\$ 19.69	12.85
GROUP 7.....	\$ 16.84	12.85
ZONE 4 - ALCONA, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CLARE, CRAWFORD, EMMET, GLADWIN, GRAND TRAVERSE, GRATIOT AND HURON COUNTIES; IONIA COUNTY (EXCEPT THE CITY OF PORTLAND); IOSCO, ISABELLA, KALAMAZOO, KALKASKA, KENT, LAKE, LEELANAU, MANISTEE, MASON, MECOSTA, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, ST. JOSEPH, TUSCOLA, VAN BUREN AND WEXFORD COUNTIES:		
GROUP 1.....	\$ 20.97	12.85
GROUP 2.....	\$ 21.10	12.85
GROUP 3.....	\$ 21.21	12.85
GROUP 4.....	\$ 21.28	12.85
GROUP 5.....	\$ 21.40	12.85
GROUP 6.....	\$ 18.62	12.85
GROUP 7.....	\$ 16.96	12.85
ZONE 5 - ALGER, BARAGA, CHIPPEWA, DELTA, DICKINSON, GOGEBIC, HOUGHTON, IRON, KEWEENAW, LUCE, MACKINAC, MARQUETTE, MENOMINEE, ONTONAGON AND SCHOOLCRAFT COUNTIES:		
GROUP 1.....	\$ 21.19	12.85
GROUP 2.....	\$ 21.33	12.85
GROUP 3.....	\$ 21.46	12.85
GROUP 4.....	\$ 21.51	12.85
GROUP 5.....	\$ 21.56	12.85
GROUP 6.....	\$ 18.94	12.85
GROUP 7.....	\$ 17.05	12.85

SCOPE OF WORK:

Open cut construction work shall be construed to mean work which requires the excavation of earth including industrial, commercial and residential building site excavation and preparation, land balancing, demolition and removal of concrete and underground appurtenances, grading, paving, sewers, utilities and improvements; retention, oxidation, flocculation and irrigation facilities, and also including but not limited to underground piping, conduits, steel sheeting for underground construction, and all work incidental thereto, and general excavation. For all areas except the Upper Peninsula, open cut construction work shall also be construed to mean waterfront work, piers,

docks, seawalls, breakwalls, marinas and all incidental work. Open cut construction work shall not include any structural modifications, alterations, additions and repairs to buildings, or highway work, including roads, streets, bridge construction and parking lots or steel erection work and excavation for the building itself and back filling inside of and within 5 ft. of the building and foundations, footings and piers for the building. Open cut construction work shall not include any work covered under Tunnel, Shaft and Caisson work.

OPEN CUT LABORER CLASSIFICATIONS

GROUP 1: Construction laborer

GROUP 2: Mortar and material mixer, concrete form person, signal person, well point person, manhole, headwall and catch basin builder, headwall, seawall, breakwall and dock builder

GROUP 3: Air, gasoline and electric tool operator, vibrator operator, driller, pump person, tar kettle operator, bracer, rodder, reinforced steel or mesh person (e.g., wire mesh, steel mats, dowel bars, etc.), welder, pipe jacking and boring person, wagon drill and air track operator and concrete saw operator (under 40 h.p.), windlass and tugger person and directional boring person

GROUP 4: Trench or excavating grade person

GROUP 5: Pipe layer (including crock, metal pipe, multi-plate or other conduits)

GROUP 6: Grouting man, audio-visual television operations and all other operations in connection with closed circuit television inspection, pipe cleaning and pipe relining work and the installation and repair of water service pipe and appurtenances

GROUP 7: Restoration laborer, seeding, sodding, planting, cutting, mulching and top soil grading; and the restoration of property such as replacing mailboxes, wood chips, planter boxes, flagstones, etc.

LABO0465-001 06/01/2018

LABORER: Highway, Bridge and Airport Construction

AREA 1: GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES

AREA 2: ALLEGAN, BARRY, BAY, BERRIEN, BRANCH, CALHOUN, CASS, CLINTON, EATON, GRATIOT, HILLSDALE, HURON, INGHAM, JACKSON, KALAMAZOO, LAPEER, LENAWEE, LIVINGSTON, MIDLAND, MUSKEGON, SAGINAW, SANILAC, SHIAWASSEE, ST. CLAIR, ST. JOSEPH, TUSCOLA AND VAN BUREN COUNTIES

AREA 3: ALCONA, ALPENA, ANTRIM, ARENAC, BENZIE, CHARLEVOIX, CHEBOYGAN, CLARE, CRAWFORD, EMMET, GLADWIN, GRAND TRAVERSE, IONIA, IOSCO, ISABELLA, KALKASKA, KENT, LAKE, LEELANAU, MANISTEE, MASON, MECOSTA, MISSAUKEE, MONTCALM, MONTMORENCY, NEWAYGO, OCEANA, OGEMAW, OSCEOLA, OSCODA, OTSEGO, OTTAWA,

PRESQUE ISLE, ROSCOMMON AND WEXFORD COUNTIES

AREA 4: ALGER, BARAGA, CHIPPEWA, DELTA, DICKINSON, GOGEBIC,
HOUGHTON, IRON, KEWEENAW, LUCE, MACKINAC, MARQUETTE, MENOMINEE,
ONTONAGON AND SCHOOLCRAFT COUNTIES

	Rates	Fringes
LABORER (AREA 1)		
GROUP 1.....	\$ 26.12	12.85
GROUP 2.....	\$ 26.25	12.85
GROUP 3.....	\$ 26.43	12.85
GROUP 4.....	\$ 26.51	12.85
GROUP 5.....	\$ 26.72	12.85
GROUP 6.....	\$ 27.02	12.85
LABORER (AREA 2)		
GROUP 1.....	\$ 24.02	12.85
GROUP 2.....	\$ 24.22	12.85
GROUP 3.....	\$ 24.46	12.85
GROUP 4.....	\$ 24.81	12.85
GROUP 5.....	\$ 24.68	12.85
GROUP 6.....	\$ 25.02	12.85
LABORER (AREA 3)		
GROUP 1.....	\$ 23.27	12.85
GROUP 2.....	\$ 23.48	12.85
GROUP 3.....	\$ 23.77	12.85
GROUP 4.....	\$ 24.21	12.85
GROUP 5.....	\$ 23.83	12.85
GROUP 6.....	\$ 24.26	12.85
LABORER (AREA 4)		
GROUP 1.....	\$ 23.32	12.85
GROUP 2.....	\$ 23.53	12.85
GROUP 3.....	\$ 23.82	12.85
GROUP 4.....	\$ 24.26	12.85
GROUP 5.....	\$ 23.88	12.85
GROUP 6.....	\$ 24.31	12.85

LABORER CLASSIFICATIONS

GROUP 1: Asphalt shoveler or loader; asphalt plant misc.; burlap person; yard person; dumper (wagon, truck, etc.); joint filling laborer; miscellaneous laborer; unskilled laborer; sprinkler laborer; form setting laborer; form stripper; pavement reinforcing; handling and placing (e.g., wire mesh, steel mats, dowel bars); mason's tender or bricklayer's tender on manholes; manhole builder; headwalls, etc.; waterproofing, (other than buildings) seal coating and slurry mix, shoring, underpinning; pressure grouting; bridge pin and hanger removal; material recycling laborer; horizontal paver laborer (brick, concrete, clay, stone and asphalt); ground stabilization and modification laborer; grouting; waterblasting; top person; railroad track and trestle laborer; carpenters' tender; guard rail builders' tender; earth retention barrier and wall and M.S.E. wall installer's tender; highway and median installer's tender (including sound, retaining, and crash barriers); fence erector's tender; asphalt raker tender; sign installer; remote control operated equipment.

GROUP 2: Mixer operator (less than 5 sacks); air or electric tool operator (jackhammer, etc.); spreader; boxperson (asphalt, stone, gravel); concrete paddler; power chain saw operator; paving batch truck dumper; tunnel mucker (highway

work only); concrete saw (under 40 h.p.) and dry pack machine; roto-mill grounds person.

GROUP 3: Tunnel miner (highway work only); finishers tenders; guard rail builders; highway and median barrier installer; earth retention barrier and wall and M.S.E. wall installer's (including sound, retaining and crash barriers); fence erector; bottom person; powder person; wagon drill and air track operator; diamond and core drills; grade checker; certified welders; curb and side rail setter's tender.

GROUP 4: Asphalt raker

GROUP 5: Pipe layers, oxy-gun

GROUP 6: Line-form setter for curb or pavement; asphalt screed checker/screw man on asphalt paving machines.

LABO1076-005 04/01/2018

MICHIGAN STATEWIDE

	Rates	Fringes
LABORER (DISTRIBUTION WORK)		
Zone 1.....	\$ 20.27	12.85
Zone 2.....	\$ 18.59	12.85
Zone 3.....	\$ 16.76	12.85
Zone 4.....	\$ 16.12	12.85
Zone 5.....	\$ 16.12	12.85

DISTRIBUTION WORK - The construction, installation, treating and reconditioning of distribution pipelines transporting coal, oil, gas or other similar materials, vapors or liquids, including pipelines within private property boundaries, up to and including the meter settings on residential, commercial, industrial, institutional, private and public structures. All work covering pumping stations and tank farms not covered by the Building Trades Agreement. Other distribution lines with the exception of sewer, water and cable television are included.

Underground Duct Layer Pay: \$.40 per hour above the base pay rate.

- Zone 1 - Macomb, Oakland and Wayne
- Zone 2 - Monroe and Washtenaw
- Zone 3 - Bay, Genesee, Lapeer, Midland, Saginaw, Sanilac, Shiawassee and St. Clair
- Zone 4 - Alger, Baraga, Chippewa, Delta, Dickinson, Gogebic, Houghton, Iron, Keweenaw, Luce, Mackinac, Marquette, Menominee, Ontonagon and Schoolcraft
- Zone 5 - Remaining Counties in Michigan

PAIN0022-002 07/01/2008

HILLSDALE, JACKSON AND LENAWEE COUNTIES; LIVINGSTON COUNTY (east of the eastern city limits of Howell, not including the city of Howell, north to the Genesee County line and south to the Washtenaw County line); MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES:

	Rates	Fringes
PAINTER.....	\$ 25.06	14.75

FOOTNOTES: For all spray work and journeyman rigging for spray work, also blowing off, \$0.80 per hour additional (applies only to workers doing rigging for spray work on off the floor work. Does not include setting up or moving rigging on floor surfaces, nor does it apply to workers engaged in covering up or tending spray equipment. For all sandblasting and spray work performed on highway bridges, overpasses, tanks or steel, \$0.80 per hour additional. For all brushing, cleaning and other preparatory work (other than spraying or steeplejack work) at scaffold heights of fifty (50) feet from the ground or higher, \$0.50 per hour additional. For all preparatorial work and painting performed on open steel under forty (40) feet when no scaffolding is involved, \$0.50 per hour additional. For all swing stage work-window jacks and window belts-exterior and interior, \$0.50 per hour additional. For all spray work and sandblaster work to a scaffold height of forty (40) feet above the floor level, \$0.80 per hour additional. For all preparatorial work and painting on all highway bridges or overpasses up to forty (40) feet in height, \$0.50 per hour additional. For all steeplejack work performed where the elevation is forty (40) feet or more, \$1.25 per hour additional.

PAIN0312-001 06/01/2018

EXCLUDES: ALLEGAN COUNTY (Townships of Dorr, Fillmore, Heath, Hopkins, Laketown, Leighton, Manlius, Monterey, Overisel, Salem, Saugatuck and Wayland); INCLUDES: Barry, Berrien, Branch, Calhoun, Cass, Hillsdale, Kalamazoo, St. Joseph, Van Buren

	Rates	Fringes
PAINTER		
Brush and roller.....	\$ 23.74	13.35
Spray, Sandblast, Sign		
Painting.....	\$ 24.94	13.35

PAIN0845-003 05/10/2018

CLINTON COUNTY; EATON COUNTY (does not include the townships of Bellevue and Olivet); INGHAM COUNTY; IONIA COUNTY (east of Hwy. M 66); LIVINGSTON COUNTY (west of the eastern city limits of Howell, including the city of Howell, north to the Genesee County line and south to the Washtenaw County line); AND SHIAWASSEE COUNTY (Townships of Bennington, Laingsbury and Perry):

	Rates	Fringes
PAINTER.....	\$ 25.49	13.74

PAIN0845-015 05/10/2018

MUSKEGON COUNTY; NEWAYGO COUNTY (except the Townships of Barton, Big Prairie, Brooks, Croton, Ensley, Everett, Goodwell, Grant, Home, Monroe, Norwich and Wilcox); OCEANA COUNTY; OTTAWA COUNTY (except the townships of Allendale, Blendone, Chester,

Georgetown, Holland, Jamestown, Olive, Park, Polkton, Port Sheldon, Tallmadge, Wright and Zeeland):

	Rates	Fringes
PAINTER.....	\$ 25.49	13.74

PAIN0845-018 05/10/2018

ALLEGAN COUNTY (Townships of Dorr, Fillmore, Heath, Hopkins, Laketown, Leighton, Manlius, Monterey, Overisel, Salem, Saugatuck and Wayland); IONIA COUNTY (west of Hwy. M-66); KENT, MECOSTA AND MONTCALM COUNTIES; NEWAYGO COUNTY (Townships of Barton, Big Prairie, Brooks, Croton, Ensley, Everett, Goodwell, Grant, Home, Monroe, Norwich and Wilcox); OSCEOLA COUNTY (south of Hwy. #10); OTTAWA COUNTY (Townships of Allendale, Blendone, Chester, Georgetown, Holland, Jamestown, Olive, Park, Polkton, Port Sheldon, Tallmadge, Wright and Zeeland):

	Rates	Fringes
PAINTER.....	\$ 25.49	13.74

FOOTNOTES: Lead abatement work: \$1.00 per hour additional.

PAIN1011-003 06/03/2018

ALGER, BARAGA, CHIPPEWA, DELTA, DICKINSON, GOGEBIC, HOUGHTON, IRON, KEWEENAW, LUCE, MACKINAC, MARQUETTE, MENOMINEE, ONTONAGON AND SCHOOLCRAFT COUNTIES:

	Rates	Fringes
PAINTER.....	\$ 25.31	12.78

FOOTNOTES: High pay (bridges, overpasses, watertower): 30 to 80 ft.: \$.65 per hour additional. 80 ft. and over: \$1.30 per hour additional.

PAIN1474-002 06/01/2010

HURON COUNTY; LAPEER COUNTY (east of Hwy. M-53); ST. CLAIR, SANILAC AND TUSCOLA COUNTIES:

	Rates	Fringes
PAINTER.....	\$ 23.79	12.02

FOOTNOTES: Lead abatement work: \$1.00 per hour additional. Work with any hazardous material: \$1.00 per hour additional. Sandblasting, steam cleaning and acid cleaning: \$1.00 per hour additional. Ladder work at or above 40 ft., scaffold work at or above 40 ft., swing stage, boatswain chair, window jacks and all work performed over a falling height of 40 ft.: \$1.00 per hour additional. Spray gun work, pick pullers and those handling needles, blowing off by air pressure, and any person rigging (setting up and moving off the ground): \$1.00 per hour additional. Steeplejack, tanks, gas holders, stacks, flag poles, radio towers and beacons, power line towers, bridges, etc.: \$1.00 per hour additional, paid from the ground up.

PAIN1803-003 06/01/2018

ALCONA, ALPENA, ANTRIM, ARENAC, BAY, BENZIE, CHARLEVOIX,
CHEBOYGAN, CLARE, CRAWFORD, EMMET, GLADWIN, GRAND TRAVERSE,
GRATIOT, IOSCO, ISABELLA, KALKASKA, LAKE, LEELANAU, MANISTEE,
MASON, MIDLAND, MISSAUKEE, MONTMORENCY AND OGEMAW COUNTIES;
OSCEOLA COUNTY (north of Hwy. #10); OSCODA, OTSEGO, PRESQUE
ISLE, ROSCOMMON, SAGINAW AND WEXFORD COUNTIES:

	Rates	Fringes
PAINTER		
Work performed on water, bridges over water or moving traffic, radio and powerline towers, elevated tanks, steeples, smoke stacks over 40 ft. of falling heights, recovery of lead-based paints and any work associated with industrial plants, except maintenance of industrial plants.....	\$ 24.92	14.68
All other work, including maintenance of industrial plant.....	\$ 24.92	14.68

FOOTNOTES: Spray painting, sandblasting, blowdown associated
with spraying and blasting, water blasting and work
involving a swing stage, boatswain chair or spider: \$1.00
per hour additional. All work performed inside tanks,
vessels, tank trailers, railroad cars, sewers, smoke
stacks, boilers or other spaces having limited egress not
including buildings, opentop tanks, pits, etc.: \$1.25 per
hour additional.

PLAS0514-001 06/01/2018

ZONE 1: GENESEE, LIVINGSTON, MACOMB, MONROE, OAKLAND, SAGINAW,
WASHTENAW AND WAYNE COUNTIES

ZONE 2: ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA,
BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX,
CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA,
DICKINSON, EATON, EMMET, GLADWIN, GOGEBIC, GRAND TRAVERSE,
GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO,
IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW,
LAKE, LAPEER, LEELANAU, LENAWEE, LUCE, MACKINAC, MANISTEE,
MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE,
MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW,
ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE,
ROSCOMMON, SANILAC, SCHOOLCRAFT, SHIAWASSEE, ST. CLAIR, ST.
JOSEPH, TUSCOLA, VAN BUREN AND WEXFORD COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER		
ZONE 1.....	\$ 31.47	13.81
ZONE 2.....	\$ 29.97	13.81

ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY,
 BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX,
 CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA,
 DICKINSON, EATON, EMMET, GENESEE, GLADWIN, GOGEBIC, GRAND
 TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA,
 IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT,
 KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LIVINGSTON, LUCE,
 MACKINAC, MACOMB, MANISTEE, MARQUETTE, MASON, MECOSTA,
 MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MONROE,
 MUSKEGON, NEWAYGO, OAKLAND, OCEANA, OGEMAW, ONTONAGON, OSCEOLA,
 OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, ST.
 CLARE, ST. JOSEPH, SANILAC, SCHOOLCRAFT, SHIAWASSEE, TUSCOLA,
 VAN BUREN, WASHTENAW, WAYNE AND WEXFORD COUNTIES

	Rates	Fringes
Plumber/Pipefitter - gas		
distribution pipeline:		
Welding in conjunction		
with gas distribution		
pipeline work.....	\$ 33.03	20.19
All other work:.....	\$ 24.19	12.28

AREA 1: ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA,
 BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX,
 CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA,
 DICKINSON, EATON, EMMET, GLADWIN, GOGEBIC, GRAND TRAVERSE,
 GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO,
 IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW,
 LAKE, LAPEER, LEELANAU, LENAWEE, LUCE, MACKINAC, MANISTEE,
 MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE,
 MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW,
 ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE,
 ROSCOMMON, SAGINAW, SANILAC, SCHOOLCRAFT, SHIAWASSEE, ST.
 CLAIR, ST. JOSEPH, TUSCOLA, VAN BUREN AND WEXFORD COUNTIES

AREA 2: GENESEE, LIVINGSTON, MACOMB, MONROE, OAKLAND, WASHTENAW
 AND WAYNE COUNTIES

	Rates	Fringes
TRUCK DRIVER		
AREA 1		
Euclids, double bottoms		
and lowboys.....	\$ 26.55	.50 + a+b
Trucks under 8 cu. yds.....	\$ 26.30	.50 + a+b
Trucks, 8 cu. yds. and		
over.....	\$ 26.40	.50 + a+b
AREA 2		
Euclids, double bottomms		
and lowboys.....	\$ 24.895	.50 + a+b
Euclids, double bottoms		
and lowboys.....	\$ 26.65	.50 + a+b
Trucks under 8 cu. yds.....	\$ 26.40	.50 + a+b
Trucks, 8 cu. yds. and		
over.....	\$ 26.50	.50 + a+b

Footnote:

a. \$446.70 per week

b. \$67.00 daily

TEAM0247-004 04/01/2013

AREA 1: ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LUCE, MACKINAC, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SANILAC, SCHOOLCRAFT, SHIAWASSEE, SAGINAW, ST. CLAIR, ST. JOSEPH, TUSCOLA, VAN BUREN AND WEXFORD COUNTIES

AREA 2: GENESEE, LIVINGSTON, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES

	Rates	Fringes
Sign Installer		
AREA 1		
GROUP 1.....	\$ 21.78	11.83
GROUP 2.....	\$ 25.27	11.8375
AREA 2		
GROUP 1.....	\$ 22.03	11.83
GROUP 2.....	\$ 25.02	11.8375

FOOTNOTE:

a. \$132.70 per week, plus \$17.80 per day.

SIGN INSTALLER CLASSIFICATIONS:

GROUP 1: performs all necessary labor and uses all tools required to construct and set concrete forms required in the installation of highway and street signs

GROUP 2: performs all miscellaneous labor, uses all hand and power tools, and operates all other equipment, mobile or otherwise, required for the installation of highway and street signs

TEAM0247-010 04/01/2018

AREA 1: LAPEER AND SHIAWASSEE COUNTIES

AREA 2: GENESEE, MACOMB, MONROE, OAKLAND, ST. CLAIR, WASHTENAW AND WAYNE COUNTIES

	Rates	Fringes
TRUCK DRIVER (Underground construction)		
AREA 1		
GROUP 1.....	\$ 23.82	19.04
GROUP 2.....	\$ 23.91	19.04

GROUP 3.....	\$ 24.12	19.04
AREA 2		
GROUP 1.....	\$ 24.12	19.04
GROUP 2.....	\$ 24.26	19.04
GROUP 3.....	\$ 24.45	19.04

PAID HOLIDAYS: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day.

SCOPE OF WORK: Excavation, site preparation, land balancing, grading, sewers, utilities and improvements; also including but not limited to, tunnels, underground piping, retention, oxidation, flocculation facilities, conduits, general excavation and steel sheeting for underground construction. Underground construction work shall not include any structural modifications, alterations, additions and repairs to buildings or highway work, including roads, streets, bridge construction and parking lots or steel erection.

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Truck driver on all trucks (EXCEPT dump trucks of 8 cubic yards capacity or over, pole trailers, semis, low boys, Euclid, double bottom and fuel trucks)

GROUP 2: Truck driver on dump trucks of 8 cubic yards capacity or over, pole trailers, semis and fuel trucks

GROUP 3: Truck driver on low boy, Euclid and double bottom

SUMI2002-001 05/01/2002

	Rates	Fringes
Flag Person.....	\$ 10.10	0.00
LINE PROTECTOR (ZONE 1: GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE)....	\$ 18.98	12.85
LINE PROTECTOR (ZONE 2: STATEWIDE (EXCLUDING GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE).....	\$ 17.14	12.85
Pavement Marking Machine (ZONE 1: GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES) Group 1.....	\$ 25.74	12.85
Pavement Marking Machine (ZONE 1: GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE) Group 2.....	\$ 23.17	12.85
Pavement Marking Machine (ZONE 2: STATEWIDE (EXCLUDING GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES)		

Group 1.....\$ 23.67 12.85

Pavement Marking Machine
(ZONE 2: STATEWIDE (EXCLUDING
GENESEE, MACOMB, MONROE,
OAKLAND, WASHTENAW AND WAYNE)

Group 2.....\$ 21.30 12.85

WORK CLASSIFICATIONS:

PAVEMENT MARKER GROUP 1: Drives or operates a truck mounted
striper, grinder, blaster, groover, or thermoplastic melter
for the placement or removal of temporary or permanent
pavement markings or markers.

PAVEMENT MARKER GROUP 2: Performs all functions involved for
the placement or removal of temporary or permanent pavement
markings or markers not covered by the classification of
Pavement Marker Group 1 or Line Protector.

LINE PROTECTOR: Performs all operations for the protection or
removal of temporary or permanent pavement markings or
markers in a moving convoy operation not performed by the
classification of Pavement Marker Group 1. A moving convoy
operation is comprised of only Pavement Markers Group 1 and
Line Protectors.

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave
for Federal Contractors applies to all contracts subject to the
Davis-Bacon Act for which the contract is awarded (and any
solicitation was issued) on or after January 1, 2017. If this
contract is covered by the EO, the contractor must provide
employees with 1 hour of paid sick leave for every 30 hours
they work, up to 56 hours of paid sick leave each year.
Employees must be permitted to use paid sick leave for their
own illness, injury or other health-related needs, including
preventive care; to assist a family member (or person who is
like family to the employee) who is ill, injured, or has other
health-related needs, including preventive care; or for reasons
resulting from, or to assist a family member (or person who is
like family to the employee) who is a victim of, domestic
violence, sexual assault, or stalking. Additional information
on contractor requirements and worker protections under the EO
is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within
the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses
(29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification
and wage rates that have been found to be prevailing for the

cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION