CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERING DIVISION

COLEMAN A. YOUNG MUNICIPAL CENTER
2 WOODWARD AVE. SUITE 601
DETROIT, MICHIGAN 48226
PHONE: (313) 224-3949 TTY: 711
WWW.DETROITMI.GOV

To: Clerk's Office
From: The Department of Public Works
City Engineering Division
MapsandRecordsBureau@DetroitMI.Gov
(313) 224-3970

Petitioner:
Michigan Department of Transportation
Represented by Next Energy
440 Burroughs Street
Detroit, MI, 48202

On behalf of the above-mentioned petitioner the Department of Public Works: City Engineering Division is submitting a petition request for the below mentioned action. The petitioner has received a project consultation from the Department of Public Works: City Engineering Division and has been advised the following:

Type of action recommended:

Petition to encroach within 14th Street, between Dalzelle Street and Marantette Street, to install an inductive charging segment for the proposed Electrified Public Roadway.

Jered Dean
Manager II
Department of Public Works
City Engineering Division
313-224-3985

The Michigan Department of Transportation (MDOT) Inductive Charging Pilot aims to explore the benefits of inductive charging technology for the use of electrified roadways. The Pilot is the first electrified public roadway in the U.S. The proposed two stretches of road are located in Detroit, Michigan: The location selection is currently being finalized and is proposed to be along two stretches of road in Detroit, Michigan: approximately a 0.25-mile segment on 14th Street and a 0.75-mile segment on Michigan Avenue.

The project team has identified a 0.25-mile segment on 14th street which allows for piloting of multiple use cases with multiple vehicle types and users. Stationary charging coils located between Michigan Avenue and the Book Depository, and Marantette Street will support additional charging in static mode. The project team is in discussions with the City of Detroit/Michigan Central/Ford to add an optional fourth dynamic system on 14th Street north of Dalzelle on one side of the street.

The Electreon vehicle charging system is based on inductive energy transfer, which means that energy is transmitted over air from the road infrastructure (copper coils under the road surface) to the vehicle receiver. There are three main hardware components in the system:

1. A management unit located at the side of the road (the 'brain'), which allows power to be transferred from the first coil (buried under the road surface) to the secondary coil inside a receiver pad that is installed under the vehicle chassis. It can be aboveground or underground where real estate is limited. The approximate size of the management unit is 5.5 feet by 3.2 feet with a height of 5.9 feet.
2. The roadway infrastructure consists of in-road copper coils that transfer power to the vehicles' receivers. The system is completely passive until there is an authenticated vehicle above the coil.
3. The vehicle receivers that transmit energy directly to the vehicle battery and engine.

The real-time management system (which includes cloud system meters) monitors and manages optimal EV charging at fleet scales, allowing for control oversight. During use, the management unit produces a maximum of 62 decibels during peak fan performance, which correlates to the sound of a car passing by or the ambient sound. When not in use, the management unit produces no sound. Approximately 36" of free space can be left around the management unit for continued access.

Initial use cases

Electrified Shuttle Vehicle

- An electrified shuttle will be deployed by Michigan Central to provide transportation within the community from the Bagley Mobility Hub to Michigan Central/Book Depository to businesses along Michigan Avenue between 14th Street and Rosa Parks Blvd.
    - The shuttle will operate during normal business hours
    - The shuttle will charge in dynamic mode while traveling north and south along 14th street between Marantette and Dalzelle, and in static mode when dropping off and picking up passengers at Michigan Central and the Book Depository

The shuttle will travel at posted speed which is between 25 and 35 mph along the route.

Additional use cases:

- 1st Mile/Last Mile Delivery
    - Electrified delivery vehicles will charge in dynamic and static modes for package delivery and pick up within Michigan Central and the Book Depository
    - Delivery fleet(s) will potentially also charge in static mode at terminal locations in Southeast Michigan

- Potential Future Use Cases:
    - Rideshare and carshare opportunities
    - Autonomous and/or additional electrified shuttles
    - Campus security and maintenance vehicles

Thank you for your time in reviewing these documents. Please contact us if you have any questions.

Regards,

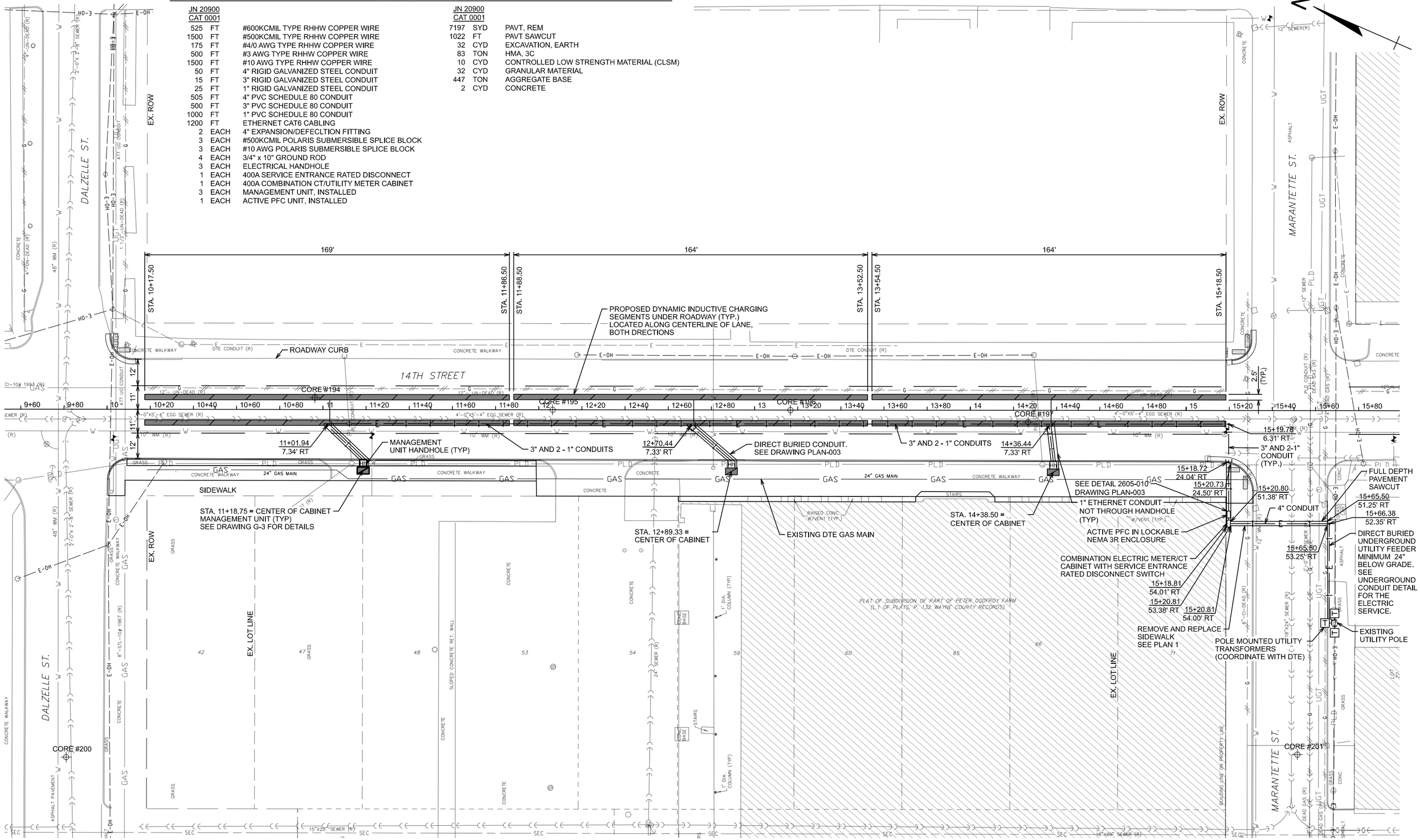
Michelle Mueller
Sr. Project Manager
Connected, Automated and Electrification
Michigan Dept of Transportation
18101 W. Nine Mile Rd.
Southfield, MI 48075
248-431-1443
Michellem2@mighigan.gov

Eric McDonald
Sr. Director,
Research Development and Infrastructure
NextEnergy
440 Burroughs St.
Detroit, MI 48202
313-400-7441
ericm@nextenergy.org

QUANTITIES THIS SHEET:

JN 20900 CAT 0001		
525	FT	#600KCMIL TYPE RHHW COPPER WIRE
1500	FT	#500KCMIL TYPE RHHW COPPER WIRE
175	FT	#4/0 AWG TYPE RHHW COPPER WIRE
500	FT	#3 AWG TYPE RHHW COPPER WIRE
1500	FT	#10 AWG TYPE RHHW COPPER WIRE
50	FT	4" RIGID GALVANIZED STEEL CONDUIT
15	FT	3" RIGID GALVANIZED STEEL CONDUIT
25	FT	1" RIGID GALVANIZED STEEL CONDUIT
505	FT	4" PVC SCHEDULE 80 CONDUIT
500	FT	3" PVC SCHEDULE 80 CONDUIT
1000	FT	1" PVC SCHEDULE 80 CONDUIT
1200	FT	ETHERNET CAT6 CABLING
2	EACH	4" EXPANSION/DEFECLTION FITTING
3	EACH	#500KCMIL POLARIS SUBMERSIBLE SPLICE BLOCK
3	EACH	#10 AWG POLARIS SUBMERSIBLE SPLICE BLOCK
4	EACH	3/4" x 10" GROUND ROD
3	EACH	ELECTRICAL HANDHOLE
1	EACH	400A SERVICE ENTRANCE RATED DISCONNECT
1	EACH	400A COMBINATION CT/UTILITY METER CABINET
3	EACH	MANAGEMENT UNIT, INSTALLED
1	EACH	ACTIVE PFC UNIT, INSTALLED

JN 20900 CAT 0001		
7197	SYD	PAVT, REM
1022	FT	PAVT SAWCUT
32	CYD	EXCAVATION, EARTH
83	TON	HMA, 3C
10	CYD	CONTROLLED LOW STRENGTH MATERIAL (CLSM)
32	CYD	GRANULAR MATERIAL
447	TON	AGGREGATE BASE
2	CYD	CONCRETE



FINAL ROW PLAN REVISIONS SUBMITTAL DATE:							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

Jacobs electreon

MDOT Michigan Department of Transportation

0 HORZ. (FT) 40

FILE: 20900_PLANS_001.DGN

DATE: MAY 11, 2023

DESIGN UNIT:

TSC: 213305

CS:

JN:

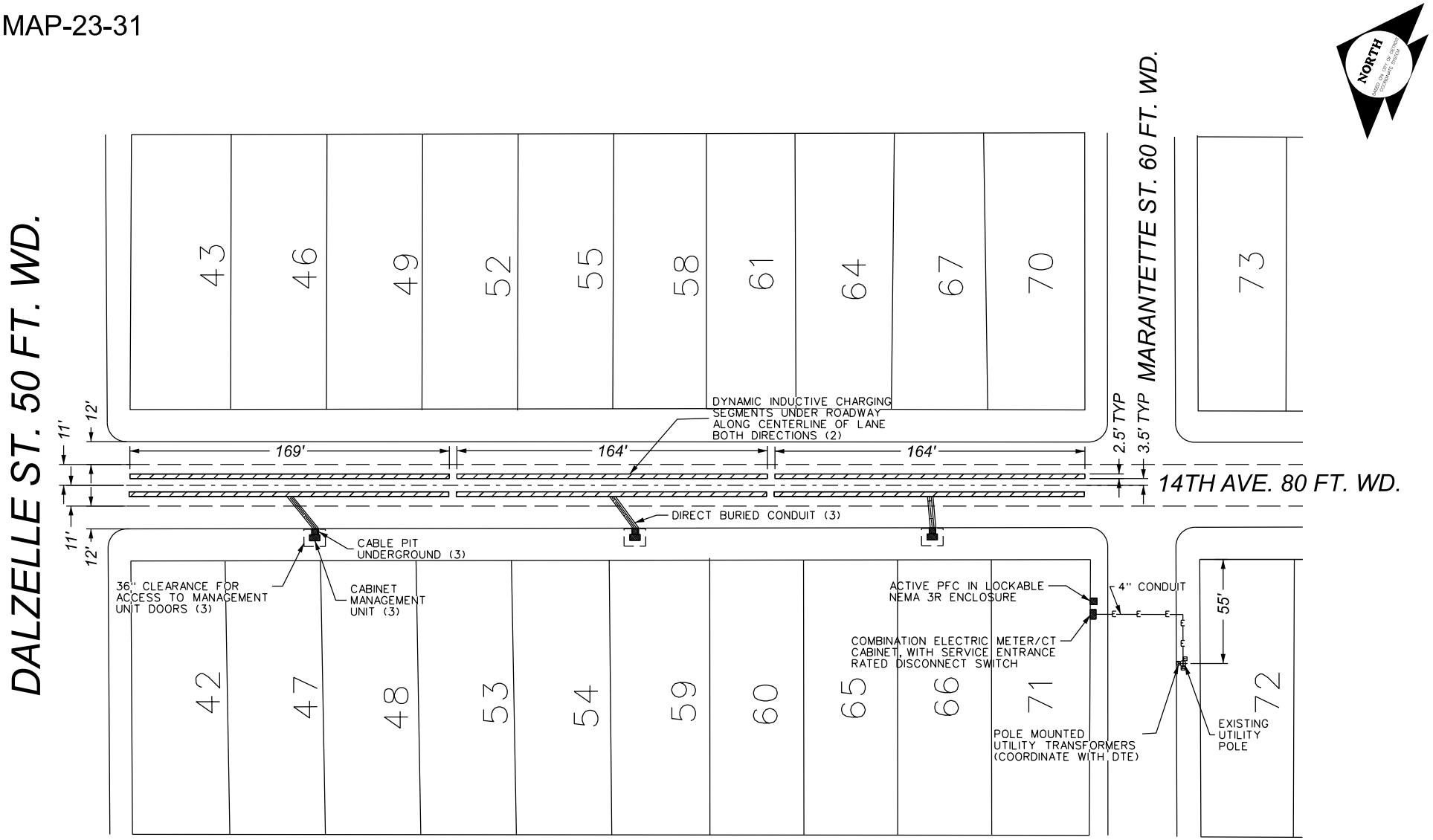
SITE PLAN

INDUCTIVE VEHICLE CHARGING PILOT

14TH STREET STREETSCAPE PHASE A - PLAN 2

DRAWING	SHEET
14 ST. SITE PLAN 001	SECT 1 10

MAP-23-31



- REQUEST STREET ENCROACHMENT

(FOR OFFICE USE ONLY)

B					
A					
DESCRIPTION		DRWN	CHKD	APPD	DATE
REVISIONS					

DRAWN BY LC	CHECKED AP
DATE 06-12-2023	APPROVED JD

ENCROACHMENT AREA FOR MDOT INDUCTIVE CHARGING PILOT ON 14TH AVE. BETWEEN DALZELLE AND MARANTETTE STREETS

CITY OF DETROIT
CITY ENGINEERING DIVISION
SURVEY BUREAU

JOB NO. 23-31

DRWG. NO.

PROJECT SPECIFIC AGREEMENT DA
CITY OF DETROIT Control Section GF19 63000
TRUNKLINE PROJECT Job Number 213304EPE
Contract No. 23-5116

THIS PROJECT SPECIFIC AGREEMENT is made by and between the MICHIGAN DEPARTMENT OF TRANSPORTATION, hereinafter referred to as the "DEPARTMENT"; and the CITY OF DETROIT, a Michigan municipal corporation, hereinafter referred to as the "CITY"; for the purpose of fixing the rights and obligations of the parties in agreeing to construction improvements located within the corporate limits of the CITY.

WITNESSETH:

WHEREAS, the DEPARTMENT is planning to install inductive charging infrastructure under the roadway surface along 14th Street within the CITY'S right-of-way (ROW); and

WHEREAS, the parties hereto anticipate that payments by them or other sources will be sufficient to pay the cost of construction of that which is hereinafter referred to as the "PROJECT" and which is located and described as follows:

> Inductive charging infrastructure installation work along 14th Street from Bagley Street to Highway US-12 (Michigan Avenue) under the roadway surface, including electrical cabinet installation work; together with necessary related work, located within the corporate limits of the CITY; and

WHEREAS, the DEPARTMENT will be responsible for the entire cost of the PROJECT; and

WHEREAS, the parties hereto have reached an understanding with each other regarding the performance of the PROJECT work and desire to set forth this understanding in the form of a written agreement; and

WHEREAS, the DEPARTMENT and the CITY desire to set this mutual understanding regarding the PROJECT in the form of a written Project Specific Agreement.

NOW, THEREFORE, it is understood that:

1. The parties shall undertake and complete the PROJECT work in accordance with the Project Specific Agreement pursuant to MASTER AGREEMENT #03-5546 by and between the DEPARTMENT and the CITY. The CITY does hereby acknowledge its acceptance of the terms of MASTER AGREEMENT #03-5546 with respect to the PROJECT work under this Project Specific Agreement.

2. The DEPARTMENT will construct the PROJECT at no cost to the CITY.

3. The DEPARTMENT will administer all phases of the PROJECT and will cause to be performed all the PROJECT work. The DEPARTMENT will obtain a permit to perform the PROJECT work from the CITY prior starting installation.

4. Upon completion of the PROJECT, the DEPARTMENT shall own, operate and maintain the facilities in accordance with all applicable Federal and State laws and regulations. The CITY shall not restrict access to the PROJECT location for maintenance of the PROJECT. The DEPARTMENT will obtain necessary permits for maintenance work within the CITY'S ROW to notify the CITY of the proposed work.

5. The DEPARTMENT recognizes and acknowledges that private and/or public utility companies may require the modification of the DEPARTMENT'S facilities and it will cooperate with the utility when requested by the CITY. The DEPARTMENT will notify public and/or private utilities within the vicinity of the PROJECT prior to accessing the inductive charging system for maintenance or an emergency. The CITY shall not allow a private or public utility to cut through the inductive charging infrastructure.

6. This inductive charging infrastructure system constructed as the PROJECT shall be included in the review process for all future construction and permit projects in the area. The CITY shall not cut through the inductive charging infrastructure for any reason. The CITY shall not make any modifications to the facilities above or below the PROJECT without consulting the DEPARTMENT. Any removal or modification of the DEPARTMENT'S facilities, when necessary for CITY purposes, shall be performed by the DEPARTMENT or as authorized by the DEPARTMENT.

7. This Project Specific Agreement shall be executed by the duly authorized officials of the CITY and the DEPARTMENT.

CITY OF DETROIT

By DocuSigned by: Ron Brundidge 213AF2B3C7EE448...
Title: Director

By _____
Title:

MICHIGAN DEPARTMENT
OF TRANSPORTATION

By Demetrius A. Parker for: MDOT Director Demetrius A. Parker, P.E. Mar 20 2023 10:08 AM
Department Director MDOT

REVIEWED