EXHIBIT E

HYPERSHINE
CAR WASH DEVELOPMENT

TRAFFIC IMPACT STUDY

HAMBURG TOWNSHIP, MICHIGAN

FEBRUARY 13, 2024

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I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Michigan.

Agency Review	Date	Comments

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REFERENCES

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Executive Summary

This report presents the results of the Traffic Impact Study (TIS) for the proposed commercial development located adjacent to the south side of M-36, approximately 400-feet west of Chilson Road, in Hamburg Township, Michigan, as shown in **Figure E1**. The proposed development includes the construction of an automatic car wash, with one (1) tunnel, on undeveloped property. Site access is proposed via one (1) full access driveway on M-36, which is under the jurisdiction of the Michigan Department of Transportation (MDOT).

Figure E1: Site Location

Background Data

F&V subconsultant Quality Counts, LLC (QC) collected existing Turning Movement Count (TMC) data on Wednesday, January 24, 2024, during the MD (11:00 AM – 1:00 PM) and PM (4:00 PM – 6:00 PM) peak periods. The traffic volume data collection data is provided in **Appendix A**.

Trip Generation

The number of weekday peak hour (MD and PM) and daily vehicle trips that would be generated by the proposed car wash development was forecast based on data published by ITE in the *Trip Generation Manual, 11th Edition*. The site trip generation forecast is summarized in **Table E1**.

The ITE trip generation database does not provide MD peak hour trip generation rates for LUC 948: Automated Car Wash; therefore, the PM peak hour trip generation rates were utilized to project the MD peak hour for the proposed car wash land use, in order to provide a conservative analysis.

Table E1: Trip Generation Summary

Land Use	ITE Code	Amount	Units	Average Daily Traffic (vpd)	MD Peak Hour (vph)			PM Peak Hour (vph)		
					In	Out	Total	In	Out	Total
Automated Car Wash	948	1	Tunnel	780	39	39	78	39	39	78

Site Trip Distribution

The site access for the proposed development will be provided via one (1) driveway on M-36. The vehicular trips that would be generated by the proposed development were assigned to the study roads based on the proposed site access plan, the existing peak hour traffic patterns on the adjacent roadway network, and the methodologies published by ITE. The site trip distribution used in the analysis is summarized in **Table E2**.

Table E2: Site Trip Distribution

From/To	Via	AM	PM
North	Chilson Road	19%	18%
East	M-36	37%	53%
West	M-36	44%	29%
Total		**100%**	**100%**

CONCLUSIONS

The conclusions of this TIS are as follows:

1. Existing Conditions (2024)

- The results of the existing conditions analysis indicates that all approaches and movements at the study intersections are currently operating acceptably at LOS D or better, during both peak periods.
- Review of SimTraffic network simulations indicates acceptable operations throughout the study roadway network during both peak periods.
- The majority of vehicles at the signalized study intersection of M-36 & Chilson Road were observed to be serviced within each cycle length and vehicles at the minor-street stop-controlled intersection were observed to find adequate gaps within the through traffic along M-36, without experiencing significant delays or excessive vehicle queueing.

2. Background Conditions (2025)

- A conservative annual background growth rate of **0.5%** per year was utilized to project the existing 2024 peak hour traffic volumes to the buildout year of 2025. No background developments were identified within the vicinity of the study area.
- The results of the background conditions analysis indicate that all approaches and movements at the study intersections are expected to continue operating acceptably, at LOS D or better during both peak periods, in a manner similar to the existing conditions analysis. SimTraffic also indicates acceptable operations throughout the study roadway network, similar to those observations made during existing conditions.

3. Future Conditions (2025)

- The results of the future conditions analysis, with the addition of the site-generated traffic from the proposed development, indicates that all approaches and movements at the study intersection are expected to continue operating acceptably at LOS D or better during both peak periods, in a manner similar to the background conditions analysis, with minor increases in delay.
- All approaches and movements at the proposed site driveway are expected to operate acceptably, at LOS D or better during both the MD and PM peak hours.
- Review of SimTraffic network simulations indicates acceptable operations, similar to those observations made during the background conditions analysis. Additionally, egress vehicles at the proposed site driveway were observed to find adequate gaps within the through traffic along M-36, without experiencing significant delays or excessive vehicle queueing.

4. Gap Study

- The results of the gap study evaluation indicates that there are a significant number of adequate gaps available within the through traffic along M-36, with more than four (4) sufficient gaps per minute, or more than 240 gaps per hour, observed during both the MD and PM peak hours.

5. Vehicle Queueing

- The results of the vehicle queueing analysis indicates the proposed Site Drive location has adequate available center two-way left-turn lane (TWLTL) storage to accommodate ingress left-turns at the proposed site drive, without impacting the adjacent BP Drive or the signalized Chilson Road intersection.

6. Access Management

- The MDOT auxiliary right-turn criteria were evaluated at the proposed site driveway on M-36. The results of the analysis indicate that right-turn treatments are **NOT** warranted.
- The location of the proposed site driveway will be aligned directly opposite the existing Hamburg Shopping Center East Drive, which follows best access management practices. The MDOT guidance document indicates that aligning new commercial driveways with existing driveways is ideal to provide for the safety and functional integrity of the roadway.
- When aligning with existing driveways is not possible, set distances determined by MDOT are required for the new driveway to be offset from existing driveways, based on speed limit and orientation to nearby existing driveways. However, there is not adequate property frontage available to provide offset driveways which would meet the recommended spacing requirements for safe and efficient operations.

7. Horizontal Sight Distance Evaluation

- The results of the intersection sight distance evaluation indicates that the location of the proposed site driveway will provide an adequate line of sight, free of vegetation and permanent obstructions.
- There is potential for egress vehicles on the site driveway approach to have a partial obstruction due to vehicles in the eastbound queue on M-36 at the signalized Chilson Road intersection. Review of SimTraffic network simulations indicates that all vehicle queues at the signal were observed to be serviced within each cycle length; therefore, any temporary vehicular obstructions from queued vehicles waiting at the signal would only be momentary and would be expected to clear regularly, thereby providing a clear line of sight.

8. Crash Analysis

- The results of the crash analysis indicate that there were NO reported crashes within the last five (5) years of available data at the existing site driveways adjacent to the proposed site driveway intersection.
- Based on the low crash frequency and the types of crashes reported at the signalized study intersection of M-36 & Chilson Road, no correctable crash patterns were identified.

RECOMMENDATIONS

The recommendations of this TIS are as follows:

- The results of the TIS analysis indicates that the proposed curb cut does not present a traffic safety issue and that the proposed development will operate acceptably within the exiting roadway geometry.
    - Therefore, no improvements are recommended.

1 INTRODUCTION

This report presents the results of the Traffic Impact Study (TIS) for the proposed commercial development located adjacent to the south side of M-36, approximately 400-feet west of Chilson Road, in Hamburg Township, Michigan, as shown on the attached **Figure 1**. The proposed development includes the construction of an automatic car wash with one (1) tunnel on undeveloped property. Site access is proposed via one (1) full access driveway on M-36, which is under the jurisdiction of the Michigan Department of Transportation (MDOT).

F&V proposes to complete the TIS for this project in accordance with the requirements outlined in the MDOT Geometric Design Guidance Section 1.2.4 and pursuant to the Hamburg Township requirements for site plan approval. Specific tasks undertaken for this study include the following:

1. **Study Area**
   a. Provide a description of the study area including: intersection and roadway geometries, speed limits, functional classifications, and traffic volume data (where available). In addition, a study area site map showing the site location and the study intersections will also be provided.
2. **Proposed Land Use**
   a. Obtain and review the proposed site plan which includes the proposed land uses, densities, and desired site access locations. A description of the current and proposed land use, including the number and type of dwelling units, will be accompanied with a complete project site plan.
3. **Existing Conditions**
   a. Provide an analysis of the traffic-related impacts of the proposed development at the following study intersections:
      - M-36 & Chilson Road, and
      - M-36 & Hamburg Village Shopping Center East Drive / Site Drive.
   b. Collect peak period turning movement counts at the study intersections during the peak hour operations of the proposed site and the adjacent street, which are expect to during the MD peak hour (11:00 AM to 1:00 PM) and the PM peak hour (4:00 PM to 6:00 PM). Additional data collection will be performed at the following intersections for modeling purposes only:
      - M-36 & Hamburg Village Shopping Center West Drive, and
      - M-36 & BP Driveway.
   c. Collect vehicle Gap data at the following study intersection, in order to determine the number of gaps in traffic available for both lanes, which would accommodate northbound left-turn movements at the proposed site driveway.
      - M-36 & Hamburg Village Shopping Center East Drive / Site Drive
   d. Calculate the **Existing** vehicle delays, LOS, and vehicle queues at the study intersections during the MD and PM peak hours. Intersection analysis shall include LOS determination for all approaches and movements. The LOS will be based on the procedures outlined in the HCM 6th Edition.
4. **Background Conditions**
   a. Calculate the future background traffic volumes to the project build-out year based on the projected traffic growth rates calculated from historic traffic volume data.
   b. Any state, local, or private transportation improvement projects in the project study area that will be underway in the build-out year and traffic that is generated by other proposed developments in the study area as identified by the City will be included as background conditions.
   c. Calculate the **Background *(without the proposed development)*** vehicle delays, LOS, and vehicle queues at the study intersections during the MD and PM peak periods. Intersection analysis shall include LOS determination for all approaches and movements. The LOS will be based on the procedures outlined in the HCM 6th Edition.

5. Trip Generation

a. Forecast the number of weekday peak hour (MD and PM) and daily vehicle trips that would be generated by the proposed development, based on data published by the Institute of Transportation Engineers (ITE) in *Trip Generation, 11th Edition* and/or local development data as approved for use in the study by MDOT, Hamburg Township, and the Livingston County Road Commission (LCRC).

b. A table will be provided in the report outlining the categories and quantities of land uses, with the corresponding trip generation rates or equations, and the resulting number of trips.

6. Trip Distribution and Traffic Assignment

a. Assign the trips that would be generated by the proposed development to the adjacent road network based on existing traffic patterns. The distribution of the estimated trip generation to the adjacent street network and nearby intersections shall be included in the report and the basis will be explained. The distribution percentages with the corresponding volumes will be provided in a graphical format.

b. Combine the site-generated traffic assignments with the background traffic forecasts to establish the Future weekday MD and PM peak hour traffic volumes.

7. Future Conditions

a. Calculate the **Future (with the proposed development)** vehicle delays, LOS, and vehicle queues at the study intersections during the weekday MD and PM peak periods. Intersection analysis shall include LOS determination for all approaches and movements. The LOS will be based on the procedures outlined in the HCM 6th Edition.

b. Identify improvements (if any) for the study road network that would be required to accommodate the site-generated traffic volumes.

c. Provide a gap analysis at the proposed site driveway intersection to determine the number of available gaps and the ability to accommodate the proposed site generated traffic. This analysis will be performed to address the following comment*: Egress vehicles exit the car wash onto M-36 at a driveway located opposite Hamburg Village Shopping Center and need adequate gaps in traffic from through traffic on M-36 and the turning movements from the adjacent driveways.*

d. Provide a summary table and exhibit with the east/west storage lengths and existing 50th% and 95th% queue lengths on M-36 at the following study intersections. Provide a back-to-back left-turn lane evaluation at the study intersections to address the following comment: *The shared center turn lane usage creates the potential for conflicts with vehicles at the adjacent driveways and at the Chilson Road intersection.*

- M-36 & Chilson Road,
- M-36 & Hamburg Village Shopping Center East Drive / Site Drive,
- M-36 & Hamburg Village Shopping Center West Drive, and
- M-36 & BP Driveway.

8. Access Management

a. Provide discussion from MDOT regarding best access management practices, specifically addressing MDOT guidelines for driveways located opposite existing driveway location and why this is a recommended practice.

b. Perform a crash analysis at the following study intersections and driveways for the most recent three (3) years of available data, in order to determine if there are any existing crash patterns associated with the current intersection operations.

- M-36 & Chilson Road,
- M-36 & Hamburg Village Shopping Center East Drive / Site Drive,
- M-36 & Hamburg Village Shopping Center West Drive, and
- M-36 & BP Driveway.

c. Review the intersection sight distance at the proposed site driveway approach to determine the potential for vehicles to impact the line of sight for egress left-turns to address the following comment: *Vehicles queued on M-36 at the Chilson Road intersection create the potential to block the sight distance for egress left-turns at the site driveway.*

The scope of this study was developed based on Fleis & VandenBrink's (F&V) knowledge of the study area, understanding of the development program, professional experience, accepted traffic engineering practice, and information published by the Institute of Transportation Engineers (ITE). The study analyses were completed using Synchro/SimTraffic (Version 11). Sources of data for this study include F&V subconsultant Quality Counts, LLC (QC), information provided by Hamburg Township, ITE, the Livingston County Road Commission (LCRC), and the Southeast Michigan Council of Governments (SEMCOG). All background information is provided in **Appendix A**.

2 BACKGROUND DATA

2.1 EXISTING ROAD NETWORK

The lane use and traffic control at the study intersections are shown on the attached **Figure 2** and the study roadways are further described below. For the purposes of this study, all minor streets and driveways were assumed to have an operating speed of 25 miles per hour (mph), unless otherwise noted.

M-36 generally runs in the east / west directions, adjacent to the north side of the project site. The study section of roadway has a posted speed limit of 45-mph, is under the jurisdiction of MDOT, is classified as *Minor Arterial*, and has an Average Annual Daily Traffic (AADT) volume of approximately 18,833 (MDOT 2016) vehicles per day (vpd). M-36, in the vicinity of the project site, provides a typical three-lane cross-section, with one (1) lane of travel in each direction and a center two-way left-turn lane (TWLTL). At the signalized intersection with Chilson Road, M-36 widens to provide an exclusive eastbound right-turn lane.

Chilson Road generally runs in the north / south directions, terminating from the north at M-36, approximately 400-feet east of the project site. The study section of roadway is under the jurisdiction of LCRC, is classified as a *Minor Arterial*, has a posted speed limit of 35-mph, and has an AADT volume of approximately 6,331 vpd (MDOT 2022). However, south of M-36, Chilson Road becomes a shopping center driveway, with an unposted speed limit; therefore, a prima facie speed limit of 25-mph was assumed. Chilson Road provides a typical two-lane cross-section, with one (1) lane of travel in each direction; additionally, Chilson Road widens at the signalized intersection with M-36 to provide exclusive left-turn lanes in both directions.

2.2 EXISTING TRAFFIC VOLUMES

F&V subconsultant QC collected existing Turning Movement Count (TMC) data on Wednesday, January 24, 2024, during the MD (11:00 AM – 1:00 PM) and PM (4:00 PM – 6:00 PM) peak periods at the following study intersections:

- M-36 & Chilson Road
- M-36 & Hamburg Village Shopping Center East Drive / Site Drive

Additional TMC data was collected at the following intersections / driveways for modeling purposes only:

- M-36 & BP Driveway
- M-36 & Hamburg Village Shopping Center West Drive

During collection of the turning movement counts, Peak Hour Factors (PHFs), pedestrian and bike volumes, and commercial truck percentages were recorded and used in the traffic analysis. Peak hour data was utilized at each of the study intersections, then the through volumes were carried through the study roadway network and balanced upwards at the proposed site driveway location. Therefore, the traffic volumes used in the analysis and shown on the attached traffic volume figures may not match the raw traffic volume collection data that is shown in the appendices.

The weekday MD and PM peak hours for the adjacent roadway network were observed to generally occur between 12:00 PM to 1:00 PM and 4:45 PM to 5:45 PM, respectively. F&V collected an inventory of existing lane use and traffic controls, as shown on the attached **Figure 2**. Additionally, F&V obtained the current traffic signal timing information for the study intersection of M-36 & Chilson Road from MDOT. The existing 2024 peak hour traffic volumes used in the analysis are shown on the attached **Figure 3**. Background data referenced in this report are included in **Appendix A**.

3 EXISTING CONDITIONS

3.1 EXISTING OPERATIONS

Existing peak hour vehicle delays and Levels of Service (LOS) were calculated at the study intersections using Synchro/SimTraffic (Version 11) traffic analysis software. This analysis was based on the existing lane use and traffic control shown on the attached **Figure 2**, the existing peak hour traffic volumes shown on the attached **Figure 3**, and methodologies presented in the *Highway Capacity Manual, 6th Edition* (HCM6).

Descriptions of LOS "A" through "F" as defined in the HCM6, are provided in **Appendix B** for signalized and unsignalized intersections. Typically, LOS D is considered acceptable, with LOS A representing minimal delay, and LOS F indicating failing conditions. Additionally, SimTraffic network simulations were utilized to calculate the existing vehicle queueing at the study intersections. The results of the existing conditions analysis are presented in **Appendix B** and are summarized in **Table 1**.

Table 1: Existing Intersection Operations

Intersection		Control	Approach	Existing Conditions			
				MD Peak		PM Peak	
				Delay (s/veh)	LOS	Delay (s/veh)	LOS
1	M-36 & Chilson Road	Signalized	EBL	6.3	A	20.8	C
			EBT	5.0	A	7.4	A
			EBR	4.1	A	6.2	A
			WBL	5.7	A	8.7	A
			WBTR	5.3	A	13.9	B
			NBL	31.6	C	35.2	D
			NBTR	27.5	C	26.7	C
			SBL	31.4	C	32.6	C
			SBTR	28.3	C	27.6	C
			Overall	**12.0**	**B**	**17.6**	**B**
2	M-36 & Shopping E. Drive	Stop (Minor)	EBL	8.2	A	9.5	A
			WB	Free			
			SB	16.5	C	29.0	D

The results of the existing conditions analysis indicates that all approaches and movements at the study intersections are currently operating acceptably, at LOS D or better, during both the MD and PM peak hours. Review of SimTraffic network simulations also indicate acceptable operations throughout the study roadway network. The majority of vehicles at the signalized study intersection were observed to be serviced within each cycle length and vehicles at the stop-controlled intersection were observed to find adequate gaps within the through traffic along M-36, without experiencing significant delays or excessive vehicle queueing.

4 BACKGROUND CONDITIONS (2025 NO BUILD)

4.1 BACKGROUND OPERATIONS

Historical population and employment profile data was obtained for Hamburg Township from the Southeast Michigan Council of Governments (SEMCOG) database, in order to calculate an annual background growth rate to project the existing 2024 peak hour traffic volumes to the site buildout year of 2025. Population and employment projections from 2020 to 2050 were reviewed and show average annual growth rates of 0.35% and 0.40%, respectively. Therefore, a conservative annual background growth rate of **0.5%** per year was applied to the existing 2024 peak hour traffic volumes, in order to forecast the background 2025 peak hour traffic volume ***without the proposed development***, as shown on the attached **Figure 4**.

Background peak hour vehicle delays and LOS were calculated based on the existing lane use and traffic control shown on the attached **Figure 2**, the background 2025 peak hour traffic volumes shown on the attached **Figure 4**, and the methodologies presented in the HCM6. The results of the analysis of background conditions are presented in **Appendix C** and are summarized in **Table 2**.

Table 2: Background Intersection Operations

Intersection		Control	Approach	Existing Conditions				Background Conditions				Difference			
				MD Peak		PM Peak		MD Peak		PM Peak		MD Peak		PM Peak	
				Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
1	M-36 & Chilson Road	Signal	EBL	6.3	A	20.8	C	6.4	A	21.1	C	0.1	-	0.3	-
			EBT	5.0	A	7.4	A	5.0	A	7.4	A	0.0	-	0.0	-
			EBR	4.1	A	6.2	A	4.1	A	6.2	A	0.0	-	0.0	-
			WBL	5.7	A	8.7	A	5.7	A	8.8	A	0.0	-	0.1	-
			WBTR	5.3	A	13.9	B	5.3	A	14.1	B	0.0	-	0.2	-
			NBL	31.6	C	35.2	D	31.6	C	35.2	D	0.0	-	0.0	-
			NBTR	27.5	C	26.7	C	27.5	C	26.6	C	0.0	-	-0.1	-
			SBL	31.4	C	32.6	C	31.4	C	32.6	C	0.0	-	0.0	-
			SBTR	28.3	C	27.6	C	28.3	C	27.5	C	0.0	-	-0.1	-
			Overall	**12.0**	**B**	**17.6**	**B**	**12.0**	**B**	**17.7**	**B**	**0.0**	**-**	**0.1**	**-**
2	M-36 & Shopping E. Drive	Stop (Minor)	EBL	8.2	A	9.5	A	8.2	A	9.5	A	0.0	-	0.0	-
			WB	Free				Free				N/A			
			SB	16.5	C	29.0	D	16.6	C	29.1	D	0.1	-	0.1	-

The results of the background conditions analysis indicates that all study intersection approaches and movements will continue to operate acceptably, at LOS D or better during both peak periods, in a manner similar to the existing conditions analysis. Review of SimTraffic microsimulations also indicates acceptable operations, similar to those observations made during existing conditions, with minimal vehicle queueing observed.

5 Site Trip Generation

The number of weekday peak hour (MD and PM) and daily vehicle trips that would be generated by the proposed development were calculated using the rates and equations published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual, 11th Edition*. The proposed development includes the construction of an automated car wash with one (1) tunnel. The site trip generation forecast utilized for this study is summarized in **Table 3**.

Table 3: Site Trip Generation

Land Use	ITE Code	Amount	Units	Average Daily Traffic (vpd)	MD Peak Hour (vph)			PM Peak Hour (vph)		
					In	Out	Total	In	Out	Total
Automated Car Wash	948	1	Tunnel	780	39	39	78	39	39	78

The ITE trip generation database does not provide MD peak hour trip generation rates for LUC 948: Automated Car Wash; therefore, the PM peak hour trip generation rates were utilized to project the MD peak hour for the proposed car wash land use, in order to provide a conservative analysis. Additionally, commercial land uses typically generate a portion of trip from the adjacent street, wherein these vehicles are already on the roadway and stop at the site and continue on their trip. These trips are considered “pass-by” trips and do not generate new traffic to the roadway network and would therefore be reduced from the total new trips generated by a study site; however, in order to provide a conservative analysis, pass-by trips were not considered.

6 Trip Distribution and Site Traffic Assignment

The site access for the proposed development will be provided via one (1) full access driveway on M-36. The vehicular trips that would be generated by the proposed development were assigned to the study roadway network based on the proposed site access plan, the existing peak hour traffic patterns on the adjacent roadway network, and the methodologies published by ITE. The adjacent street traffic volumes were used to develop the trip distribution. The ITE trip distribution methodology assumes that new trips will enter the study roadway network to access the proposed development, then return to their direction of origin. The site trip distribution used in the analysis is summarized in **Table 4**.

Table 4: Site Trip Distribution

To/From	Via	AM	PM
North	Chilson Road	19%	18%
East	M-36	37%	53%
West	M-36	44%	29%
Total		**100%**	**100%**

The vehicular traffic volumes shown in **Table 3** were distributed to the study roadway network according to the distribution shown in **Table 4**. The site generated trips shown on **Figure 5** and were added to the background peak hour traffic volumes shown on the attached **Figure 4**, in order to calculate the future peak hour traffic volumes with the addition of the proposed development. Future peak hour traffic volumes are shown on the attached **Figure 6**.

7 Future Conditions (2025)

7.1 Future Operations

The future peak hour vehicle delays and LOS ***with the proposed development*** were calculated based on the proposed lane use and traffic control shown on the attached **Figure 2**, the proposed site access plan, the future peak hour traffic volumes shown on the attached **Figure 6**, and the methodologies presented in the HCM6. The results of the future conditions analysis are presented in **Appendix D** and are summarized in **Table 5.**

Table 5: Future Intersection Operations

	Intersection	Control	Approach	Background Conditions				Future Conditions				Difference			
				MD Peak		PM Peak		MD Peak		PM Peak		MD Peak		PM Peak	
				Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
1	M-36 & Chilson Road	Signal	EBL	6.4	A	21.1	C	6.6	A	23.3	C	0.2	-	2.2	-
			EBT	5.0	A	7.4	A	5.2	A	7.7	A	0.2	-	0.3	-
			EBR	4.1	A	6.2	A	4.1	A	6.4	A	0.0	-	0.2	-
			WBL	5.7	A	8.8	A	5.9	A	9.2	A	0.2	-	0.4	-
			WBTR	5.3	A	14.1	B	5.5	A	15.1	B	0.2	-	1.0	-
			NBL	31.6	C	35.2	D	31.9	C	35.2	D	0.3	-	0.0	-
			NBTR	27.5	C	26.6	C	27.4	C	26.3	C	-0.1	-	-0.3	-
			SBL	31.4	C	32.6	C	31.4	C	32.1	C	0.0	-	-0.5	-
			SBTR	28.3	C	27.5	C	28.5	C	27.4	C	0.2	-	-0.1	-
			Overall	**12.0**	**B**	**17.7**	**B**	**12.0**	**B**	**18.1**	**B**	**0.0**	**-**	**0.4**	**-**
2	M-36 & Shopping E. Drive / Site Drive	Stop (Minor)	EBL	8.2	A	9.5	A	8.2	A	9.5	A	0.0	-	0.0	-
			WBL	Free				8.5	A	8.3	A	N/A			
			NB	N/A				16.7	C	19.3	C	N/A			
			SB	16.6	C	29.1	D	18.5	C	34.7	D	1.9	-	5.6	-

The results of the future conditions analysis indicates that all approaches and movements at the study intersections and proposed site driveway are expected to operate acceptably, at LOS D or better during both peak periods, in a manner similar to the background conditions analysis. Review of SimTraffic microsimulations also indicates acceptable operations, similar to those observations made during existing conditions, with the majority of vehicle queues observed to be processed through the signalized study intersection of M-36 & Chilson Road within each cycle length. Additionally, SimTraffic network simulations at minor-street stop-controlled site driveway intersection indicates that ingress/egress vehicles traveling to/from the proposed development were observed to find adequate gaps within the through traffic along M-36, without experiencing significant delays or excessive vehicle queueing.

7.2 GAP STUDY

A gap study was conducted along M-36 at the intersection with Hamburg Village Shopping Center East Drive / Site Drive, in order to identify the available gaps in traffic along M-36. This analysis was performed to address the concerns noted, in a memo from the Hamburg Safety Director dated November 17, 2023, regarding the *projected car wash site vehicles exit onto M-36 at a driveway located opposite Hamburg Village Shopping Center and the need to provide adequate gaps in traffic from through traffic on M-36 and from the turning movements associated with the adjacent driveways*.

The critical headway represents the time interval (gap) in the major street traffic stream that motorists queued on a side street are willing to accept in order to proceed into or across the main street traffic flow. The critical headway for a left-turn movement from the proposed site driveway onto M-36 was determined based on vehicle turning information provided within the AASHTO Geometric Design of Highways and Street (*Green Book Table 9-6*). The number of acceptable gaps in the conflicting traffic stream(s) for each movement was then determined based on the summation of all gaps greater than or equal to the critical headway. The results of the gap study are shown in **Table 6**.

Table 6: M-36 & Site Drive – Gap Data

Movement			Left-Turn onto WB M-36	Movement		Left-Turn onto WB M-36
Critical Headway (sec)			8	Critical Headway (sec)		8
Number of Available Gaps	MD Peak	11:00 AM to 12:00 PM	295	PM Peak	4:00 PM to 5:00 PM	282
		12:00 PM to 1:00 PM	300		5:00 PM to 6:00 PM	261

SUMMARY

- The results of the gap study evaluation indicates that there are a significant number of adequate gaps available within the through traffic along M-36 for egress traffic from the proposed development.
- There are more than four (4) sufficient gaps observed to occur every minute, or over 260 gaps per hour during both the MD and PM peak hours.
- There are more acceptable gaps in traffic available for this site than trips generated by the proposed development. Therefore, there are no concerns associated with the operations of this driveway and finding acceptable gaps in traffic.

7.3 QUEUEING ANALYSIS

A back-to back left-turn lane analysis was performed to address the concern noted, in a memo from the Hamburg Safety Director dated November 17, 2023, for this site that *shared center turn lane usage creates the potential for conflicts with vehicles at the adjacent driveways and at the Chilson Road intersection.*

The proposed Site Drive is located west of both the BP Drive and the M-36 & Chilson Road signalized intersection. The proposed site driveway location was reviewed to determine if there is adequate center TWLTL storage length to accommodate the back-to-back left-turns between the proposed Site Drive and the existing BP Drive / Chilson Road intersections. The SimTraffic microsimulations were reviewed in order to determine the expected vehicle queueing; the results are summarized in **Table 7**.

Table 7: Vehicle Queueing (50th and 95th Percentile)

Peak Period	Eastbound Left-Turn at BP Drive / Chilson Rd		Westbound Left-Turn at Site Drive		Total		Effective Queue Length (ft)	Exceeds Queue Length
	Avg. Queue (ft)	95th % Queue (ft)	Avg. Queue (ft)	95th % Queue (ft)	Avg. Queue (ft)	95th % Queue (ft)		
MD	2	14	9	32	7	46	200	**No**
PM	1	9	10	33	11	42	200	**No**

SUMMARY

- The results of the vehicle queueing analysis indicates the proposed Site Drive location has adequate available center TWLTL storage length to accommodate ingress left-turns at the proposed site drive.
- Back-to-back left-turn conflicts, with the addition of proposed development, are not anticipated with the adjacent BP Drive or the signalized intersection with Chilson Road.

8 ACCESS MANAGEMENT

8.1 MDOT DRIVEWAY LOCATION GUIDELINES

The location of the proposed site driveway was reviewed, in accordance with MDOT standards and best practices for the placement of new commercial driveways, as outlined in the MDOT Geometric Design Guidance Section 1.2.2

The MDOT guidance document indicates that aligning new commercial driveways with existing driveways is ideal to improve the safety and functional integrity of the roadway. When aligning with existing driveways is not possible, set distances determined by MDOT are required for the new driveway to be offset from existing driveways, based on the roadway speed limit and orientation to nearby existing driveways. However, there is not adequate property frontage available to provide an unaligned site driveway and meet the recommended spacing requirements for safe and efficient operations.

The proposed site driveway on M-36 approach is ideally located from a traffic and safety perspective and follows best access management practices, as identified below:

- The driveway is aligned directly opposite the existing Hamburg Village Shopping E. Drive intersection.
- There is an existing center TWLTL on M-36 at the BP driveway and signalized intersection of Chilson Road to accommodate vehicles without impacting through traffic along M-36.

The proposed location of the site driveway is the best option for this site and was approved by MDOT as the recommended driveway location. The applicant was unable to obtain access through the adjacent property and “Reasonable access” to property abutting a state highway or county road is protected by state law (Sec. 4 of Act 200 of 1969).

- Therefore, the proposed driveway location provides the optimal location for the project site, based on best access management practices, traffic operations, and safety.

8.2 HORIZONTAL SIGHT DISTANCE EVALUATION

A horizontal sight distance evaluation was performed, in order to determine if there is adequate sight distance on M-36 at the proposed Site Drive. The intersection sight distance was reviewed based on the requirements outlined in the American Association of State Highway and Transportation Officials (AASHTO), 2011, *Geometric Design of Highways and Streets*. According to Section 9.5 – Intersection Sight Distance. An intersection sight distance of 551-feet is required for a left turn from a complete stop at the proposed site driveway, based on the existing 45-mph speed limit (50 mph design speed) on the study section of M-36.

The AASHTO manual states that the “vertex (decision point) of the departure sight triangle on the minor road should be 14.5 ft from the edge of the major-road traveled way”. This gives an accurate depiction of driver behavior when preparing to make a turn from a minor roadway. The results of the sight distance analysis indicates that a driver waiting to egress the proposed Site Drive onto M-36 will not experience any visual obstructions from permanent structures or vegetation, to the east and west of the Site Drive. However, it is recommended that any vegetation within the clear vision triangles adjacent to the site driveway are removed/cleared during driveway construction, in order to ensure proper sight distance.

Further review of the intersection sight distance indicates that eastbound vehicle queues generated by the signalized study intersection of M-36 & Chilson Road have the potential to partially obstruct drivers’ views facing east. However, review of SimTraffic microsimulations indicates that all vehicle queues at the signal were observed to be serviced within each cycle length; therefore, any temporary vehicular obstructions from queued vehicles at the signal would have negligible impact on the site driveway operations as the queues would clear regularly, thereby providing a clear line of sight.

8.3 Auxiliary Turn Lane Evaluation

The MDOT auxiliary turn lane treatment criteria were evaluated at the proposed Site Drive. The study section of M-36 currently provides an existing center TWLTL adjacent to the project site; therefore, the left-turn criteria were not evaluated. This analysis was based on the future peak hour traffic volumes shown on **Figure 6**. The results of the analysis indicate that right-turn treatments are **NOT** warranted at the proposed site driveway; the results are shown on the attached MDOT warranting charts and summarized in **Table 8**.

Table 8: Right-Turn Treatment Analysis Summary

Site Driveway Intersection	MD Peak Hour	PM Peak Hour	Recommendation
M-36 & Site Drive	No Treatment	No Treatment	**No Treatment**

8.4 Crash Analysis

A crash analysis was conducted for all nearby intersections within the study roadway network. F&V obtained the crash data used in the analysis from the Michigan Traffic Crash Facts (MTCF) historical crash database website for the most recent **five (5) years** (January 1, 2018, to December 31, 2022) of available data. The results of the crash analysis evaluation are summarized for "crash types" in **Table 9** and for "worst injury involved in crash" in **Table 10**.

Table 9: Crash Type Summary

Intersections and M-36 Segments	Type	Crash Type									Total
		Single Motor Vehicle Crash	Backing	Head-On	Head-On Left-Turn	Angle	Rear End	Sideswipe-Same	Sideswipe-Opposite	Other / Unknown	
M-36 & Hamburg Village Shopping Center W. Drive	Intersection	0	0	0	0	0	0	0	0	0	**0**
Shopping W. Drive to Shopping E. Drive	Segment	0	0	0	0	0	0	0	0	0	**0**
M-36 & Hamburg Village Shopping Center E. Drive	Intersection	0	0	0	0	0	0	0	0	0	**0**
Shopping E. Drive to BP Drive	Segment	0	0	0	0	0	0	0	0	0	**0**
M-36 & BP Drive	Intersection	0	0	0	0	0	0	0	0	0	**0**
BP Drive to Chilson Road	Segment	0	0	0	0	0	0	1	0	0	**1**
M-36 & Chilson Road	Intersection	0	0	1	2	2	8	1	0	0	**14**
Total		**0**	**0**	**1**	**2**	**2**	**8**	**2**	**0**	**0**	**15**

Table 10: Crash Injury Summary

Intersections and M-36 Segments	Type	Worst Injury in Crash				
		Fatality	Type "A"	Type "B"	Type "C"	Total
M-36 & Hamburg Village Shopping Center W. Drive	Intersection	0	0	0	0	**0**
Shopping W. Drive to Shopping E. Drive	Segment	0	0	0	0	**0**
M-36 & Hamburg Village Shopping Center E. Drive	Intersection	0	0	0	0	**0**
Shopping E. Drive to BP Drive	Segment	0	0	0	0	**0**
M-36 & BP Drive	Intersection	0	0	0	0	**0**
BP Drive to Chilson Road	Segment	0	0	0	1	**1**
M-36 & Chilson Road	Intersection	0	0	0	2	**2**
Total		**0**	**0**	**0**	**3**	**3**

SUMMARY

- The results of the crash analysis indicate that there were NO reported crashes within the last five (5) years of available data at the existing driveways adjacent to the proposed development.
- **BP Drive to Chilson Road (Segment):** There was one (1) crash reported on M-36 between the BP Drive and Chilson Road. The crash was a sideswipe-same that occurred as a result of a reckless driver improperly passing another vehicle. Alcohol / drug use was not identified in the crash report; however, the crash report indicates that the driver was "observed by several callers, driving on and off the roadway, crashing into signs".
- **M-36 & Chilson Road (Intersection):** There were 14 crashes reported at or associated with the signalized study intersection of M-36 & Chilson Road within the most recent five (5) years of data, with an average crash rate of 2.6 crashes per year at this signalized intersection.
    - The majority of the crashes were rear-end (57%) type crashes; the remaining were angle (14%), head-on left-turn (14%), sideswipe same-direction (7%), and head-on (7%) crash types.
    - The rear end crashes are typical for signalized intersections, in conjunction with distracted drivers. The head-on left-turn crashes were the result of failure to yield, while attempting to complete a left-turn when traffic was not clear.
    - The angle crashes were due to either failure to yield to oncoming traffic while the traffic signal was in flash mode or the driver improperly completing a left-turn within the intersection.
    - The head-on crash was due to a distracted driver and improper lane usage.
- Based on the low crash frequency and the types of crashes that were reported at the signalized study intersection of M-36 & Chilson Road, no correctable crash patterns were identified.

9 CONCLUSIONS

The conclusions of this TIS are as follows:

1. Existing Conditions (2024)

- The results of the existing conditions analysis indicates that all approaches and movements at the study intersections are currently operating acceptably at LOS D or better, during both peak periods.
- Review of SimTraffic network simulations indicates acceptable operations throughout the study roadway network during both peak periods.
- The majority of vehicles at the signalized study intersection of M-36 & Chilson Road were observed to be serviced within each cycle length and vehicles at the minor-street stop-controlled intersection were observed to find adequate gaps within the through traffic along M-36, without experiencing significant delays or excessive vehicle queueing.

2. Background Conditions (2025)

- A conservative annual background growth rate of **0.5%** per year was utilized to project the existing 2024 peak hour traffic volumes to the buildout year of 2025. No background developments were identified within the vicinity of the study area.
- The results of the background conditions analysis indicate that all approaches and movements at the study intersections are expected to continue operating acceptably, at LOS D or better during both peak periods, in a manner similar to the existing conditions analysis. SimTraffic also indicates acceptable operations throughout the study roadway network, similar to those observations made during existing conditions.

3. Future Conditions (2025)

- The results of the future conditions analysis, with the addition of the site-generated traffic from the proposed development, indicates that all approaches and movements at the study intersection are expected to continue operating acceptably at LOS D or better during both peak periods, in a manner similar to the background conditions analysis, with minor increases in delay.

- All approaches and movements at the proposed site driveway are expected to operate acceptably, at LOS D or better during both the MD and PM peak hours.
- Review of SimTraffic network simulations indicates acceptable operations, similar to those observations made during the background conditions analysis. Additionally, egress vehicles at the proposed site driveway were observed to find adequate gaps within the through traffic along M-36, without experiencing significant delays or excessive vehicle queueing.

4. Gap Study

- The results of the gap study evaluation indicates that there are a significant number of adequate gaps available within the through traffic along M-36, with more than four (4) sufficient gaps per minute, or more than 240 gaps per hour, observed during both the MD and PM peak hours.

5. Vehicle Queueing

- The results of the vehicle queueing analysis indicates the proposed Site Drive location has adequate available center two-way left-turn lane (TWLTL) storage to accommodate ingress left-turns at the proposed site drive, without impacting the adjacent BP Drive or the signalized Chilson Road intersection.

6. Access Management

- The MDOT auxiliary right-turn criteria were evaluated at the proposed site driveway on M-36. The results of the analysis indicate that right-turn treatments are **NOT** warranted.
- The location of the proposed site driveway will be aligned directly opposite the existing Hamburg Shopping Center East Drive, which follows best access management practices. The MDOT guidance document indicates that aligning new commercial driveways with existing driveways is ideal to provide for the safety and functional integrity of the roadway.
- When aligning with existing driveways is not possible, set distances determined by MDOT are required for the new driveway to be offset from existing driveways, based on speed limit and orientation to nearby existing driveways. However, there is not adequate property frontage available to provide offset driveways which would meet the recommended spacing requirements for safe and efficient operations.

7. Horizontal Sight Distance Evaluation

- The results of the intersection sight distance evaluation indicates that the location of the proposed site driveway will provide an adequate line of sight, free of vegetation and permanent obstructions.
- There is potential for egress vehicles on the site driveway approach to have a partial obstruction due to vehicles in the eastbound queue on M-36 at the signalized Chilson Road intersection. Review of SimTraffic network simulations indicates that all vehicle queues at the signal were observed to be serviced within each cycle length; therefore, any temporary vehicular obstructions from queued vehicles waiting at the signal would only be momentary and would be expected to clear regularly, thereby providing a clear line of sight.

8. Crash Analysis

- The results of the crash analysis indicate that there were NO reported crashes within the last five (5) years of available data at the existing site driveways adjacent to the proposed site driveway intersection.
- Based on the low crash frequency and the types of crashes reported at the signalized study intersection of M-36 & Chilson Road, no correctable crash patterns were identified.

RECOMMENDATIONS

The recommendations of this TIS are as follows:

- The results of the TIS analysis indicates that the proposed curb cut does not present a traffic safety issue and that the proposed development will operate acceptably within the exiting roadway geometry.
    - Therefore, no improvements are recommended.

FIGURES

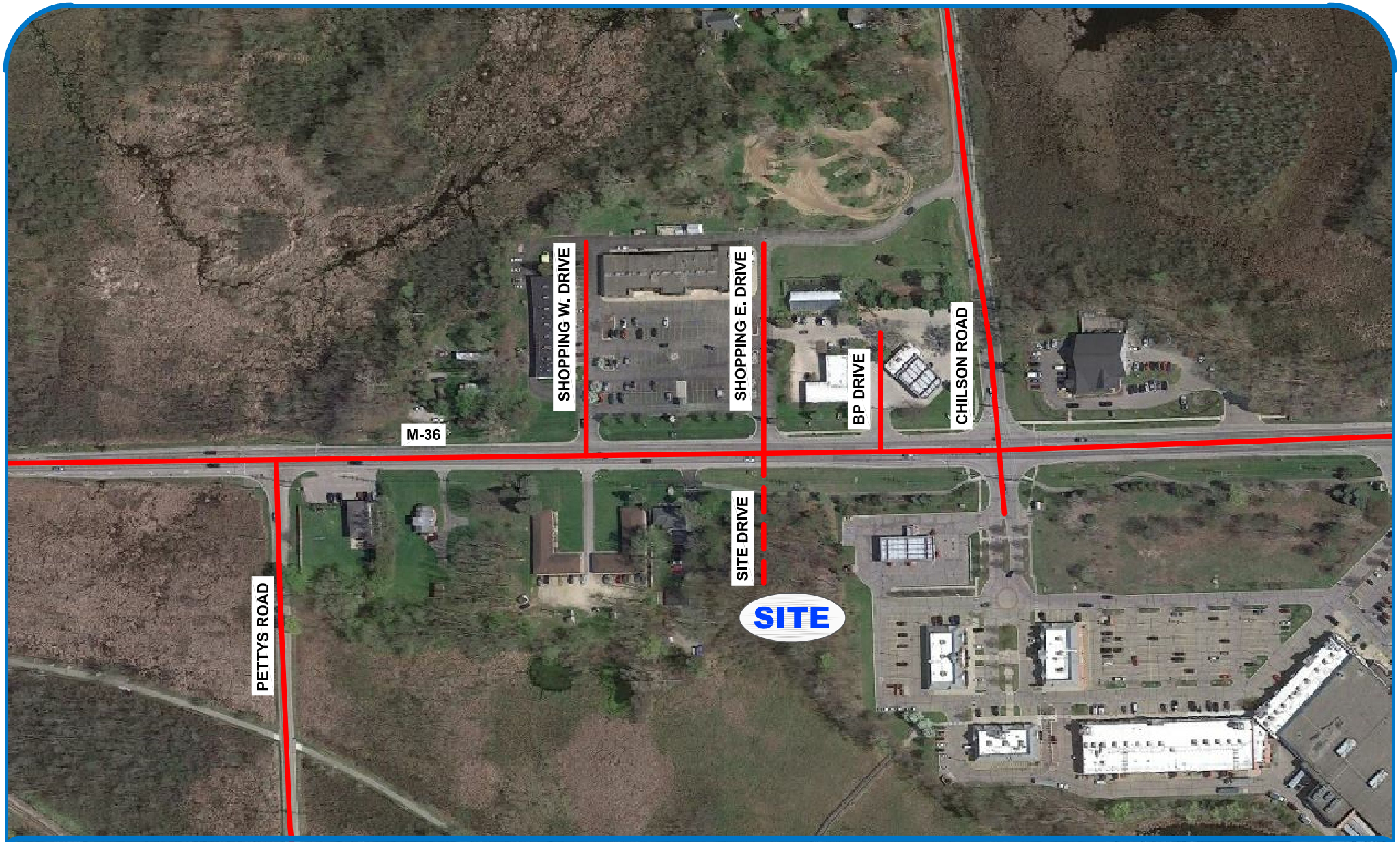


FIGURE 1

SITE LOCATION

HYPERSHINE CAR WASH TIS - HAMBURG TWP, MI

LEGEND

SITE SITE LOCATION

NORTH

SCALE: NOT TO SCALE

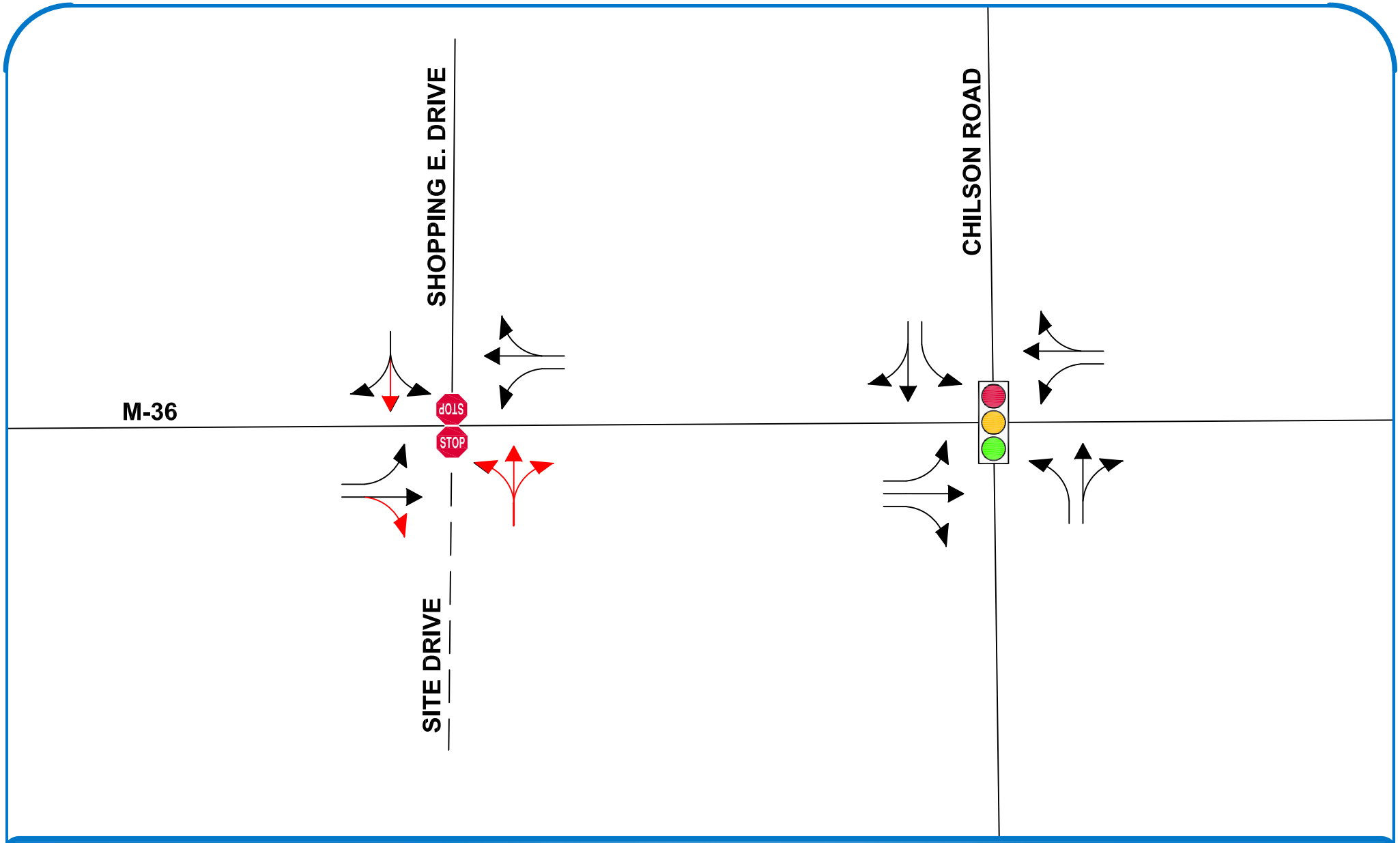


FIGURE 2

LANE USE AND TRAFFIC CONTROL

HYPERSHINE CAR WASH TIS - HAMBURG TWP, MI

LEGEND

ROADS

PROPOSED ROADS

LANE USE

PROPOSED LANE USE

SIGNALIZED INTERSECTION

UNSIGNALIZED INTERSECTION

NORTH

SCALE: NOT TO SCALE

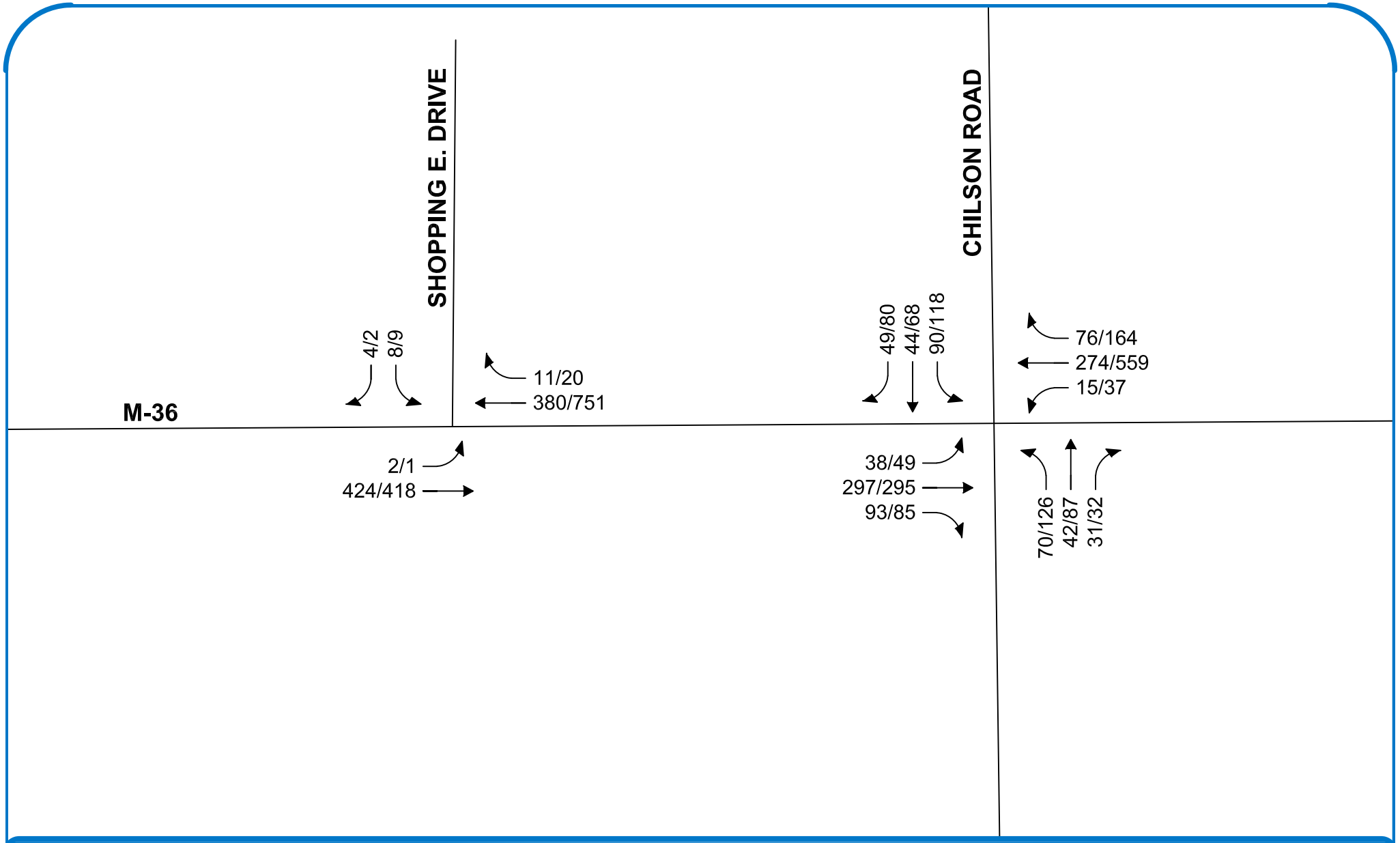


FIGURE 3

EXISTING TRAFFIC VOLUMES

HYPERSHINE CAR WASH TIS - HAMBURG TWP, MI

LEGEND

ROADS

PROPOSED ROADS

TRAFFIC VOLUMES (MD/PM)

NORTH

SCALE: NOT TO SCALE

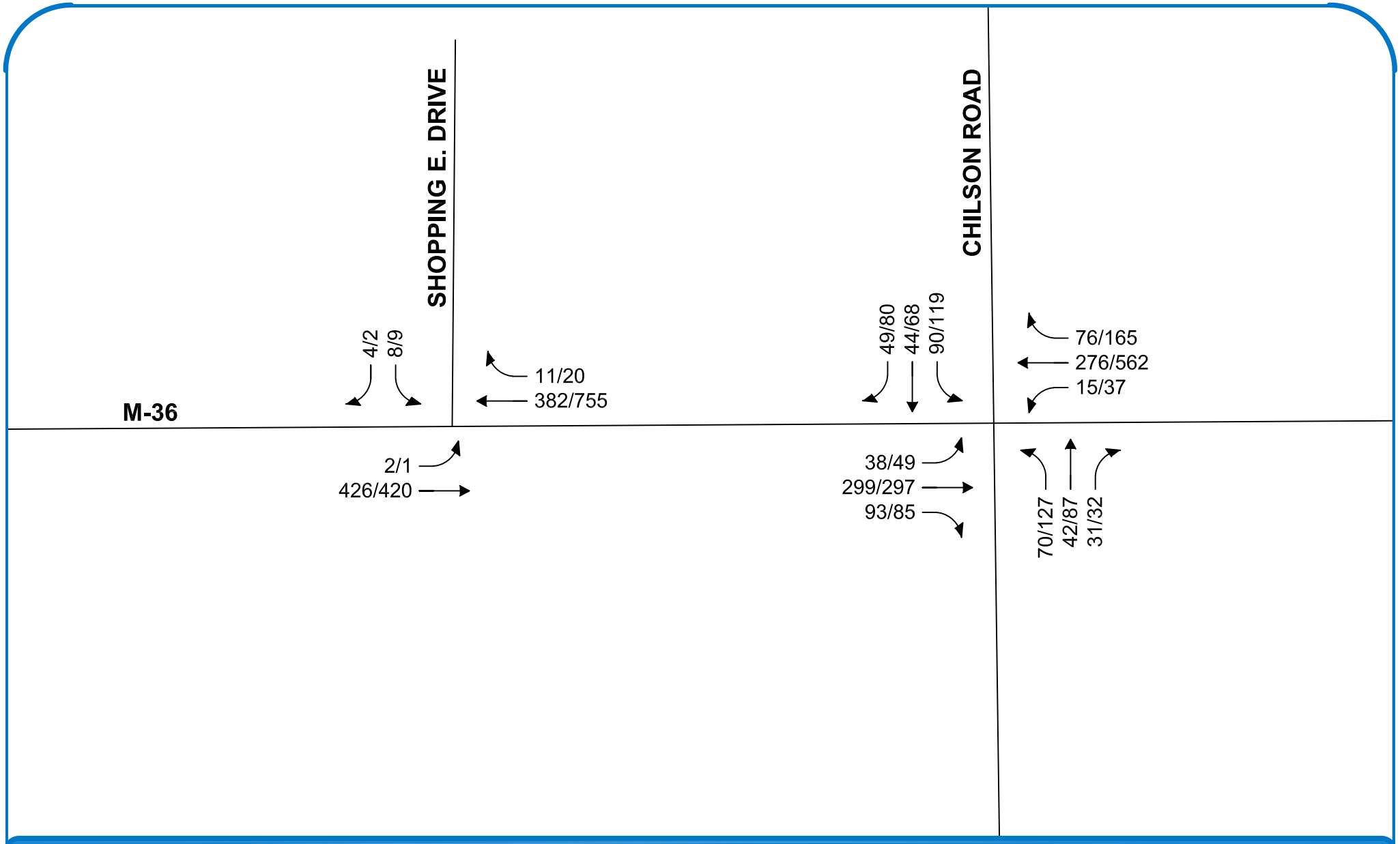


FIGURE 4

BACKGROUND TRAFFIC VOLUMES

HYPERSHINE CAR WASH TIS - HAMBURG TWP, MI

LEGEND

ROADS

PROPOSED ROADS

TRAFFIC VOLUMES (MD/PM)

NORTH

SCALE: NOT TO SCALE

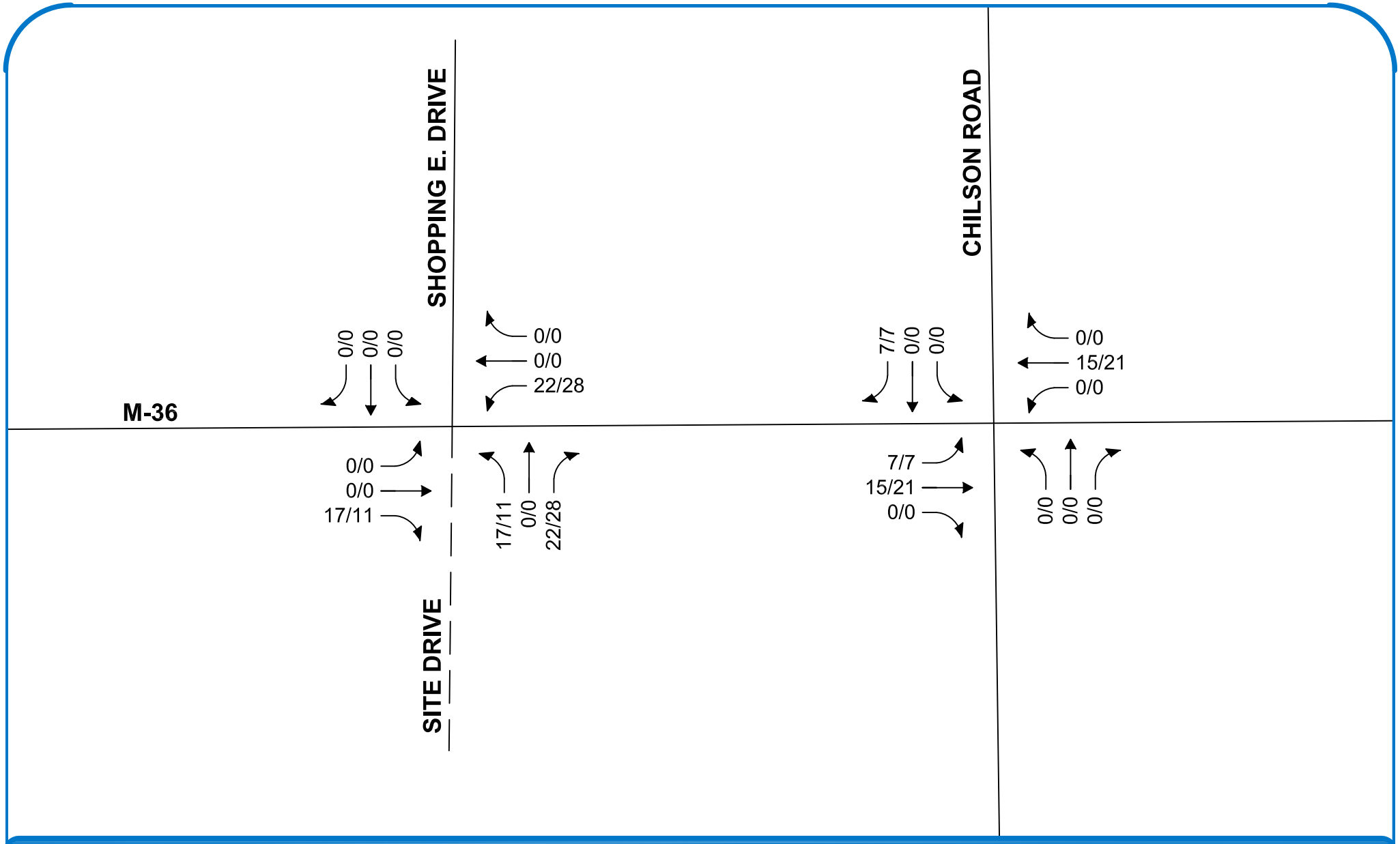


FIGURE 5

SITE-GENERATED TRAFFIC VOLUMES

HYPERSHINE CAR WASH TIS - HAMBURG TWP, MI

LEGEND

ROADS

PROPOSED ROADS

TRAFFIC VOLUMES (MD/PM)

NORTH

SCALE: NOT TO SCALE

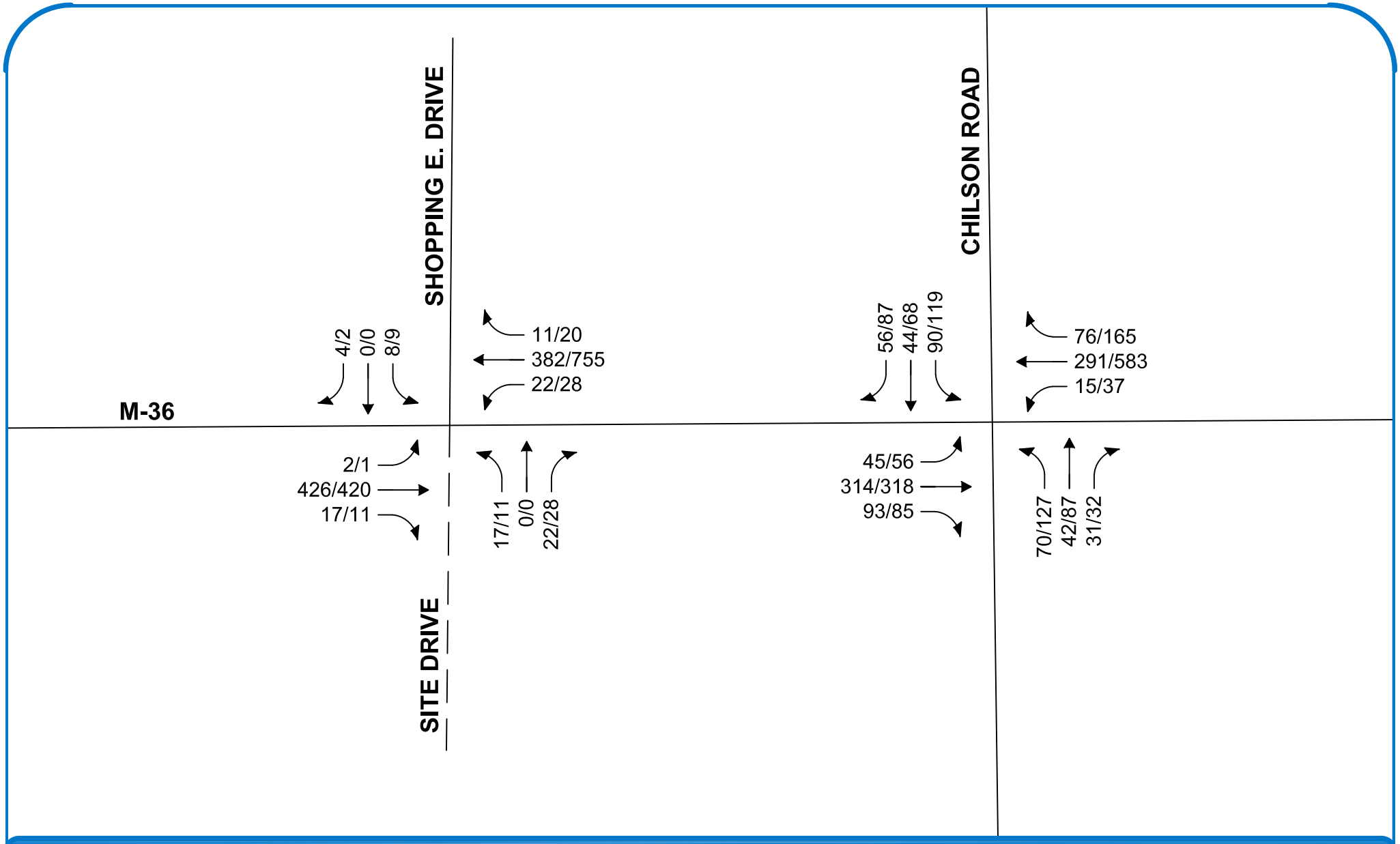


FIGURE 6

FUTURE TRAFFIC VOLUMES

HYPERSHINE CAR WASH TIS- HAMBURG TWP, MI

LEGEND

ROADS

PROPOSED ROADS

TRAFFIC VOLUMES (MD/PM)

NORTH

SCALE: NOT TO SCALE

FIGURE 7

INTERSECTION SIGHT DISTANCE

HYPERSHINE CAR WASH TIS - HAMBURG TOWNSHIP, MI

LEGEND

- EB LEFT-TURN 95th% QUEUE
- EB THROUGH 95th% QUEUE
- SIGHT TRIANGLE

Appendix A

BACKGROUND INFORMATION

SITE DEVELOPMENT PLANS

FOR

WHITEWATER EXPRESS CAR WASH

PROPOSED CAR WASH

PID: 4715-22-400-024
VACANT E-M36
TOWNSHIP OF HAMBURG, LIVINGSTON COUNTY, MICHIGAN

APPLICANT

EROP LLC
3130 NORTH KANDY LANE
DECATUR, ILLINOIS 62526
217-972-4296

ARCHITECT

REB ARCHITECTS
103 WINDHAVEN DRIVE, SUITE 101
NICHOLASVILLE, KY 40356
859-523-1500

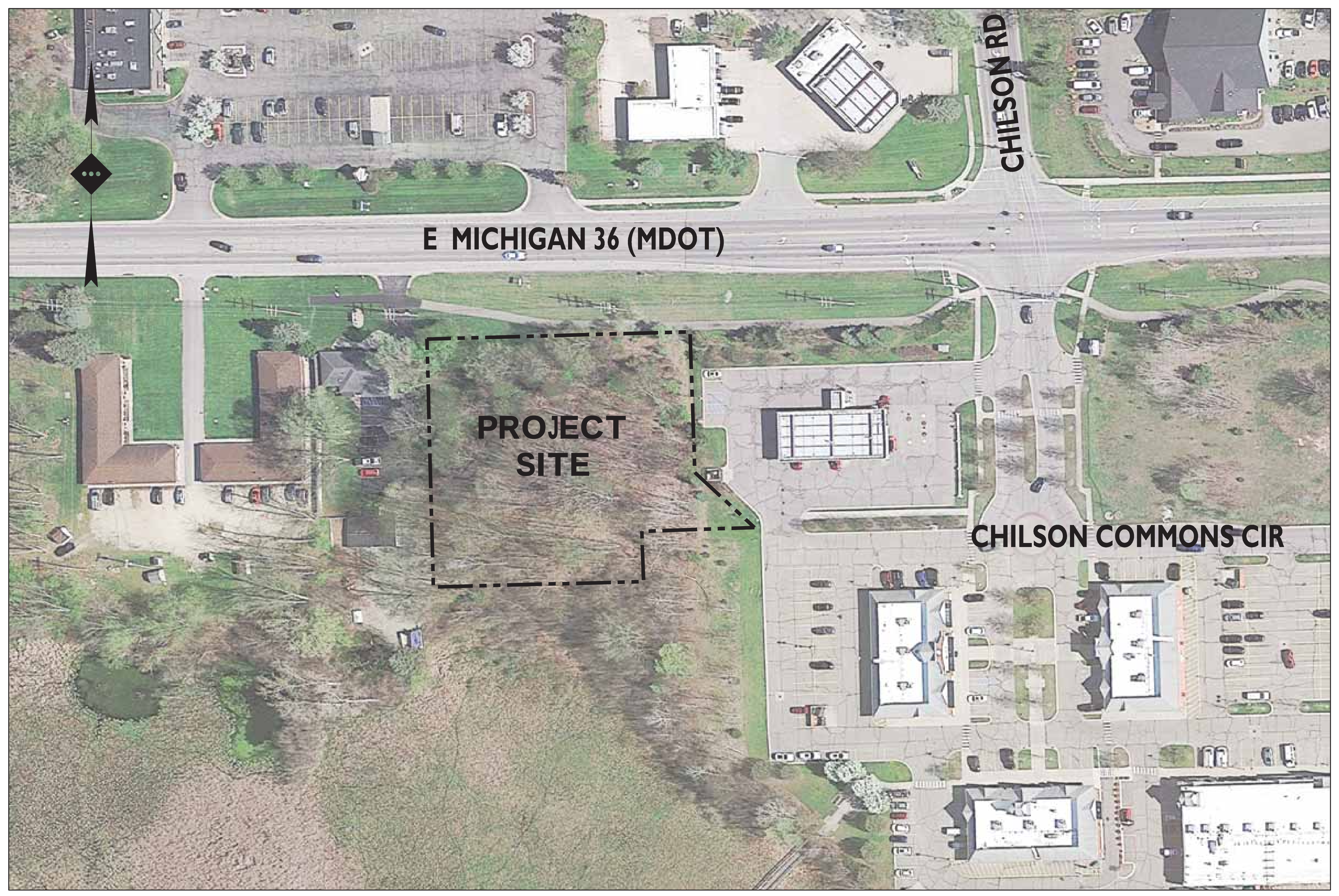
OWNER

CHILLSON COMMONS LLC
27600 NORTHWESTERN HWY STE 200
SOUTHFIELD, MI, 48034

SOURCE: USGS MAPPING SYSTEM

LOCATION MAP

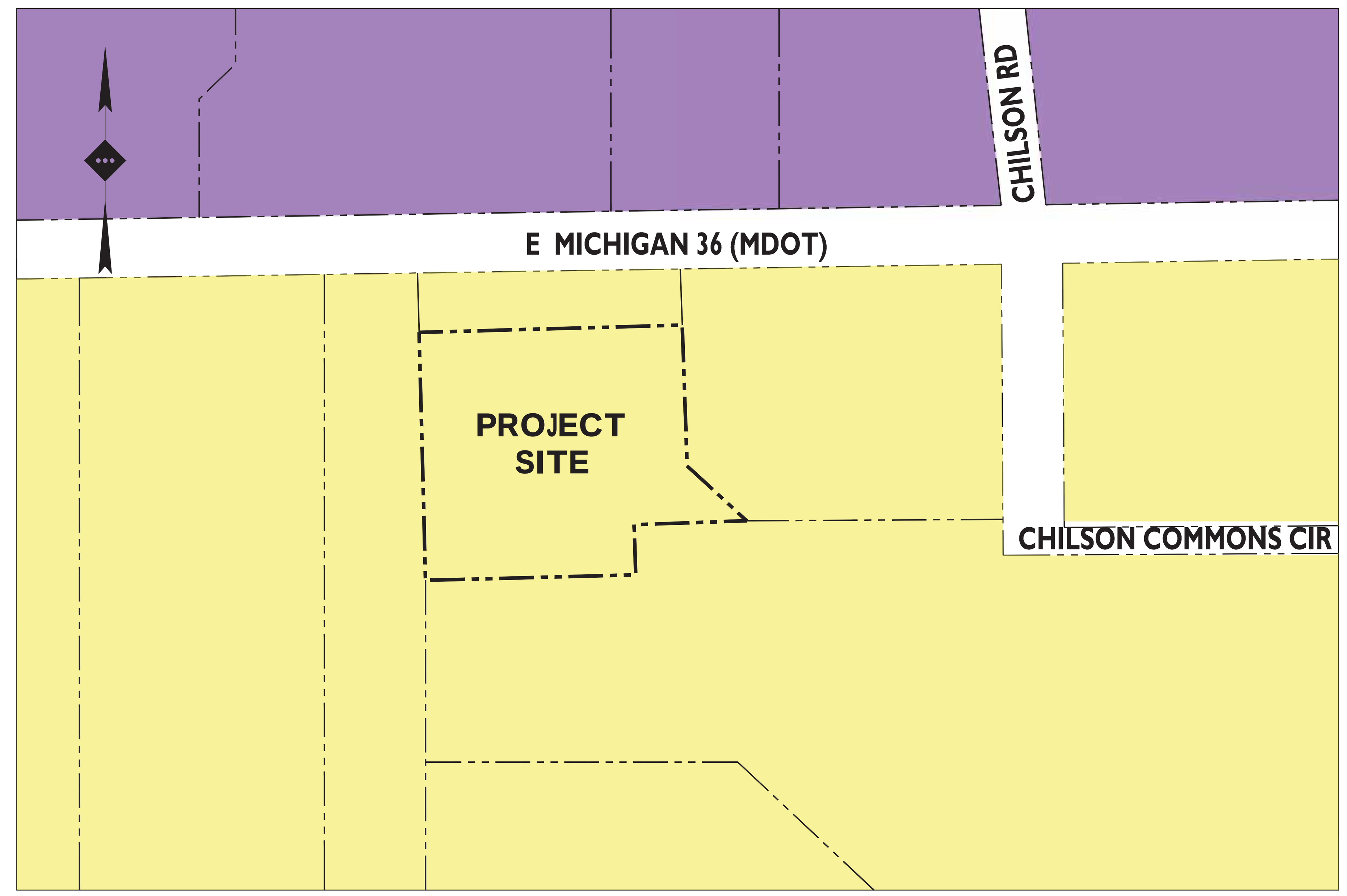
SCALE: 1" = 2,000'±



SOURCE: GOOGLE EARTH PRO

AERIAL MAP

SCALE: 1" = 100'±



SOURCE: TOWNSHIP OF HAMBURG, LIVINGSTON COUNTY, MICHIGAN OFFICIAL ZONING MAP

ZONING MAP

SCALE: 1" = 100'±

ZONING KEY

WFR: WATERFRONT RESIDENTIAL
CS COMMUNITY SERVICE

PLANS PREPARED BY:

PROPERTY DESCRIPTION:

THE LAND SITUATED IN THE TOWNSHIP OF HAMBURG, COUNTY OF LIVINGSTON, STATE OF MICHIGAN, AND IS DESCRIBED AS FOLLOWS:

RECONFIGURED UNIT 9 DESCRIPTION:
A PARCEL OF LAND BEING PART OF UNIT 9 AND PART OF UNIT 7 OF CHILSON COMMONS SHOPPING CENTER, A CONDOMINIUM, ACCORDING TO THE MASTER DEED RECORDED IN LIBER 4366, PAGE 944, AS AMENDED BY FIRST AMENDMENT TO MASTER DEED RECORDED IN LIBER 4738, PAGE 533, SECOND AMENDMENT TO MASTER DEED RECORDED IN INSTRUMENT NO. 2011R-000963 AND THIRD AMENDMENT TO MASTER DEED RECORDED IN INSTRUMENT NO. 2022R-022074, AS AMENDED AND DESIGNATED AS LIVINGSTON COUNTY CONDOMINIUM SUBDIVISION PLAN NO. 303, TOGETHER WITH RIGHTS IN THE GENERAL COMMON ELEMENTS AND THE LIMITED COMMON ELEMENTS AS SHOWN ON THE MASTER DEED AND AS DESCRIBED IN ACT 59 OF THE PUBLIC ACTS OF 1978, AS AMENDED, DESCRIBED AS FOLLOWS: COMMENCING AT THE EAST 1/4 CORNER OF SECTION 22; THENCE ALONG THE EAST LINE OF SAID SECTION 22, SOUTH 01 DEGREE 08 MINUTES 26 SECONDS EAST, 95.25 FEET TO THE SOUTH LINE OF M-36; THENCE ALONG SAID SOUTH LINE OF M-36 THE FOLLOWING SEVEN (7) COURSES: 1.) 180.08 FEET ALONG A CURVE TO THE LEFT HAVING A RADIUS OF 482.60 FEET AND A CHORD THAT BEARS NORTH 73 DEGREES 10 MINUTES 10 SECONDS WEST, 179.03 FEET; 2.) ALONG A RADIAL LINE SOUTH 06 DEGREES 08 MINUTES 27 SECONDS WEST, 33.00 FEET; 3.) 63.17 FEET ALONG A CURVE TO THE LEFT HAVING A RADIUS OF 449.60 FEET AND A CHORD THAT BEARS NORTH 87 DEGREES 53 MINUTES 03 SECONDS WEST, 63.11 FEET; 4.) SOUTH 88 DEGREES 05 MINUTES 53 SECONDS WEST, 679.77 FEET; 5.) SOUTH 02 DEGREES 19 MINUTES 50 SECONDS EAST, 22.89 FEET; 6.) SOUTH 87 DEGREES 40 MINUTES 10 SECONDS WEST, 385.42 FEET; 7.) SOUTH 88 DEGREES 31 MINUTES 32 SECONDS WEST, 374.14 FEET TO THE POINT-OF-BEGINNING OF THIS PARCEL DESCRIPTION; THENCE SOUTH 01 DEGREE 59 MINUTES 56 SECONDS EAST, 127.85 FEET; THENCE SOUTH 47 DEGREES 18 MINUTES 25 SECONDS EAST, 73.48 FEET TO THE SOUTH LINE OF SAID UNIT 7; THENCE SOUTH 88 DEGREES 00 MINUTES 02 SECONDS WEST, ALONG THE SOUTH LINE OF SAID UNIT 7, 102.24 FEET TO THE EAST LINE OF SAID UNIT 9; THENCE SOUTH 01 DEGREES 59 MINUTES 56 SECONDS EAST, ALONG THE EAST LINE OF SAID UNIT 9, 45.57 FEET; THENCE SOUTH 88 DEGREES 31 MINUTES 32 SECONDS WEST, PARALLEL WITH THE SOUTH LINE OF M-36, 191.17 FEET TO A POINT ON THE WEST LINE OF SAID UNIT 9; THENCE NORTH 01 DEGREES 08 MINUTES 26 SECONDS WEST, ALONG THE WEST LINE OF SAID UNIT 9, 225.55 FEET TO THE SOUTH LINE OF M-36; THENCE NORTH 88 DEGREES 31 MINUTES 32 SECONDS EAST, ALONG THE SOUTH LINE OF M-36, 237.80 FEET TO THE POINT-OF-BEGINNING OF THIS PARCEL DESCRIPTION.

STONEFIELD
engineering & design

Detroit, MI • Rutherford, NJ • New York, NY
Boston, MA • Princeton, NJ • Tampa, FL
www.stonefieldeng.com

607 Shelby Suite 200, Detroit, MI 48226
Phone 248.247.1115

PLAN REFERENCE MATERIALS:

1. THIS PLAN SET REFERENCES THE FOLLOWING DOCUMENTS INCLUDING, BUT NOT LIMITED TO:
   - ALTA/NSPS LAND TITLE SURVEY PREPARED BY KEM-TEC, DATED 05/15/2023
   - ARCHITECTURAL FLOORPLAN AND ELEVATIONS PREPARED BY REB ARCHITECTS DATED 07/06/2023
   - AERIAL MAP OBTAIN FROM GOOGLE EARTH PRO
   - LOCATION MAP OBTAINED FROM USGS NATIONAL MAPPER
2. ALL REFERENCE MATERIAL LISTED ABOVE SHALL BE CONSIDERED A PART OF THIS PLAN SET AND ALL INFORMATION CONTAINED WITHIN THESE MATERIALS SHALL BE UTILIZED IN CONJUNCTION WITH THIS PLAN SET. THE CONTRACTOR IS RESPONSIBLE TO OBTAIN A COPY OF EACH REFERENCE AND REVIEW IT THOROUGHLY PRIOR TO THE START OF CONSTRUCTION.

SHEET INDEX

ADDITIONAL SHEETS

ISSUE	DATE	BY	DESCRIPTION
3	09/26/2023	EM	REVISED WATER AND STORM CONNECTIONS
2	07/05/2023	JC/EM	FOR PRE-APPLICATION CONFERENCE
1	05/30/2023	JP/EM	FOR CLIENT REVIEW

NOT APPROVED FOR CONSTRUCTION

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Princeton, NJ • Tampa, FL • Rutherford, NJ
www.stonefieldeng.com
607 Shelby Suite 200, Detroit, MI 48226
Phone 248.247.1115

SITE DEVELOPMENT PLANS
EROP LLC
PROPOSED CAR WASH
PARCEL ID: 4715-22-400-024
VACANT E-M36
HAMBURG TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN

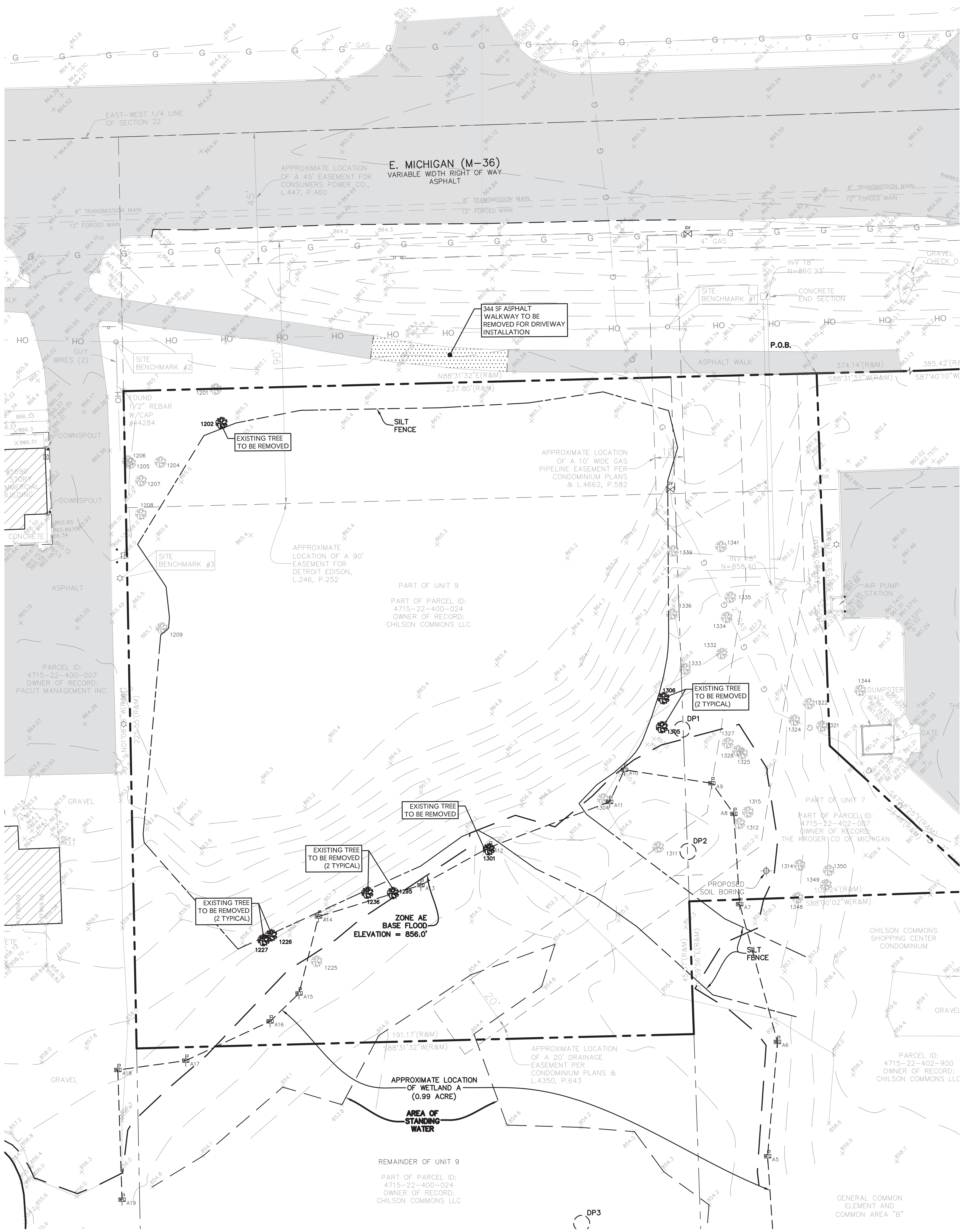
STATE OF MICHIGAN
JONATHAN REID COOKSEY
ENGINEER
PROFESSIONAL ENGINEER

SCALE: AS SHOWN | PROJECT ID: DET-220416

TITLE: COVER SHEET

DRAWING: C-1

V:\DET\2022\DET-220416-EROP, LLC-9700 CHILSON COMMONS CIRCLE, HAMBURG TOWNSHIP, MI\CADD\PLOT\SDP-01-COVR.DWG



SYMBOL	DESCRIPTION
——— — — ———	PROPERTY LINE
— — — — —	FEATURE TO BE REMOVED / DEMOLISHED

ALL SITE FEATURES WITHIN THE LIMIT OF DISTURBANCE INDICATED ON THIS PLAN ARE TO REMAIN AND BE PROTECTED THROUGHOUT CONSTRUCTION UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. IF SIGNIFICANT DISCREPANCIES ARE DISCERNED BETWEEN THIS PLAN AND FIELD CONDITIONS

STABILIZED CONSTRUCTION ENTRANCE AND SILT FENCE ARE REQUIRED TO BE INSTALLED PRIOR TO CONSTRUCTION. SEE SOIL EROSION PLAN.

811
Know what's **below**
Call before you dig.

DEMOLITION NOTES

1. THE WORK REFLECTED ON THE DEMOLITION PLAN IS TO PROVIDE GENERAL INFORMATION TOWARDS THE EXISTING ITEMS TO BE DEMOLISHED AND/OR REMOVED. THE CONTRACTOR IS RESPONSIBLE TO REVIEW THE ENTIRE PLAN SET AND ASSOCIATED REPORTS/REFERENCE DOCUMENTS INCLUDING ALL DEMOLITION ACTIVITIES AND INCIDENTAL TASKS NECESSARY TO COMPLETE THE SITE IMPROVEMENTS.
2. THE CONTRACTOR IS RESPONSIBLE TO DETERMINE THE MEANS AND METHODS OF DEMOLITION ACTIVITIES.
3. EXPLOSIVES SHALL NOT BE USED UNLESS WRITTEN CONSENT FROM BOTH THE OWNER AND ANY APPLICABLE GOVERNING AGENCY IS OBTAINED. BEFORE THE START OF ANY EXPLOSIVE PROGRAM, THE CONTRACTOR IS RESPONSIBLE TO OBTAIN ALL LOCAL, STATE, AND FEDERAL PERMITS. ADDITIONALLY, THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL SEISMIC TESTING AS REQUIRED AND ANY DAMAGES AS THE RESULT OF SAID DEMOLITION PRACTICES.
4. ALL DEMOLITION ACTIVITIES SHALL BE PERFORMED IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL CODES. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL UTILITIES ARE DISCONNECTED IN ACCORDANCE WITH THE UTILITY AUTHORITY'S REQUIREMENTS PRIOR TO STARTING THE DEMOLITION OF ANY STRUCTURE. ALL EXCAVATIONS ASSOCIATED WITH DEMOLISHED STRUCTURES OR REMOVED TANKS SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED TO SUPPORT SITE AND BUILDING IMPROVEMENTS. A GEOTECHNICAL ENGINEER SHOULD BE PRESENT DURING BACKFILLING ACTIVITIES TO OBSERVE AND CERTIFY THAT BACKFILL MATERIAL WAS COMPACTED TO A SUITABLE CONDITION.
5. DEMOLISHED DEBRIS SHALL NOT BE BURIED ON SITE. ALL WASTE/DEBRIS GENERATED FROM DEMOLITION ACTIVITIES SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN ALL RECORDS OF THE DISPOSAL TO DEMONSTRATE COMPLIANCE WITH THE ABOVE REGULATIONS.

20' 0' 20' 40'
GRAPHIC SCALE IN FEET
1" = 20'

ISSUE	DATE	BY	DESCRIPTION
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607 Shelby Suite 200, Detroit, MI 48226
Phone 248.247.1115

WHITEWATER EXPRESS CAR WASH

SITE DEVELOPMENT PLANS

EROP LLC

PROPOSED CAR WASH

PARCEL ID: 4715-22-400-024
VACANT E-M36
HAMBURG TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN

STATE OF MICHIGAN
JONATHAN REID COOKSEY
ENGINEER
PROFESSIONAL ENGINEER

STONEFIELD
engineering & design

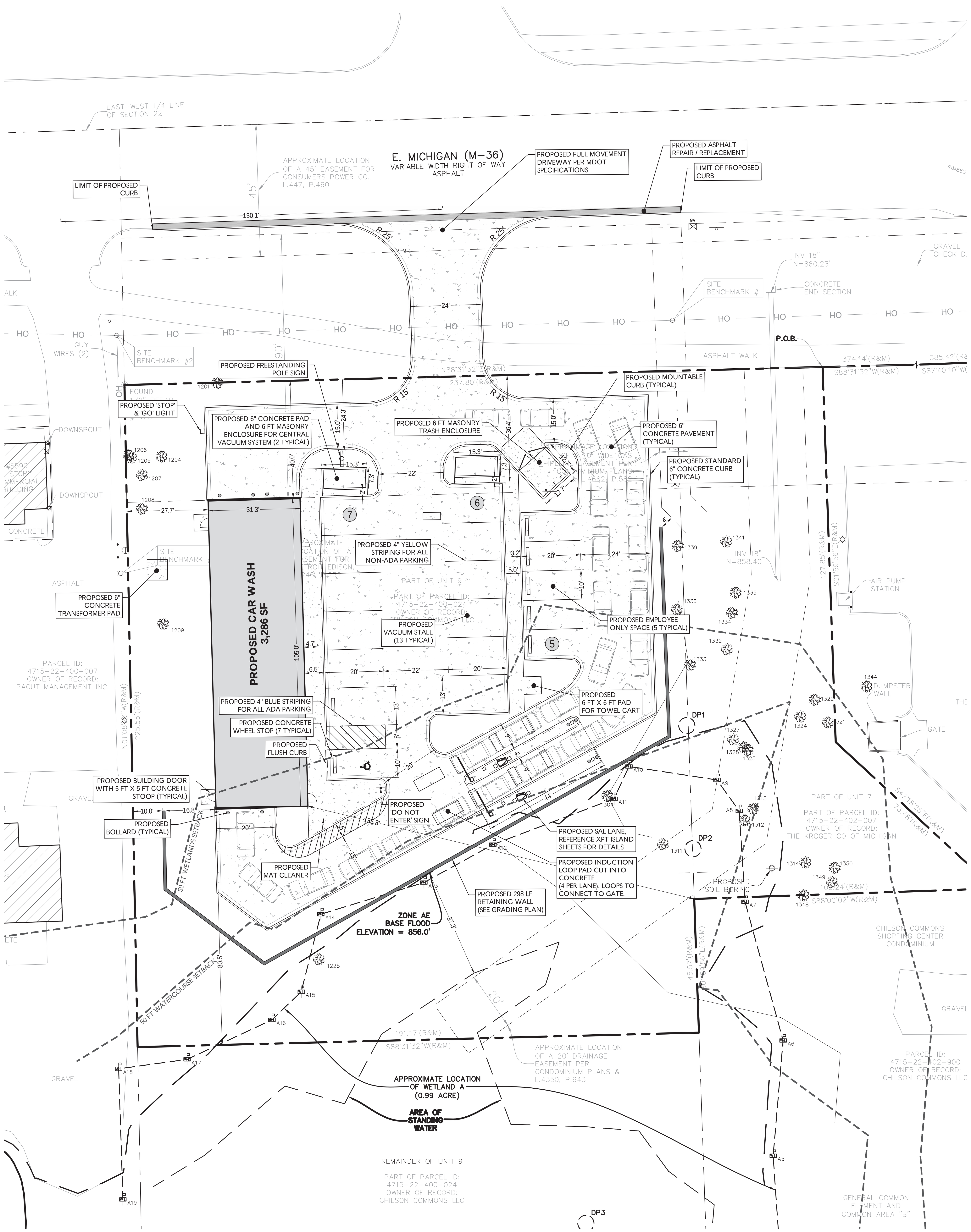
SCALE: 1" = 20' PROJECT ID: DET-220416

TITLE:

DEMOLITION PLAN

DRAWING:

C-2



LAND USE AND ZONING

PARCEL ID: 4715-22-400-024 (UNIT 9)

WATERFRONT RESIDENTIAL (WFR) & HARDSHIP PLANNED UNIT DEVELOPMENT (HPUD)

PROPOSED USE

CAR WASH — SPECIAL LAND USE

ZONING REQUIREMENT	REQUIRED (WFR)	REQUIRED (HPUD)	PROPOSED
MINIMUM LOT AREA	43,560 SF	N/A	53,075 SF
MINIMUM LOT WIDTH AT STREET	125 FT	N/A	237.8 FT
MINIMUM LOT COVERAGE (BUILDING)	35% (18,576 SF)	N/A	6.2% (3,286 SF)
MINIMUM LOT COVERAGE (PARKING)	40% (21,230 SF)	N/A	35% (18,607 SF)
MAXIMUM BUILDING HEIGHT	2.5 STORIES / 35 FT	N/A	1 STORY / 22 FT
MINIMUM FRONT YARD SETBACK	25 FT	N/A	40.0 FT
MINIMUM SIDE YARD SETBACK	10 FT	N/A	27.7 FT
MINIMUM REAR YARD SETBACK	30 FT	N/A	80.5 FT
MINIMUM PARKING SETBACK (M-36 ROW)	N/A	50 FT (1)	36.4 (W)
M-36 ACCESS	N/A	NO NEW CURB CUTS ON M-36, SHARE WITH CHILSON COMMONS	(W) (DENIED BY BOTH ADJACENT PROPERTIES, NO ALTERNATIVE, MDOT APPROVED ACCESS)
WETLANDS SETBACK	50 FT	50 FT	0.0 FT (W)(2)
WATERCOURSE SETBACK	50 FT	50 FT	37.3 FT (W)(2)

(1) OR MUST BE LOCATED SOUTH OF PROPOSED BUILDING

(2) THE ZONING ADMINISTRATOR OR BODY UNDERTAKING PLAN REVIEW MAY REDUCE OR ELIMINATE THE FOLLOWING SETBACKS UPON REVIEW OF A REQUEST WHICH DETAILS THE FUTURE PROTECTION OF THE NATURAL FEATURE AND OR MITIGATION OF THE NATURAL FEATURE.

(W) WAIVER / MODIFICATION TO BE REQUESTED AS PERMITTED BY THE HARDSHIP PLANNED UNIT DEVELOPMENT

OFF-STREET PARKING REQUIREMENTS

CODE SECTION	REQUIRED	PROPOSED
§36-330.c	**MINIMUM VECHICLE PARKING SPACE:** 200 SF	200 SF
§36-334.23	**GASOLINE FILLING AND SERVICE STATIONS:** 1 SPACE PER SERVICE STALL; 1 WASH LANE = 1 SPACE; PLUS; 1 SPACE PER EMPLOYEE; 5 EMP. = 5 SPACES; **TOTAL: 1 + 5 = 6 SPACES**	13 VACUUMS +5 EMPLOYEE; 18 TOTAL SPACES
§36-339.a.1.	**DRIVEWAY SPACING (45 MPH):** 300 FT	130.1 FT (W)

(W) WAIVER / MODIFICATION TO BE REQUESTED AS PERMITTED BY THE HARDSHIP PLANNED UNIT DEVELOPMENT

SIGNAGE REQUIREMENTS

CODE SECTION	REQUIRED	PROPOSED
§ 36.472.f.	**ROW SETBACK:** 10 FT	10 FT
§ 36.472.q.2.	**POLE SIGN MAX HEIGHT:** 15 FT	15 FT
§ 36.477.1.a.	**POLE SIGN MAX AREA (COMMERCIAL):** 25 SF	25 SF
§ 36.474.2.	**PARKING LOT SIGNS MAX AREA:** 1.5 SF	1.5 SF

SYMBOL / DESCRIPTION

- PROPERTY LINE
- SETBACK LINE
- SAWCUT LINE
- PROPOSED CURB
- PROPOSED FLUSH CURB
- PROPOSED MOUNTABLE CURB
- PROPOSED SIGNS / BOLLARDS
- PROPOSED BUILDING
- PROPOSED CONCRETE
- PROPOSED AREA LIGHT
- PROPOSED RETAINING WALL
- PROPOSED GUIDERAIL
- PROPOSED BUILDING DOORS

GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY AND FAMILIARIZE THEMSELVES WITH THE EXISTING SITE CONDITIONS AND THE PROPOSED SCOPE OF WORK (INCLUDING DIMENSIONS, LAYOUT, ETC.) PRIOR TO INITIATING THE IMPROVEMENTS IDENTIFIED WITHIN THESE DOCUMENTS. SHOULD ANY DISCREPANCY BE FOUND BETWEEN THE EXISTING SITE CONDITIONS AND THE PROPOSED WORK THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. PRIOR TO THE START OF CONSTRUCTION.
2. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND ENSURE THAT ALL REQUIRED APPROVALS HAVE BEEN OBTAINED PRIOR TO THE START OF CONSTRUCTION. COPIES OF ALL REQUIRED PERMITS AND APPROVALS SHALL BE KEPT ON SITE AT ALL TIMES DURING CONSTRUCTION.
3. ALL CONTRACTORS WILL, TO THE FULLEST EXTENT PERMITTED BY LAW, INDEMNIFY AND HOLD HARMLESS STONEFIELD ENGINEERING & DESIGN, LLC. AND IT'S SUB-CONSULTANTS FROM AND AGAINST ANY DAMAGES AND LIABILITIES INCLUDING ATTORNEY'S FEES ARISING OUT OF CLAIMS BY EMPLOYEES OF THE CONTRACTOR IN ADDITION TO CLAIMS CONNECTED TO THE PROJECT AS A RESULT OF NOT CARRYING THE PROPER INSURANCE FOR WORKERS COMPENSATION, LIABILITY INSURANCE, AND LIMITS OF COMMERCIAL GENERAL LIABILITY INSURANCE.
4. THE CONTRACTOR SHALL NOT DEVIATE FROM THE PROPOSED IMPROVEMENTS IDENTIFIED WITHIN THIS PLAN SET UNLESS APPROVAL IS PROVIDED IN WRITING BY STONEFIELD ENGINEERING & DESIGN, LLC.
5. THE CONTRACTOR IS RESPONSIBLE TO DETERMINE THE MEANS AND METHODS OF CONSTRUCTION.
6. THE CONTRACTOR SHALL NOT PERFORM ANY WORK OR CAUSE DISTURBANCE ON A PRIVATE PROPERTY NOT CONTROLLED BY THE PERSON OR ENTITY WHO HAS AUTHORIZED THE WORK WITHOUT PRIOR WRITTEN CONSENT FROM THE OWNER OF THE PRIVATE PROPERTY.
7. THE CONTRACTOR IS RESPONSIBLE TO RESTORE ANY DAMAGED OR UNDERMINED STRUCTURE OR SITE FEATURE THAT IS IDENTIFIED TO REMAIN ON THE PLAN SET. ALL REPAIRS SHALL USE NEW MATERIALS TO RESTORE THE FEATURE TO ITS EXISTING CONDITION AT THE CONTRACTORS EXPENSE.
8. CONTRACTOR IS RESPONSIBLE TO PROVIDE THE APPROPRIATE SHOP DRAWINGS, PRODUCT DATA, AND OTHER REQUIRED SUBMITTALS FOR REVIEW. STONEFIELD ENGINEERING & DESIGN, LLC. WILL REVIEW THE SUBMITTALS IN ACCORDANCE WITH THE DESIGN INTENT AS REFLECTED WITHIN THE PLAN SET.
9. THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
10. THE CONTRACTOR IS REQUIRED TO PERFORM ALL WORK IN THE PUBLIC RIGHT-OF-WAY IN ACCORDANCE WITH THE APPROPRIATE GOVERNING AUTHORITY AND SHALL BE RESPONSIBLE FOR THE PROCUREMENT OF STREET OPENING PERMITS.
11. THE CONTRACTOR IS REQUIRED TO RETAIN AN OSHA CERTIFIED SAFETY INSPECTOR TO BE PRESENT ON SITE AT ALL TIMES DURING CONSTRUCTION & DEMOLITION ACTIVITIES.
12. SHOULD AN EMPLOYEE OF STONEFIELD ENGINEERING & DESIGN, LLC. BE PRESENT ON SITE AT ANY TIME DURING CONSTRUCTION, IT DOES NOT RELIEVE THE CONTRACTOR OF ANY OF THE RESPONSIBILITIES AND REQUIREMENTS LISTED IN THE NOTES WITHIN THIS PLAN SET.

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SITE DEVELOPMENT PLANS

EROP LLC

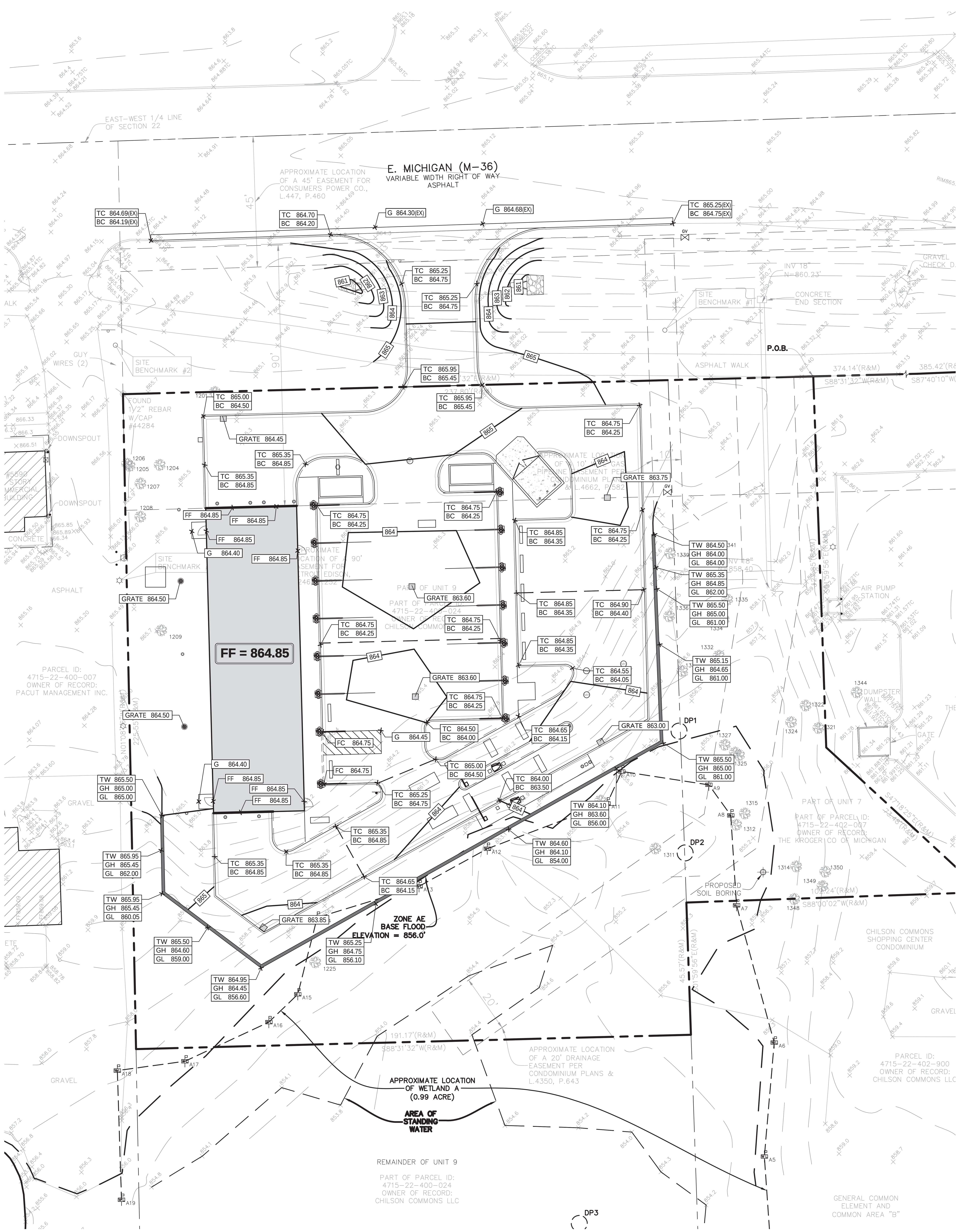
PROPOSED CAR WASH

PARCEL ID: 4715-22-400-024
VACANT E-M36
HAMBURG TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN

SCALE: 1" = 20' | PROJECT ID: DET-220416

TITLE: SITE PLAN

DRAWING: C-3



SYMBOL	DESCRIPTION
	PROPERTY LINE
100	PROPOSED GRADING CONTOUR
RIDGELINE	PROPOSED GRADING RIDGELINE
	PROPOSED DIRECTION OF DRAINAGE FLOW
G 100.00	PROPOSED GRADE SPOT SHOT
TC 100.50 / BC 100.00	PROPOSED TOP OF CURB / BOTTOM OF CURB SPOT SHOT
FC 100.00	PROPOSED FLUSH CURB SPOT SHOT
TW 102.00 / BW 100.00	PROPOSED TOP OF WALL / BOTTOM OF WALL SPOT SHOT

GRADING NOTES

1. ALL SOIL AND MATERIAL REMOVED FROM THE SITE SHALL BE DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS. ANY GROUNDWATER DE-WATERING PRACTICES SHALL BE PERFORMED UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL. THE CONTRACTOR IS REQUIRED TO OBTAIN ALL NECESSARY PERMITS FOR THE DISCHARGE OF DE-WATERED GROUNDWATER. ALL SOIL IMPORTED TO THE SITE SHALL BE CERTIFIED CLEAN FILL. CONTRACTOR SHALL MAINTAIN RECORDS OF ALL FILL MATERIALS BROUGHT TO THE SITE.
2. THE CONTRACTOR IS REQUIRED TO PROVIDE TEMPORARY AND/OR PERMANENT SHORING WHERE REQUIRED DURING EXCAVATION ACTIVITIES, INCLUDING BUT NOT LIMITED TO UTILITY TRENCHES, TO ENSURE THE STRUCTURAL INTEGRITY OF NEARBY STRUCTURES AND STABILITY OF THE SURROUNDING SOILS.
3. PROPOSED TOP OF CURB ELEVATIONS ARE GENERALLY 4 INCHES TO 7 INCHES ABOVE EXISTING GRADES UNLESS OTHERWISE NOTED. THE CONTRACTOR WILL SUPPLY ALL STAKEOUT CURB GRADE SHEETS TO STONEFIELD ENGINEERING & DESIGN, LLC. FOR REVIEW AND APPROVAL PRIOR TO POURING CURBS.
4. THE CONTRACTOR IS RESPONSIBLE TO SET ALL PROPOSED UTILITY COVERS AND RESET ALL EXISTING UTILITY COVERS WITHIN THE PROJECT LIMITS TO PROPOSED GRADE IN ACCORDANCE WITH ANY APPLICABLE MUNICIPAL, COUNTY, STATE AND/OR UTILITY AUTHORITY REGULATIONS.
5. MINIMUM SLOPE REQUIREMENTS TO PREVENT PONDING SHALL BE AS FOLLOWS:
   - CURB GUTTER: 0.50%
   - CONCRETE SURFACES: 1.00%
   - ASPHALT SURFACES: 1.00%
6. A MINIMUM SLOPE OF 1.00% SHALL BE PROVIDED AWAY FROM ALL BUILDINGS. THE CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE FROM THE BUILDING IS ACHIEVED AND SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. IF THIS CONDITION CANNOT BE MET.
7. FOR PROJECTS WHERE BASEMENTS ARE PROPOSED, THE DEVELOPER IS RESPONSIBLE TO DETERMINE THE DEPTH TO GROUNDWATER AT THE LOCATION OF THE PROPOSED STRUCTURE. IF GROUNDWATER IS ENCOUNTERED WITHIN THE BASEMENT AREA, SPECIAL CONSTRUCTION METHODS SHALL BE UTILIZED AND REVIEWED/APPROVED BY THE CONSTRUCTION CODE OFFICIAL. IF SUMP PUMPS ARE UTILIZED, ALL DISCHARGES SHALL BE CONNECTED DIRECTLY TO THE PUBLIC STORM SEWER SYSTEM WITH APPROVAL FROM THE GOVERNING STORM SEWER SYSTEM AUTHORITY.

ADA NOTES

1. THE CONTRACTOR SHALL MAINTAIN A MAXIMUM 2.00% SLOPE IN ANY DIRECTION WITHIN THE ADA PARKING SPACES AND ACCESS AISLES.
2. THE CONTRACTOR SHALL PROVIDE COMPLIANT SIGNAGE AT ALL ADA PARKING AREAS IN ACCORDANCE WITH STATE GUIDELINES.
3. THE CONTRACTOR SHALL MAINTAIN A MAXIMUM 5.00% RUNNING SLOPE AND A MAXIMUM OF 2.00% CROSS SLOPE ALONG WALKWAYS WITHIN THE ACCESSIBLE PATH OF TRAVEL (SEE THE SITE PLAN FOR THE LOCATION OF THE ACCESSIBLE PATH). THE CONTRACTOR IS RESPONSIBLE TO ENSURE THE ACCESSIBLE PATH OF TRAVEL IS 36 INCHES WIDE OR GREATER UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET.
4. THE CONTRACTOR SHALL MAINTAIN A MAXIMUM 2.00% SLOPE IN ANY DIRECTION AT ALL LANDINGS. LANDINGS INCLUDE, BUT ARE NOT LIMITED TO, THE TOP AND BOTTOM OF AN ACCESSIBLE RAMP, AT ACCESSIBLE BUILDING ENTRANCES, AT AN AREA IN FRONT OF A WALK-UP ATM, AND AT TURNING SPACES ALONG THE ACCESSIBLE PATH OF TRAVEL. THE LANDING AREA SHALL HAVE A MINIMUM CLEAR AREA OF 60 INCHES BY 60 INCHES UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET.
5. THE CONTRACTOR SHALL MAINTAIN A MAXIMUM 8.33% RUNNING SLOPE AND A MAXIMUM 2.00% CROSS SLOPE ON ANY CURB RAMPS ALONG THE ACCESSIBLE PATH OF TRAVEL. WHERE PROVIDED, CURB RAMP FLARES SHALL NOT HAVE A SLOPE GREATER THAN 10.00% IF A LANDING AREA IS PROVIDED AT THE TOP OF THE RAMP. FOR ALTERATIONS, A CURB RAMP FLARES SHALL NOT HAVE A SLOPE GREATER THAN 8.33% IF A LANDING AREA IS NOT PROVIDED AT THE TOP OF THE RAMP. CURBS RAMPS SHALL NOT RISE MORE THAN 6 INCHES IN ELEVATION WITHOUT A HANDRAIL. THE CLEAR WIDTH OF A CURB RAMP SHALL BE NO LESS THAN 36 INCHES WIDE.
6. ACCESSIBLE RAMPS WITH A RISE GREATER THAN 6 INCHES SHALL CONTAIN COMPLIANT HANDRAILS ON BOTH SIDES OF THE RAMP AND SHALL NOT RISE MORE THAN 30” IN ELEVATION WITHOUT A LANDING AREA IN BETWEEN RAMP RUNS. LANDING AREAS SHALL ALSO BE PROVIDED AT THE TOP AND BOTTOM OF THE RAMP.
7. A SLIP RESISTANT SURFACE SHALL BE CONSTRUCTED ALONG THE ACCESSIBLE PATH AND WITHIN ADA PARKING AREAS.
8. THE CONTRACTOR SHALL ENSURE A MAXIMUM OF ¼ INCHES VERTICAL CHANGE IN LEVEL ALONG THE ACCESSIBLE PATH. WHERE A CHANGE IN LEVEL BETWEEN ¼ INCHES AND ½ INCHES EXISTS, CONTRACTOR SHALL ENSURE THAT THE TOP ¼ INCH CHANGE IN LEVEL IS BEVELED WITH A SLOPE NOT STEEPER THAN 1 UNIT VERTICAL AND 2 UNITS HORIZONTAL (2:1 SLOPE).
9. THE CONTRACTOR SHALL ENSURE THAT ANY OPENINGS (GAPS OR HORIZONTAL SEPARATION) ALONG THE ACCESSIBLE PATH SHALL NOT ALLOW PASSAGE OF A SPHERE GREATER THAN ½ INCH.

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STATE OF MICHIGAN
JONATHAN REID COOKSEY
ENGINEER
PROFESSIONAL ENGINEER

STONEFIELD
engineering & design

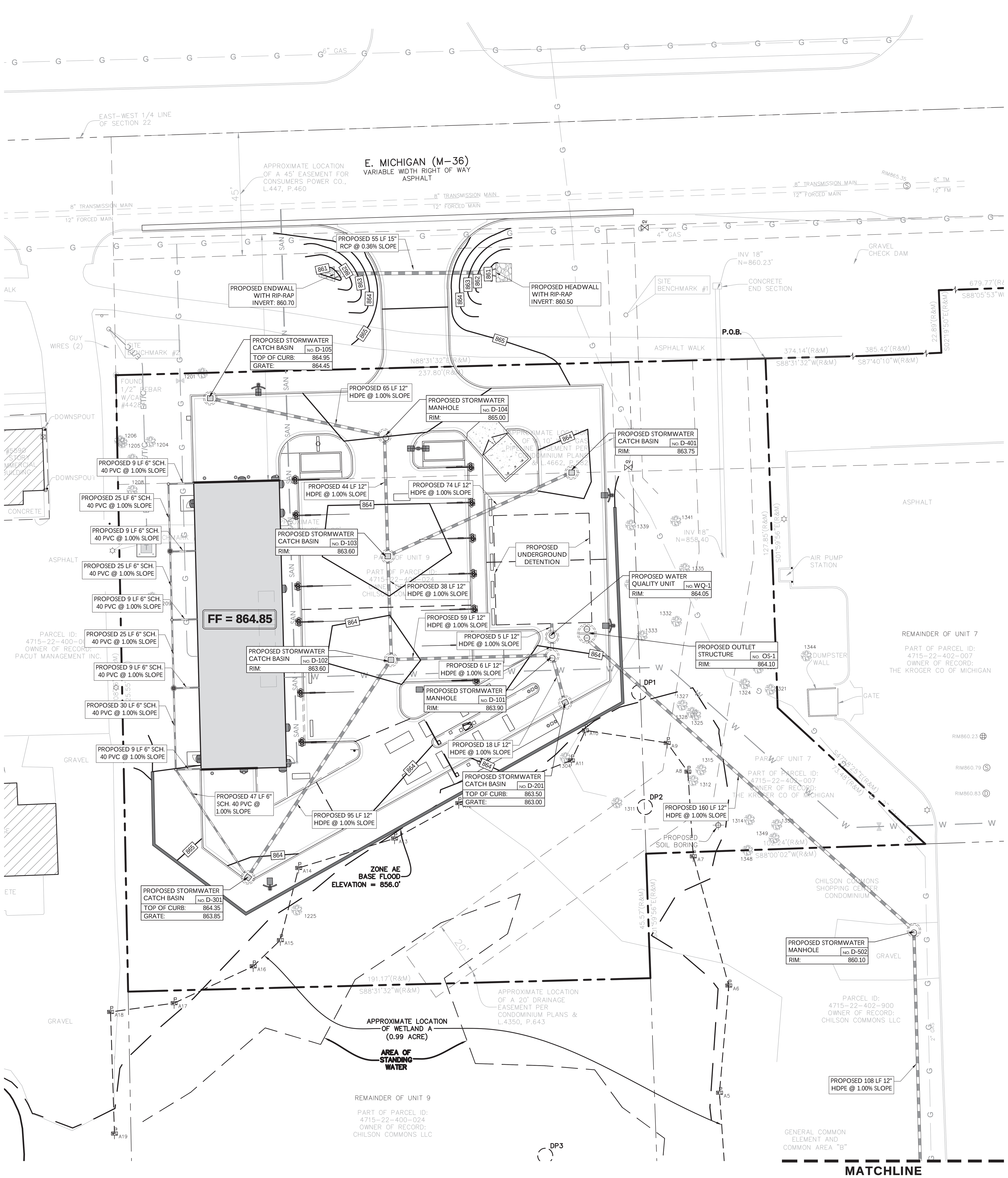
SCALE: 1" = 20' PROJECT ID: DET-220416

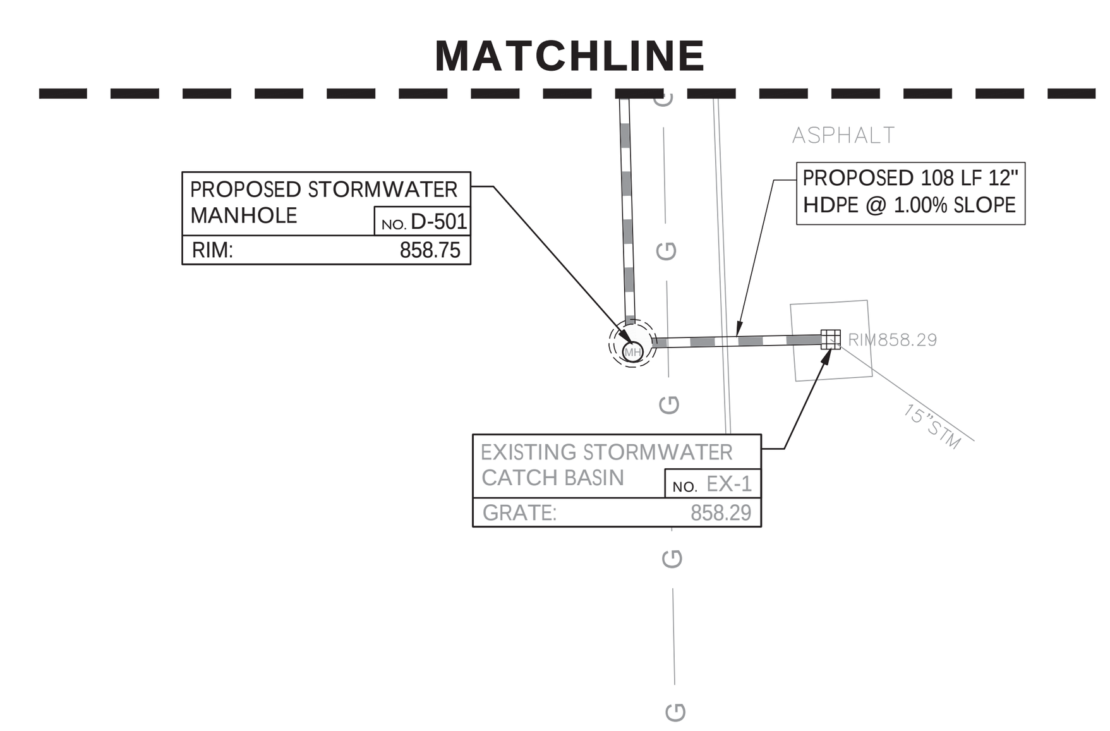
TITLE:

GRADING PLAN

DRAWING:

C-4





SYMBOL	DESCRIPTION
	PROPERTY LINE
100	PROPOSED GRADING CONTOUR
RIDGELINE	PROPOSED GRADING RIDGELINE
	PROPOSED STORMWATER STRUCTURES
	PROPOSED STORMWATER PIPING
MH / MH	PROPOSED UNDERGROUND OUTLET STRUCTURE

DRAINAGE AND UTILITY NOTES

1. THE CONTRACTOR TO PERFORM A TEST PIT PRIOR TO CONSTRUCTION (RECOMMEND 30 DAYS PRIOR) AT LOCATIONS OF EXISTING UTILITY CROSSINGS FOR STORMWATER IMPROVEMENTS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. IN WRITING.
2. CONTRACTOR SHALL START CONSTRUCTION OF STORM LINES AT THE LOWEST INVERT AND WORK UP-GRADIENT.
3. THE CONTRACTOR IS REQUIRED TO CALL THE APPROPRIATE AUTHORITY FOR NOTICE OF CONSTRUCTION/EXCAVATION AND UTILITY MARK OUT PRIOR TO THE START OF CONSTRUCTION IN ACCORDANCE WITH STATE LAW. CONTRACTOR IS REQUIRED TO CONFIRM THE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES IN THE FIELD. SHOULD A DISCREPANCY EXIST BETWEEN THE FIELD LOCATION OF A UTILITY AND THE LOCATION SHOWN ON THE PLAN SET OR SURVEY, THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. IMMEDIATELY IN WRITING.
4. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN A RECORD OF THE AS-BUILT LOCATIONS OF ALL PROPOSED UNDERGROUND INFRASTRUCTURE. THE CONTRACTOR SHALL NOTE ANY DISCREPANCIES BETWEEN THE AS-BUILT LOCATIONS AND THE LOCATIONS DEPICTED WITHIN THE PLAN SET. THIS RECORD SHALL BE PROVIDED TO THE OWNER FOLLOWING COMPLETION OF WORK.

EXCAVATION, SOIL PREPARATION, AND DEWATERING NOTES

1. THE CONTRACTOR IS REQUIRED TO REVIEW THE REFERENCED GEOTECHNICAL DOCUMENTS PRIOR TO CONSTRUCTION, THESE DOCUMENTS SHALL BE CONSIDERED A PART OF THE PLAN SET.
2. THE CONTRACTOR IS REQUIRED TO PREPARE SUBGRADE SOILS BENEATH ALL PROPOSED IMPROVEMENTS AND BACKFILL ALL EXCAVATIONS IN ACCORDANCE WITH RECOMMENDATIONS BY THE GEOTECHNICAL ENGINEER OF RECORD.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SHORING FOR ALL EXCAVATIONS AS REQUIRED. CONTRACTOR SHALL HAVE THE SHORING DESIGN PREPARED BY A QUALIFIED PROFESSIONAL. SHORING DESIGNS SHALL BE SUBMITTED TO STONEFIELD ENGINEERING & DESIGN, LLC. AND THE OWNER PRIOR TO THE START OF CONSTRUCTION.
4. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL OPEN EXCAVATIONS ARE PERFORMED AND PROTECTED IN ACCORDANCE WITH THE LATEST OSHA REGULATIONS.
5. THE CONTRACTOR IS RESPONSIBLE FOR ANY DEWATERING DESIGN AND OPERATIONS, AS REQUIRED, TO CONSTRUCT THE PROPOSED IMPROVEMENTS. THE CONTRACTOR SHALL OBTAIN ANY REQUIRED PERMITS FOR DEWATERING OPERATIONS AND GROUNDWATER DISPOSAL.

STORMWATER INFILTRATION BMP CONSTRUCTION NOTES

1. PRIOR TO THE START OF CONSTRUCTION, ANY AREA DESIGNATED TO BE USED FOR AN INFILTRATION BMP (E.G. BASIN, BIORETENTION AREA, ETC.) SHALL BE FENCED OFF AND SHALL NOT BE UTILIZED AS STORAGE FOR CONSTRUCTION EQUIPMENT OR AS A STOCKPILE AREA FOR CONSTRUCTION MATERIALS. NO ACTIVITY SHALL BE PERMITTED WITHIN THE INFILTRATION BASIN AREA UNLESS RELATED TO THE CONSTRUCTION OF THE INFILTRATION BASIN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY ALL SUBCONTRACTORS OF BASIN AREA RESTRICTIONS.
2. THE CONTRACTOR SHALL MAKE EVERY EFFORT, WHERE PRACTICAL, TO AVOID SUBGRADE SOIL COMPACTION IN THE AREAS DESIGNATED TO BE USED FOR AN INFILTRATION BMP.
3. ALL EXCAVATION WITHIN THE LIMITS OF ANY INFILTRATION BMP SHALL BE PERFORMED WITH THE LIGHTEST PRACTICAL EXCAVATION EQUIPMENT. ALL EXCAVATION EQUIPMENT SHALL BE PLACED OUTSIDE THE LIMITS OF THE BASIN WHERE FEASIBLE. THE USE OF LIGHT-WEIGHT, RUBBER-TIRED EQUIPMENT (LESS THAN 8 PSI APPLIED TO THE GROUND SURFACE) IS RECOMMENDED WITHIN THE BASIN LIMITS.
4. THE SEQUENCE OF SITE CONSTRUCTION SHALL BE COORDINATED WITH BASIN CONSTRUCTION TO ADHERE TO SEQUENCING LIMITATIONS.
5. DURING THE FINAL GRADING OF AN INFILTRATION BASIN, THE BOTTOM OF THE BASIN SHALL BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW AND THEN SMOOTHED OUT WITH A LEVELING DRAW OR EQUIVALENT GRADING EQUIPMENT. ALL GRADING EQUIPMENT SHALL BE LOCATED OUTSIDE OF THE BASIN BOTTOM WHERE FEASIBLE.
6. FOLLOWING CONSTRUCTION OF AN INFILTRATION BASIN, SOIL INFILTRATION TESTING BY A LICENSED GEOTECHNICAL ENGINEER IS REQUIRED TO CERTIFY COMPLIANCE WITH THE DESIGN INFILTRATION RATES IN ACCORDANCE WITH APPENDIX E OF THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION'S BEST MANAGEMENT PRACTICES MANUAL, LATEST EDITION. IF THE FIELD INFILTRATION RATES ARE LOWER THAN THE RATE USED DURING DESIGN, THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. IN WRITING IMMEDIATELY TO DETERMINE THE APPROPRIATE COURSE OF ACTION.
7. THE CONTRACTOR SHALL NOTIFY THE MUNICIPALITY TO DETERMINE IF WITNESS TESTING IS REQUIRED DURING INFILTRATION BASIN EXCAVATION AND/OR SOIL INFILTRATION TESTING.

STORMWATER UNDERGROUND BMP CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL INSTALL AND BACKFILL THE UNDERGROUND BMP IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
2. UNDERGROUND BASINS SHALL UTILIZE A STONE BACKFILL WITH A MINIMUM VOID RATIO OF 40%.
3. NO CONSTRUCTION LOADING OVER UNDERGROUND BASINS IS PERMITTED UNTIL BACKFILL IS COMPLETE PER THE MANUFACTURER'S SPECIFICATIONS. NO VEHICLES SHALL BE STAGED OR OPERATE FROM A FIXED POSITION OVER THE BASIN.

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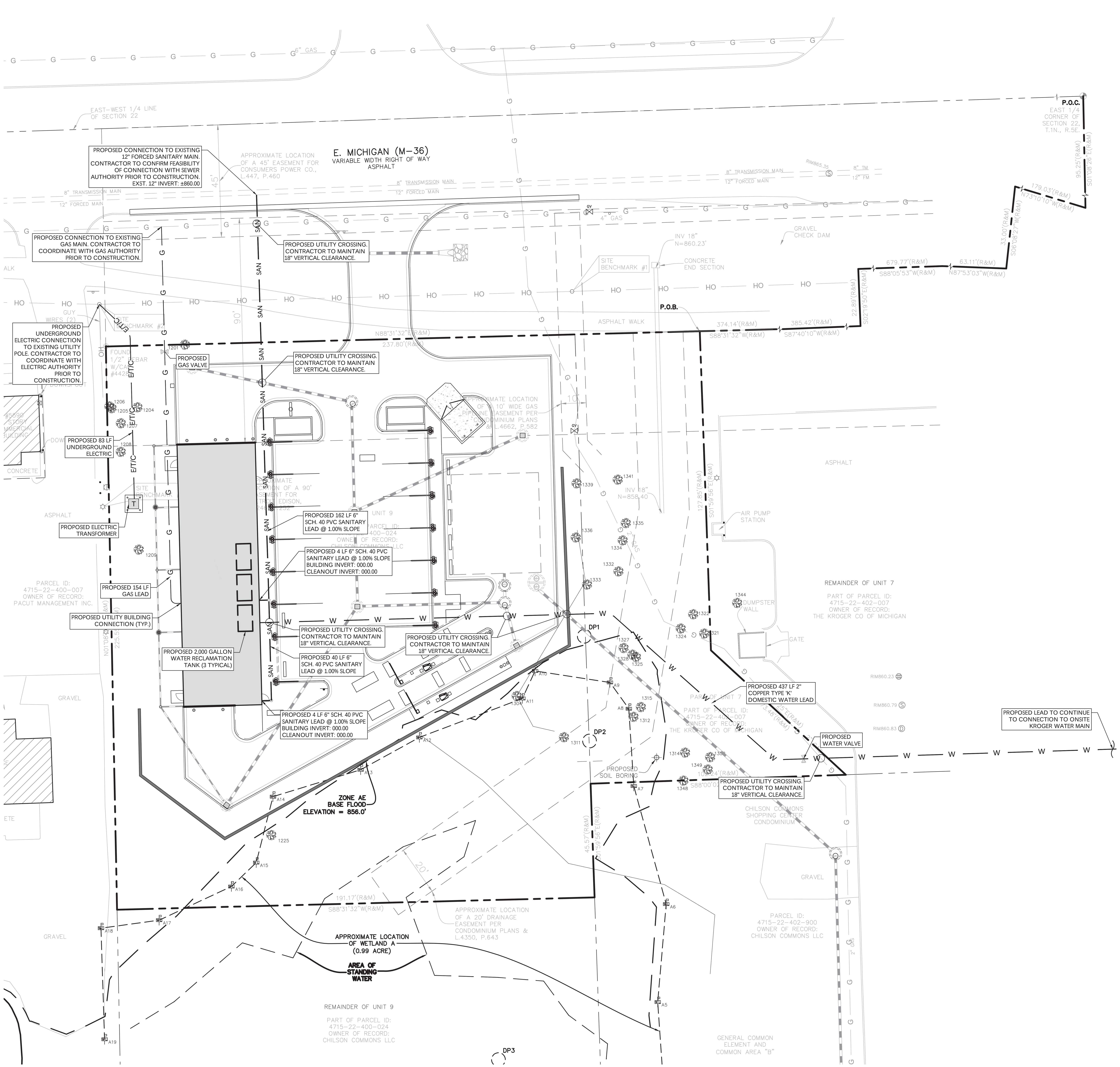
engineering & design

SCALE: 1" = 20'
PROJECT ID: DET-220416

TITLE:
STORMWATER MANAGEMENT PLAN

DRAWING:
C-5



SYMBOL	DESCRIPTION
	PROPERTY LINE
SAN	PROPOSED SANITARY LATERAL
W	PROPOSED DOMESTIC WATER SERVICE
E/T/C	PROPOSED ELECTRICAL/DATA CONDUITS
G	PROPOSED GAS LINE
	PROPOSED VALVE
	PROPOSED WATER TEE / BEND
	PROPOSED SANITARY MANHOLE / CLEANOUT
T	PROPOSED TRANSFORMER ON CONCRETE PAD WITH BOLLARDS

DRAINAGE AND UTILITY NOTES

1. THE CONTRACTOR IS REQUIRED TO CALL THE APPROPRIATE AUTHORITY FOR NOTICE OF CONSTRUCTION/EXCAVATION AND UTILITY MARK OUT PRIOR TO THE START OF CONSTRUCTION IN ACCORDANCE WITH STATE LAW. CONTRACTOR IS REQUIRED TO CONFIRM THE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES IN THE FIELD. SHOULD A DISCREPANCY EXIST BETWEEN THE FIELD LOCATION OF A UTILITY AND THE LOCATION SHOWN ON THE PLAN SET OR SURVEY, THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. IMMEDIATELY IN WRITING.
2. THE CONTRACTOR IS RESPONSIBLE TO PROTECT AND MAINTAIN IN OPERATION ALL UTILITIES NOT DESIGNATED TO BE REMOVED.
3. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO ANY EXISTING UTILITY IDENTIFIED TO REMAIN WITHIN THE LIMITS OF THE PROPOSED WORK DURING CONSTRUCTION.
4. A MINIMUM HORIZONTAL SEPARATION OF 10 FEET IS REQUIRED BETWEEN ANY SANITARY SEWER SERVICE AND ANY WATER LINES. IF THIS SEPARATION CANNOT BE PROVIDED, A CONCRETE ENCASEMENT SHALL BE UTILIZED FOR THE SANITARY SEWER SERVICE AS APPROVED BY STONEFIELD ENGINEERING & DESIGN, LLC.
5. ALL WATER LINES SHALL BE VERTICALLY SEPARATED ABOVE SANITARY SEWER LINES BY A MINIMUM DISTANCE OF 18 INCHES. IF THIS SEPARATION CANNOT BE PROVIDED, A CONCRETE ENCASEMENT SHALL BE UTILIZED FOR THE SANITARY SEWER SERVICE AS APPROVED BY STONEFIELD ENGINEERING & DESIGN, LLC.
6. THE CONTRACTOR TO PERFORM A TEST PIT PRIOR TO CONSTRUCTION (RECOMMEND 30 DAYS PRIOR) AT LOCATIONS OF EXISTING UTILITY CROSSINGS FOR WATER AND SANITARY SEWER CONNECTION IMPROVEMENTS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. IN WRITING.
7. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING GAS, ELECTRIC AND TELECOMMUNICATION CONNECTIONS WITH THE APPROPRIATE GOVERNING AUTHORITY.
8. CONTRACTOR SHALL START CONSTRUCTION OF ANY GRAVITY SEWER AT THE LOWEST INVERT AND WORK UP-GRADIENT.
9. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN A RECORD SET OF PLANS REFLECTING THE LOCATION OF EXISTING UTILITIES THAT HAVE BEEN CAPPED, ABANDONED, OR RELOCATED BASED ON THE DEMOLITION/REMOVAL ACTIVITIES REQUIRED IN THIS PLAN SET. THIS DOCUMENT SHALL BE PROVIDED TO THE OWNER FOLLOWING COMPLETION OF WORK.
10. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN A RECORD OF THE AS-BUILT LOCATIONS OF ALL PROPOSED UNDERGROUND INFRASTRUCTURE. THE CONTRACTOR SHALL NOTE ANY DISCREPANCIES BETWEEN THE AS-BUILT LOCATIONS AND THE LOCATIONS DEPICTED WITHIN THE PLAN SET. THIS RECORD SHALL BE PROVIDED TO THE OWNER FOLLOWING COMPLETION OF WORK.

20' 0' 20' 40'
GRAPHIC SCALE IN FEET
1" = 20'

ISSUE	DATE	BY	DESCRIPTION
3	09/26/2023	EM	REVISED WATER AND STORM CONNECTIONS
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NOT APPROVED FOR CONSTRUCTION

STONEFIELD engineering & design
Detroit, MI · New York, NY · Boston, MA
Princeton, NJ · Tampa, FL · Rutherford, NJ
www.stonefieldeng.com
607 Shelby Suite 200, Detroit, MI 48226
Phone 248.247.1115

SITE DEVELOPMENT PLANS

EROP LLC

PROPOSED CAR WASH

PARCEL ID: 4715-22-400-024
VACANT E-M36
HAMBURG TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN

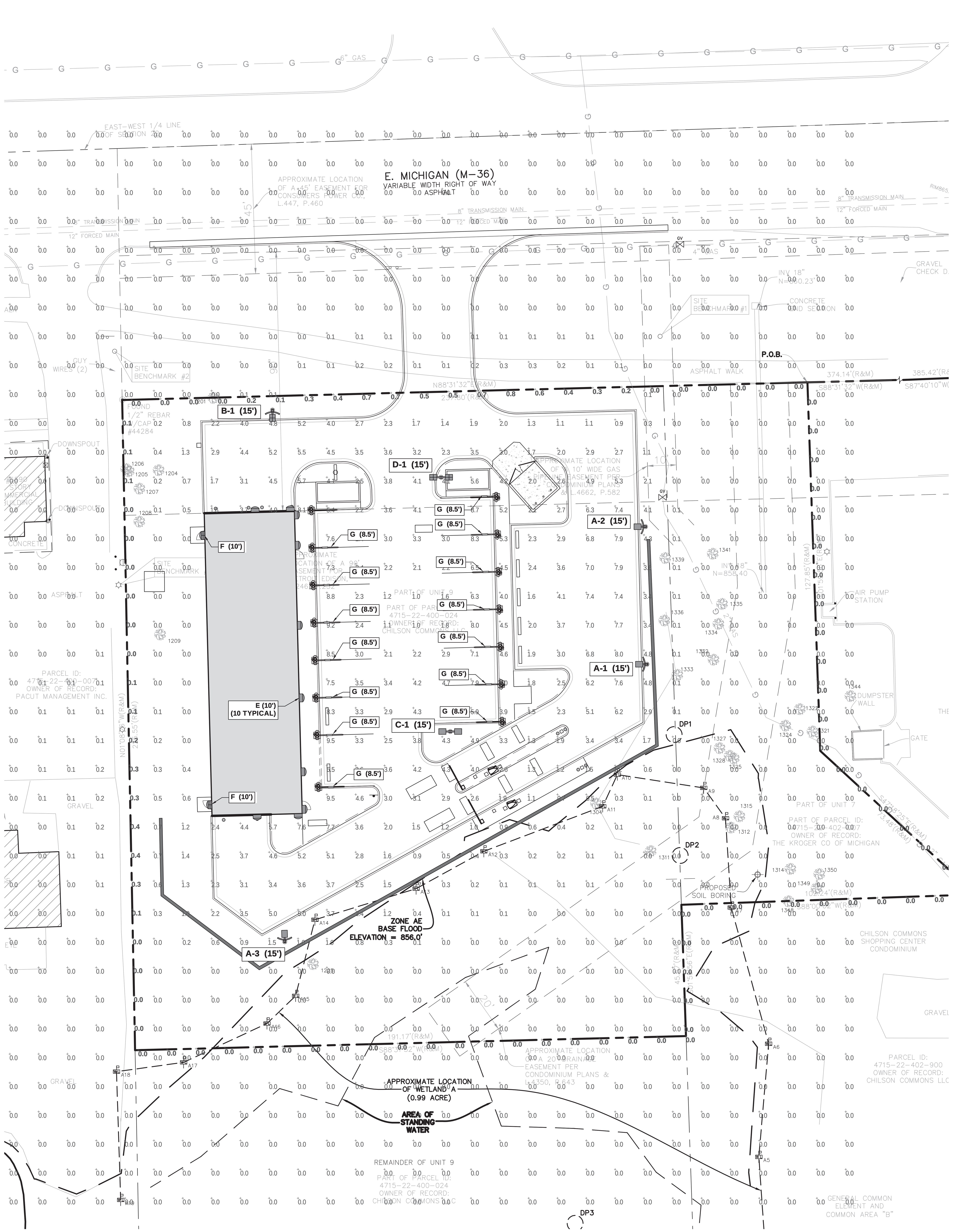
STATE OF MICHIGAN · JONATHAN REID COOKSEY ENGINEER · LICENSED PROFESSIONAL ENGINEER
REID COOKSEY, P.E.
MICHIGAN LICENSE No. 6201059128
LICENSED PROFESSIONAL ENGINEER

STONEFIELD engineering & design

SCALE: 1" = 20' | PROJECT ID: DET-220416

TITLE: UTILITY PLAN

DRAWING: C-6



PROPOSED LUMINAIRE SCHEDULE							
SYMBOL	LABEL	QUANTITY	LIGHTING	DISTRIBUTION	LLF	MANUFACTURER	IES FILE
	A	3	MIRADA MEDIUM LED AREA LIGHT 18L LUMEN PACKAGE W/ HOUSE-SIDE SHIELD - SINGLE	FT	0.90	LSI INDUSTRIES	MRM-LED-18L-SIL-FT-30-70CRI-IL
	B	1	MIRADA MEDIUM LED AREA LIGHT 9L LUMEN PACKAGE W/ HOUSE-SIDE SHIELD - SINGLE	FT	0.90	LSI INDUSTRIES	MRM-LED-09L-SIL-FT-30-70CRI-IL
	C	1	MIRADA MEDIUM LED AREA LIGHT 18L LUMEN PACKAGE W/ HOUSE-SIDE SHIELD - DOUBLE @ 180°	FT	0.90	LSI INDUSTRIES	MRM-LED-18L-SIL-FT-30-70CRI-IL
	D	1	MIRADA MEDIUM LED AREA LIGHT 9L LUMEN PACKAGE W/ HOUSE-SIDE SHIELD - DOUBLE @180°	FT	0.90	LSI INDUSTRIES	MRM-LED-09L-SIL-FT-30-70CRI-IL
	E	10	MIRADA SMALL OUTDOOR LED WALL SCONCE 2L LUMEN PACKAGE	FT	0.90	LSI INDUSTRIES	XWS-LED-02L-SIL-2-30-70CRI
	F	2	MIRADA MEDIUM OUTDOOR LED WALL SCONCE 8L LUMEN PACKAGE (*)	FT	0.90	LSI INDUSTRIES	XWM-FT-LED-08L-30
	G	14	VACUUM MOUNTED - LOW-PROFILE DRIVERLESS LINKABLE LED LINEAR LUMINAIRE - 2 FT	N/A	0.90	LSI INDUSTRIES	GPX2-SO

* SECURITY LIGHITNG NOT INCLUDED WITHIN LIGHTING CALCUALTIONS

LIGHTING STATISTICS

DESCRIPTION	AVERAGE	MINIMUM	MAXIMUM
OVERALL PARCEL	1.44 FC	0.0 FC	9.5 FC
PROPERTY LINE (RESIDENTIAL ZONE)	0.03 FC	0.0 FC	0.4 FC
PROPERTY LINE (ROW)	0.27 FC	0.0 FC	0.8 FC

LIGHTING REQUIREMENTS

CODE SECTION	REQUIRED	PROPOSED
§ 36-295.d(1)	EXTERIOR LIGHTING SHALL BE FULLY SHIELDED AND DIRECTED DOWNWARD	COMPLIES
§ 36-295.d(3)	MAXIMUM POLE HEIGHT: 15 FT	15 FT
§ 36-295.d(5)	MAXIMUM INTENSITY: 10 FC	9.5 FC
	MAXIMUM SPILLOVER (NON-RESIDENTIAL ZONE): 1.0 FC	0.8 FC
	MAXIMUM SPILLOVER (RESIDENTIAL ZONE): 0.5 FC	0.4 FC

SECURITY CAMERAS TO BE MOUNTED ON EACH POLE 10 FT ABOVE GRADE

POLE LABEL	NUMBER OF CAMERAS	DIRECTION OF CAMERAS
A-1		
A-2		
A-3		
B-1		
C-1		
D-1		

SYMBOL	DESCRIPTION
(line)	PROPERTY LINE
A (XX')	PROPOSED LIGHTING FIXTURE (MOUNTING HEIGHT)
+X.X	PROPOSED LIGHTING INTENSITY (FOOTCANDLES)
(symbol)	PROPOSED AREA LIGHT
(symbol)	PROPOSED BUILDING MOUNTED LIGHT
(symbol)	PROPOSED VACUUM MOUNTED LIGHT

EXCEPT WHERE USED FOR SECURITY PURPOSES, ALL OUTDOOR LIGHTING FIXTURES, EXISTING OR HEREAFTER INSTALLED AND MAINTAINED SHALL BE TURNED OFF BETWEEN 11:00 P.M. AND SUNRISE, EXCEPT WHEN USED FOR COMMERCIAL AND INDUSTRIAL USES, SUCH AS IN SALES, ASSEMBLY AND REPAIR AREAS, WHERE SUCH USE IS OPEN FOR BUSINESS AFTER 11:00 P.M. BUT ONLY FOR SO LONG AS SUCH USE OPEN FOR BUSINESS. BUSINESSES WITH LIGHT FIXTURES USED FOR SECURITY PURPOSES ARE ENCOURAGED TO USE A MOTION DETECTION DEVISE WHICH IS DIRECTED TO DETECT MOTION WITHIN THE PROPERTY.

GENERAL LIGHTING NOTES

1. THE LIGHTING LEVELS DEPICTED WITHIN THE PLAN SET ARE CALCULATED UTILIZING DATA OBTAINED FROM THE LISTED MANUFACTURER. ACTUAL ILLUMINATION LEVELS AND PERFORMANCE OF ANY PROPOSED LIGHTING FIXTURE MAY VARY DUE TO UNCONTROLLABLE VARIABLES SUCH ARE WEATHER, VOLTAGE SUPPLY, LAMP TOLERANCE, EQUIPMENT SERVICE LIFE AND OTHER VARIABLE FIELD CONDITIONS.
2. WHERE APPLICABLE, THE EXISTING LIGHT LEVELS DEPICTED WITHIN THE PLAN SET SHALL BE CONSIDERED APPROXIMATE. THE EXISTING LIGHT LEVELS ARE BASED ON FIELD OBSERVATIONS AND THE MANUFACTURER'S DATA OF THE ASSUMED OR MOST SIMILAR LIGHTING FIXTURE MODEL.
3. UNLESS NOTED ELSEWHERE WITHIN THIS PLAN SET, THE LIGHT LOSS FACTORS USED IN THE LIGHTING ANALYSIS ARE AS FOLLOWS:
   - LIGHT EMITTING DIODES (LED): 0.90
   - HIGH PRESSURE SODIUM: 0.72
   - METAL HALIDE: 0.72
4. THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. IN WRITING, PRIOR TO THE START OF CONSTRUCTION, OF ANY PROPOSED LIGHTING LOCATIONS THAT CONFLICT WITH EXISTING/ PROPOSED DRAINAGE, UTILITY, OR OTHER IMPROVEMENTS.
5. THE CONTRACTOR IS RESPONSIBLE TO PREPARE A WIRING PLAN AND PROVIDE ELECTRIC SERVICE TO ALL PROPOSED LIGHTING FIXTURES. THE CONTRACTOR IS REQUIRED TO PREPARE AN AS-BUILT PLAN OF WIRING AND PROVIDE COPIES TO THE OWNER AND STONEFIELD ENGINEERING & DESIGN, LLC.

20' 0' 20' 40'
GRAPHIC SCALE IN FEET
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WHITEWATER EXPRESS CAR WASH

SITE DEVELOPMENT PLANS

EROP LLC

PROPOSED CAR WASH

PARCEL ID: 4715-22-400-024
VACANT E-M36
HAMBURG TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN

STATE OF MICHIGAN
JONATHAN REID COOKSEY
ENGINEER
PROFESSIONAL

STONEFIELD engineering & design

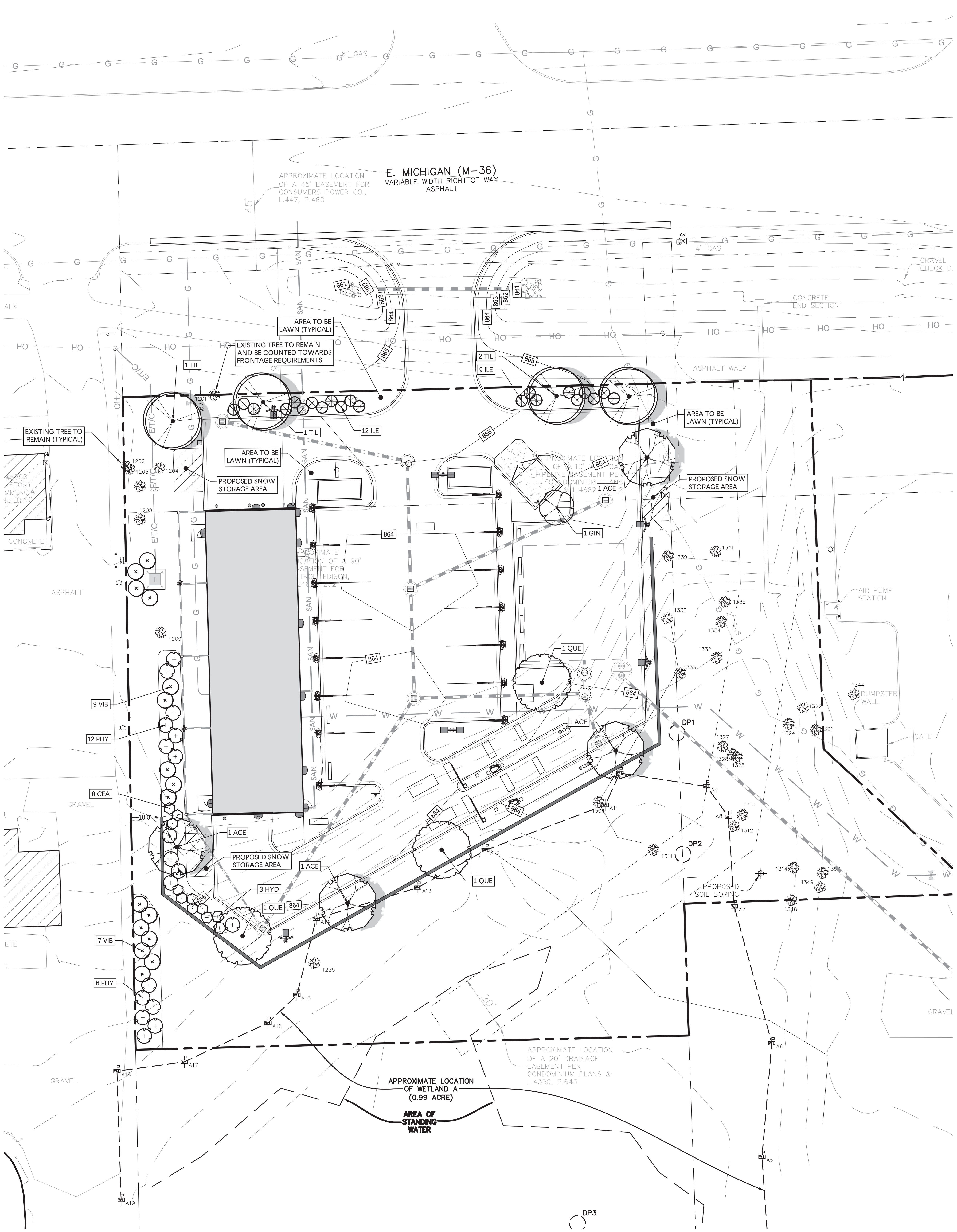
SCALE: 1" = 20' PROJECT ID: DET-220416

TITLE:

LIGHTING PLAN

DRAWING:

C-7



DECIDUOUS TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
	ACE	4	ACER RUBRUM `OCTOBER GLORY`	OCTOBER GLORY RED MAPLE	2" - 2.5" CAL	B&B
	GIN	1	GINKGO BILOBA `PRINCETON SENTRY`	PRINCETON SENTRY GINGKO	2" - 2.5" CAL	B&B
	QUE	3	QUERCUS PHELLOS	WILLOW OAK	2" - 2.5" CAL	B&B
	TIL	4	TILIA CORDATA	LITTLELEAF LINDEN	2.5" - 3" CAL	B&B
SHRUBS	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
	CEA	8	CEANOTHUS AMERICANUS	NEW JERSEY TEA	24" - 30"	POT
	HYD	3	HYDRANGEA MACROPHYLLA `BLOOMSTRUCK`	BLOOMSTRUCK HYDRANGEA	3 GAL.	POT
	PHY	18	PHYSOCARPUS OPULIFOLIUS	NINEBARK	24" - 30"	POT
	VIB	16	VIBURNUM DENTATUM	VIBURNUM	24" - 30"	POT
EVERGREEN SHRUBS	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
	ILE	21	ILEX CRENATA 'COMPACTA'	DWARF JAPANESE HOLLY	24" - 30"	B&B

NOTE: IF ANY DISCREPANCIES OCCUR BETWEEN AMOUNTS SHOWN ON THE LANDSCAPE PLAN AND WITHIN THE PLANT LIST, THE PLAN SHALL DICTATE.

LANDSCAPING AND BUFFER REQUIREMENTS

CODE SECTION	REQUIRED	PROPOSED
	GREENBELT REQUIREMENTS	
§ 36-281(b)(1)	20 FT WIDE GREENBELT ALONG RIGHT-OF-WAY	7.9 FT (W)
	1 CANOPY TREE AND 4 SHRUBS PER 40 LF OF FRONTAGE	
	EAST MICHIGAN: 209 LF	
	TREE: (209 LF) / (40 LF) = 5 REQUIRED TREES	5 TREES(2)
	SHRUBS: (209 LF) / (40 LF) = 5.25 * (4) = 21 SHRUBS	21 SHRUBS
	BUFFER ZONES	
§ 36-281(e)(1)	COMMERCIAL BUFFER C REQUIRED	
	BUFFER WIDTH: 10 FEET	10.0 FT
	1 CANOPY OR EVERGREEN TREE OR 4 SHRUBS PER 20 LF OF FRONTAGE	
	WEST PROPERTY BOUNDARY: 225 LF	
	SHRUBS: (225 LF) / (20 LF) = 11.25 * (4) = 45 SHRUBS	45 SHRUBS
	PARKING LOT LANDSCAPING	
§ 36-283(a)(1)	1 CANOPY TREE PER 2,000 SF OF ASPHALT	
	(15,641 SF)/(2,000 SF) = 8 REQUIRED TREES	8 TREES
§ 36-283(a)(2)	150 SF OF LANDSCAPE AREA PER TREE(1)	COMPLIES
	LANDSCAPE STANDARDS	
§ 36-284(3)	NO MORE THAN 33% OF ANY ONE SPECIES SHALL BE PERMITTED	COMPLIES

(W) WAIVER
(1) (OPEN LAND PER TREE CAN BE REDUCED TO 75 SF PER TREE IF IRRIGATION IS PROVIDED.)
(2) (5 PROPOSED STREET TREES: 4 PROPOSED & 1 EXISTING TREE TO REMAIN)

PER THE DEVELOPER AGREEMENT RECORDED ON 04/14/2021 (2021R-017179) THE FOLLOWING LANDSCAPE PROVISIONS SHALL BE IN EFFECT FOR PARCEL 9:

1. ALL LANDSCAPING SHALL BE IN COMPLIANCE WITH ALL APPLICABLE ZONING ORDINANCE REQUIREMENTS AS WELL AS THE HPUD PLAN AND AGREEMENT.
2. FUTURE DEVELOPMENT SHALL MEET THE LANDSCAPE STANDARDS IN THE ZONING ORDIANCE INCLUDING THE REGULATIONS UNDER SECTION 7.75 & SECTION 9.4.
3. EXISTING VEGETATION ON UNITS 9 AND 11 SHALL NOT BE ALTERED UNTIL SITE PLAN APPROVAL IS GRANTED.

811
Know what's **below**
Call before you dig.

IRRIGATION NOTE:

IRRIGATION CONTRACTOR TO PROVIDE A DESIGN FOR AN IRRIGATION SYSTEM SEPARATING PLANTING BEDS FROM LAWN AREA. PRIOR TO CONSTRUCTION, DESIGN IS TO BE SUBMITTED TO THE PROJECT LANDSCAPE DESIGNER FOR REVIEW AND APPROVAL. WHERE POSSIBLE, DRIP IRRIGATION AND OTHER WATER CONSERVATION TECHNIQUES SUCH AS RAIN SENSORS SHALL BE IMPLEMENTED. CONTRACTOR TO VERIFY MAXIMUM ON SITE DYNAMIC WATER PRESSURE AVAILABLE MEASURED IN PSI. PRESSURE REDUCING DEVICES OR BOOSTER PUMPS SHALL BE PROVIDED TO MEET SYSTEM PRESSURE REQUIREMENTS. DESIGN TO SHOW ALL VALVES, PIPING, HEADS, BACKFLOW PREVENTION, METERS, CONTROLLERS, AND SLEEVES WITHIN HARDSCAPE AREAS.

LANDSCAPING NOTES

1. THE CONTRACTOR SHALL RESTORE ALL DISTURBED GRASS AND LANDSCAPED AREAS WITH SOD.
2. THE CONTRACTOR SHALL RESTORE ALL DISTURBED LAWN AREAS WITH A MINIMUM 4 INCH LAYER OF TOPSOIL AND SOD.
3. THE CONTRACTOR SHALL RESTORE MULCH AREAS WITH A MINIMUM 3 INCH LAYER OF MULCH .
4. THE MAXIMUM SLOPE ALLOWABLE IN LANDSCAPE RESTORATION AREAS SHALL BE 3 FEET HORIZONTAL TO 1 FOOT VERTICAL (3:1 SLOPE) UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET.
5. THE CONTRACTOR IS REQUIRED TO LOCATE ALL SPRINKLER HEADS IN AREA OF LANDSCAPING DISTURBANCE PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL RELOCATE SPRINKLER HEADS AND LINES IN ACCORDANCE WITH OWNER'S DIRECTION WITHIN AREAS OF DISTURBANCE.
6. THE CONTRACTOR SHALL ENSURE THAT ALL DISTURBED LANDSCAPED AREAS ARE GRADED TO MEET FLUSH AT THE ELEVATION OF WALKWAYS AND TOP OF CURB ELEVATIONS EXCEPT UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET. NO ABRUPT CHANGES IN GRADE ARE PERMITTED IN DISTURBED LANDSCAPING AREAS.
7. PAINTED STEEL METAL EDGING TO BE PROVIDED AROUND ALL MULCH BEDS.
8. ALL MULCH AREAS MUST BE TREATED WITH PRE-EMERGENT HERBICIDE AND THEN OVERLAID WITH LANDSACPE WEED BARRIER MATERIAL.

20' 0' 20' 40'
GRAPHIC SCALE IN FEET
1" = 20'

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SITE DEVELOPMENT PLANS

EROP LLC

PROPOSED CAR WASH

PARCEL ID: 4715-22-400-024
VACANT E-M36
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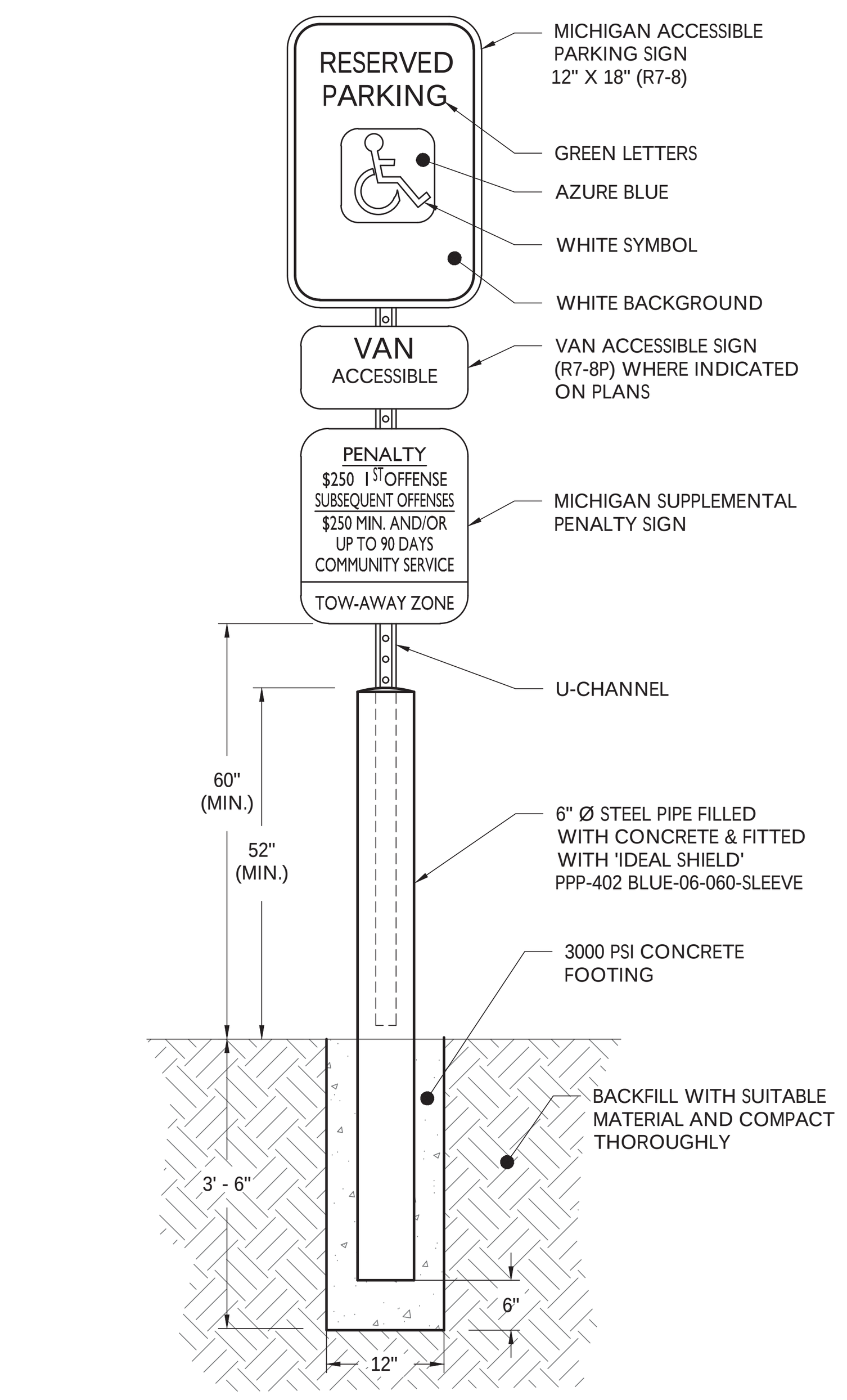
JONATHAN REID COOKSEY ENGINEER
REID COOKSEY, P.E.
MICHIGAN LICENSE No. 6201059128
LICENSED PROFESSIONAL ENGINEER

STONEFIELD engineering & design

SCALE: 1" = 20' | PROJECT ID: DET-220416

TITLE: LANDSCAPING PLAN

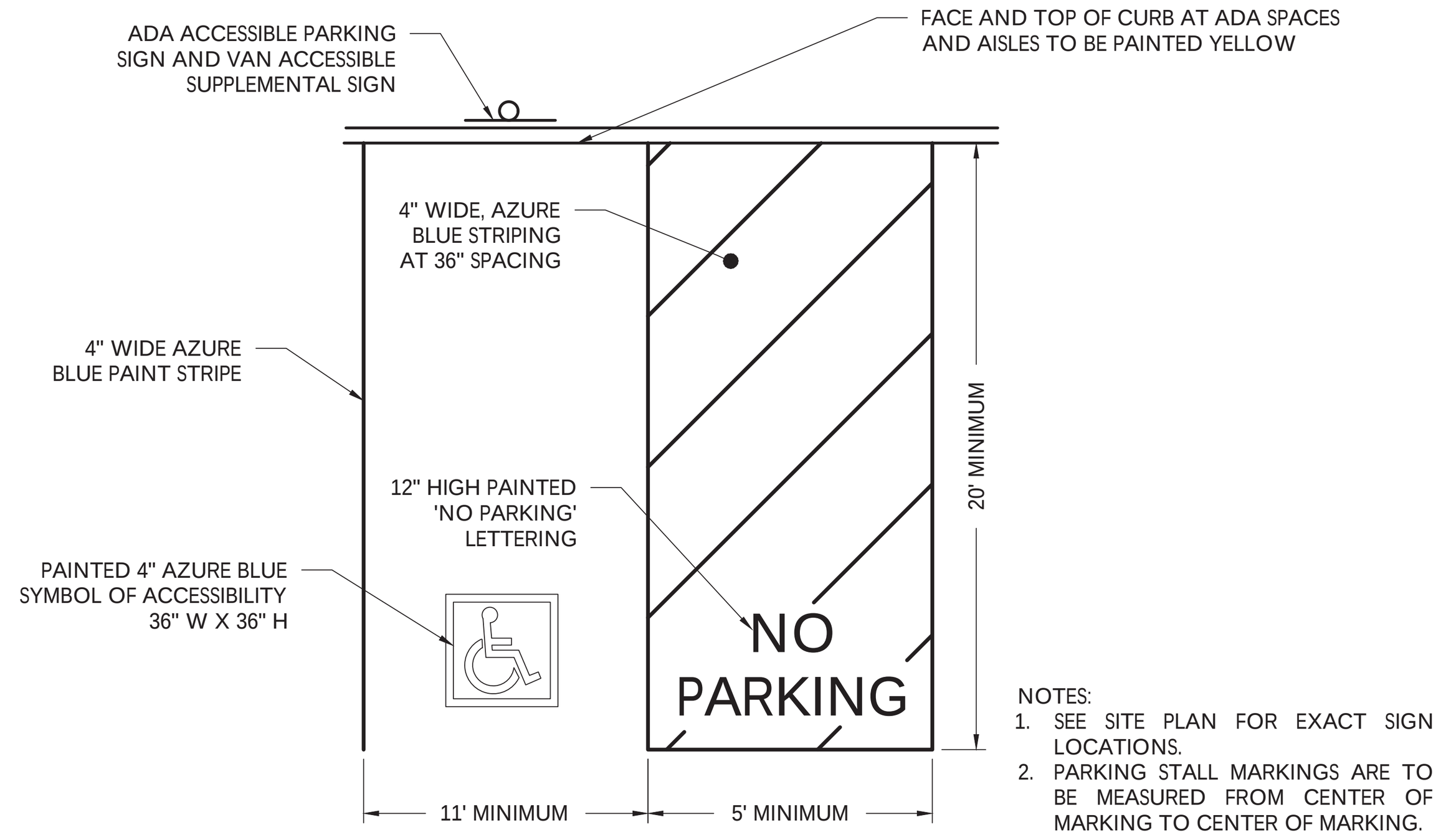
DRAWING: C-8



ACCESSIBLE PARKING SIGN WITH BOLLARD DETAIL

NOT TO SCALE

1

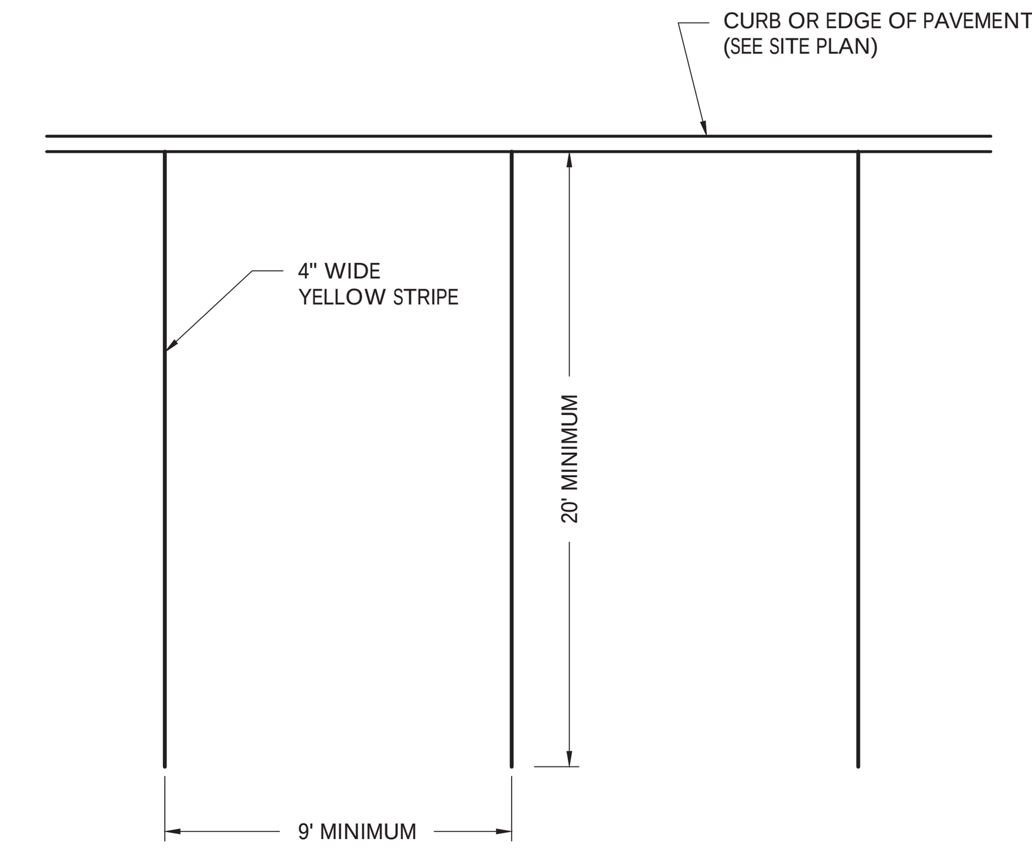


NOTES:
1. SEE SITE PLAN FOR EXACT SIGN LOCATIONS.
2. PARKING STALL MARKINGS ARE TO BE MEASURED FROM CENTER OF MARKING TO CENTER OF MARKING.

ACCESSIBLE PARKING STALL MARKINGS

NOT TO SCALE

2



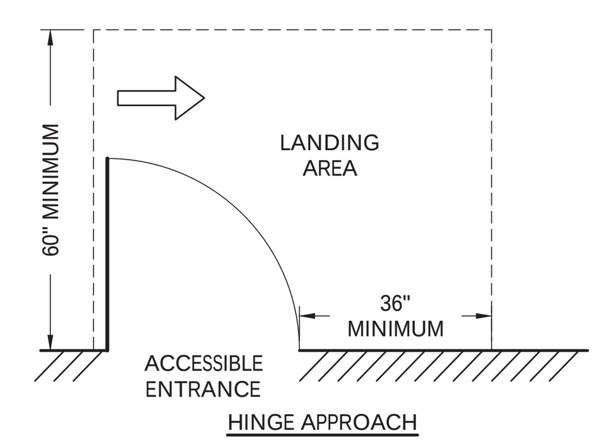
90° PARKING STALL MARKINGS

NOT TO SCALE

3

PAVEMENT STRIPING & MARKINGS NOTES:
1. ALL SIGNING AND STRIPING IN EXISTING CONDITION IN CONFLICT WITH THE PROPOSED DESIGN PLAN SHALL BE REMOVED.
2. ALL PROPOSED SIGNING AND STRIPING SHALL CONFORM TO THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
3. PAVEMENT STRIPING AND MARKINGS SHALL BE INSTALLED IN CONFORMANCE WITH ALL APPLICABLE LOCAL, COUNTY AND STATE REQUIREMENTS.
4. UNLESS OTHERWISE SPECIFIED, ALL STRIPING AND MARKINGS IN THE PUBLIC RIGHT-OF-WAY SHALL BE OF THERMOPLASTIC PAINT OR PREFORMED THERMOPLASTIC MARKINGS.
5. UNLESS OTHERWISE SPECIFIED, ON SITE PARKING STALL STRIPING, FIRE LANE STRIPING AND DIRECTIONAL ARROWS SHALL BE EPOXY PAINT. ON SITE STOP BARS, "DO NOT ENTER" BARS, AND ASSOCIATED LETTERING SHALL BE THERMOPLASTIC PAINT OR PREFORMED THERMOPLASTIC MARKINGS.

4

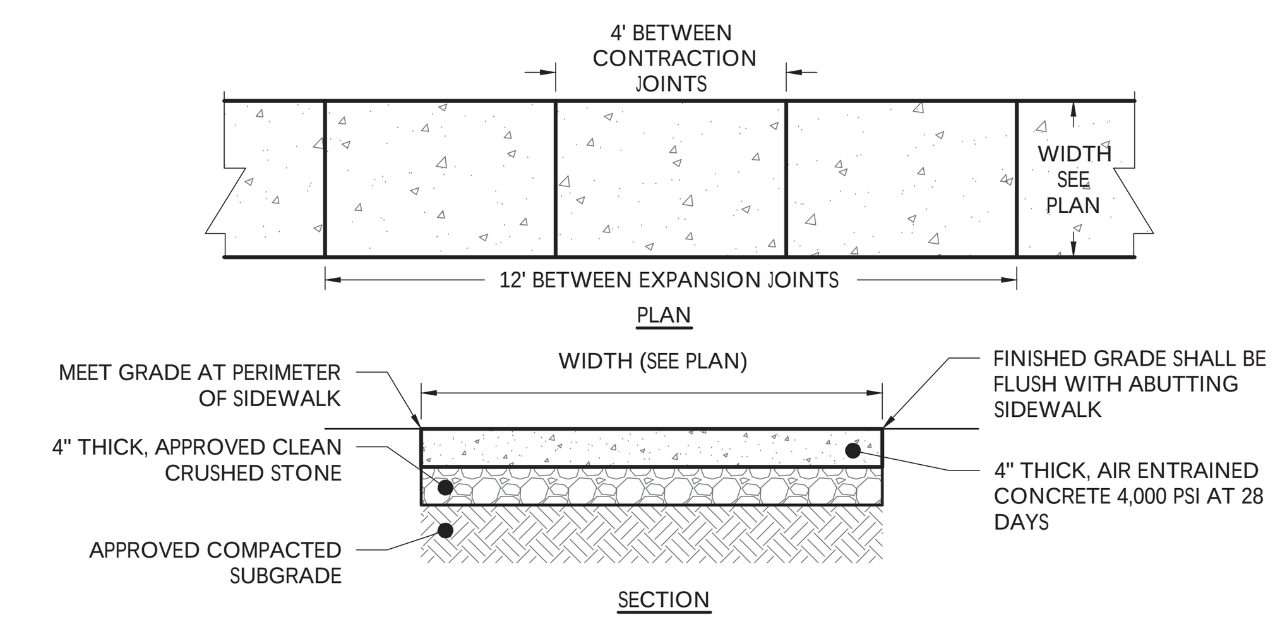


ACCESSIBLE ENTRANCE LANDING DETAIL

NOT TO SCALE

NOTES:
1. MAXIMUM SLOPE ON LANDING SHALL BE 1:50 IN ALL DIRECTIONS
2. DIMENSIONS SHOWN HERE ARE THE MINIMUM DIMENSIONS REQUIRED FOR AN ADA COMPLIANT LANDING AT THE ACCESSIBLE ENTRANCE. REFER TO SITE PLAN FOR SITE SPECIFIC DIMENSIONS THAT MAY SPECIFY A LARGER LANDING AREA.
3. CONTRACTOR SHALL CONTACT THE ENGINEER BEFORE CONSTRUCTION IF THE ACCESSIBLE ENTRANCE ON SITE DOES NOT MATCH THE SCENARIO SHOWN ABOVE.

5

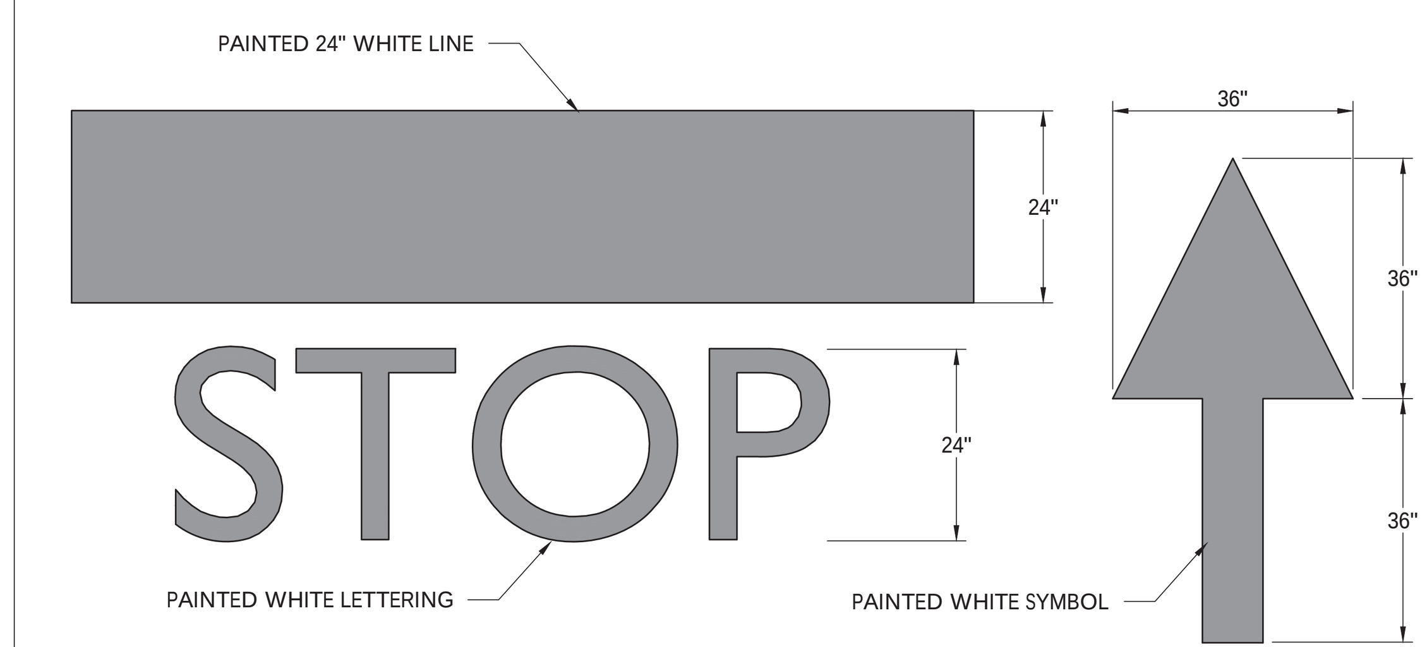


CONCRETE WALKWAY DETAIL

NOT TO SCALE

NOTES:
1. MAXIMUM CROSS SLOPE SHALL BE 1/4" PER FOOT.
2. 1/2" EXPANSION JOINTS SHALL BE PROVIDED AT 12' INTERVALS WITH PRE-MOLDED, BITUMINOUS JOINT FILLER, RECESSED 1/4" FROM THE SURFACE.
3. 1" DEEP BY 1/8" WIDE, TOOLED CONTRACTION JOINTS SHALL BE PROVIDED AT 4' INTERVALS.
4. EXPANSION JOIN SHALL BE PROVIDED WHERE ADJACENT TO A BUILDING.

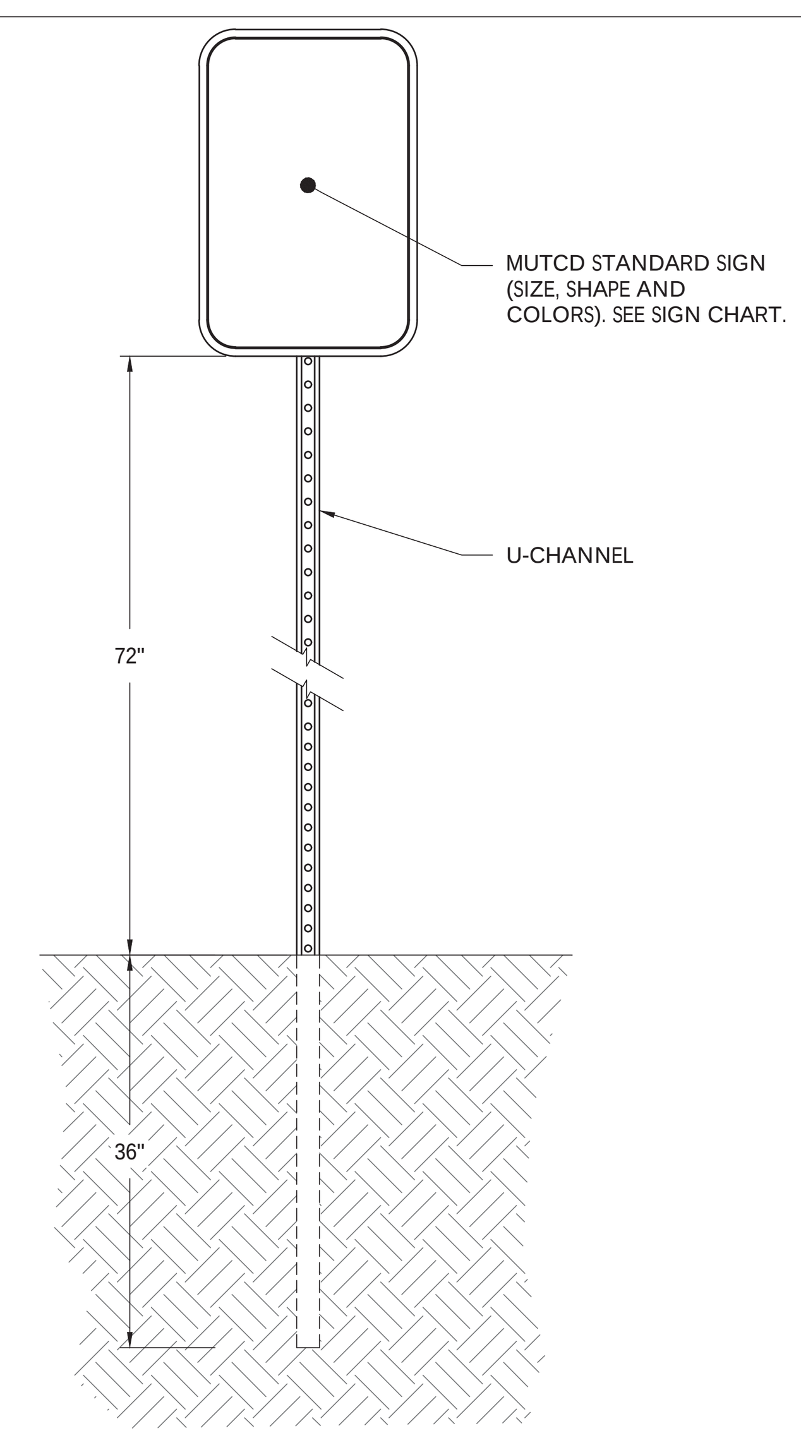
6



STOP BAR & ARROW DETAILS

NOT TO SCALE

7



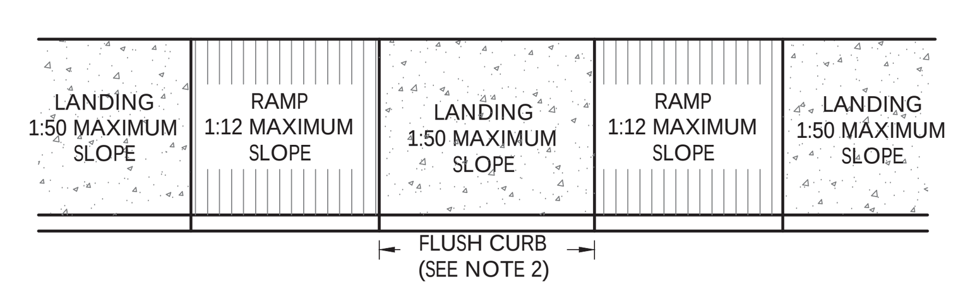
M.U.T.C.D. NUMBER	TEXT	COLOR		SIZE OF SIGN (WIDTH X HEIGHT)	TYPE OF MOUNT
		LEGEND	BACKGROUND		
STOP SIGN (R1-1)	STOP	WHITE	RED	36"x36"	GROUND
DO NOT ENTER (R5-1)	DO NOT ENTER	RED	WHITE	30"x30"	GROUND

NOTES:
1. ALL SIGNS SHALL BE IN ACCORDANCE WITH THE FEDERAL HIGHWAY ADMINISTRATION (FHWA) MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), EXCEPT AS NOTED.
2. ALL SIGNS SHALL BE MOUNTED AS TO NOT OBSTRUCT THE SHAPE OF "STOP" (R1-1) AND "YIELD" (R1-2) SIGNS.

SIGN DETAIL & DATA TABLE

NOT TO SCALE

8

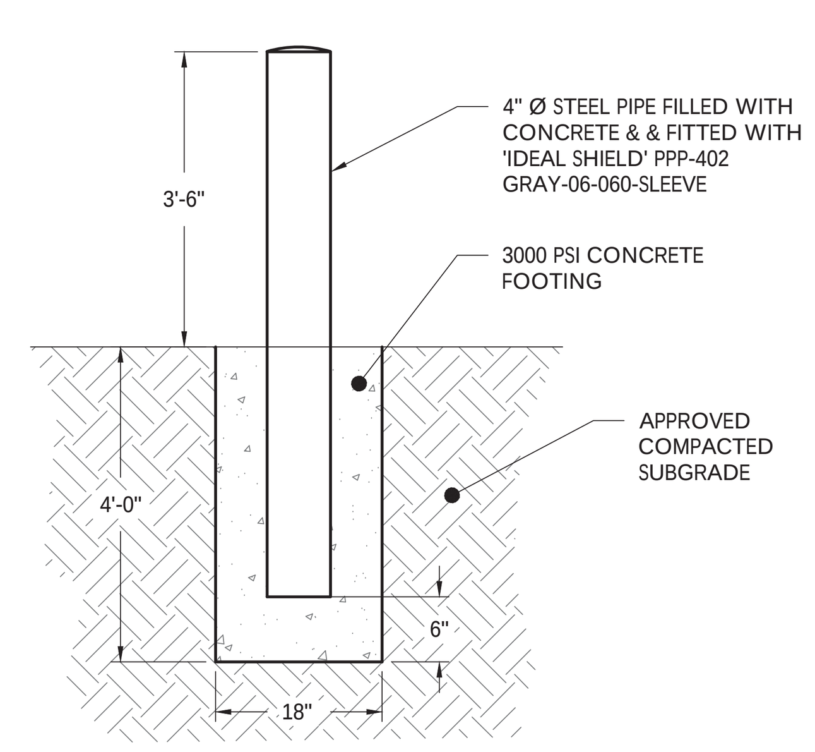


TRANSITION RAMP DETAIL

NOT TO SCALE

NOTES:
1. CROSS SLOPE ON RAMP SHALL NOT EXCEED 2%
2. A FLUSH CURB SHALL HAVE A MINIMUM WIDTH OF 36". SEE PLAN FOR EXACT WIDTH.
3. RAMP SHALL HAVE A MAXIMUM RISE OF 6" WITHOUT A HANDRAIL

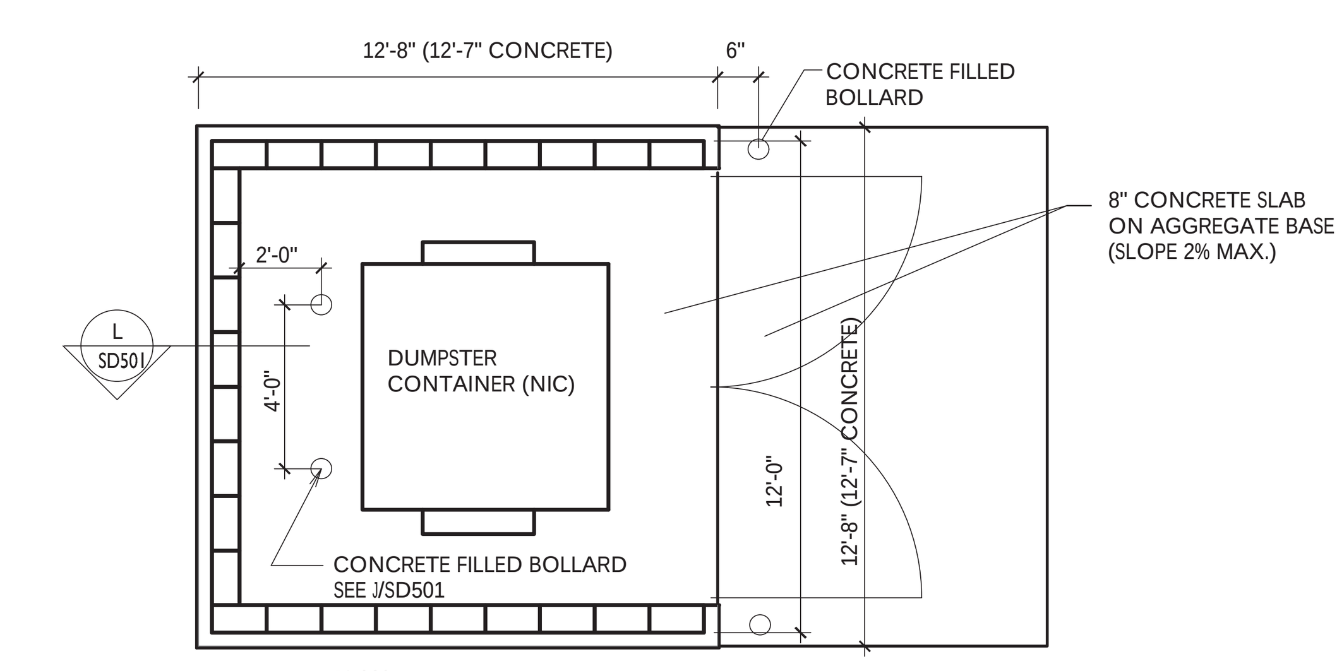
9

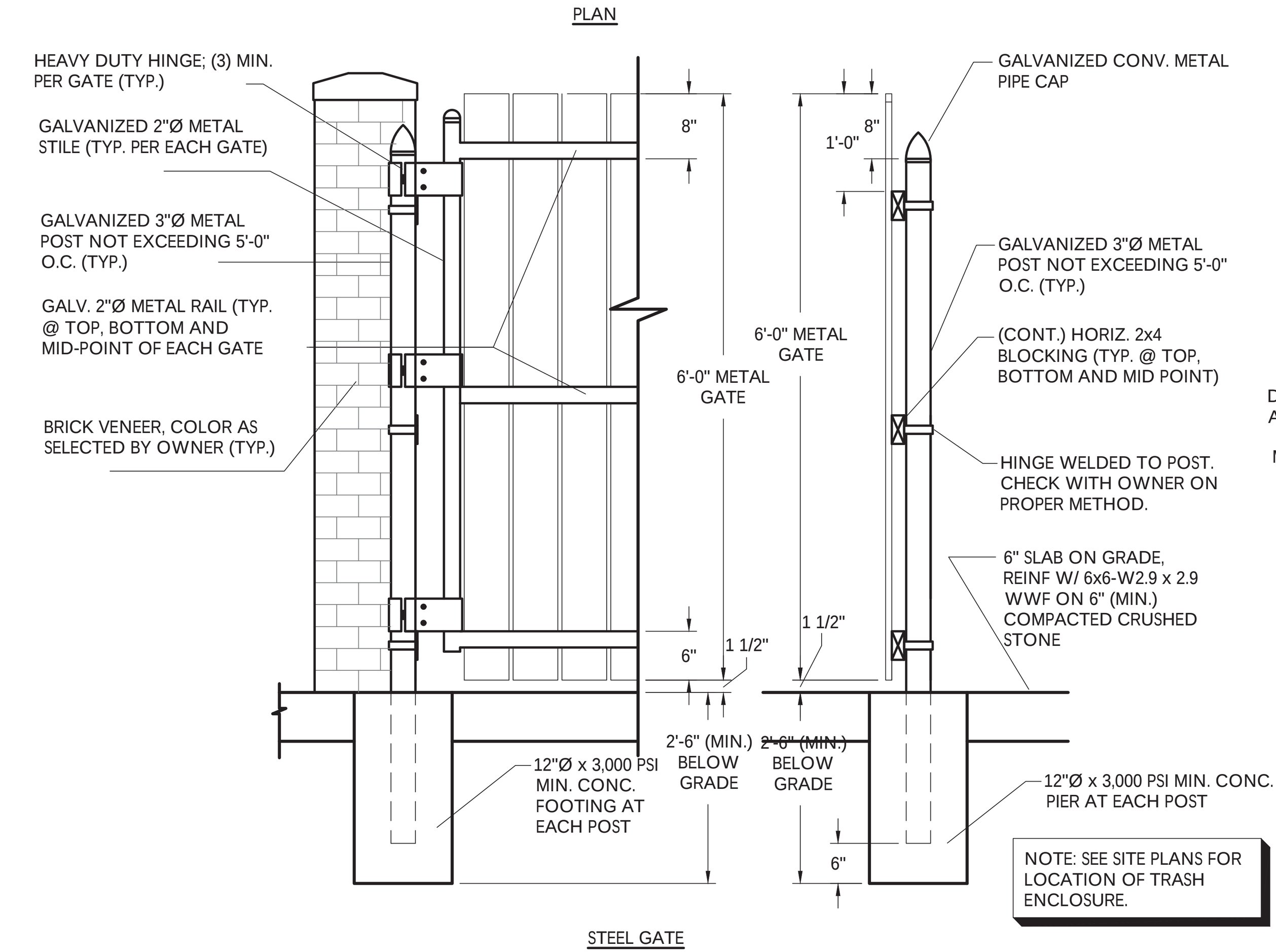


BOLLARD DETAIL

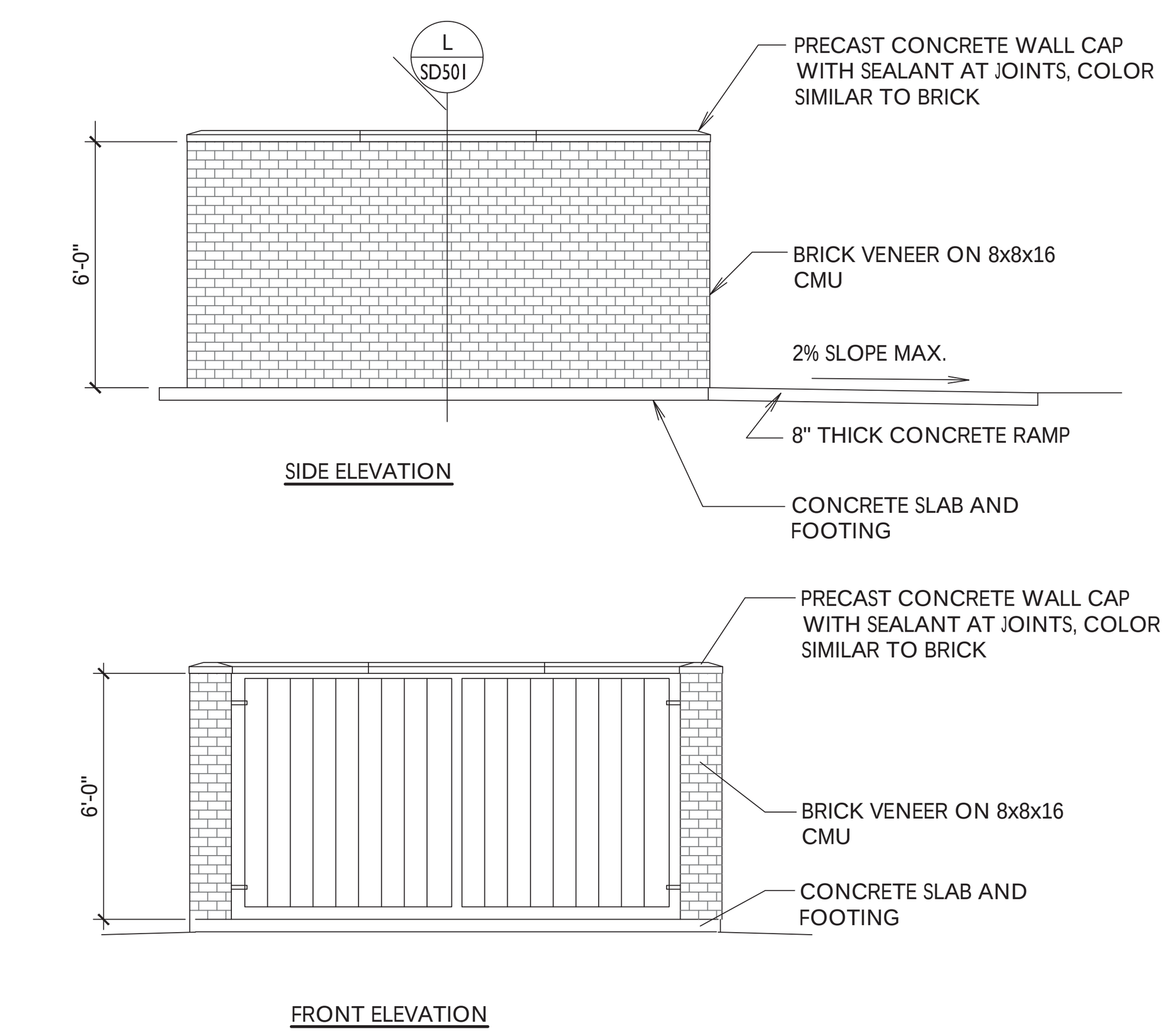
NOT TO SCALE

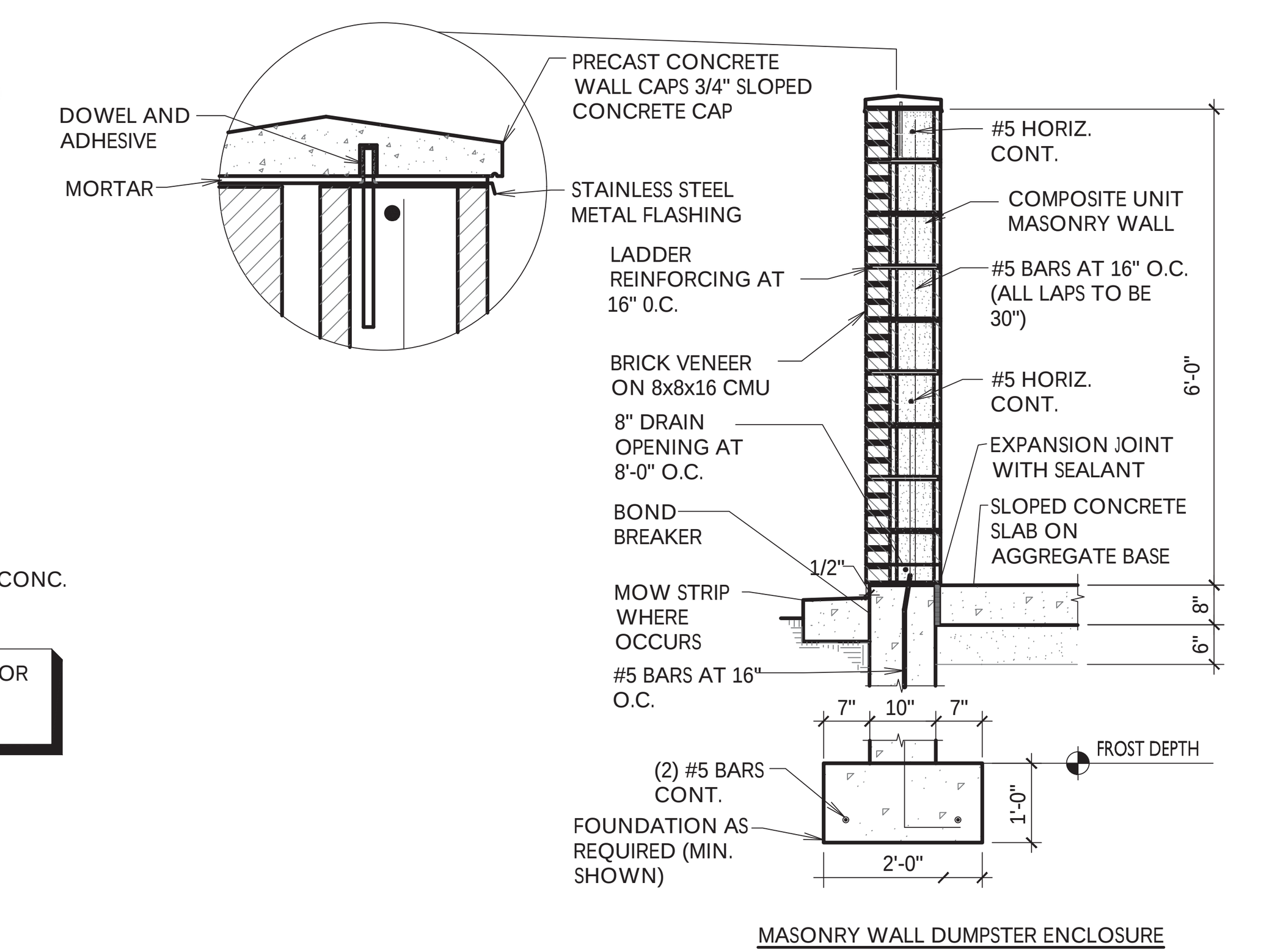
10





NOTE: SEE SITE PLANS FOR LOCATION OF TRASH ENCLOSURE.





NOTE:
BLOCK COLOR TO MATCH BUILDING OR AS SPECIFIED BY OWNER

TRASH / RECYCLE ENCLOSURE DETAIL

NOT TO SCALE

11

ISSUE	DATE	BY	DESCRIPTION
3	09/26/2023	EM	REVISED WATER AND STORM CONNECTIONS
2	07/05/2023	JC/EM	FOR PRE-APPLICATION CONFERENCE
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SITE DEVELOPMENT PLANS

EROP LLC

PROPOSED CAR WASH

PARCEL ID: 4715-22-400-024
VACANT E-M36
HAMBURG TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN

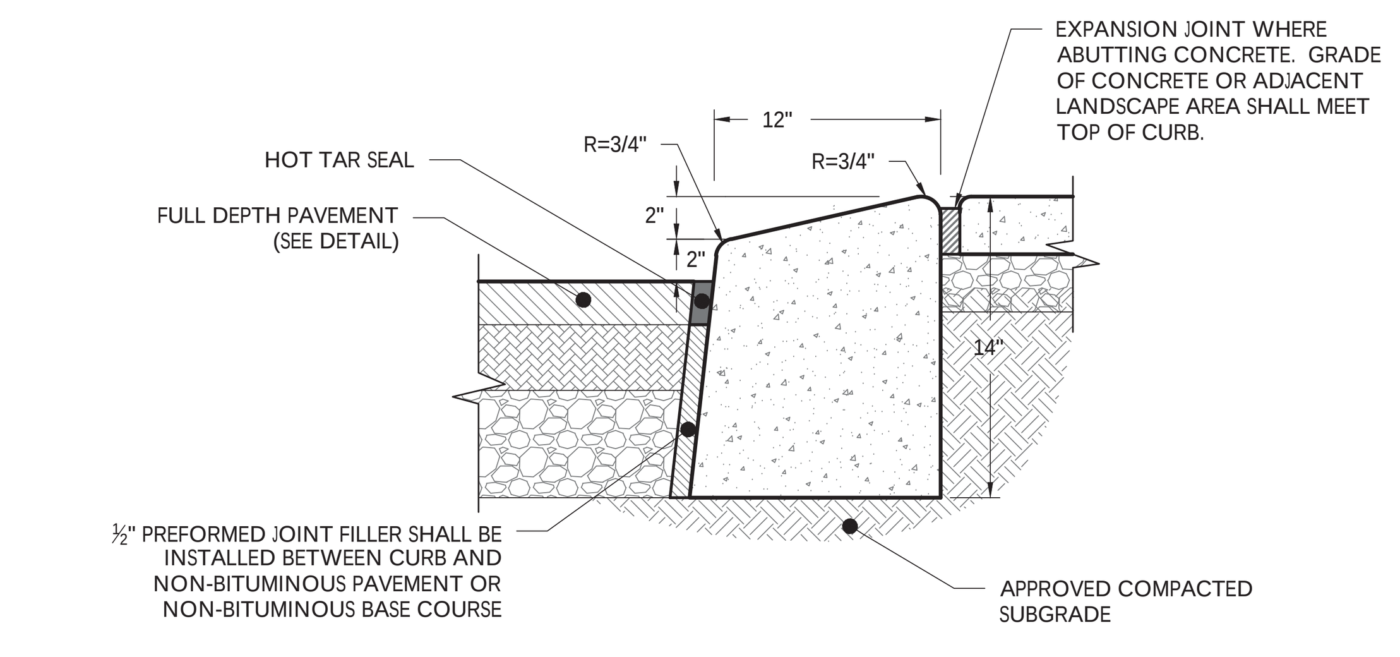
STATE OF MICHIGAN — JONATHAN REID COOKSEY — ENGINEER — PROFESSIONAL ENGINEER

STONEFIELD engineering & design

SCALE: AS SHOWN | PROJECT ID: DET-220416

TITLE: CONSTRUCTION DETAILS

DRAWING: C-9

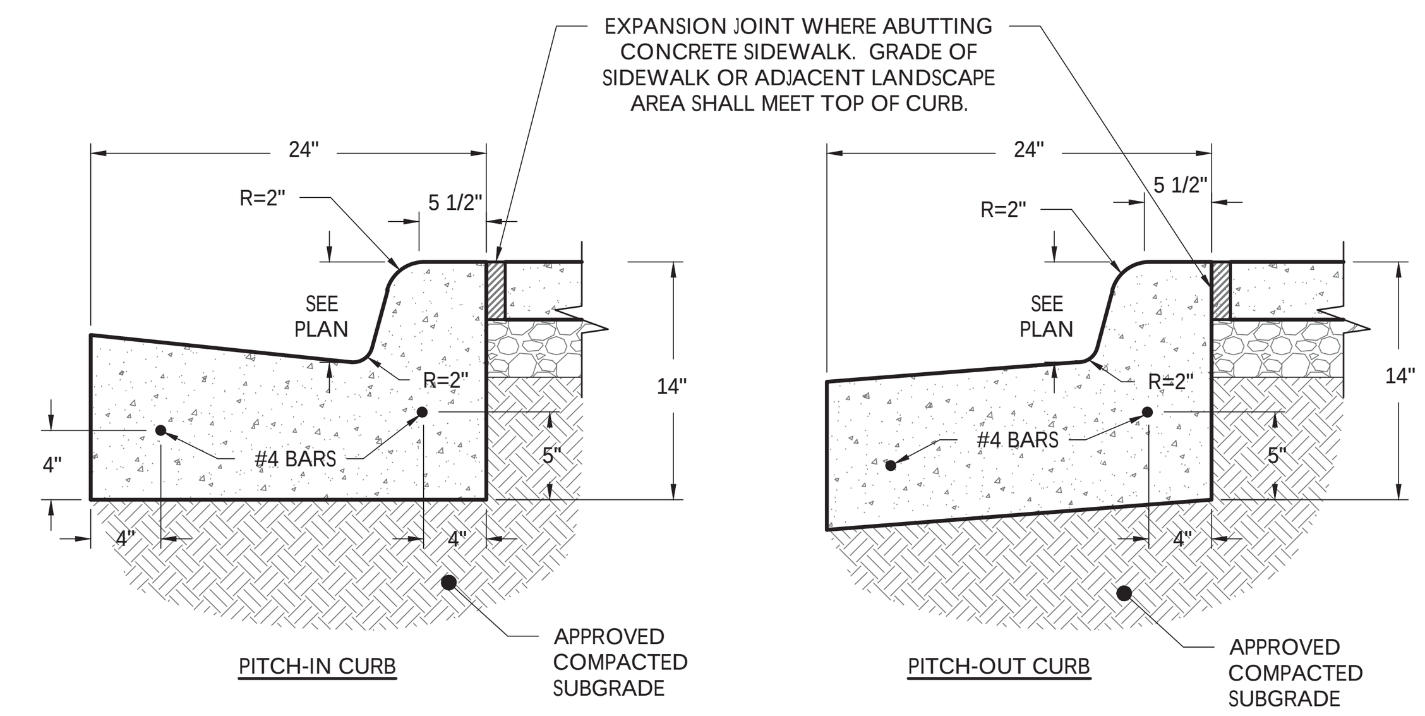


MOUNTABLE CONCRETE CURB

NOT TO SCALE

NOTES:
1. CONCRETE SHALL BE 3500 PSI AT 28 DAYS, AIR-ENTRAINED.
2. TRANSVERSE EXPANSION JOINTS SHALL BE PROVIDED AT 20 FOOT INTERVALS WITH PRE-MOLDED, BITUMINOUS JOINT FILLER, RECESSED ¼" FROM SURFACE.
3. HALF DEPTH CONTRACTION JOINTS SHALL BE PROVIDED AT 10 FOOT INTERVALS.
4. 18" CURB DEPTH SHALL BE MAINTAINED AT DEPRESSED OR FLUSH CURBED AREAS.

1



CONCRETE CURB AND GUTTER DETAIL

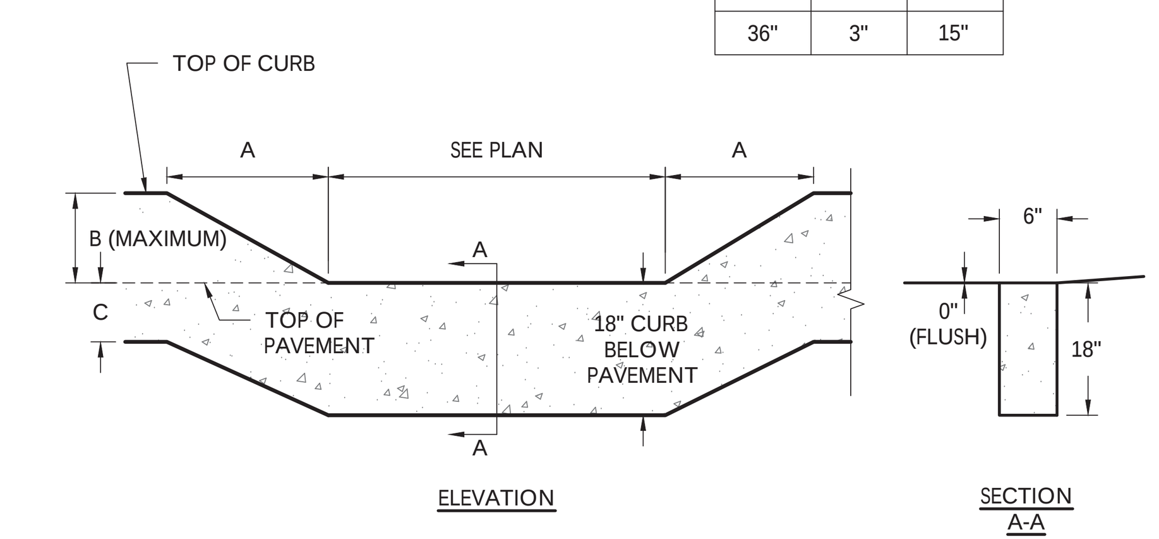
NOT TO SCALE

NOTES:
1. CONCRETE SHALL BE 3500 PSI AT 28 DAYS, AIR-ENTRAINED.
2. TRANSVERSE EXPANSION JOINTS SHALL BE PROVIDED AT 20 FOOT INTERVALS WITH PRE-MOLDED, BITUMINOUS JOINT FILLER, RECESSED ¼" FROM SURFACE.
3. HALF DEPTH CONTRACTION JOINTS SHALL BE PROVIDED AT 10 FOOT INTERVALS.
4. 14" CURB DEPTH SHALL BE MAINTAINED AT DEPRESSED OR FLUSH CURBED AREAS.

2

FLUSH CURB DIMENSIONS

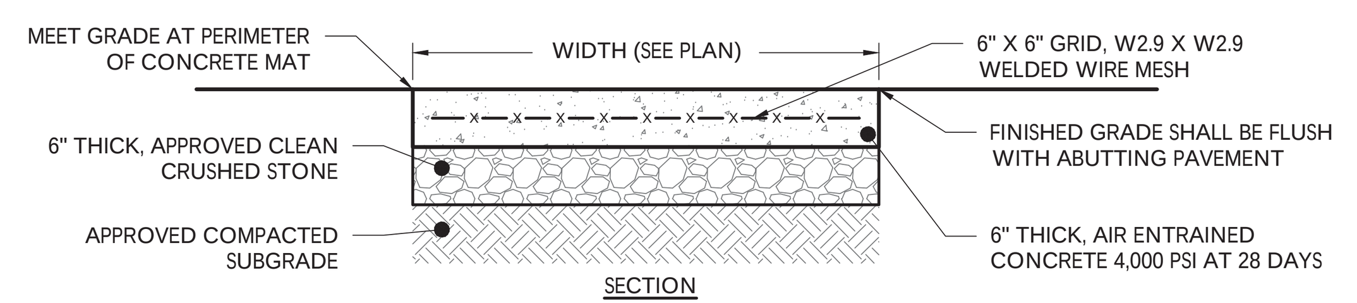
A	B	C
72"	6"	12"
60"	5"	13"
48"	4"	14"
36"	3"	15"



FLUSH CURB DETAIL

NOT TO SCALE

3



REINFORCED 6" CONCRETE MAT (FOR TRANSFORMER PAD AND TRASH MATS)

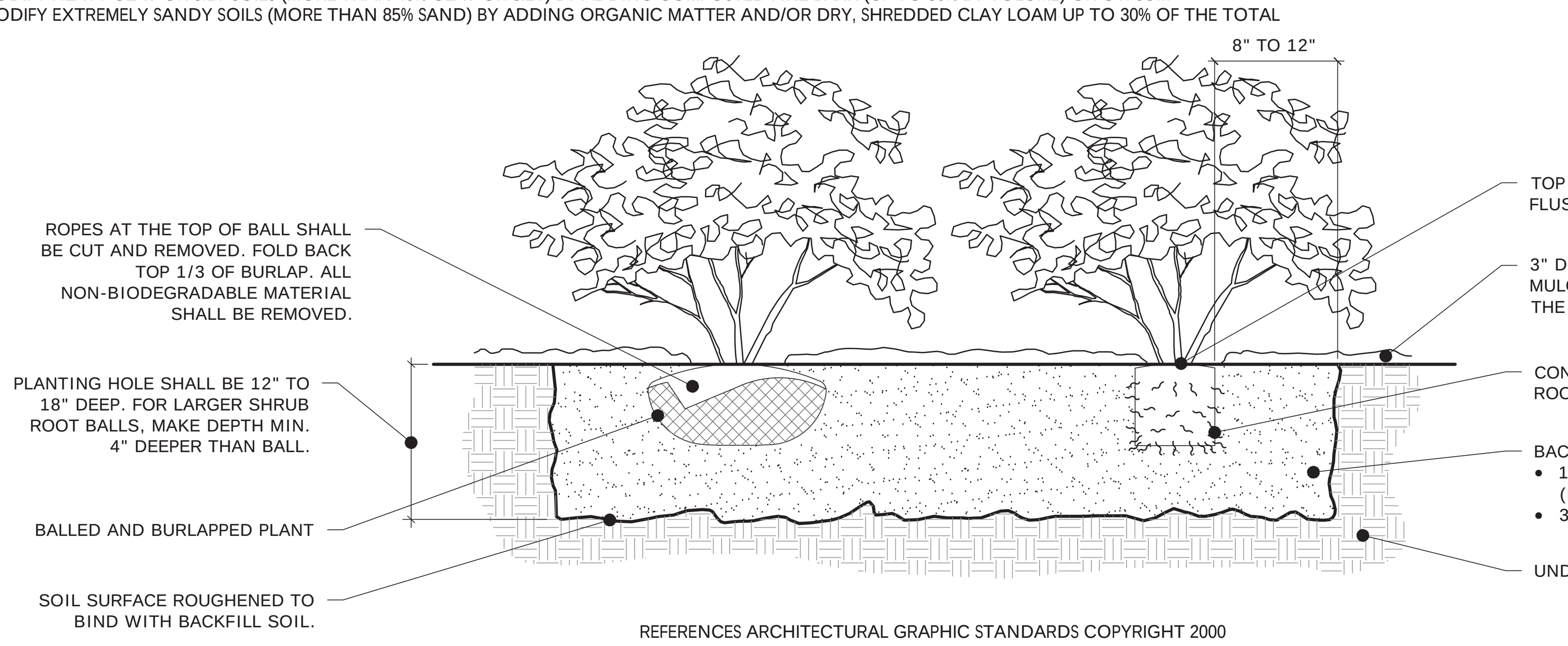
NOT TO SCALE

NOTES:
1. ½" EXPANSION JOINTS WITH WATER SEAL SHALL BE PROVIDED AT 12' INTERVALS WITH PRE-MOLDED, BITUMINOUS JOINT FILLER, RECESSED ¼" FROM THE SURFACE. LONGITUDINAL REBAR TO BE CUT AT EXPANSION JOINTS.
2. 1" DEEP BY ¼" WIDE, TOOLED CONTRACTION JOINTS SHALL BE PROVIDED AT MID-POINT BETWEEN EXPANSION JOINTS OR 6' INTERVALS MAX.
3. CONCRETE SHALL RECEIVE BROOM FINISH.
4. ALL EXPOSED CORNERS TO HAVE 12" CHAMFER.

4

NOTES:

1. FOR THE CONTAINER-GROWN SHRUBS, USE FINGERS OR SMALL HAND TOOL TO PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL; THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF THE CONTAINER.
2. THOROUGHLY SOAK THE SHRUB ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH AFTER PLANTING AND REGULARLY THROUGHOUT THE FOLLOWING TWO SUMMERS.
   - MODIFY HEAVY CLAY OR SILT SOILS (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) OR GYPSUM
   - MODIFY EXTREMELY SANDY SOILS (MORE THAN 85% SAND) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL

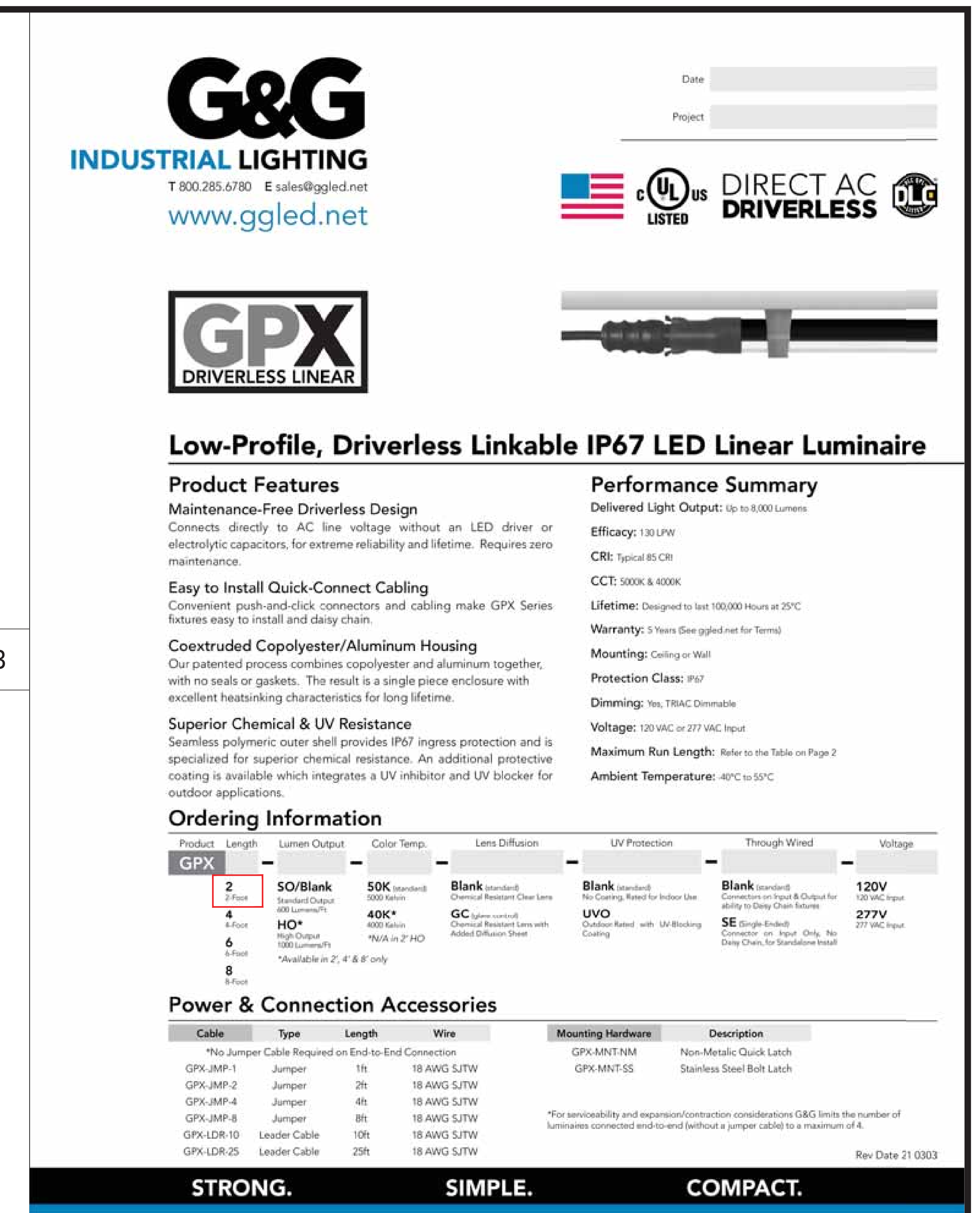


REFERENCES ARCHITECTURAL GRAPHIC STANDARDS COPYRIGHT 2000

DECIDUOUS AND EVERGREEN SHRUB PLANTING DETAIL

NOT TO SCALE

5

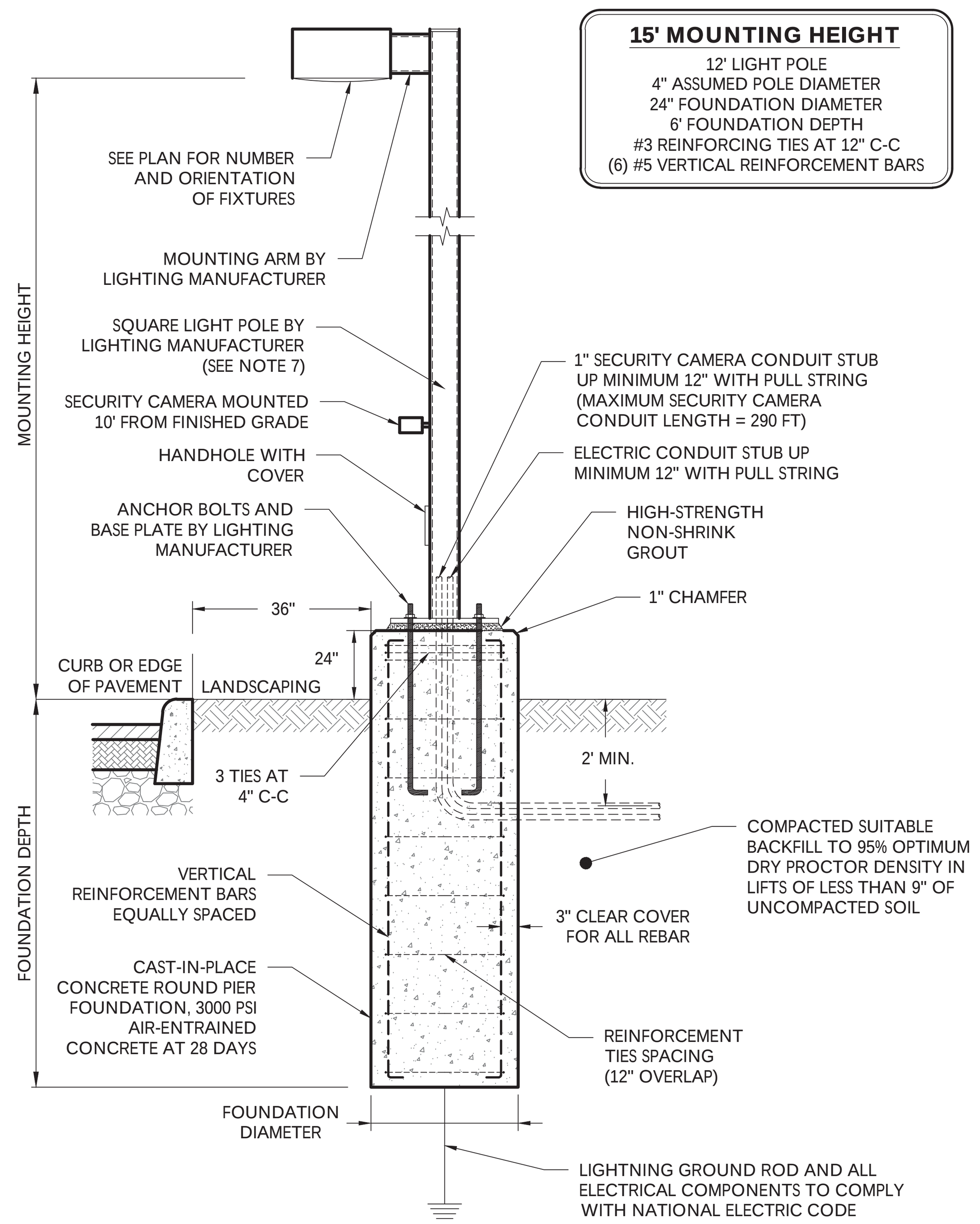


SPECIFICATIONS FOR FIXTURE 'G'

NOT TO SCALE

6

15' MOUNTING HEIGHT
12' LIGHT POLE
4" ASSUMED POLE DIAMETER
24" FOUNDATION DIAMETER
6' FOUNDATION DEPTH
#3 REINFORCING TIES AT 12" C-C
(6) #5 VERTICAL REINFORCEMENT BARS

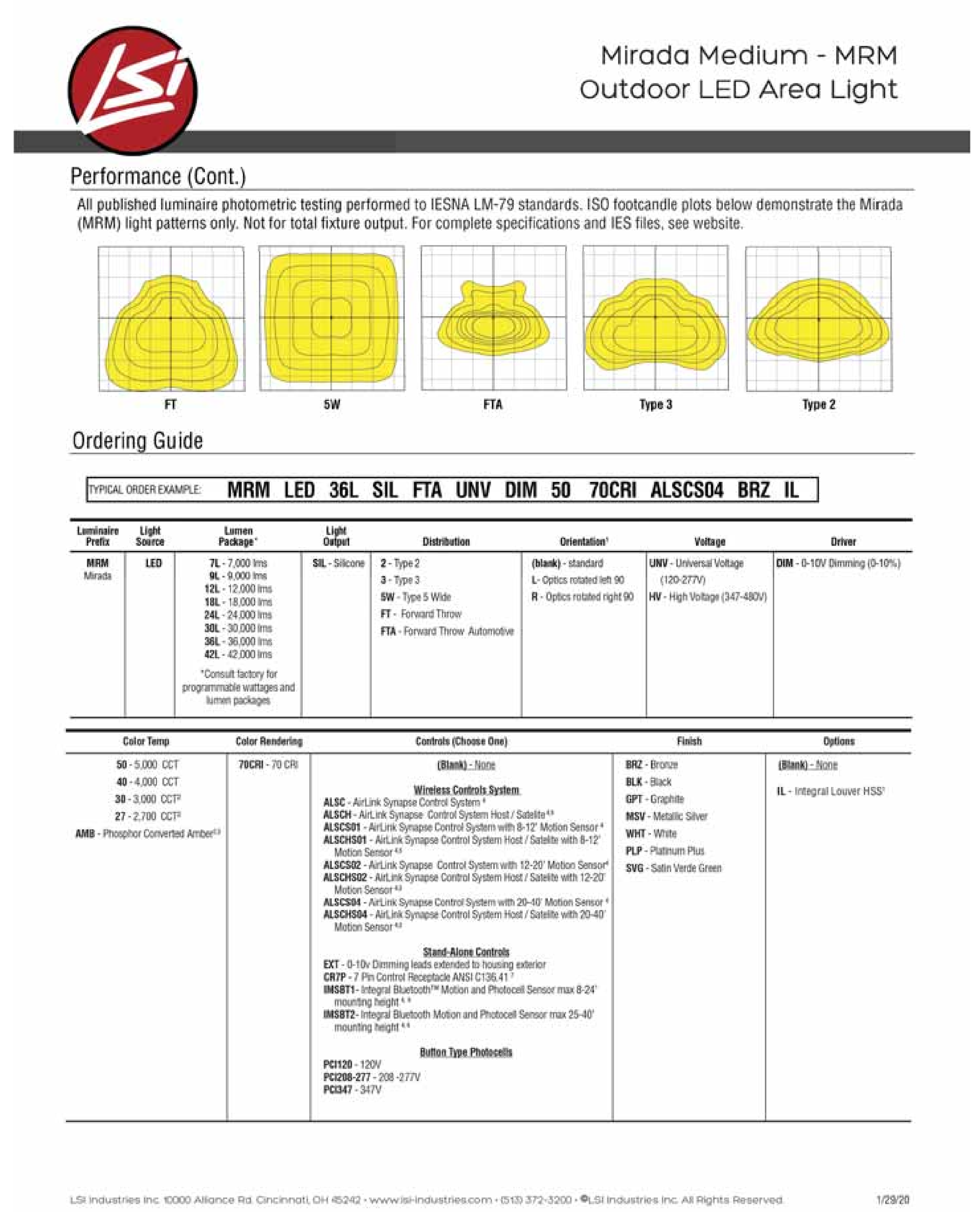


LIGHT POLE INSTALLATION

NOT TO SCALE

NOTES:
1. MINIMUM SOIL BEARING PRESSURE OF 1500 PSF, SOIL FRICTION ANGLE OF 30 DEGREES, AND SOIL DRY UNIT WEIGHT OF 120 PCF SHALL BE CONFIRMED IN THE FIELD BY A QUALIFIED PROFESSIONAL.
2. CAST-IN-PLACE CONCRETE SHALL BE CONSOLIDATED USING VIBRATOR.
3. ALL REBAR TO BE NEW GRADE 60 STEEL.
4. PRE-CAST PIERS ACCEPTABLE UPON WRITTEN APPROVAL OF SHOP DRAWING BY ENGINEER.
5. CONCRETE TO BE INSTALLED A MINIMUM OF 7 DAYS PRIOR TO INSTALLING LIGHT POLE. POURED CONCRETE MIX REQUIRED TO OBTAIN 80% OF DESIGN STRENGTH PRIOR TO INSTALLING LIGHT POLE.
6. CONCRETE SHALL HAVE A MAXIMUM SLUMP OF 4" (WITHIN 1" TOLERANCE).
7. POLE SHALL BE RATED FOR 10 MPH HIGHER THAN MAXIMUM WIND SPEED 33FT ABOVE GROUND FOR THE AREA BASED ON ANSI/ASCE 7-93.
8. POUR TO BE TERMINATED AT A FORM.
9. WORK SHALL CONFORM TO ACI BEST PRACTICES FOR APPROPRIATE TEMPERATURE AND WEATHER CONDITIONS.
10. CONTRACTOR TO TEMPORARILY SUPPORT ADJACENT SOIL AND STRUCTURES DURING EXCAVATION IF REQUIRED.

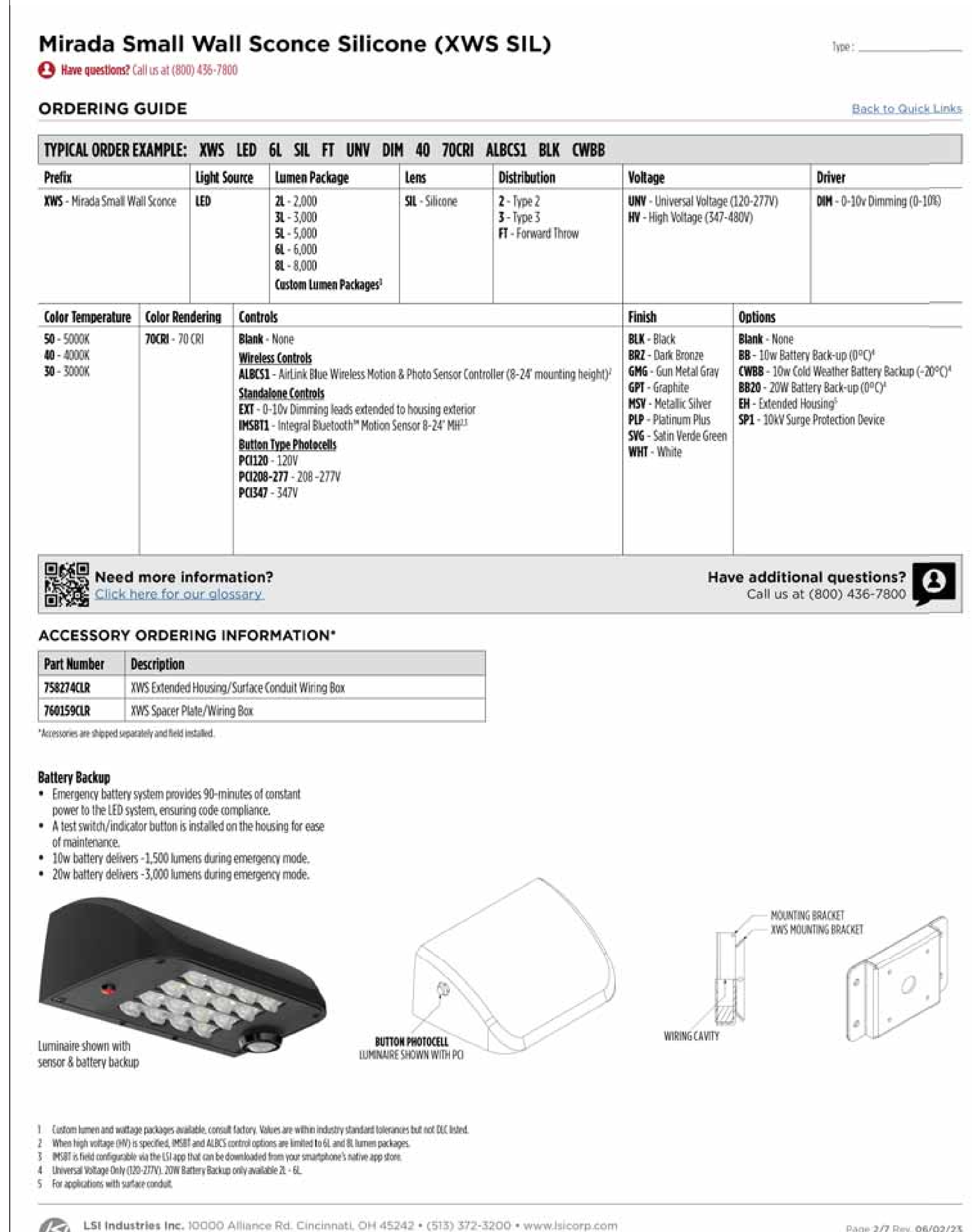
7



SPECIFICATIONS FOR FIXTURES 'A' 'B' 'C' 'D'

NOT TO SCALE

8



SPECIFICATIONS FOR FIXTURE 'E'

NOT TO SCALE

9

SPECIFICATIONS FOR FIXTURE 'F'

NOT TO SCALE

10

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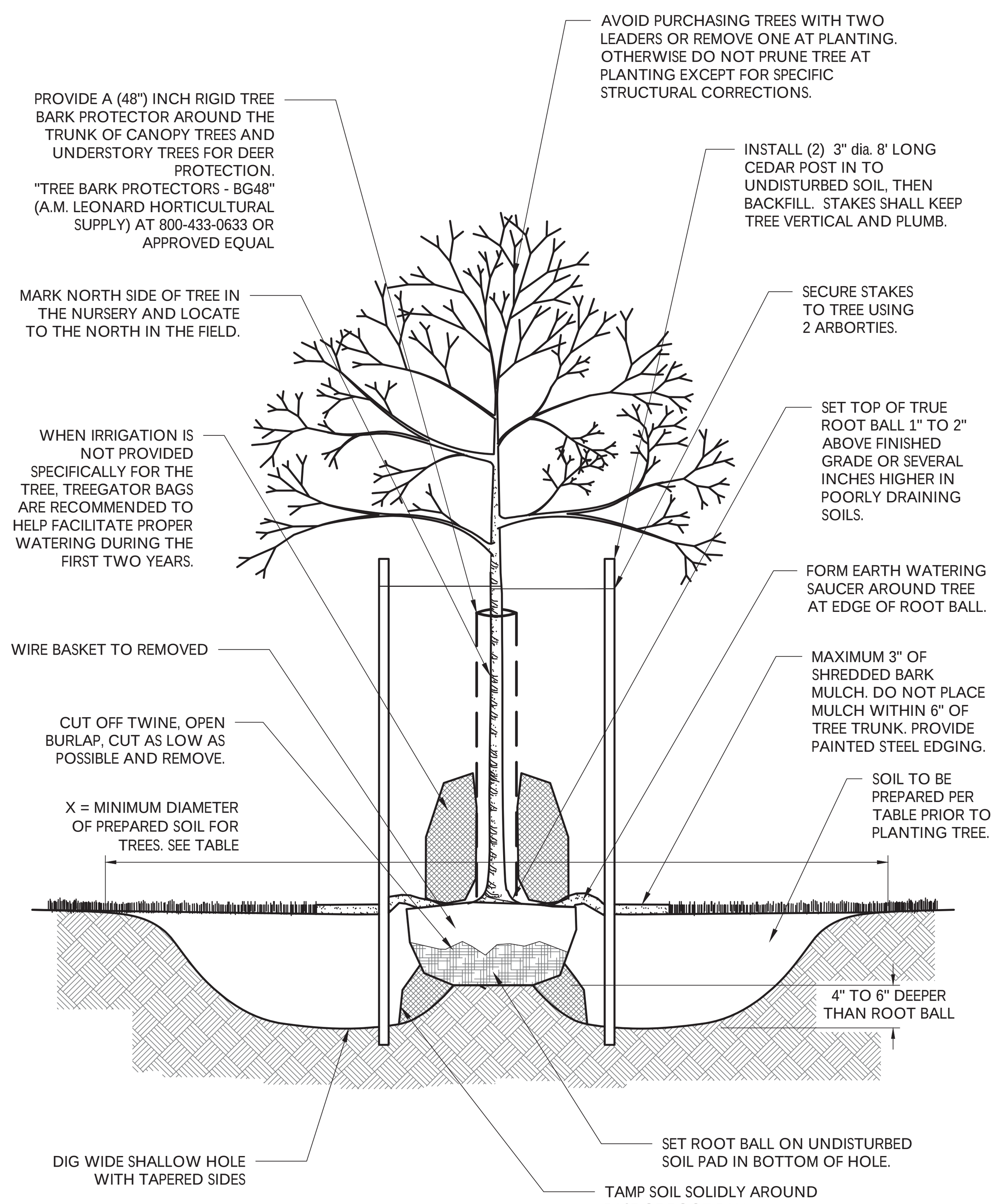
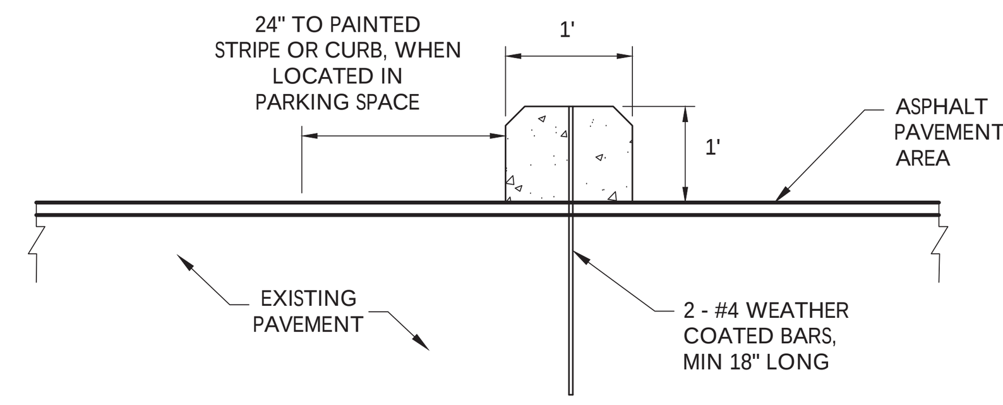


DECIDUOUS TREE PLANTING DETAIL

NOT TO SCALE

1

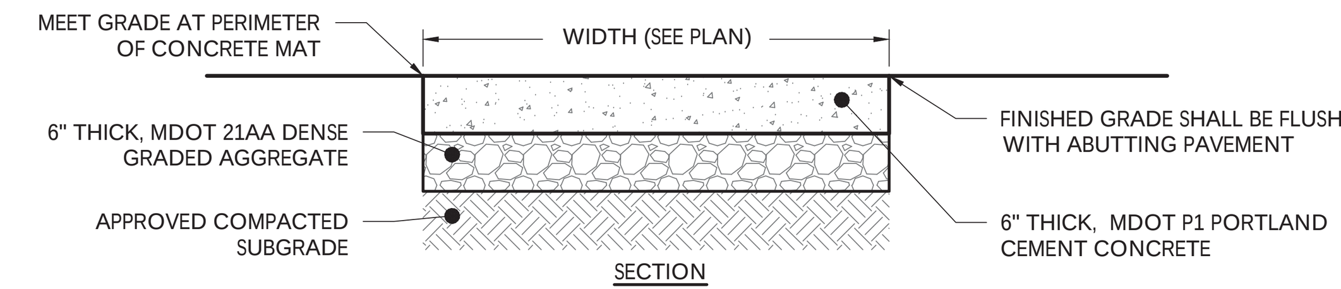


CONCRETE WHEEL STOP DETAIL

NOT TO SCALE

NOTES:
1. ON CONCRETE PAVEMENT, SECURE WHEEL STOP WITH EPOXY BONDING AGENT.
2. WHEEL STOP SHALL BE 6' LONG.
3. WHEEL STOP SHALL BE PREFABRICATED CONCRETE.

2

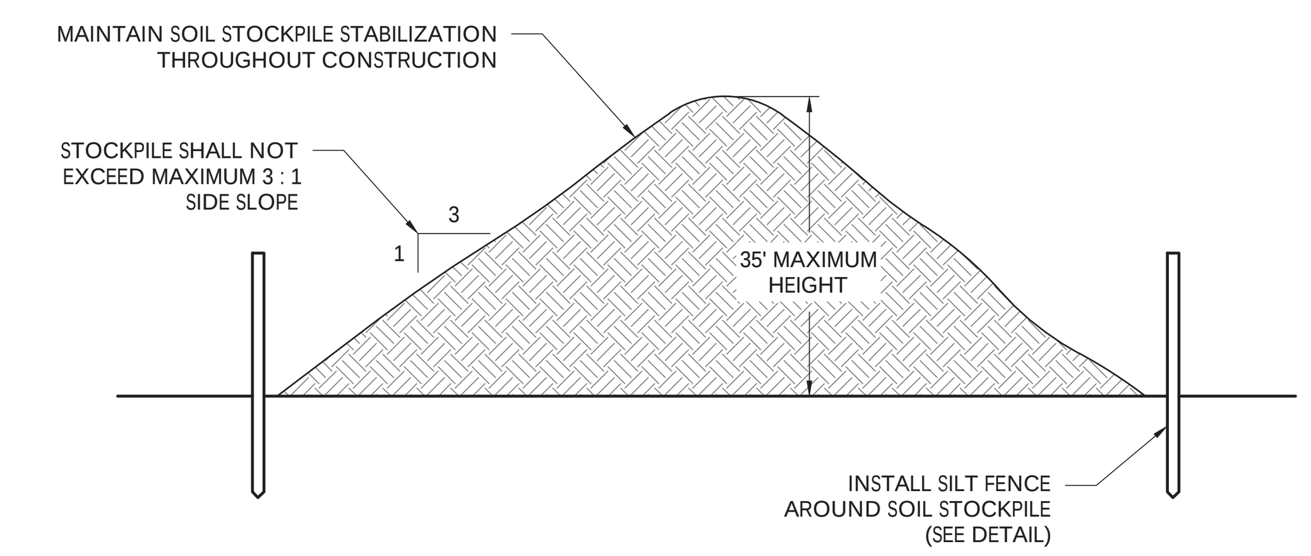


STANDARD DUTY CONCRETE PAVEMENT

NOT TO SCALE

NOTES:
1. ½" EXPANSION JOINTS WITH WATER SEAL SHALL BE PROVIDED AT 12' INTERVALS WITH PRE-MOLDED, BITUMINOUS JOINT FILLER, RECESSED ¼" FROM THE SURFACE. LONGITUDINAL REBAR TO BE CUT AT EXPANSION JOINTS.
2. 1" DEEP BY ¼" WIDE, TOOLED CONTRACTION JOINTS SHALL BE PROVIDED AT MID-POINT BETWEEN EXPANSION JOINTS OR 6' INTERVALS MAX.
3. CONCRETE SHALL RECEIVE BROOM FINISH.
4. ALL EXPOSED CORNERS TO HAVE 12" CHAMFER.

3

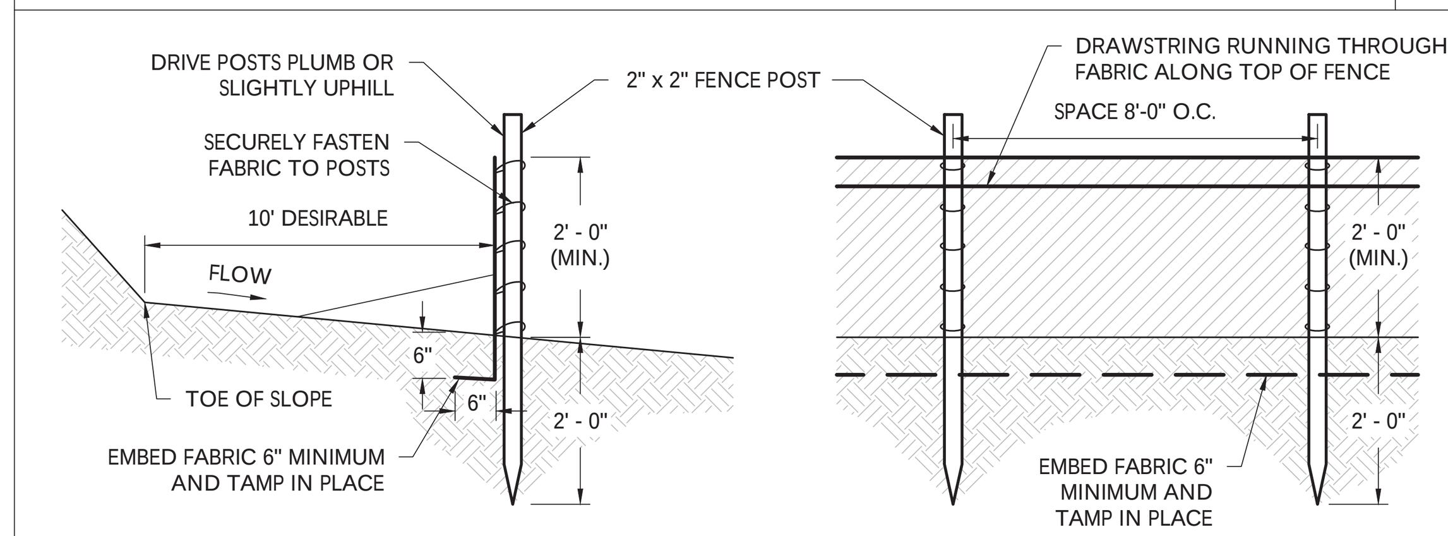


NOTES:
1. STOCKPILES SHALL BE SITUATED SO AS NOT TO OBSTRUCT NATURAL DRAINAGE OR CAUSE OFF-SITE ENVIRONMENTAL DAMAGE.
2. STOCKPILES SHALL BE STABILIZED IN ACCORDANCE WITH THE STANDARDS FOR PERMANENT OR TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION, AS APPROPRIATE (SEE SOIL EROSION NOTES).

SOIL STOCKPILE DETAIL

NOT TO SCALE

4

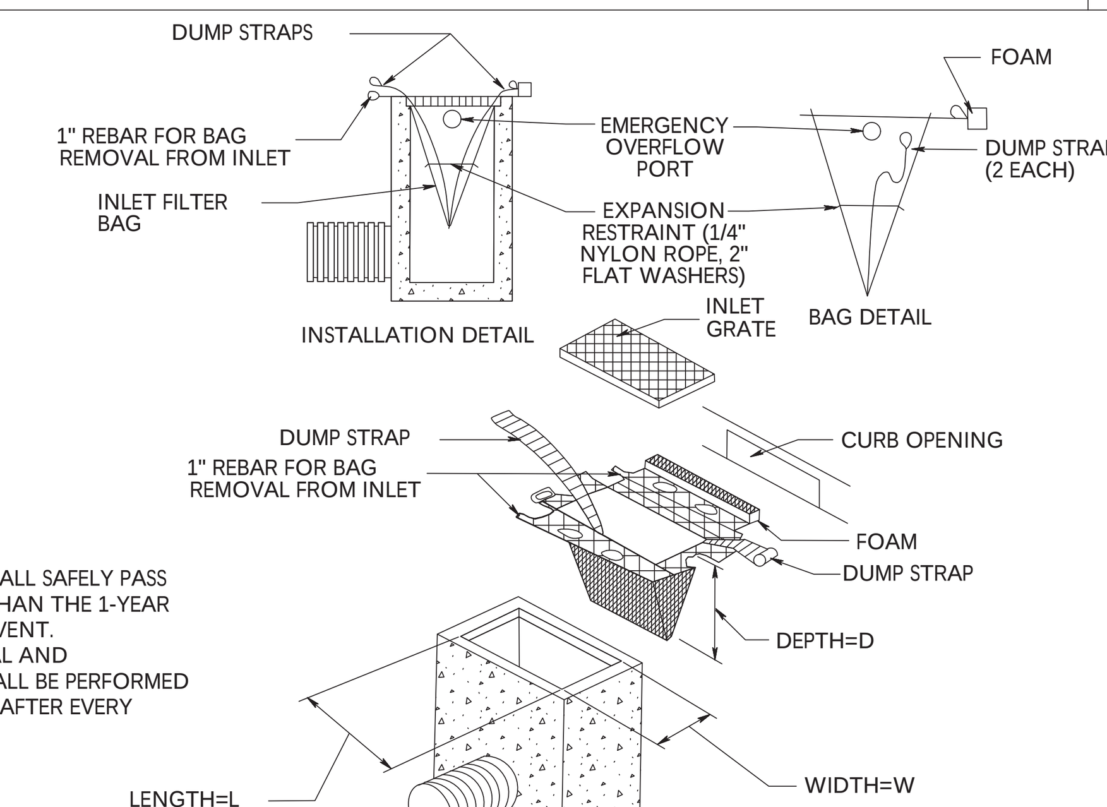


NOTES:
1. SECURELY FASTEN GEOTEXTILE TO FENCE POST BY USE OF WIRE TIES, HOG RINGS, STAPLES OR POCKETS. FOUR TO SIX FASTENERS PER POST.
2. GEOTEXTILE FABRIC TO BE EMBEDDED 6" (MIN.) AND TAMP IN PLACE.
3. SECURELY FASTEN ENDS OF INDIVIDUAL ROLLS OF GEOTEXTILE TO A POST BY WRAPPING EACH END OF THE GEOTEXTILE AROUND THE POST TWICE AND ATTACHING AS SPECIFIED IN NOTE 1 ABOVE. SPLICING OF INDIVIDUAL ROLLS SHALL NOT OCCUR AT LOW POINTS.
4. SET SILT FENCE WITHIN PROJECT LIMITS. 10'-0" IS DESIRABLE.

SILT FENCE DETAIL

NOT TO SCALE

5

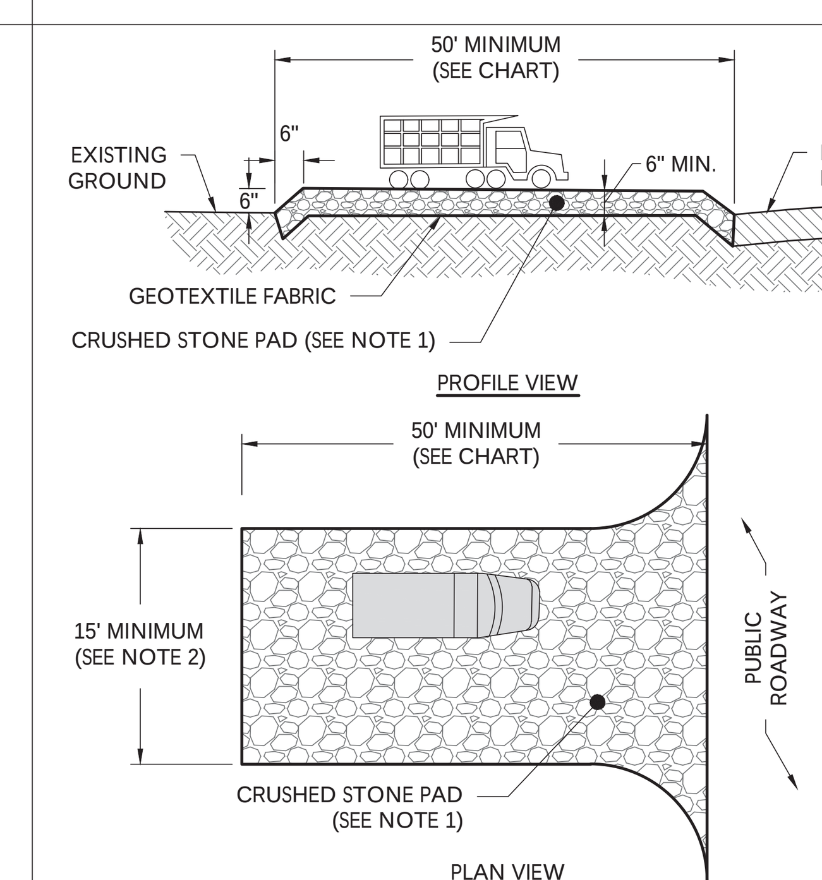


NOTES:
1. THE FILTER BAG SHALL SAFELY PASS FLOWS GREATER THAN THE 1-YEAR 24-HOUR STORM EVENT.
2. SEDIMENT REMOVAL AND MAINTENANCE SHALL BE PERFORMED FREQUENTLY AND AFTER EVERY STORM EVENT.

INLET FILTER BAG DETAIL

NOT TO SCALE

6



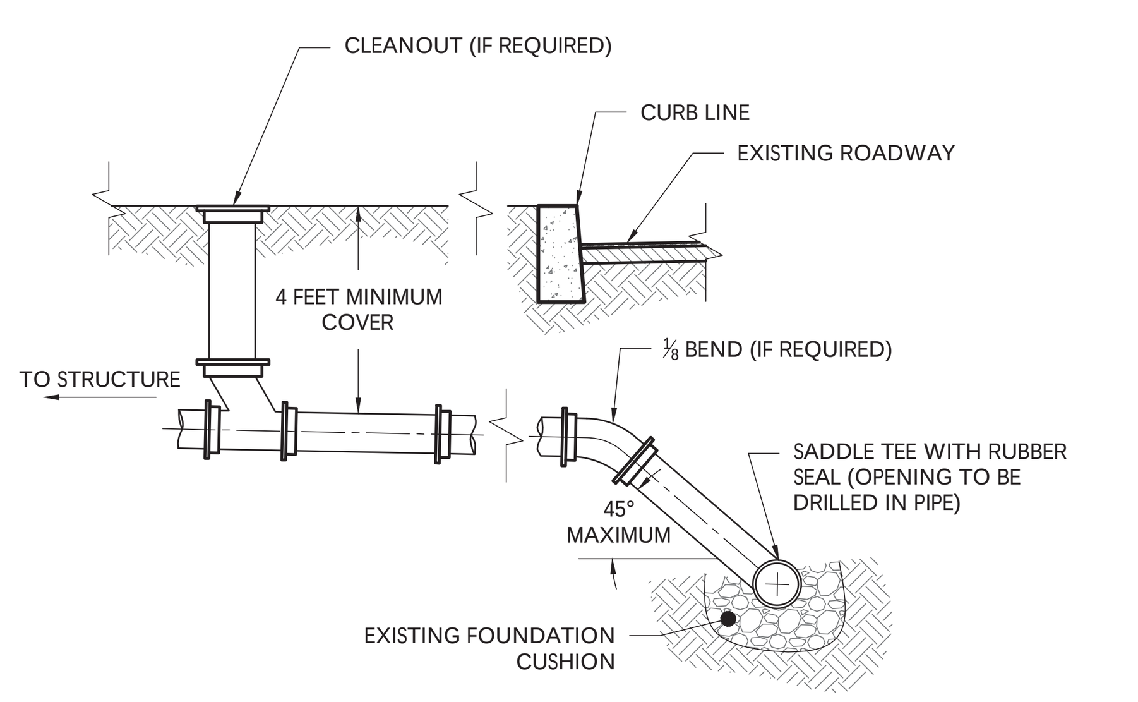
SLOPE OF PUBLIC ROADWAY	LENGTH OF STONE REQ'D	
	COARSE GRAINED SOILS	FINE GRAINED SOILS
0% TO 2%	50 FEET	100 FEET
2% TO 5%	100 FEET	200 FEET
> 5%	SEE NOTE 4	

NOTES:
1. STONE SHALL BE ASTM C-33, SIZE No. 2 (2.5" TO 1.5") OR No. 3 (2" TO 1") CLEAN CRUSHED ANGULAR STONE.
2. WIDTH SHALL BE 15' MINIMUM OR THE FULL WIDTH OF THE ACCESS POINT, WHICHEVER IS GREATER.
3. STORMWATER FROM UP-SLOPE AREAS SHALL BE DIVERTED AWAY FROM THE STABILIZED PAD, WHERE POSSIBLE. AT POORLY DRAINED LOCATIONS, SUBSURFACE DRAINAGE GRAVEL FILTER OR GEOTEXTILE SHALL BE INSTALLED BEFORE THE STABILIZED CONSTRUCTION ENTRANCE.
4. WHERE THE SLOPE OF THE ROADWAY EXCEEDS 5%, A STABILIZED BASE OF HOT MIX ASPHALT BASE COURSE SHALL BE INSTALLED. THE TYPE AND THICKNESS OF THE BASE COURSE AND USE OF DENSE GRADED AGGREGATE SUB-BASE SHALL BE AS PRESCRIBED BY LOCAL MUNICIPAL ORDINANCE OR GOVERNING AUTHORITY.
5. CONTRACTOR SHALL PROVIDE A SMOOTH TRANSITION BETWEEN THE STABILIZED CONSTRUCTION ACCESS AND THE PUBLIC ROADWAY.

STABILIZED CONSTRUCTION ACCESS DETAIL

NOT TO SCALE

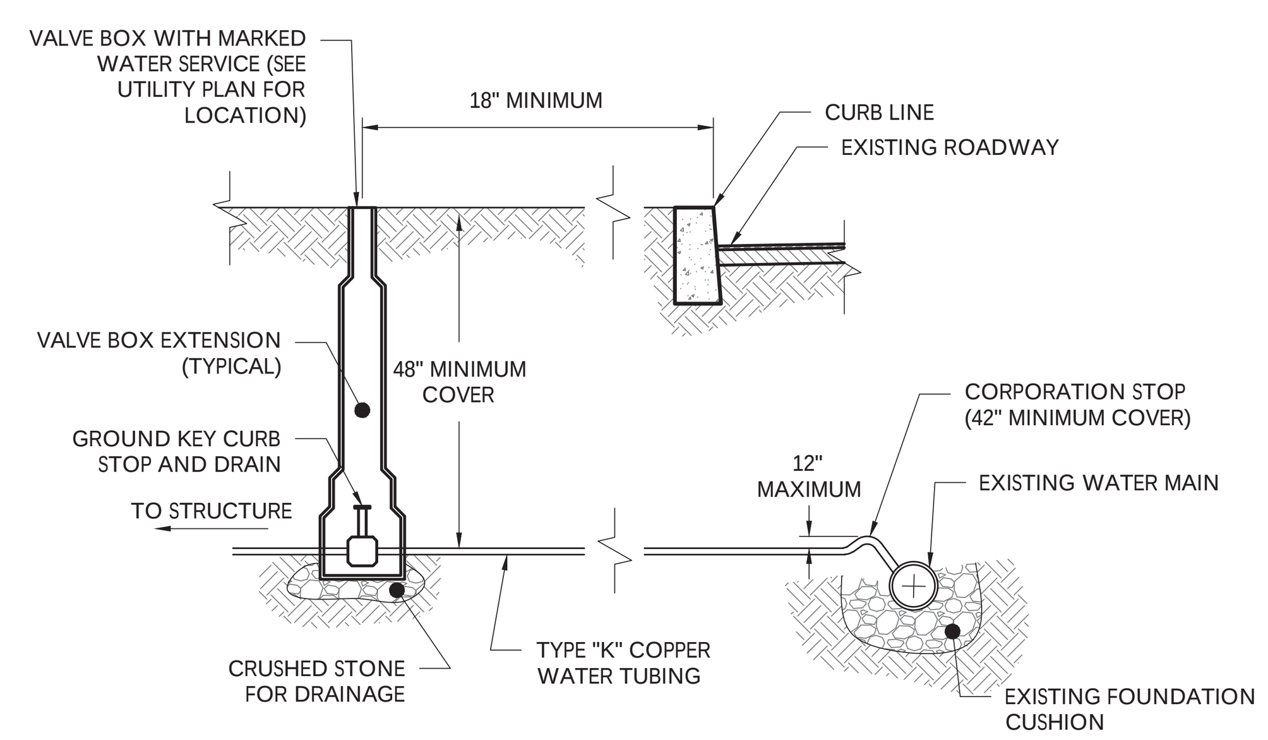
7



SEWER CONNECTION DETAIL

NOT TO SCALE

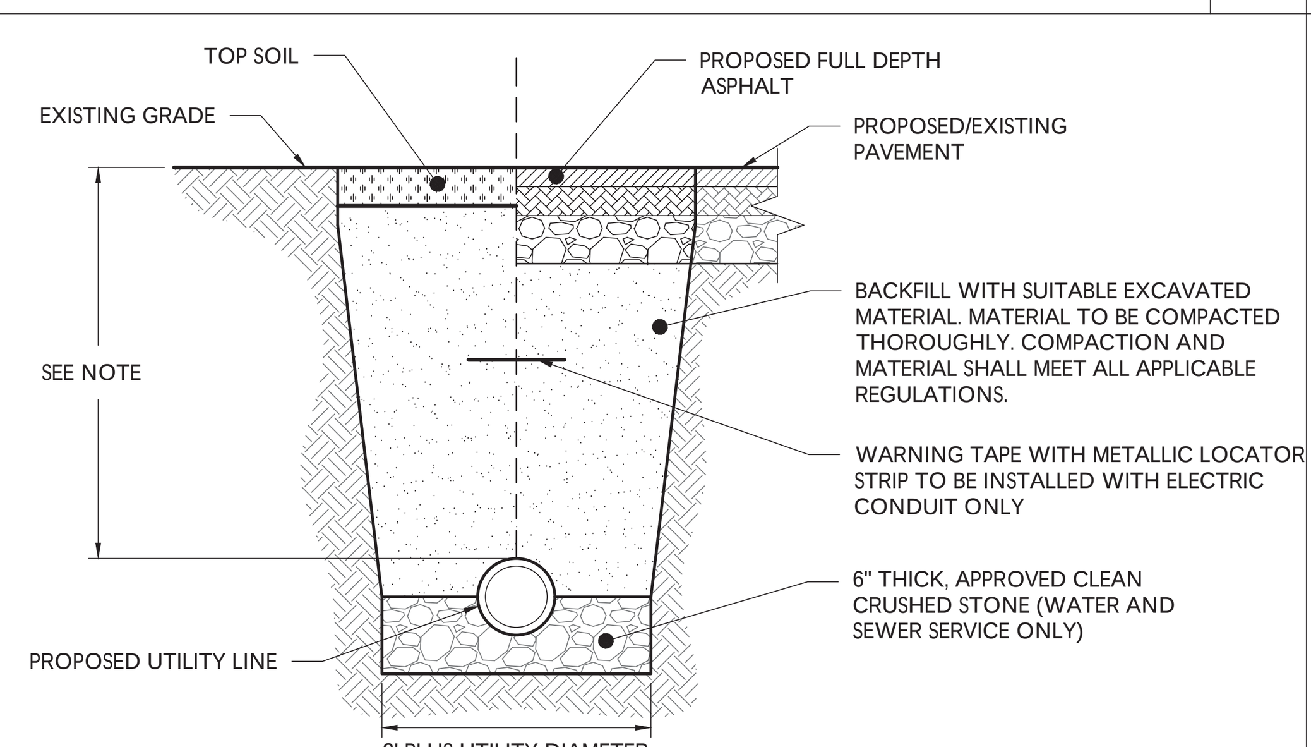
8



WATER CONNECTION DETAIL

NOT TO SCALE

9



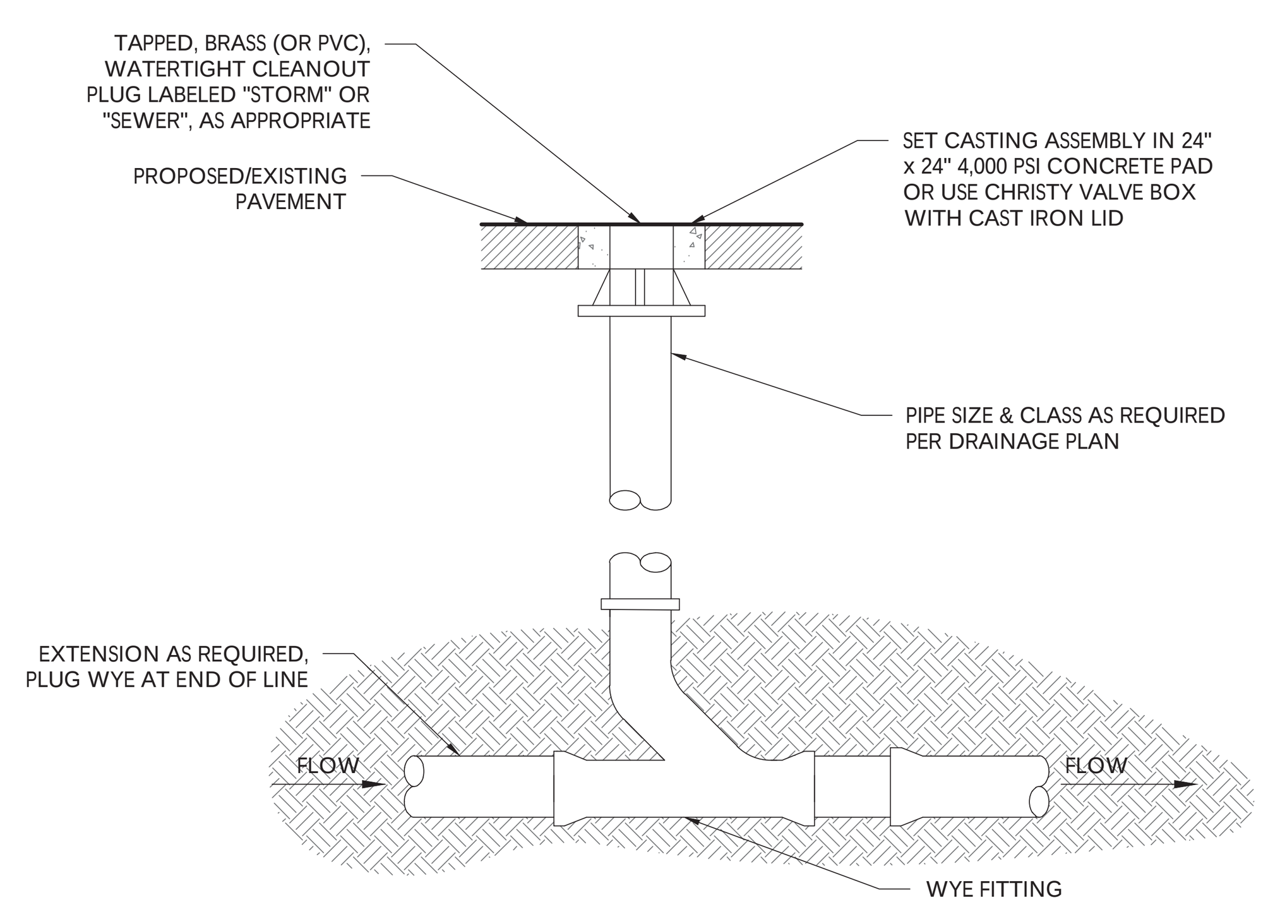
UTILITY TRENCH DETAIL

NOT TO SCALE

NOTE:

MINIMUM PIPE COVER SHALL BE AS FOLLOW:
- ELECTRIC SERVICE - PER APPLICABLE UTILITY AUTHORITY
- GAS SERVICE - PER APPLICABLE UTILITY AUTHORITY
- SEWER SERVICE - 36" MINIMUM
- WATER SERVICE - 48" MINIMUM

10

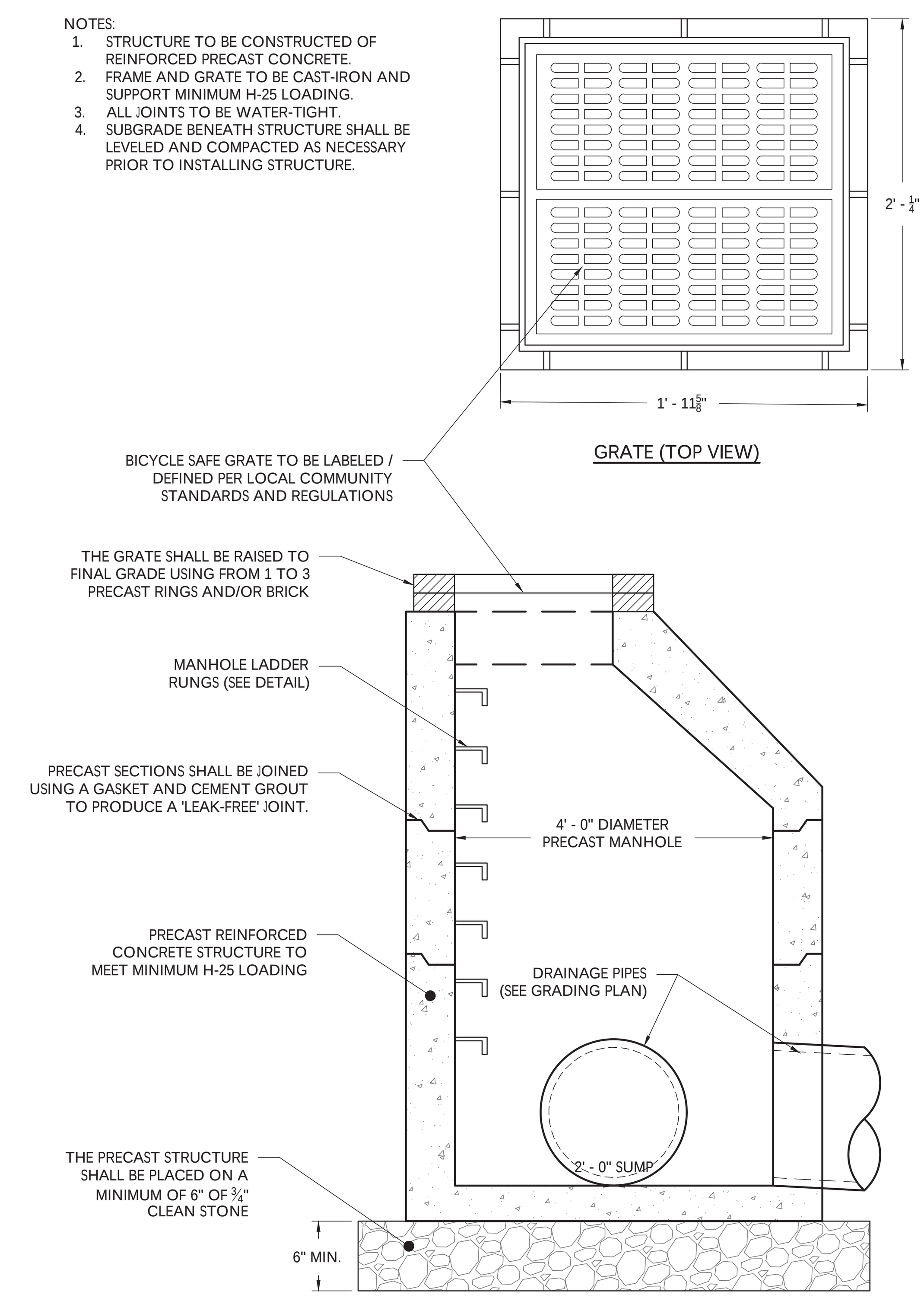


HARDSCAPE CLEAN-OUT

NOT TO SCALE

11

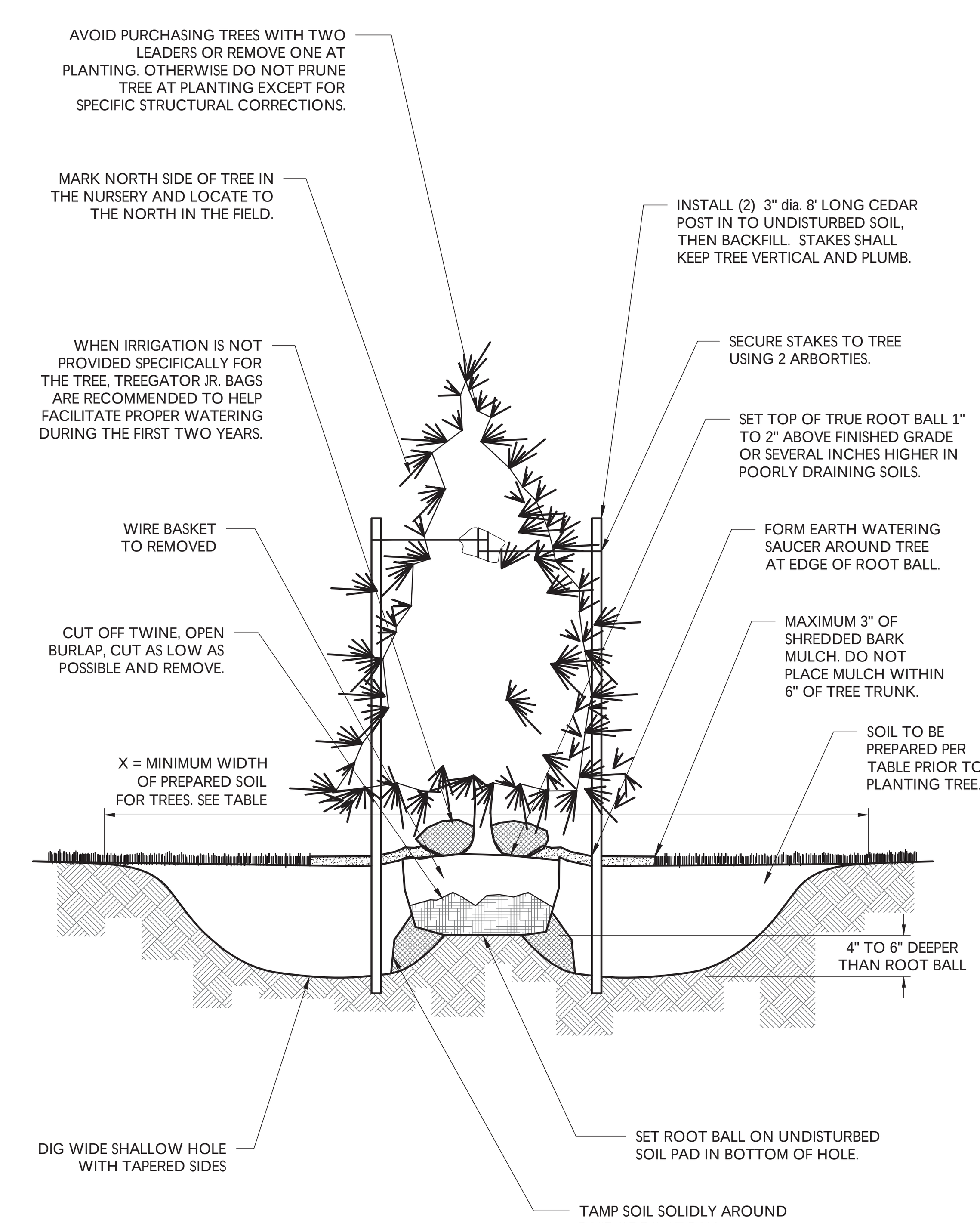
NOTES:
1. STRUCTURE TO BE CONSTRUCTED OF REINFORCED PRECAST CONCRETE.
2. FRAME AND GRATE TO BE CAST-IRON AND SUPPORT MINIMUM H-25 LOADING.
3. ALL JOINTS TO BE WATER-TIGHT.
4. SUBGRADE BENEATH STRUCTURE SHALL BE LEVELED AND COMPACTED AS NECESSARY PRIOR TO INSTALLING STRUCTURE.



STORM INLET DETAIL

PER MDOT TYPE 'R' COVER
NOT TO SCALE

12



CONIFEROUS TREE PLANTING DETAIL

NOT TO SCALE

13

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PROPOSED CAR WASH

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STATE OF MICHIGAN · JONATHAN REID COOKSEY ENGINEER · LICENSED PROFESSIONAL ENGINEER
REID COOKSEY, P.E.
MICHIGAN LICENSE No. 6201059128
LICENSED PROFESSIONAL ENGINEER

STONEFIELD engineering & design

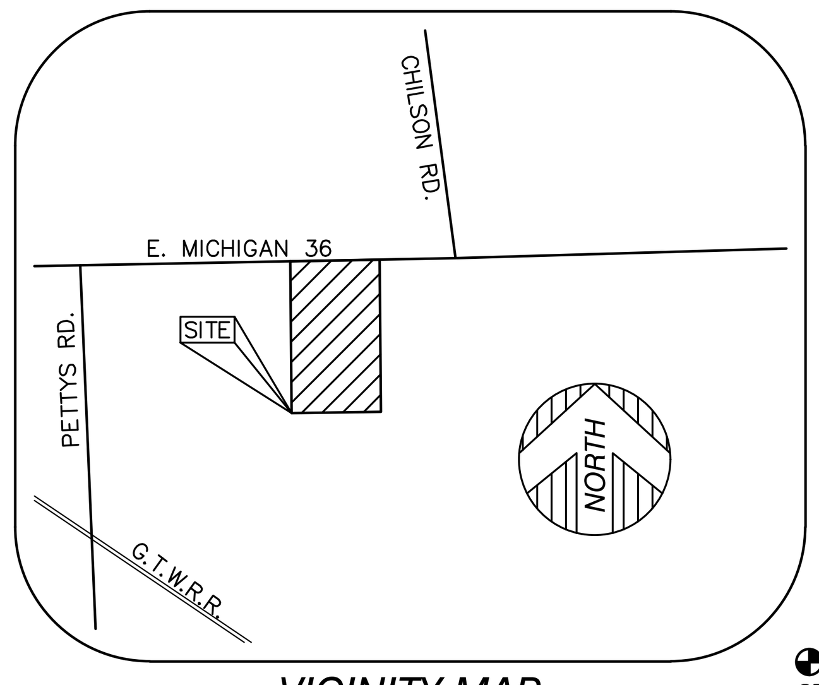
SCALE: AS SHOWN	PROJECT ID: DET-220416

TITLE:

CONSTRUCTION DETAILS

DRAWING:

C-11



VICINITY MAP

(NOT TO SCALE)

PARCEL AREA

53,075± SQUARE FEET = 1.22± ACRES

BASIS OF BEARING

NORTH 88°31'32" EAST, BEING THE SOUTH LINE OF E. MICHIGAN AVE (M-36), AS DESCRIBED.

BENCHMARK

SITE BENCHMARK #1
RR SPIKE IN EAST SIDE OF UTILITY POLE @ NE CORNER OF SITE 40'± SOUTH OF M-36.
ELEVATION = 864.81' (NAVD 88)

SITE BENCHMARK #2
BOLT SPIKE IN NORTH SIDE OF UTILITY POLE @ NW CORNER OF SITE 40'± SOUTH OF M-36.
ELEVATION = 866.38' (NAVD 88)

SITE BENCHMARK #3
SQUARE ON EAST SIDE OF CONC LIGHT POLE @ WEST SIDE OF SITE.
ELEVATION = 867.59' (NAVD 88)

FLOOD NOTE

SUBJECT PARCEL LIES WITHIN:
SPECIAL FLOOD HAZARD AREA (ZONE AE): BASE FLOOD ELEVATIONS DETERMINED.

OTHER FLOOD AREA (ZONE X): AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD.

OTHER AREA (ZONE X): AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN.

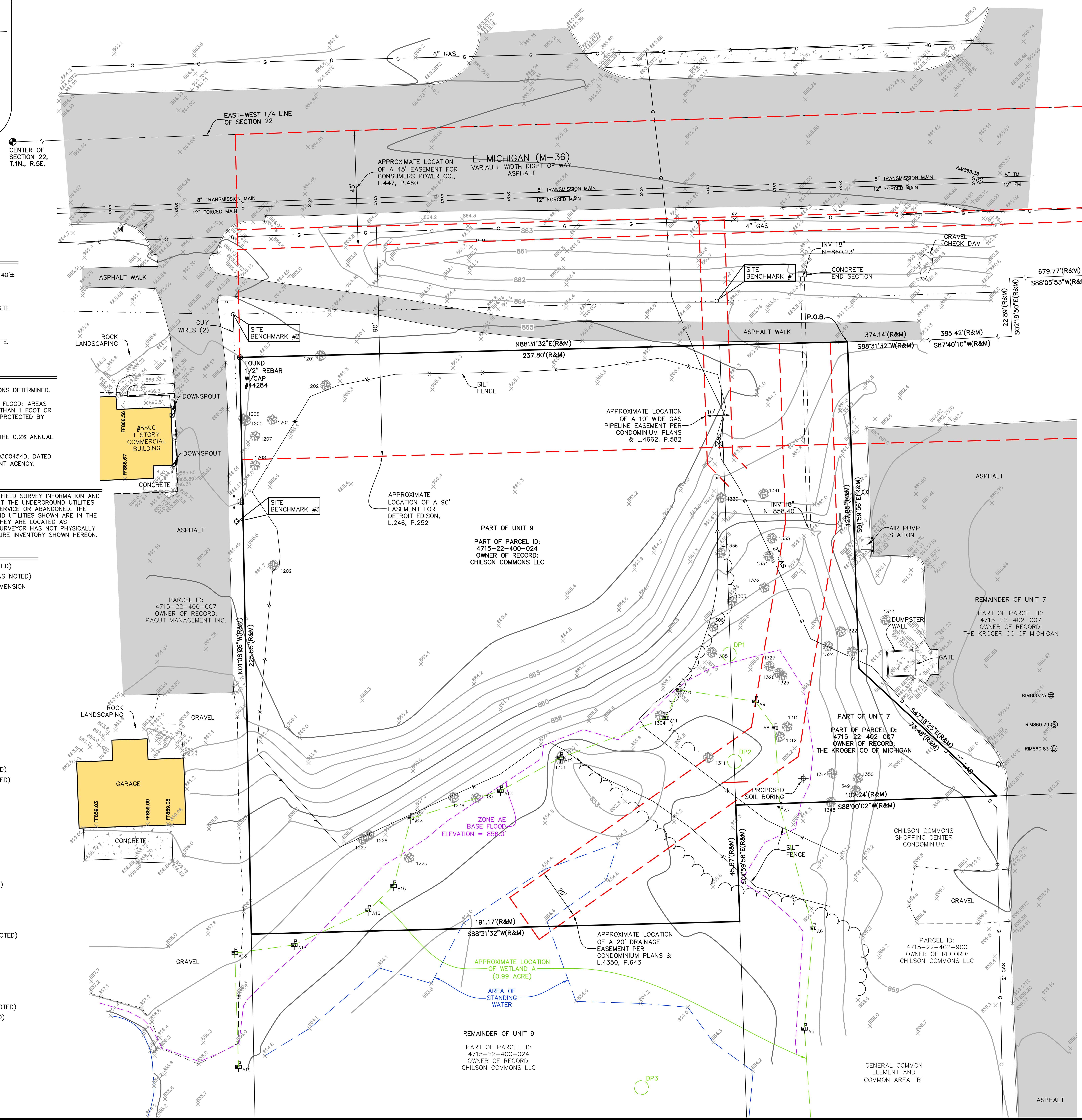
AS SHOWN ON FLOOD INSURANCE RATE MAP: MAP NUMBER 26093C0454D, DATED 9/17/2008, PUBLISHED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

SURVEYOR'S NOTE

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES OTHER THAN THE STRUCTURE INVENTORY SHOWN HEREON.

LEGEND

Symbol	Description
	FOUND MONUMENT (AS NOTED)
	FOUND SECTION CORNER (AS NOTED)
(R&M)	RECORD AND MEASURED DIMENSION
(R)	RECORD DIMENSION
(M)	MEASURED DIMENSION
0.00	GROUND ELEVATION
	ELECTRIC METER
	UTILITY POLE
	GAS VALVE
	SANITARY MANHOLE
	ROUND CATCH BASIN
	SQUARE CATCH BASIN
	STORM DRAIN MANHOLE
	WELL
	WETLAND FLAG
	BOLLARD
	MAIL BOX
	SINGLE POST SIGN
	DOUBLE POST SIGN
	SOIL BORING
	DECIDUOUS TREE (AS NOTED)
	CONIFEROUS TREE (AS NOTED)
	PARCEL BOUNDARY LINE
	PLATTED LOT LINE
	SECTION LINE
	CENTERLINE OF EASEMENT
	BUILDING
	BUILDING OVERHANG
	CONCRETE CURB
	RAISED CONCRETE
	PARKING
	EDGE OF CONCRETE (CONC.)
	EDGE OF ASPHALT (ASPH.)
	EDGE OF GRAVEL
	FENCE (AS NOTED)
	WALL (AS NOTED)
	TREE / BRUSH LINE (AS NOTED)
	OVERHEAD UTILITY LINE
G	GAS LINE
S	SANITARY LINE
D	STORM LINE
W	WATER LINE
	WETLAND LIMITS
	UNDERGROUND PIPE (AS NOTED)
	EDGE OF WATER (AS NOTED)
	FLOOD LINE
	MINOR CONTOUR LINE
	MAJOR CONTOUR LINE
	BUILDING AREA
	ASPHALT
	CONCRETE



NORTH

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

PROPERTY DESCRIPTION

THE LAND SITUATED IN THE TOWNSHIP OF HAMBURG, COUNTY OF LIVINGSTON, STATE OF MICHIGAN, AND IS DESCRIBED AS FOLLOWS:

RECONFIGURED UNIT 9 DESCRIPTION:
A PARCEL OF LAND BEING PART OF UNIT 9 AND PART OF UNIT 7 OF CHILSON COMMONS SHOPPING CENTER, A CONDOMINIUM, ACCORDING TO THE MASTER DEED RECORDED IN LIBER 4366, PAGE 944, AS AMENDED BY FIRST AMENDMENT TO MASTER DEED RECORDED IN LIBER 4738, PAGE 533, SECOND AMENDMENT TO MASTER DEED RECORDED IN INSTRUMENT NO. 2011R-000963 AND THIRD AMENDMENT TO MASTER DEED RECORDED IN INSTRUMENT NO. 2022R-022074, AS AMENDED AND DESIGNATED AS LIVINGSTON COUNTY CONDOMINIUM SUBDIVISION PLAN NO. 303, TOGETHER WITH RIGHTS IN THE GENERAL COMMON ELEMENTS AND THE LIMITED COMMON ELEMENTS AS SHOWN ON THE MASTER DEED AND AS DESCRIBED IN ACT 59 OF THE PUBLIC ACTS OF 1978, AS AMENDED, DESCRIBED AS FOLLOWS: COMMENCING AT THE EAST 1/4 CORNER OF SECTION 22; THENCE ALONG THE EAST LINE OF SAID SECTION 22, SOUTH 01 DEGREE 08 MINUTES 26 SECONDS EAST, 95.25 FEET TO THE SOUTH LINE OF M-36; THENCE ALONG SAID SOUTH LINE OF M-36 THE FOLLOWING SEVEN (7) COURSES: 1.) 180.08 FEET ALONG A CURVE TO THE LEFT HAVING A RADIUS OF 482.60 FEET AND A CHORD THAT BEARS NORTH 73 DEGREES 10 MINUTES 10 SECONDS WEST, 179.03 FEET; 2.) ALONG A RADIAL LINE SOUTH 06 DEGREES 08 MINUTES 27 SECONDS WEST, 33.00 FEET; 3.) 63.17 FEET ALONG A CURVE TO THE LEFT HAVING A RADIUS OF 449.60 FEET AND A CHORD THAT BEARS NORTH 87 DEGREES 53 MINUTES 03 SECONDS WEST, 63.11 FEET; 4.) SOUTH 88 DEGREES 05 MINUTES 53 SECONDS WEST, 679.77 FEET; 5.) SOUTH 02 DEGREES 19 MINUTES 50 SECONDS EAST, 22.89 FEET; 6.) SOUTH 87 DEGREES 40 MINUTES 10 SECONDS WEST, 385.42 FEET; 7.) SOUTH 88 DEGREES 31 MINUTES 32 SECONDS WEST, 374.14 FEET TO THE POINT-OF-BEGINNING OF THIS PARCEL DESCRIPTION; THENCE SOUTH 01 DEGREE 59 MINUTES 56 SECONDS EAST, 127.85 FEET; THENCE SOUTH 47 DEGREES 18 MINUTES 25 SECONDS EAST, 73.48 FEET TO THE SOUTH LINE OF SAID UNIT 7; THENCE SOUTH 88 DEGREES 00 MINUTES 02 SECONDS WEST, ALONG THE SOUTH LINE OF SAID UNIT 7, 102.24 FEET TO THE EAST LINE OF SAID UNIT 9; THENCE SOUTH 01 DEGREES 59 MINUTES 56 SECONDS EAST, ALONG THE EAST LINE OF SAID UNIT 9, 45.57 FEET; THENCE SOUTH 88 DEGREES 31 MINUTES 32 SECONDS WEST, PARALLEL WITH THE SOUTH LINE OF M-36, 191.17 FEET TO A POINT ON THE WEST LINE OF SAID UNIT 9; THENCE NORTH 01 DEGREES 08 MINUTES 26 SECONDS WEST, ALONG THE WEST LINE OF SAID UNIT 9, 225.55 FEET TO THE SOUTH LINE OF M-36; THENCE NORTH 88 DEGREES 31 MINUTES 32 SECONDS EAST, ALONG THE SOUTH LINE OF M-36, 237.80 FEET TO THE POINT-OF-BEGINNING OF THIS PARCEL DESCRIPTION.

TITLE REPORT NOTE

ONLY THOSE EXCEPTIONS CONTAINED WITHIN THE FIRST AMERICAN TITLE INSURANCE COMPANY COMMITMENT No. 987130, REVISION A, DATED APRIL 28, 2023, AND RELISTED BELOW WERE CONSIDERED FOR THIS SURVEY. NO OTHER RECORDS RESEARCH WAS PERFORMED BY THE CERTIFYING SURVEYOR.

7. POLE LINE PERMIT IN FAVOR OF THE DETROIT EDISON COMPANY AND THE COVENANTS, CONDITIONS AND RESTRICTIONS CONTAINED IN INSTRUMENT RECORDED IN LIBER 246, PAGE 252. (AS SHOWN)

8. RIGHT OF WAY IN FAVOR OF THE CONSUMERS POWER COMPANY AND THE COVENANTS, CONDITIONS AND RESTRICTIONS CONTAINED IN INSTRUMENT RECORDED IN LIBER 447, PAGE 460. (AS SHOWN)

9. TERMS AND CONDITIONS CONTAINED IN HARDSHIP PLANNED UNIT DEVELOPMENT AGREEMENT AS DISCLOSED BY INSTRUMENT RECORDED IN LIBER 4350, PAGE 643. (AS SHOWN)

FIRST AMENDMENT TO HARDSHIP PLANNED UNIT DEVELOPMENT AGREEMENT RECORDED IN INSTRUMENT NO. 2011R-000962. (SEE DOCUMENT FOR TERMS AND CONDITIONS)

SECOND AMENDED AND FULLY RESTATED HARDSHIP PLANNED UNIT DEVELOPMENT AGREEMENT RECORDED IN INSTRUMENT NO. 2021R-017179. (SEE DOCUMENT FOR TERMS AND CONDITIONS)

FIRST AMENDMENT TO SECOND AMENDED AND FULLY RESTATED HARDSHIP PLANNED UNIT DEVELOPMENT AGREEMENT RECORDED IN INSTRUMENT NO. 2022R-022070. (SEE DOCUMENT FOR TERMS AND CONDITIONS)

10. THE RIGHTS OF CO-OWNERS AND THE ADMINISTERING BODY AS SET FORTH IN THE MASTER DEED AND ACT 59 OF THE PUBLIC ACTS OF 1978 AS AMENDED. THE RIGHTS OF CO-OWNERS AND THE ADMINISTERING BODY, EASEMENTS, RESTRICTIONS AND OTHER TERMS, COVENANTS AND CONDITIONS SET FORTH IN THE MASTER DEED AND EXHIBITS THERETO RECORDED IN LIBER 4366, PAGE 944, LIVINGSTON COUNTY RECORDS, AND ANY AMENDMENTS THERETO. (DOES NOT INCLUDE UNIT 9; SEE DOCUMENT FOR TERMS AND CONDITIONS)

FIRST AMENDMENT TO MASTER DEED RECORDED IN LIBER 4738, PAGE 533. (DOES NOT INCLUDE UNIT 9; SEE DOCUMENT FOR TERMS AND CONDITIONS)

SECOND AMENDMENT TO MASTER DEED RECORDED IN INSTRUMENT NO. 2011R-000963. (DOES NOT INCLUDE UNIT 9; SEE DOCUMENT FOR TERMS AND CONDITIONS)

THIRD AMENDMENT TO MASTER DEED RECORDED IN INSTRUMENT NO. 2022R-022074. (AS SHOWN)

11. TERMS AND CONDITIONS CONTAINED IN AGREEMENT FOR SEWER CONNECTION AS DISCLOSED BY INSTRUMENT RECORDED IN LIBER 4570, PAGE 13. (SEWER AGREEMENT DOES NOT INCLUDE UNIT 9; SEE DOCUMENT FOR TERMS AND CONDITIONS)

12. TERMS AND CONDITIONS CONTAINED IN EASEMENT FOR GAS PIPELINE AS DISCLOSED BY INSTRUMENT RECORDED IN LIBER 4662, PAGE 582. (AS SHOWN)

13. DETROIT EDISON UNDERGROUND RESIDENTIAL DISTRIBUTION EASEMENT (RIGHT OF WAY) IN FAVOR OF THE DETROIT EDISON COMPANY AND SBC COMMUNICATIONS, INC., FORMERLY AMERITECH, FORMERLY MICHIGAN BELL TELEPHONE COMPANY AND THE COVENANTS, CONDITIONS AND RESTRICTIONS CONTAINED IN INSTRUMENT RECORDED IN LIBER 4746, PAGE 876. (DOES NOT CROSS NOR ABUT SUBJECT PARCEL)

14. TERMS AND CONDITIONS CONTAINED IN EASEMENT DEED BY COURT ORDER IN SETTLEMENT OF LANDOWNER ACTION AS DISCLOSED BY INSTRUMENT RECORDED IN INSTRUMENT NO. 2013R-008991. (SEE DOCUMENT FOR TERMS AND CONDITIONS)

AFFIDAVIT OF JOSEPH E. JONES RECORDED IN INSTRUMENT NO. 2013R-008992. (DOES NOT AFFECT SUBJECT PARCEL; SEE DOCUMENT FOR TERMS AND CONDITIONS)

PARTIAL QUITCLAIM RELEASE RECORDED IN INSTRUMENT NO. 2015R-028186. (SEE DOCUMENT FOR TERMS AND CONDITIONS)

26. DETROIT EDISON UNDERGROUND EASEMENT (RIGHT OF WAY) IN FAVOR OF THE DETROIT EDISON COMPANY AND THE COVENANTS, CONDITIONS AND RESTRICTIONS CONTAINED IN INSTRUMENT RECORDED IN INSTRUMENT NO. 2011R-019561, AS TO UNIT 7. (DOES NOT CROSS NOR ABUT SUBJECT PARCEL)

SURVEYOR'S CERTIFICATION

TO EROP LLC, AN ILLINOIS LIMITED LIABILITY COMPANY AND FIRST AMERICAN TITLE INSURANCE COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 2, 4, 5, 7A, 8, 9, 11A, AND 11B OF TABLE A, THEREOF. THE FIELD WORK WAS COMPLETED ON 05/03/23.

DATE OF PLAT OR MAP: 05/10/23

DRAFT

ANTHONY T. SYCKO, JR., P.S.
PROFESSIONAL SURVEYOR
MICHIGAN LICENSE NO. 47976
22556 GRATIOT AVE., EASTPOINTE, MI 48021
TSycko@kemtec-survey.com

KEM-TEC
A GROUP OF COMPANIES
PROFESSIONAL ENGINEERING, SURVEYING & ENVIRONMENTAL SERVICES
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Detroit (313) 758.0677
Ann Arbor (734) 994.0888
Grand Blanc (888) 694.0001
www.kemtecagroupofcompanies.com

ALTA / NSPS LAND TITLE SURVEY

PREPARED FOR: STONEFIELD ENGINEERING AND DESIGN
M-36, HAMBURG TWP., MICHIGAN,
PART OF SECTION 22,
TOWN 1 NORTH, RANGE 5 EAST

REVISION	DATE	BY	DESCRIPTION
1	05/11/23	JV	RECEIVED TITLE WORK

DRAWN BY:	NPH/JDM	05/10/23
CHECKED BY:	ATS	05/10/23
DATE:	MAY 10, 2023	
PROJECT NO.	23-00652	SCALE: 1" = 20'

1

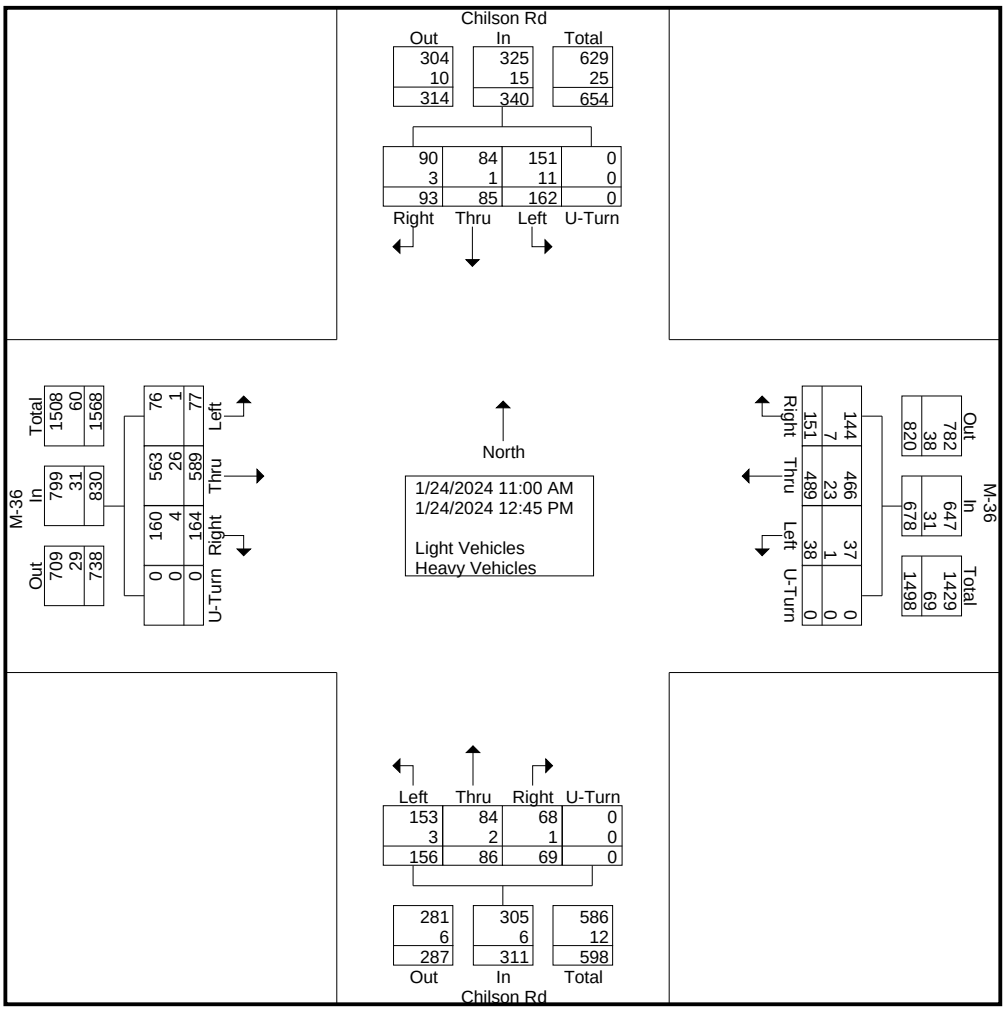
1 OF 1 SHEETS

TRUE DATA TO IMPROVE MOBILITY

File Name : 16450401 - Chilson Rd -- M-36
Site Code : 16450401
Start Date : 1/24/2024
Page No : 1

Groups Printed- Light Vehicles - Heavy Vehicles

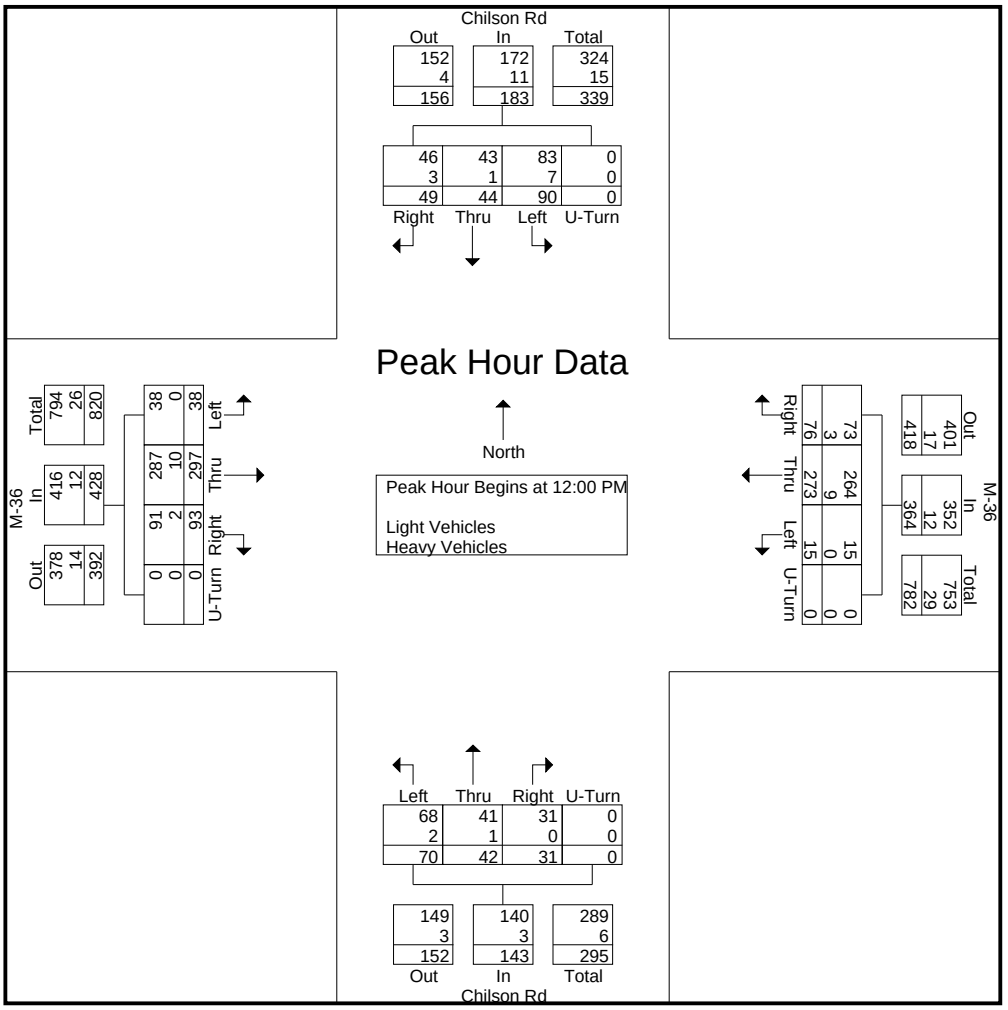
	M-36 Eastbound					M-36 Westbound					Chilson Rd Northbound					Chilson Rd Southbound					
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
11:00 AM	9	68	10	0	87	5	54	23	0	82	27	9	11	0	47	18	12	10	0	40	256
11:15 AM	11	73	20	0	104	5	44	13	0	62	23	10	9	0	42	12	15	11	0	38	246
11:30 AM	8	80	19	0	107	4	50	17	0	71	14	17	7	0	38	21	8	13	0	42	258
11:45 AM	11	71	22	0	104	9	68	22	0	99	22	8	11	0	41	21	6	10	0	37	281
Total	39	292	71	0	402	23	216	75	0	314	86	44	38	0	168	72	41	44	0	157	1041
12:00 PM	12	62	17	0	91	5	68	19	0	92	14	11	12	0	37	26	12	10	0	48	268
12:15 PM	6	69	27	0	102	4	62	21	0	87	20	12	7	0	39	22	9	15	0	46	274
12:30 PM	6	81	23	0	110	4	75	20	0	99	18	11	7	0	36	21	10	10	0	41	286
12:45 PM	14	85	26	0	125	2	68	16	0	86	18	8	5	0	31	21	13	14	0	48	290
Total	38	297	93	0	428	15	273	76	0	364	70	42	31	0	143	90	44	49	0	183	1118
Grand Total	77	589	164	0	830	38	489	151	0	678	156	86	69	0	311	162	85	93	0	340	2159
Apprch %	9.3	71	19.8	0		5.6	72.1	22.3	0		50.2	27.7	22.2	0		47.6	25	27.4	0		
Total %	3.6	27.3	7.6	0	38.4	1.8	22.6	7	0	31.4	7.2	4	3.2	0	14.4	7.5	3.9	4.3	0	15.7	
Light Vehicles	76	563	160	0	799	37	466	144	0	647	153	84	68	0	305	151	84	90	0	325	2076
% Light Vehicles	98.7	95.6	97.6	0	96.3	97.4	95.3	95.4	0	95.4	98.1	97.7	98.6	0	98.1	93.2	98.8	96.8	0	95.6	96.2
Heavy Vehicles	1	26	4	0	31	1	23	7	0	31	3	2	1	0	6	11	1	3	0	15	83
% Heavy Vehicles	1.3	4.4	2.4	0	3.7	2.6	4.7	4.6	0	4.6	1.9	2.3	1.4	0	1.9	6.8	1.2	3.2	0	4.4	3.8



TRUE DATA TO IMPROVE MOBILITY

File Name : 16450401 - Chilson Rd -- M-36
Site Code : 16450401
Start Date : 1/24/2024
Page No : 2

	M-36 Eastbound					M-36 Westbound					Chilson Rd Northbound					Chilson Rd Southbound					
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	12	62	17	0	91	**5**	68	19	0	92	14	11	**12**	0	37	**26**	12	10	0	**48**	268
12:15 PM	6	69	**27**	0	102	4	62	**21**	0	87	**20**	**12**	7	0	**39**	22	9	**15**	0	46	274
12:30 PM	6	81	23	0	110	4	**75**	20	0	**99**	18	11	7	0	36	21	10	10	0	41	286
12:45 PM	**14**	**85**	26	0	**125**	2	68	16	0	86	18	8	5	0	31	21	**13**	14	0	48	**290**
Total Volume	38	297	93	0	428	15	273	76	0	364	70	42	31	0	143	90	44	49	0	183	1118
% App. Total	8.9	69.4	21.7	0		4.1	75	20.9	0		49	29.4	21.7	0		49.2	24	26.8	0		
PHF	.679	.874	.861	.000	.856	.750	.910	.905	.000	.919	.875	.875	.646	.000	.917	.865	.846	.817	.000	.953	.964
Light Vehicles	38	287	91	0	416	15	264	73	0	352	68	41	31	0	140	83	43	46	0	172	1080
% Light Vehicles	100	96.6	97.8	0	97.2	100	96.7	96.1	0	96.7	97.1	97.6	100	0	97.9	92.2	97.7	93.9	0	94.0	96.6
Heavy Vehicles	0	10	2	0	12	0	9	3	0	12	2	1	0	0	3	7	1	3	0	11	38
% Heavy Vehicles	0	3.4	2.2	0	2.8	0	3.3	3.9	0	3.3	2.9	2.4	0	0	2.1	7.8	2.3	6.1	0	6.0	3.4

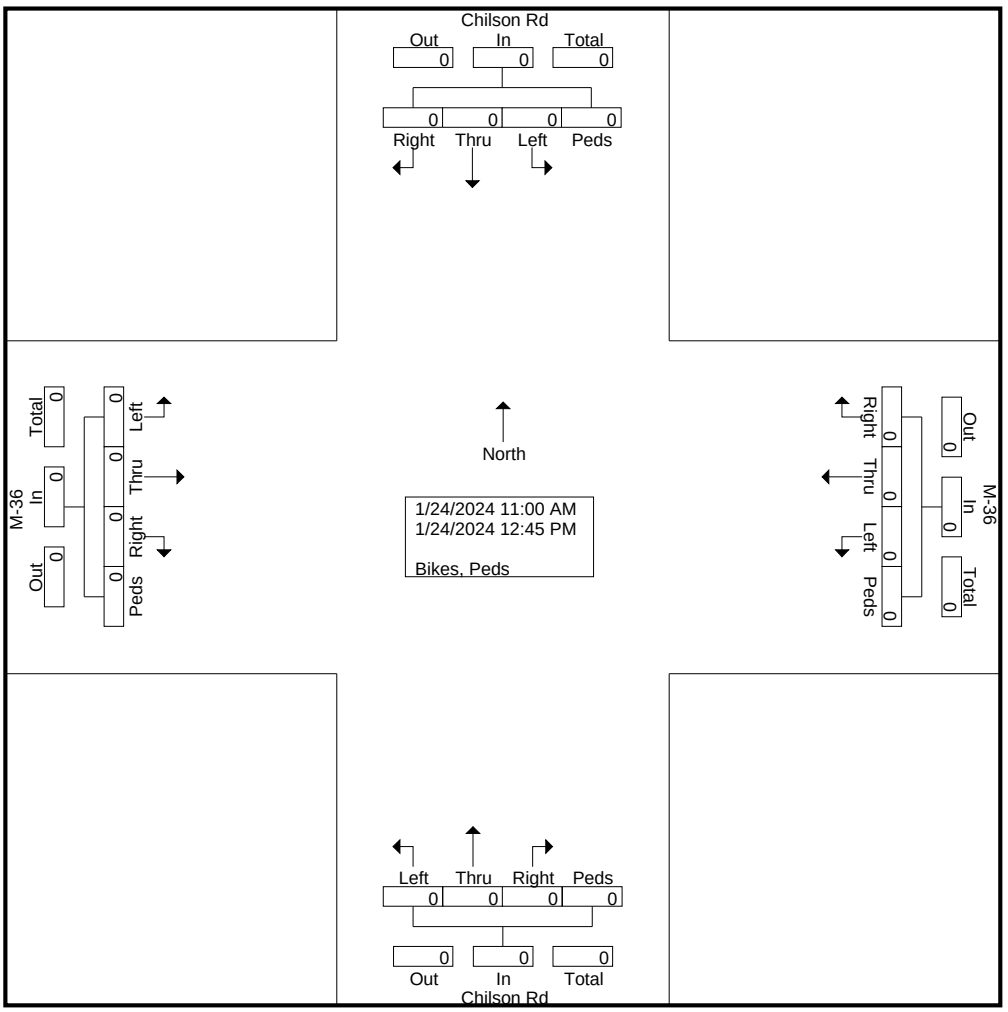


TRUE DATA TO IMPROVE MOBILITY

File Name : 16450401 - Chilson Rd -- M-36
Site Code : 16450401
Start Date : 1/24/2024
Page No : 1

Groups Printed- Bikes, Peds

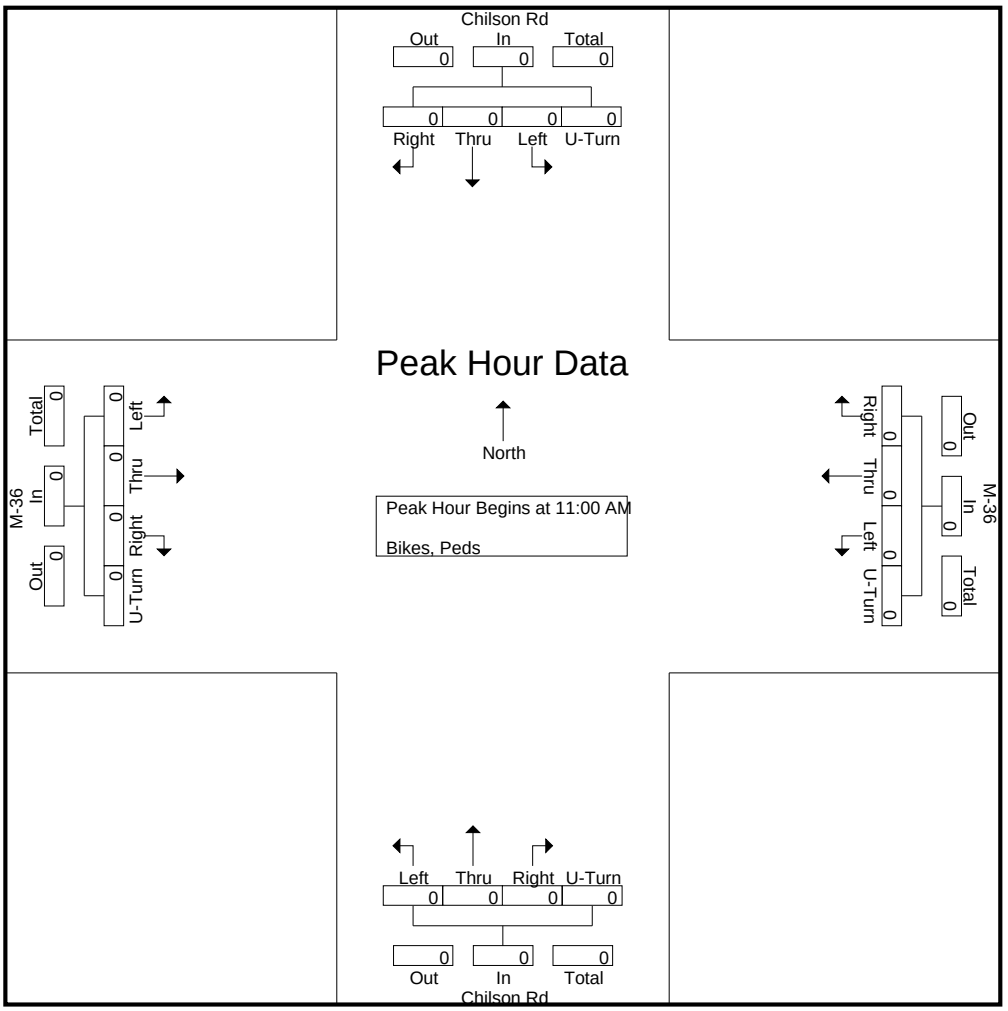
	M-36 Eastbound					M-36 Westbound					Chilson Rd Northbound					Chilson Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					



TRUE DATA TO IMPROVE MOBILITY

File Name : 16450401 - Chilson Rd -- M-36
Site Code : 16450401
Start Date : 1/24/2024
Page No : 2

	M-36 Eastbound					M-36 Westbound					Chilson Rd Northbound					Chilson Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

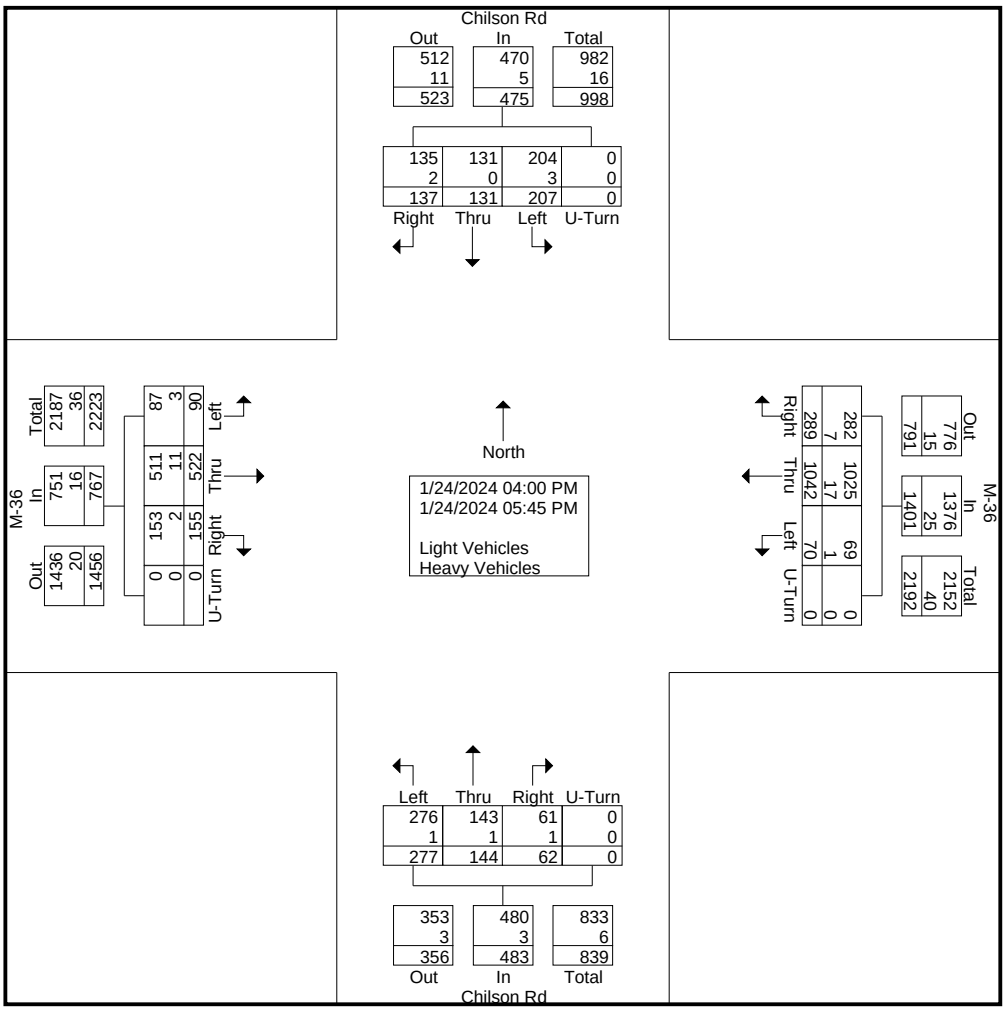


TRUE DATA TO IMPROVE MOBILITY

File Name : 16450402 - Chilson Rd -- M-36
Site Code : 16450402
Start Date : 1/24/2024
Page No : 1

Groups Printed- Light Vehicles - Heavy Vehicles

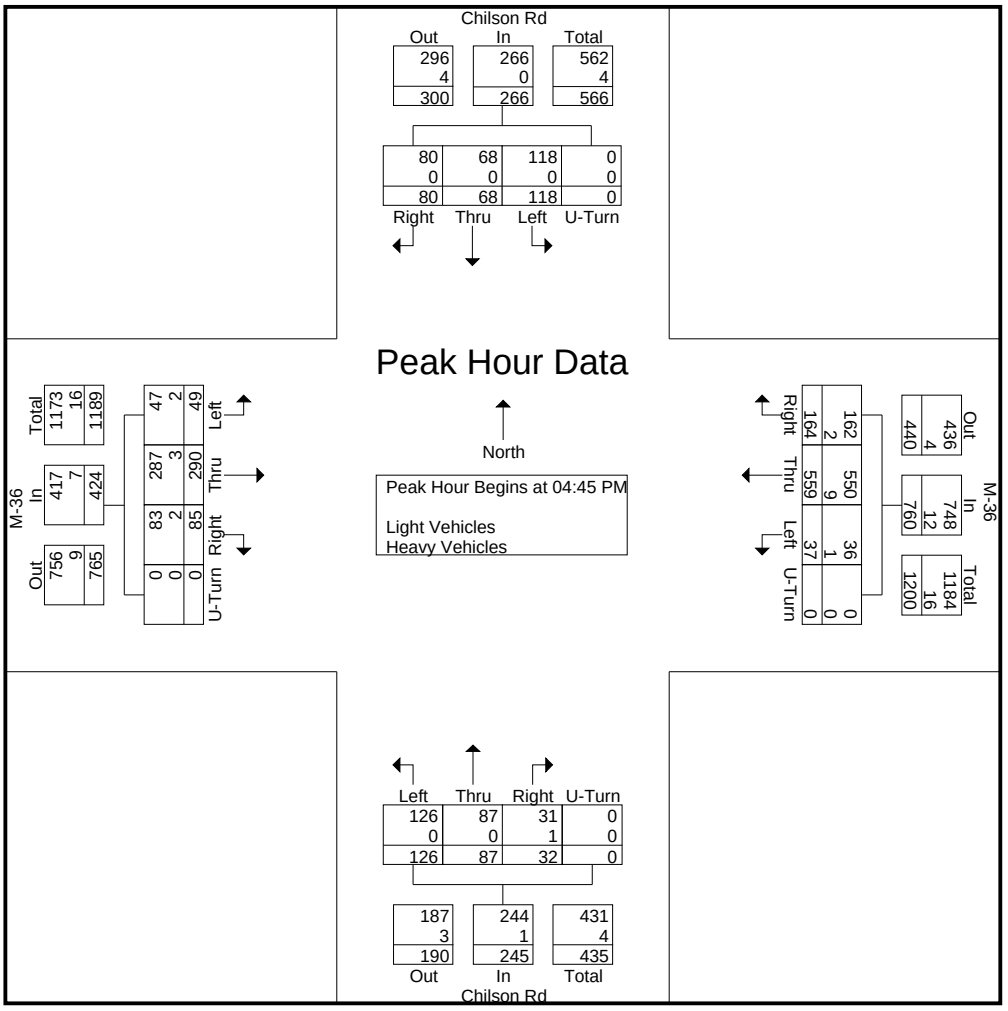
	M-36 Eastbound					M-36 Westbound					Chilson Rd Northbound					Chilson Rd Southbound					
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
04:00 PM	14	56	15	0	85	12	121	22	0	155	40	18	8	0	66	24	20	15	0	59	365
04:15 PM	5	60	20	0	85	7	122	28	0	157	34	13	6	0	53	17	17	14	0	48	343
04:30 PM	11	64	18	0	93	9	125	33	0	167	33	11	6	0	50	25	19	9	0	53	363
04:45 PM	12	76	19	0	107	8	122	40	0	170	35	27	7	0	69	33	19	17	0	69	415
Total	42	256	72	0	370	36	490	123	0	649	142	69	27	0	238	99	75	55	0	229	1486
05:00 PM	8	82	21	0	111	9	152	45	0	206	25	15	9	0	49	20	17	18	0	55	421
05:15 PM	10	67	21	0	98	13	147	49	0	209	27	25	10	0	62	30	17	27	0	74	443
05:30 PM	19	65	24	0	108	7	138	30	0	175	39	20	6	0	65	35	15	18	0	68	416
05:45 PM	11	52	17	0	80	5	115	42	0	162	44	15	10	0	69	23	7	19	0	49	360
Total	48	266	83	0	397	34	552	166	0	752	135	75	35	0	245	108	56	82	0	246	1640
Grand Total	90	522	155	0	767	70	1042	289	0	1401	277	144	62	0	483	207	131	137	0	475	3126
Apprch %	11.7	68.1	20.2	0		5	74.4	20.6	0		57.3	29.8	12.8	0		43.6	27.6	28.8	0		
Total %	2.9	16.7	5	0	24.5	2.2	33.3	9.2	0	44.8	8.9	4.6	2	0	15.5	6.6	4.2	4.4	0	15.2	
Light Vehicles	87	511	153	0	751	69	1025	282	0	1376	276	143	61	0	480	204	131	135	0	470	3077
% Light Vehicles	96.7	97.9	98.7	0	97.9	98.6	98.4	97.6	0	98.2	99.6	99.3	98.4	0	99.4	98.6	100	98.5	0	98.9	98.4
Heavy Vehicles	3	11	2	0	16	1	17	7	0	25	1	1	1	0	3	3	0	2	0	5	49
% Heavy Vehicles	3.3	2.1	1.3	0	2.1	1.4	1.6	2.4	0	1.8	0.4	0.7	1.6	0	0.6	1.4	0	1.5	0	1.1	1.6



TRUE DATA TO IMPROVE MOBILITY

File Name : 16450402 - Chilson Rd -- M-36
Site Code : 16450402
Start Date : 1/24/2024
Page No : 2

	M-36 Eastbound					M-36 Westbound					Chilson Rd Northbound					Chilson Rd Southbound					
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	12	76	19	0	107	8	122	40	0	170	35	**27**	7	0	**69**	33	**19**	17	0	69	415
05:00 PM	8	**82**	21	0	**111**	9	**152**	45	0	206	25	15	9	0	49	20	17	18	0	55	421
05:15 PM	10	67	21	0	98	**13**	147	**49**	0	**209**	27	25	**10**	0	62	30	17	**27**	0	**74**	**443**
05:30 PM	**19**	65	**24**	0	108	7	138	30	0	175	**39**	20	6	0	65	**35**	15	18	0	68	416
Total Volume	49	290	85	0	424	37	559	164	0	760	126	87	32	0	245	118	68	80	0	266	1695
% App. Total	11.6	68.4	20	0		4.9	73.6	21.6	0		51.4	35.5	13.1	0		44.4	25.6	30.1	0		
PHF	.645	.884	.885	.000	.955	.712	.919	.837	.000	.909	.808	.806	.800	.000	.888	.843	.895	.741	.000	.899	.957
Light Vehicles	47	287	83	0	417	36	550	162	0	748	126	87	31	0	244	118	68	80	0	266	1675
% Light Vehicles	95.9	99.0	97.6	0	98.3	97.3	98.4	98.8	0	98.4	100	100	96.9	0	99.6	100	100	100	0	100	98.8
Heavy Vehicles	2	3	2	0	7	1	9	2	0	12	0	0	1	0	1	0	0	0	0	0	20
% Heavy Vehicles	4.1	1.0	2.4	0	1.7	2.7	1.6	1.2	0	1.6	0	0	3.1	0	0.4	0	0	0	0	0	1.2

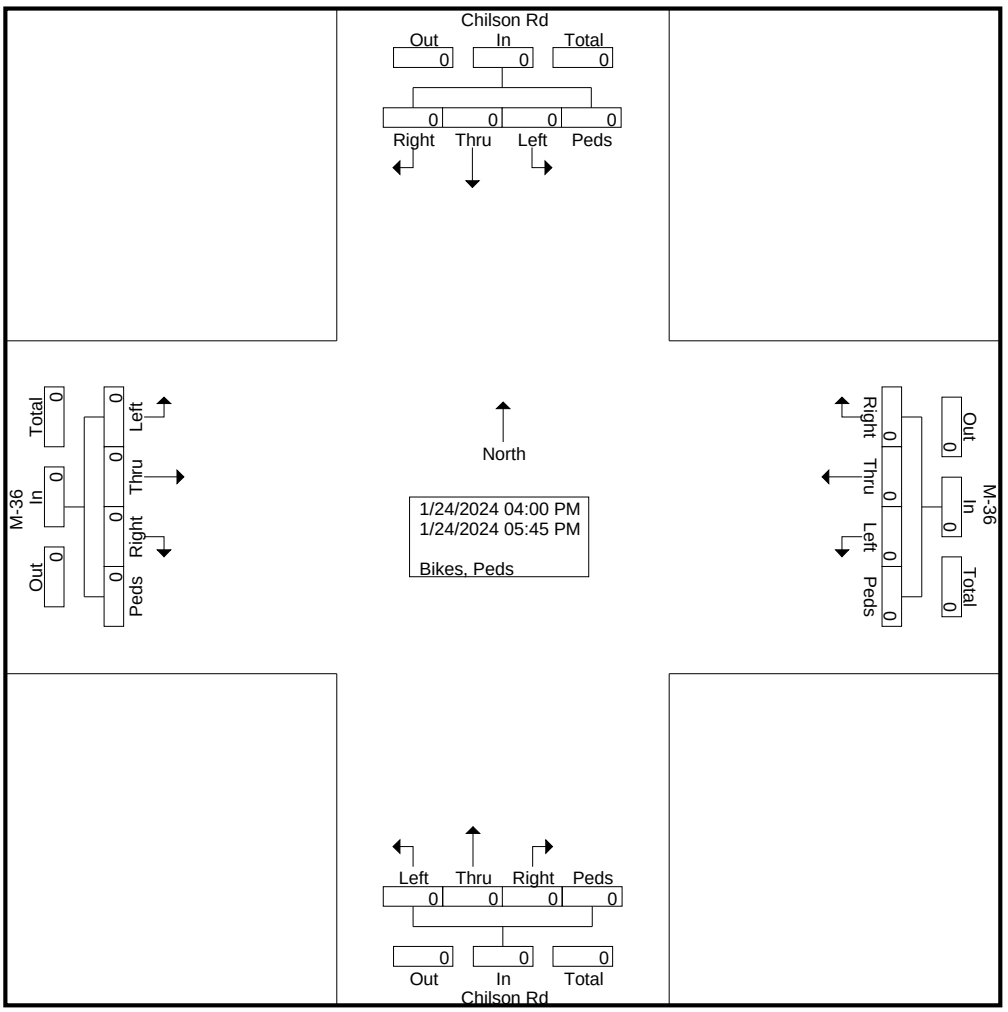


TRUE DATA TO IMPROVE MOBILITY

File Name : 16450402 - Chilson Rd -- M-36
Site Code : 16450402
Start Date : 1/24/2024
Page No : 1

Groups Printed- Bikes, Peds

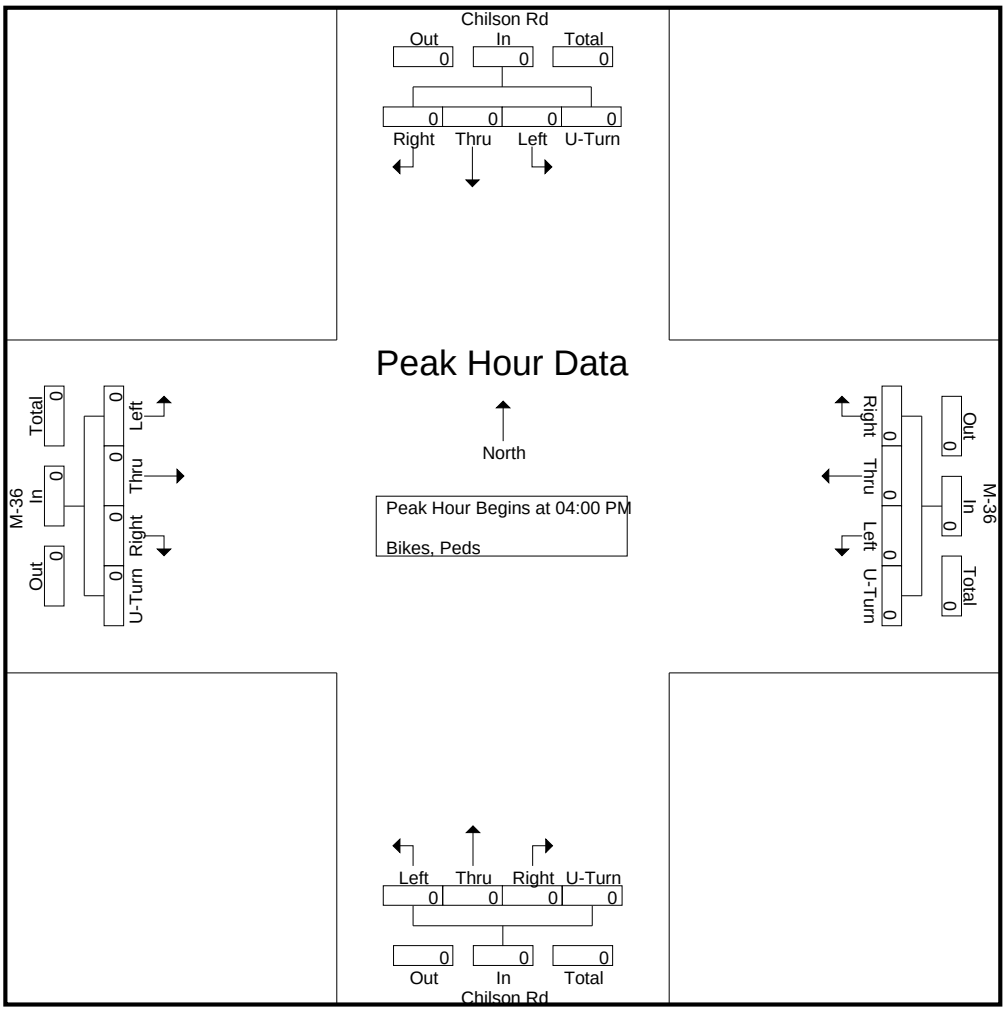
	M-36 Eastbound					M-36 Westbound					Chilson Rd Northbound					Chilson Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					



TRUE DATA TO IMPROVE MOBILITY

File Name : 16450402 - Chilson Rd -- M-36
Site Code : 16450402
Start Date : 1/24/2024
Page No : 2

	M-36 Eastbound					M-36 Westbound					Chilson Rd Northbound					Chilson Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

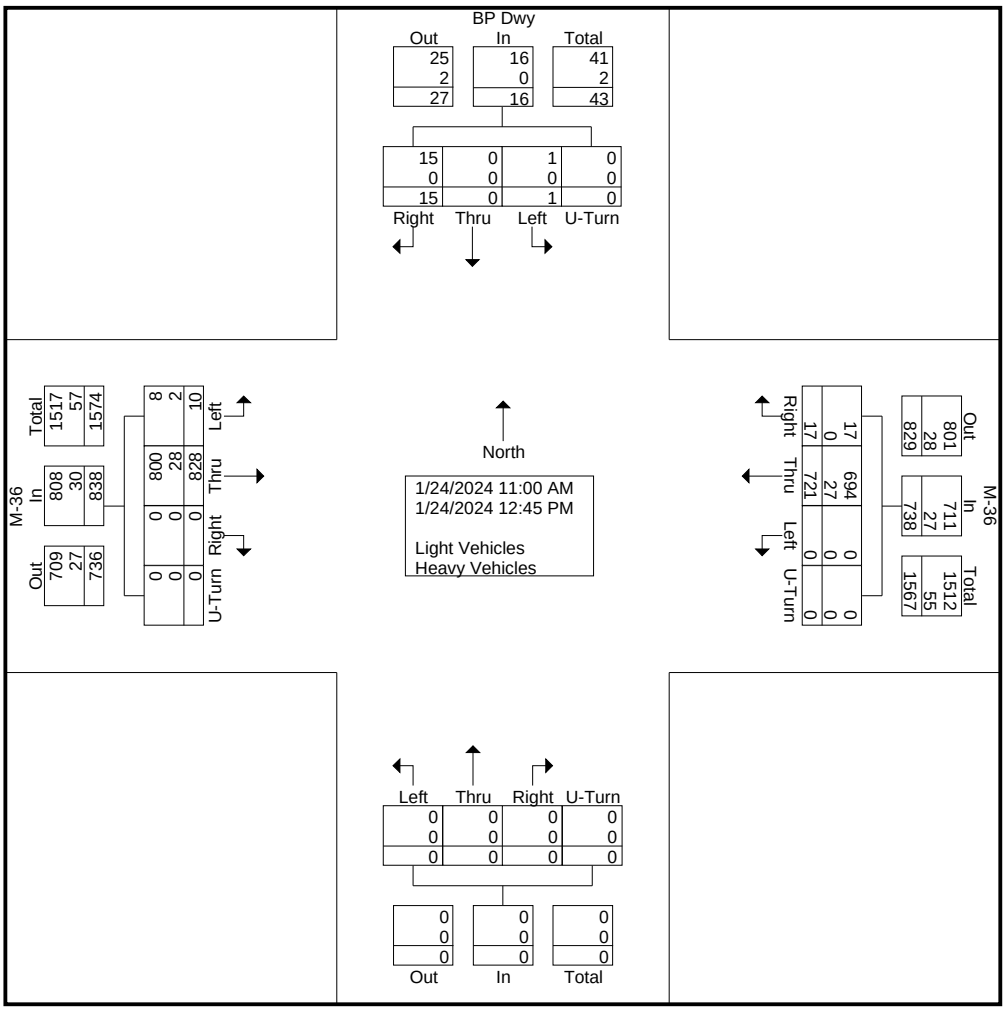


TRUE DATA TO IMPROVE MOBILITY

File Name : 16450403 - BP Dwy -- M-36
Site Code : 16450403
Start Date : 1/24/2024
Page No : 1

Groups Printed- Light Vehicles - Heavy Vehicles

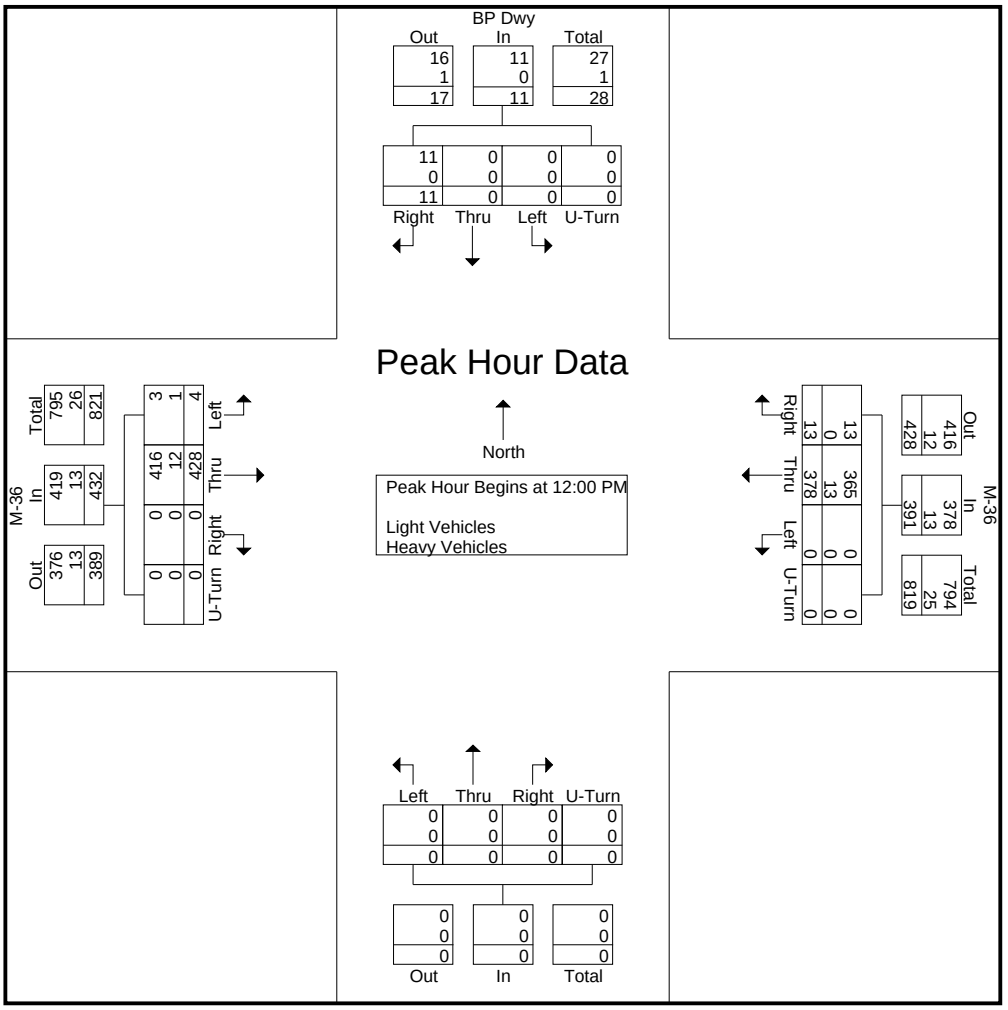
	M-36 Eastbound					M-36 Westbound					Northbound					BP Dwy Southbound					
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
11:00 AM	1	87	0	0	88	0	89	2	0	91	0	0	0	0	0	0	0	0	0	0	179
11:15 AM	2	103	0	0	105	0	77	1	0	78	0	0	0	0	0	1	0	1	0	2	185
11:30 AM	1	107	0	0	108	0	76	1	0	77	0	0	0	0	0	0	0	3	0	3	188
11:45 AM	2	103	0	0	105	0	101	0	0	101	0	0	0	0	0	0	0	0	0	0	206
Total	6	400	0	0	406	0	343	4	0	347	0	0	0	0	0	1	0	4	0	5	758
12:00 PM	1	93	0	0	94	0	89	3	0	92	0	0	0	0	0	0	0	1	0	1	187
12:15 PM	2	102	0	0	104	0	95	2	0	97	0	0	0	0	0	0	0	3	0	3	204
12:30 PM	0	112	0	0	112	0	97	5	0	102	0	0	0	0	0	0	0	2	0	2	216
12:45 PM	1	121	0	0	122	0	97	3	0	100	0	0	0	0	0	0	0	5	0	5	227
Total	4	428	0	0	432	0	378	13	0	391	0	0	0	0	0	0	0	11	0	11	834
Grand Total	10	828	0	0	838	0	721	17	0	738	0	0	0	0	0	1	0	15	0	16	1592
Apprch %	1.2	98.8	0	0		0	97.7	2.3	0		0	0	0	0		6.2	0	93.8	0		
Total %	0.6	52	0	0	52.6	0	45.3	1.1	0	46.4	0	0	0	0	0	0.1	0	0.9	0	1	
Light Vehicles	8	800	0	0	808	0	694	17	0	711	0	0	0	0	0	1	0	15	0	16	1535
% Light Vehicles	80	96.6	0	0	96.4	0	96.3	100	0	96.3	0	0	0	0	0	100	0	100	0	100	96.4
Heavy Vehicles	2	28	0	0	30	0	27	0	0	27	0	0	0	0	0	0	0	0	0	0	57
% Heavy Vehicles	20	3.4	0	0	3.6	0	3.7	0	0	3.7	0	0	0	0	0	0	0	0	0	0	3.6



TRUE DATA TO IMPROVE MOBILITY

File Name : 16450403 - BP Dwy -- M-36
Site Code : 16450403
Start Date : 1/24/2024
Page No : 2

	M-36 Eastbound					M-36 Westbound					Northbound					BP Dwy Southbound					
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	1	93	0	0	94	0	89	3	0	92	0	0	0	0	0	0	0	1	0	1	187
12:15 PM	**2**	102	0	0	104	0	95	2	0	97	0	0	0	0	0	0	0	3	0	3	204
12:30 PM	0	112	0	0	112	0	**97**	**5**	0	**102**	0	0	0	0	0	0	0	2	0	2	216
12:45 PM	1	**121**	0	0	**122**	0	97	3	0	100	0	0	0	0	0	0	0	**5**	0	**5**	**227**
Total Volume	4	428	0	0	432	0	378	13	0	391	0	0	0	0	0	0	0	11	0	11	834
% App. Total	0.9	99.1	0	0		0	96.7	3.3	0		0	0	0	0		0	0	100	0		
PHF	.500	.884	.000	.000	.885	.000	.974	.650	.000	.958	.000	.000	.000	.000	.000	.000	.000	.550	.000	.550	.919
Light Vehicles	3	416	0	0	419	0	365	13	0	378	0	0	0	0	0	0	0	11	0	11	808
% Light Vehicles	75.0	97.2	0	0	97.0	0	96.6	100	0	96.7	0	0	0	0	0	0	0	100	0	100	96.9
Heavy Vehicles	1	12	0	0	13	0	13	0	0	13	0	0	0	0	0	0	0	0	0	0	26
% Heavy Vehicles	25.0	2.8	0	0	3.0	0	3.4	0	0	3.3	0	0	0	0	0	0	0	0	0	0	3.1

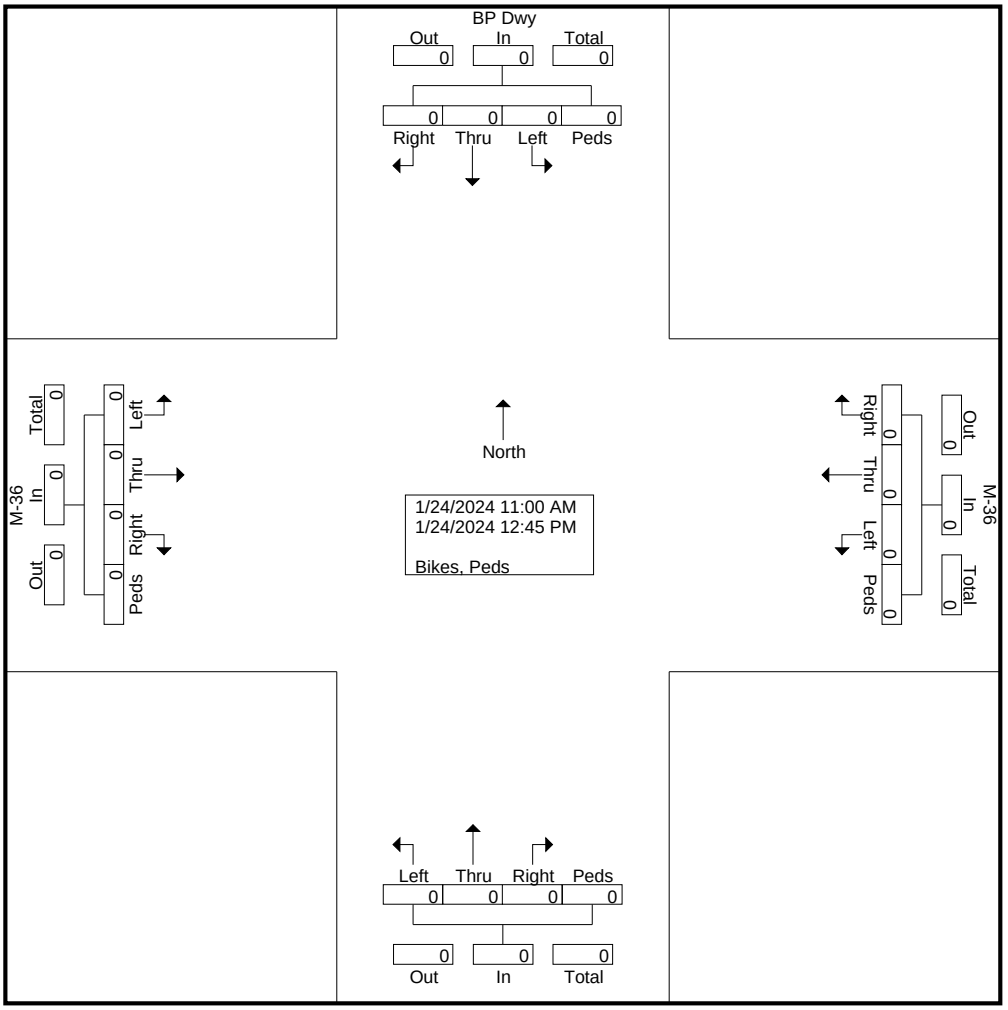


TRUE DATA TO IMPROVE MOBILITY

File Name : 16450403 - BP Dwy -- M-36
Site Code : 16450403
Start Date : 1/24/2024
Page No : 1

Groups Printed- Bikes, Peds

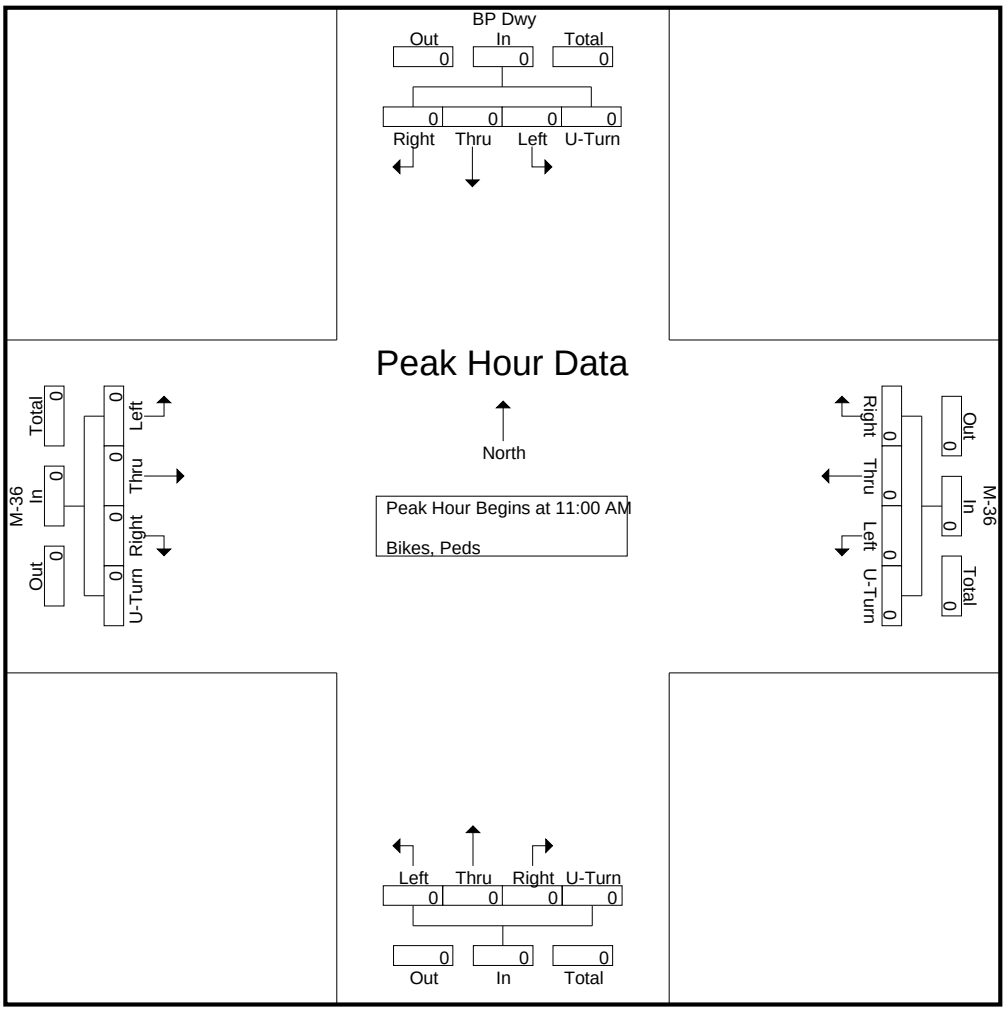
	M-36 Eastbound					M-36 Westbound					Northbound					BP Dwy Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					



TRUE DATA TO IMPROVE MOBILITY

File Name : 16450403 - BP Dwy -- M-36
Site Code : 16450403
Start Date : 1/24/2024
Page No : 2

	M-36 Eastbound					M-36 Westbound					Northbound					BP Dwy Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

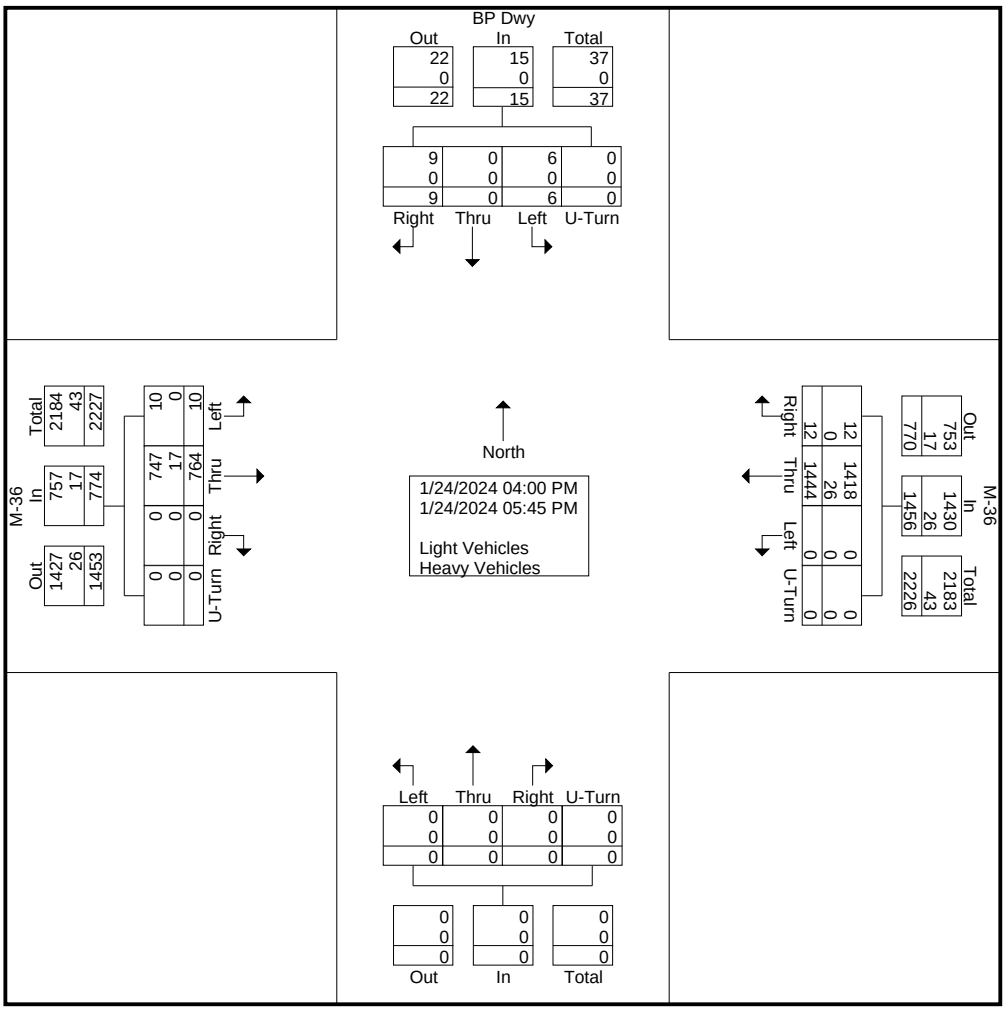


TRUE DATA TO IMPROVE MOBILITY

File Name : 16450404 - BP Dwy -- M-36
Site Code : 16450404
Start Date : 1/24/2024
Page No : 1

Groups Printed- Light Vehicles - Heavy Vehicles

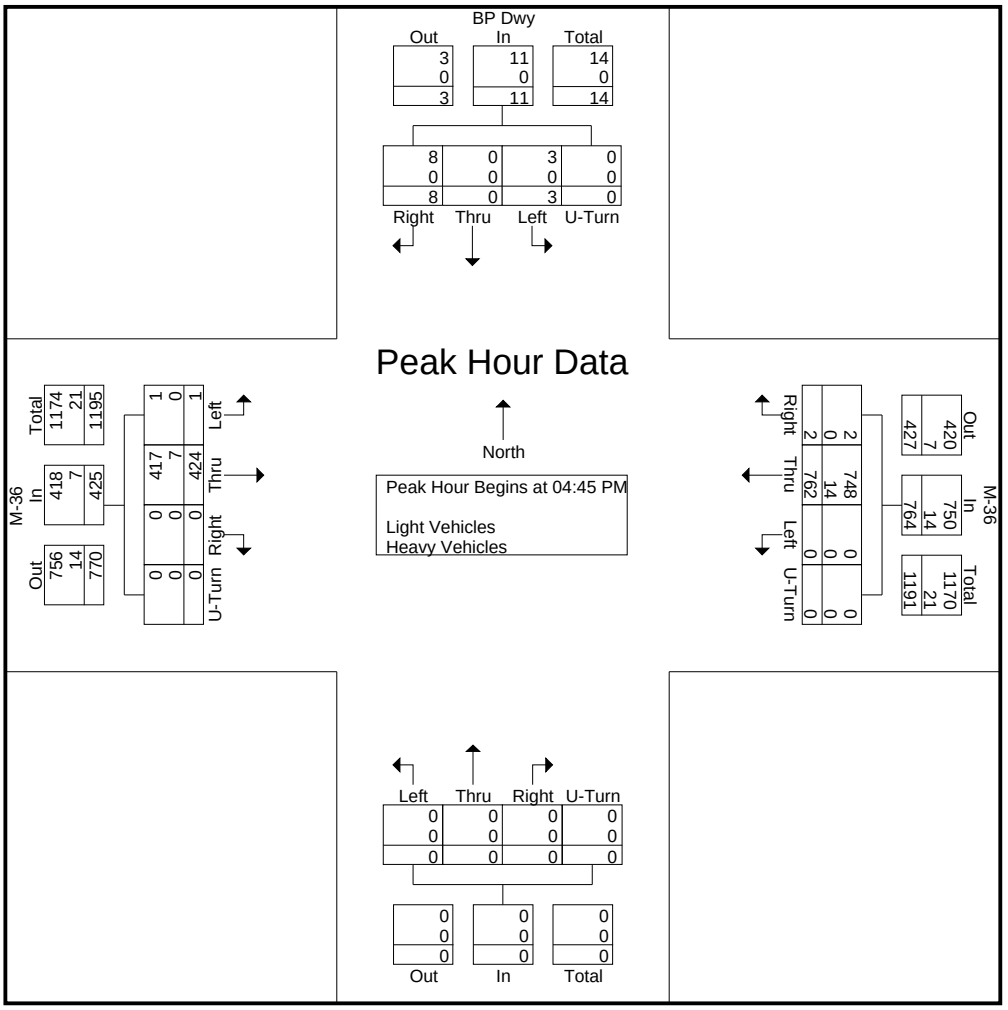
	M-36 Eastbound					M-36 Westbound					Northbound					BP Dwy Southbound					
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
04:00 PM	2	82	0	0	84	0	172	4	0	176	0	0	0	0	0	1	0	0	0	1	261
04:15 PM	3	86	0	0	89	0	166	3	0	169	0	0	0	0	0	1	0	1	0	2	260
04:30 PM	3	90	0	0	93	0	167	1	0	168	0	0	0	0	0	1	0	0	0	1	262
04:45 PM	0	107	0	0	107	0	173	0	0	173	0	0	0	0	0	1	0	1	0	2	282
Total	8	365	0	0	373	0	678	8	0	686	0	0	0	0	0	4	0	2	0	6	1065
05:00 PM	0	111	0	0	111	0	194	0	0	194	0	0	0	0	0	0	0	2	0	2	307
05:15 PM	1	97	0	0	98	0	200	2	0	202	0	0	0	0	0	2	0	2	0	4	304
05:30 PM	0	109	0	0	109	0	195	0	0	195	0	0	0	0	0	0	0	3	0	3	307
05:45 PM	1	82	0	0	83	0	177	2	0	179	0	0	0	0	0	0	0	0	0	0	262
Total	2	399	0	0	401	0	766	4	0	770	0	0	0	0	0	2	0	7	0	9	1180
Grand Total	10	764	0	0	774	0	1444	12	0	1456	0	0	0	0	0	6	0	9	0	15	2245
Apprch %	1.3	98.7	0	0		0	99.2	0.8	0		0	0	0	0		40	0	60	0		
Total %	0.4	34	0	0	34.5	0	64.3	0.5	0	64.9	0	0	0	0	0	0.3	0	0.4	0	0.7	
Light Vehicles	10	747	0	0	757	0	1418	12	0	1430	0	0	0	0	0	6	0	9	0	15	2202
% Light Vehicles	100	97.8	0	0	97.8	0	98.2	100	0	98.2	0	0	0	0	0	100	0	100	0	100	98.1
Heavy Vehicles	0	17	0	0	17	0	26	0	0	26	0	0	0	0	0	0	0	0	0	0	43
% Heavy Vehicles	0	2.2	0	0	2.2	0	1.8	0	0	1.8	0	0	0	0	0	0	0	0	0	0	1.9



TRUE DATA TO IMPROVE MOBILITY

File Name : 16450404 - BP Dwy -- M-36
Site Code : 16450404
Start Date : 1/24/2024
Page No : 2

	M-36 Eastbound					M-36 Westbound					Northbound					BP Dwy Southbound					
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	107	0	0	107	0	173	0	0	173	0	0	0	0	0	1	0	1	0	2	282
05:00 PM	0	**111**	0	0	**111**	0	194	0	0	194	0	0	0	0	0	0	0	2	0	2	**307**
05:15 PM	**1**	97	0	0	98	0	**200**	**2**	0	**202**	0	0	0	0	0	**2**	0	2	0	**4**	304
05:30 PM	0	109	0	0	109	0	195	0	0	195	0	0	0	0	0	0	0	**3**	0	3	307
Total Volume	1	424	0	0	425	0	762	2	0	764	0	0	0	0	0	3	0	8	0	11	1200
% App. Total	0.2	99.8	0	0		0	99.7	0.3	0		0	0	0	0		27.3	0	72.7	0		
PHF	.250	.955	.000	.000	.957	.000	.953	.250	.000	.946	.000	.000	.000	.000	.000	.375	.000	.667	.000	.688	.977
Light Vehicles	1	417	0	0	418	0	748	2	0	750	0	0	0	0	0	3	0	8	0	11	1179
% Light Vehicles	100	98.3	0	0	98.4	0	98.2	100	0	98.2	0	0	0	0	0	100	0	100	0	100	98.3
Heavy Vehicles	0	7	0	0	7	0	14	0	0	14	0	0	0	0	0	0	0	0	0	0	21
% Heavy Vehicles	0	1.7	0	0	1.6	0	1.8	0	0	1.8	0	0	0	0	0	0	0	0	0	0	1.8

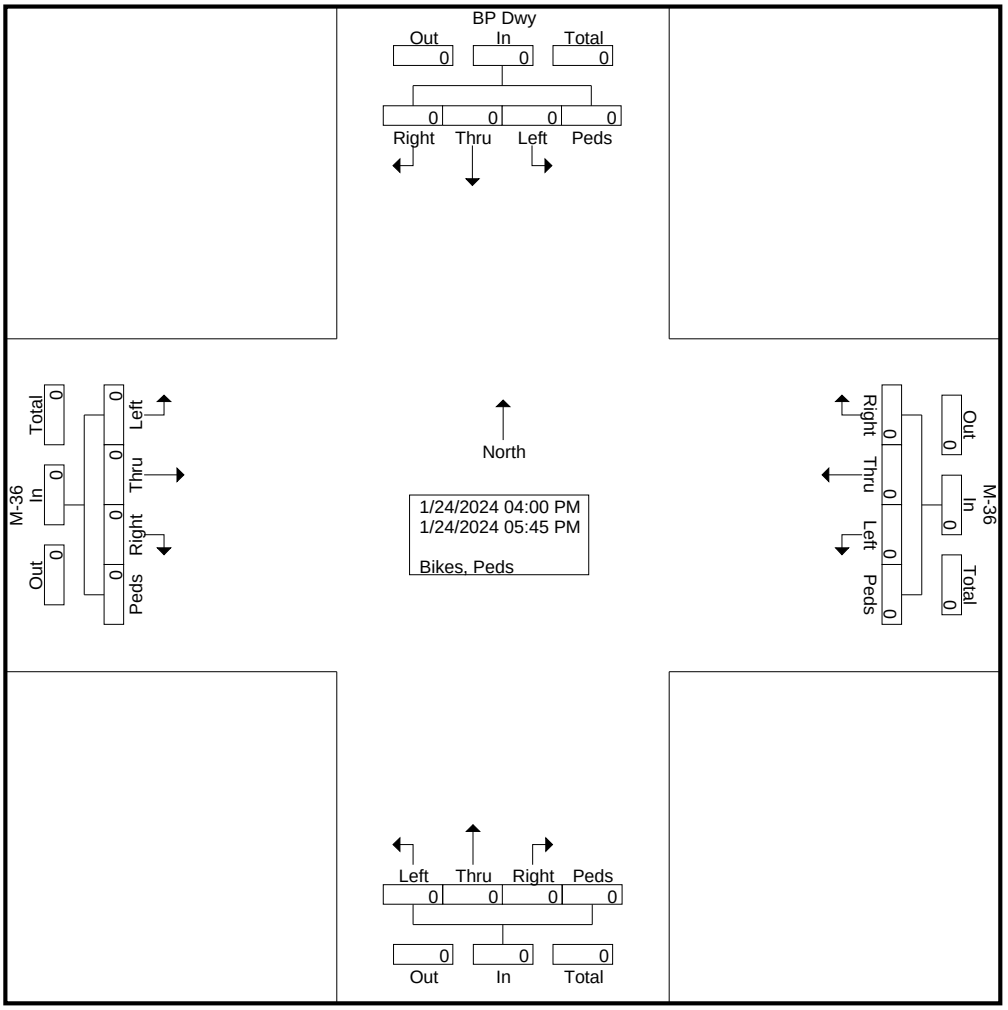


TRUE DATA TO IMPROVE MOBILITY

File Name : 16450404 - BP Dwy -- M-36
Site Code : 16450404
Start Date : 1/24/2024
Page No : 1

Groups Printed- Bikes, Peds

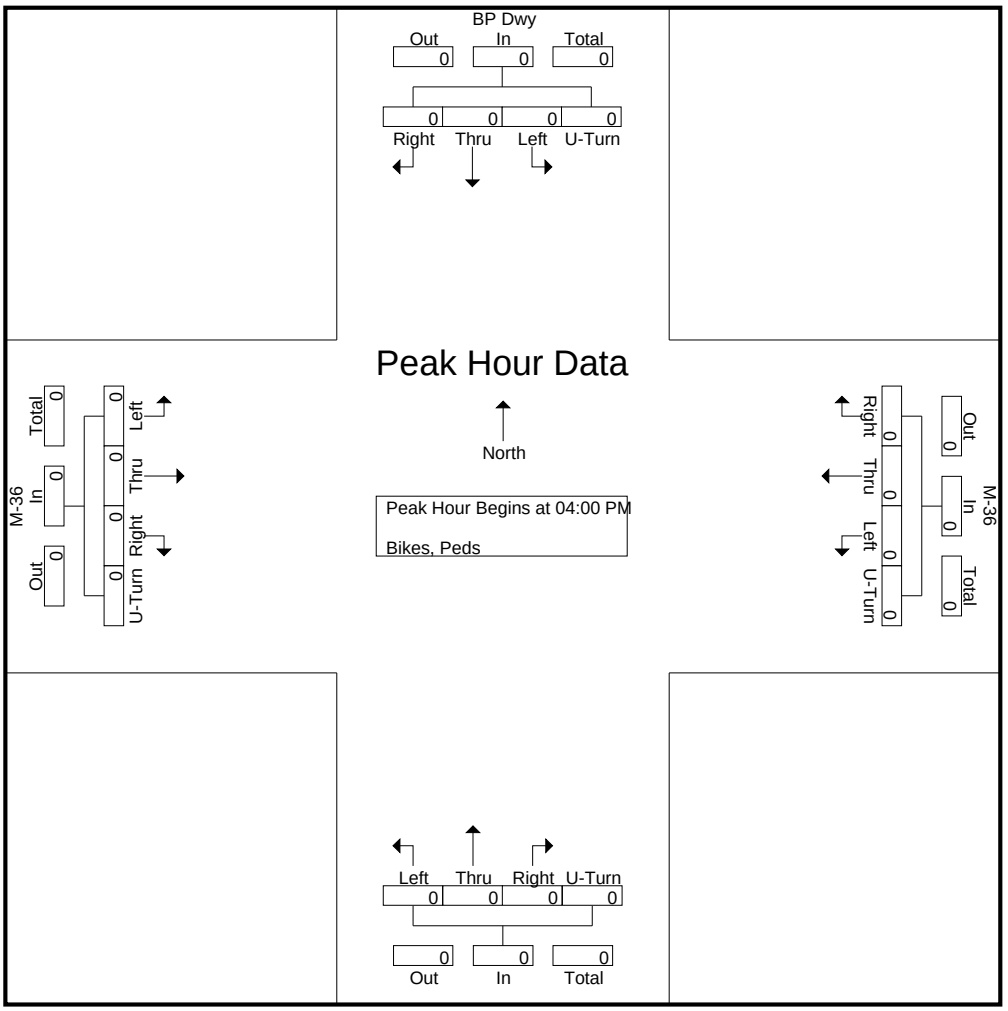
	M-36 Eastbound					M-36 Westbound					Northbound					BP Dwy Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					



TRUE DATA TO IMPROVE MOBILITY

File Name : 16450404 - BP Dwy -- M-36
Site Code : 16450404
Start Date : 1/24/2024
Page No : 2

	M-36 Eastbound					M-36 Westbound					Northbound					BP Dwy Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

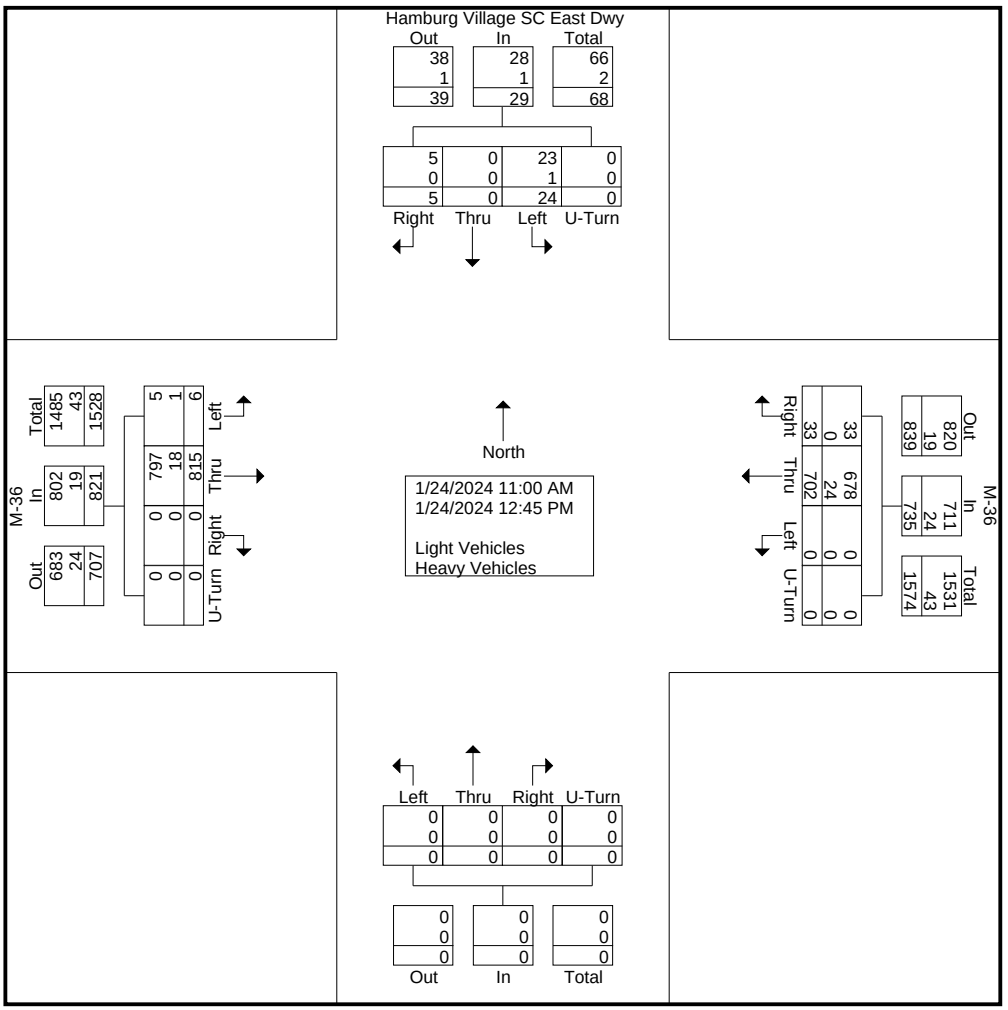


TRUE DATA TO IMPROVE MOBILITY

File Name : 16450405 - Hamburg Village SC East Dwy -- M-36
Site Code : 16450405
Start Date : 1/24/2024
Page No : 1

Groups Printed- Light Vehicles - Heavy Vehicles

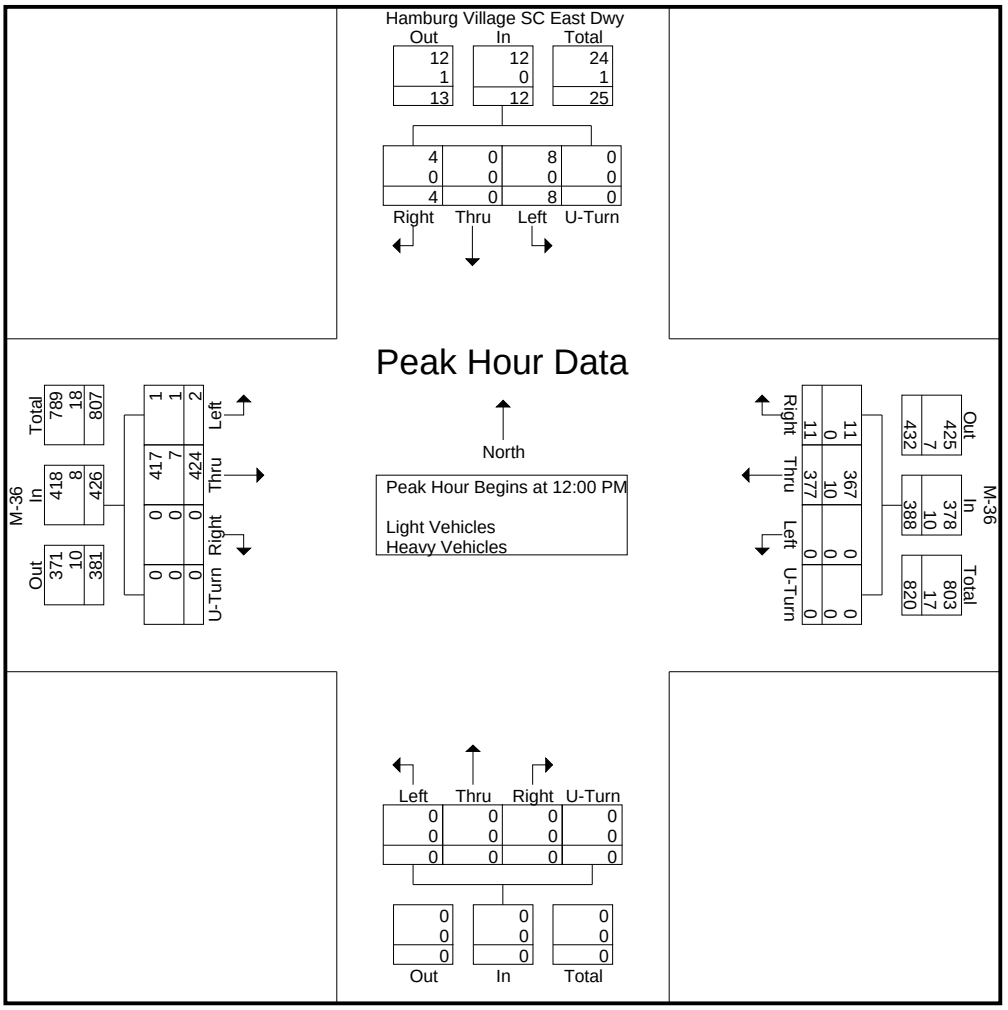
	M-36 Eastbound					M-36 Westbound					Northbound					Hamburg Village SC East Dwy Southbound					
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
11:00 AM	1	87	0	0	88	0	82	7	0	89	0	0	0	0	0	3	0	1	0	4	181
11:15 AM	1	100	0	0	101	0	76	2	0	78	0	0	0	0	0	4	0	0	0	4	183
11:30 AM	0	105	0	0	105	0	71	7	0	78	0	0	0	0	0	3	0	0	0	3	186
11:45 AM	2	99	0	0	101	0	96	6	0	102	0	0	0	0	0	6	0	0	0	6	209
Total	4	391	0	0	395	0	325	22	0	347	0	0	0	0	0	16	0	1	0	17	759
12:00 PM	0	92	0	0	92	0	87	2	0	89	0	0	0	0	0	2	0	1	0	3	184
12:15 PM	0	103	0	0	103	0	95	3	0	98	0	0	0	0	0	2	0	0	0	2	203
12:30 PM	1	109	0	0	110	0	94	4	0	98	0	0	0	0	0	2	0	1	0	3	211
12:45 PM	1	120	0	0	121	0	101	2	0	103	0	0	0	0	0	2	0	2	0	4	228
Total	2	424	0	0	426	0	377	11	0	388	0	0	0	0	0	8	0	4	0	12	826
Grand Total	6	815	0	0	821	0	702	33	0	735	0	0	0	0	0	24	0	5	0	29	1585
Apprch %	0.7	99.3	0	0		0	95.5	4.5	0		0	0	0	0		82.8	0	17.2	0		
Total %	0.4	51.4	0	0	51.8	0	44.3	2.1	0	46.4	0	0	0	0	0	1.5	0	0.3	0	1.8	
Light Vehicles	5	797	0	0	802	0	678	33	0	711	0	0	0	0	0	23	0	5	0	28	1541
% Light Vehicles	83.3	97.8	0	0	97.7	0	96.6	100	0	96.7	0	0	0	0	0	95.8	0	100	0	96.6	97.2
Heavy Vehicles	1	18	0	0	19	0	24	0	0	24	0	0	0	0	0	1	0	0	0	1	44
% Heavy Vehicles	16.7	2.2	0	0	2.3	0	3.4	0	0	3.3	0	0	0	0	0	4.2	0	0	0	3.4	2.8



TRUE DATA TO IMPROVE MOBILITY

File Name : 16450405 - Hamburg Village SC East Dwy -- M-36
Site Code : 16450405
Start Date : 1/24/2024
Page No : 2

	M-36 Eastbound					M-36 Westbound					Northbound					Hamburg Village SC East Dwy Southbound					
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	0	92	0	0	92	0	87	2	0	89	0	0	0	0	0	**2**	0	1	0	3	184
12:15 PM	0	103	0	0	103	0	95	3	0	98	0	0	0	0	0	2	0	0	0	2	203
12:30 PM	**1**	109	0	0	110	0	94	**4**	0	98	0	0	0	0	0	2	0	1	0	3	211
12:45 PM	1	**120**	0	0	**121**	0	**101**	2	0	**103**	0	0	0	0	0	2	0	**2**	0	**4**	**228**
Total Volume	2	424	0	0	426	0	377	11	0	388	0	0	0	0	0	8	0	4	0	12	826
% App. Total	0.5	99.5	0	0		0	97.2	2.8	0		0	0	0	0		66.7	0	33.3	0		
PHF	.500	.883	.000	.000	.880	.000	.933	.688	.000	.942	.000	.000	.000	.000	.000	1.00	.000	.500	.000	.750	.906
Light Vehicles	1	417	0	0	418	0	367	11	0	378	0	0	0	0	0	8	0	4	0	12	808
% Light Vehicles	50.0	98.3	0	0	98.1	0	97.3	100	0	97.4	0	0	0	0	0	100	0	100	0	100	97.8
Heavy Vehicles	1	7	0	0	8	0	10	0	0	10	0	0	0	0	0	0	0	0	0	0	18
% Heavy Vehicles	50.0	1.7	0	0	1.9	0	2.7	0	0	2.6	0	0	0	0	0	0	0	0	0	0	2.2

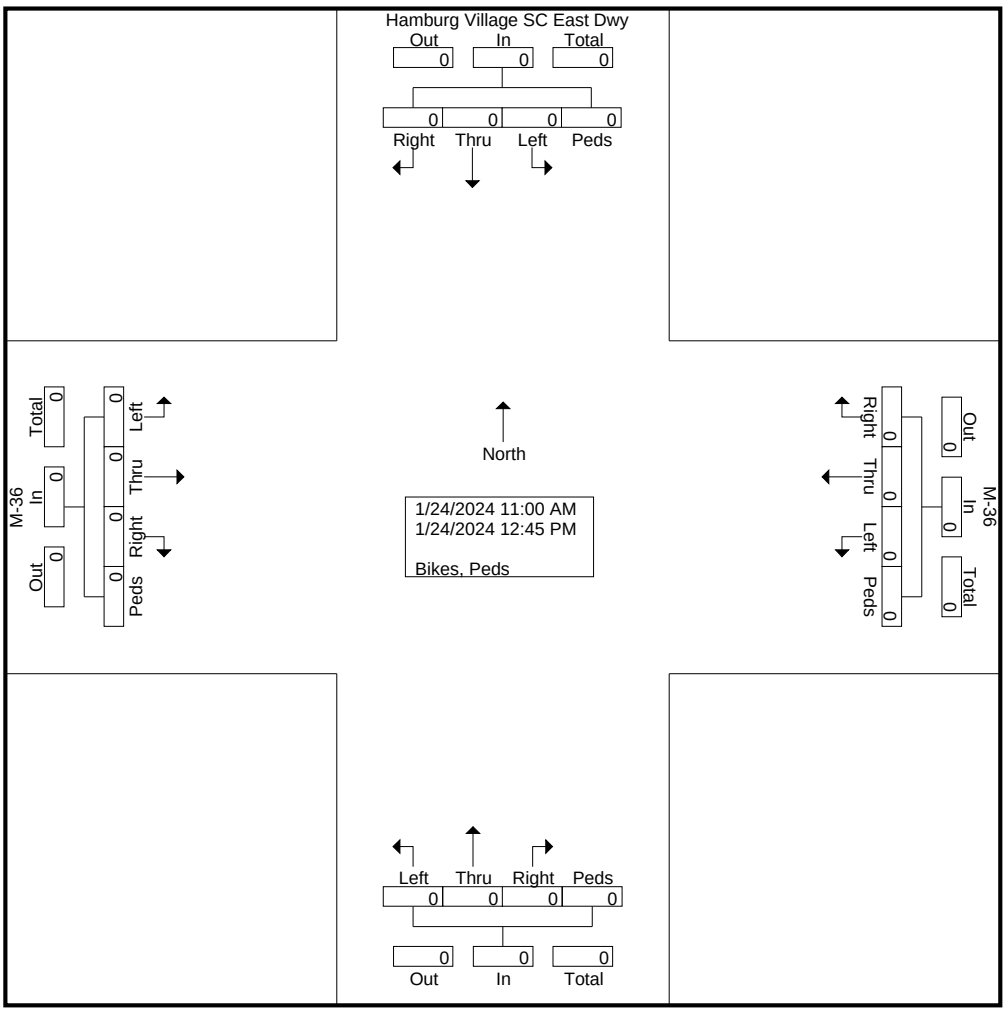


TRUE DATA TO IMPROVE MOBILITY

File Name : 16450405 - Hamburg Village SC East Dwy -- M-36
Site Code : 16450405
Start Date : 1/24/2024

Groups Printed- Bikes, Peds

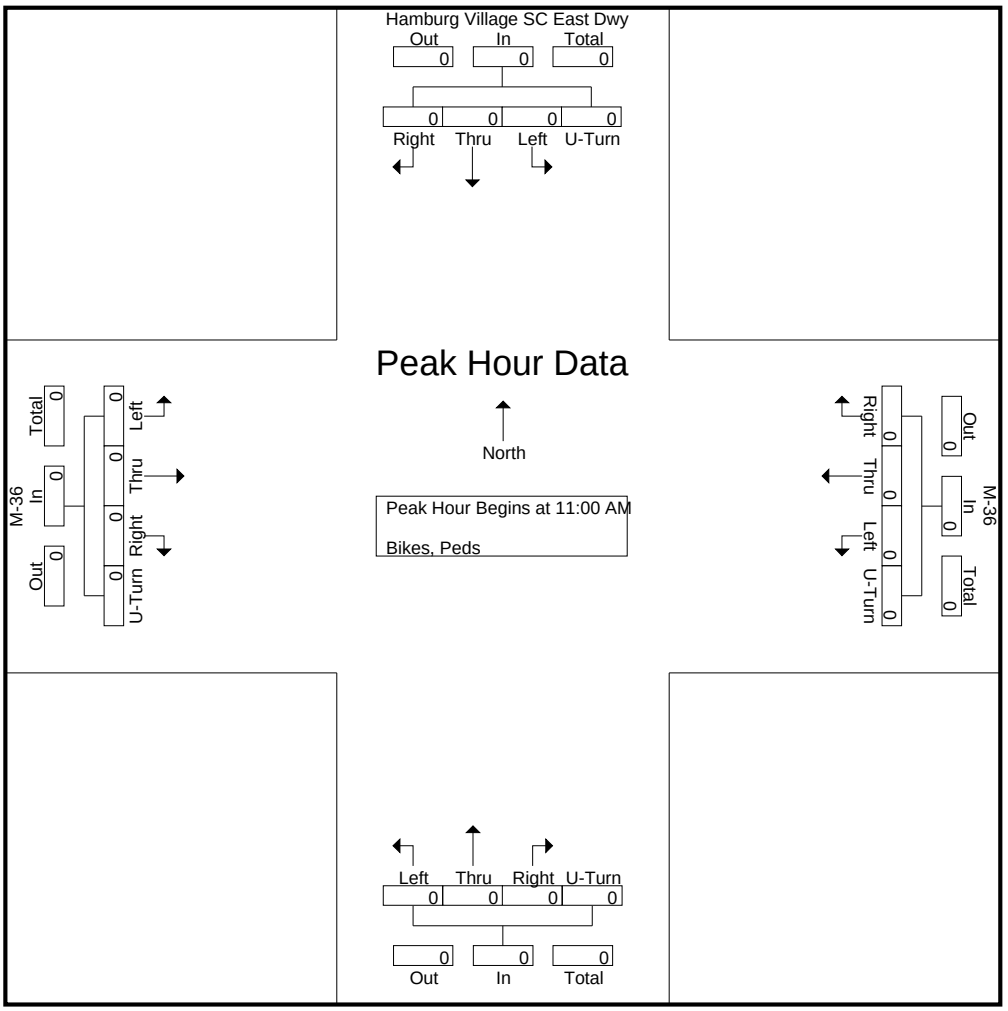
	M-36 Eastbound					M-36 Westbound					Northbound					Hamburg Village SC East Dwy Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					



TRUE DATA TO IMPROVE MOBILITY

File Name : 16450405 - Hamburg Village SC East Dwy -- M-36
Site Code : 16450405
Start Date : 1/24/2024
Page No : 2

	M-36 Eastbound					M-36 Westbound					Northbound					Hamburg Village SC East Dwy Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

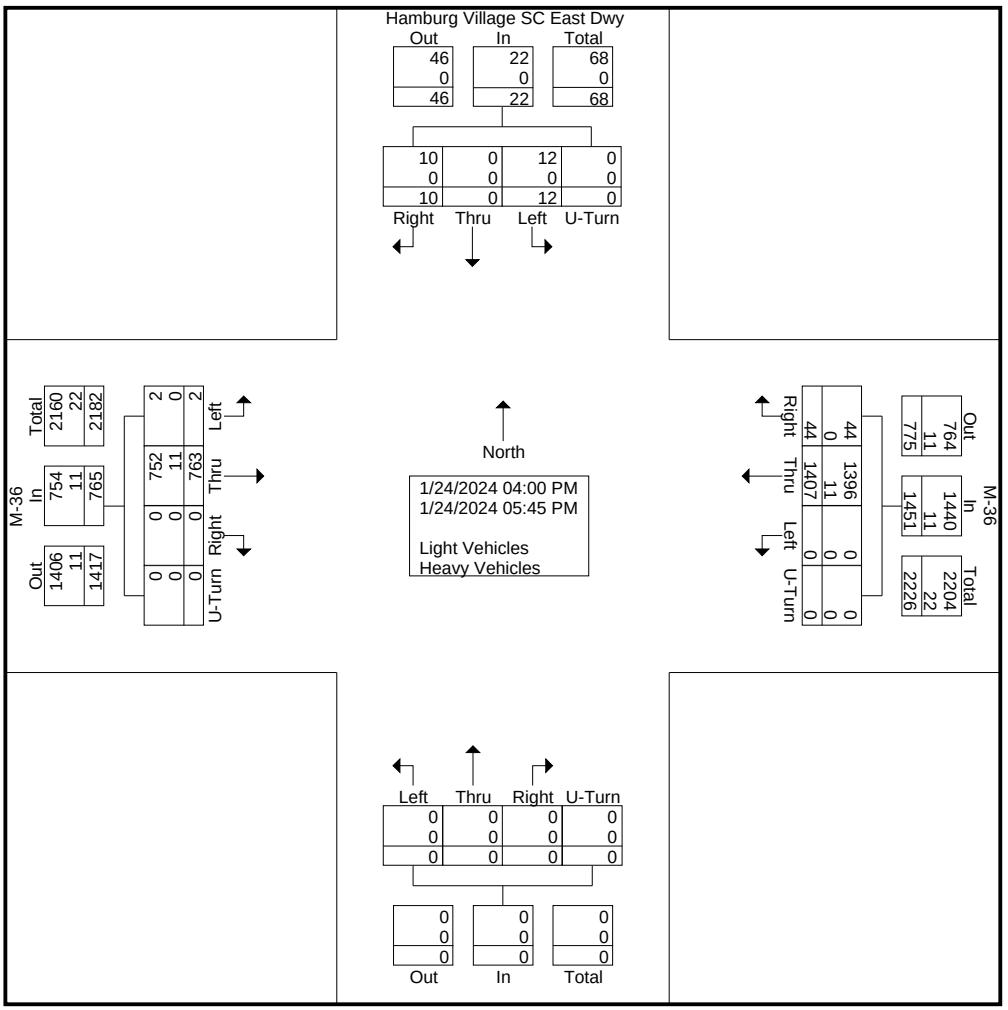


TRUE DATA TO IMPROVE MOBILITY

File Name : 16450406 - Hamburg Village SC East Dwy -- M-36
Site Code : 16450406
Start Date : 1/24/2024
Page No : 1

Groups Printed- Light Vehicles - Heavy Vehicles

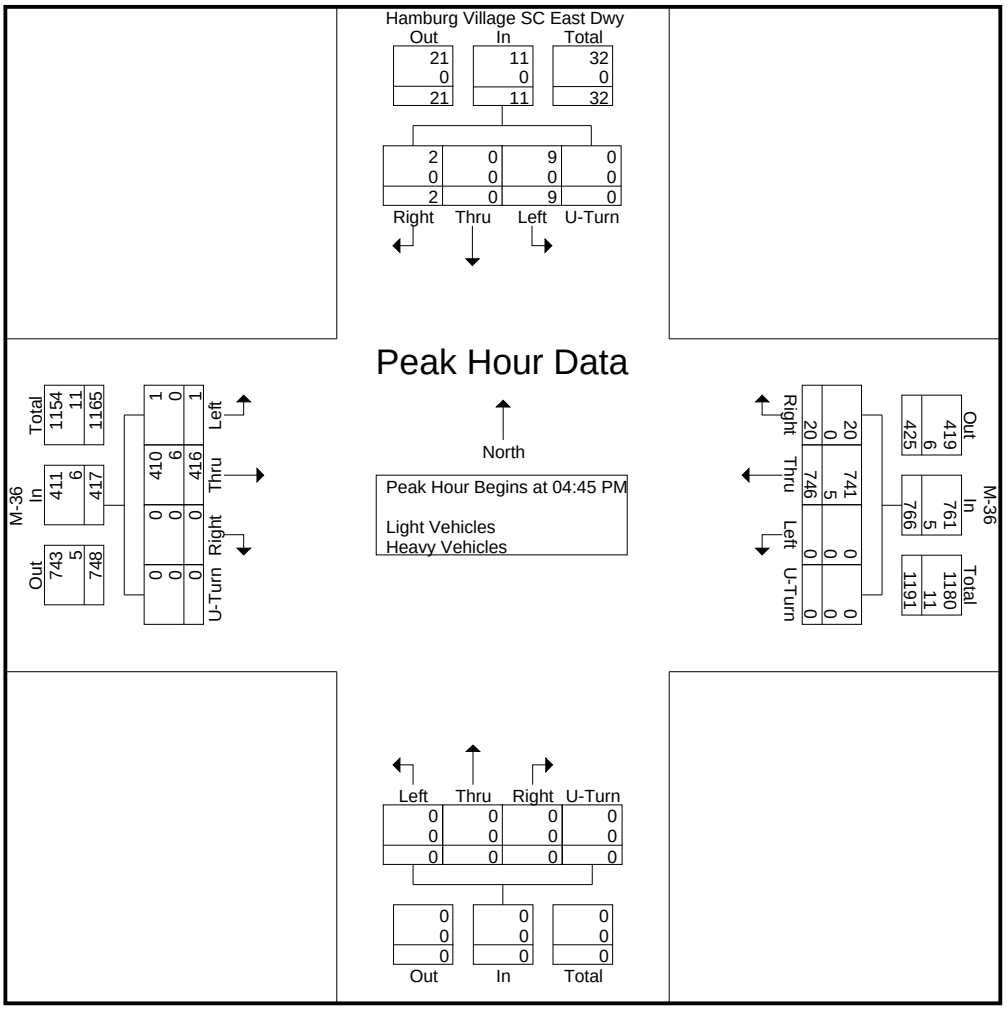
	M-36 Eastbound					M-36 Westbound					Northbound					Hamburg Village SC East Dwy Southbound					
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
04:00 PM	0	82	0	0	82	0	163	10	0	173	0	0	0	0	0	1	0	4	0	5	260
04:15 PM	0	88	0	0	88	0	162	6	0	168	0	0	0	0	0	2	0	2	0	4	260
04:30 PM	0	93	0	0	93	0	161	6	0	167	0	0	0	0	0	0	0	1	0	1	261
04:45 PM	1	105	0	0	106	0	165	5	0	170	0	0	0	0	0	2	0	0	0	2	278
Total	1	368	0	0	369	0	651	27	0	678	0	0	0	0	0	5	0	7	0	12	1059
05:00 PM	0	109	0	0	109	0	191	3	0	194	0	0	0	0	0	1	0	0	0	1	304
05:15 PM	0	97	0	0	97	0	198	8	0	206	0	0	0	0	0	2	0	2	0	4	307
05:30 PM	0	105	0	0	105	0	192	4	0	196	0	0	0	0	0	4	0	0	0	4	305
05:45 PM	1	84	0	0	85	0	175	2	0	177	0	0	0	0	0	0	0	1	0	1	263
Total	1	395	0	0	396	0	756	17	0	773	0	0	0	0	0	7	0	3	0	10	1179
Grand Total	2	763	0	0	765	0	1407	44	0	1451	0	0	0	0	0	12	0	10	0	22	2238
Apprch %	0.3	99.7	0	0		0	97	3	0		0	0	0	0		54.5	0	45.5	0		
Total %	0.1	34.1	0	0	34.2	0	62.9	2	0	64.8	0	0	0	0	0	0.5	0	0.4	0	1	
Light Vehicles	2	752	0	0	754	0	1396	44	0	1440	0	0	0	0	0	12	0	10	0	22	2216
% Light Vehicles	100	98.6	0	0	98.6	0	99.2	100	0	99.2	0	0	0	0	0	100	0	100	0	100	99
Heavy Vehicles	0	11	0	0	11	0	11	0	0	11	0	0	0	0	0	0	0	0	0	0	22
% Heavy Vehicles	0	1.4	0	0	1.4	0	0.8	0	0	0.8	0	0	0	0	0	0	0	0	0	0	1



TRUE DATA TO IMPROVE MOBILITY

File Name : 16450406 - Hamburg Village SC East Dwy -- M-36
Site Code : 16450406
Start Date : 1/24/2024
Page No : 2

	M-36 Eastbound					M-36 Westbound					Northbound					Hamburg Village SC East Dwy Southbound					
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	**1**	105	0	0	106	0	165	5	0	170	0	0	0	0	0	2	0	0	0	2	278
05:00 PM	0	**109**	0	0	**109**	0	191	3	0	194	0	0	0	0	0	1	0	0	0	1	304
05:15 PM	0	97	0	0	97	0	**198**	**8**	0	**206**	0	0	0	0	0	2	0	**2**	0	**4**	**307**
05:30 PM	0	105	0	0	105	0	192	4	0	196	0	0	0	0	0	**4**	0	0	0	4	305
Total Volume	1	416	0	0	417	0	746	20	0	766	0	0	0	0	0	9	0	2	0	11	1194
% App. Total	0.2	99.8	0	0		0	97.4	2.6	0		0	0	0	0		81.8	0	18.2	0		
PHF	.250	.954	.000	.000	.956	.000	.942	.625	.000	.930	.000	.000	.000	.000	.000	.563	.000	.250	.000	.688	.972
Light Vehicles	1	410	0	0	411	0	741	20	0	761	0	0	0	0	0	9	0	2	0	11	1183
% Light Vehicles	100	98.6	0	0	98.6	0	99.3	100	0	99.3	0	0	0	0	0	100	0	100	0	100	99.1
Heavy Vehicles	0	6	0	0	6	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	11
% Heavy Vehicles	0	1.4	0	0	1.4	0	0.7	0	0	0.7	0	0	0	0	0	0	0	0	0	0	0.9

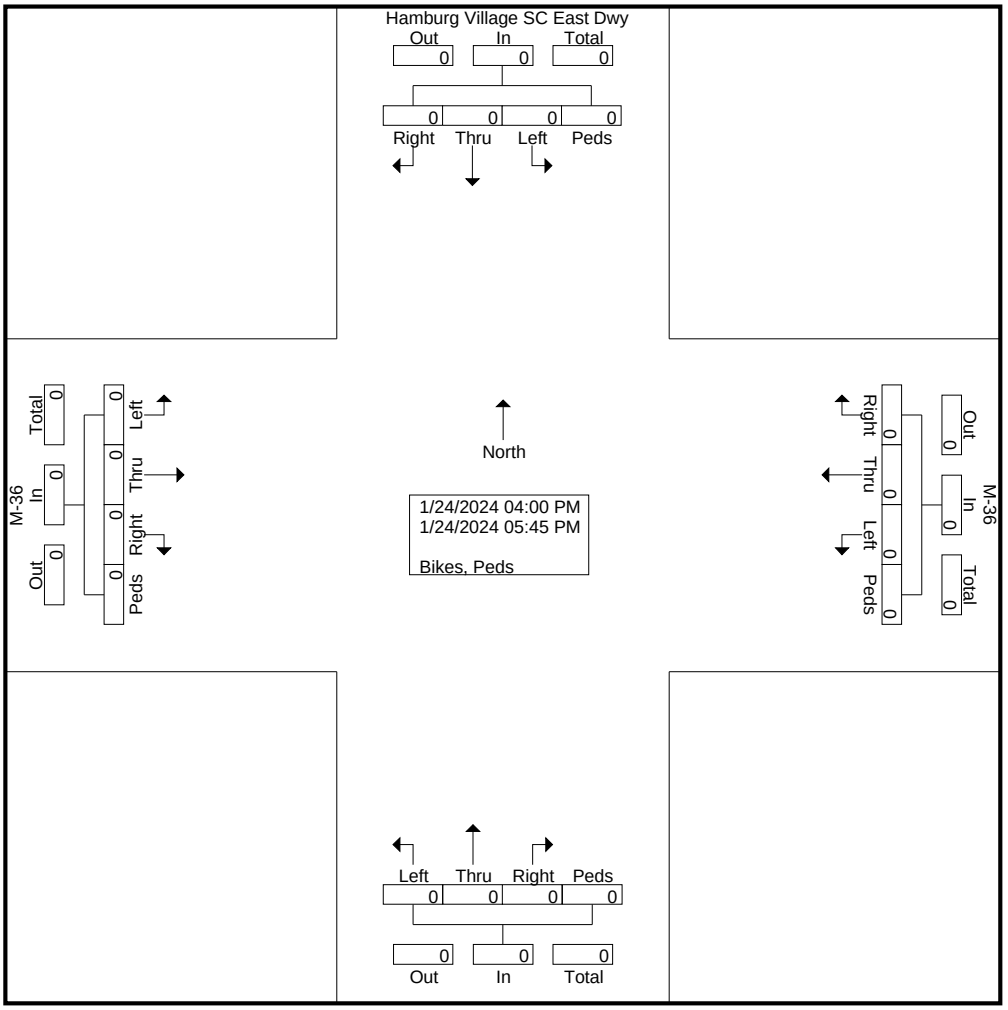


TRUE DATA TO IMPROVE MOBILITY

File Name : 16450406 - Hamburg Village SC East Dwy -- M-36
Site Code : 16450406
Start Date : 1/24/2024
Page No : 1

Groups Printed- Bikes, Peds

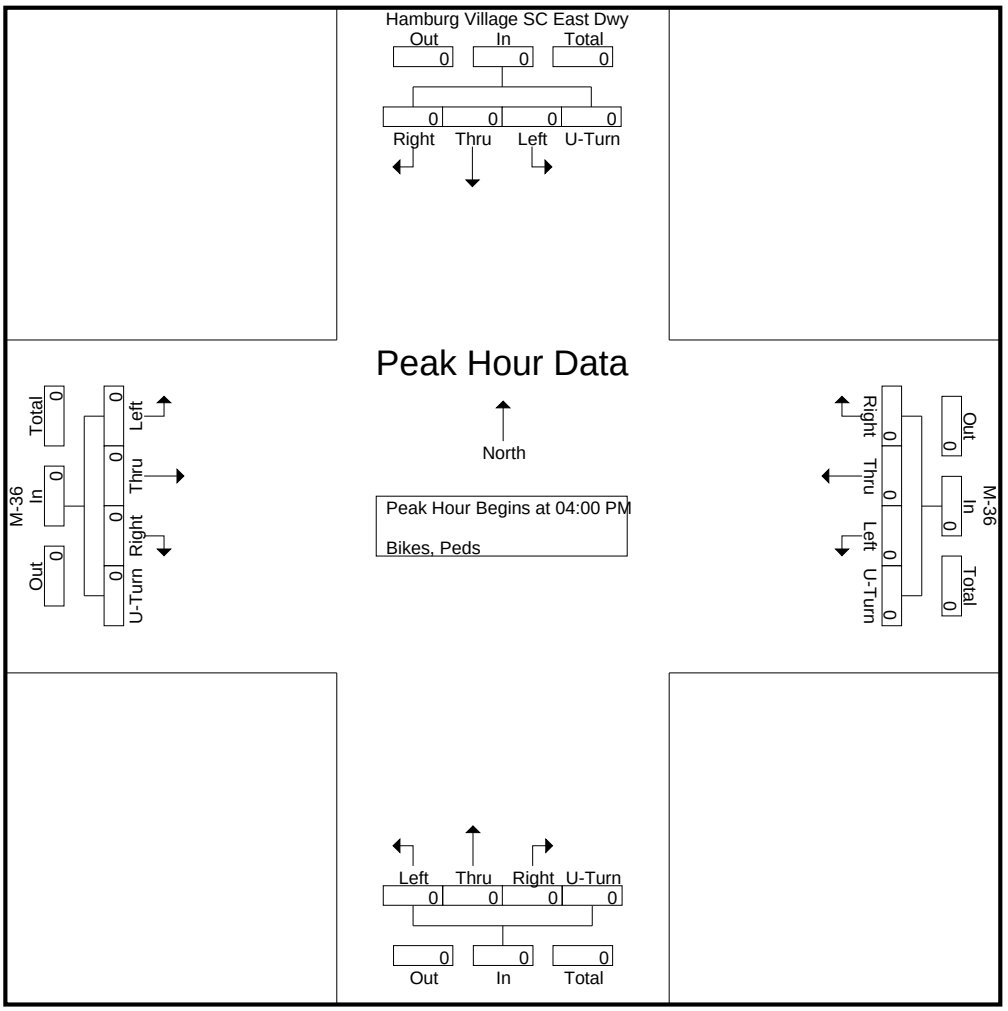
	M-36 Eastbound					M-36 Westbound					Northbound					Hamburg Village SC East Dwy Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					



TRUE DATA TO IMPROVE MOBILITY

File Name : 16450406 - Hamburg Village SC East Dwy -- M-36
Site Code : 16450406
Start Date : 1/24/2024
Page No : 2

	M-36 Eastbound					M-36 Westbound					Northbound					Hamburg Village SC East Dwy Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

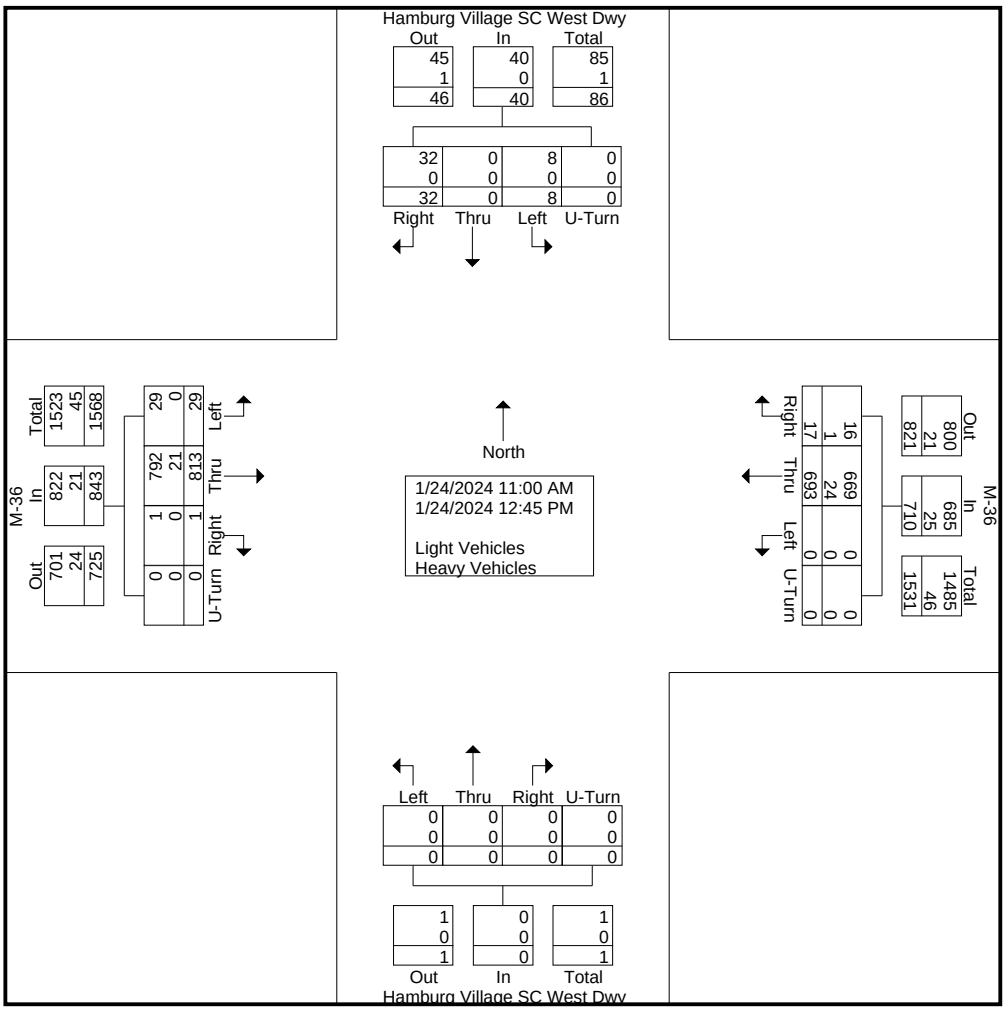


TRUE DATA TO IMPROVE MOBILITY

File Name : 16450407 - Hamburg Village SC West Dwy -- M-36
Site Code : 16450407
Start Date : 1/24/2024
Page No : 1

Groups Printed- Light Vehicles - Heavy Vehicles

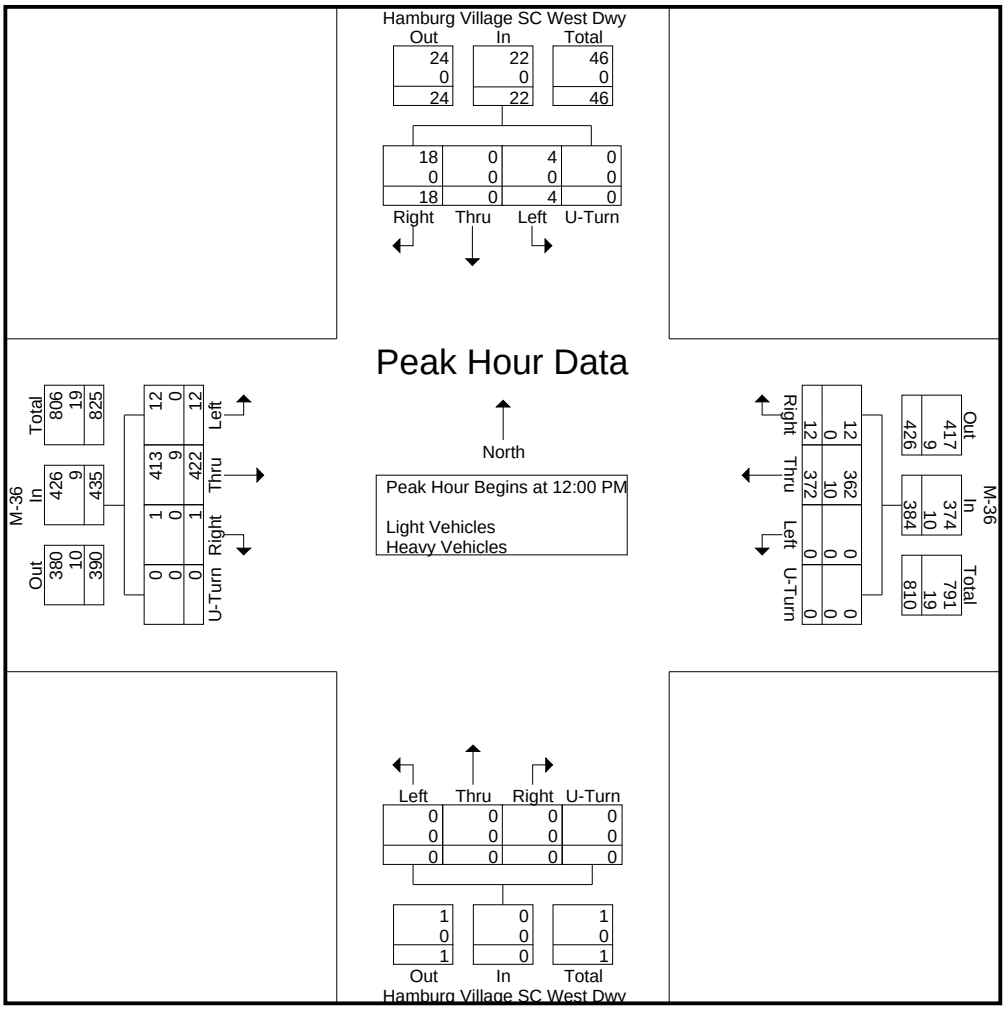
	M-36 Eastbound					M-36 Westbound					Hamburg Village SC West Dwy Northbound					Hamburg Village SC West Dwy Southbound					
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
11:00 AM	3	87	0	0	90	0	82	1	0	83	0	0	0	0	0	1	0	4	0	5	178
11:15 AM	5	101	0	0	106	0	76	0	0	76	0	0	0	0	0	0	0	4	0	4	186
11:30 AM	3	103	0	0	106	0	70	1	0	71	0	0	0	0	0	2	0	5	0	7	184
11:45 AM	6	100	0	0	106	0	93	3	0	96	0	0	0	0	0	1	0	1	0	2	204
Total	17	391	0	0	408	0	321	5	0	326	0	0	0	0	0	4	0	14	0	18	752
12:00 PM	5	91	0	0	96	0	85	4	0	89	0	0	0	0	0	1	0	3	0	4	189
12:15 PM	2	101	0	0	103	0	95	2	0	97	0	0	0	0	0	2	0	6	0	8	208
12:30 PM	4	110	0	0	114	0	95	0	0	95	0	0	0	0	0	1	0	3	0	4	213
12:45 PM	1	120	1	0	122	0	97	6	0	103	0	0	0	0	0	0	0	6	0	6	231
Total	12	422	1	0	435	0	372	12	0	384	0	0	0	0	0	4	0	18	0	22	841
Grand Total	29	813	1	0	843	0	693	17	0	710	0	0	0	0	0	8	0	32	0	40	1593
Apprch %	3.4	96.4	0.1	0		0	97.6	2.4	0		0	0	0	0		20	0	80	0		
Total %	1.8	51	0.1	0	52.9	0	43.5	1.1	0	44.6	0	0	0	0	0	0.5	0	2	0	2.5	
Light Vehicles	29	792	1	0	822	0	669	16	0	685	0	0	0	0	0	8	0	32	0	40	1547
% Light Vehicles	100	97.4	100	0	97.5	0	96.5	94.1	0	96.5	0	0	0	0	0	100	0	100	0	100	97.1
Heavy Vehicles	0	21	0	0	21	0	24	1	0	25	0	0	0	0	0	0	0	0	0	0	46
% Heavy Vehicles	0	2.6	0	0	2.5	0	3.5	5.9	0	3.5	0	0	0	0	0	0	0	0	0	0	2.9



TRUE DATA TO IMPROVE MOBILITY

File Name : 16450407 - Hamburg Village SC West Dwy -- M-36
Site Code : 16450407
Start Date : 1/24/2024
Page No : 2

	M-36 Eastbound					M-36 Westbound					Hamburg Village SC West Dwy Northbound					Hamburg Village SC West Dwy Southbound					
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	**5**	91	0	0	96	0	85	4	0	89	0	0	0	0	0	1	0	3	0	4	189
12:15 PM	2	101	0	0	103	0	95	2	0	97	0	0	0	0	0	**2**	0	**6**	0	**8**	208
12:30 PM	4	110	0	0	114	0	95	0	0	95	0	0	0	0	0	1	0	3	0	4	213
12:45 PM	1	**120**	**1**	0	**122**	0	**97**	**6**	0	**103**	0	0	0	0	0	0	0	6	0	6	**231**
Total Volume	12	422	1	0	435	0	372	12	0	384	0	0	0	0	0	4	0	18	0	22	841
% App. Total	2.8	97	0.2	0		0	96.9	3.1	0		0	0	0	0		18.2	0	81.8	0		
PHF	.600	.879	.250	.000	.891	.000	.959	.500	.000	.932	.000	.000	.000	.000	.000	.500	.000	.750	.000	.688	.910
Light Vehicles	12	413	1	0	426	0	362	12	0	374	0	0	0	0	0	4	0	18	0	22	822
% Light Vehicles	100	97.9	100	0	97.9	0	97.3	100	0	97.4	0	0	0	0	0	100	0	100	0	100	97.7
Heavy Vehicles	0	9	0	0	9	0	10	0	0	10	0	0	0	0	0	0	0	0	0	0	19
% Heavy Vehicles	0	2.1	0	0	2.1	0	2.7	0	0	2.6	0	0	0	0	0	0	0	0	0	0	2.3

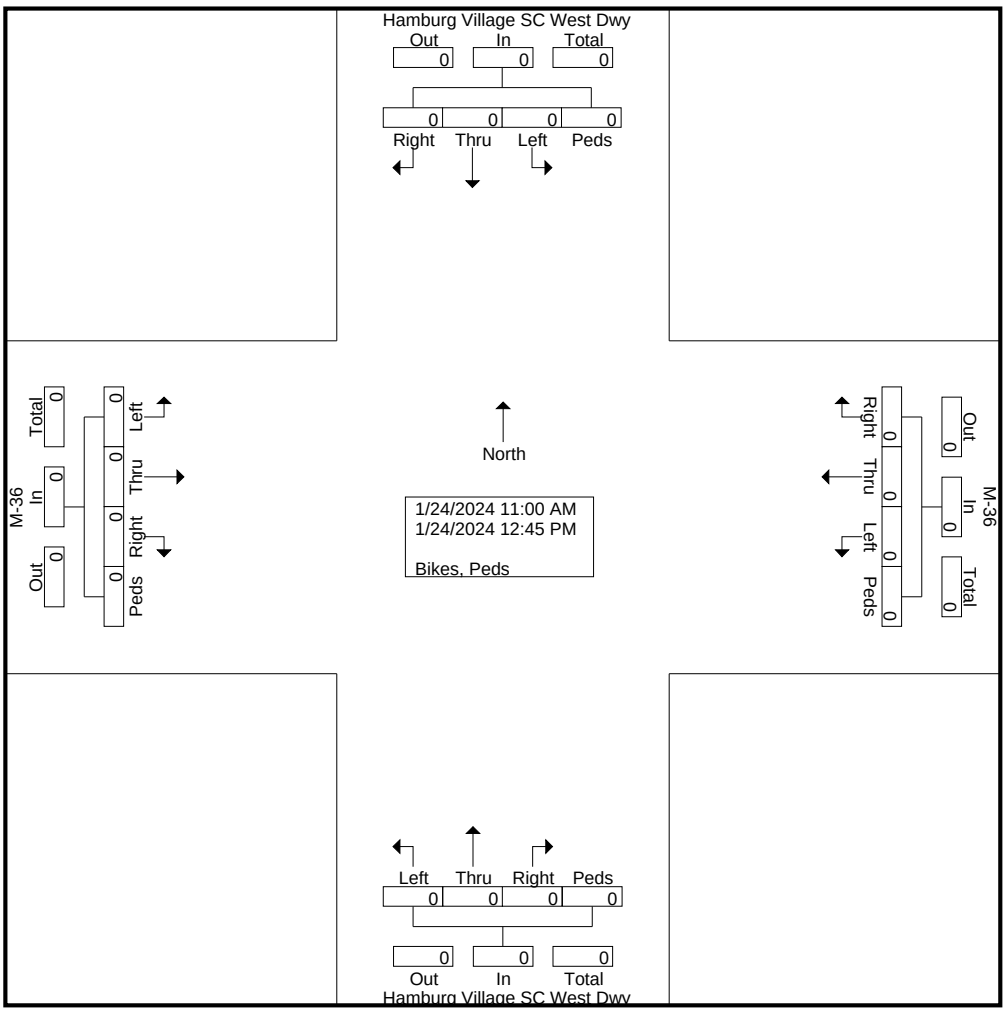


TRUE DATA TO IMPROVE MOBILITY

File Name : 16450407 - Hamburg Village SC West Dwy -- M-36
Site Code : 16450407
Start Date : 1/24/2024
Page No : 1

Groups Printed- Bikes, Peds

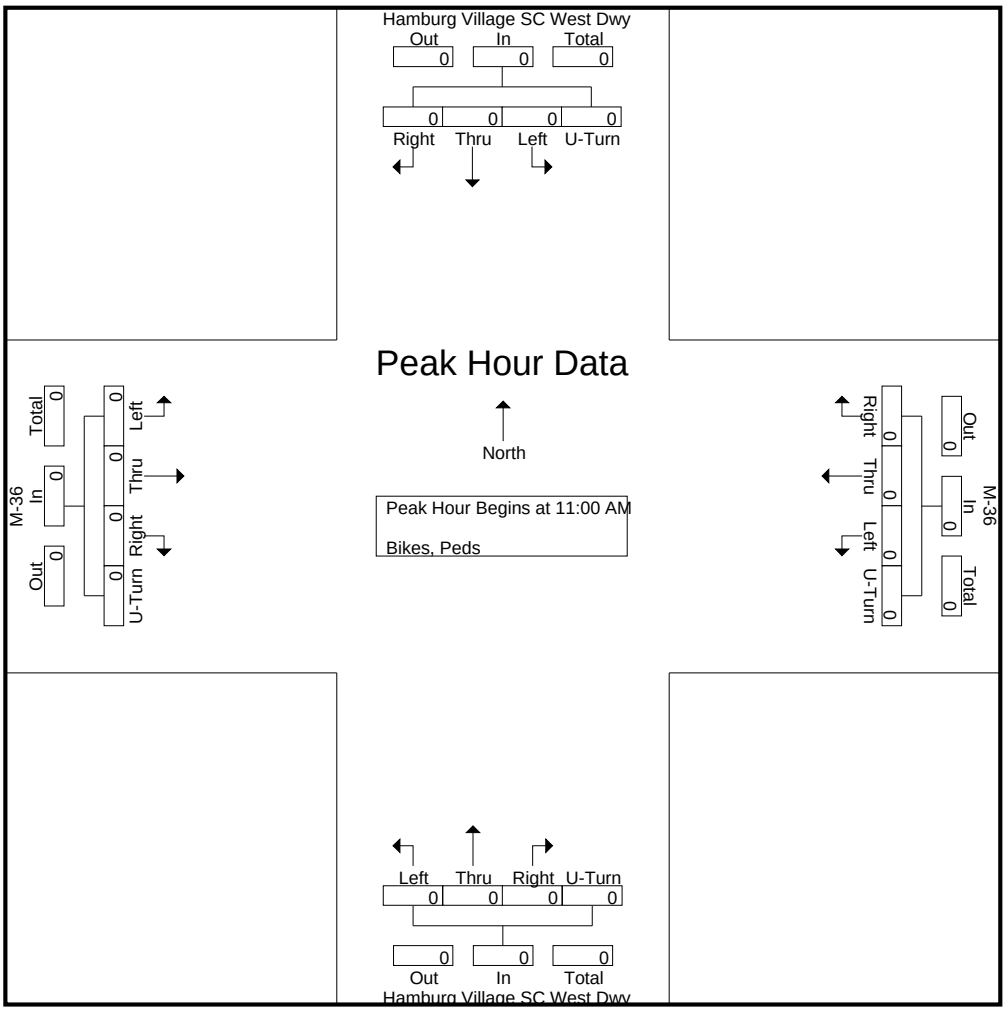
	M-36 Eastbound					M-36 Westbound					Hamburg Village SC West Dwy Northbound					Hamburg Village SC West Dwy Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					



TRUE DATA TO IMPROVE MOBILITY

File Name : 16450407 - Hamburg Village SC West Dwy -- M-36
Site Code : 16450407
Start Date : 1/24/2024
Page No : 2

	M-36 Eastbound					M-36 Westbound					Hamburg Village SC West Dwy Northbound					Hamburg Village SC West Dwy Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

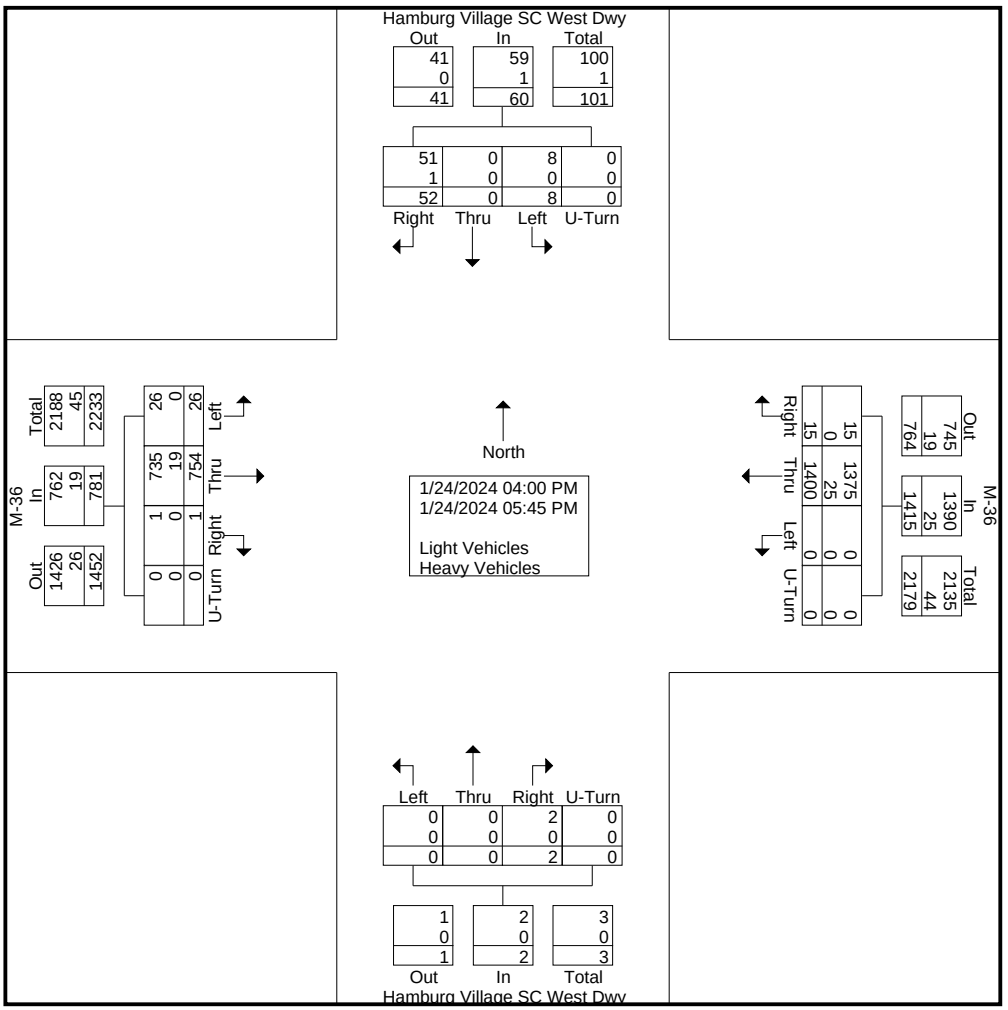


TRUE DATA TO IMPROVE MOBILITY

File Name : 16450408 - Hamburg Village SC West Dwy -- M-36
Site Code : 16450408
Start Date : 1/24/2024
Page No : 1

Groups Printed- Light Vehicles - Heavy Vehicles

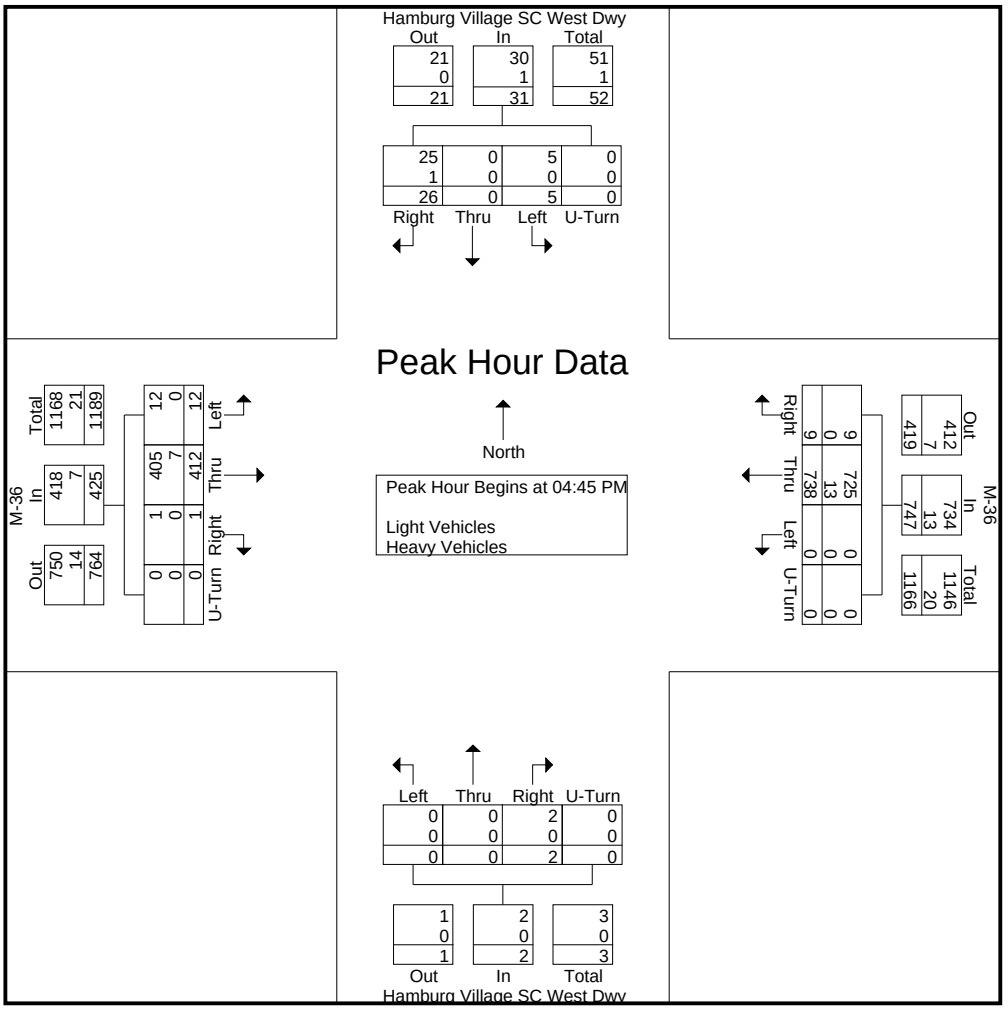
	M-36 Eastbound					M-36 Westbound					Hamburg Village SC West Dwy Northbound					Hamburg Village SC West Dwy Southbound					
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
04:00 PM	5	81	0	0	86	0	163	3	0	166	0	0	0	0	0	1	0	9	0	10	262
04:15 PM	2	87	0	0	89	0	163	1	0	164	0	0	0	0	0	1	0	7	0	8	261
04:30 PM	2	92	0	0	94	0	162	0	0	162	0	0	0	0	0	1	0	5	0	6	262
04:45 PM	4	104	0	0	108	0	165	1	0	166	0	0	1	0	1	2	0	5	0	7	282
Total	13	364	0	0	377	0	653	5	0	658	0	0	1	0	1	5	0	26	0	31	1067
05:00 PM	1	105	0	0	106	0	186	3	0	189	0	0	1	0	1	2	0	3	0	5	301
05:15 PM	3	98	1	0	102	0	196	4	0	200	0	0	0	0	0	0	0	9	0	9	311
05:30 PM	4	105	0	0	109	0	191	1	0	192	0	0	0	0	0	1	0	9	0	10	311
05:45 PM	5	82	0	0	87	0	174	2	0	176	0	0	0	0	0	0	0	5	0	5	268
Total	13	390	1	0	404	0	747	10	0	757	0	0	1	0	1	3	0	26	0	29	1191
Grand Total	26	754	1	0	781	0	1400	15	0	1415	0	0	2	0	2	8	0	52	0	60	2258
Apprch %	3.3	96.5	0.1	0		0	98.9	1.1	0		0	0	100	0		13.3	0	86.7	0		
Total %	1.2	33.4	0	0	34.6	0	62	0.7	0	62.7	0	0	0.1	0	0.1	0.4	0	2.3	0	2.7	
Light Vehicles	26	735	1	0	762	0	1375	15	0	1390	0	0	2	0	2	8	0	51	0	59	2213
% Light Vehicles	100	97.5	100	0	97.6	0	98.2	100	0	98.2	0	0	100	0	100	100	0	98.1	0	98.3	98
Heavy Vehicles	0	19	0	0	19	0	25	0	0	25	0	0	0	0	0	0	0	1	0	1	45
% Heavy Vehicles	0	2.5	0	0	2.4	0	1.8	0	0	1.8	0	0	0	0	0	0	0	1.9	0	1.7	2



TRUE DATA TO IMPROVE MOBILITY

File Name : 16450408 - Hamburg Village SC West Dwy -- M-36
Site Code : 16450408
Start Date : 1/24/2024
Page No : 2

	M-36 Eastbound					M-36 Westbound					Hamburg Village SC West Dwy Northbound					Hamburg Village SC West Dwy Southbound					
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	**4**	104	0	0	108	0	165	1	0	166	0	0	**1**	0	**1**	**2**	0	5	0	7	282
05:00 PM	1	**105**	0	0	106	0	186	3	0	189	0	0	1	0	1	2	0	3	0	5	301
05:15 PM	3	98	**1**	0	102	0	**196**	**4**	0	**200**	0	0	0	0	0	0	0	**9**	0	9	**311**
05:30 PM	4	105	0	0	**109**	0	191	1	0	192	0	0	0	0	0	1	0	9	0	**10**	311
Total Volume	12	412	1	0	425	0	738	9	0	747	0	0	2	0	2	5	0	26	0	31	1205
% App. Total	2.8	96.9	0.2	0		0	98.8	1.2	0		0	0	100	0		16.1	0	83.9	0		
PHF	.750	.981	.250	.000	.975	.000	.941	.563	.000	.934	.000	.000	.500	.000	.500	.625	.000	.722	.000	.775	.969
Light Vehicles	12	405	1	0	418	0	725	9	0	734	0	0	2	0	2	5	0	25	0	30	1184
% Light Vehicles	100	98.3	100	0	98.4	0	98.2	100	0	98.3	0	0	100	0	100	100	0	96.2	0	96.8	98.3
Heavy Vehicles	0	7	0	0	7	0	13	0	0	13	0	0	0	0	0	0	0	1	0	1	21
% Heavy Vehicles	0	1.7	0	0	1.6	0	1.8	0	0	1.7	0	0	0	0	0	0	0	3.8	0	3.2	1.7

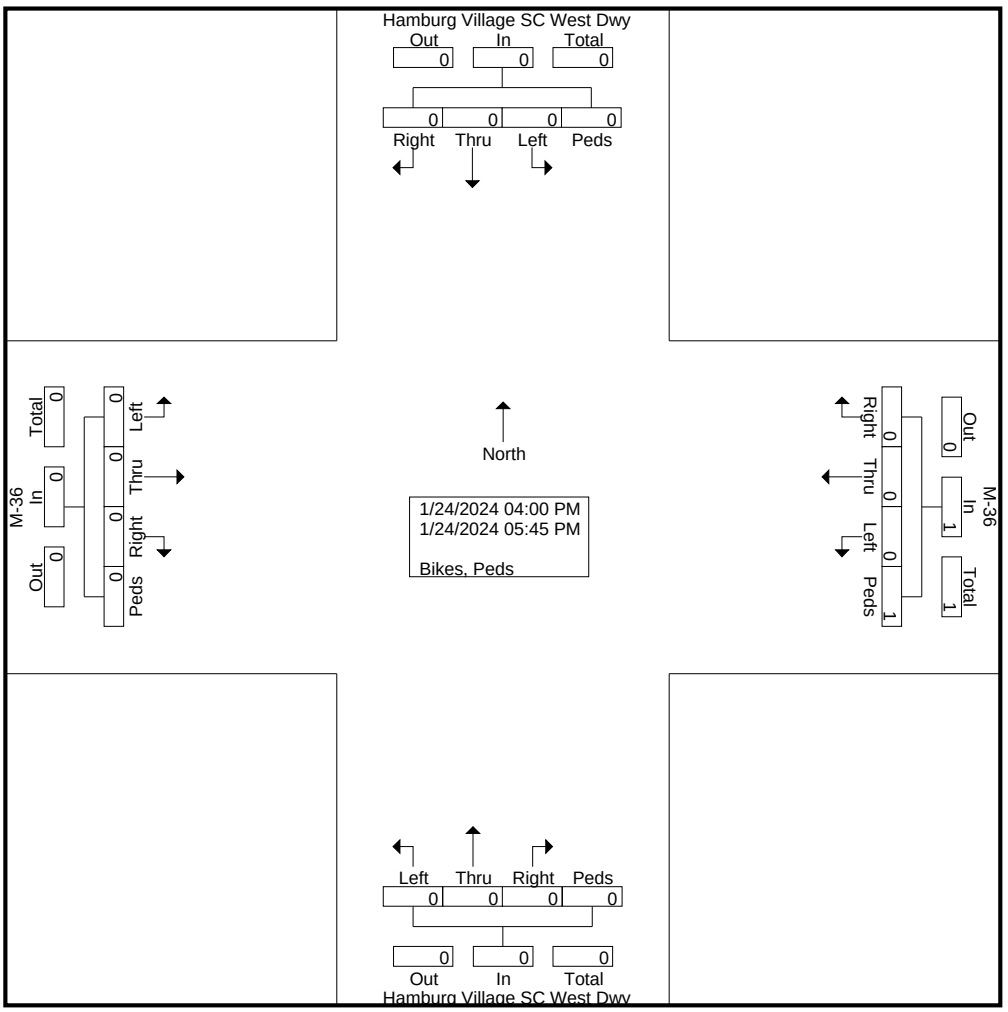


TRUE DATA TO IMPROVE MOBILITY

File Name : 16450408 - Hamburg Village SC West Dwy -- M-36
Site Code : 16450408
Start Date : 1/24/2024
Page No : 1

Groups Printed- Bikes, Peds

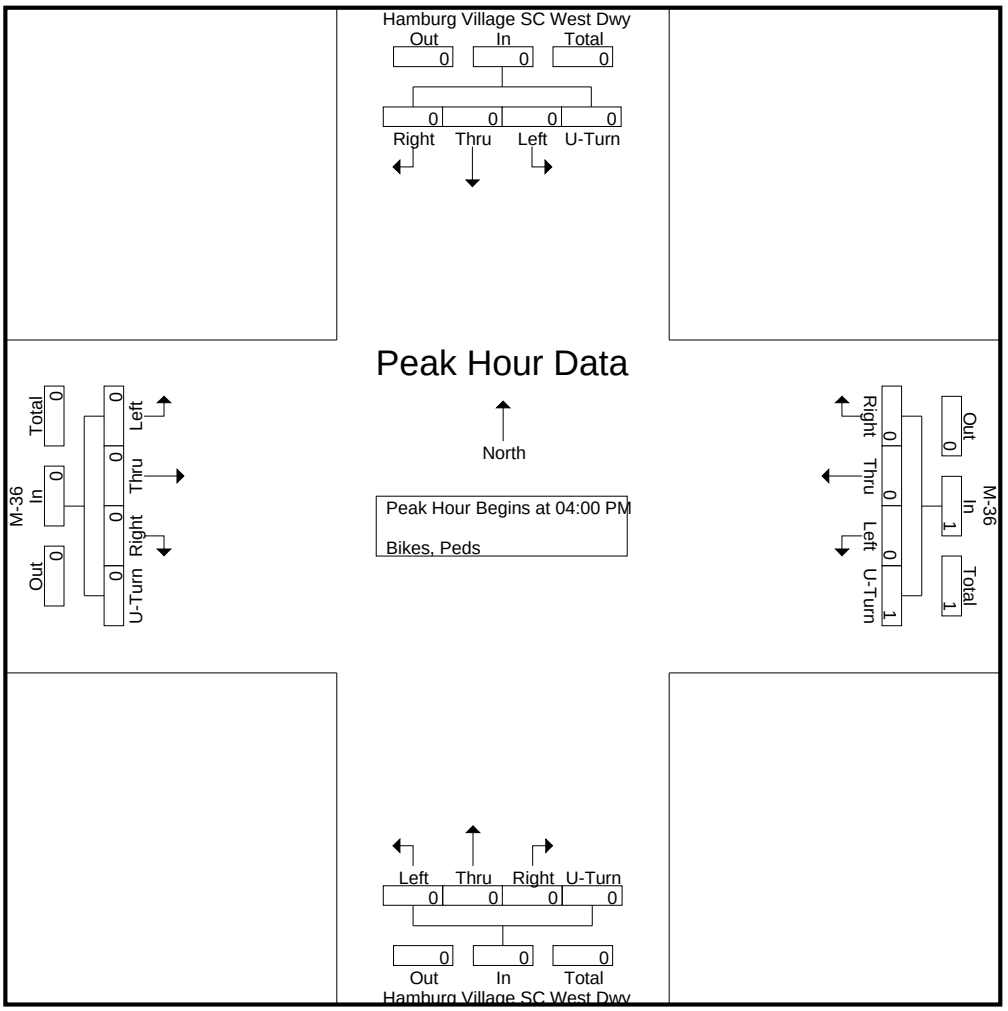
	M-36 Eastbound					M-36 Westbound					Hamburg Village SC West Dwy Northbound					Hamburg Village SC West Dwy Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
Apprch %	0	0	0	0		0	0	0	100		0	0	0	0		0	0	0	0		
Total %	0	0	0	0	0	0	0	0	100	100	0	0	0	0	0	0	0	0	0	0	



TRUE DATA TO IMPROVE MOBILITY

File Name : 16450408 - Hamburg Village SC West Dwy -- M-36
Site Code : 16450408
Start Date : 1/24/2024
Page No : 2

	M-36 Eastbound					M-36 Westbound					Hamburg Village SC West Dwy Northbound					Hamburg Village SC West Dwy Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	**1**
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
% App. Total	0	0	0	0		0	0	0	100		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250



TRUE DATA TO IMPROVE MOBILITY

Site Code: 16450409 & 10
Location: M-36 at Hamburg Village SC East Dwy
Date: 1/24/2024
Time: 11:00 AM - 1:00 PM & 4:00 PM - 6:00 PM

Gap Analysis - MID

Time	Volume	< 2.0 s	2.0 - 3.9 s	4.0 - 5.9 s	6.0 - 7.9 s	8.0 - 9.9 s	10.0 - 11.9 s	12.0 - 13.9 s	14.0 - 15.9 s	16.0 - 17.9 s	18.0 - 19.9 s	20.0 - 21.9 s	22.0 - 23.9 s	24.0 - 25.9 s	26.0 - 27.9 s	28.0 - 29.9 s	> 30.0 s
11:00 AM	168	10	45	28	14	7	8	12	3	9	3	8	1	3	3	0	14
11:15 AM	176	8	51	30	17	9	13	7	10	3	5	2	1	3	3	3	11
11:30 AM	174	10	61	22	12	7	8	7	5	6	5	2	6	2	3	2	16
11:45 AM	196	14	68	18	11	21	5	9	9	6	8	4	7	2	3	4	7
12:00 PM	178	11	54	27	9	18	10	7	3	4	5	2	2	5	0	4	17
12:15 PM	197	13	60	25	20	15	12	4	12	8	4	9	2	2	1	3	7
12:30 PM	203	21	70	29	10	11	8	9	5	9	4	6	2	0	1	5	13
12:45 PM	223	6	79	45	22	15	7	10	5	8	7	2	1	1	1	4	10
Total	**1515**	**93**	**488**	**224**	**115**	**103**	**71**	**65**	**52**	**53**	**41**	**35**	**22**	**18**	**15**	**25**	**95**

Gap Analysis - PM

Time	Volume	< 2.0 s	2.0 - 3.9 s	4.0 - 5.9 s	6.0 - 7.9 s	8.0 - 9.9 s	10.0 - 11.9 s	12.0 - 13.9 s	14.0 - 15.9 s	16.0 - 17.9 s	18.0 - 19.9 s	20.0 - 21.9 s	22.0 - 23.9 s	24.0 - 25.9 s	26.0 - 27.9 s	28.0 - 29.9 s	> 30.0 s
4:00 PM	246	26	102	32	26	7	7	5	7	7	5	5	3	2	3	2	7
4:15 PM	252	19	98	39	19	16	15	12	7	5	2	3	3	5	2	1	6
4:30 PM	255	26	96	40	20	16	10	11	4	7	5	4	3	2	1	3	7
4:45 PM	273	20	121	40	20	14	13	8	6	9	5	5	2	3	1	1	5
5:00 PM	291	24	138	46	23	9	12	9	5	4	6	4	3	0	1	1	6
5:15 PM	296	23	142	46	23	11	10	4	6	10	5	1	2	2	2	1	8
5:30 PM	297	26	136	47	20	16	10	8	6	3	8	0	4	3	3	2	5
5:45 PM	257	15	102	46	23	18	8	9	5	5	3	4	1	6	3	4	5
Total	**2167**	**179**	**935**	**336**	**174**	**107**	**85**	**66**	**46**	**50**	**39**	**26**	**21**	**23**	**16**	**15**	**49**

Disclaimer: The Michigan Department of Transportation (MDOT) works with individual agencies (cities/villages, counties, metropolitan planning organizations (MPOs), regional planning organizations (RPOs), and other areas of MDOT) to identify existing traffic count programs and/or traffic data. ... more

List View | All DIRs | Report Center

Record 1 of 1 Goto Record go

Location ID	47-1416	**MPO ID**	560
Type	SPOT	**HPMS ID**	
On NHS	No	**On HPMS**	No
LRS ID	0932808	**LRS Loc Pt.**	0.2967863
SF Group	Urban Non State	**Route Type**	
AF Group	NoFactor	**Route**	
GF Group	Urban Non State	**Active**	Yes
Class Dist Grp	NTL_4	**Category**	
Seas Clss Grp			
WIM Group			
QC Group	Default		
Fnct'l Class	(4) Minor Arterial	**Milepost**	
Located On	Chilson Rd		
Loc On Alias			
NORTH OF	Lawrence Ct		
More Detail			

STATION DATA

Directions: 2-WAY | NB | SB

AADT

Year	AADT	DHV-30	K %	D %	PA	BC	Src
2022	6,331	596	9		6,149 (97%)	182 (3%)	

VOLUME COUNT

	Date	Int	Total
	Mon 8/8/2022	60	6,331

VOLUME TREND

Year	Annual Growth

CLASSIFICATION

	Date	Int	Total
No Data			

NOTES/FILES

	Note	Date	

Class Dist Grp	2_036_007	**Category**	Primary
Seas Clss Grp			
WIM Group			
QC Group	Default		
Fnct'l Class	(4) Minor Arterial	**Milepost**	
Located On	M-36		
Loc On Alias	M 36		
WEST OF	Chilson Rd		
More Detail			

STATION DATA

Directions: 2-WAY | EB 1 | WB 1

AADT

Year	AADT	DHV-30	K %	D %	PA	BC	Src
2017	19,492[3]		12	54	19,100 (98%)	392 (2%)	Grown from 2016
2016	18,833		12	54	18,566 (99%)	267 (1%)	MDOT
2015	18,022		12	54			MDOT
2014	17,277[3]	2,091	12	54	16,941 (98%)	336 (2%)	MDOT
2013	16,872[3]	2,042	12	54	16,544 (98%)	328 (2%)	MDOT

|<< < > >>| 6-10 of 14

VOLUME COUNT

	Date	Int	Total
	Tue 6/29/2021	15	13,721
	Mon 6/28/2021	15	15,837
-	Tue 6/19/2018	-	
-	Mon 6/18/2018	-	
	Wed 9/23/2015	60	18,925
	Tue 9/22/2015	60	18,987
	Wed 8/12/2015	60	17,832
	Tue 8/11/2015	60	17,420
	Tue 5/22/2012	60	17,601
	Mon 5/21/2012	60	16,879

|<< < > >>| **1-10 of 23**

mm / dd / yyyy To Date

VOLUME TREND

Year	Annual Growth
2022	-2%
2021	-1%
2020	-12%
2019	0%
2018	-19%
2017	3%
2016	5%
2015	4%
2014	2%
2013	1%

|<< < > >>| 1-10 of 13

CLASSIFICATION

	Date	Int	Total
	Tue 6/29/2021	15	13,721

NTCIP TRAFFIC SIGNAL TIMING PERMIT

PHASE	1	2	3	4	5	6	7	8
APPROACH	EB/WB	NB/SB						
MINIMUM GREEN	10	7						
PASSAGE	0.0	4.0						
MAXIMUM GREEN NO. 1	54	26						
MAXIMUM GREEN NO. 2	0	0						
YELLOW CLEARANCE	4.3	3.6						
ALL RED CLEARANCE	1.8	2.7						
WALK	7	7						
FLASHING DON'T WALK (FDW) CLEARANCE	16	14						
EXT PED CLR (EOG, EOY, 3.0s)	3.0s	3.0s						
START UP PHASE(S)	☒	☐	☐	☐	☐	☐	☐	☐
VEHICLE RECALL (NONE, MIN, MAX, SOFT)	MAX	NONE						
PEDESTRIAN RECALL (NONE, RECL, OTHR)	RECL	NONE						
DUAL ENTRY (Y, N)	N	N						
MODE (CRD, MIN, MAX, D-CRD, NOCRD)	CRD	NOCRD						
DAILY FLASH (Y, R, DK, NA)	Y	R						
CONFLICT FLASH (Y, R, DK)	Y	R						
EVNT/ACTN PLN 1 OFFSET 0 CYCLE 70	44	26						
EVNT/ACTN PLN 2 OFFSET 0 CYCLE 70	44	26						
EVNT/ACTN PLN 3 OFFSET 0 CYCLE 80	54	26						
EVNT/ACTN PLN OFFSET CYCLE								
EVNT/ACTN PLN OFFSET CYCLE								
EVNT/ACTN PLN OFFSET CYCLE								

TIMING INSTALLED

PRE-EMPT ☐
COUNTDOWN PEDS ☐

REMARKS

Modified by HNTB for integration into CSCS.

Updated Yellow, All Red, and pedestrian clearance intervals with values provided by MDOT.

LESS FREQUENTLY USED FEATURES

WALK REST MODIFIER (Y, N) (Cycle Ped in Free)								
LEAD PEDESTRIAN INTERVAL								
RED MAX EXTENSION (Dilemma Zone Mitigation)								

FLASH HOURS:
21:30 to 06:00 DAILY ☒ NONE ☐

PHASE
1 EB/WB M-36
2 NB/SB Chilson Road
3
4
5
6
7
8

VEHICLE OVERLAPS

Overlap Phase	Load Bay	Phases Overlapped	T.G. (s)	Y (s)	R (s)	FYA Phases Perm	FYA Phases Prot	Flash Daily	Flash Confl
=									
=									
=									
=									
=									
=									
=									
=									

CONTROLLER and FIRMWARE#
☒ Siemens (SEPAC) M60
☐ ECONOLITE (EOS)
☐ Other:

PREPARED BY: TGB
DATE:

LOCATION: M-36 at Chilson Road
CITY/TWP: Hamburg Township
COUNTY : Livingston

MILE POINT: 18.51
CONTROL SECTION-SPOT #: 47041-01-012

Job # (If Applicable):

CLEAR ALL

Page 4 included only if Pre-Empt Checked

NTCIP Permit 3-31-21

ADVANCED TIMING PARAMETERS FORM

SYSTEM INFORMATION

System Type:

- ☒ Central
  Group ID 47-7
- ☐ TBC
- ☐ None
- ☐ Other:

Controller Location ID:

Interconnect:

- ☐ HARDWIRE
- ☐ FIBER-OPTIC
- ☐ RADIO
- ☐ SERIAL RADIO
  Hop Pattern:
- ☐ IP RADIO
- ☐ TBC
- ☐ GPS CLOCK
- ☒ CELL MODEM
- ☐ NONE
- ☐ Other:

LEFT-TURN PHASING

Phase # / Description	*Permissive-Protected* Lead	*Permissive-Protected* Lag	*Protected-Only* Split	*Protected-Only* Lead	*Protected-Only* Lag
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐

RING AND BARRIER STRUCTURE

	B1				B2				B3				B4			
R1	1				2											
R2																
R3																
R4																

VEHICULAR AND PEDESTRIAN DETECTION

Approach	*Vehicle Detection* Movements and Call Delay (s) Left		Thru		Right		Locking Left	Locking Thru	Locking Right	*Pedestrian Detection* Phase #	Crossing	Load Switch #
NB Chilson Road	☒		☒		☐		☐	☐	☐	2	M-36 at the EAST leg	
SB Chilson Road	☒		☒		☐		☐	☐	☐	2	M-36 at the WEST leg	
	☐		☐		☐		☐	☐	☐			
	☐		☐		☐		☐	☐	☐			
	☐		☐		☐		☐	☐	☐			
	☐		☐		☐		☐	☐	☐			

COORDINATION/OPERATION SETTINGS

CHANGE (ADD ONLY, ADD/SUBT, OTHR)	ADD/SUBT
REST IN WALK FOR COORD PHASE (Y/N)	N
PUSHBUTTONS FOR COORD PHASE (Y/N)	N

ADDITIONAL EVENT/ACTION PLAN DATA

		PHASE	1	2	3	4	5	6	7	8
EVNT/ACTN PLN	OFFSET	CYCLE								
EVNT/ACTN PLN	OFFSET	CYCLE								
EVNT/ACTN PLN	OFFSET	CYCLE								
EVNT/ACTN PLN	OFFSET	CYCLE								
EVNT/ACTN PLN	OFFSET	CYCLE								
EVNT/ACTN PLN	OFFSET	CYCLE								
EVNT/ACTN PLN	OFFSET	CYCLE								
EVNT/ACTN PLN	OFFSET	CYCLE								
EVNT/ACTN PLN	OFFSET	CYCLE								
EVNT/ACTN PLN	OFFSET	CYCLE								

DISAPPEARING CASE SIGN

REMARKS

PREPARED BY: TGB DATE:

☐ MDOT ☐ County ☐ City ☒ Consultant

LOCATION:

M-36 at Chilson Road

CONTROL SECTION-SPOT #
47041-01-012

SCHEDULING INFORMATION

Typical Schedule

Schedule #	Days of Week	Start Date	End Date	Day Plan #	Events
1	Saturday - Sunday	January 1st	December 31st	1	#1 - Normal #100 - Flash: 21:30 - 06:00
2	Monday - Friday	January 1st	December 31st	2	#1 - Normal #100 - Flash: 21:30 - 06:00 #2 - AM Peak: 06:00 - 09:00 #3 - PM Peak: 15:00 - 19:00
3				3	
4				4	

Special Schedules — Schedule remarks including floating holiday schedules

Day Plan #	Events	Day Plan #	Events	Day Plan #	Events	Day Plan #	Events
5		6		7		8	

Schedule	Day Plan #	MONTH OF YEAR												DAY OF WEEK							DAY OF MONTH																											REMARKS :
		J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
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PREPARED BY: TGB | DATE: | LOCATION: M-36 at Chilson Road | CONTROL SECTION-SPOT # 47041-01-012

SEMCOG | Southeast Michigan Council of Governments

Community Profiles

YOU ARE VIEWING DATA FOR:

Hamburg Township

10405 Merrill Rd
Hamburg, MI 48139-0157
https://www.hamburg.mi.us/

SEMCOG MEMBER

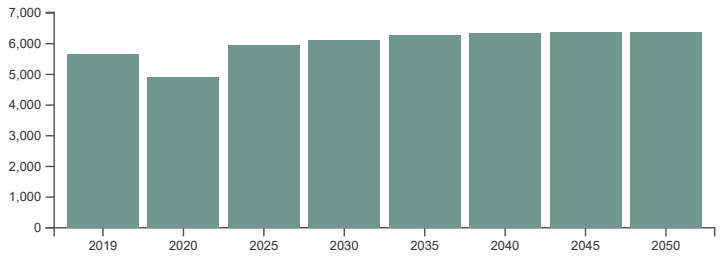
Census 2020 Population: 21,259
Area: 36 square miles

VIEW COMMUNITY EXPLORER MAP VIEW 2020 CENSUS MAP

Economy & Jobs

Link to American Community Survey (ACS) Profiles: **Select a Year** 2018-2022 **Economic**

Forecasted Jobs



Note: The base year for the employment forecast is 2019, as 2020 employment was artificially low due to the COVID recession.

Source: **SEMCOG 2050 Regional Development Forecast**

Forecasted Jobs by Industry Sector

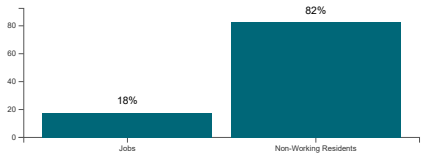
Forecasted Jobs By Industry Sector	2019	2020	2025	2030	2035	2040	2045	2050	Change 2019-2050	Pct Change 2019-2050
Natural Resources, Mining, & Construction	627	581	786	808	807	786	776	770	143	22.8%
Manufacturing	402	370	419	416	403	389	366	342	-60	-14.9%
Wholesale Trade	89	84	94	107	113	112	113	112	23	25.8%
Retail Trade	389	373	393	391	378	363	356	342	-47	-12.1%
Transportation, Warehousing, & Utilities	138	134	153	153	158	159	161	162	24	17.4%
Information & Financial Activities	892	745	864	886	918	930	943	959	67	7.5%
Professional and Technical Services & Corporate HQ	530	374	532	575	603	620	631	649	119	22.5%
Administrative, Support, & Waste Services	468	384	446	483	516	545	568	597	129	27.6%
Education Services	404	389	434	449	472	475	480	481	77	19.1%
Healthcare Services	340	312	459	470	491	501	503	510	170	50%
Leisure & Hospitality	672	548	689	713	747	769	769	765	93	13.8%
Other Services	502	427	476	477	486	499	506	511	9	1.8%
Public Administration	191	187	211	175	181	186	186	184	-7	-3.7%
Total Employment Numbers	5,644	4,908	5,956	6,103	6,273	6,334	6,358	6,384	740	13.1%

Note: The base year for the employment forecast is 2019, as 2020 employment was artificially low due to the COVID recession.

Source: **SEMCOG 2050 Regional Development Forecast**

Daytime Population

Daytime Population	ACS 2016
Jobs	2,202
Non-Working Residents	10,365
Age 15 and under	3,893
Not in labor force	5,833
Unemployed	639
Daytime Population	12,567



Source: **2012-2016 American Community Survey 5-Year Estimates** and **2012-2016 Census Transportation Planning Products Program (CTPP)**. For additional information, visit SEMCOG's **Interactive Commuting Patterns Map**

Note: The number of residents attending school outside Southeast Michigan is not available. Likewise, the number of students commuting into Southeast Michigan to attend school is also not known.

Where Workers Commute From 2016

Rank	Where Workers Commute From *	Workers	Percent
1	**Hamburg Twp**	1,376	62.5%
2	**Out of the Region, Instate**	121	5.5%
3	**Genoa Twp**	66	3%
4	**Brighton Twp**	62	2.8%
5	**Putnam Twp**	58	2.6%
6	**Northfield Twp**	47	2.1%
7	**Brighton**	40	1.8%
8	**Oceola Twp**	40	1.8%
9	**Canton Twp**	31	1.4%
10	**Marion Twp**	28	1.3%
-	**Elsewhere**	333	15.1%
* Workers, age 16 and over employed in Hamburg Twp		**2,202**	**100%**

Source: **U.S. Census Bureau** - 2012-2016 CTPP/ACS Commuting Data and **Commuting Patterns in Southeast Michigan**

Where Residents Work 2016

Rank	Where Residents Work *	Workers	Percent
1	**Ann Arbor**	1,695	15.2%
2	**Hamburg Twp**	1,376	12.3%
3	**Green Oak Twp**	652	5.8%
4	**Brighton**	548	4.9%
5	**Genoa Twp**	419	3.8%
6	**Brighton Twp**	411	3.7%
7	**Out of the Region, Instate**	342	3.1%
8	**Howell Twp**	317	2.8%
9	**Pittsfield Twp**	286	2.6%
10	**Livonia**	266	2.4%
-	**Elsewhere**	4,858	43.5%
* Workers, age 16 and over residing in Hamburg Twp		**11,170**	**100%**

Source: **U.S. Census Bureau** - 2012-2016 CTPP/ACS Commuting Data and **Commuting Patterns in Southeast Michigan**

Household Income

Income (in 2021 dollars)	ACS 2010	ACS 2021	Change 2010-2021	Percent Change 2010-2021
Median Household Income	$105,189	$98,550	$-6,639	-6.3%
Per Capita Income	$43,401	$48,295	$4,894	11.3%

Source: **U.S. Census Bureau**, **2006-2010 and 2017-2021 American Community Survey 5-Year Estimates**

SEMCOG | Southeast Michigan Council of Governments

Community Profiles

YOU ARE VIEWING DATA FOR:

Hamburg Township

10405 Merrill Rd
Hamburg, MI 48139-0157
https://www.hamburg.mi.us/

SEMCOG MEMBER

Census 2020 Population: 21,259
Area: 36 square miles

VIEW COMMUNITY EXPLORER MAP VIEW 2020 CENSUS MAP

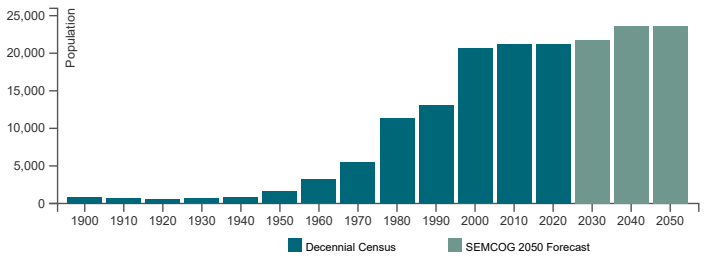
Population and Households

Link to American Community Survey (ACS) Profiles: **Select a Year** 2018-2022 **Social** | **Demographic**

Population and Household Estimates for Southeast Michigan, 2023

Population Forecast

POPULATION:



Population and Households

Population and Households	Census 2020	Census 2010	Change 2010-2020	Pct Change 2010-2020	SEMCOG Jul 2023	SEMCOG 2050
Total Population	21,259	21,165	94	0.4%	21,229	23,616
Group Quarters Population	0	14	-14	-100.0%	12	69
Household Population	21,259	21,151	108	0.5%	21,217	23,547
Housing Units	8,926	8,668	258	3.0%	9,062	-
Households (Occupied Units)	8,257	7,860	397	5.1%	8,612	9,153
Residential Vacancy Rate	7.5%	9.3%	-1.8%	-	5.0%	-
Average Household Size	2.57	2.69	-0.12	-	2.46	2.57

Source: **U.S. Census Bureau** and **SEMCOG 2050 Regional Development Forecast**

Components of Population Change

Components of Population Change	2000-2005 Avg.	2006-2010 Avg.	2011-2018 Avg.
Natural Increase (Births - Deaths)	140	24	37
Births	241	124	168
Deaths	101	100	131
Net Migration (Movement In - Movement Out)	210	-266	-106
Population Change (Natural Increase + Net Migration)	350	-242	-69

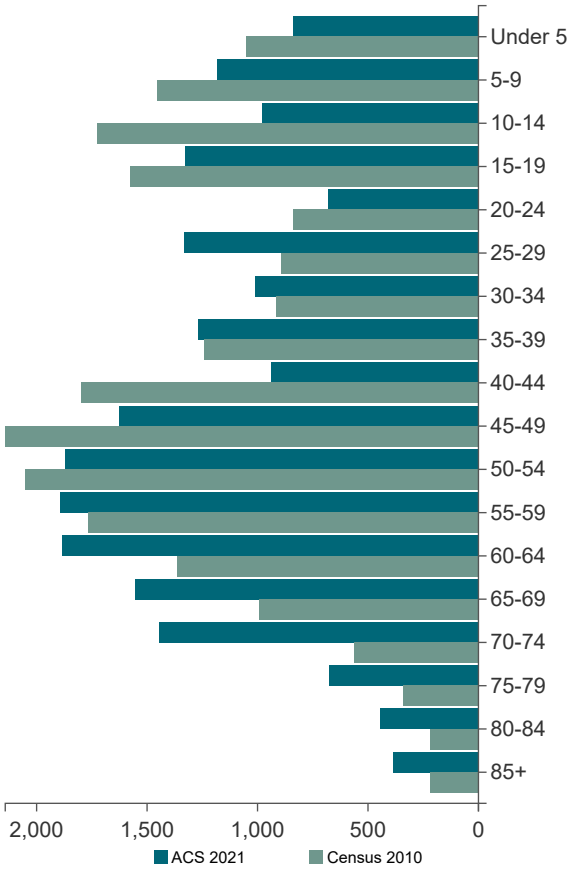
Source: **Michigan Department of Community Health Vital Statistics**, **U.S. Census Bureau**, and SEMCOG

Household Types

Household Types	Census 2010	ACS 2021	Change 2010-2021	Pct Change 2010-2021	SEMCOG 2050
With Seniors 65+	1,629	2,989	1,360	83.5%	-
Without Seniors	6,231	5,533	-698	-11.2%	-
Live Alone, 65+	426	627	201	47.2%	-
Live Alone, <65	926	900	-26	-2.8%	-
2+ Persons, With children	2,833	2,382	-451	-15.9%	-
2+ Persons, Without children	3,675	4,613	938	25.5%	-
Total Households	7,860	8,522	662	8.4%	-

Source: **U.S. Census Bureau**, **Decennial Census**, **2017-2021 American Community Survey 5-Year Estimates**, and **SEMCOG 2050 Regional Development Forecast**

Population Change by Age, 2010-2021



Age Group	Census 2010	Change 2000-2010	ACS 2021	Change 2010-2021
Under 5	1,052	-542	841	-211
5-9	1,456	-331	1,183	-273
10-14	1,726	-63	979	-747
15-19	1,579	206	1,330	-249
20-24	838	138	680	-158
25-29	895	-110	1,332	437
30-34	914	-810	1,013	99
35-39	1,244	-949	1,270	26
40-44	1,797	-306	939	-858
45-49	2,142	317	1,629	-513
50-54	2,054	547	1,870	-184
55-59	1,769	706	1,896	127
60-64	1,364	702	1,886	522
65-69	994	555	1,554	560
70-74	564	200	1,448	884
75-79	340	96	675	335
80-84	220	62	445	225
85+	217	120	386	169
Total	21,165	538	21,356	191
Median Age	42.6	6.8	48.4	5.8

Source: **U.S. Census Bureau**, **Decennial Census**, and **2017-2021 American Community Survey 5-Year Estimates**

Race and Hispanic Origin

Race and Hispanic Origin	Census 2010	Percent of Population 2010	Census 2020	Percent of Population 2020	Percentage Point Change 2010-2020
Non-Hispanic	20,886	98.7%	20,799	97.8%	-0.8%
White	20,367	96.2%	19,593	92.2%	-4.1%
Black	66	0.3%	68	0.3%	0%
Asian	122	0.6%	143	0.7%	0.1%
Multi-Racial	242	1.1%	883	4.2%	3%
Other	89	0.4%	112	0.5%	0.1%
Hispanic	279	1.3%	460	2.2%	0.8%
Total	21,165	100%	21,259	100%	0%

Source: **U.S. Census Bureau Decennial Census**

Authority: 1949 PA 300, Sec.257.622
Compliance: Required MSP UD-10E
Penalty: $100 and/or 90 days (Rev 01/2016)

External # 0058312 Crash ID 1984340

File Class 9300-1

STATE OF MICHIGAN TRAFFIC CRASH REPORT

Incident # 2000252

ORI	Department Name	Reviewer
MI 4745100	Hamburg Township Police Department	DUHAIME, MATTHEW

Crash Date	Crash Time	No. of Units	Crash Type	Special Circumstances	Special Checks
03/12/2020	14:43	02	Sideswipe-Same	● None O Hit and Run O School Bus O Fleeing Police O Unknown O Animal	O Fatal O Non-Traffic Area O ORV/Snowmobile

County	Traffic Control	Relation to Roadway	Weather	Area
47 - Livingston	None	On the Road	Clear	NON-FRWY Driveway Related

City/Twsp	Contributing Circumstances 1st	2nd	Light	Road Surface Condition	Total Lanes	Speed Limit	Posted
07 - Hamburg Twp	None		Daylight	Dry	02	45	Yes

Work Zone (if applicable) — Type | Workers Present | Activity | Location

LOCATION

Prefix	Primary Road Name	Road Type	Suffix	Divided Roadway
E	M36	HWY		

Distance / Direction: 50 Feet E
Trafficway: Not Physically Divided

Prefix	Intersecting Road Name	Road Type	Suffix	Divided Roadway
E	CHILSON	RD		

UNIT / DRIVER

Unit Number	Unit Known	State	Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Total Occupants	Hazardous Action
01	Yes	MI	##########	##/##/#### (90)	● Operator O Chauffeur O Moped	O Cycle O Farm O Recreation	F	01	Reckless Driving

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## REDFORD, MI 48239 (###) ###-####	Yes	C	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st	2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Other		Unknown			Deployed - Front

Hospital: PROVIDENCE HOSP & MEDICAL CENTERS-PROVIDENCE PARK
Ambulance: LIVINGSTON COUNTY EMS

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	O Breath O Blood O Urine O Field O PBT O Refused O Not Offered	O Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	O Blood O Urine O Field O Refused O Not Offered	O Pending Test Results:	O Hazardous O Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
DVJ4288	MI		2008	DODGE	AVENGER	SILVER OR ALUMI

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
1B3LC6KX8N639755	Passenger Car, SUV, Van	Not Applicable		

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No		

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########	CORRIGAN'S	CORRIGAN'S

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
08	08	Disabling Damage	W	Private	Going Straight Ahead

Sequence of Events (● indicates MOST harmful event)

First	Second	Third	Fourth
● 17 - Motor Veh in Transport			

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital | Ambulance

Passenger Information	Date of Birth (Age)	Sex	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital | Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	O H O P O T O N O S O X	O Farm O Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
O 10,000 lbs. or Less O 10,001 - 26,000 lbs. O Greater than 26,000 lbs.				O Placard O Cargo Spill		

OWNERS

Owner Information: ########## ########## ##########, ## #####-#### (###) ###-####

Owner Information

Damaged Property	Public	Owner & Phone
HIAWATHA CHURCH SIGN	No	########## (###) ###-####

UNIT/DRIVER

Unit Number	Unit Known	State	Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Total Occupants	Hazardous Action
02	Yes	MI	##########	##/##/#### (71)	● Operator ○ Chauffeur ○ Moped	○ Cycle ○ Farm ○ Recreation	M	01	None

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## PINCKNEY, MI 48169 (###) ###-####	Yes	O	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st / 2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Appeared Normal	Not Distracted			Not Deployed

Hospital	Ambulance
NONE	NONE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	○ Breath ○ Blood ○ Urine ○ Field ○ PBT ○ Refused ○ Not Offered	○ Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	○ Blood ○ Urine ○ Field ○ Refused ○ Not Offered	○ Pending Test Results:	○ Hazardous ○ Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
DHC9260	MI		2019	CHEVROLET	TRAX	WHITE

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
3GNCJKSB0KL285915	Passenger Car, SUV, Van	Not Applicable		

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No		

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########	CORRIGAN'S	CORRIGAN'S

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
04	04	Disabling Damage	W	Private	Going Straight Ahead

Sequence of Events (● indicates MOST harmful event)	First	Second	Third	Fourth
	● 17 - Motor Veh in Transport			

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

Passenger Information	Date of Birth (Age)	Sex	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	○ H ○ P ○ T ○ N ○ S ○ X	○ Farm ○ Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
○ 10,000 lbs. or Less ○ 10,001 - 26,000 lbs. ○ Greater than 26,000 lbs.				○ Placard ○ Cargo Spill		

OWNERS

Owner Information	Owner Information
########## ########## ##########, ## #####-#### (###) ###-####	

WITNESS

Witness Information	Witness Information

Investigated at Scene	Reported Date (Time)	1st Investigator Name (Badge)	2nd Investigator Name (Badge)	Photos
Yes	03/12/2020 (17:43)	LEEDS, KIMBERLY (00040)		No

Narrative

VEH 1 WAS OBSERVED BY SEVERAL CALLERS, DRIVING ON AND OFF THE ROADWAY, CRASHING INTO SIGNS. VEH 1 CONTINUED WEST ON M36, AND ATTEMPTED TO PASS VEH 2 ON THE RIGHT, STRIKING IT. BOTH VEHICLES WERE COMPLETELY DISABLED. OC-88 COMPLETED ON DRIVER OF VEH 1

Diagram

Authority: 1949 PA 300, Sec.257.622
Compliance: Required MSP UD-10E
Penalty: $100 and/or 90 days (Rev 01/2016)

External # 0058220 Crash ID 1970793

File Class 9300-1

STATE OF MICHIGAN TRAFFIC CRASH REPORT

Incident # 2000233

ORI	Department Name	Reviewer
MI 4745100	Hamburg Township Police Department	PRICE, DANIELLE

Crash Date	Crash Time	No. of Units	Crash Type	Special Circumstances	Special Checks
03/05/2020	08:05	02	Head On	● None O Hit and Run O School Bus O Fleeing Police O Unknown O Animal	O Fatal O Non-Traffic Area O ORV/Snowmobile

County	Traffic Control	Relation to Roadway	Weather	Area
47 - Livingston	Signal	On the Road	Clear	INTR Within Intersection

City/Twsp	Contributing Circumstances 1st	2nd	Light	Road Surface Condition	Total Lanes	Speed Limit	Posted
07 - Hamburg Twp	None		Daylight	Dry	03	45	Yes

Work Zone (if applicable) — Type | Workers Present | Activity | Location

LOCATION

Prefix	Primary Road Name	Road Type	Suffix	Divided Roadway
	E M36			

Distance / Direction: AT — Trafficway: Not Physically Divided

Prefix	Intersecting Road Name	Road Type	Suffix	Divided Roadway
	CHILSON	RD		

UNIT / DRIVER

Unit Number	Unit Known	State	Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Total Occupants	Hazardous Action
01	Yes	MI	##########	##/##/#### (52)	● Operator O Chauffeur O Moped	O Cycle O Farm O Recreation	M	01	Careless Driving

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## HOWELL, MI 48843 (###) ###-####	Yes	O	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st	2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Appeared Normal		Other Activity Inside Veh			Deployed - Front

Hospital	Ambulance
REFUSE	REFUSE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	O Breath O Blood O Urine O Field O PBT O Refused O Not Offered	O Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	O Blood O Urine O Field O Refused O Not Offered	O Pending Test Results:	O Hazardous ● Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
1MNS19	MI		2003	CHEVROLET	CAVALIER	RED

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
3G1JC52F53S204258	Passenger Car, SUV, Van	Not Applicable		

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No		

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########	CORRIGAN'S	OWNER DISCRETION

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
01	01	Disabling Damage	E	Private	Avoiding Veh Front/Back

Sequence of Events (● indicates MOST harmful event)

First	Second	Third	Fourth
● 17 - Motor Veh in Transport			

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

Passenger Information	Date of Birth (Age)	Sex	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	O H O P O T O N O S O X	O Farm O Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
O 10,000 lbs. or Less O 10,001 - 26,000 lbs. O Greater than 26,000 lbs.				O Placard O Cargo Spill		

OWNERS

Owner Information	Owner Information
########## ########## ##########, ## #####-#### (###) ###-####	

Damaged Property	Public	Owner & Phone

UNIT/DRIVER

Unit Number	Unit Known	State Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Total Occupants	Hazardous Action
02	Yes	MI ##########	##/##/#### (67)	● Operator ○ Chauffeur ○ Moped	○ Cycle ○ Farm ○ Recreation	M	01	None

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## WHITMORE LAKE, MI 48189 (###) ###-####	Yes	O	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st / 2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Appeared Normal	Not Distracted			Not Deployed

Hospital	Ambulance
REFUSE	REFUSE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	○ Breath ○ Blood ○ Urine ○ Field ○ PBT ○ Refused ○ Not Offered	○ Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	○ Blood ○ Urine ○ Field ○ Refused ○ Not Offered	○ Pending Test Results:	○ Hazardous ○ Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
CXL387	MI		2004		ES330	BLACK

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
JTHBA30G945000297	Passenger Car, SUV, Van	Not Applicable		

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No		

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########	CORRIGAN'S	OWNER DISCRETION

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
01	01	Disabling Damage	W	Private	Going Straight Ahead

Sequence of Events (● indicates MOST harmful event)	First	Second	Third	Fourth
	● 17 - Motor Veh in Transport			

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

Passenger Information	Date of Birth (Age)	Sex	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	○ H ○ P ○ T ○ N ○ S ○ X	○ Farm ○ Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
○ 10,000 lbs. or Less ○ 10,001 - 26,000 lbs. ○ Greater than 26,000 lbs.				○ Placard ○ Cargo Spill		

OWNERS

Owner Information	Owner Information
########## ########## ##########, ## #####-#### (###) ###-####	

WITNESS

Witness Information	Witness Information

Investigated at Scene	Reported Date (Time)	1st Investigator Name (Badge)	2nd Investigator Name (Badge)	Photos
Yes	03/05/2020 (08:13)	FISCHHABER, ADAM (00034)		No

Narrative

#1 was turning left from southbound Chilson Road onto eastbound M36. The driver was attempting to retrieve sun glasses inside the vehicle when the vehicle in front of him stopped for the light. To avoid the collision, the driver turned into the westbound lane of M36 and struck #1 head on. #2 was in the westbound lane of travel beginning a right turn from westbound M36 to northbound Chilson Road.

No injuries.

Diagram

Authority: 1949 PA 300, Sec.257.622
Compliance: Required MSP UD-10E
Penalty: $100 and/or 90 days (Rev 01/2016)

External # 0058510 | Crash ID 2005264

File Class 9300-1

STATE OF MICHIGAN TRAFFIC CRASH REPORT

Incident # 2000394

ORI	Department Name	Reviewer
MI 4745100	Hamburg Township Police Department	GARBACIK, ALYSHA

Crash Date	Crash Time	No. of Units	Crash Type	Special Circumstances	Special Checks
05/19/2020	16:06	02	Rear End	● None O Hit and Run O School Bus O Fleeing Police O Unknown O Animal	O Fatal O Non-Traffic Area O ORV/Snowmobile

County	Traffic Control	Relation to Roadway	Weather	Area
47 - Livingston	Signal	On the Road	Cloudy	INTR Within Intersection

City/Twsp	Contributing Circumstances 1st	2nd	Light	Road Surface Condition	Total Lanes	Speed Limit	Posted
07 - Hamburg Twp	None		Daylight	Dry	03	45	Yes

Work Zone (if applicable) — Type | Workers Present | Activity | Location

LOCATION

Prefix	Primary Road Name	Road Type	Suffix	Divided Roadway
E	M36	HWY		

Distance / Direction: 40 Feet E
Trafficway: Not Physically Divided

Prefix	Intersecting Road Name	Road Type	Suffix	Divided Roadway
E	CHILSON	RD		

UNIT / DRIVER

Unit Number	Unit Known	State	Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Total Occupants	Hazardous Action
01	Yes	MI	##########	##/##/#### (60)	● Operator O Chauffeur O Moped	O Cycle O Farm O Recreation	F	02	Careless Driving

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## LUPTON, MI 48635-9755 (###) ###-####	Yes	O	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st	2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Emotional		Comm Dev (Text,Type,Dial)			Deployed - Front

Hospital: NONE | Ambulance: NONE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	O Breath O Blood O Urine O Field O PBT O Refused O Not Offered	O Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	O Blood O Urine O Field O Refused O Not Offered	O Pending Test Results:	● Hazardous O Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
CKG750	MI		2009	PONTIAC	G6	MAROON OR BURGU

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
1G2ZG57NX94220645	Passenger Car, SUV, Van	Not Applicable		

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No		

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########	CORRIGAN	CORRIGAN

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
02	02	Disabling Damage	W	Private	Going Straight Ahead

Sequence of Events (● indicates MOST harmful event): First: ● 17 - Motor Veh in Transport | Second | Third | Fourth

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Position	Restraint
########## ########## ANN ARBOR, MI 48103 (###) ###-####	##/##/#### (0)	F	2nd Row - Left	Child - Rear Facing

Injury	Ejected	Trapped	Airbag Deployed
O			Deployed - Front

Hospital: NONE | Ambulance: NONE

Passenger Information	Date of Birth (Age)	Sex	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital | Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	O H O P O T O N O S O X	O Farm O Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
O 10,000 lbs. or Less O 10,001 - 26,000 lbs. O Greater than 26,000 lbs.				O Placard O Cargo Spill		

OWNERS

Owner Information	Owner Information
########## ########## ##########, ## #####-#### (###) ###-####	

Damaged Property	Public	Owner & Phone

UNIT/DRIVER

Unit Number	Unit Known	State Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Total Occupants	Hazardous Action
02	Yes	MI ##########	##/##/#### (27)	● Operator ○ Chauffeur ○ Moped	○ Cycle ○ Farm ○ Recreation	F	01	None

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## PINCKNEY, MI 48169-8039 (###) ###-####	Yes	O	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st / 2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Appeared Normal	Not Distracted			Not Deployed

Hospital	Ambulance
NONE	NONE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	○ Breath ○ Blood ○ Urine ○ Field ○ PBT ○ Refused ○ Not Offered	○ Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	○ Blood ○ Urine ○ Field ○ Refused ○ Not Offered	○ Pending Test Results:	○ Hazardous ○ Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
CXZ058	MI		2011	VOLKSWAGON	JETTA	GOLD

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
3VWDZ7AJ3BM382870	Passenger Car, SUV, Van	Not Applicable		

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No		

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########		OWNER DISCRETION

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
06	06	Functional Damage	W	Private	Stopped on Roadway

Sequence of Events	First	Second	Third	Fourth
(● indicates MOST harmful event)	● 17 - Motor Veh in Transport			

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

Passenger Information	Date of Birth (Age)	Sex	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	○ H ○ P ○ T ○ N ○ S ○ X	○ Farm ○ Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
○ 10,000 lbs. or Less ○ 10,001 - 26,000 lbs. ○ Greater than 26,000 lbs.				○ Placard ○ Cargo Spill		

OWNERS

Owner Information	Owner Information
########## ########## ##########, ## #####-#### (###) ###-####	

WITNESS

Witness Information	Witness Information

Investigated at Scene	Reported Date (Time)	1st Investigator Name (Badge)	2nd Investigator Name (Badge)	Photos
Yes	05/19/2020 (16:28)	WALLACE, TONY (00010)		No

Narrative

Vehicle #2 was stopped at the red traffic light when vehicle #1 rear-ended vehicle #2. Driver #1 stated she was watching a video on her phone when she rear-ended vehicle #2. No injuries.

Diagram

Authority: 1949 PA 300, Sec.257.622
Compliance: Required MSP UD-10E
Penalty: $100 and/or 90 days (Rev 01/2016)

External # 0058889 | Crash ID 2038932

File Class 9300-1

STATE OF MICHIGAN TRAFFIC CRASH REPORT

Incident # 2000567

ORI	Department Name	Reviewer
MI 4745100	Hamburg Township Police Department	PRICE, DANIELLE

Crash Date	Crash Time	No. of Units	Crash Type	Special Circumstances	Special Checks
07/13/2020	09:03	02	Rear End	● None O Hit and Run O School Bus O Fleeing Police O Unknown O Animal	O Fatal O Non-Traffic Area O ORV/Snowmobile

County	Traffic Control	Relation to Roadway	Weather	Area
47 - Livingston	Signal	On the Road	Clear	NON-FRWY Straight Roadway

City/Twsp	Contributing Circumstances 1st	2nd	Light	Road Surface Condition	Total Lanes	Speed Limit	Posted
07 - Hamburg Twp	None		Daylight	Dry	02	45	Yes

Work Zone (if applicable) — Type | Workers Present | Activity | Location

LOCATION

Prefix	Primary Road Name	Road Type	Suffix	Divided Roadway
	M36 R			N

Distance / Direction	Trafficway
10 Feet E	Not Physically Divided

Prefix	Intersecting Road Name	Road Type	Suffix	Divided Roadway
	PETTYS	RD		N

UNIT / DRIVER

Unit Number	Unit Known	State	Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Total Occupants	Hazardous Action
01	Yes	MI	##########	##/##/#### (65)	● Operator O Chauffeur O Moped	O Cycle O Farm O Recreation	M	01	Disregard Traffic Control

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## WHITMORE LAKE, MI 48189 (###) ###-####	Yes	O	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st	2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Appeared Normal		Not Distracted			Not Deployed

Hospital	Ambulance
NONE	NONE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	O Breath O Blood O Urine O Field O PBT O Refused O Not Offered	O Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	O Blood O Urine O Field O Refused O Not Offered	O Pending Test Results:	O Hazardous O Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
DRR7641	MI		2004	FORD	F250	WHITE

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
1FTNX21L64EA86395	Pickup Truck	Not Applicable		

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No		

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########	CORRIGAN'S	OWNER DISCRETION

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
02	02	Disabling Damage	W	Private	Going Straight Ahead

Sequence of Events	First	Second	Third	Fourth
(● indicates MOST harmful event)	● 17 - Motor Veh in Transport			

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

Passenger Information	Date of Birth (Age)	Sex	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	O H O P O T O N O S O X	O Farm O Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
O 10,000 lbs. or Less O 10,001 - 26,000 lbs. O Greater than 26,000 lbs.				O Placard O Cargo Spill		

OWNERS

Owner Information	Owner Information
########## ########## ##########, ## #####-#### (###) ###-####	

Damaged Property	Public	Owner & Phone

UNIT/DRIVER

Unit Number	Unit Known	State Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Total Occupants	Hazardous Action
02	Yes	MI ##########	##/##/#### (38)	● Operator ○ Chauffeur ○ Moped	○ Cycle ○ Farm ○ Recreation	F	01	None

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## BURT, MI 48417-9601 (###) ###-####	Yes	O	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st / 2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Appeared Normal	Not Distracted			Not Deployed

Hospital	Ambulance
NONE	NONE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	○ Breath ○ Blood ○ Urine ○ Field ○ PBT ○ Refused ○ Not Offered	○ Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	○ Blood ○ Urine ○ Field ○ Refused ○ Not Offered	○ Pending Test Results:	○ Hazardous ○ Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
3MHJ29	MI		2019	JEEP	CHEROKEE	SILVER OR ALUMI

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
1C4PJMBXXKD188471	Passenger Car, SUV, Van	Not Applicable		

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No		

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########	CORRIGAN'S	OWNER DISCRETION

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
06	06	Disabling Damage	W	Private	Stopped on Roadway

Sequence of Events (● indicates MOST harmful event)	First	Second	Third	Fourth
	● 17 - Motor Veh in Transport			

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

Passenger Information	Date of Birth (Age)	Sex	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	○ H ○ P ○ T ○ N ○ S ○ X	○ Farm ○ Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
○ 10,000 lbs. or Less ○ 10,001 - 26,000 lbs. ○ Greater than 26,000 lbs.				○ Placard ○ Cargo Spill		

OWNERS

Owner Information	Owner Information
########## ########## ##########, ## #####-#### (###) ###-####	

WITNESS

Witness Information	Witness Information

Investigated at Scene	Reported Date (Time)	1st Investigator Name (Badge)	2nd Investigator Name (Badge)	Photos
Yes	07/13/2020 (09:26)	DEBOTTIS, DAHNE (00042)		No

Narrative

Vehicle two was stopped at red light. Vehicle one did not see red light or vehicle two stopped. Vehicle one rear ended and side swiped vehicle two.

Diagram

Authority: 1949 PA 300, Sec.257.622
Compliance: Required MSP UD-10E
Penalty: $100 and/or 90 days (Rev 01/2016)

External # 0059975 Crash ID 2047577

File Class 9300-1

STATE OF MICHIGAN TRAFFIC CRASH REPORT

Incident # 2000619

ORI: MI 4745100
Department Name: Hamburg Township Police Department
Reviewer: DUHAIME, MATTHEW

Crash Date	Crash Time	No. of Units	Crash Type	Special Circumstances	Special Checks
07/24/2020	20:26	02	Rear End	● None O Hit and Run O School Bus O Fleeing Police O Unknown O Animal	O Fatal O Non-Traffic Area O ORV/Snowmobile

County	Traffic Control	Relation to Roadway	Weather	Area
47 - Livingston	Signal	On the Road	Clear	INTR Within Intersection

City/Twsp	Contributing Circumstances 1st	2nd	Light	Road Surface Condition	Total Lanes	Speed Limit	Posted
07 - Hamburg Twp	None		Daylight	Dry	06	45	Yes

Work Zone (if applicable): Type | Workers Present | Activity | Location

LOCATION

Prefix	Primary Road Name	Road Type	Suffix	Divided Roadway
	E M36			

Distance / Direction: AT
Trafficway: Not Physically Divided

Prefix	Intersecting Road Name	Road Type	Suffix	Divided Roadway
	CHILSON	RD		

UNIT / DRIVER

Unit Number	Unit Known	State	Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Total Occupants	Hazardous Action
01	Yes	MI	##########	##/##/#### (27)	● Operator O Chauffeur O Moped	O Cycle O Farm O Recreation	M	01	Other

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## TAYLOR, MI 48180-2409 (###) ###-####	No	O	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st	2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Appeared Normal		Activity Outside Vehicle			Not Deployed

Hospital	Ambulance
NONE	NONE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	O Breath O Blood O Urine O Field O PBT O Refused O Not Offered	O Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	O Blood O Urine O Field O Refused O Not Offered	O Pending Test Results:	O Hazardous O Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
DC47190	MI		2018	RAM	PROMASTER 25	BLUE

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
3C6TRVDGXJE159535	Motor Home	Not Applicable		

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No		

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########		

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
08	08	Minor Damage	E	Commercial (Business)	Going Straight Ahead

Sequence of Events (● indicates MOST harmful event)

First	Second	Third	Fourth
● 17 - Motor Veh in Transport			

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

Passenger Information	Date of Birth (Age)	Sex	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	O H O P O T O N O S O X	O Farm O Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
O 10,000 lbs. or Less O 10,001 - 26,000 lbs. O Greater than 26,000 lbs.				O Placard O Cargo Spill		

OWNERS

Owner Information	Owner Information
########## ########## ##########, ## #####-#### (###) ###-####	

Damaged Property	Public	Owner & Phone

UNIT/DRIVER

Unit Number	Unit Known	State	Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Total Occupants	Hazardous Action
02	Yes	MI	##########	##/##/#### (25)	● Operator ○ Chauffeur ○ Moped	○ Cycle ○ Farm ○ Recreation	F	01	None

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## BRIGHTON, MI 48116 (###) ###-####	Yes	O	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st / 2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Appeared Normal	Not Distracted			Not Deployed

Hospital	Ambulance
NONE	NONE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	○ Breath ○ Blood ○ Urine ○ Field ○ PBT ○ Refused ○ Not Offered	○ Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	○ Blood ○ Urine ○ Field ○ Refused ○ Not Offered	○ Pending Test Results:	○ Hazardous ○ Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
DKT5902	MI		2008	FORD	FUSION	MAROON OR BURGU

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
3FAHP08158R136458	Passenger Car, SUV, Van	Not Applicable		

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No		

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########		

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
04	04	Minor Damage	E	Private	Stopped on Roadway

Sequence of Events (● indicates MOST harmful event)	First	Second	Third	Fourth
	● 17 - Motor Veh in Transport			

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

Passenger Information	Date of Birth (Age)	Sex	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	○ H ○ P ○ T ○ N ○ S ○ X	○ Farm ○ Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
○ 10,000 lbs. or Less ○ 10,001 - 26,000 lbs. ○ Greater than 26,000 lbs.				○ Placard ○ Cargo Spill		

OWNERS

Owner Information	Owner Information
########## ########## ##########, ## #####-#### (###) ###-####	

WITNESS

Witness Information	Witness Information

Investigated at Scene	Reported Date (Time)	1st Investigator Name (Badge)	2nd Investigator Name (Badge)	Photos
Yes	07/24/2020 (20:48)	FLAVIN, SPENCER (00038)		No

Narrative

Vehicles 1 and 2 were traveling East on M36. Vehicle 2 was stopped in traffic due to the traffic signal. Vehicle 1 was approaching Vehicle 2 when another vehicle entered the left turn lane from a nearby business, distracting driver of Vehicle 1. Vehicle 1 swerved towards the shoulder, and collided with the Passenger Rear corner of Vehicle 2. Damage on Vehicle 1 was on the driver's side front corner. Both vehicles driveable. Driver of Vehicle 2 was checked out on scene by LCA EMS, advised that she was not injured. Driver of Vehicle 1 stated he was not injured.

Diagram

Authority: 1949 PA 300, Sec.257.622
Compliance: Required MSP UD-10E
Penalty: $100 and/or 90 days (Rev 11/2020)

External # 0063288 Crash ID 2166289

File Class 9300-1

STATE OF MICHIGAN TRAFFIC CRASH REPORT

Incident # 2001094

ORI	Department Name	Reviewer
MI 4745100	Hamburg Township Police Department	DUHAIME, MATTHEW

Crash Date	Crash Time	No. of Units	Crash Type	Special Circumstances	Special Checks
12/16/2020	17:16	02	Head On-Left Turn	● None O Hit and Run O School Bus O Fleeing Police O Unknown O Animal	O Fatal O Non-Traffic Area O ORV/Snowmobile

County	Traffic Control	Relation to Roadway	Weather	Area
47 - Livingston	Signal	On the Road	Snow	NON-FRWY Straight Roadway

City/Twsp	Contributing Circumstances 1st	2nd	Light	Road Surface Condition	Total Lanes	Speed Limit	Posted
07 - Hamburg Twp	None		Dark-Unlighted	Snow	03	45	Yes

Work Zone (if applicable) — Type | Workers Present | Activity | Location

LOCATION

Prefix	Primary Road Name	Road Type	Suffix	Divided Roadway
E	M 36	HWY		

Distance / Direction: 10 Feet W
Trafficway: Not Physically Divided

Prefix	Intersecting Road Name	Road Type	Suffix	Divided Roadway
E	CHILSON	RD		

UNIT / DRIVER

Unit Number	Unit Known	State	Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Race	Total Occupants	Hazardous Action
01	Yes	MI	##########	##/##/#### (79)	● Operator O Chauffeur O Moped	O Cycle O Farm O Recreation	M		01	Failed to Yield

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## PINCKNEY, MI 48169 (###) ###-####	Yes	O	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st	2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Appeared Normal		Not Distracted			Not Deployed

Hospital	Ambulance
NONE	NONE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	O Breath O Blood O Urine O Field O PBT O Refused ● Not Offered	O Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	O Blood O Urine O Field O Refused ● Not Offered	O Pending Test Results:	O Hazardous O Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
3591J6	MI		1994	JEEP	CHEROKEE	RED

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
1J4FJ68S9RL211218	Passenger Car, SUV, Van	Not Applicable		

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No		

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########		

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
08	08	Functional Damage	E	Private	Turning Left

Sequence of Events (● indicates MOST harmful event)
First: ● 17 - Motor Veh in Transport | Second | Third | Fourth

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital | Ambulance

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital | Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	O H O P O T O N O S O X	O Farm O Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
O 10,000 lbs. or Less O 10,001 - 26,000 lbs. O Greater than 26,000 lbs.				O Placard O Cargo Spill		

OWNERS

Owner Information	Owner Information
########## ########## ##########, ## #####-#### (###) ###-####	

Damaged Property	Public	Owner & Phone

UNIT/DRIVER

Unit Number	Unit Known	State	Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Race	Total Occupants	Hazardous Action
02	Yes	MI	##########	##/##/#### (46)	● Operator ○ Chauffeur ○ Moped	○ Cycle ○ Farm ○ Recreation	F		01	None

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## PINCKNEY, MI 48169-8251 (###) ###-####	Yes	O	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st / 2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Appeared Normal	Not Distracted			Not Deployed

Hospital	Ambulance
NONE	NONE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	○ Breath ○ Blood ○ Urine ○ Field ○ PBT ○ Refused ● Not Offered	○ Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	○ Blood ○ Urine ○ Field ○ Refused ● Not Offered	○ Pending Test Results:	○ Hazardous ○ Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
2MNS48	MI		2015	JEEP	WRANGLER UNL	SILVER OR ALUMI

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
1C4BJWDG0FL713830	Passenger Car, SUV, Van	Not Applicable		

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No		

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########		

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
08	08	Functional Damage	W	Private	Going Straight Ahead

Sequence of Events (● indicates MOST harmful event)	First	Second	Third	Fourth
	● 17 - Motor Veh in Transport			

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	○ H ○ P ○ T ○ N ○ S ○ X	○ Farm ○ Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
○ 10,000 lbs. or Less ○ 10,001 - 26,000 lbs. ○ Greater than 26,000 lbs.				○ Placard ○ Cargo Spill		

OWNERS

Owner Information	Owner Information
########## ########## ##########, ## #####-#### (###) ###-####	

WITNESS

Witness Information	Witness Information
########## ########## ##########, ## #####-#### (###) ###-####	

Investigated at Scene	Reported Date (Time)	1st Investigator Name (Badge)	2nd Investigator Name (Badge)	Photos
Yes	12/22/2020 (11:32)	WATSON, NATHAN (00041)		No

Narrative

Driver of unit # 1 advised that he did not see unit # 2 when making a left hand turn from eb M 36 to nb Chilson Rd. Driver of Unit #2 advised unit # 1 turned in front of her while she was wb on M 36 and she could not stop. Witness Dockett advised that he was behind unit # 2 when unit # 1 failed to yield and turned in front of unit # 2.

Diagram

Authority: 1949 PA 300, Sec.257.622
Compliance: Required MSP UD-10E
Penalty: $100 and/or 90 days (Rev 11/2020)

External # 0066302 | Crash ID 2254438

File Class 9300-1

STATE OF MICHIGAN TRAFFIC CRASH REPORT

Incident # 2100324

ORI	Department Name	Reviewer
MI 4745100	Hamburg Township Police Department	WALLACE, TONY

Crash Date	Crash Time	No. of Units	Crash Type	Special Circumstances	Special Checks
04/24/2021	15:38	02	Head On-Left Turn	● None O Hit and Run O School Bus O Fleeing Police O Unknown O Animal	O Fatal O Non-Traffic Area O ORV/Snowmobile

County	Traffic Control	Relation to Roadway	Weather	Area
47 - Livingston	Signal	On the Road	Rain	INTR Within Intersection

City/Twsp	Contributing Circumstances 1st	2nd	Light	Road Surface Condition	Total Lanes	Speed Limit	Posted
07 - Hamburg Twp	None		Daylight	Wet	03	45	Yes

Work Zone (if applicable) — Type | Workers Present | Activity | Location

LOCATION

Prefix	Primary Road Name	Road Type	Suffix	Divided Roadway
E	M-36	HWY		

Distance / Direction: 5 Feet NE | Trafficway: Not Physically Divided

Prefix	Intersecting Road Name	Road Type	Suffix	Divided Roadway
E	CHILSON	RD		

UNIT / DRIVER

Unit Number	Unit Known	State	Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Race	Total Occupants	Hazardous Action
01	Yes	MI	##########	##/##/#### (69)	O Operator ● Chauffeur O Moped	O Cycle O Farm O Recreation	M		02	Failed to Yield

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## LIVONIA, MI 48154-3731 (###) ###-####	Yes	O	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st	2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Appeared Normal		Not Distracted			Not Deployed

Hospital	Ambulance
REFUSE	REFUSE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	O Breath O Blood O Urine O Field O PBT O Refused O Not Offered	O Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	O Blood O Urine O Field O Refused O Not Offered	O Pending Test Results:	O Hazardous O Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
5MDH20	MI		2008	CHEVROLET	UPLANDER	MAROON OR BURGU

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
1GNDV23W98D198510	Passenger Car, SUV, Van	Not Applicable		

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No		

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########		

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
01	01	Functional Damage	S	Private	Turning Left

Sequence of Events (● indicates MOST harmful event)

First	Second	Third	Fourth
● 17 - Motor Veh in Transport			

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	O H O P O T O N O S O X	O Farm O Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
O 10,000 lbs. or Less O 10,001 - 26,000 lbs. O Greater than 26,000 lbs.				O Placard O Cargo Spill		

OWNERS

Owner Information	Owner Information
########## ########## ##########, ## #####-#### (###) ###-####	

Damaged Property	Public	Owner & Phone

UNIT/DRIVER

Unit Number	Unit Known	State	Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Race	Total Occupants	Hazardous Action
02	Yes	MI	##########	##/##/#### (43)	● Operator ○ Chauffeur ○ Moped	○ Cycle ○ Farm ○ Recreation	M		01	None

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## PINCKNEY, MI 48169 (###) ###-####	Yes	O	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st / 2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Appeared Normal	Not Distracted			Not Deployed

Hospital	Ambulance
REFUSE	REFUSE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	○ Breath ○ Blood ○ Urine ○ Field ○ PBT ○ Refused ○ Not Offered	○ Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	○ Blood ○ Urine ○ Field ○ Refused ○ Not Offered	○ Pending Test Results:	○ Hazardous ○ Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
CJM0472	MI		2008	JEEP	PATRIOT	BLUE

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
1J8FF28W98D528887	Passenger Car, SUV, Van	Not Applicable		

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No		

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########		

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
08	08	Functional Damage	N	Private	Going Straight Ahead

Sequence of Events (● indicates MOST harmful event)	First	Second	Third	Fourth
	● 17 - Motor Veh in Transport			

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	○ H ○ P ○ T ○ N ○ S ○ X	○ Farm ○ Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
○ 10,000 lbs. or Less ○ 10,001 - 26,000 lbs. ○ Greater than 26,000 lbs.				○ Placard ○ Cargo Spill		

OWNERS

Owner Information	Owner Information
########## ########## ##########, ## #####-#### (###) ###-####	

WITNESS

Witness Information	Witness Information

Investigated at Scene	Reported Date (Time)	1st Investigator Name (Badge)	2nd Investigator Name (Badge)	Photos
Yes	04/24/2021 (16:00)	WALLACE, TONY (00010)		No

Narrative

Vehicle #1 was turning left (East) onto E M36 when it failed to yield to vehicle #2 which was traveling North through the intersection on Chilson Rd. Vehicle #1 collided with vehicle #2, no injuries.

Diagram

Authority: 1949 PA 300, Sec.257.622
Compliance: Required MSP UD-10E
Penalty: $100 and/or 90 days (Rev 11/2020)

External # 0067899 | Crash ID 2308062

File Class 9300-1

STATE OF MICHIGAN TRAFFIC CRASH REPORT

Incident # 2100521

ORI	Department Name	Reviewer
MI 4745100	Hamburg Township Police Department	WALLACE, TONY

Crash Date	Crash Time	No. of Units	Crash Type	Special Circumstances	Special Checks
07/03/2021	17:24	02	Rear End	● None ○ Hit and Run ○ School Bus ○ Fleeing Police ○ Unknown ○ Animal	○ Fatal ○ Non-Traffic Area ○ ORV/Snowmobile

County	Traffic Control	Relation to Roadway	Weather	Area
47 - Livingston	Signal	On the Road	Clear	INTR Within Intersection

City/Twsp	Contributing Circumstances 1st	2nd	Light	Road Surface Condition	Total Lanes	Speed Limit	Posted
07 - Hamburg Twp	None		Daylight	Dry	03	45	Yes

Work Zone (if applicable): Type | Workers Present | Activity | Location

LOCATION

Prefix	Primary Road Name	Road Type	Suffix	Divided Roadway
E	M36	HWY		

Distance / Direction: 30 Feet E
Trafficway: Not Physically Divided

Prefix	Intersecting Road Name	Road Type	Suffix	Divided Roadway
E	CHILSON	RD		

UNIT / DRIVER

Unit Number	Unit Known	State	Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Race	Total Occupants	Hazardous Action
01	Yes	MI	##########	##/##/#### (58)	● Operator ○ Chauffeur ○ Moped	○ Cycle ○ Farm ○ Recreation	F		01	Unable to Stop

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## LAKELAND, MI 48143-0000 (###) ###-####	Yes	O	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st	2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Appeared Normal		Not Distracted			Not Deployed

Hospital	Ambulance
REFUSE	REFUSE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	○ Breath ○ Blood ○ Urine ○ Field ○ PBT ○ Refused ○ Not Offered	○ Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	○ Blood ○ Urine ○ Field ○ Refused ○ Not Offered	○ Pending Test Results:	● Hazardous ○ Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
CWS335	MI		2017	JEEP	COMPASS	WHITE

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
3C4NJDBB8HT651996	Passenger Car, SUV, Van	Not Applicable		

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No		

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########		

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
01	01	Minor Damage	W	Private	Starting Up on Roadway

Sequence of Events (● indicates MOST harmful event)

First	Second	Third	Fourth
● 17 - Motor Veh in Transport			

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	○ H ○ P ○ T ○ N ○ S ○ X	○ Farm ○ Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
○ 10,000 lbs. or Less ○ 10,001 - 26,000 lbs. ○ Greater than 26,000 lbs.				○ Placard ○ Cargo Spill		

OWNERS

Owner Information	Owner Information
########## ########## ##########, ## #####-#### (###) ###-####	

Damaged Property	Public	Owner & Phone

UNIT/DRIVER

Unit Number	Unit Known	State	Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Race	Total Occupants	Hazardous Action
02	Yes	MI	##########	##/##/#### (57)	○ Operator ● Chauffeur ○ Moped	○ Cycle ○ Farm ○ Recreation	M		02	None

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## WAYNE, MI 48184-1947 (###) ###-####	Yes	C	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st / 2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Appeared Normal	Not Distracted			Not Deployed

Hospital	Ambulance
REFUSE	REFUSE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	○ Breath ○ Blood ○ Urine ○ Field ○ PBT ○ Refused ○ Not Offered	○ Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	○ Blood ○ Urine ○ Field ○ Refused ○ Not Offered	○ Pending Test Results:	○ Hazardous ○ Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
9MVJ13	MI		2019	CHEVROLET	MALIBU	BLACK

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
1G1ZB5ST7KF113457	Passenger Car, SUV, Van	Not Applicable		

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No		

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########		

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
05	05	Minor Damage	W	Private	Starting Up on Roadway

Sequence of Events (● indicates MOST harmful event)	First	Second	Third	Fourth
	● 17 - Motor Veh in Transport			

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint
########## ########## WAYNE, MI 48184-1947 (###) ###-####	##/##/#### (57)	F		Front - Right	Shoulder and Lap Belt

Injury	Ejected	Trapped	Airbag Deployed
C			Not Deployed

Hospital	Ambulance
REFUSE	REFUSE

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	○ H ○ P ○ T ○ N ○ S ○ X	○ Farm ○ Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
○ 10,000 lbs. or Less ○ 10,001 - 26,000 lbs. ○ Greater than 26,000 lbs.				○ Placard ○ Cargo Spill		

OWNERS

Owner Information	Owner Information
########## ########## ##########, ## #####-#### (###) ###-####	

WITNESS

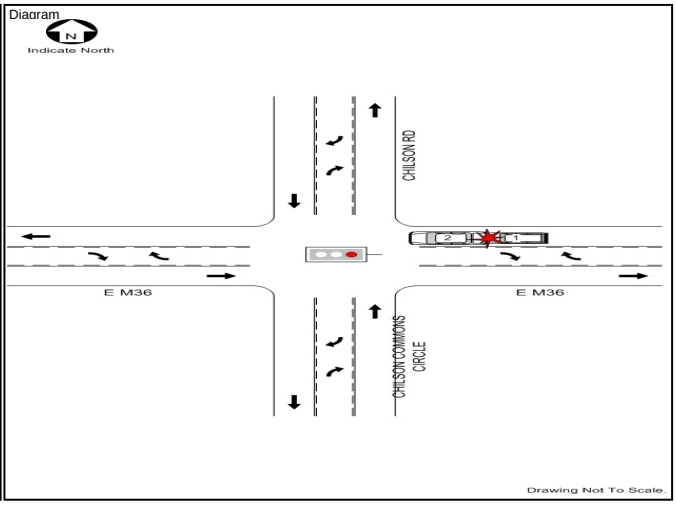
Witness Information	Witness Information

Investigated at Scene	Reported Date (Time)	1st Investigator Name (Badge)	2nd Investigator Name (Badge)	Photos
Yes	07/03/2021 (17:46)	WALLACE, TONY (00010)		No

Narrative

Vehicle #2 stated he was stopped for the traffic light and when it turned green he started to accelerate and was rear-ended by vehicle #1. Driver #1 stated the light changed and she went forward and collided with vehicle #2. Driver and passenger in vehicle #2 complaining of back/neck pain, refused EMS.

Diagram



Authority: 1949 PA 300, Sec.257.622
Compliance: Required MSP UD-10E
Penalty: $100 and/or 90 days (Rev 11/2020)

External # 0073268 Crash ID 2420697

File Class 9300-1

STATE OF MICHIGAN TRAFFIC CRASH REPORT

Incident # 2100967

ORI	Department Name	Reviewer
MI 4745100	Hamburg Township Police Department	GARBACIK, ALYSHA

Crash Date	Crash Time	No. of Units	Crash Type	Special Circumstances	Special Checks
11/11/2021	15:40	02	Rear End	● None O Hit and Run O School Bus O Fleeing Police O Unknown O Animal	O Fatal O Non-Traffic Area O ORV/Snowmobile

County	Traffic Control	Relation to Roadway	Weather	Area
47 - Livingston	Signal	On the Road	Rain	INTR Within Intersection

City/Twsp	Contributing Circumstances 1st	2nd	Light	Road Surface Condition	Total Lanes	Speed Limit	Posted
07 - Hamburg Twp	None		Daylight	Wet	03	45	Yes

Work Zone (if applicable) — Type | Workers Present | Activity | Location

LOCATION

Prefix	Primary Road Name	Road Type	Suffix	Divided Roadway
E	M36	HWY		

Distance / Direction: 50 Feet E
Trafficway: Not Physically Divided

Prefix	Intersecting Road Name	Road Type	Suffix	Divided Roadway
E	CHILSON	RD		

UNIT / DRIVER

Unit Number	Unit Known	State	Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Race	Total Occupants	Hazardous Action
01	Yes	MI	##########	##/##/#### (21)	● Operator O Chauffeur O Moped	O Cycle O Farm O Recreation	M		01	Unable to Stop

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## HOWELL, MI 48843 (###) ###-####	No	O	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st	2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Appeared Normal		Electronic Device - Other			Not Deployed

Hospital	Ambulance
REFUSE	REFUSE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	O Breath O Blood O Urine O Field O PBT O Refused O Not Offered	O Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	O Blood O Urine O Field O Refused O Not Offered	O Pending Test Results:	O Hazardous O Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
ABH854	MI		2008	TOYOTA	RAV4	WHITE

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
JTMBK31V785062105	Passenger Car, SUV, Van	Not Applicable		

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No	Unknown	Unknown

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########		

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
08	08	Minor Damage	W	Private	Slowing/Stop on Roadway

Sequence of Events (● indicates MOST harmful event)

First	Second	Third	Fourth
● 17 - Motor Veh in Transport			

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint	Injury	Ejected	Trapped	Airbag Deployed

Hospital | Ambulance

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint	Injury	Ejected	Trapped	Airbag Deployed

Hospital | Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type | Endorsements: O H O P O T O N O S O X | CDL Exempt: O Farm O Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
O 10,000 lbs. or Less O 10,001 - 26,000 lbs. O Greater than 26,000 lbs.				O Placard O Cargo Spill		

OWNERS

Owner Information	Owner Information
########## ########## ##########, ## #####-#### (###) ###-####	

Damaged Property	Public	Owner & Phone

UNIT/DRIVER

Unit Number	Unit Known	State	Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Race	Total Occupants	Hazardous Action
02	Yes	MI	##########	##/##/#### (29)	● Operator ○ Chauffeur ○ Moped	○ Cycle ○ Farm ○ Recreation	M		01	None

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## PINCKNEY, MI 48169 (###) ###-####	Yes	O	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st / 2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Appeared Normal	Not Distracted			Not Deployed

Hospital	Ambulance
REFUSE	REFUSE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	○ Breath ○ Blood ○ Urine ○ Field ○ PBT ○ Refused ○ Not Offered	○ Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	○ Blood ○ Urine ○ Field ○ Refused ○ Not Offered	○ Pending Test Results:	○ Hazardous ○ Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
DVN9010	MI		2014	HONDA	CR-V	BLUE

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
2HKRM4H76EH636677	Passenger Car, SUV, Van	Not Applicable		

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No	Unknown	Unknown

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########		

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
04	04	Minor Damage	W	Private	Stopped on Roadway

Sequence of Events (● indicates MOST harmful event)	First	Second	Third	Fourth
	● 17 - Motor Veh in Transport			

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	○ H ○ P ○ T ○ N ○ S ○ X	○ Farm ○ Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
○ 10,000 lbs. or Less ○ 10,001 - 26,000 lbs. ○ Greater than 26,000 lbs.				○ Placard ○ Cargo Spill		

OWNERS

Owner Information	Owner Information
########## ########## ##########, ## #####-#### (###) ###-####	

WITNESS

Witness Information	Witness Information

Investigated at Scene	Reported Date (Time)	1st Investigator Name (Badge)	2nd Investigator Name (Badge)	Photos
Yes	11/11/2021 (16:00)	WALLACE, TONY (00010)		No

Narrative

Vehicle #2 was stopped at the traffic signal when driver #1 stated he looked down to turn off his GPS and rear-ended vehicle #2. No injuries to either driver.

Diagram

Authority: 1949 PA 300, Sec.257.622
Compliance: Required MSP UD-10E
Penalty: $100 and/or 90 days (Rev 11/2020)

External # 0077110 Crash ID 2567729

File Class 9300-1

STATE OF MICHIGAN TRAFFIC CRASH REPORT

Incident # 2200267

ORI	Department Name	Reviewer
MI 4745100	Hamburg Township Police Department	PAUL, MEGAN

Crash Date	Crash Time	No. of Units	Crash Type	Special Circumstances	Special Checks
03/28/2022	07:48	02	Rear End	● None O Hit and Run O School Bus O Fleeing Police O Unknown O Animal	O Fatal O Non-Traffic Area O ORV/Snowmobile

County	Traffic Control	Relation to Roadway	Weather	Area
47 - Livingston	None	On the Road	Clear	INTR Driveway Related

City/Twsp	Contributing Circumstances 1st	2nd	Light	Road Surface Condition	Total Lanes	Speed Limit	Posted
07 - Hamburg Twp	Backup - Reg. Congestion		Dawn	Snow	03	45	Yes

Work Zone (if applicable) — Type | Workers Present | Activity | Location

LOCATION

Prefix	Primary Road Name	Road Type	Suffix	Divided Roadway
E	M36	HWY		

Distance / Direction: 100 Feet W
Trafficway: Not Physically Divided

Prefix	Intersecting Road Name	Road Type	Suffix	Divided Roadway
E	CHILSON	RD		

UNIT / DRIVER

Unit Number	Unit Known	State	Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Race	Total Occupants	Hazardous Action
01	Yes	MI	##########	##/##/#### (17)	● Operator O Chauffeur O Moped	O Cycle O Farm O Recreation	F		01	Speed Too Fast

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## PINCKNEY, MI 48169-8169 (###) ###-####	No	C	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st	2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Appeared Normal		Not Distracted			Deployed - Combination

Hospital	Ambulance
NONE	NONE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	O Breath O Blood O Urine O Field O PBT O Refused O Not Offered	O Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	O Blood O Urine O Field O Refused O Not Offered	O Pending Test Results:	O Hazardous O Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
DD02744	MI		2014	FORD	FUSION	BLACK

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
3FA6P0HD5ER313927	Passenger Car, SUV, Van	Not Applicable		

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No	Unknown	Unknown

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########	CORRIGAN'S	CORRIGAN'S

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
01	01	Disabling Damage	E	Private	Going Straight Ahead

Sequence of Events (● indicates MOST harmful event)
First: ● 17 - Motor Veh in Transport
Second | Third | Fourth

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital | Ambulance

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital | Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	O H O P O T O N O S O X	O Farm O Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
O 10,000 lbs. or Less O 10,001 - 26,000 lbs. O Greater than 26,000 lbs.				O Placard O Cargo Spill		

OWNERS

Owner Information	Owner Information
########## ########## ##########, ## #####-#### (###) ###-####	

Damaged Property	Public	Owner & Phone

UNIT/DRIVER

Unit Number	Unit Known	State	Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Race	Total Occupants	Hazardous Action
02	Yes	MI	##########	##/##/#### (65)	● Operator ○ Chauffeur ○ Moped	○ Cycle ○ Farm ○ Recreation	M		01	None

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## PINCKNEY, MI 48169 (###) ###-####	No	O	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st / 2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Appeared Normal	Not Distracted			Not Deployed

Hospital	Ambulance
NONE	NONE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	○ Breath ○ Blood ○ Urine ○ Field ○ PBT ○ Refused ○ Not Offered	○ Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	○ Blood ○ Urine ○ Field ○ Refused ○ Not Offered	○ Pending Test Results:	○ Hazardous ○ Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
EDR4445	MI		2017	FORD	F150	BLACK

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
1FTEW1EP5HFB09157	Passenger Car, SUV, Van	Not Applicable		

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No	Unknown	Unknown

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########		

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
05	05	Minor Damage	E	Private	Going Straight Ahead

Sequence of Events (● indicates MOST harmful event)	First	Second	Third	Fourth
	● 17 - Motor Veh in Transport			

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	○ H ○ P ○ T ○ N ○ S ○ X	○ Farm ○ Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
○ 10,000 lbs. or Less ○ 10,001 - 26,000 lbs. ○ Greater than 26,000 lbs.				○ Placard ○ Cargo Spill		

OWNERS

Owner Information	Owner Information
########## ########## ##########, ## #####-#### (###) ###-####	

WITNESS

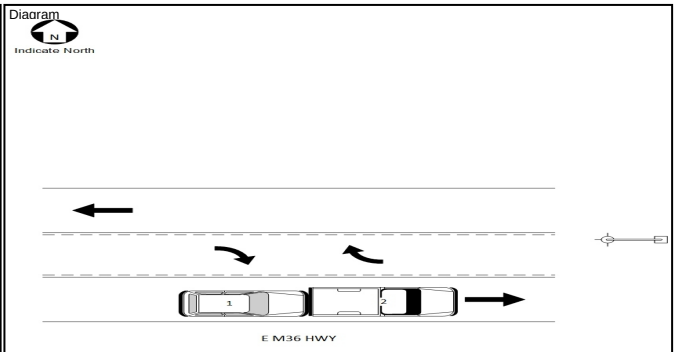
Witness Information	Witness Information

Investigated at Scene	Reported Date (Time)	1st Investigator Name (Badge)	2nd Investigator Name (Badge)	Photos
Yes	03/28/2022 (08:25)	LEEDS, KIMBERLY (00040)		No

Narrative

VEH 1 WAS TRAVELING EAST BEHIND VEH 2, APPROACHING CHILSON RD, ON E M36. VEH 2 SLOWED AND STOPPED FOR TRAFFIC CONGESTION. VEH 1 WAS UNABLE TO STOP AND STRUCK VEH 2. DRIVER OF VEH 1 COMPLAINED OF ARM PAIN. NO OBVIOUS INJURY AT TIME OF REPORT.

Diagram



Authority: 1949 PA 300, Sec.257.622
Compliance: Required MSP UD-10E
Penalty: $100 and/or 90 days (Rev 11/2020)

External # 0077251 | Crash ID 2578083

File Class 9300-1

STATE OF MICHIGAN TRAFFIC CRASH REPORT

Incident # 2200398

ORI	Department Name	Reviewer
MI 4745100	Hamburg Township Police Department	PAUL, MEGAN

Crash Date	Crash Time	No. of Units	Crash Type	Special Circumstances	Special Checks
05/14/2022	09:59	03	Rear End	● None O Hit and Run O School Bus O Fleeing Police O Unknown O Animal	O Fatal O Non-Traffic Area O ORV/Snowmobile

County	Traffic Control	Relation to Roadway	Weather	Area
47 - Livingston	None	On the Road	Clear	NON-FRWY Straight Roadway

City/Twsp	Contributing Circumstances 1st	2nd	Light	Road Surface Condition	Total Lanes	Speed Limit	Posted
07 - Hamburg Twp	None		Daylight	Dry	02	45	Yes

Work Zone (if applicable): Type | Workers Present | Activity | Location

LOCATION

Prefix	Primary Road Name	Road Type	Suffix	Divided Roadway
E	M-36	HWY		

Distance / Direction: 300 Feet E
Trafficway: Not Physically Divided

Prefix	Intersecting Road Name	Road Type	Suffix	Divided Roadway
E	CHILSON	RD		

UNIT / DRIVER

Unit Number	Unit Known	State	Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Race	Total Occupants	Hazardous Action
01	Yes	MI	##########	##/##/#### (72)	● Operator O Chauffeur O Moped	O Cycle O Farm O Recreation	M		01	Unable to Stop

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## PINCKNEY, MI 48169 (###) ###-####	Yes	O	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st	2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Appeared Normal		Not Distracted			Not Deployed

Hospital	Ambulance
NONE	NONE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	O Breath O Blood O Urine O Field O PBT O Refused ● Not Offered	O Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	O Blood O Urine O Field O Refused ● Not Offered	O Pending Test Results:	O Hazardous O Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
5MRC07	MI		2002	CHEVROLET	EXPRESS G150	BLACK

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
1GNFG15R621210609	Motor Home	Not Applicable	Other	Other

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No	Unknown	Unknown

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########	TOWED BY OWNER	OWNER DISCRETION

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
01	01	Functional Damage	W	Private	Going Straight Ahead

Sequence of Events (● indicates MOST harmful event): First: ● 17 - Motor Veh in Transport | Second | Third | Fourth

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint	Injury	Ejected	Trapped	Airbag Deployed

Hospital | Ambulance

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint	Injury	Ejected	Trapped	Airbag Deployed

Hospital | Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type | Endorsements: O H O P O T O N O S O X | CDL Exempt: O Farm O Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
O 10,000 lbs. or Less O 10,001 - 26,000 lbs. O Greater than 26,000 lbs.				O Placard O Cargo Spill		

OWNERS

Owner Information: ########## ########## ##########, ## #####-#### (###) ###-####

Owner Information

Damaged Property	Public	Owner & Phone

UNIT/DRIVER

Unit Number	Unit Known	State	Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Race	Total Occupants	Hazardous Action
02	Yes	MI	##########	##/##/#### (17)	● Operator ○ Chauffeur ○ Moped	○ Cycle ○ Farm ○ Recreation	F		01	None

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## SOUTH LYON, MI 48178 (###) ###-####	No	O	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st / 2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Appeared Normal	Not Distracted			Not Deployed

Hospital	Ambulance
NONE	NONE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	○ Breath ○ Blood ○ Urine ○ Field ○ PBT ○ Refused ● Not Offered	○ Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	○ Blood ○ Urine ○ Field ○ Refused ● Not Offered	○ Pending Test Results:	○ Hazardous ○ Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
DUF0861	MI		2017	FORD	ESCAPE	BLACK

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
1FMCU0GD6HUC22567	Passenger Car, SUV, Van	Not Applicable	Other	Other

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No	Unknown	Unknown

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########		

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
05	05	Minor Damage	W	Private	Stopped on Roadway

Sequence of Events (● indicates MOST harmful event)	First	Second	Third	Fourth
	● 17 - Motor Veh in Transport			

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	○ H ○ P ○ T ○ N ○ S ○ X	○ Farm ○ Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
○ 10,000 lbs. or Less ○ 10,001 - 26,000 lbs. ○ Greater than 26,000 lbs.				○ Placard ○ Cargo Spill		

OWNERS

Owner Information	Owner Information
########## ########## ##########, ## #####-#### (###) ###-####	

WITNESS

Witness Information	Witness Information

Investigated at Scene	Reported Date (Time)	1st Investigator Name (Badge)	2nd Investigator Name (Badge)	Photos
Yes	05/15/2022 (07:48)	HARVEY, JUSTIN (00030)		No

Narrative

Vehicle's #2 and #3 were stopped west bound in traffic. Vehicle #1 was traveling west and rear ended vehicle #2 which struck #3. No injuries reported. Cheryl Sokoloski of vehicle #3 advised her son who was riding in the back seat has a rod in his neck from surgery and wanted it noted. She advised he was okay but she would be taking him to the doctor later to make sure nothing moved.

Diagram

Authority: 1949 PA 300, Sec.257.622
Compliance: Required MSP UD-10E
Penalty: $100 and/or 90 days (Rev 11/2020)

External # 0077251 Crash ID 2578083

Incident # 2200398

STATE OF MICHIGAN TRAFFIC CRASH REPORT

ORI	Department Name	Reviewer
MI 4745100	Hamburg Township Police Department	PAUL, MEGAN

Crash Date	Crash Time	No. of Units	Crash Type	Special Circumstances	Special Checks
05/14/2022	09:59	03	Rear End	● None O Hit and Run O School Bus O Fleeing Police O Unknown O Animal	O Fatal O Non-Traffic Area O ORV/Snowmobile

County	Traffic Control	Relation to Roadway	Weather	Area
47 - Livingston	None	On the Road	Clear	NON-FRWY Straight Roadway

City/Twsp	Contributing Circumstances 1st	2nd	Light	Road Surface Condition	Total Lanes	Speed Limit	Posted
07 - Hamburg Twp	None		Daylight	Dry	02	45	Yes

Work Zone (if applicable) — Type | Workers Present | Activity | Location

LOCATION

Prefix	Primary Road Name	Road Type	Suffix	Divided Roadway
E	M-36	HWY		

Distance / Direction: 300 Feet E
Trafficway: Not Physically Divided

Prefix	Intersecting Road Name	Road Type	Suffix	Divided Roadway
E	CHILSON	RD		

UNIT / DRIVER

Unit Number	Unit Known	State	Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Race	Total Occupants	Hazardous Action
03	Yes	MI	##########	##/##/#### (71)	● Operator O Chauffeur O Moped	O Cycle O Farm O Recreation	M		03	None

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## NOVI, MI 48374-2529 (###) ###-####	Yes	O	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st	2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Appeared Normal		Not Distracted			Not Deployed

Hospital	Ambulance
NONE	NONE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	O Breath O Blood O Urine O Field O PBT O Refused ● Not Offered	O Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	O Blood O Urine O Field O Refused ● Not Offered	O Pending Test Results:	O Hazardous O Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
DRC4809	MI		2022	FORD	ESCAPE	WHITE

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
1FMCU9G65NUA23477	Passenger Car, SUV, Van	Not Applicable	Other	Other

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No	Unknown	Unknown

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########		

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
05	05	No Damage	W	Private	Stopped on Roadway

Sequence of Events (● indicates MOST harmful event)
First: ● 17 - Motor Veh in Transport
Second | Third | Fourth

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint
########## ########## NOVI, MI 48374-2529 (###) ###-####	##/##/#### (71)	F		Front - Right	Shoulder and Lap Belt

Injury	Ejected	Trapped	Airbag Deployed
O			Not Deployed

Hospital	Ambulance
NONE	NONE

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint
########## ########## CHELSEA, MI 48118-9643 (###) ###-####	##/##/#### (48)	M		2nd Row - Right	Shoulder and Lap Belt

Injury	Ejected	Trapped	Airbag Deployed
O			Not Deployed

Hospital	Ambulance
NONE	NONE

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	O H O P O T O N O S O X	O Farm O Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
O 10,000 lbs. or Less O 10,001 - 26,000 lbs. O Greater than 26,000 lbs.				O Placard O Cargo Spill		

OWNERS

Owner Information	Owner Information
########## ########## ##########, ## #####-#### (###) ###-####	

Damaged Property	Public	Owner & Phone

UNIT/DRIVER

Unit Number	Unit Known	State Driver License Number	Date of Birth (Age)	License Type / Endorsements	Sex	Race	Total Occupants	Hazardous Action
				○ Operator ○ Chauffeur ○ Moped / ○ Cycle ○ Farm ○ Recreation				

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint

Driver Condition at Time of Crash (1st / 2nd)	Driver Distracted By	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
		○ Breath ○ Blood ○ Urine ○ Field ○ PBT ○ Refused ○ Not Offered	○ Pending Test Results:	

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
		○ Blood ○ Urine ○ Field ○ Refused ○ Not Offered	○ Pending Test Results:	○ Hazardous ○ Other

Vehicle Registration	State	Vehicle Description / Year / Make / Model / Color

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash

Insurance Company	Insurance Policy #	Towed By	Towed To

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior

Sequence of Events (● indicates MOST harmful event)	First	Second	Third	Fourth

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type / Endorsements	CDL Exempt
○ H ○ P ○ T ○ N ○ S ○ X	○ Farm ○ Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
○ 10,000 lbs. or Less ○ 10,001 - 26,000 lbs. ○ Greater than 26,000 lbs.				○ Placard ○ Cargo Spill		

OWNERS

Owner Information	Owner Information

WITNESS

Witness Information	Witness Information

Investigated at Scene	Reported Date (Time)	1st Investigator Name (Badge)	2nd Investigator Name (Badge)	Photos

Narrative	Diagram

Authority: 1949 PA 300, Sec.257.622
Compliance: Required MSP UD-10E
Penalty: $100 and/or 90 days (Rev 11/2020)

External # 0077299 | Crash ID 2582504

File Class 9300-1

STATE OF MICHIGAN TRAFFIC CRASH REPORT

Incident # 2200415

ORI	Department Name	Reviewer
MI 4745100	Hamburg Township Police Department	PAUL, MEGAN

Crash Date	Crash Time	No. of Units	Crash Type	Special Circumstances	Special Checks
05/19/2022	21:10	02	Rear End	● None O Hit and Run O School Bus O Fleeing Police O Unknown O Animal	O Fatal O Non-Traffic Area O ORV/Snowmobile

County	Traffic Control	Relation to Roadway	Weather	Area
47 - Livingston	Signal	On the Road	Clear	INTR Driveway Related

City/Twsp	Contributing Circumstances 1st	2nd	Light	Road Surface Condition	Total Lanes	Speed Limit	Posted
07 - Hamburg Twp	Backup - Reg. Congestion		Dark-Lighted	Dry	03	45	Yes

Work Zone (if applicable): Type | Workers Present | Activity | Location

LOCATION

Prefix	Primary Road Name	Road Type	Suffix	Divided Roadway
E	M36	HWY		

Distance / Direction: 150 Feet W
Trafficway: Not Physically Divided

Prefix	Intersecting Road Name	Road Type	Suffix	Divided Roadway
E	CHILSON COMMONS	CIR		

UNIT / DRIVER

Unit Number	Unit Known	State	Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Race	Total Occupants	Hazardous Action
01	Yes	MI	##########	##/##/#### (44)	O Operator ● Chauffeur O Moped	● Cycle O Farm O Recreation	M		01	Unable to Stop

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## WHITMORE LAKE, MI 48189 (###) ###-####	Yes	O	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st	2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Appeared Normal		Not Distracted			Not Deployed

Hospital	Ambulance
REFUSE	REFUSE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	O Breath O Blood O Urine O Field O PBT O Refused ● Not Offered	O Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	O Blood O Urine O Field O Refused ● Not Offered	O Pending Test Results:	O Hazardous O Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
EEA4824	MI		2019	FORD	FIESTA	WHITE

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
3FADP4EJ0KM159497	Passenger Car, SUV, Van	Not Applicable		

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No	Unknown	Unknown

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########		

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
01	01	Functional Damage	E	Private	Going Straight Ahead

Sequence of Events (● indicates MOST harmful event): First: ● 17 - Motor Veh in Transport | Second | Third | Fourth

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital | Ambulance

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital | Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	O H O P O T O N O S O X	O Farm O Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
O 10,000 lbs. or Less O 10,001 - 26,000 lbs. O Greater than 26,000 lbs.				O Placard O Cargo Spill		

OWNERS

Owner Information	Owner Information
########## ########## ##########, ## #####-#### (###) ###-####	

Damaged Property	Public	Owner & Phone

UNIT/DRIVER

Unit Number	Unit Known	State	Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Race	Total Occupants	Hazardous Action
02	Yes	MI	##########	##/##/#### (30)	● Operator ○ Chauffeur ○ Moped	○ Cycle ○ Farm ○ Recreation	M		01	None

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## FLINT, MI 48503-2134 (###) ###-####	Yes	O	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st	2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Appeared Normal		Not Distracted			Not Deployed

Hospital	Ambulance
REFUSE	REFUSE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	○ Breath ○ Blood ○ Urine ○ Field ○ PBT ○ Refused ● Not Offered	○ Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	○ Blood ○ Urine ○ Field ○ Refused ● Not Offered	○ Pending Test Results:	○ Hazardous ○ Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
EFC5060	MI		2017	JEEP	PATRIOT	BLACK

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
1C4NJPBB5HD103509	Passenger Car, SUV, Van	Not Applicable		

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No	Unknown	Unknown

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########		

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
05	05	No Damage	E	Private	Stopped on Roadway

Sequence of Events (● indicates MOST harmful event)	First	Second	Third	Fourth
	● 17 - Motor Veh in Transport			

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	○ H ○ P ○ T ○ N ○ S ○ X	○ Farm ○ Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
○ 10,000 lbs. or Less ○ 10,001 - 26,000 lbs. ○ Greater than 26,000 lbs.				○ Placard ○ Cargo Spill		

OWNERS

Owner Information	Owner Information
########## ########## ##########, ## #####-#### (###) ###-####	

WITNESS

Witness Information	Witness Information

Investigated at Scene	Reported Date (Time)	1st Investigator Name (Badge)	2nd Investigator Name (Badge)	Photos
Yes	05/19/2022 (21:30)	PEDERSEN, JOSHUA (00013)		No

Narrative

Unit 2 was stopped on E M36 for the red light when Unit 1 rear ended him. Unit 1 found at fault for fail to stop assured clear distance.

Diagram

Authority: 1949 PA 300, Sec.257.622
Compliance: Required MSP UD-10E
Penalty: $100 and/or 90 days (Rev 11/2020)

External # 0077806 | Crash ID 2623299

File Class 9300-1
Incident # 2200524

STATE OF MICHIGAN TRAFFIC CRASH REPORT

ORI	Department Name	Reviewer
MI 4745100	Hamburg Township Police Department	GARBACIK, ALYSHA

Crash Date	Crash Time	No. of Units	Crash Type	Special Circumstances	Special Checks
06/18/2022	23:00	02	Angle	● None ○ Hit and Run ○ School Bus ○ Fleeing Police ○ Unknown ○ Animal	○ Fatal ○ Non-Traffic Area ○ ORV/Snowmobile

County	Traffic Control	Relation to Roadway	Weather	Area
47 - Livingston	Signal	On the Road	Clear	INTR Within Intersection

City/Twsp	Contributing Circumstances 1st	2nd	Light	Road Surface Condition	Total Lanes	Speed Limit	Posted
07 - Hamburg Twp	None		Dark-Lighted	Dry	03	45	Yes

Work Zone (if applicable): Type | Workers Present | Activity | Location

LOCATION

Prefix	Primary Road Name	Road Type	Suffix	Divided Roadway
E	M 36	HWY		

Distance / Direction: 10 Feet W
Trafficway: Not Physically Divided

Prefix	Intersecting Road Name	Road Type	Suffix	Divided Roadway
E	CHILSON	RD		

UNIT / DRIVER

Unit Number	Unit Known	State	Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Race	Total Occupants	Hazardous Action
01	Yes	MI	##########	##/##/#### (20)	● Operator ○ Chauffeur ○ Moped	○ Cycle ○ Farm ○ Recreation	F		01	Failed to Yield

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## ANN ARBOR, MI 48103-9603 (###) ###-####	No	O	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st	2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Appeared Normal		Not Distracted			Not Deployed

Hospital: REFUSE
Ambulance: REFUSE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	○ Breath ○ Blood ○ Urine ○ Field ○ PBT ○ Refused ○ Not Offered	○ Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	○ Blood ○ Urine ○ Field ○ Refused ○ Not Offered	○ Pending Test Results:	○ Hazardous ○ Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
HY72L	MI		2016	JEEP	WRANGLER UNL	

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
1C4BJWFG8GL124894	Passenger Car, SUV, Van	Not Applicable		

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No	Unknown	Unknown

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########		

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
03	03	Minor Damage	S	Private	Starting Up on Roadway

Sequence of Events (● indicates MOST harmful event): First: ● 17 - Motor Veh in Transport | Second | Third | Fourth

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital | Ambulance

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital | Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type | Endorsements: ○ H ○ P ○ T ○ N ○ S ○ X | CDL Exempt: ○ Farm ○ Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
○ 10,000 lbs. or Less ○ 10,001 - 26,000 lbs. ○ Greater than 26,000 lbs.				○ Placard ○ Cargo Spill		

OWNERS

Owner Information	Owner Information
########## ########## ##########, ## #####-#### (###) ###-####	

Damaged Property	Public	Owner & Phone

UNIT/DRIVER

Unit Number	Unit Known	State Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Race	Total Occupants	Hazardous Action
02	Yes	FL ##########	##/##/#### (26)	O Operator O Chauffeur O Moped	O Cycle O Farm O Recreation	F		02	None

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## LAKE PLACID, FL 33852 (###) ###-####	No	O	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st / 2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Appeared Normal	Not Distracted			Deployed - Front

Hospital	Ambulance
REFUSE	REFUSE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	O Breath O Blood O Urine O Field O PBT O Refused O Not Offered	O Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	O Blood O Urine O Field O Refused O Not Offered	O Pending Test Results:	O Hazardous O Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
047D945	MI			FORD	EXPLORER	WHITE

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
1FM5K8F81GGB60851	Passenger Car, SUV, Van	Not Applicable		

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No	Unknown	Unknown

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########	CORRIGAN'S	OWNER DISCRETION

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
01	01	Disabling Damage	E	Private	Going Straight Ahead

Sequence of Events (● indicates MOST harmful event)	First	Second	Third	Fourth
	● 17 - Motor Veh in Transport			

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	O H O P O T O N O S O X	O Farm O Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
O 10,000 lbs. or Less O 10,001 - 26,000 lbs. O Greater than 26,000 lbs.				O Placard O Cargo Spill		

OWNERS

Owner Information	Owner Information

WITNESS

Witness Information	Witness Information

Investigated at Scene	Reported Date (Time)	1st Investigator Name (Badge)	2nd Investigator Name (Badge)	Photos
Yes	06/21/2022 (04:45)	HOGAN, SEAN (0729)		No

Narrative

Driver of Unit 1 was stopped for traffic to clear. Unit 1 was headed south on Chilson Rd. She said she looked both way and did not see any vehicles. When she began to enter the intersection she observed headlights and attempted to avoid a collison by speeding up. Unit 2 collided into the rear passenger side of Unit 1. Driver of Unit 2 stated they were traveling W/B on E M36 when Unit 1 pulled out in front of them and they collided into the rear passenger side of Unit 1. No injuries were reported at the time of the accident.

Diagram

Authority: 1949 PA 300, Sec.257.622
Compliance: Required MSP UD-10E
Penalty: $100 and/or 90 days (Rev 11/2020)

External # 0083186 Crash ID 2729522

File Class 9300-1

STATE OF MICHIGAN TRAFFIC CRASH REPORT

Incident # 2200982

ORI	Department Name	Reviewer
MI 4745100	Hamburg Township Police Department	PAUL, MEGAN

Crash Date	Crash Time	No. of Units	Crash Type	Special Circumstances	Special Checks
11/07/2022	15:57	02	Angle	● None O Hit and Run O School Bus O Fleeing Police O Unknown O Animal	O Fatal O Non-Traffic Area O ORV/Snowmobile

County	Traffic Control	Relation to Roadway	Weather	Area
47 - Livingston	None	On the Road	Clear	INTR Within Intersection

City/Twsp	Contributing Circumstances 1st	2nd	Light	Road Surface Condition	Total Lanes	Speed Limit	Posted
07 - Hamburg Twp	None		Daylight	Dry	02	45	Yes

Work Zone (if applicable) — Type | Workers Present | Activity | Location

LOCATION

Prefix	Primary Road Name	Road Type	Suffix	Divided Roadway
E	M36	HWY		

Distance / Direction: AT
Trafficway: Not Physically Divided

Prefix	Intersecting Road Name	Road Type	Suffix	Divided Roadway
E	CHILSON COMMONS CIRCLE	RD		

UNIT / DRIVER

Unit Number	Unit Known	State	Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Race	Total Occupants	Hazardous Action
01	Yes	MI	##########	##/##/#### (80)	● Operator O Chauffeur O Moped	O Cycle O Farm O Recreation	M		01	Careless Driving

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## WHITMORE LAKE, MI 48189-9736 (###) ###-####	Yes	O	Front - Left	Restraint Use Unknown

Driver Condition at Time of Crash 1st	2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Appeared Normal		Not Distracted			Not Deployed

Hospital	Ambulance
NONE	NONE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	O Breath O Blood O Urine O Field O PBT O Refused ● Not Offered	O Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	O Blood O Urine O Field O Refused ● Not Offered	O Pending Test Results:	O Hazardous O Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
DSL6597	MI		2020	CHEVROLET	EQUINOX	BLACK

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
3GNAXVEX1LL240059	Passenger Car, SUV, Van	Not Applicable		Other

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No	Unknown	Unknown

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########		

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
02	02	Minor Damage	W	Private	Turning Left

Sequence of Events (● indicates MOST harmful event)
First: ● 17 - Motor Veh in Transport | Second | Third | Fourth

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital | Ambulance

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital | Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	O H O P O T O N O S O X	O Farm O Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
O 10,000 lbs. or Less O 10,001 - 26,000 lbs. O Greater than 26,000 lbs.				O Placard O Cargo Spill		

OWNERS

Owner Information	Owner Information
########## ########## ##########, ## #####-#### (###) ###-####	

Damaged Property	Public	Owner & Phone

UNIT/DRIVER

Unit Number	Unit Known	State	Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Race	Total Occupants	Hazardous Action
02	Yes	MI	##########	##/##/#### (67)	● Operator ○ Chauffeur ○ Moped	○ Cycle ○ Farm ○ Recreation	F		02	None

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## PINCKNEY, MI 48169-8539 (###) ###-####	Yes	O	Front - Left	Restraint Use Unknown

Driver Condition at Time of Crash	Driver Distracted By	Ejected	Trapped	Airbag Deployed
1st: Appeared Normal 2nd:	Not Distracted			Not Deployed

Hospital	Ambulance
NONE	NONE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	○ Breath ○ Blood ○ Urine ○ Field ○ PBT ○ Refused ● Not Offered	○ Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	○ Blood ○ Urine ○ Field ○ Refused ● Not Offered	○ Pending Test Results:	○ Hazardous ○ Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
EAV8628	MI		2006	FORD	ESCAPE	GREEN

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
1FMYU93166KB34293	Passenger Car, SUV, Van	Not Applicable		

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No	Unknown	Unknown

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########	CORRIGAN'S	IMPOUND LOT

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
02	02	Disabling Damage	N	Private	Stopped on Roadway

Sequence of Events	First	Second	Third	Fourth
(● indicates MOST harmful event)	● 17 - Motor Veh in Transport			

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint
########## ########## PINCKNEY, MI 48169 (###) ###-####	##/##/#### (67)	F		Front - Right	Restraint Use Unknown

Injury	Ejected	Trapped	Airbag Deployed
O			Not Deployed

Hospital	Ambulance
NONE	NONE

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	○ H ○ P ○ T ○ N ○ S ○ X	○ Farm ○ Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
○ 10,000 lbs. or Less ○ 10,001 - 26,000 lbs. ○ Greater than 26,000 lbs.				○ Placard ○ Cargo Spill		

OWNERS

Owner Information	Owner Information
########## ########## ##########, ## #####-#### (###) ###-####	

WITNESS

Witness Information	Witness Information

Investigated at Scene	Reported Date (Time)	1st Investigator Name (Badge)	2nd Investigator Name (Badge)	Photos
Yes	11/07/2022 (18:09)	HARVEY, JUSTIN (00030)		No

Narrative

Vehicle #1 was turning into the Kroger parking lot from west bound E M-36 and struck vehicle #2 who was sitting at the exit/entrance of the Kroger parking lot waiting to turn onto E M-36. No injuries reported.

Diagram

Appendix B

EXISTING TRAFFIC CONDITIONS

Level of Service Criteria for Stop Sign Controlled Intersections

The level of service criteria are given in Exhibit 20-2. As used here, control delay is defined as the total elapsed time from the time a vehicle stops at the end of the queue until the vehicle departs from the stop line; this time includes the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position, including deceleration of vehicles from free-flow speed to the speed of vehicles in queue.

The average total delay for any particular controlled movement is a function three (capacity) factors: distribution of gaps in the major-street traffic stream, driver judgment in selecting gaps through which to execute the desired maneuvers, and the follow-up headways required by each driver in a queue.

The basic capacity model assumes gaps in the conflicting movements are randomly distributed. When traffic signals are present on the major street, upstream of the subject intersection, flows may not be random but will likely have some platoon structure. Although the procedures in this chapter provide a method for approximating the operations of a TWSC intersection with an upstream signal, the operations of such an intersection is arguably best handled by including it in a complete simulation

Exhibit 20-2. Level of Service Criteria for Stop-Controlled Intersections (Motor Vehciles)

LEVEL OF SERVICE	AVERAGE CONTROL DELAY (sec/veh)
A	$\leq$ 10
B	> 10 and $\leq$ 15
C	> 15 and $\leq$ 25
D	> 25 and $\leq$ 35
E	> 35 and $\leq$ 50
F	> 50

Average total delay less than 10 sec/veh is defined as Level of Service (LOS) A. Follow-up times of less than 5 sec have been measured when there is no conflicting traffic for a minor street movement, so control delays of less than 10 sec/veh are appropriate for low flow conditions. A total delay of 50 sec/veh is assumed as the break point between LOS E and F.

The LOS criteria for TWSC intersections differ somewhat from the criteria used in Chapter 19 for signalized intersections, primarily because user perceptions differ among transportation facility types. The expectation is that a signalized intersection is designed to carry higher traffic volumes and will present greater delay than an unsignalized intersection. Additionally, several driver behavior considerations combine to make delays at signalized intersections less onerous than at unsignalized intersections. For example, drivers at signalized intersections are able to relax during the red interval, where drivers on the minor approaches to unsignalized intersections must remain attentive to the task of identifying acceptable gaps and vehicle conflicts. Also, there is often much more variability in the amount of delay experienced by individual drivers at unsignalized than signalized intersections. For these reasons, it is considered that the total delay threshold for any given level of service is less for an unsignalized intersection than for a signalized intersection.

LOS F exists when there are insufficient gaps of suitable size to allow a side street demand to cross safely through a major street traffic stream. This level of service is generally evident from extremely long total delays experienced by side street traffic and by queueing on the minor approaches. The method, however, is based on a constant critical gap size - that is, the critical gap remains constant, no matter how long the side street motorist waits. LOS F may also appear in the form of side street vehicles' selecting smaller-than-usual gaps. In such cases, safety may be a problem and some disruption to the major traffic stream may result. It is important to note that LOS F may not always result in long queues but may result in adjustments to normal gap acceptance behavior. The latter is more difficult to observe on the field than queueing, which is more obvious.

Source: Highway Capacity Manual, 6th Edition. Transportation Research Board, National Research Council

Level of Service for Signalized Intersections

Level of service for signalized intersections is defined in terms of delay, which is a measure of driver discomfort and frustration, fuel consumption, and lost travel time. LOS can be characterized for the entire intersection, each intersection approach, and each lane group. Specifically, level-of-service (LOS) criteria are stated in terms of the average stopped delay per vehicle. The criteria are given in Exhibit 19-8. Delay may be measured in the field or estimated using procedures presented later in this chapter. Delay is a complex measure and is dependent on a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group in question.

LOS A describes operations with a control delay of 10 s/veh or less. This level is typically assigned when the volume-to-capacity ratio is low and either progression is extremely favorable or the cycle length is very short. If LOS A is the result of favorable progression, most vehicles arrive during a green indication and travel through the intersection without stopping.

LOS B describes operations with control delay between 10 and 20 s/veh. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.

Exhibit 19.8. Level-of-Service Criteria for Signalized Intersections (Motorized Vehicles)

LEVEL OF SERVICE	STOPPED DELAY PER VEHICLE (SEC)
A	≤10.0
B	> 10.0 and ≤20.0
C	> 20.0 and ≤ 35.0
D	> 35.0 and ≤ 55.0
E	> 55.0 and ≤ 80.0
F	>80.0

1. If the v/c ratio for a lane group exceeds 1.0, a LOS F is assigned to the individual lane group. LOS for approach-based and intersection-wide assessments are determined solely by the control delay.

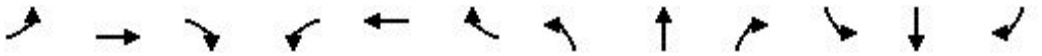
LOS C describes operations with control delay between 20 and 35 s/veh. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual *cycle failures* (i.e. one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number if vehicle stopping is significant, although many vehicles still pass through the intersection without stopping.

LOS D describes operations with control delay between 35 and 55 s/veh. This level is typically assigned when when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.

LOS E describes operations with control delay between 55 and 80 s/veh. This level is typically assigned when when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.

LOS F describes operations with control delay exceeding 80 s/veh or a volume-to-capacity ratio greater than 1.0. This level, considered to be unacceptable to most drivers, often occurs with over-saturation, that is, when arrival flow rates exceed the capacity of the intersection. This level is typically assigned when the volume-to-capacity ratio is high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Source: Highway Capacity Manual, 6th Edition. Transportation Research Board, National Research Council



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	297	93	15	274	76	70	42	31	90	44	49
Future Volume (veh/h)	38	297	93	15	274	76	70	42	31	90	44	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1870	1870	1870	1811	1811	1811
Adj Flow Rate, veh/h	44	345	108	16	298	83	76	46	34	95	46	52
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	2	2	2	6	6	6
Cap, veh/h	689	1256	1065	664	946	263	222	146	108	236	113	128
Arrive On Green	0.68	0.68	0.68	0.68	0.68	0.68	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	994	1856	1572	930	1397	389	1297	999	738	1277	776	877
Grp Volume(v), veh/h	44	345	108	16	0	381	76	0	80	95	0	98
Grp Sat Flow(s),veh/h/ln	994	1856	1572	930	0	1786	1297	0	1737	1277	0	1653
Q Serve(g_s), s	1.3	5.2	1.7	0.5	0.0	6.1	4.0	0.0	2.9	5.0	0.0	3.8
Cycle Q Clear(g_c), s	7.5	5.2	1.7	5.6	0.0	6.1	7.7	0.0	2.9	7.9	0.0	3.8
Prop In Lane	1.00		1.00	1.00		0.22	1.00		0.43	1.00		0.53
Lane Grp Cap(c), veh/h	689	1256	1065	664	0	1209	222	0	253	236	0	241
V/C Ratio(X)	0.06	0.27	0.10	0.02	0.00	0.32	0.34	0.00	0.32	0.40	0.00	0.41
Avail Cap(c_a), veh/h	689	1256	1065	664	0	1209	398	0	489	410	0	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.2	4.5	3.9	5.6	0.0	4.6	30.7	0.0	26.8	30.3	0.0	27.1
Incr Delay (d2), s/veh	0.2	0.5	0.2	0.1	0.0	0.7	0.9	0.0	0.7	1.1	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.3	0.4	0.1	0.0	1.6	1.3	0.0	1.2	1.5	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.3	5.0	4.1	5.7	0.0	5.3	31.6	0.0	27.5	31.4	0.0	28.3
LnGrp LOS	A	A	A	A	A	A	C	A	C	C	A	C
Approach Vol, veh/h		497			397			156			193	
Approach Delay, s/veh		4.9			5.3			29.5			29.8	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		53.5		16.5		53.5		16.5				
Change Period (Y+Rc), s		* 6.1		* 6.3		* 6.1		* 6.3				
Max Green Setting (Gmax), s		* 38		* 20		* 38		* 20				
Max Q Clear Time (g_c+I1), s		9.5		9.9		8.1		9.7				
Green Ext Time (p_c), s		2.5		0.5		2.3		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			12.0									
HCM 6th LOS			B									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

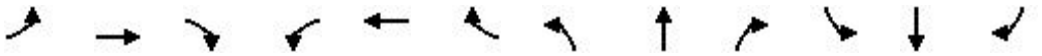
Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	424	0	0	380	11	0	0	0	8	0	4
Future Vol, veh/h	2	424	0	0	380	11	0	0	0	8	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	500	-	-	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	94	94	94	92	92	92	75	75	75
Heavy Vehicles, %	2	2	2	3	3	3	2	2	2	0	0	0
Mvmt Flow	2	482	0	0	404	12	0	0	0	11	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	416	0	0	482	0	0	899	902	482	896	896	410
Stage 1	-	-	-	-	-	-	486	486	-	410	410	-
Stage 2	-	-	-	-	-	-	413	416	-	486	486	-
Critical Hdwy	4.12	-	-	4.13	-	-	7.12	6.52	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.5	-
Follow-up Hdwy	2.218	-	-	2.227	-	-	3.518	4.018	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1143	-	-	1075	-	-	260	277	584	263	282	646
Stage 1	-	-	-	-	-	-	563	551	-	623	599	-
Stage 2	-	-	-	-	-	-	616	592	-	566	554	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1143	-	-	1075	-	-	257	276	584	263	281	646
Mov Cap-2 Maneuver	-	-	-	-	-	-	257	276	-	263	281	-
Stage 1	-	-	-	-	-	-	562	550	-	622	599	-
Stage 2	-	-	-	-	-	-	611	592	-	565	553	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	16.5
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1143	-	-	1075	-	-	328
HCM Lane V/C Ratio	-	0.002	-	-	-	-	-	0.049
HCM Control Delay (s)	0	8.2	-	-	0	-	-	16.5
HCM Lane LOS	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	295	85	37	559	164	126	87	32	118	68	80
Future Volume (veh/h)	49	295	85	37	559	164	126	87	32	118	68	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	52	311	89	41	614	180	142	98	36	131	76	89
Peak Hour Factor	0.95	0.95	0.95	0.91	0.91	0.91	0.89	0.89	0.89	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	0	0	0	0	0	0
Cap, veh/h	313	1167	989	630	867	254	263	293	108	293	177	207
Arrive On Green	0.62	0.62	0.62	0.62	0.62	0.62	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	684	1870	1585	985	1390	407	1240	1325	487	1275	798	934
Grp Volume(v), veh/h	52	311	89	41	0	794	142	0	134	131	0	165
Grp Sat Flow(s),veh/h/ln	684	1870	1585	985	0	1797	1240	0	1812	1275	0	1732
Q Serve(g_s), s	4.4	6.0	1.8	1.6	0.0	23.8	8.9	0.0	5.0	7.7	0.0	6.6
Cycle Q Clear(g_c), s	28.3	6.0	1.8	7.6	0.0	23.8	15.5	0.0	5.0	12.7	0.0	6.6
Prop In Lane	1.00		1.00	1.00		0.23	1.00		0.27	1.00		0.54
Lane Grp Cap(c), veh/h	313	1167	989	630	0	1121	263	0	401	293	0	383
V/C Ratio(X)	0.17	0.27	0.09	0.07	0.00	0.71	0.54	0.00	0.33	0.45	0.00	0.43
Avail Cap(c_a), veh/h	313	1167	989	630	0	1121	294	0	446	325	0	426
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.7	6.8	6.0	8.5	0.0	10.1	33.5	0.0	26.2	31.5	0.0	26.8
Incr Delay (d2), s/veh	1.1	0.6	0.2	0.2	0.0	3.8	1.7	0.0	0.5	1.1	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.0	0.5	0.3	0.0	8.0	2.8	0.0	2.2	2.4	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.8	7.4	6.2	8.7	0.0	13.9	35.2	0.0	26.7	32.6	0.0	27.6
LnGrp LOS	C	A	A	A	A	B	D	A	C	C	A	C
Approach Vol, veh/h		452			835			276			296	
Approach Delay, s/veh		8.7			13.7			31.1			29.8	
Approach LOS		A			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		56.0		24.0		56.0		24.0				
Change Period (Y+Rc), s		* 6.1		* 6.3		* 6.1		* 6.3				
Max Green Setting (Gmax), s		* 48		* 20		* 48		* 20				
Max Q Clear Time (g_c+I1), s		30.3		14.7		25.8		17.5				
Green Ext Time (p_c), s		2.2		0.6		5.8		0.3				

Intersection Summary		
HCM 6th Ctrl Delay		17.6
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	418	0	0	751	20	0	0	0	9	0	2
Future Vol, veh/h	1	418	0	0	751	20	0	0	0	9	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	500	-	-	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	93	93	93	92	92	92	69	69	69
Heavy Vehicles, %	1	1	1	1	1	1	2	2	2	0	0	0
Mvmt Flow	1	440	0	0	808	22	0	0	0	13	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	830	0	0	440	0	0	1263	1272	440	1261	1261	819
Stage 1	-	-	-	-	-	-	442	442	-	819	819	-
Stage 2	-	-	-	-	-	-	821	830	-	442	442	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.12	6.52	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.518	4.018	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	806	-	-	1125	-	-	147	168	617	148	172	379
Stage 1	-	-	-	-	-	-	594	576	-	372	392	-
Stage 2	-	-	-	-	-	-	369	385	-	598	580	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	806	-	-	1125	-	-	146	168	617	148	172	379
Mov Cap-2 Maneuver	-	-	-	-	-	-	146	168	-	148	172	-
Stage 1	-	-	-	-	-	-	593	575	-	372	392	-
Stage 2	-	-	-	-	-	-	366	385	-	597	579	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	29
HCM LOS			A	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	806	-	-	1125	-	-	166
HCM Lane V/C Ratio	-	0.001	-	-	-	-	-	0.096
HCM Control Delay (s)	0	9.5	-	-	0	-	-	29
HCM Lane LOS	A	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.3

Intersection: 1: Chilson Road & M-36

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	TR	L	TR
Maximum Queue (ft)	58	118	53	40	145	106	101	134	136
Average Queue (ft)	20	48	15	9	61	46	33	55	52
95th Queue (ft)	46	98	38	29	122	89	74	106	105
Link Distance (ft)	116	116	116		876	231	231		506
Upstream Blk Time (%)		0							
Queuing Penalty (veh)		0							
Storage Bay Dist (ft)				500				175	
Storage Blk Time (%)								0	0
Queuing Penalty (veh)								0	0

Intersection: 2: Site Drive/Shopping E. Drive & M-36

Movement	EB	SB
Directions Served	L	LTR
Maximum Queue (ft)	5	32
Average Queue (ft)	0	11
95th Queue (ft)	4	35
Link Distance (ft)		343
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	500	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9000: M-36 & BP Drive

Movement	EB	EB	SB
Directions Served	LT	T	LR
Maximum Queue (ft)	29	30	34
Average Queue (ft)	2	1	9
95th Queue (ft)	13	22	32
Link Distance (ft)	171	171	257
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9001: Motel Drive/Shopping W. Drive & M-36

Movement	EB	SB
Directions Served	L	LTR
Maximum Queue (ft)	27	41
Average Queue (ft)	3	16
95th Queue (ft)	16	42
Link Distance (ft)		353
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	500	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Chilson Road & M-36

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	TR	L	TR
Maximum Queue (ft)	95	128	60	61	337	200	126	153	129
Average Queue (ft)	36	56	16	19	159	80	55	77	65
95th Queue (ft)	81	108	43	47	272	154	112	128	115
Link Distance (ft)	116	116	116		876	231	231		506
Upstream Blk Time (%)	1	0				0	0		
Queuing Penalty (veh)	1	1				0	0		
Storage Bay Dist (ft)				500				175	
Storage Blk Time (%)								0	
Queuing Penalty (veh)								0	

Intersection: 2: Site Drive/Shopping E. Drive & M-36

Movement	EB	SB
Directions Served	L	LTR
Maximum Queue (ft)	10	32
Average Queue (ft)	0	8
95th Queue (ft)	5	30
Link Distance (ft)		343
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	500	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9000: M-36 & BP Drive

Movement	WB	SB
Directions Served	TR	LR
Maximum Queue (ft)	9	35
Average Queue (ft)	0	11
95th Queue (ft)	7	36
Link Distance (ft)	116	257
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9001: Motel Drive/Shopping W. Drive & M-36

Movement	EB	NB	SB
Directions Served	L	LTR	LTR
Maximum Queue (ft)	28	19	67
Average Queue (ft)	5	1	25
95th Queue (ft)	22	11	56
Link Distance (ft)		201	353
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	500		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 2

Appendix C

BACKGROUND TRAFFIC CONDITIONS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	299	93	15	276	76	70	42	31	90	44	49
Future Volume (veh/h)	38	299	93	15	276	76	70	42	31	90	44	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1870	1870	1870	1811	1811	1811
Adj Flow Rate, veh/h	44	348	108	16	300	83	76	46	34	95	46	52
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	2	2	2	6	6	6
Cap, veh/h	687	1256	1065	662	947	262	222	146	108	236	113	128
Arrive On Green	0.68	0.68	0.68	0.68	0.68	0.68	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	992	1856	1572	928	1399	387	1297	999	738	1277	776	877
Grp Volume(v), veh/h	44	348	108	16	0	383	76	0	80	95	0	98
Grp Sat Flow(s),veh/h/ln	992	1856	1572	928	0	1786	1297	0	1737	1277	0	1653
Q Serve(g_s), s	1.3	5.2	1.7	0.5	0.0	6.2	4.0	0.0	2.9	5.0	0.0	3.8
Cycle Q Clear(g_c), s	7.5	5.2	1.7	5.7	0.0	6.2	7.7	0.0	2.9	7.9	0.0	3.8
Prop In Lane	1.00		1.00	1.00		0.22	1.00		0.43	1.00		0.53
Lane Grp Cap(c), veh/h	687	1256	1065	662	0	1209	222	0	253	236	0	241
V/C Ratio(X)	0.06	0.28	0.10	0.02	0.00	0.32	0.34	0.00	0.32	0.40	0.00	0.41
Avail Cap(c_a), veh/h	687	1256	1065	662	0	1209	398	0	489	410	0	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.2	4.5	3.9	5.6	0.0	4.6	30.7	0.0	26.8	30.3	0.0	27.1
Incr Delay (d2), s/veh	0.2	0.5	0.2	0.1	0.0	0.7	0.9	0.0	0.7	1.1	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.4	0.4	0.1	0.0	1.6	1.3	0.0	1.2	1.5	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.4	5.0	4.1	5.7	0.0	5.3	31.6	0.0	27.5	31.4	0.0	28.3
LnGrp LOS	A	A	A	A	A	A	C	A	C	C	A	C
Approach Vol, veh/h		500			399			156			193	
Approach Delay, s/veh		5.0			5.3			29.5			29.8	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		53.5		16.5		53.5		16.5				
Change Period (Y+Rc), s		* 6.1		* 6.3		* 6.1		* 6.3				
Max Green Setting (Gmax), s		* 38		* 20		* 38		* 20				
Max Q Clear Time (g_c+I1), s		9.5		9.9		8.2		9.7				
Green Ext Time (p_c), s		2.5		0.5		2.3		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			12.0									
HCM 6th LOS			B									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

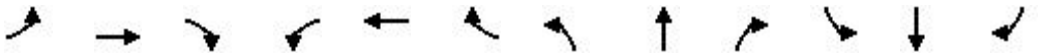
Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	426	0	0	382	11	0	0	0	8	0	4
Future Vol, veh/h	2	426	0	0	382	11	0	0	0	8	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	500	-	-	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	94	94	94	92	92	92	75	75	75
Heavy Vehicles, %	2	2	2	3	3	3	2	2	2	0	0	0
Mvmt Flow	2	484	0	0	406	12	0	0	0	11	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	418	0	0	484	0	0	903	906	484	900	900	412
Stage 1	-	-	-	-	-	-	488	488	-	412	412	-
Stage 2	-	-	-	-	-	-	415	418	-	488	488	-
Critical Hdwy	4.12	-	-	4.13	-	-	7.12	6.52	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.5	-
Follow-up Hdwy	2.218	-	-	2.227	-	-	3.518	4.018	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1141	-	-	1074	-	-	258	276	583	262	280	644
Stage 1	-	-	-	-	-	-	561	550	-	621	598	-
Stage 2	-	-	-	-	-	-	615	591	-	565	553	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1141	-	-	1074	-	-	255	275	583	262	279	644
Mov Cap-2 Maneuver	-	-	-	-	-	-	255	275	-	262	279	-
Stage 1	-	-	-	-	-	-	560	549	-	620	598	-
Stage 2	-	-	-	-	-	-	610	591	-	564	552	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	16.6
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1141	-	-	1074	-	-	327
HCM Lane V/C Ratio	-	0.002	-	-	-	-	-	0.049
HCM Control Delay (s)	0	8.2	-	-	0	-	-	16.6
HCM Lane LOS	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	297	85	37	562	165	127	87	32	119	68	80
Future Volume (veh/h)	49	297	85	37	562	165	127	87	32	119	68	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	52	313	89	41	618	181	143	98	36	132	76	89
Peak Hour Factor	0.95	0.95	0.95	0.91	0.91	0.91	0.89	0.89	0.89	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	0	0	0	0	0	0
Cap, veh/h	309	1165	988	628	866	254	264	294	108	294	177	207
Arrive On Green	0.62	0.62	0.62	0.62	0.62	0.62	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	680	1870	1585	983	1390	407	1240	1325	487	1275	798	934
Grp Volume(v), veh/h	52	313	89	41	0	799	143	0	134	132	0	165
Grp Sat Flow(s),veh/h/ln	680	1870	1585	983	0	1797	1240	0	1812	1275	0	1732
Q Serve(g_s), s	4.5	6.1	1.8	1.6	0.0	24.1	9.0	0.0	5.0	7.8	0.0	6.6
Cycle Q Clear(g_c), s	28.6	6.1	1.8	7.6	0.0	24.1	15.5	0.0	5.0	12.7	0.0	6.6
Prop In Lane	1.00		1.00	1.00		0.23	1.00		0.27	1.00		0.54
Lane Grp Cap(c), veh/h	309	1165	988	628	0	1120	264	0	402	294	0	384
V/C Ratio(X)	0.17	0.27	0.09	0.07	0.00	0.71	0.54	0.00	0.33	0.45	0.00	0.43
Avail Cap(c_a), veh/h	309	1165	988	628	0	1120	294	0	446	325	0	426
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.0	6.8	6.0	8.6	0.0	10.2	33.4	0.0	26.1	31.5	0.0	26.8
Incr Delay (d2), s/veh	1.2	0.6	0.2	0.2	0.0	3.9	1.7	0.0	0.5	1.1	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.0	0.5	0.3	0.0	8.2	2.8	0.0	2.2	2.4	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.1	7.4	6.2	8.8	0.0	14.1	35.2	0.0	26.6	32.6	0.0	27.5
LnGrp LOS	C	A	A	A	A	B	D	A	C	C	A	C
Approach Vol, veh/h		454			840			277			297	
Approach Delay, s/veh		8.7			13.9			31.0			29.8	
Approach LOS		A			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		55.9		24.1		55.9		24.1				
Change Period (Y+Rc), s		* 6.1		* 6.3		* 6.1		* 6.3				
Max Green Setting (Gmax), s		* 48		* 20		* 48		* 20				
Max Q Clear Time (g_c+I1), s		30.6		14.7		26.1		17.5				
Green Ext Time (p_c), s		2.2		0.6		5.8		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			17.7									
HCM 6th LOS			B									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	420	0	0	755	20	0	0	0	9	0	2
Future Vol, veh/h	1	420	0	0	755	20	0	0	0	9	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	500	-	-	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	93	93	93	92	92	92	69	69	69
Heavy Vehicles, %	1	1	1	1	1	1	2	2	2	0	0	0
Mvmt Flow	1	442	0	0	812	22	0	0	0	13	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	834	0	0	442	0	0	1269	1278	442	1267	1267	823
Stage 1	-	-	-	-	-	-	444	444	-	823	823	-
Stage 2	-	-	-	-	-	-	825	834	-	444	444	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.12	6.52	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.518	4.018	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	804	-	-	1123	-	-	145	166	615	147	170	377
Stage 1	-	-	-	-	-	-	593	575	-	371	391	-
Stage 2	-	-	-	-	-	-	367	383	-	597	579	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	804	-	-	1123	-	-	144	166	615	147	170	377
Mov Cap-2 Maneuver	-	-	-	-	-	-	144	166	-	147	170	-
Stage 1	-	-	-	-	-	-	592	574	-	371	391	-
Stage 2	-	-	-	-	-	-	364	383	-	596	578	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	29.1
HCM LOS			A	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	804	-	-	1123	-	-	165
HCM Lane V/C Ratio	-	0.001	-	-	-	-	-	0.097
HCM Control Delay (s)	0	9.5	-	-	0	-	-	29.1
HCM Lane LOS	A	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.3

Intersection: 1: Chilson Road & M-36

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	TR	L	TR
Maximum Queue (ft)	63	120	57	42	166	125	96	131	100
Average Queue (ft)	19	49	16	8	56	44	34	55	43
95th Queue (ft)	48	102	42	28	123	92	73	105	78
Link Distance (ft)	116	116	116		876	231	231		506
Upstream Blk Time (%)		0							
Queuing Penalty (veh)		0							
Storage Bay Dist (ft)				500				175	
Storage Blk Time (%)								0	
Queuing Penalty (veh)								0	

Intersection: 2: Site Drive/Shopping E. Drive & M-36

Movement	EB	SB
Directions Served	L	LTR
Maximum Queue (ft)	5	32
Average Queue (ft)	0	10
95th Queue (ft)	6	33
Link Distance (ft)		343
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	500	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9000: M-36 & BP Drive

Movement	EB	EB	SB
Directions Served	LT	T	LR
Maximum Queue (ft)	29	34	31
Average Queue (ft)	1	1	9
95th Queue (ft)	12	20	31
Link Distance (ft)	171	171	257
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9001: Motel Drive/Shopping W. Drive & M-36

Movement	EB	SB
Directions Served	L	LTR
Maximum Queue (ft)	26	40
Average Queue (ft)	2	17
95th Queue (ft)	14	44
Link Distance (ft)		353
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	500	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 1

Intersection: 1: Chilson Road & M-36

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	TR	L	TR
Maximum Queue (ft)	84	132	47	57	345	154	124	178	173
Average Queue (ft)	36	58	14	15	141	74	51	80	64
95th Queue (ft)	83	111	37	41	263	132	98	150	138
Link Distance (ft)	116	116	116		876	231	231		506
Upstream Blk Time (%)	1	0							
Queuing Penalty (veh)	2	1							
Storage Bay Dist (ft)				500				175	
Storage Blk Time (%)								1	
Queuing Penalty (veh)								2	

Intersection: 2: Site Drive/Shopping E. Drive & M-36

Movement	SB
Directions Served	LTR
Maximum Queue (ft)	40
Average Queue (ft)	11
95th Queue (ft)	36
Link Distance (ft)	343
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9000: M-36 & BP Drive

Movement	EB	EB	WB	SB
Directions Served	LT	T	TR	LR
Maximum Queue (ft)	16	11	12	39
Average Queue (ft)	1	0	0	9
95th Queue (ft)	10	8	9	33
Link Distance (ft)	171	171	116	257
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9001: Motel Drive/Shopping W. Drive & M-36

Movement	EB	NB	SB
Directions Served	L	LTR	LTR
Maximum Queue (ft)	27	31	61
Average Queue (ft)	4	3	22
95th Queue (ft)	20	17	52
Link Distance (ft)		201	353
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	500		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 5

Appendix D

FUTURE TRAFFIC CONDITIONS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	314	93	15	291	76	70	42	31	90	44	56
Future Volume (veh/h)	45	314	93	15	291	76	70	42	31	90	44	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1870	1870	1870	1811	1811	1811
Adj Flow Rate, veh/h	52	365	108	16	316	83	76	46	34	95	46	59
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	2	2	2	6	6	6
Cap, veh/h	673	1255	1063	648	958	252	217	146	108	237	106	135
Arrive On Green	0.68	0.68	0.68	0.68	0.68	0.68	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	978	1856	1572	913	1417	372	1289	999	738	1277	721	924
Grp Volume(v), veh/h	52	365	108	16	0	399	76	0	80	95	0	105
Grp Sat Flow(s),veh/h/ln	978	1856	1572	913	0	1789	1289	0	1737	1277	0	1645
Q Serve(g_s), s	1.6	5.5	1.7	0.5	0.0	6.5	4.0	0.0	2.9	5.0	0.0	4.1
Cycle Q Clear(g_c), s	8.1	5.5	1.7	6.1	0.0	6.5	8.1	0.0	2.9	7.9	0.0	4.1
Prop In Lane	1.00		1.00	1.00		0.21	1.00		0.43	1.00		0.56
Lane Grp Cap(c), veh/h	673	1255	1063	648	0	1210	217	0	255	237	0	241
V/C Ratio(X)	0.08	0.29	0.10	0.02	0.00	0.33	0.35	0.00	0.31	0.40	0.00	0.44
Avail Cap(c_a), veh/h	673	1255	1063	648	0	1210	391	0	489	410	0	463
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.4	4.6	3.9	5.8	0.0	4.7	30.9	0.0	26.7	30.3	0.0	27.2
Incr Delay (d2), s/veh	0.2	0.6	0.2	0.1	0.0	0.7	1.0	0.0	0.7	1.1	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.5	0.4	0.1	0.0	1.6	1.3	0.0	1.2	1.5	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.6	5.2	4.1	5.9	0.0	5.5	31.9	0.0	27.4	31.4	0.0	28.5
LnGrp LOS	A	A	A	A	A	A	C	A	C	C	A	C
Approach Vol, veh/h		525			415			156			200	
Approach Delay, s/veh		5.1			5.5			29.6			29.8	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		53.4		16.6		53.4		16.6				
Change Period (Y+Rc), s		* 6.1		* 6.3		* 6.1		* 6.3				
Max Green Setting (Gmax), s		* 38		* 20		* 38		* 20				
Max Q Clear Time (g_c+I1), s		10.1		9.9		8.5		10.1				
Green Ext Time (p_c), s		2.6		0.6		2.4		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			12.0									
HCM 6th LOS			B									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	426	17	22	382	11	17	0	22	8	0	4
Future Vol, veh/h	2	426	17	22	382	11	17	0	22	8	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	500	-	-	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	94	94	94	92	92	92	75	75	75
Heavy Vehicles, %	2	2	2	3	3	3	2	2	2	0	0	0
Mvmt Flow	2	484	19	23	406	12	18	0	24	11	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	418	0	0	503	0	0	959	962	494	968	965	412
Stage 1	-	-	-	-	-	-	498	498	-	458	458	-
Stage 2	-	-	-	-	-	-	461	464	-	510	507	-
Critical Hdwy	4.12	-	-	4.13	-	-	7.12	6.52	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.5	-
Follow-up Hdwy	2.218	-	-	2.227	-	-	3.518	4.018	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1141	-	-	1056	-	-	237	256	575	235	257	644
Stage 1	-	-	-	-	-	-	554	544	-	587	570	-
Stage 2	-	-	-	-	-	-	581	564	-	550	543	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1141	-	-	1056	-	-	231	250	575	221	251	644
Mov Cap-2 Maneuver	-	-	-	-	-	-	231	250	-	221	251	-
Stage 1	-	-	-	-	-	-	553	543	-	586	557	-
Stage 2	-	-	-	-	-	-	564	552	-	526	542	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	16.7	18.5
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	349	1141	-	-	1056	-	-	283
HCM Lane V/C Ratio	0.121	0.002	-	-	0.022	-	-	0.057
HCM Control Delay (s)	16.7	8.2	-	-	8.5	-	-	18.5
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	318	85	37	583	165	127	87	32	119	68	87
Future Volume (veh/h)	56	318	85	37	583	165	127	87	32	119	68	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	59	335	89	41	641	181	143	98	36	132	76	97
Peak Hour Factor	0.95	0.95	0.95	0.91	0.91	0.91	0.89	0.89	0.89	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	0	0	0	0	0	0
Cap, veh/h	288	1157	980	606	868	245	263	300	110	300	172	219
Arrive On Green	0.62	0.62	0.62	0.62	0.62	0.62	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	666	1870	1585	963	1403	396	1231	1325	487	1275	758	968
Grp Volume(v), veh/h	59	335	89	41	0	822	143	0	134	132	0	173
Grp Sat Flow(s),veh/h/ln	666	1870	1585	963	0	1799	1231	0	1812	1275	0	1726
Q Serve(g_s), s	5.5	6.7	1.8	1.7	0.0	25.7	9.0	0.0	4.9	7.7	0.0	6.9
Cycle Q Clear(g_c), s	31.1	6.7	1.8	8.3	0.0	25.7	15.9	0.0	4.9	12.7	0.0	6.9
Prop In Lane	1.00		1.00	1.00		0.22	1.00		0.27	1.00		0.56
Lane Grp Cap(c), veh/h	288	1157	980	606	0	1113	263	0	411	300	0	391
V/C Ratio(X)	0.20	0.29	0.09	0.07	0.00	0.74	0.54	0.00	0.33	0.44	0.00	0.44
Avail Cap(c_a), veh/h	288	1157	980	606	0	1113	287	0	446	325	0	425
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.7	7.1	6.2	9.0	0.0	10.7	33.4	0.0	25.8	31.1	0.0	26.6
Incr Delay (d2), s/veh	1.6	0.6	0.2	0.2	0.0	4.4	1.8	0.0	0.5	1.0	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.2	0.5	0.3	0.0	8.8	2.8	0.0	2.2	2.4	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.3	7.7	6.4	9.2	0.0	15.1	35.2	0.0	26.3	32.1	0.0	27.4
LnGrp LOS	C	A	A	A	A	B	D	A	C	C	A	C
Approach Vol, veh/h		483			863			277			305	
Approach Delay, s/veh		9.4			14.8			30.9			29.4	
Approach LOS		A			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		55.6		24.4		55.6		24.4				
Change Period (Y+Rc), s		* 6.1		* 6.3		* 6.1		* 6.3				
Max Green Setting (Gmax), s		* 48		* 20		* 48		* 20				
Max Q Clear Time (g_c+I1), s		33.1		14.7		27.7		17.9				
Green Ext Time (p_c), s		2.2		0.6		5.9		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		18.1
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	420	11	28	755	20	11	0	28	9	0	2
Future Vol, veh/h	1	420	11	28	755	20	11	0	28	9	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	500	-	-	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	93	93	93	92	92	92	69	69	69
Heavy Vehicles, %	1	1	1	1	1	1	2	2	2	0	0	0
Mvmt Flow	1	442	12	30	812	22	12	0	30	13	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	834	0	0	454	0	0	1335	1344	448	1348	1339	823
Stage 1	-	-	-	-	-	-	450	450	-	883	883	-
Stage 2	-	-	-	-	-	-	885	894	-	465	456	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.12	6.52	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.518	4.018	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	804	-	-	1112	-	-	131	152	611	129	154	377
Stage 1	-	-	-	-	-	-	589	572	-	343	367	-
Stage 2	-	-	-	-	-	-	340	360	-	581	572	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	804	-	-	1112	-	-	127	148	611	120	150	377
Mov Cap-2 Maneuver	-	-	-	-	-	-	127	148	-	120	150	-
Stage 1	-	-	-	-	-	-	588	571	-	343	357	-
Stage 2	-	-	-	-	-	-	328	350	-	551	571	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	19.3	34.7
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	294	804	-	-	1112	-	-	137
HCM Lane V/C Ratio	0.144	0.001	-	-	0.027	-	-	0.116
HCM Control Delay (s)	19.3	9.5	-	-	8.3	-	-	34.7
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	0.4

Intersection: 1: Chilson Road & M-36

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	TR	L	TR
Maximum Queue (ft)	70	131	57	29	147	90	78	125	125
Average Queue (ft)	24	53	13	6	51	42	33	56	50
95th Queue (ft)	51	107	38	23	106	80	67	105	99
Link Distance (ft)	116	116	116		876	231	231		506
Upstream Blk Time (%)		0	0						
Queuing Penalty (veh)		1	0						
Storage Bay Dist (ft)				500				175	
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 2: Site Drive/Shopping E. Drive & M-36

Movement	WB	NB	SB
Directions Served	L	LTR	LTR
Maximum Queue (ft)	42	36	36
Average Queue (ft)	9	22	10
95th Queue (ft)	32	46	35
Link Distance (ft)		178	343
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	500		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9000: M-36 & BP Drive

Movement	EB	EB	SB
Directions Served	LT	T	LR
Maximum Queue (ft)	24	23	31
Average Queue (ft)	2	1	8
95th Queue (ft)	14	13	30
Link Distance (ft)	171	171	257
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9001: Motel Drive/Shopping W. Drive & M-36

Movement	EB	SB
Directions Served	L	LTR
Maximum Queue (ft)	28	40
Average Queue (ft)	4	18
95th Queue (ft)	19	44
Link Distance (ft)		353
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	500	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 1

Intersection: 1: Chilson Road & M-36

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	TR	L	TR
Maximum Queue (ft)	98	135	49	53	314	173	137	154	141
Average Queue (ft)	38	67	14	18	164	78	51	76	68
95th Queue (ft)	78	124	33	41	277	140	103	132	118
Link Distance (ft)	116	116	116		876	231	231		506
Upstream Blk Time (%)	1	1				0			
Queuing Penalty (veh)	1	1				0			
Storage Bay Dist (ft)				500				175	
Storage Blk Time (%)								0	0
Queuing Penalty (veh)								0	0

Intersection: 2: Site Drive/Shopping E. Drive & M-36

Movement	WB	NB	SB
Directions Served	L	LTR	LTR
Maximum Queue (ft)	35	68	44
Average Queue (ft)	10	26	11
95th Queue (ft)	33	55	37
Link Distance (ft)		178	343
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	500		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9000: M-36 & BP Drive

Movement	EB	EB	SB
Directions Served	LT	T	LR
Maximum Queue (ft)	17	10	31
Average Queue (ft)	1	0	9
95th Queue (ft)	9	7	31
Link Distance (ft)	171	171	257
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9001: Motel Drive/Shopping W. Drive & M-36

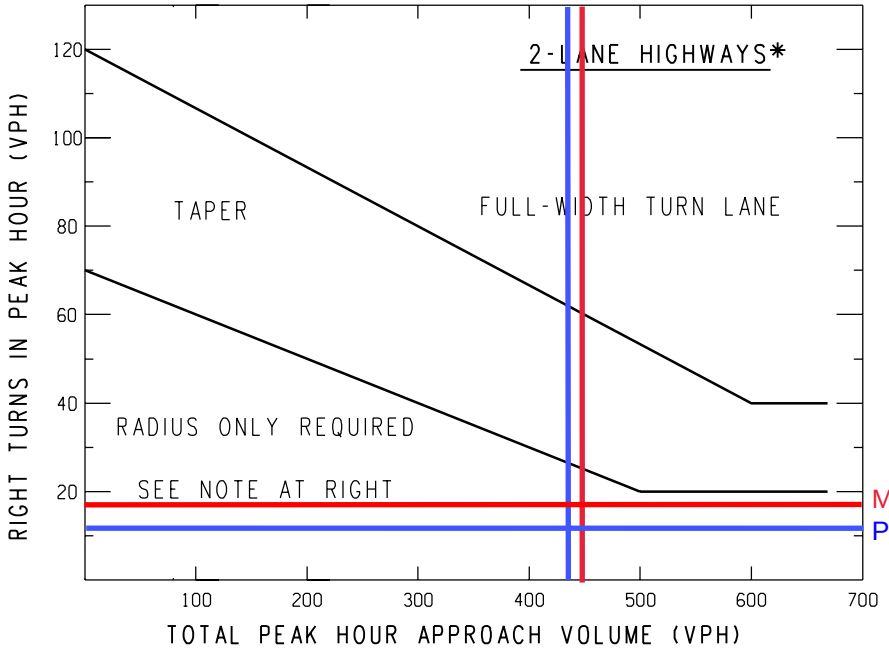
Movement	EB	WB	NB	SB
Directions Served	L	TR	LTR	LTR
Maximum Queue (ft)	27	5	31	58
Average Queue (ft)	5	0	3	21
95th Queue (ft)	23	3	17	50
Link Distance (ft)		274	201	353
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	500			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 3

M-36 and Site Drive

PM=431 MD=443



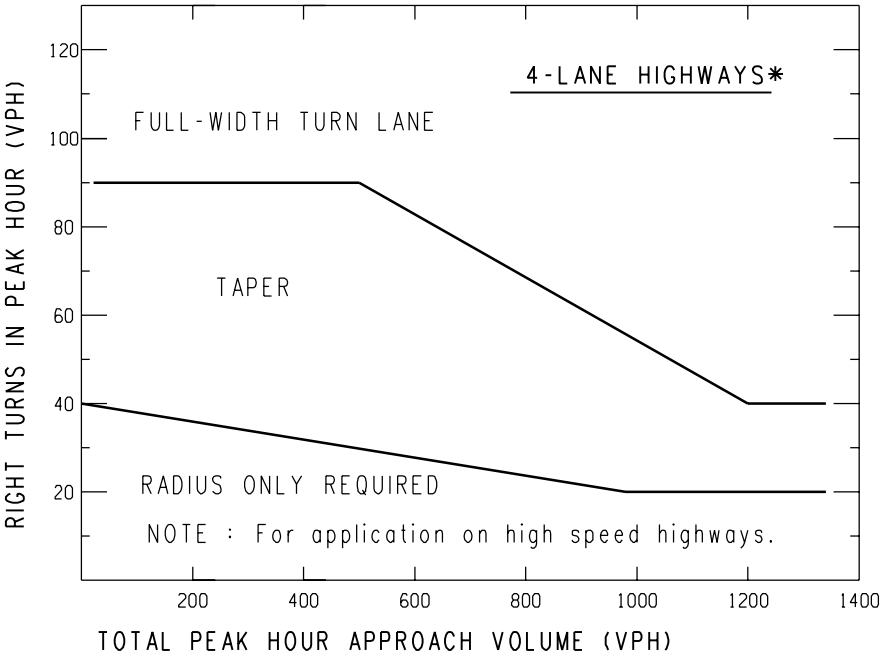
MD=17

PM=11

NOTE:
For posted speeds at or under 45 mph, peak hour right turns greater than 40 vph, and total peak hour approach less than 300 vph, adjust right turn volumes.

Adjust peak hour right turns = Peak hour right turns - 20

RT Treatment NOT Recommended



*If a center left-turn lane exists(i.e. 3 or 5 lane highway), subtract the number of left turns in approach volume from the total approach volume to get an adjusted total approach volume.

Sample Problem:
The Design Speed is 55 mph. The Peak Hour Approach Volume is 300 vph. The Number of Right Turns in the Peak Hour is 100 vph. Determine if a right turn lane is recommended.

Solution:
Figure indicates that the intersection of 300 vph and 100 vph is located above the upper trend line; thus, a right-turn lane may be recommended.

MDOT Michigan Department of Transportation

TRAFFIC AND SAFETY NOTE

TRAFFIC VOLUME GUIDELINES FOR RIGHT-TURN LANES AND TAPERS

DRAWN BY: MTS	08/05/2004	604A	SHEET 2 OF 2
CHECKED BY: JAT	PLAN DATE:		
FILE: K:/DGN/ts notes/Note604A tsn.dgn		REV. 08/05/2004	