# CHARTER TOWNSHIP OF VAN BUREN PLANNING COMMISSION AGENDA Wednesday, October 27, 2021 – 7:30 PM REMOTE MEETING –AGENDA

To mitigate the spread of COVID-19, protect the public health, and provide essential protections to Van Buren Township residents; this Van Buren Township's Planning Commission meeting will be conducted virtually as permissible under Public Acts of 2020 Act No. 254 and Declaration of a Health Emergency in Wayne County. To participate in the meeting electronically, the public may follow the instructions below.

Join by weblink: https://us06web.zoom.us/j/82474912929

• Or dial in by phone: 1 312 626 6799

Webinar ID: 824 7491 2929

For instructions on how to join a Zoom meeting, make a public comment, ADA information, and virtual meeting compliance from the State please click here.

CALL TO ORDER:		
ROLL CALL:		
APPROVAL OF AGEN	DA:	
MINUTES:		
ITEM #1:	Approval of minutes from the regular meeting of October 13, 2021.	
CORRESPONDENCE:		
PUBLIC HEARING:		
ITEM #1:	Case 21-033 – DTE Energy / 42061 Ecorse Road Rezoning Request	
	The applicant, Christopher Becker, on behalf of DTE Electric, seeks to rezone the property located at 42061 Ecorse Road from C-1 General	

LOCATION: 42061 Ecorse Road, tax parcel 83 041 99 0004 001, On the South side of

Business District, to M-1 Light Industrial.

Ecorse Road between Haggerty Road and Kirkridge Park Drive.

**ACTION ITEMS:** A. Open Public Hearing

B. Public CommentC. Close Public Hearing

### **OLD BUSINESS:**

### **NEW BUSINESS:**

### ITEM # 1 Case 21-033 – DTE Energy / 42061 Ecorse Road Rezoning Request

TITLE: The applicant, Christopher Becker, on behalf of DTE Electric, seeks to

rezone the property located at 42061 Ecorse Road from C-1 General

Business District, to M-1 Light Industrial.

LOCATION: 42061 Ecorse Road, tax parcel 83 041 99 0004 001. On the South side of

Ecorse Road between Haggerty Road and Kirkridge Park Drive.

ACTION ITEMS: A. Presentation by the Township staff and consultants.

B. Presentation by the applicant.

C. Public comment.

D. Planning Commission discussion.

E. Planning Commission considers recommendation on rezoning to the

Township Board of Trustees.

ITEM # 2 Case 21-029 – Subaru / 50255 Michigan Avenue Preliminary and Final

**Site Plan Review** 

TITLE: Applicant Spalding DeDecker on behalf of owner Subaru Research and

Development Inc seeks site plan approval to construct an approximately 1,900' long vehicle testing roadway connection to an existing research and

development site and related site improvements.

LOCATION: 50255 Michigan Avenue, tax parcel 83 021 99 0001 704. On the South side

of Michigan Avenue between Denton and Ecorse Road. The site is zoned

M-1 – Light Industrial.

ACTION ITEMS: A. Presentation by the Township staff and consultants.

B. Presentation by the applicant.

C. Public comment.

D. Planning Commission discussion.

E. Planning Commission considers preliminary and final site plan

approval.

ITEM #3: CASE 21-028 – Kojaian / 6615 Haggerty Road Preliminary Site Plan Review

TITLE: Applicant and owner Kojaian Van Buren Acquisitions, LLC seeks preliminary

site plan approval to construct a 66,450 square foot speculative industrial

building and related site improvements.

LOCATION: 6615 Haggerty Road, tax parcel 83 002 99 0026 706. On the east side of

Haggerty Road, North of Ecorse Road and South of Van Born Road. The

property is zoned M-1 – Light Industrial.

ACTION ITEMS A. Presentation by Township staff and consultants.

B. Presentation by the applicant.

C. Public comment.

D. Planning Commission discussion.

E. Planning Commission considers granting preliminary site plan approval.

### **GENERAL DISCUSSION AND UPDATES**

### **ADJOURNMENT**

# CHARTER TOWNSHIP OF VAN BUREN PLANNING COMMISSION - VIRTUAL MEETING ON ZOOM October 13, 2021 MINUTES - DRAFT

Prior to the start of the meeting, the public was given instructions on how to take part in the meeting.

Chairperson Thompson called the meeting to order at 7:32 p.m.

### **ROLL CALL:**

Present: Jahr, Kelley, Cullin, Barr, Atchinson, Budd and Thompson.

Excused: None.

**Staff:** Director Power, Director Best and Secretary Harman.

Planning Representatives: McKenna Associate, Vidya Krishnan and Fishbeck Associate, Paul

Kammer.

**Applicant(s) in Attendance:** Jeff Minter, Teresa Bruce and Bruce Brickman for the General Development Company, Wendy Baker, Chris Bluton and Uli Branstetter for Inter Plan, LLC and Craig Atchinson for Atchinson Ford.

Audience: Eight (8).

### **APPROVAL OF AGENDA:**

Motion Kelley, Jahr second to approve the revised agenda of October 13, 2021, noting the correction of the action items listed under new Business Item #3.

### **Roll Call:**

Yeas: Jahr, Kelley, Barr, Atchinson, Cullin, Budd and Thompson.

Nays: None. Absent: None. Motion Carried.

### **APPROVAL OF MINUTES:**

Motion Jahr, Cullin second to approve the regular meeting minutes of September 8, 2021 as presented.

### **Roll Call:**

Yeas: Atchinson, Cullin, Budd, Barr, Kelley, Jahr and Thompson.

Nays: None. Absent: None. Motion Carried.

#### **PUBLIC HEARING:**

ITEM #1: 21-021 - GENERAL DEVELOPMENT COMPANY, LLC - SPECIAL LAND USE

**REQUEST.** 

THE REQUEST IS FOR TRUCK SALES AND REPAIR BY KENWORTH/CMS COMPANIES, INC. APPLICANT, GENERAL DEVELOPMENT COMPANY, LLC ON BEHALF OF OWNER BELLEVILLE NORTH MARSH VENTURES, LLC SEEKS TO CONSTRUCT A +/- 59,820 SQ. FT. BUILDING WITH RELATED SITE IMPROVEMENTS FOR OUTDOOR VEHICLE SALES AND VEHICLE SHOWROOM USES WITH ACCESSORY VEHICLE REPAIR AND SERVICE. THE SITE IS ZONED C-2 (EXTENSIVE HIGHWAY BUSINESS DISTRICT). OUTDOOR VEHICLE SALES AND VEHICLE SERVICE (MINOR) IS A SPECIAL LAND USE IN THE C-2 ZONING DISTRICT.

LOCATION:

THE +/- 20.01-ACRE SITE IS PROPOSED TO BE A COMBINATION OF LAND FROM TWO EXISTING PARCELS LOCATED AT TAX PARCEL NUMBERS 83-060-99-0002-001 AND 83-060-99-0001-001, ON THE NORTH SIDE OF I-94 NORTH SERVICE DRIVE BETWEEN DEWITT AND MORTON TAYLOR ROADS.

Commissioner Budd asked to be recused from the Public Hearing and New Business Item numbers 1 and 2.

Motion Kelley, Jahr second to recuse Commissioner Budd from the public hearing and new business item numbers 1 and 2.

### **Roll Call:**

Yeas: Jahr, Kelley, Barr, Atchinson, Cullin, Budd and Thompson.

Nays: None. Absent: None. Motion Carried.

Motion Atchinson, Kelley second to open the public hearing.

### **Roll Call:**

Yeas: Cullin, Atchinson, Barr, Kelley, Jahr and Thompson.

Nays: None. Recused: Budd. Motion Carried.

Director Power gave a brief presentation and informed that this is an opportunity for members of the audience to ask questions or submit comments for the special land use request. There were no questions or comments from the audience.

Motion Kelley, Atchinson to close the public hearing.

### **Roll Call:**

Yeas: Jahr, Kelley, Barr, Atchinson, Cullin and Thompson.

Nays: None. Recused: Budd. Motion Carried.

### **NEW BUSINESS:**

ITEM #1: 21-021 - GENERAL DEVELOPMENT COMPANY, LLC - SPECIAL LAND USE REQUEST.

THE REQUEST IS FOR TRUCK SALES AND REPAIR BY KENWORTH/CMS COMPANIES, INC. APPLICANT, GENERAL DEVELOPMENT COMPANY, LLC ON BEHALF OF OWNER BELLEVILLE NORTH MARSH VENTURES, LLC SEEKS TO CONSTRUCT A +/- 59,820 SQ. FT. BUILDING WITH RELATED SITE IMPROVEMENTS FOR OUTDOOR VEHICLE SALES AND VEHICLE SHOWROOM USES WITH ACCESSORY VEHICLE REPAIR AND SERVICE. THE SITE IS ZONED C-2 (EXTENSIVE HIGHWAY BUSINESS DISTRICT). OUTDOOR VEHICLE SALES AND VEHICLE SERVICE (MINOR) IS A SPECIAL LAND USE IN THE C-2 ZONING DISTRICT.

LOCATION: THE +/- 20.01-ACRE SITE IS PROPOSED TO BE A COMBINATION OF LAND FROM TWO EXISTING PARCELS LOCATED AT TAX PARCEL NUMBERS 83-060-99-0002-001 AND 83-060-99-0001-001, ON THE NORTH SIDE OF I-94 NORTH SERVICE DRIVE BETWEEN DEWITT AND MORTON TAYLOR ROADS.

Director Power deferred the discussion to Principal Planner, Vidya Krishnan.

Vidya Krishnan of McKenna Associates presented her special land use review letter dated 9-22-21. The proposed use meets the general standards for consideration of special land use approval and most of the specific standards related to outdoor vehicle sales. Therefore, McKenna Associates recommends that the Planning Commission recommend approval of the proposed special land use to the Township Board of Trustees, subject to the following conditions:

- 1. Correction of the notation regarding inoperable vehicles are in the outdoor sales lot.
- 2. Verification that no large vehicles will be displayed in the front yard unless the vehicle is new.
- 3. Site plan approval.

Director Power noted that this is a unique business, truck sales and accessory repairs and there's a need to demonstrate the prominence of the commercial aspect of the use. This is predominantly a sales based use, primarily for the sale of new trucks and the accessory portion of the site is for truck repair. Director Power recommend the following conditions of approval to be met prior to the Van Buren Township Board of Trustee's consideration of special land use:

- Via either notes on the site plan or a letter in CSM/Kenworth letterhead, the applicant shall submit a description of revenue splits for new truck sales, new truck parts sales and truck service sales. This data may either be gathered from a comparable facility or as an estimate for the subject site. This information has been supplied by the applicant.
- The applicant shall submit an addendum to the site plan which shows trucks parked for service as being limited to areas to the north of the proposed building or west of the building adjacent to its service bays.
- The applicant shall note that at no time will trucks parked on the site for service purposes exceed 50% of truck parking spaces.
- The applicant shall note that no dismantled truck parts will be stored outdoors.

The applicant has addressed these items as requested prior to sending to the Township Board of Trustees for approval.

Bruce Brickman of General Development Companies, LLC on behalf of Kenworth/CMS Companies displayed a picture of what Kenworth wants to build, it's like an automobile dealership showroom except with Kenworth tractors as opposed to cars. Kenworth/CMS is the largest Kenworth dealership in the country.

No comments from the audience.

Commissioners commented that it's a nice looking facility and inquired about the following:

- In regard to parking, is there a distinction between tractors and components of the tractor trailer versus what a truck is in our ordinance? The parking of trucks under service in the back of the site, does that include any trailers? Bruce Brickman informed it is mostly just tractors, it is possible that a driver comes in with a service problem and does have a trailer attached. The site plan was displayed which depicts a handful of spaces in the back that are sized for trailer parking. Commissioner would like that clarified on the site plan.
- If an owner/operator comes in with a problem with a truck and a trailer, what provisions are there for them to stay overnight in tractors on the property? The applicant does not allow owners/operators to stay in tractors, prefer to not have them in the tractors for security reasons and will make arrangements with their companies for a local hotel.
- For overnight storage up to 48 hours with a trailer, does the applicant have any control of materials that can be stored (ex. hazmat)? Nothing specific in writing, hazmat materials are the responsibility of the load bearing company.
- Why has Kenworth decided to come to Van Buren Township? Mainly the location, a lot
  of customers are in the Detroit area and the visibility along the freeway in the greater
  Detroit area was desirable. The applicant also found the large parcel of land and heard
  the community was relatively easy to work with.
- Commissioner would like a better understanding of what the parts sales are. Are
  owner/operators coming to this location to pick up parts to take elsewhere or to have
  serviced on site? Bruce Brickman informed that it is a combination of both. The larger
  fleets that parts are sold to have their own service centers and some tractors will be
  serviced on site.

Motion Kelley, Jahr second to recommend the Township Board of Trustees grant special land use approval to the applicant, General Development Company, LLC for outdoor vehicle sales and associated uses for the properties located at parcel tax I.D. numbers 83-060-99-0002-001 and 83-060-99-0001-001, on the north side of I-94 North Service Drive, based on the analysis and subject to the conditions in the McKenna Associates review letter dated 9-22-21 and Director Power staff review letter dated 10-6-21.

### **Roll Call:**

Yeas: Barr, Atchinson, Cullin, Kelley, Jahr and Thompson.

Nays: None. Recused: Budd.

**Motion Carried. (Letters Attached)** 

ITEM #2: 21-021 – GENERAL DEVELOPMENT COMPANY, LLC – PRELIMINARY SITE PLAN.

THE REQUEST IS FOR TRUCK SALES AND REPAIR BY KENWORTH/CMS COMPANIES, INC. APPLICANT, GENERAL DEVELOPMENT COMPANY, LLC ON BEHALF OF OWNER BELLEVILLE NORTH MARSH VENTURES, LLC SEEKS TO CONSTRUCT A +/- 59,820 SQ. FT. BUILDING WITH RELATED SITE IMPROVEMENTS FOR OUTDOOR VEHICLE SALES AND VEHICLE SHOWROOM USES WITH ACCESSORY VEHICLE REPAIR AND SERVICE. THE SITE IS ZONED C-2 (EXTENSIVE HIGHWAY BUSINESS DISTRICT).

LOCATION:

THE +/- 20.01-ACRE SITE IS PROPOSED TO BE A COMBINATION OF LAND FROM TWO EXISTING PARCELS LOCATED AT TAX PARCEL NUMBERS 83-060-99-0002-001 AND 83-060-99-0001-001, ON THE NORTH SIDE OF I-94 NORTH SERVICE DRIVE BETWEEN DEWITT AND MORTON TAYLOR ROADS.

Director Power deferred the discussion to Principal Planner, Township Engineer and Fire Marshal reviews.

Vidya Krishnan of McKenna Associates presented her preliminary site plan review letter dated 9-22-21. The site plan includes most of the details required by the Zoning Ordinance. The items remaining to be addressed can be included for review with the final site plan submission. Therefore, McKenna Associates recommends that the Planning Commission grant preliminary site plan approval for the Kenworth dealership to be located at the above site, subject to the following conditions:

- 1. Notation of any required Township, County or State permits.
- 2. Approval of the proposed lot split.
- 3. Clarification regarding pavement stub shown at the north end of the parcel.
- 4. Incorporation of area for future access drive to the east.
- 5. Construction of a sidewalk across the entire frontage or contribution into the Township sidewalk fund, to be determined based on feasibility at the time of full engineering review.
- 6. Striping of crosswalks to the employee patio and along the front of the building.
- 7. Planning Commission approval of proposed substitution of landscaping along the frontage, i.e., ornamental grasses and perennials in lieu of shrubs.
- 8. Expanding of landscape islands to meet the minimum size requirement.
- 9. Incorporation of triangular projections of landscape area along the front yard display, similar to the east side of the site.
- 10. Detention pond approval by Wayne County and Township Engineer.
- 11. Submission of detailed photometric plan and manufacturer's details of light fixtures.
- 12. Planning Commission approval of proposed building materials and colors.
- 13. Revision of monument sign to include 24" tall masonry base as required by Ordinance.

Paul Kammer of Fishbeck Associates presented his review letter dated 9-21-21, recommending the Planning Commission grant preliminary site plan approval for engineering feasibility, subject to the comments listed in the review and in accordance with the Township's Engineering and Standards manual for the engineering review submittal. It is also recommended that the

applicant begin discussions with Wayne County, if they haven't already to determine their requirements for storm water management.

Director Power summarized Fire Marshal Lenaghan's review letter.

Bruce Brickman of General Development Companies, LLC informed that the consultants have covered all aspects and he has nothing further to add at this time. Teresa Bruce of General Development Companies, LLC discussed the building materials and displayed photos of sample materials to the Commission. The materials included a clear anodized ACM look shown on the rendering at the front of the building, brown split face block, insulated metal panel likely to be silver or brown and clear anodized look for the windows. Jeff Minter of General Development Companies, LLC informed that the goal for the company is for the building is to look like a high end car dealership and like to maintain that image on their properties.

Commissions had the follow questions and comments:

- Is the applicant having outdoor storage of anything other than new vehicles, such as the storage of parts? No, the applicant does not store anything outside. Anything that is stored outside is either for sale or coming in for service.
- Is there a plan for an onsite truck wash inside the bays? Generally there will be one bay labeled as a wash bay, where a pressure washer is used to degrease engines and for cleanup. There is not an automated truck wash.
- Is there any special engineering review required for the waste water handling of the truck wash? Township Engineer, Paul Kammer informed that will depend on degreasing and the oil water separation. This will be discussed further during the final engineering review prior to final site plan approval.
- Does the Quirk drain handle the water from the residents on Dewitt? The Township Engineer does not know off hand what goes into the Quirk drain. The stormwater management will be metered per township standards. Many County drains have not been maintained by the County, however have not seen any major issues along this stretch.
- Commissioner suggested to modify the ornamental grasses and hedges as the applicant will be displaying vehicles and is fine with modifying the landscape. Commissioners agreed with the landscape modification requested by the applicant.
- Sidewalk, is the applicant putting in the sidewalk along most of the frontage and considering putting into the sidewalk fund for the crossing over the drain? The applicant will extend the sidewalk as far west as they can go without getting into the slopes of the drain. The sidewalk fund will be used for the area of the connection over the drain for a later date when they are able to connect the sidewalk with National RV.

No comments from the audience.

Motion Jahr, Cullin second to grant the applicant, General Development Companies, LLC on behalf of owner Belleville North Marsh Ventures, LLC, preliminary site plan approval for the construction of a 59,820 square foot building with related site improvements for outdoor vehicle sales and vehicle showroom uses with accessory vehicle repair and service, located on the proposed 20.01 acre site, combination of tax parcel ID numbers 83-060-99-0002-001 and

83-060-99-0001-001, on the north side of the north I-94 Service Drive, between Dewitt and Morton Taylor Roads, based on the analysis and subject to the conditions detailed in the staff review letter dated 10-6-21, in McKenna Associates review letter dated 9-22-21 noting condition # 5 the contribution into the Township sidewalk fund, Fishbeck Associates review letter dated 9-21-21, undated Fire Marshal review letter.

### **Roll Call:**

Yeas: Atchinson, Cullin, Barr, Kelley, Jahr and Thompson.

Nays: None. Recused: Budd.

**Motion Carried. (Letters Attached)** 

ITEM #3: 21-019 – BURGER KING DRIVE-THRU – PRELIMINARY SITE PLAN.

THE APPLICANT, INTER PLAN, LLC ON BEHALF OF OWNER BRAUVIN NET INVESTMENTS, LLC SEEKS PRELIMINARY SITE PLAN APPROVAL TO CONSTRUCT A SECONDARY DRIVE-THRU LANE ALONG WITH LANDSCAPING AND ARCHITECTURAL IMPROVEMENTS ASSOCIATED WITH THE REMODEL OF A BURGER KING RESTAURANT.

LOCATION:

11550 BELLEVILLE ROAD, TAX PARCEL 83-081-99-0004-002. ON THE WEST SIDE OF BELLEVILLE ROAD BETWEEN SOUTH I-94 SERVICE DRIVE AND VENETIAN AVENUE.

Director Power deferred to the Principal Planner, Township Engineer and Fire Marshal reviews.

Vidya Krishnan of McKenna Associates presented her preliminary site plan review letter dated 9-21-21. The applicant has revised the plans to address several of the previous outstanding concerns; however, a few other changes remain to be made. Therefore, McKenna Associates recommends the Planning Commission grant preliminary site plan approval to the Burger King project located at 11550 Belleville Road, subject to the following conditions:

- Accommodating an RV/Semi parking space along the north side of the site and eliminating the space proposed on the southeast corner of the site or Planning Commission waiver of required RV parking spaces.
- 2. Truck maneuvering plan to show that the loading space is accessible.
- 3. Revised outdoor furniture design in compliance with BROD design requirements.
- 4. Installation of decorative BROD style light poles at the two access drives to the site.
- 5. Wayne County and Township Engineer approval of stormwater detention for the site.
- 6. Elimination of LED band from the building façade.
- 7. Submission of a revised sign packet with accurate calculations in compliance with the ordinance.

Paul Kammer of Fishbeck Associates presented his preliminary site plan review letter dated 9-21-21, recommending the Planning Commission grant the Burger King parking lot reconstruction preliminary site plan approval for engineering feasibility, subject to the comments in the review letter and in accordance with the Township's Engineering Standards manual.

Director Power presented the Fire Marshal's review letter dated 4-27-21, the plans are approved with the following exceptions:

- 1. Fire Department access shall be maintained throughout construction. NFPA 1 2018 16.1.4
- 2. Accumulations of combustible waste material, dust and debris shall be removed from the structure and its immediate vicinity at the end of each work shift or more frequently as necessary for safe operations. **NFPA 1 2018 16.2.2.1**

Chris Blurton of Inter Plan, LLC gave the presentation on behalf of the applicant. The applicant in general has no objections to the proposed conditions, specifically of the RV/semi parking space and will remove an additional 5 to 6 parking spaces to make that happen. The landscaping on the site is being upgraded significantly, a truck maneuver plan will be submitted at final site plan review and the applicant will address the outdoor furniture design. The only objection is the additional decorative light poles, there is an existing decorative light pole along Belleville Road. All of the applicants light poles are interior, the applicant is proposing to replace the fixtures with full cutoff dark sky compliant fixtures with no spillage onto the adjacent properties, refurbishing the existing poles and replacing the luminaires. The proposed composite trex dumpster gate will last much longer, looks just like the wood gate and will be better for long term maintenance. Uli Branstetter of Inter Plan, LLC informed that the trash can provided has a plastic lid, they can replace with a metal can as requested and have it added to the drawing. The LED light band is not just a corporate feature, however they are prepared to not have it lit if that is the request.

Resident is disappointed that the applicant will no longer be required to provide cross access with the property to the south. The site is already prepped for the cross access, believes that some sort of compromise should be made to create a more complete cohesive appearance and function for the properties. For example if the flow of traffic is a concern if there could at least be a one way passage through.

Vidya Krishnan provided her responses to the applicant, she is fine with the applicant installing the trex gate as it is more attractive and durable than a wooden gate. The request for the red band is fine as long as it is not lit. The trash can needs to be changed to meet DDA specifications. Ms. Krishnan is fine with applicants request to keep the light poles and replace the fixtures, however recommends that the fixture is fully downward directed.

Commissioner had the following questions and comments:

- Don't want to replace the interior floodlight, retrofit and submit with photometric? Yes, will submit an updated photometric plan.
- Have we seen a photometric plan? Yes, photometric plan meets requirements.
- What's the lumen output on the band and is the current band lit? The existing band is not an illuminated band. If the applicant is not going to light the band it will not affect the photometric for the site.
- Recommendation for the decorative BROD light style poles at the drive, the existing single pole is ok? Yes.
- The current property is very wet, is the drainage going to be updated with the parking lot modification? Chris Blurton informed that there is an existing detention system to store stormwater runoff. The applicant is not proposing to upgrade the existing underground system, however could bring a vacuum truck out to the site to clean out the existing storm

drain system. Paul Kammer identified that over time these detention systems get clogged with debris and leaves. The applicant is not increasing the impervious area to the site and they are not required to upgrade the system, could have them do a thorough cleanout of the system added at final site review. Commissioner would like to see the cleanout requirement added at final site plan review.

Motion Kelley, Atchinson second to grant the applicant Inter Plan, LLC preliminary site plan approval to construct a secondary drive-thru lane at the property located at 11550 Belleville Road, based on the analysis and subject to the conditions detailed in the McKenna Associates review letter dated 9-21-21, Fishbeck Associates review letter dated 9-21-21, Fire Department review letter dated 4-27-21, staff review letter dated 10-6-21, with some modifications to the requirements, where we are looking at allowing a modification to the decorative light pole requirement where the applicant would be allowed to use the existing pole and that we are requesting a fully downward director light, that we will permit the red band on the building so long as it is not lit, we are allowing the trex gate modification to the dumpster storage and that prior to final we would like to see some discussion on a future review regarding the stormwater maintenance.

### Roll Call:

Yeas: Jahr, Kelley, Barr, Atchinson, Cullin, Budd and Thompson.

Nays: None. Absent: None.

**Motion Carried. (Letters Attached)** 

ITEM #4: 21-027 – ATCHINSON FORD – TEMPORARY LAND USE APPROVAL.

THE APPLICANT, ATCHINSON FORD, ON BEHALF OF OWNER SPARTY INVESTMENTS, LLC IS REQUESTING A NEW APPROVAL OF A TEMPORARY LAND USE PERMIT TO PARK TURNED-IN LEASED AND NEW VEHICLE INVENTORY.

LOCATION: THE PROPERTY IS LOCATED AT 8705 BELLEVILLE ROAD, WHICH IS ON THE EASE

SIDE OF BELLEVILLE ROAD, NORTH OF TYLER ROAD.

Motion Atchinson, Budd second to recuse Commissioner Atchinson from new business item number 4.

### Roll Call:

Yeas: Cullin, Budd, Atchinson, Barr, Kelley, Jahr and Thompson.

Nays: None. Absent: None. Motion Carried.

Director Power presented his staff review letter dated 10-1-21. The temporary land use has been conducted for three years and no issues have been brought to the attention of the Township. The applicant has removed the existing vacant building on the site and has taken efforts to keep

the property well maintained. Based on this and the review criteria mentioned in the letter, staff is recommending approval of the temporary land use for Atchinson Ford to continue the temporary land use of parking vehicles at this property at 8705 Belleville Road. The recommendation is based on the review dated 10-1-21 and subject to the following conditions:

- 1. The applicant shall maintain setbacks with are consistent with the landscape buffering standards in the Township's Zoning Ordinance. These are as follows:
  - a. Front (East side adjacent to Belleville Road): 10' from property boundary.
  - b. Side (North side adjacent to Belleville Manor: 20' from property boundary.
  - c. Side (South side adjacent to Armstrong's Funland): 10' from property boundary.
  - d. Rear (West side adjacent to Belleville Manor): 20' from property boundary.
- Vehicles parked immediately adjacent to Belleville Road shall be parked with the front of the vehicle facing away from Belleville Road and adjacent properties in order to avoid headlight glare.
- 3. The site shall be maintained in a clean manner and trash will be property disposed of.
- 4. The hours of operation for the temporary vehicle parking area shall mirror the hours of operation for the Atchinson Ford dealership.
- That any exterior lighting or signs be reviewed and approved by the Director of Planning & Economic Development for consistency with the Zoning Ordinance, prior to their installation.
- 6. The applicant shall remove any sign panel that advertises a use that no longer exists on the site.
- 7. That the temporary land use permit is valid for a period of one year ending October 12, 2022.

Applicant, Craig Atchinson gave the presentation. Mr. Atchinson has made improvements to the property including replacing the fence around the property, adding additional gravel to the parking area and is in the process of removing the sign.

No comments from the Commission or the audience.

Motion Jahr, Cullin second to grant the applicant, Atchinson Ford on behalf of owner Sparty Investments, LLC, a temporary land use permit to park turned-in lease and new vehicle inventory, located at 8705 Belleville Road, on the east side of Belleville Road, north of Tyler Road, based on the analysis and subject to the conditions in Director Power's staff review letter dated 10-1-21.

### **Roll Call**:

Yeas: Cullin, Budd, Barr, Kelley, Jahr and Thompson.

Nays: None.

Recused: Atchinson.

**Motion Carried. (Letter Attached)** 

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ITEM #5: DISCUSSION: ZONING ORDINANCE TEXT AMENDMENT – OUTDOOR DINING AND

RETAIL.

Director Power announced that the Zoning Ordinance text amendment for outdoor dining and retail is a topic that the Planning Commission will be working on, considering additional language and flexibility. Director Power requested to postpone discussion until the next meeting.

Motion Kelley, Jahr second to postpose discussion to a future meeting.

**Roll Call:** 

Yeas: Budd, Cullin, Atchinson, Barr, Kelley, Jahr and Thompson.

Nays: None.
Absent: None.
Motion Carried.

ITEM #6: ADMINISTRATIVE SITE PLAN REVIEW: 21-037 – COX AUTOMOTIVE, LLC.

Director Power gave a brief presentation. The Building Department regularly reviews reoccupancy. The Cox Automotive site is a large site that at one time was owned by Wellington Steel. The occupant is moving their battery storage and battery testing, there are no site changes.

ITEM #7: ADMINISTRATIVE UPDATE: 19-038 – CAMPING WORLD REDEVELOPMENT.

Director Power provided an update on the Camping World redevelopment. The current project has reverted back to its original scope. The applicant had proposed to maintain the east wing of their existing building instead of demolishing it. The Planning Commission discussed this proposal at their regular meeting on 6-9-21, but did not take action on the request after the applicant withdrew their request for a formal site plan amendment prior to the meeting. With no action being taken on a site plan amendment, the previously approved plans for site redevelopment, which were given final site plan approval by the Planning Commission on 12-9-20, remain active. Project construction is ongoing and the demolition of the east wing of the building occurred in September 2021. If the applicant formally proposes any additional changes to the site plan or building, staff will review these changes and bring any necessary new site plan submittals forward to the Planning Commission at the appropriate time.

### **GENERAL DISCUSSION:**

Director Power informed the Commission and the audience that Chairperson Thompson is retiring and this is her last Planning Commission meeting. Commissioners thanked Chairperson Thompson for her many years of service to the Planning Commission, for being a great mentor and expressed their pleasure in working with her.

Commissioner Budd also informed that this will be Director Best's last meeting as he has accepted a new position with Pittsfield Township. Commissioners thanked Director Best for all his hard work and wished him the best in his next endeavor.

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No comments from the Commission or the audience.

### ADJOURNMENT:

Motion Cullin, Atchinson second to adjourn the meeting at 10:15 p.m. Motion Carried.

Respectfully submitted,

Christina Harman Recording Secretary

### **PLANNING & ZONING APPLICATION**

Case number 21-033 Date Submitted 9-7-2021

		INFORMATION
Applicant	Christopher W. Becker	Phone 313.235.0394
Address	One Energy Plaza	Fax christopher.becker@dteenergy.com
City, State	Detroit, Michigan	Zip 48226
E:mail	christopher.becker@dteenergy.com	Cell Phone Number 734.320.1711
Property Own	er DTE Electric	Phone 313.235.7846
Address	(if different than applicant) One Energy Plaza	Fax karen.bourdage@dteenergy.com
City, State	Detroit, Michigan	Zip 48226
Billing Contact Christopher W. Becker		Phone 313.235.0394
Address One Energy Plaza		Fax christopher.becker@dteenergy.com
City, State	Detroit, Michigan	Zip 48226
		INFORMATION
		INFORMATION
Name of Proj	ect Morton Substation	
Parcel Id No.	V125-83- 041-99-004-001	Project Address 42061 Ecorse Road
	Attach Legal Descripti	ion of Property
Property Loca	tion: On the south Side of Ecorse Ra	Road; Between Hagerty R
and Kirkridge	Street Road.	Size of Lot Width Depth
Acreage of Sit		2.14 acres Current Zoning of Site C-1
		to support existing electrical distribution system and
-	growth in the area.	to support existing electrical distribution system and
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### LEGAL DESCRIPTION:

LAND SITUATED IN VAN BUREN TOWNSHIP, WAYNE COUNTY, MICHIGAN.

PART OF THE NORTHEAST 1/4 OF SECTION 11, T. 3 S., R. 8 E., BEGINNING THENCE N. 89°21'00" E. 350.02 FEET FROM THE NORTH 1/4 CORNER OF SECTION 11; THENCE S. 01°24'00" E. 397.50 FEET; THENCE S. 45°11'45" E. 58.51 FEET; THENCE N. 89°21'00" E. 207.20 FEET; THENCE N. 01°24'00" W. 442.50 FEET; THENCE S. 89°21'00" W. 247.00 FEET TO THE POINT OF BEGINNING. EXCEPT THE NORTHERLY 60 FEET THEREOF.



### **MEMO**

TO: Van Buren Township Planning Commission

FROM: Dan Power– Director of Planning and Economic Development

RE: Case 21-033: DTE Electric

DATE: October 21, 2021

The Planning Commission will review the request by applicant Christopher Becker, on behalf of DTE Electric, seeks to rezone the property located at 42061 Ecorse Road (tax parcel 83 041 99 0004 001) from C-1 General Business District, to M-1 Light Industrial. The parcel is located on the South side of Ecorse Road between Haggerty Road and Kirkridge Park Drive. The rezoning request will facilitate a later application for site plan review for a substation on the subject property.

For your reference, this packet includes a report from the Township's Planning Consultant dated October 14, 2021, a complete rezoning application narrative from the applicant dated September 21, 2021, a preliminary site plan of the proposed substation for reference, and a copy of the public hearing notice for this rezoning request.

I look forward to assisting with this review. Thank you for your consideration.

Sincerely,

Dan Power, AICP

Planning and Economic Development Director

Public Services Department Charter Township of Van Buren

CC: Christopher Becker and Barbara Rykwalder – DTE Electric, Inc.

### **MCKENNA**



October 14, 2021

Planning Commission Charter Township of Van Buren 46425 Tyler Road Van Buren Township, MI 48111

Subject: VBT-21-033 RZ; DTE Morton Substation/42061 Ecorse Road; Application to Amend the

**Charter Township of Van Buren Zoning Map** 

### Dear Commissioners:

We have reviewed the application by Christopher Becker on behalf of DTE to rezone the following parcel illustrated on the map below from C-1 (General Business) to M-1 (Light Industrial). The site is located on the south side of Ecorse Road, west of Haggerty Road and has a tax parcel identification number: V-125-83-041-99-0004-001. The parcel is a rectangular piece of land with an area of approximately 2.14 acres.

Figure 1. Subject Site Location



Source: Nearmap



Planning and zoning law provides that government has a legitimate interest in maintaining compatibility of surrounding areas, protecting and preserving natural resources, and ensuring adequate infrastructure such as roads, water supply and sanitary sewage disposal. Adoption of a master plan and imposition of zoning restrictions to accomplish those interests, as well as to avoid overcrowding, preserve open space, and protect the aesthetics of an area of land are consistent with the Michigan Planning Enabling Act (P.A. 33 of 2008) and Michigan Zoning Enabling Act (P.A. 110 of 2006).

The Master Plan was originally adopted in 1989 and amended in 1999 (Single Family Residential Plan), 2000 (Ecorse-Haggerty Corridor Plan), 2001 (Grace Lake Area Plan), 2007 (South Side Master Plan), and 2010 (Belleville Road District Plan). The Master Plan is currently under review for a complete revision. <u>Our comments</u> on and analysis of this request follows.

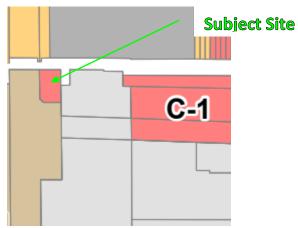
### **DESCRIPTION**

The table below summarizes the existing land use, zoning, and master plan designations in and around the subject site, according to the Master Plans and Zoning Ordinance.

	Existing Land Use	Zoning	Future Land Use Classification
Subject Site	Vacant wooded land	C-1 (General Business)	Office/Light Industrial
North	Warehouse/distribution center/ITC corridor	MT (Industrial Transportation) and R-1B (single Family)	Light Industrial/Industrial Trucking/Single Family Residential
South	ITC Corridor	RM (Multiple Family Residential)	Industrial Trucking
East	Warehouse	M-1 (Light Industrial)	Office/Light Industrial
West	ITC corridor	RM (Multiple Family Residential)	Multiple Family Residential

Specifically, the zoning of the subject site and surrounding areas are in the following figure:

Figure 2. Zoning of Subject Site and Surrounding Area



Source: Charter Township of Van Buren Zoning Map

### **REZONING STANDARDS**

Article 12, Chapter 5 of the Zoning Ordinance includes the procedures and standards for reviewing Zoning Ordinance amendment applications. Section 12.504(A) through (K) includes specific standards of review for the Planning Commission and Township Board of Trustees to consider prior to taking action on an amendment application. These standards are as follows:



(A) Consistency with the goals, policies, and objectives of the Master Plan and any sub-area plans. If conditions have changed since the Master Plan was adopted, consistency with recent development trends in the area shall be considered.

The Michigan Zoning Enabling Act requires a zoning ordinance to be based upon the Master Plan. Although the Master Plan was originally adopted in 1989, it has been amended in 1999 (Single Family Residential Plan), 2000 (Ecorse-Haggerty Corridor Plan), 2001 (Grace Lake Area Plan), 2007 (South Side Master Plan), and 2010 (Belleville Road District Plan).

The Master Plan designates the subject site and the abutting parcels to the east as office/light industrial district, while the parcels to the north and south are designated as light industrial/industrial trucking district. The proposed M-1 designation is consistent with that vision in the Master Plan, more so than the current commercial zoning of the property. The future land use plan map has clearly delineated commercial corridors in different parts of the Township and the subject site is not one of them. The M-1 district is intended to light industrial and office type of uses, while providing easy access with proximity to the freeway and interchanges. The use of the parcel for the DTE substation will provide for the utility needs of the major industrial development recently approved and anticipated for this corridor/area of the Township. A portion of the parcel to the north is Master Planned as single family residential and the parcel to the west is designated as multiple family residential; however, these parcels are occupied by the ITC transmission corridor and no construction within these corridors is possible. Therefore, there will be no residential use immediately abutting this site in any direction.

### (B) Consistency with the basic intent and purpose of this Zoning Ordinance.

The Purpose and intent of Section 1.102 of the Zoning Ordinance includes imposing regulations and restrictions governing the location and construction of structures and buildings to be used for business, industry, residence, social purposes, and other specified purposes. To that end, there are provisions for zoning districts, setbacks, building height, land use, parking and loading, access management, landscaping and screening, and environmental performance.

The subject site is a small 2.14-acre parcel located next to industrial warehouses and with a major drain along its frontage, which makes it challenging to build on for any commercial use and is located in an area of industrial-office uses. While having a commercial use at the site may be of service to the employees and tenants of the numerous industrial and office buildings in the area, the site is just a few miles from the main downtown Belleville Road corridor area with all types of commercial businesses. The use of the parcel to accommodate a utility substation is permitted in both eth current and proposed zoning districts.

(C) The capability of the street system to safely and efficiently accommodate the expected traffic generated by uses permitted in the requested zoning district.

The site's frontage along Ecorse Road has one lane in each direction with a center turn lane starting from the east end of the subject site to the light at the intersection of Ecorse and Haggerty Roads. The proposed DTE substation will not have any on-site employees and visits from a single employee only as required. The site would receive additional traffic only in the event of a major repair, maintenance, or upgrade. Therefore, the change of zoning will not result in any additional traffic on the abutting roadway on a regular basis.

(D) The capacity of the Township's utilities and services sufficient to accommodate the uses permitted in the requested district without compromising the health, safety, and welfare of the Township.

The proposed use of the site does not anticipate any use of water and sewer facilities, will add to electric supply of the Township and will be complying with the Township and County's stormwater detention requirements.



(E) That conditions have changed since the Zoning Ordinance was adopted or there was an error in the Zoning Ordinance that justifies the amendment.

We are not aware of any errors in the Zoning Ordinance or Zoning Map, so a rezoning cannot be granted on the grounds that there is an error to correct. The Township has granted a few requests for rezoning in the past few years, all based upon review of the Ordinance standards and the Master Plan. The applicant's current request for rezoning is also following the established and required process.

Over the last few years, Van Buren Township has experienced a high demand for new industrial development and expansions of existing industrial land uses. The addition of a substation to provide necessary electric power to support the growth in this area of the Township is in keeping with the Township vision.

- (F) That the amendment will not be expected to result in exclusionary zoning.

  In general, exclusionary zoning is a prohibition of a land use when there is a demonstrated need for the use in the community. The proposed use is permitted in the current C-1 and proposed M-1 districts. The applicant is seeking the rezoning to have the ability to develop the site under the site design guidelines for the M-1 District.
- (G) If a rezoning is requested, compatibility of the site's physical, geological, hydrological and other environmental features with the uses permitted in the proposed zoning district.
  Currently, the site is a vacant wooded lot. According to the Michigan Department of Environmental Quality (MDEQ) Wetlands Map Viewer, a significant portion of the site is covered in wetlands, some of which are regulated. According to FEMA, the site is an area of 'minimal flood hazard'. The applicant's proposal to construct a substation on the site will be presented to the Planning Commission for site plan approval and will be subject to review and approval by the Township Engineer and appropriate governing authorities.
- (H) If a rezoning is requested, compatibility of all the potential uses allowed in the proposed zoning district with surrounding uses and zoning in terms of land suitability, impacts on the environment, density, nature of use, traffic impacts, aesthetics, infrastructure and potential influence on property values.

The permitted uses and special land uses of the M-1 zoning district are listed in the following table:

PERMITTED USES	SPECIAL LAND USES
<ul> <li>Wholesale Sales</li> <li>Warehousing (excluding Distribution Centers)</li> <li>Manufacturing and Processing (Light)</li> <li>Laboratories, Minor</li> <li>Laboratories, Major</li> <li>Retail Dry Cleaning Plants and Laundries</li> <li>Public utility buildings, telephone exchange buildings, electric transformer stations and substations and gas regulator stations and including storage yards, when necessary to serve the immediate vicinity.</li> <li>High Tech, Data Processing, and Computer Centers</li> <li>Accessory Outdoor Industrial Storage</li> <li>Accessory structures and uses customarily incidental to the above permitted uses</li> <li>Indoor Recreation.</li> </ul>	<ul> <li>Automobile Wash Establishment, Automatic</li> <li>Drive-In Theaters</li> <li>Private Clubs</li> <li>Recreational Vehicle Storage Yards</li> <li>Regulated Uses (Tattoo establishments, pawnshops, pool and billiard halls, and massage parlors)</li> <li>Outdoor Storage of Building or Contracting Equipment and Supplies</li> <li>Instructional Services, Outdoor</li> <li>Truck Repair and Maintenance Facility, Minor</li> <li>Accessory Caretaker Dwelling</li> </ul>



The area of focus for this standard is the impact that the proposed M-1 zoning district will have on the abutting properties, specifically any single-family residential uses. As noted previously, while the site abuts RM zoning to the west and has R-1B zoning to the north, these parcels are occupied by the ITC transmission corridor and are not buildable. Therefore, there is no anticipated adverse impact on any abutting residential uses.

The M-1 District is intended to be located so that uses will be developed with limitations being placed on any negative impacts on adjacent uses from characteristics and conditions such as truck traffic, noise, glare, and other features of light industrial operation. The Zoning Ordinance has provisions for inclusion of greenbelts along property lines of non-residential uses and residential uses. In addition, aspects of landscaping, lighting and hours of operation are also strictly regulated. As noted, the applicant will be applying for full site plan approval from the Planning Commission prior to construction the proposed substation on the parcel.

(I) If a rezoning is requested, the boundaries of the requested rezoning district will be reasonable in relationship to surrounding zoning districts, and construction on the site will be able to meet the dimensional regulations for the requested zoning district.

If the site is rezoned to M-1, the boundaries of this requested district would be contiguous with the larger parcel to the east, which is zoned M-1. As noted previously the proposed use is permitted under the current zoning also; however, the applicant aims to preserve the wetlands/natural features on the site with minimal impact. The required front yard setback for the C-1 district is 75 feet, while the front yard setback for the M-1 district is 50 feet. The applicant proposes to design the site in compliance with the regulations for the M-1 District.

(J) If a rezoning is requested, the requested zoning district is considered to be more appropriate from the Township's perspective than another zoning district.

Based on market trends, there is not as much demand for commercial properties as there is for Industrial and office based uses. It is entirely appropriate to change the zoning of the subject site from commercial to M-1 to be in conformance with the development trends in the area. The applicant will be seeking site plan approval for the construction of an electric substation. Issues related to parking, screening, landscaping, fencing etc. will be reviewed with site plan approval.

(K) If a rezoning is requested to allow for a specific use, rezoning the land is considered to be more appropriate than amending the list of permitted or special land uses in the current zoning district to allow the use.

As previously noted, the proposed use is permitted under the current zoning designation of the parcel too. The applicant is seeking a rezoning to be consistent with the Master Plan and allow them the ability to develop the site under M-1 district regulations.

(L) If a rezoning is requested, the requested rezoning will not create an isolated or incompatible zone in the neighborhood.

The existing C-1 zoning of the parcel is an isolated zone in the area. The site is contiguous with M-1 zoning to the east and similar industrial zoned/used parcels to the north and south. Therefore, the proposed rezoning is not creating an isolated or incompatible zone in the neighborhood. The proposed rezoning is consistent with the office/industrial designation of the parcel and the surrounding properties in the future land use plan. The proximity of the site to the other industrial uses makes the proposed zoning to M-1 a good fit into the neighborhood.



### **RECOMMENDATION**

At this time, the application to rezone the subject site from C-1 to M-1 meets the following standards of Section 12.504(A) through (K) of the Zoning Ordinances:

- 1. Section 12.504(A). The proposed rezoning is consistent with the goals, policies, and objectives of the Master Plan and its subsequent amendments. The proposed M-1 zoning designation is consistent with the office/industrial designation envisioned in the Master Plan for the site and abutting properties.
- 2. Section 12.504(B). The proposed rezoning is consistent with the intent to the zoning ordinance and the existing development pattern of the area.
- 3. Section 12.504 (C). The site has frontages on a major thoroughfare, even though the proposed use is likely to generate minimal traffic.
- 4. Section 12.504 (D). The proposed use of the site does not require water or sewer services and will contribute positively to the electric capacity of the Township.
- 5. Section 12.504(E). Van Buren Township has experienced a high demand for additional industrial development and expansions of existing industrial land uses. The proposed use of the site for a substation will support the existing and future growth of the area.
- 6. Section 12.504 (F). The proposed rezoning is not causing any exclusionary zoning.
- 7. Section 12.504 (G). Although the site has wetlands, the applicant will be designing the site plan to ensure minimal disturbance and will obtain any necessary approvals from EGLE at the time of site plan review.
- 8. Section 12.504 (H). The uses permitted by right and special land use in the proposed M-1 zoning district is likely to have less adverse impacts on the adjacent neighborhood, than developing it under the current C-1 zoning designation.
- 9. Section 12.054(I). The site is challenging for any development owing to its narrow frontage and required setbacks for the current C-1 District.
- 10. Section 12.054(J). Given the possible options, we believe the M-1 designation is the most appropriate designation.
- 11. Section 12.504 (K). The proposed substation use is permitted under the current C-1 and proposed M-1 zoning designation. The applicant is seeking rezoning to maintain consistency with the Master Plan and develop the site under setback guidelines of the M-1 District.
- 12. Section 12.054(L). The proposed M-1 zoning of the site will be compatible with the uses currently existing around it. Although the parcel abuts RM zoning to the west and R-1B zoning to a portion of the north, these parcels are occupied by the ITXC transmission corridor and are not buildable.

Therefore, we recommend that the Planning Commission recommend approval of the requested amendment to the Zoning Ordinance to rezone the subject property from C-1 to M-1 designation, to the Township Board of Trustees.

Respectfully,

**McKENNA** 

Vidya Krishnan

Senior Principal Planner

Cc: Dan Power, Director of Planning and Economic Development



Dan Power, Director of Planning and Economic Development Department of Public Services
Charter Township of Van Buren
46425 Tyler Road
Van Buren Township, MI 48111
<a href="mailto:dpower@vanburen-mi.org">dpower@vanburen-mi.org</a>.
734.699.8913

Mr. Power,

To facilitate the construction of a 120 – 13.2 kV, 80 MVA nine circuit substation at 42061 Ecorse Road DTE is requesting that the property at 42061 Ecorse Road whose legal description is:

Land situated in Van Buren Township, Wayne County, Michigan. Part of the northeast 1/4 of section 11, T. 3. S., R. 8 E., beginning thence N. 89°21′00″ E. 350.02 feet from the north 1/4 corner of section 11; thence S. 01°24′00″ W. 397.50 feet; thence S. 45°11′45″ E. 442.5 feet; thence S. 89°21′00″ W. 247.00 feet to the point of beginning. Except the northerly 60 feet thereof.

be rezoned from C-1, "General Industrial" to M-1, "Light Industrial"

In addition, while this matter is before the Planning Commission, DTE requests if the a "Site Investigation Report" per: "Charter Township of Van Buren Zoning Ordinance" as amended 8 Feb 2021, Section 12.204, "Site Investigation Report" will be required for the project at 42061 Ecorse Road.

The property at 42061 Ecorse Road is currently zoned C-1, "General Business District" per the "Zoning Map" for the Charter Township of Van Buren dated 30 Oct 2020 as shown below.

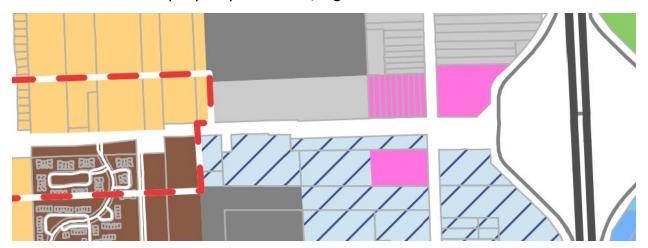


An "...electric transformer stations and substations (excluding external storage)..." is a principal permitted use in zoning C-1 [Ref: "Charter Township of Van Buren Zoning Ordinance" as amended 8 Feb 2021, Table 1: Table of Permitted Land Uses and Special Land Uses by District and Section 3.111, "C-21 General Business District"].

The property immediately west of the proposed substation is currently zoned M-1, "Light Industrial". The property to the north, on the other side of Ecorse, is zoned M-T, "Industrial Transportation". The property to the west and south of the property contains ITCs 120 kV transmission lines.

The front yard setback for C-1 zoning is seventy five feet (75 ft) [Ref: "Charter Township of Van Buren Zoning Ordinance" as amended 8 Feb 2021, Section 3.111, "C-21 General Business District" (E) Dimension Regulations]. As there are preemergent wetlands in the southwest corner of the property, DTE reached out to the Planning Department to look at ways to minimize the impact on this preemergent wetland by reducing this setback.

The "Future Land Use" for the Charter Township of Van Buren date 23 Dec 2020 identifies the property as Office/Light Industrial as shown below.



Per the 2020 Master Plan Office/Light Industrial is intended to "...encourage industrial and office development consistent with the higher quality character of the area. The classification encompasses typical "flex" industrial uses and development. The corresponding zoning for this area is O-T, "Office Technology" or M-1, "Light Industrial". Electric transformer stations and substations without storage are a normal permitted use for M-1 but is not permitted for OT [Ref. "Charter Township of Van Buren Zoning Ordinance" as amended 8 Feb 2021, Section 3.105 (D), "Required Conditions of the OT, Office Technology District" and Section 3.115, "M-1, Light Industrial District"].

So, consistent with the future land use plans for Charter Township of Van Buren and the existing permitted uses of the property, DTE is requesting that the property at 42061 Ecorse Road whose legal description is:

Land situated in Van Buren Township, Wayne County, Michigan. Part of the northeast 1/4 of section 11, T. 3. S., R. 8 E., beginning thence N. 89°21′00″ E. 350.02 feet from the north 1/4 corner of section 11; thence S. 01°24′00″ W. 397.50 feet; thence S. 45°11′45″ E. 442.5 feet; thence S. 89°21′00″ W. 247.00 feet to the point of beginning. Except the northerly 60 feet thereof.

be rezoned M-1, "Light Industrial"

To further support this rezoning request, DTE is addressing each of the considerations that the Planning Commission and Township Board of Trustees must address as per "Charter Township of Van Buren Zoning Ordinance" as amended 8 Feb 2021, Section 12.504, "Standards of Review for Amendments": Note: Several of the individual items have been combined.

### **Consistency with the Master Plan with Zoning Ordinance**

As stated above the Master Plan has the property classified as Office/Light Industrial which can be zoned OT, "Office Technical" or M-1, "Light Industrial". The current zoning C-1, "General Industrial" has "...electric transformer stations and substations (excluding external storage)..." as a normal permitted use. M-1, "Light Industrial" also has "...electric transformer stations and substations (excluding external storage)..." as a normal permitted use.

### **Capability of the Street System**

The substation operates 24/7, but a single DTE or ITC operator only visits the site as needed and at least once a month for substation inspection by each company. When routine maintenance, equipment failure, capital maintenance, etc. is required, multiple DTE and its contractor's personnel will be present and may include large equipment including heavy transport trucks and cranes. These larger staff presences will be infrequent, being required approximately once over each ten-year (10 yr) period. This the rezoning will not appreciably impact the street system.

### Capacity of the Township's Utilities and Services

The substation being proposed will not utilize water or sewerage, will increase the electrical supply to the township, and will have a stormwater management system to control the stormwater load on Strong Drain.

### **Exclusionary Zoning**

The requested zoning M-1, "Light Industrial" extends the existing M-1 zoning to the east of the property so no exclusionary zoning is created.

### **Compatibility with Permitted Uses**

The current zoning C-1, "General Industrial" has "...electric transformer stations and substations (excluding external storage)..." as a normal permitted use.. M-1, "Light Industrial" also has "...electric transformer stations and substations (excluding external storage)..." as a normal permitted use.

### **Compatibility with Surrounding Uses and Surrounding Zoning**

The property immediately west of the proposed substation is currently zoned M-1, "Light Industrial". The property to the north, on the other side of Ecorse, is zoned M-T, "Industrial Transportation". The property to the west and south of the property contains ITCs 120 kV transmission lines. The rezoning is compatible with the surrounding uses.

### Requested Zoning is Appropriate and is not for Specific Use

The current zoning C-1, "General Industrial" has "...electric transformer stations and substations (excluding external storage)..." as a normal permitted use.. M-1, "Light Industrial" also has "...electric transformer stations and substations (excluding external storage)..." as a normal permitted use.

### **Isolated or Incompatible with the Neighborhood**

The property immediately west of the proposed substation is currently zoned M-1, "Light Industrial". The property to the north, on the other side of Ecorse, is zoned M-T, "Industrial Transportation". The property to the west and south of the property contains ITCs 120 kV transmission lines. The rezoning is compatible with the surrounding uses.

If there are any questions or concerns with this application, please feel free to contact me at christopher.becker@dteenergy.com or 734.320.171one.

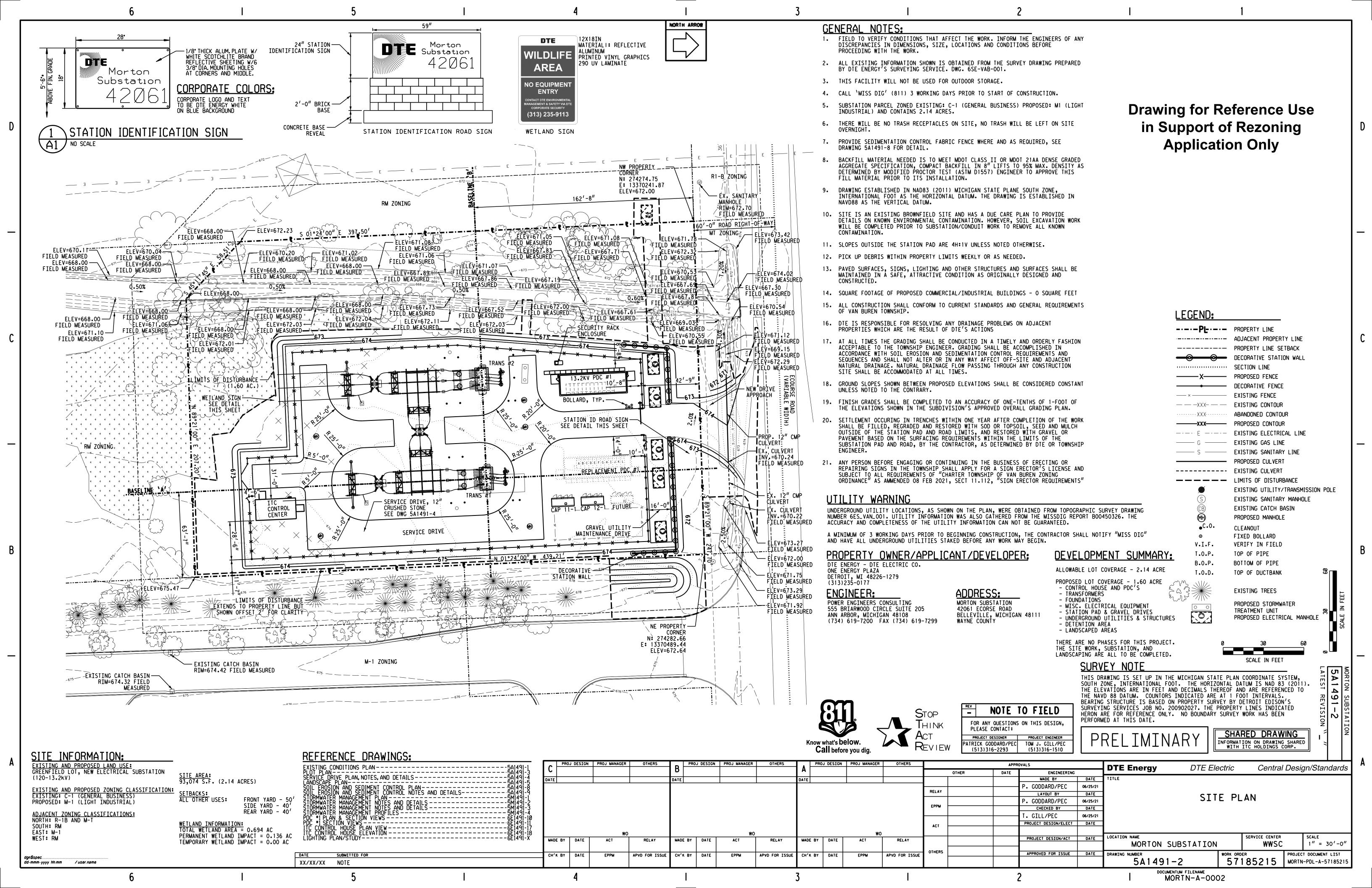
Respectfully,

Christopher W. Becker /s/

Christopher W. Becker, Manager of Engineering DTE – Major Enterprise Projects – Distribution

### Attachments:

- 1. Planning and Zoning Application dated 7 Sept 2021)
- 2. Check No. 53928 dated 17 Sep 2021, Payable to Charter Township of Van Buren Belleville MI in the Amount of \$1,230.00 (reference only, sent separately)



## CHARTER TOWNSHIP OF VAN BUREN PLANNING COMMISSION REMOTE PUBLIC HEARING

Notice is hereby given that the Charter Township of Van Buren Planning Commission will hold a public hearing on **October 27, 2021 at 7:30 p.m.** To mitigate the spread of COVID-19, protect the public health, and provide essential protections to Van Buren Township residents; this Van Buren Township's Planning Commission meeting will be conducted virtually as permissible under Public Acts of 2020 Act No. 254 and Declaration of a Health Emergency in Wayne County. To participate in the meeting electronically, the public may follow the instructions below. The Planning Commission will consider the following request:

 Case 21-033: A request by Christopher W. Becker on behalf of owner DTE Electric to rezone a 2.14-acre property located at 42061 Ecorse Road (Parcel ID # V- 83 041 99 0004 001) from C-1, General Business District to M-1, Light Industrial.

Members of the public may access the agenda materials via the Township website – <a href="www.vanburen-mi.org">www.vanburen-mi.org</a> beginning October 22, 2021. On this website, members of the public will also gain access to means of participating in the electronic meeting, including a unique Zoom weblink and dial-in phone number with a meeting ID for meeting videoconference or teleconference access. The meeting will be available to view live on the Van Buren Township YouTube Channel which can be reached from the live meeting link located on the Van Buren Township website home page (<a href="www.vanburen-mi.org">www.vanburen-mi.org</a>). Closed captioning will be available after YouTube fully renders meeting video.

A complete **procedure for public comment by electronic means** is provided on a guide which is accessible on the Van Buren Township website (<a href="www.vanburen-mi.org">www.vanburen-mi.org</a>). Participants may also choose to submit written comments that will be read into record during public comment by the Chairperson. Submit any written comments via e-mail to <a href="dopower@vanburen-mi.org">dopower@vanburen-mi.org</a>. Members of the public may also contact <a href="dopower@vanburen-mi.org">dopower@vanburen-mi.org</a> to be connected with members of the Planning Commission prior to the meeting by e-mail.

To comply with the Americans with Disabilities Act (ADA), any citizen requesting accommodation to attend a meeting, and/or to obtain this notice in alternate formats, please contact the Clerk's Office at 734.699.8900 extension 9205.

Posted: October 2, 2021 Published: October 7, 2021

82 83 006 99 0006 703 INTERNATIONAL TRANSMISSION COMPANY CROSSROADS DISTRIBUTION CENTER LLC INTERNATIONAL TRANSMISSION COMPANY TAX DEPARTMENT 27175 ENERGY WAY NOVI MI 48377

 82 83 041 99 0002 702
 82 83 041 99 0002 703
 82 83 041 99 0004 001

 ORCHARD CLEMSON, VBT LLC
 ASHLEY CROSSROADS SOUTH LLC
 DTE ELECTRIC COMPANY

 400 WEST NORTH STREET, SUITE 112
 2575 S HAGGERTY RD STE 500
 PROPERTY TAX DEPARTMENT

 RALEIGH NC 27603-4373
 CANTON MI 48188-2678
 PO BOX 33017

82 83 008 99 0002 704 2575 S HAGGERTY RD STE 500 CANTON MI 48188

82 83 041 99 0001 002 TAX DEPARTMENT 27175 ENERGY WAY NOVI MI 48377

DETROIT MI 48232

### **PLANNING & ZONING APPLICATION**

Case number 21-029 Date Submitted 8/13/2021

APPLICANT INFORMATION				
Applicant	Spalding DeDecker	Phone (248) 844-5400		
Address	905 E South Blvd	Fax		
City, State	Rochester, MI			
E:mail		_ Cell Phone Number <u>(517)</u> 740-7059		
<b>Property Owner</b>		Phone (734) 263-9445		
Address	(if different than applicant)	Fax		
City, State	Van Buren Township, MI	Zip 48111		
Billing Contact _		Phone <u>248-542-2570</u>		
Address 21717	Republic Ave	_ Fax		
City, State	Oak Park, MI	Zip 48237		
	SITE/ PROJECT IN	FORMATION		
Name of Projec	Subaru Vehicle Evaluation Area			
Parcel Id No. V1	25-83- <b>021-99-0001-704</b>	Project Address 50255 Michigan Ave		
	Attach Legal Description of			
Property Location	on: On the South Side of Michigan Av	e Road; Between Ecorse Road		
	Street Road.	Size of Lot Width 3,187' Depth 1,363'		
	79.98 Total Acres of Site to Review 4.			
	on: Proposed roadway connection to the			
Troject Bescript	phase 1 of development			
Is a re-zoning of	this parcel being requested?	YES (if yes complete next line) NO		
Current Zoning	of Site	Requested Zoning		
	SPECIAL PERMIT IN	NFORMATION		
Does the Propose	ed Use Require Special Approval?	YES (if yes complete next line NO		
Section of Zoning Ordinance for which you are applying				
	· · · · · · · · ·			
Is there an official	al Woodland within parcel?	Woodland acreage		
List total number	r of regulated trees outside the Woodland area?	Total number of trees		
Detailed descript	tion for cutting trees			
If applicable app	lication MUST be accompanied with a Tree Sur	vey or statement of no trees, which incorporates all the		
requirements list	ed in Section 4.45 of Zoning Ordinance 6-2-92	os amended		



### **MEMO**

TO: Van Buren Township Planning Commission

FROM: Dan Power– Director of Planning and Economic Development

RE: Case 21-029: Subaru Test Track

DATE: October 21, 2021

The Planning Commission will review the request by applicant Spalding DeDecker on behalf of owner Subaru Research and Development Inc for site plan approval to construct an approximately 1,900' long vehicle testing roadway connection to an existing research and development site, along with related site improvements. The subject parcel is located at 50255 Michigan Avenue, tax parcel 83 021 99 0001 704. The site is zoned M-1 – Light Industrial.

The site is affiliated with a 63,574 square foot research and development facility that was approved by the Van Buren Township Planning Commission in 2018 and constructed in 2019-2020. The proposed test track under the current application is subject to a separate site plan review process. Staff recommends that the Planning Commission consider recommending a combined preliminary and final site plan approval for this project.

For your reference, this packet includes a completed application form from the applicant and reports from the Van Buren Township Planning Consultant, Township Engineer and Fire Marshal. The packet also includes a 17-page civil sheet set with detailed drawings showing the design of the track and adjacent grading and landscaping.

I look forward to assisting with this review. Thank you for your consideration.

Sincerely,

Dan Power, AICP

Planning and Economic Development Director

Public Services Department Charter Township of Van Buren

CC: Jeremy Schrot, PE – Spalding DeDecker

Ryan Plum – Subaru Research and Development, Inc.

### MCKENNA



October 12, 2021

Planning Commission Charter Township of Van Buren 46425 Tyler Road Belleville, Michigan 48111

Subject: VBT-21-029 Subaru Test Track/ 50255 Michigan Avenue; Site Plan Review #2

Revised Site Plans Dated September 24, 2021.

### Dear Commissioners:

The applicant, Subaru has submitted a request to construct a test track on a parcel with their existing research facility and laboratories. The applicant received site plan approval from the Planning Commission in late 2018 to build a 2-story 63,574-square foot research and development facility building and associated site improvements. The 75-acre site is located on the south side of Michigan Avenue, bound by single family residential neighborhoods to the east and Conrail railroad to the south, and is commonly referred to as the "Harold Smith Farm" parcel.

The approval at the time referenced a 'future test track' on the south side of the site. At this time the applicant has submitted plans to construct the test track on the site. We have reviewed the site plan based on Zoning Ordinance standards and sound planning and design principles. Our comments are as follows (items requiring changes or additional information are <u>underlined</u>):



Source - Nearmap - Sept 27, 2021

#### **COMMENTS**

1. **Zoning and Use.** The site is zoned M-1 (Light Industrial) district. The surrounding zoning includes M-2 (General Industrial) to the south, R-1C (Single Family Residential), C-1 (General Business) and RMH (Mobile Home Park) to the north across Michigan Avenue, R-1C (Single Family Residential) to the east and RMH (Mobile Home Park) and M-1 (Light Industrial) to the west.

The research and development facility with laboratories was permitted as principal land use in the M-1 district per Section 3.104 of the Zoning Ordinance. The test track is a use accessory to the principal permitted use and is permitted by right, subject to compliance with Zoning Ordinance standards for screening. The applicant has included an overall site plan, which shows the location of the test track on the south side of the site, abutting the railroad tracks.

- Vehicular Access. The test track is located on the south side of the site and will be accessed from an existing paved area. The proposed test track is 1,900 feet long, has a width of 24 feet and ends in a culde-sac.
- 3. Pedestrian Circulation. No sidewalks are required as part of this project.
- **4. Parking.** No designated parking spaces are required for the proposal. The plan notes that a maximum of 3 vehicles will be at the test site at any given time. The existing paved area has ample space for vehicle holding while being tested.
- 5. Landscaping and Screening. The plan notes headlight testing to take place from dusk to 10 pm. The site has an existing row of evergreen trees located around the entire proposed test track area. Tio the west (direction of track) the property has a berm planted with trees and significant grade which provides screening. To the south the track abuts the railroad and to the east the site is screening with existing tree cover. We find the existing vegetation sufficiently dense to screen the use from the neighboring residential uses to the east and west. A copy of the approved landscape plan has been submitted.
- **6. Tree Removal Permit.** The test track area does not have any trees; therefore, this requirement is not applicable.
- 7. Trash Removal. The proposed test track use is not likely to generate any additional trash.
- **8. Stormwater Detention.** The site plan indicates a proposed drainage area within the site. <u>Storm water</u> detention calculations are subject to review and approval by Wayne County and the Township Engineer.
- 9. Lighting. Per sheet C4.1 the test track will operate 9 am 5pm. Headlight testing will occur from dawn till 10 pm. The applicant has clarified that no additional site lighting will be added as part of this project.
- **10. Noise Mitigation.** Per Section 8.102 (K) of the Zoning Ordinance, maximum permitted noise levels adjacent to a residentially zoned parcel are 67 dBA, and adjacent to an industrial zoned parcel is 80 dBA. Per the plan submitted noise generated from the testing will be in the range of 72 81 dB, with speed of vehicles averaging 25 35 mph, up to a maximum of 80 mph. Note #5 on Sheet C4.1 states that any testing on the site will comply with the noise limits established in the Zoning Ordinance. To date the Township has received no code enforcement related complaints from the use on this site.



- 11. Signage. The site plan does not include any proposed new signage at this time.
- 12. Fencing. The site already has fencing. No new fencing is proposed at this time.

#### **RECOMMENDATION**

The proposed project is an accessory to a previously permitted use and does not alter the character or layout of the site. All of the site plan related concerns have been addressed at this time. Therefore, we recommend that the Planning Commission grant preliminary and final site plan approval for the Subaru test track to be constructed at the site, subject to the following conditions:

1. Approval of storm water detention requirements by Wayne County and Township Engineer.

Respectfully, McKENNA

Vidya Krishnan Senior Principal Planner Hunter Whitehill Associate Planner

Hunter Whitehill

cc: Dan Power, Director of Planning & Economic Development Matt Best, Director of Public Services Paul J. Kammer, FTCH, Township Engineers David McInally, Van Buren Township Fire Chief







October 12, 2021 Fishbeck Project No. 211242 VBT Project No. 21-029

Kris Schlutow Interim Director of Water and Sewer Van Buren Township 46425 Tyler Road Van Buren Township, MI 48311

# Subaru Test Track Preliminary Engineering and Final Site Plan Review

Dear Director Schlutow:

At the request of Van Buren Township (Township), Fishbeck has reviewed the revised Preliminary and Final Site Plan dated September 29, 2021 submitted to the Township for the preliminary and final site plan review for the proposed Subaru Test Track located at 50255 Michigan Avenue.

This proposed project includes construction of a test track at the recently constructed Subaru Facility, which includes the construction of approximately 1900 length foot of a paved 2-lane test track, a paved roundabout, drainage improvements, curb and gutter, and various other site plan improvements. According to plan notes, the test track will be for advance driver-assistance systems. No overnight parking will occur on the test track.

Our review comments are as follows:

### General

The following items are general requirements established as part of the *Engineering Standards Manual, Charter Township of Van Buren* (April 2014). The applicant must include the following items as part of the construction plans:

- 1. Soil boring information, including the ground water elevations, must be provided. Previous borings from Phase 1 of the project shall be included in the plans.
- 2. The Title Sheet should include revision dates.
- 3. Plans should include a Soil Erosion and Sedimentation Control plan.
- 4. The 'Phase 2' called out on sheet C6.1 is a bit confusing, as there is no other reference to "Phase 2", rather it's just referred to as the "Subaru Vehicle Evaluation Area". Rephrase or delete to specify that the work is done as part of this project.

### **Water Main Service**

**Existing:** The Township Geographic Information System (GIS) records indicate an existing ductile iron 12-inch water main along the north and east sides of the existing Subaru building and an existing 8-inch ductile iron water main along the west side of the existing Subaru building.

Proposed: The proposed plans do not show any water main or water service improvements.

### **Sanitary Sewer**

**Existing:** The Township GIS records indicate there is an existing 10-inch PVC Truss Pipe gravity-fed sanitary sewer pipeline running along the north side of the existing Subaru facility.

**Proposed:** The plans do not show any sanitary sewer main or service improvements.

### **Storm Sewer**

**Existing:** The previous Subaru Facility Site Plans (VBT Project No. 18-021) indicates the drainage of the existing site consists of a combination of overland flow through swales, earthen berms, and open-ended culverts; an underground storm drainage collection system that intercept flow from paved areas; and a detention basin system that collects all flow through a forebay. The outlet for the site discharges into the existing 12-inch storm system (enclosed Denton Drain) that also collects runoff from Cemetery Road.

**Proposed:** The plans show drainage swales and ditches connecting to the existing on-site drainage system. A note on the plans indicates that the site development accounted for future development area that is equal to the proposed drainage area for this plan set. Another note indicates that the existing greenbelts around the proposed track will not be altered. Drainage around the property will be consistent with predevelopment conditions.

#### Comments:

- 1. Existing Subaru Site Plans indicate that the "undeveloped area" will require an additional Wayne County Storm Water Permit. The applicant must submit and discuss with Wayne County on the requirement for the permit. It is understood that the applicant anticipates that a Wayne County permit will not be required and has submitted the plans to Wayne County for their concurrence.
- 2. In general, the stormwater runoff coefficients should include more information on the proposed vs the existing areas. The plans indicate that the proposed drainage sub-areas will be different than what is shown on sheet C21.
  - a. Plans should include drainage areas and calculations depicting all improvements and/or changes to the existing system from the new area. The additional information should include the proposed development drainage area C factor calculations on the plans depicted graphically to demonstrate no net increase in impervious area.
  - b. The calculations shown are only for the system as a whole for detention. The applicant must also show calculations that the increased drainage area being picked up by the test track area does not overwhelm the existing underground system, prior to discharging to the detention pond.
- 3. The proposed drainage area shown on C5.1 show changes in the drainage sub-area boundaries outside of the proposed limits of work. Applicant must clarify this discrepancy. See Below:



### **Paving and Grading**

- 1. The applicant must verify the thickness of the base course of 3C. 2.5" is less than the industry standard for thickness of a 3C mix. Minimum thickness should be 3-inches.
- 2. Final limits of grading must be shown on the plans. The plans indicate the top of bank for the ditches, but don't include any other grading or areas of disturbance that may occur on site.

### Soil Erosion and Sedimentation Control

1. The SESC plan provided must be in accordance with the Township *Engineering Standards Manual*, Chapter II, Plan Requirements, Paragraph D, SESC Plan Requirements, and in accordance with Wayne County SESC standards. A permit must be acquired from the Wayne County SESC County Enforcing Agency. https://www.waynecounty.com/departments/environmental/landresources/soil-erosion.aspx

### Recommendation

Fishbeck is recommending the Planning Commission grant the Subaru Test Track Project Preliminary, Engineering, and Final Site Plan approval, subject to the comments listed above and in accordance with the Township's Engineering Standards manual. The applicant must update plans in an Issued for Construction plan set with requirements listed above and also acquire Wayne County approval (Permit) or acceptance of the plans as is, prior to the beginning of construction or the scheduling of a Township PreConstruction meeting. It should also be noted that if Wayne County review comments require adjustments to the plans in areas of concern for the Township Planner or Engineer, the site plan may be subject to re-review and approval by the Planning Commission.

If you have any questions regarding this project, please contact Paul Kammer at 248.324.2137 or pkammer@fishbeck.com.

fo- 6t

Civil Engineer

Stephen C. Clayton, PE

Sincerely,

Paul J. Kammer, PE

Senior Civil Engineer

By email

Copy: Matthew Best – Township

Dan Power – Township Vidya Krishnan – McKenna Dave Potter – Fishbeck Andrew Lenaghan Fire Marshal O: 734-699-8900 ext. 9416 Van Buren Fire Department 46425 Tyler Rd Van Buren Twp. MI 48111



October 5, 2021

Department Building and Planning 46425 Tyler Road Belleville, MI 48111

Re: Vehicle Evaluation Area

21-029 To whom it may concern:

I have reviewed a set of plans dated July 28, 2021, by Spalding DeDecker Engineering and Surveying 27333 Meadowbrook Rd. Novi, Michigan 48377

### **Project Overview:**

The submitted plans are for a vehicle test track. The site plan was reviewed for fire department access. The adopted fire code for Van Buren Township (NFPA 1 2018) was used in the review.

Based on the site plan information it is further understood that:

No structure is included on the test track site, and fire personnel responding to the facility will assume that any emergency to the location will be vehicular in nature.

Testing will occur primarily during business hours 9 am-5 pm, headlight test will occur at dawn until 10 pm.

The maximum speed of the vehicles during test will be 80 mph, with most tests occurring at 25 -35 mph

The maximum numbers of vehicles being tested at one time will be 3. Most testing will only involve 1 vehicle.

Our Mission: The members of the Van Buren Fire Department shall work together in a professional and caring way to protect life and property from the adverse effects of fire, trauma, illness and dangerous conditions. Our services will be provided in a fair, honest, and ethical manner with the highest respect and dignity to all.

Based on the information provided by the plans, and the planning staff review meeting dated 9/15, all fire department concerns have been addressed.

If you have any questions about this plan review report, please feel free to contact me

Respectfully submitted,

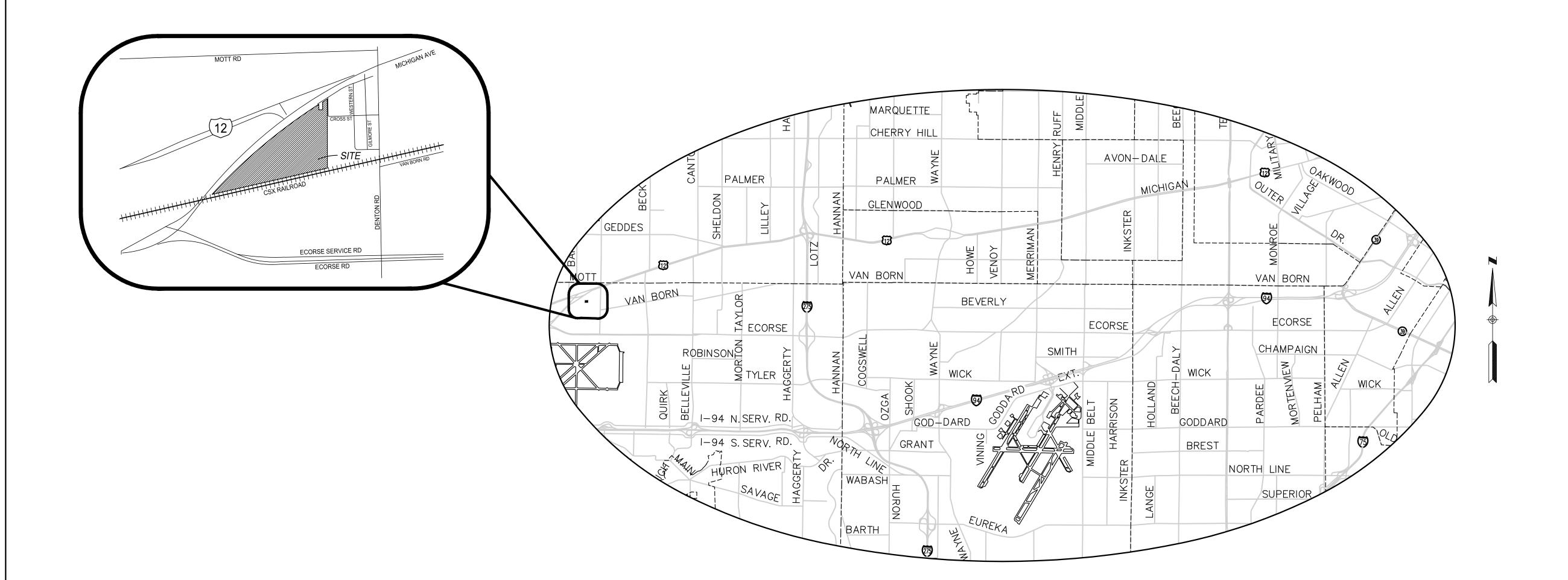
Andrew Lenaghan Fire Marshal Van Buren Fire Department

# VAN BUREN CHARTER TOWNSHIP

WAYNE COUNTY, MICHIGAN

# 50255 MICHIGAN AVE SUBARU VEHICLE EVALUATION AREA

VAN BUREN, MICHIGAN 48111



SHEET INDEX		
SHEET NUMBER	SHEET TITLE	
C1.1 COVER		
C2.1 GENERAL NOTES		
C3.1 TYPICAL CROSS SECTIONS		
C4.1	CONSTRUCTION PLAN	
C4.2	ROAD PROFILE STA 0+00 TO STA 10+50	
C4.3	ROAD PROFILE STA 10+50 TO 21+60.24	
C5.1	PROPOSED DRAINAGE AREA MAP	
C5.2	STORM WATER CALCULATIONS	
C6.1 OVERALL SITE PLAN		
MD-1	MISCELLANEOUS DETAILS (MD-1)	
SE-1	SEDIMENTATION CONTROL DETAILS (SE-1)	
ST-1	STANDARD STORM SEWER DETAILS (ST-1)	
C03 *	PROPOSED SITE	
C04 *	EXISTING TOPOGRAPHY AND REMOVALS	
C07 *	OVERALL UTILITY PLAN	
C21 *	PROPOSED DRAINAGE AREAS	
L-0 *	OVERALL LANDSCAPE PLAN	

<sup>\*</sup> FOR REFERENCE ONLY



27333 Meadowbrook Rd., Suite 210 Novi, MI 48377 Phone: (248) 844-6274

> www.sda-eng.com (800) 598-1600

### UTILITY CONTACT INFORMATION

TRANSCANADA/ANR PIPELINE CARRIE CHILDRESS 700 LOUISIANA ST HOUSTON, TX 77002 PH: 304-257-3179

<u>ATT</u> LINDA DENNISUK 54 N. MILL ST, 4th FLOOR PONTIAC, MI 48342 PH: 248-456-8256

DETROIT EDISON ONE ENERGY PLAZA, 518 SB DETROIT, MI 48226 PH: 313-235-5632

<u>COMCAST</u> CRAIG PUDAS 25626 TELEGRAPH RD. SOUTHFIELD, MI 48034 PH: 248-809-2715

LEVEL 3 NOW CENTURY LINK RYAN EGAN 1025 ELDORADO BLVD BROOMFIELD, CO 80021

PH: 877-366-8344

DTE GAS TRANSMISSION GREG BLOSSER ONE ENERGY PLAZA DETROIT, MI 48226 PH: 313-235-1080

DTE GAS DISTRIBUTION BARBARA SAUNDERS ONE ENERGY PLAZA DETROIT, MI 48226 PH: 313-235-5111

QUEST COMMUNICATIONS
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VAN BUREN TOWNSHIP KRIS SCHLUTOW 46425 TYLER RD. VAN BUREN TWP., MI 48111 PH: 734-699-8900, EXT. 9228

WESTERN TOWNSHIPS UTILITIES <u>AUTHORITY</u> ARRON@WTAU.ORG 40905 JOY RD. CANTON, MI 48187 PH: 734-216-4382



### **EXISTING LEGEND** MANHOLE ⊕ ⊟ CATCH BASIN ∘ C.O. SEWER CLEAN OUT G GAS METER -©- GAS SHUT OFF VALVE ☑ VALVE BOX oxtimes FIRE HYDRANT VB SPRINKLER VALVE BOX ★ LAWN SPRINKLER HEAD ☐ HAND HOLE E ELECTRIC RISER OR METER TELEPHONE RISER CABLE TV RISER AC AIR CONDITION UNIT ∅ UTILITY POLE Ø↑ UTILITY POLE W/ TRANSFORMER UTILITY POLE W/ LAMP EXTENSION (ARROW INDICATES DIRECTION OF ARM) LIGHT POLE WITH LAMP EXTENSION TRAFFIC SIGNAL POLE W/ TRAFFIC SIGNAL (OVER ROAD) OGUY GUY WIRE O GP GUY POLE GROUND LEVEL / DECORATIVE LIGHTING $\sim$ FLAG POLE PB PHONE OR PHONE BOOTH METAL OR CONC. POST MB MAILBOX → SIGN ▼ WATER FOUNTAIN ♦ PARKING METER BILLBOARD OR LARGE SIGN ∮BB **BASKETBALL HOOP** BOULDER BENCH BENCH STUMP ( · ) CONIFEROUS TREE { · } DECIDUOUS TREE ★ DECIDUOUS SHRUB ☆ CONIFEROUS SHRUE SECTION CORNER ↑ SDA#10 TRAVERSE POINT (1) STRUCTURE NUMBER 10 SDA POINT No. SPOT ELEVATION TOP OF CURB ELEVATION GUTTER ELEVATION TOP OF PAVEMENT ELEVATION EDGE OF METAL ELEVATION TOP OF WALK ELEVATION T/WALL TOP OF WALL ELEVATION BOTTOM OF WALL ELEVATION GROUND FI EVATION UNDERGROUND FIBER OPTIC CONC CONCRETE ASPH FINISH FLOOR ELEVATION DOOR LEDGE ELEVATION F.I. FOUND IRON • F.M. FOUND MONUMENT FPK S.I. SET IRON W/SDA CAP S.P.K. SET P.K. NAIL S.P.K./TAG SET P.K. NAIL W/SDA TAG MAG SET MAGNETIC NAIL M MEASURED R RECORD C CALCULATED INV. INVERT ELEVATION CMP CORRUGATED METAL PIPE − ⑥ — GAS - ○ SANITARY SEWER (SAN) — ○——ST —— STORM SEWER (STM) —⊗——WM — — WATERMAIN (WM) ——OH ——— OVERHEAD WIRE ———— — COMBINED SEWER — \_\_\_\_\_STF — \_\_\_ STFAM LINF - — o— — OIL LINE — (Ē)——— E ——— — UG ELECTRIC (ELEC.) (P)—— T —— UG PHONE (PH) - € ----- c ----- UG CABLE (CBL) × × CHAIN LINK FENCE (CL) O O O O O O WOOD FENCE // // // // WOVEN WIRE FENCE (WW) OOOOOOOOOO GUARD RAIL EDGE OF BRUSH/WOODS — - - - — CENTERLINE OF DITCH = = = = = CULVERT BANK/TOP OF SLOPE 650 MAJOR CONTOUR ————651—— MINOR CONTOUR BOUNDARY LINES ROW LINES --- SECTION LINES —— — PROPERTY LINES

ASPHALT CONCRETE

HMA PAVEMENT

PROPOSED LEGEND

DET F4, MODIFIED SHOULDER, CL II, 23A

STANDARD ABBREVIATI	ONS
BOVE FINISH FLOOR	AFF
CRE	AC
GGREGATE	AGG
.TERNATE	ALT
PPROXIMATELY	APPRO
RCHITECTURAL	ARCH
SPHALT	<b>ASPH</b>
ELOW FINISH FLOOR	BFF
ENCH MARK	ВМ
TUMINOUS	BIT
OTTOM OF PIPE	B/P
OTTOM OF WALL	B/WAL
DULEVARD	BLVD
JILDING	BLDG
ATCH BASIN	CB
HAIN LINK	CL
EAN OUT	co
ONCRETE	CONC
ROSSING	X-ING
IBIC FEET	CF
JBIC FEET PER SECOND	CFS
IBIC YARD	CY
AMETER	DIA
DOR LEDGE	DL
RIVE	DR
ACH	EA
AST JORDAN IRON WORKS	EJIW
OGE OF METAL	EOM
ECTRIC	ELEC
EVATION	ELEV
DGE OF PAVEMENT	EP
ID SECTION	ES
USTING	EX
(PANSION	EXP
ET	FT
ELD CATCH BASIN	FCB
NISH FLOOR	FF
NISH GRADE	FG
ATE VALVE AND BOX	GVB
ATE VALVE AND WELL	GVW
TITER	G
ANDICAP PARKING	HC
ANDICAP PARKING / VAN ACCESSIBLE	HCV
EAVY DUTY	HD
GH POINT	HP
	HWL
GH WATER LEVEL ORIZONTAL	HORZ
YDRANT	HYD
LET	INL
VERT	INV
VERT ELEVATION	IE IE
	IE LF
NEAR FEET DW FEET	LP LP
ANHOLE	MH
ATCH EXISTING	ME
AXIMUM	MAX
ECHANICAL	MECH
NIMUM	MIN
ORMAL WATER LEVEL	NWL
OT TO SCALE	NTS
V CENTER	<i>0C</i>
JTSIDE GRADE	OG
VERFLOW MANHOLE	OMH
VERHEAD	OH
AVEMENT	PVMT
ERFORATED	PERF
ROPOSED	PROP

REQD

VERT

REQUIRED

SANITARY

RESTRICTOR MANHOLE

SOIL EROSION AND SEDIMENTATION CONTROL

TAPPING SLEEVE VALVE AND WELL

TEMPORARY STAND PIPE

UNABLE TO FIELD VERIFY

RIGHT OF WAY

SQUARE FEET

SQUARE YARDS

TOP OF CURB

TOP OF PIPF

TOP OF WALK

TOP OF WALL

UNDERGROUND

WATER LEVEL

WATER MAIN

TYPICAL

VERTICAL

TOP OF PAVEMENT

### MISCELLANEOUS PROJECT QUANTITIES

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

ITEM	AMOUNT	UNIT
BONDS, INSURANCE, AND MOBILIZATION (5% MAX)	1	LS
PRE-CONSTRUCTION AUDIO-VISUAL	1	LS
SOIL EROSION CONTROL MEASURES	1	LS
ROADWAY GRADING	21.5	STA
DITCHING	4560	FT
TURF ESTABLISHMENT, PERFORMANCE	5200	SY
PROJECT CLEANUP	1	LS
PERMIT ALLOWANCE	2500	DLR

### SOIL EROSION AND SEDIMENTATION CONTROL NOTES AND MAINTENANCE NOTES

- 1. THIS PROJECT SHALL BE CONSTRUCTED IN COMPLIANCE WITH PART 91 OF ACT 451 OF 1994, AS AMENDED. THE SOIL EROSION AND SEDIMENTATION CONTROL ACT.
- 2. EROSION AND ANY SEDIMENTATION FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON ANY OFF SITE AREAS OR IN WATERWAYS. WATERWAYS INCLUDE BOTH NATURAL AND MAN MADE OPEN DITCHES, STREAMS, STORM DRAINS, LAKES, AND PONDS.
- 3. INSTALL SILT FENCE AS INDICATED ON THE PLAN AND AT ADDITIONAL AREAS AS NECESSARY. A. SILT FENCE SHALL BE INSTALLED PER DETAIL. B. BUILD UP OF SEDIMENT SHALL BE REMOVED WHEN SEDIMENT ACCUMULATES TO 1/3 TO ½ OF THE HEIGHT OF THE SILT FENCE C. IF THE SILT FENCE FABRIC DECOMPOSES OR BECOMES INEFFECTIVE PRIOR TO THE END OF EXPECTED USABLE LIFE AND THE BARRIER IS STILL REQUIRED, THE SILT FENCE SHALL BE REPLACED D. SILT FENCE SHALL BE INSPECTED WEEKLY UNDER NORMAL CONDITIONS, WITHIN 24 HOURS OF
- 10. ALL STOCKPILED SOILS SHALL BE MAINTAINED IN SUCH A WAY AS TO PREVENT EROSION FROM LEAVING THE SITE. IF THE STOCKPILE WILL BE ON SITE FOR MORE THAN 30 DAYS, THE STOCKPILE MUST BE SEEDED. SILT FENCE MUST BE INSTALLED AROUND THE PERIMETER OF THE STOCKPILE.

RAINFALL AND DAILY DURING A PROLONGED RAIN EVENT. REQUIRED MAINTENANCE SHALL BE

- IMMEDIATELY AFTER SEEDING, MULCH ALL SEEDED AREAS WITH UNWEATHERED SMALL GRAIN STRAW, SPREAD UNIFORMLY AT THE RATE OF 1 ½ TO 2 TONS PER ACRE OR 100 POUNDS (2-3 BALES) PER 1000 SQUARE FEET. THIS MULCH SHOULD BE ANCHORED WITH DISC TYPE MULCH ANCHORING TOOL OR OTHER MEANS AS APPROVED BY THE MACOMB COUNTY PUBLIC WORKS OFFICE. MULCH MATTING MAY BE SUED IN LIEU OF LOOSE MULCH.
- 12. IF ANY DEWATERING IS NEEDED, IT SHALL BE DISCHARGED THROUGH A FILTER BAG OVER A WELL VEGETATED AREA. THE PUMP MUST DISCHARGE AT A NON-EROSIVE VELOCITY. IF NECESSARY, AN APPROVED ENERGY DISSIPATER MAY BE USED.
- 13. ALL DIRT TRACKED ONTO ANY ROADWAY SHALL BE REMOVED IMMEDIATELY.

PROVIDED PROMPTLY.

- 14. STREETS AND OR PARKING AREAS WILL BE SCRAPED ON A DAILY BASIS AND SWEPT AT A MINIMUM OF ONCE PER WEEK BY THE LANDOWNER OR LANDOWNER'S REPRESENTATIVE.
- 15. DURING DRY PERIODS, ALL DISTURBED AREAS SHALL BE WATERED FOR DUST CONTROL.
- 16. PERMANENT SOIL EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 5 CALENDAR DAYS AFTER FINAL GRADING OR THE FINAL EARTH CHANGE HAS BEEN COMPLETED. WHEN IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA AFTER EARTH CHANGE HAS BEEN COMPLETED OR WHERE SIGNIFICANT EARTH CHANGE ACTIVITY CEASES, TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED IMMEDIATELY. ALL TEMPORARY SOIL EROSION CONTROL SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED. ALL PERMANENT SOIL EROSION CONTROL MEASURES WILL BE IMPLEMENTED AND ESTABLISHED BEFORE A CERTIFICATE OF COMPLIANCE
- 17. FINAL GRADE, ESTABLISH VEGETATION AND OR LANDSCAPE ALL DISTURBED AREAS NOT BUILT OR
- 18. REMOVE ALL TEMPORARY SOIL EROSION DEVICES AFTER PERMANENT STABILIZATION IS ESTABLISHED.

### UTILITY STATEMENT

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.

PRIOR TO THE PLANNED IMPROVEMENTS. AND/OR CONSTRUCTION. THE RESPECTIVE UTILITY COMPANIES MUST BE NOTIFIED TO STAKE THE PRECISE LOCATION OF THEIR

IF THERE IS A CONFLICT WITH THE PROPOSED SEWER OR MANHOLE LOCATION THE CONTRACTOR SHALL NOTIFY THE ENGINEER. RELOCATION OF THE PROPOSED SEWER OR EXISTING UTILITY WILL BE EVALUATED AFTER CONSULTATION WITH CITY AND RESPECTIVE UTILITY COMPANIES.

# MDOT STANDARD PLANS

R-30-G CONCRETE CURB AND CONCRETE CURB & GUTTER R-82-D BEDDING AND FILLING AROUND PIPE CULVERTS

R-83-C UTILITY TRENCHES

R-95-G CULVERT SLOPED END SECTIONS R-96-E SOIL EROSION & SEDIMENTATION CONTROL R-100-H SEEDING AND TREE PLANTING

### *NOTES*

- THE LOCATION OF ALL UTILITIES SHOWN ON THESE PLANS ARE TAKEN FROM THE BEST AVAILABLE DATA. SUBARU WILL NOT BE RESPONSIBLE FOR ANY OMISSIONS OR VARIATION FROM THE LOCATIONS SHOWN. THE CONTRACTOR SHALL CONTACT THE UTILITY OWNERS REGARDING THEIR FACILITIES INCLUDING SERVICE CONNECTIONS PRIOR TO STARTING THE WORK. UTILITY SERVICE CONNECTIONS ARE NOT SHOWN ON THE PLANS AND ARE NOT THE RESPONSIBILITY OF THE WAYNE COUNTY DEPARTMENT OF PUBLIC SERVICES.
- EXISTING CASTINGS DAMAGED BY THE CONTRACTOR SHALL BE REPLACED BY THE CONTRACTOR AT HIS OWN EXPENSE.
- THE EDGE OF EXISTING PAVEMENT SHALL BE CLEANED OF EARTH OR OTHER FOREIGN MATERIAL WITH A WIRE BROOM BEFORE ADJACENT HMA OR CONCRETE PAVEMENT IS PLACED AND SHALL BE INCLUDED IN PAVEMENT ITEMS
- 4. CLASS "A" SLOPES WILL BE REQUIRED WITH 4 FOOT VERTICAL CURVES AT THE TOP AND TOE OF
- 5. ALL PROPOSED STREET RETURN RADII SHALL BE 25 FEET UNLESS OTHERWISE SHOWN.
- HMA PAVEMENT THICKNESS SHOWN IS THE ESTIMATED THICKNESS OF HMA PAVEMENT MIXTURES BASED UPON THE APPLICATION RATES AND COMPACTION METHODS.
- THE SOIL BORING LOGS REPRESENT POINT INFORMATION. PRESENTATION OF THIS INFORMATION IN NO WAY INFERS THAT SUBSURFACE CONDITIONS ARE THE SAME AT LOCATIONS OTHER THAN THE EXACT LOCATION OF
- FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 53, 1974, THE CONTRACTOR SHALL DIAL 1-800-482-7171 A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS AND HOLIDAYS PRIOR TO BEGINNING EARTH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEMS.
- ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS, SPECIFICATIONS, AND GENERAL CONDITIONS OF THE TOWNSHIP.
- 10. THE APPLICANT IS RESPONSIBLE FOR RESOLVING ANY DRAINAGE PROBLEMS ON ADJACENT PROPERTIES WHICH ARE THE RESULT OF THE APPLICANT'S ACTIONS.

### SOIL EROSION & SEDIMENTATION CONTROLS

### TIMING AND SEQUENCE OF EVENTS

- 1. FOR EXISTING STRUCTURES IN THE DITCH/SWALE, OR THOSE IN THE PAVEMENT REQUIRING SE/SC MEASURES, CONSTRUCT/PLACE THE SE/SC MEASURE PRIOR TO OVERBURDEN REMOVAL OR OTHER EXCAVATION ACTIVITY IN THE VICINITY WHICH HAS THE POTENTIAL TO CONTRIBUTE SEDIMENT TO THE STRUCTURE. FOR NEW STRUCTURES IN TURF AREAS OR OTHER LOCATIONS SPECIFIED BY THE ENGINEER. CONSTRUCT THE SE/SC MEASURE IMMEDIATELY AFTER THE BACKFILLING AND GRADING ADJACENT TO THE DRAINAGE STRUCTURE IS COMPLETED.
- 2. ANY ACCUMULATION OF SEDIMENT AFFECTING THE EFFICIENT OPERATION OF THE EROSION CONTROLS SHALL BE REMOVED AND STOCKPILED IN A STABILIZED AREA SO AS TO PREVENT THE MATERIAL FROM ERODING BACK INTO THE DRAINAGE COURSE.
- 3. AFTER VEGETATION OR A PERMANENT LINING OR HARD SURFACE HAS BEEN SUCCESSFULLY ESTABLISHED IN THE DITCH/SWALE/BACK-OF-CURB, THE SE/SC MEASURE SHALL BE REMOVED AND THE AREA FORMERLY OCCUPIED BY THE SE/SC MEASURE SHALL BE SODDED (WHERE
- 4. UPON FINAL ACCEPTANCE OF THE PROJECT, THE MAINTENANCE OF THE PERMANENT SOIL EROSION
- CONTROL ITEMS SHALL BECOME THE RESPONSIBILITY OF THE WAYNE COUNTY ROADS DIVISION. 5. ALL EROSION AND SEDIMENT CONTROL WORK SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF VAN BUREN TWP AND/OR WAYNE COUNTY.
- 6. DAILY INSPECTIONS SHALL BE MADE BY THE CONTRACTOR TO DETERMINE EFFECTIVENESS OF EROSION AND SEDIMENTATION CONTROL DEVICES, AND ANY NECESSARY REPAIRS SHALL BE PERFORMED WITHOUT
- 7. EROSION AND ANY SEDIMENT FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON ANY OFF-SITE AREAS OR IN WATER WAYS. WATERWAYS INCLUDE BOTH NATURAL AND MANMADE OPEN DITCHES, STREAMS, STORM DRAINS, LAKES AND PONDS.
- 8. EROSION AND SEDIMENT CONTROL DEVICES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CONSTRUCTION; SEDIMENT CONTROL PRACTICES WILL BE APPLIED AS A PERIMETER DEFENSE AGAINST ANY TRANSPORTING OF SILT OFF THE SITE.
- 9. CONTRACTOR SHALL APPLY TEMPORARY EROSION AND SEDIMENTATION CONTROL DEVICES AS REQUIRED AND AS DIRECTED ON THESE PLANS. HE SHALL REMOVE TEMPORARY DEVICES AS SOON AS PERMANENT STABILIZATION OF SLOPES, DITCHES, AND OTHER EARTH CHANGES HAVE BEEN ACCOMPLISHED AND
- APPROVED BY PLYMOUTH TWP AND/OR WAYNE COUNTY. 10. DEBRIS FROM PROJECT WILL BE LEFT ON THE SITE BY DELIVERY OR CONSTRUCTION VEHICLES THROUGH THE USE OF CLEAN STONE EXITS. SHOULD THE STONE BECOME LESS EFFECTIVE IT WILL BE REPLACED. ALL CONSTRUCTION TRAFFIC WILL USE THE CLEAN STONE EXIT.
- 11. DUST CONTROL WILL BE EXERCISED AT ALL TIMES WITHIN THE PROJECT BY THE CONTRACTORS. SPRINKLING TANK TRUCKS WILL BE AVAILABLE AT ALL TIMES TO BE USED ON HAUL ROUTES OR OTHER PLACES WHERE DUST BECOMES A PROBLEM.
- 12. IMMEDIATELY AFTER SEEDING. MULCH ALL SEEDED AREAS WITH UNWEATHERED SMALL GRAIN STRAW OR HAY. SPREAD UNIFORMLY AT A RATE OF 1 1/2 TO 2 TONS PER ACRE OR 0.10 POUNDS PER SQUARE FEET. ANCHOR MULCH WITH DISC TYPE MULCH ANCHORING TOOL.
- 13. ALL MUD, DIRT, AND DEBRIS TRACKED ONTO EXISTING ROADS FROM THIS SITE SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR OR BUILDER. ALL MUD, DIRT, AND DEBRIS TRACKED OR SPILLED ONTO PAVED SURFACES WITHIN THIS SITE SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR.
- 14. PERMANENT SOIL EROSION CONTROL DEVICES FOR ALL SLOPES, CHANNELS, DITCHES OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 15 CALENDAR DAYS AFTER FINAL GRADING OR FINAL EARTH CHANGES HAVE BEEN COMPLETED. WHEN IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA AFTER AN EARTH CHANGE HAS BEEN COMPLETED OR WHERE SIGNIFICANT EARTH CHANGE ACTIVITY CEASES TEMPORARY SOIL FROSION CONTROL DEVICES SHALL BE IMPLEMENTED WITHIN 30 CALENDAR DAYS. ALL TEMPORARY SOIL EROSION CONTROL DEVICES SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION DEVICES ARE IMPLEMENTED AND/OR ESTABLISHED. ALL PERMANENT SOIL EROSION CONTROL DEVICES WILL BE IMPLEMENTED AND ESTABLISHED BEFORE A CERTIFICATE OF INSURANCE IS ISSUED.
- 15. ALL CONTRACTORS ARE TO KEEP EXCAVATED MATERIAL ON SITE. PARTICULAR CARE SHOULD BE TAKEN WHEN WORKING ALONG THE PERIMETER OF THE SITE. IN NO EVENT SHALL THE WORK AREA EXTEND BEYOND THE LIMITS INDICATED ON THE PLANS.
- 16. THE SOIL EROSION CONTROLS WILL BE MAINTAINED WEEKLY AND AFTER EVERY STORM EVENT BY THE

### SITE SOIL TYPES

WdA WASEPI SANDY LOAM, O TO 4 PERCENT SLOPES

4.07 ACRES DISTURBED



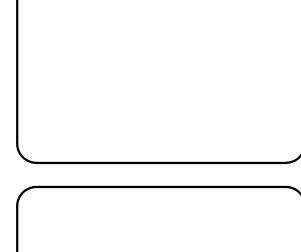
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# SUBARU VEHICLE **EVALUATION AREA**

**GENERAL NOTES** 

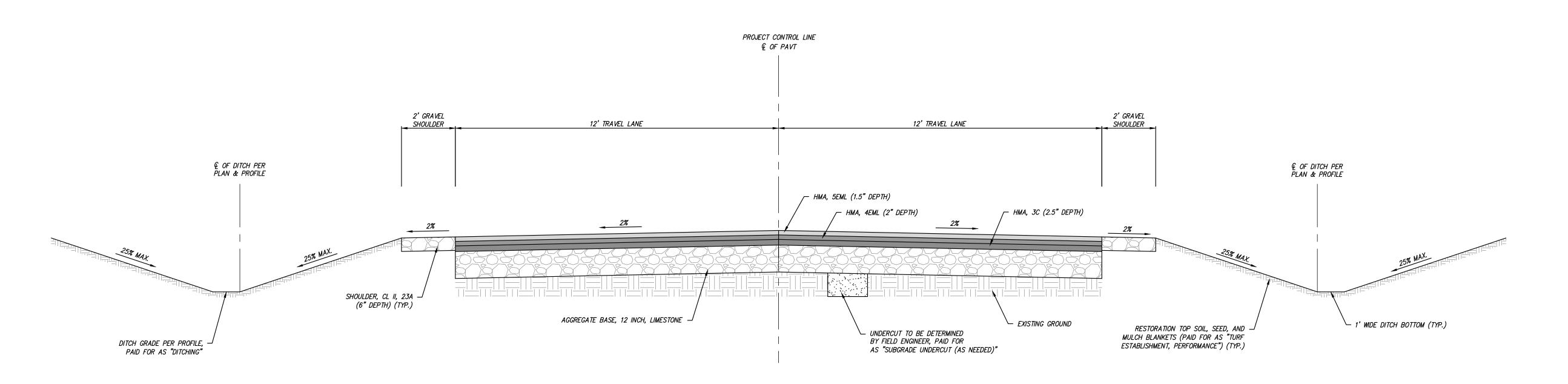
SECTION 6 TOWN 3 SOUTH RANGE 8 EAST VAN BUREN TOWNSHIP WAYNE COUNTY, MI

NO.	DATE	REVISION
1	09/24/21	SITE PLAN REVIEW

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

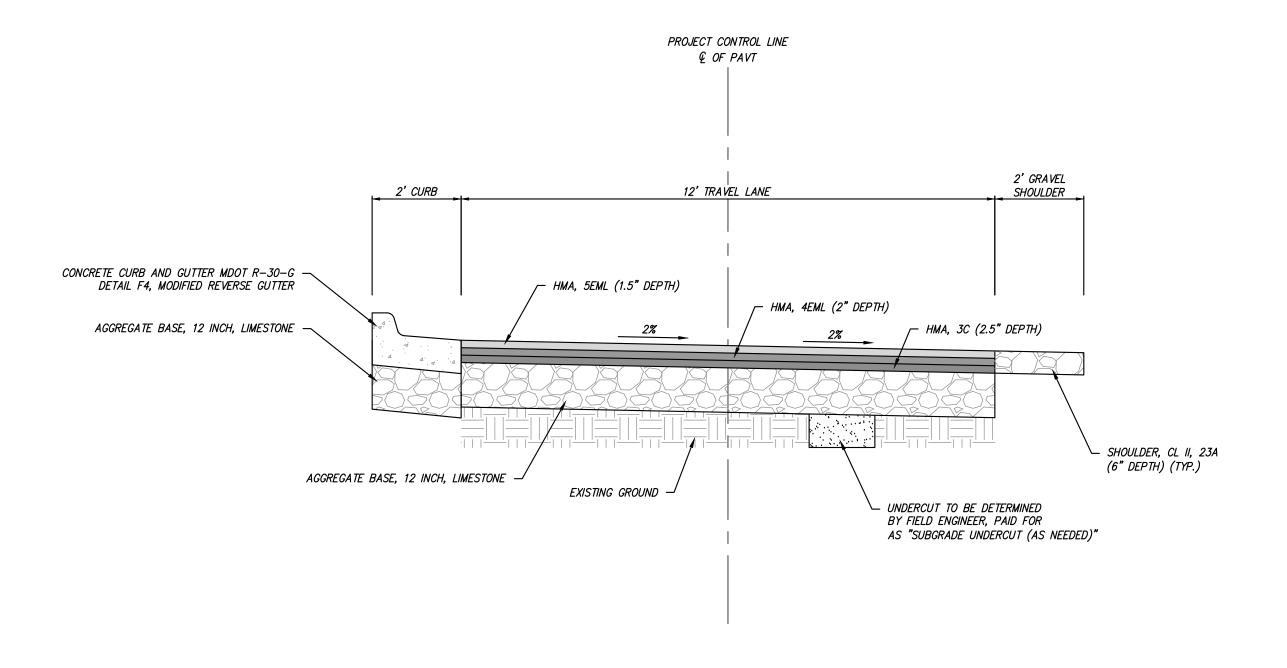
S. TUCKER 07-02-2021 S.TUCKER 07-02-2021 J. SCHROT 07-26-2021 PROJECT MANAGER BID PLAN DATE J. SCHROT DEPARTMENT MANAGER APPROVAL DATE J. SCHROT

MN21005 MN21005NOT AS NOTED C2.1

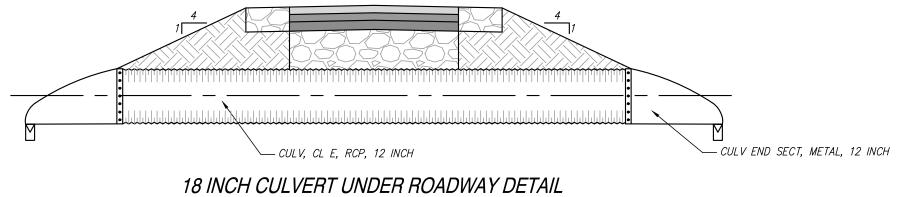


# PROPOSED TYPICAL ROADWAY SECTION

NOT TO SCALE



# PROPOSED TYPICAL TURNAROUND SECTION NOT TO SCALE



INCH CULVERT UNDER ROADWAY DE

TYPICAL CROSS-SECTION

N.T.S.

HMA APPLICATION TABLE				
IDENT NO.   ITEM   APPLICATION RATE (LBS/CY)   PERFORMANCE GRADE   REMARKS			REMARKS	
5EML	HMA, 5EML	165	64–22	TOP COURSE AW = 220
4EML	HMA, 4EML	220	64–22	LEVELING COURSE
<i>3C</i>	HMA, 3C	275	64–22	BASE COURSE



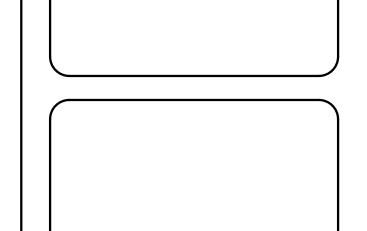
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# SUBARU VEHICLE EVALUATION AREA

TYPICAL CROSS SECTIONS

SECTION 6
TOWN 3 SOUTH RANGE 8 EAST
VAN BUREN TOWNSHIP
WAYNE COUNTY, MI

NO.	DATE	REVISION
1	09/24/21	SITE PLAN REVIEW

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET,
ADJUST SCALES ACCORDINGLY

 DRAFTER
 DATE

 M. FRECKELTON
 07-23-21

 DESIGNER
 DATE

 M. FRECKELTON
 07-23-21

 CHECKED
 DATE

 J. SCHROT
 07-26-21

 PROJECT MANAGER
 BID PLAN DATE

 J. SCHROT
 .

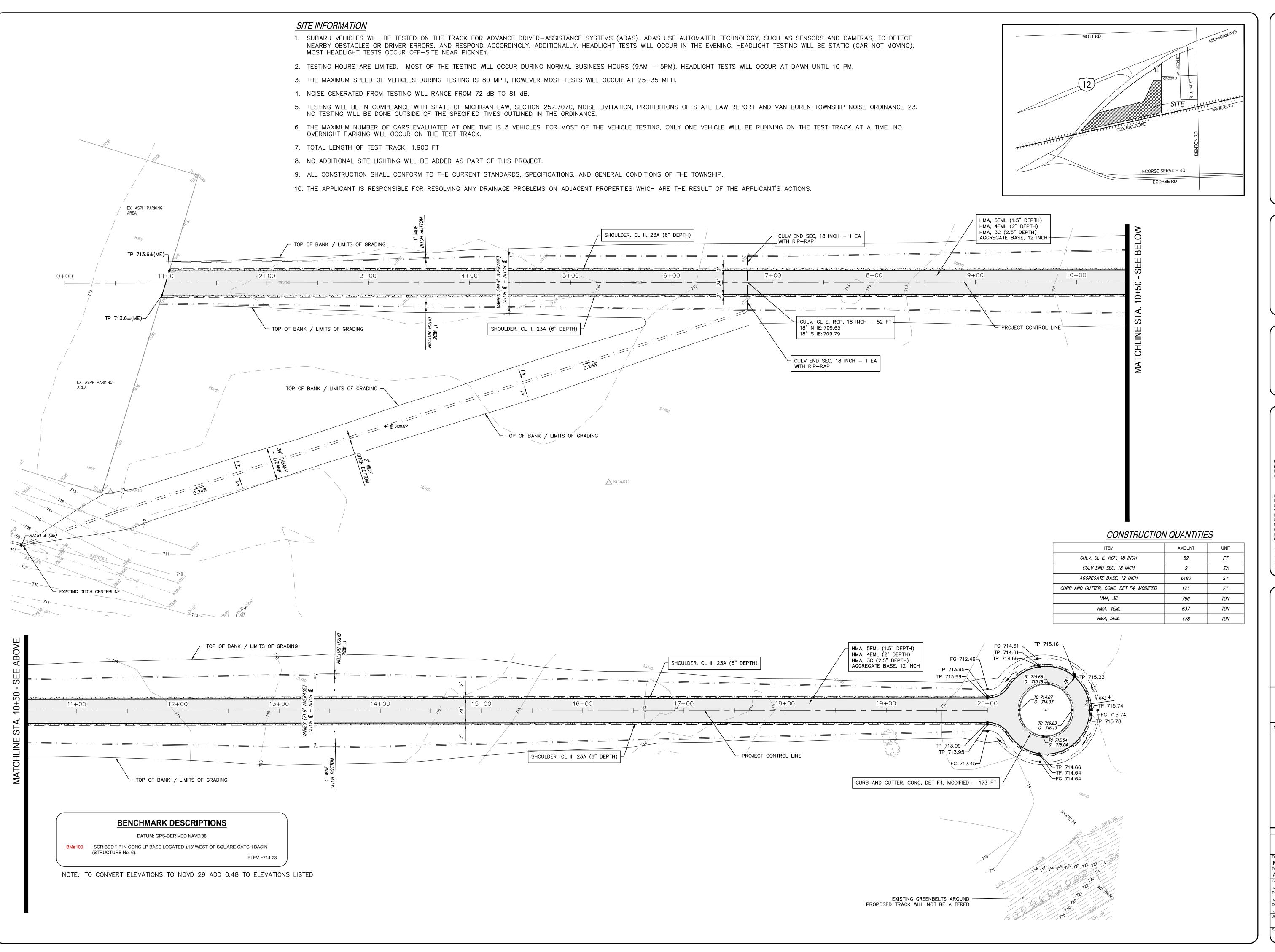
 DEPARTMENT MANAGER APPROVAL
 DATE

 J. SCHROT
 .

MN21005 MN21005TYP

SCALE: SHEET NO.

N/A C3.1





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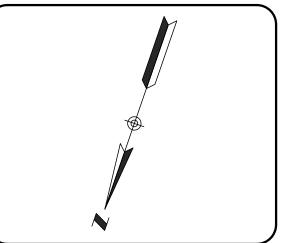
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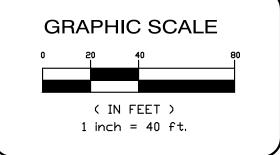
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# SUBARU VEHICLE **EVALUATION AREA**

CONSTRUCTION PLAN

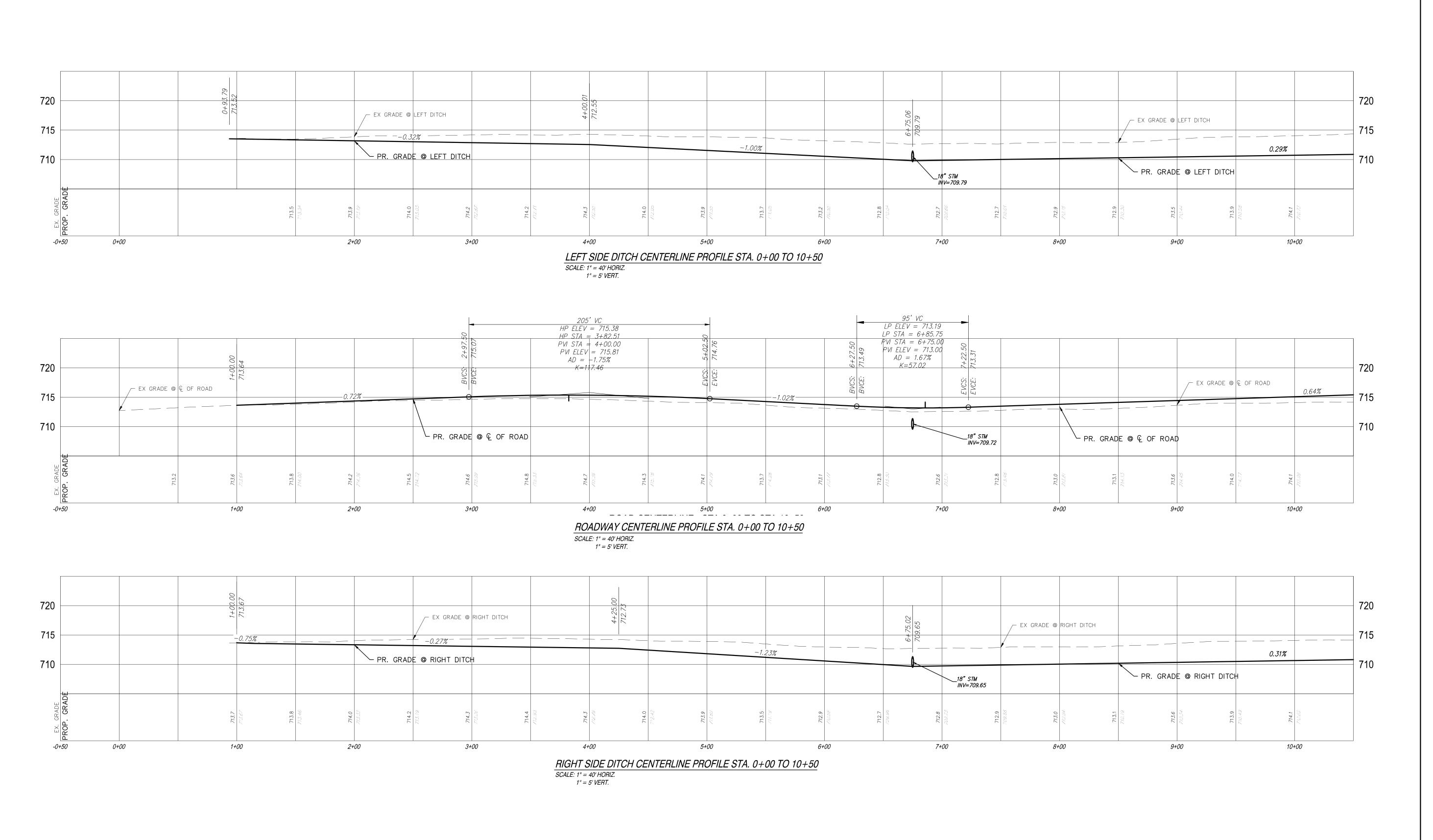
**SECTION** 6 TOWN 3 SOUTH RANGE 8 EAST VAN BUREN TOWNSHIP WAYNE COUNTY, MI

DATE	REVISION
09/24/21	SITE PLAN REVIEW

VERIFY SCALES
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DRAFTER	DATE	
M. FRECKELTON	07-15-21	
DESIGNER		DATE
A. CHLUDZINSKI		07-28-21
CHECKED		DATE
J. SCHROT	07-26-21	
PROJECT MANAGER	BID PLAN DATE	
J. SCHROT		
DEPARTMENT MANAGER APP	DATE	
LISCHROT		

MN21005 MN21005CON





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# **SUBARU VEHICLE EVALUATION AREA**

**ROAD PROFILE** STA 0+00 TO STA 10+50

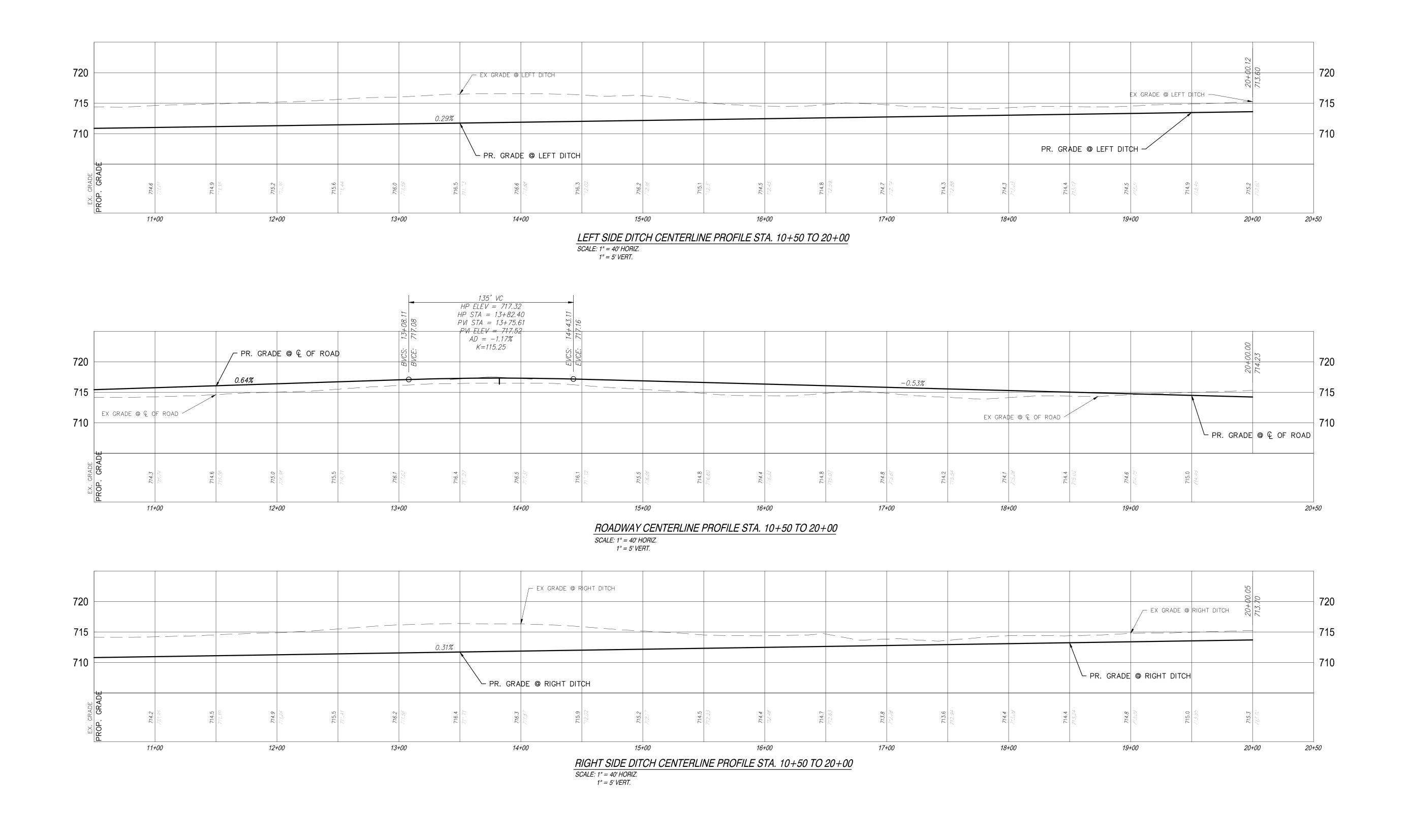
SECTION 6 TOWN 3 SOUTH RANGE 8 EAST VAN BUREN TOWNSHIP WAYNE COUNTY, MI

NO.	DATE	REVISION
1	09/24/21	SITE PLAN REVIEW

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S. TUCKER 07-15-21 A. CHLUDZINSKI 07-28-21 J. SCHROT 07-26-21 PROJECT MANAGER BID PLAN DATE J. SCHROT DEPARTMENT MANAGER APPROVAL DATE

J. SCHROT MN21005 MN21005SPR AS NOTED C4.2





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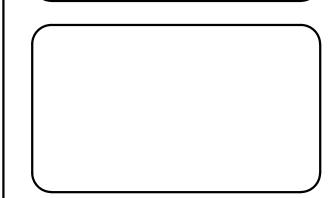
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# SUBARU VEHICLE EVALUATION AREA

ROAD PROFILE STA 10+50 TO STA 20+00

SECTION 6
TOWN 3 SOUTH RANGE 8 EAST
VAN BUREN TOWNSHIP
WAYNE COUNTY, MI

	NO.	DATE	REVISION
	1	09/24/21	SITE PLAN REVIEW

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S. TUCKER 07-15-21

DESIGNER DATE
A. CHLUDZINSKI 07-28-21

CHECKED DATE
J. SCHROT 07-26-21

PROJECT MANAGER BID PLAN DATE
J. SCHROT

DEPARTMENT MANAGER APPROVAL
J. SCHROT

J. SCHROT

DEPARTMENT MANAGER APPROVAL
J. SCHROT





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# SUBARU VEHICLE EVALUATION AREA

PROPOSED DRAINAGE AREA MAP

SECTION 6
TOWN 3 SOUTH RANGE 8 EAST
VAN BUREN TOWNSHIP
WAYNE COUNTY, MI

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PROJECT MANAGER	•	BID PLAN DATE
J. SCHROT		
DEDARTMENT MANACED ADD	DOV/AI	DATE

 J. SCHROT
 .

 JOB NO.
 DRAWING NO.

 MN21005
 MN21005DRM

 SCALE:
 SHEET NO.

# PROPOSED STORM WATER CALCULATIONS

	AREA (ACRE)	С	A x C
ROOF/PAVEMENT	1.10	0.95	1.04
LAWN	23.23	0.30	6.97
WA TER	0.00	1.00	0.00
TOTAL	24.33		
Cavg	0.33		

PHASE 1 OF THE SITE DEVELOPMENT ACCOUNTED FOR A FUTURE DEVELOPMENT AREA THAT IS EQUAL TO THE PROPOSED DRAINAGE AREA FOR THIS PLAN SET. THE PROPOSED PHASE 1 POND ASSUMED AN AVERAGE C FACTOR OF 0.65 FOR THIS DEVELOPMENT, WHICH IS HIGHER THAN THE PROPOSED AVERAGE C FACTOR OF 0.33 SHOWN IN THE TABLE ABOVE. THIS WILL RESULT IN A LOWER DETENTION VOLUME REQUIREMENT SHOWN IN THE PHASE 1 PLANS AND FOR THE EXISTING DETENTION POND AND FOREBAY.

PHASE 1 DETENTION CALCULATIONS ARE SHOWN TO THE RIGHT FOR REFERENCE ONLY.

		SP-35	
	Area (acre)	С	AxC
Roof/Pavement	9.06	0.95	8.61
Lawn	28.02	0.30	8.41
Ponds/Fore Bays	6.7	1.00	6.70
Wetlands	1.04	1.00	1.04
Future Development	24.33	0.65	15.81
Total =	69.15		
Cavg	0.59		
Vt ff=1815*A*C	73635	cubic feet	
Provided Forebay Volume:			
Elevation	Area	Volume	Cumulative Volume
705.00	82680	77114	162185
704.00	71679	59656	85071
703.00	48392	24419	25415
702.00	6768	996	996
701.65	314	<u> </u>	L
	r	Γ	
First Flush Elevation			
	) + (704.00 - 703.00) * 5415)/(85071-25415)]	702.04	
[(/3035-25	///(03U/1-25415)]	703.81	
	Outlet C	ontrol Structure (	Jesign
Sizing for First Flush			
Qavg ff=	0.852	cfs	Vt ff/(86400)
dout	8.0	in	Assumed
Zout	702.32		Outlet invert + dout
havg=	1.00	ft	0.667*(Zff-Zout)
Aout =	0.1712	sf	Qavg ff/(.62 x (32.2 x 2 x have)0.5))
dact=	5.60	in	
uact-	3.60		
dout	8.00	in	
Aout	0.3491	SF	
do	5.50	in	
Ao	0.1650	sf	
Zout act	702.32		
havg=	1.00	ft	0.667*(Zff-Zout)
Qavg ff act	0.819	cfs	0.62*Ao*(2*32.2*havg)0.5
Tff	25.0	hr	Vtff/(Qavg ff act*3600)
		<u> </u>	, , , ,
	<del></del>		
Riser Outlet Pipe			
Slope			
Qmax	0.819	cfs	
n	0.012		
Pipe Size	8.0	in	
Aout	0.3491	sf	
R	0.167	ft	Pipe Size/4
S, Min Slope		10	[(Qmax*n)/(1.486*Aout*R2/3)]2
<u> </u>	0.39%		[(Qmax_n)/(1.486*A0ut*K2/3)]2
Use		6.7	
V	2.34	ft/s	Qmax/Aout
	2.34	ft/s < 8.0 ft/s	
	Ove	erflow Weir Desig	n
Q	0.00	cfs	See storm sewer design chart
c	3.40		
T/Bank Elevation	705.00		
		<u> </u>	
Weir Invert	703.81		
H	1.00	ft	T/Bank-Invert
	ا م م	4	O//C*H3/2\

EXISTING CALCULATIONS SHOWN FOR REFERENCE ONLY

Q/(C\*H3/2)

	Area (acre)		С	Ax	(C
Roof/Pavement	9.06	0.	.95	8.6	51
Lawn	28.02	0.	.30	8.4	11
Ponds/Fore Bays	6.70	1.	.00	6.7	70
Wetlands	1.04		.00	1.0	
Future Development	24.33		.65	15.	
Total =	69.15				
Cavg	0.59				
<b>u</b>	עכ.ט	<u> </u>		1	
	0.10 x A  Qa (allowable) =		cfs	Current Max Flow Through	n Ex Denton Drain
0 - 0 - // 4 * 6 \ 1 205 / / 60 4 5 * 0	50)				afa /a ana taon
Qo = Qa/(A*C) = 1.385/ (69.15*0				0.0341	cfs/acre imp.
T100 = -45 + (19845/Qo)^(1/2) =				717.9	min.
Vs100 = ((17649*T100)/(T100+45	5))-40*Qo*T100 =			15629	cfs/acre imp.
Vt100 = Vs100*A*C =				634060	cubic feet
Vtbf = 5,160*A*C =				209341	cubic feet
Provided Storage Volume:	Are	ea (SF)	Increme	ntal Volume (CF)	
		Fore Bay (Above		. ,	
Elevation	Basin (SF)	Zff) (SF)	Basin (CF)	Fore Bay (Above Zff) (CF)	Cumulative Volume (CF
705.00	192830	82687	185278	77118	560618
704.00	177827	71679	32203	13196	298223
703.81	161287	67254	119434	0	252824
703.00	134031		103820		133390
702.00	76302		29570		29570
701.00	1546		0		0
Bank Full Elevation:					
Vbf adj= Vbf - Vfb	= 209341 - 73635	135706	cf		
Zbf = 703.00 + ((135706 - 13					
, 55.50 : [[155700 - 15	133390))	703.02			
		- 2217			
100 year Starre El					
100-year Storm Elevation:					
V10	00 adj= V100 - Vfb	560425			
Z100 = 704.00 + ((705.00 - 7					
-298223) / (!	560618 -298223))	705.00			
	Zout	701.00			
		Outlet Control	Structure Design		
		Outlet Control	Structure Design		
Sizing for Bank Full Flood		Outlet Control	Structure Design		
	eased within time p		Structure Design		
Bank full discharge should be rele		period 40 hours	Structure Design  Vtbf/(144000)		
Sizing for Bank Full Flood  Bank full discharge should be rele  Qavg bf =	1.45	period 40 hours	Vtbf/(144000)		
Bank full discharge should be rele Qavg bf = have =	1.45 1.35	period 40 hours cfs ft	Vtbf/(144000) 0.667*(Zbf-Zout)	v 2 v haval0 Ell	
Bank full discharge should be rele Qavg bf = have = A =	1.45 1.35 0.2508	cfs ft	Vtbf/(144000)	x 2 x have)0.5))	
Bank full discharge should be rele Qavg bf = have = A =	1.45 1.35	period 40 hours cfs ft	Vtbf/(144000) 0.667*(Zbf-Zout)	x 2 x have)0.5))	
Bank full discharge should be rele Qavg bf = have = A = Hole Size	1.45 1.35 0.2508	cfs ft	Vtbf/(144000) 0.667*(Zbf-Zout)	x 2 x have)0.5))	
Bank full discharge should be rele Qavg bf = have = A = Hole Size Hole Area	1.45 1.35 0.2508 1.0000 0.00545	cfs ft sf	Vtbf/(144000) 0.667*(Zbf-Zout)	x 2 x have)0.5))	
Bank full discharge should be rele  Qavg bf =  have =  A =  Hole Size  Hole Area  # of Holes	1.45 1.35 0.2508 1.0000 0.00545 45.98	oeriod 40 hours  cfs  ft  sf  in  sf  ea	Vtbf/(144000) 0.667*(Zbf-Zout)	x 2 x have)0.5))	
Bank full discharge should be rele  Qavg bf =  have =  A =  Hole Size  Hole Area  # of Holes  # of Holes	1.45 1.35 0.2508 1.0000 0.00545 45.98	cfs ft sf in sf ea ea	Vtbf/(144000) 0.667*(Zbf-Zout)	x 2 x have)0.5))	
Bank full discharge should be rele  Qavg bf =  have =  A =  Hole Size  Hole Area  # of Holes  # of Holes  Aactual (bf) =	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454	cfs ft sf in sf ea ea	Vtbf/(144000) 0.667*(Zbf-Zout) Qavg bf/(.62 x (32.2		
Bank full discharge should be rele  Qavg bf =  have =  A =  Hole Size  Hole Area  # of Holes  # of Holes  Aactual (bf) =	1.45 1.35 0.2508 1.0000 0.00545 45.98	cfs ft sf in sf ea ea	Vtbf/(144000) 0.667*(Zbf-Zout) Qavg bf/(.62 x (32.2)	x 2 x have)0.5)) x (32.2 x 2 x have)0.5)	
Bank full discharge should be rele  Qavg bf =  have =  A =  Hole Size  Hole Area  # of Holes  # of Holes  Aactual (bf) =  Qave Actual =	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454	cfs ft sf in sf ea ea	Vtbf/(144000) 0.667*(Zbf-Zout) Qavg bf/(.62 x (32.2		
Bank full discharge should be rele  Qavg bf =  have =  A =  Hole Size  Hole Area  # of Holes  # of Holes  Aactual (bf) =  Qave Actual =	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187	cfs ft sf in sf ea ea sf cfs	Vtbf/(144000) 0.667*(Zbf-Zout) Qavg bf/(.62 x (32.2)		
Bank full discharge should be rele	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187	cfs ft sf in sf ea ea sf cfs hrs	Vtbf/(144000) 0.667*(Zbf-Zout) Qavg bf/(.62 x (32.2)		
Bank full discharge should be rele  Qavg bf =  have =  A =  Hole Size  Hole Area  # of Holes  # of Holes  Aactual (bf) =  Qave Actual =  Tbf	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99	cfs ft sf in sf ea ea fcfs fcfs fr Forebay Design	Vtbf/(144000) 0.667*(Zbf-Zout) Qavg bf/(.62 x (32.2) (0.62 x Aactual (bf) x Vbf/(Qactx3600)		
Bank full discharge should be rele  Qavg bf =  have =  A =  Hole Size  Hole Area  # of Holes  # of Holes  Aactual (bf) =  Qave Actual =  Tbf  Downstream crown of forebay or	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99	cfs ft sf in sf ea ea sf cfs hrs  Forebay Design	Vtbf/(144000) 0.667*(Zbf-Zout) Qavg bf/(.62 x (32.2) (0.62 x Aactual (bf) x Vbf/(Qactx3600)		
Bank full discharge should be rele  Qavg bf =  have =  A =  Hole Size  Hole Area  # of Holes  # of Holes  Aactual (bf) =  Qave Actual =  Tbf  Downstream crown of forebay or	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99	cfs ft sf in sf ea ea sf cfs hrs  Forebay Design	Vtbf/(144000)  0.667*(Zbf-Zout)  Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) x Vbf/(Qactx3600)	x (32.2 x 2 x have)0.5)	
Bank full discharge should be rele  Qavg bf =  have =  A =  Hole Size  Hole Area  # of Holes  # of Holes  Aactual (bf) =  Qave Actual =  Tbf  Downstream crown of forebay or	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99	cfs ft sf in sf ea ea sf cfs hrs  Forebay Design	Vtbf/(144000)  0.667*(Zbf-Zout)  Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) x Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*Aa	x (32.2 x 2 x have)0.5) actual bf))^2)/(2*g)	
Bank full discharge should be rele  Qavg bf =  have =  A =  Hole Size  Hole Area  # of Holes  # of Holes  Aactual (bf) =  Qave Actual =  Tbf  Downstream crown of forebay or  Qavg ff act	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99 atlet pipe = 701.45 0.819 0.45	cfs ft sf in sf ea ea fcfs hrs  Forebay Design + 0.67 = 702.12	Vtbf/(144000)  0.667*(Zbf-Zout)  Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) x Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*Aa Basin water surface)	x (32.2 x 2 x have)0.5)	e from forebay riser
Bank full discharge should be rele  Qavg bf =  have =  A =  Hole Size  Hole Area  # of Holes  # of Holes  Aactual (bf) =  Qave Actual =  Tbf  Downstream crown of forebay or  Qavg ff act	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99	cfs ft sf in sf ea ea sf cfs hrs  Forebay Design	Vtbf/(144000)  0.667*(Zbf-Zout)  Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) x Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*Aa	x (32.2 x 2 x have)0.5) actual bf))^2)/(2*g)	e from forebay riser
Bank full discharge should be rele  Qavg bf =  have =  A =  Hole Size  Hole Area  # of Holes  # of Holes  Aactual (bf) =  Qave Actual =  Tbf  Downstream crown of forebay ou  Qavg ff act  h =	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99 atlet pipe = 701.45 0.819 0.45	cfs ft sf in sf ea ea fcfs hrs  Forebay Design + 0.67 = 702.12	Vtbf/(144000)  0.667*(Zbf-Zout)  Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) x Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*Aa Basin water surface)	x (32.2 x 2 x have)0.5) actual bf))^2)/(2*g)	e from forebay riser
Bank full discharge should be rele  Qavg bf = have = A = Hole Size Hole Area # of Holes # of Holes Aactual (bf) = Qave Actual = Tbf  Downstream crown of forebay ou Qavg ff act h =	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99 atlet pipe = 701.45 0.819 0.45	cfs ft sf in sf ea ea fcfs hrs  Forebay Design + 0.67 = 702.12	Vtbf/(144000)  0.667*(Zbf-Zout)  Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) x Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*Aa Basin water surface outlet pipe	x (32.2 x 2 x have)0.5) actual bf))^2)/(2*g)	e from forebay riser
Bank full discharge should be rele Qavg bf = have = A = Hole Size Hole Area # of Holes # of Holes Aactual (bf) = Qave Actual = Tbf  Downstream crown of forebay ou Qavg ff act h =  Sizing for 100-year Flood	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99 atlet pipe = 701.45 0.819 0.45	cfs ft sf in sf ea ea fcfs hrs  Forebay Design + 0.67 = 702.12	Vtbf/(144000)  0.667*(Zbf-Zout)  Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) x Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*Aa Basin water surface)	x (32.2 x 2 x have)0.5) actual bf))^2)/(2*g)	e from forebay riser
Bank full discharge should be rele Qavg bf = have = A = Hole Size Hole Area # of Holes Aactual (bf) = Qave Actual = Tbf  Downstream crown of forebay ou Qavg ff act h =  Sizing for 100-year Flood Qmax=	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99  atlet pipe = 701.45 0.819 0.45 701.45	cfs ft sf in sf ea ea sf cfs hrs  Forebay Design + 0.67 = 702.12  cfs ft <702.12	Vtbf/(144000)  0.667*(Zbf-Zout)  Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) x Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*Aa Basin water surface outlet pipe	x (32.2 x 2 x have)0.5) actual bf))^2)/(2*g)	e from forebay riser
Bank full discharge should be rele  Qavg bf =  have =  A =  Hole Size  Hole Area  # of Holes  Aactual (bf) =  Qave Actual =  Tbf  Downstream crown of forebay ou  Qavg ff act  h =  Sizing for 100-year Flood  Qmax=  dout	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99  atlet pipe = 701.45 0.819 0.45 701.45	cfs ft sf in sf ea ea sf cfs hrs  Forebay Designed + 0.67 = 702.12  cfs ft  cfs	Vtbf/(144000) 0.667*(Zbf-Zout) Qavg bf/(.62 x (32.2) (0.62 x Aactual (bf) x Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*Aa Basin water surface outlet pipe	x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge	e from forebay riser
Bank full discharge should be rele  Qavg bf =  have =  A =  Hole Size  Hole Area  # of Holes  Aactual (bf) =  Qave Actual =  Tbf  Downstream crown of forebay ou  Qavg ff act  h =  Sizing for 100-year Flood  Qmax= dout  Zout	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99  atlet pipe = 701.45 0.819 0.45 701.45  1.385 10 701.83	cfs ft sf in sf ea ea sf cfs hrs  Forebay Design + 0.67 = 702.12  cfs ft <702.12	Vtbf/(144000)  0.667*(Zbf-Zout)  Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) x Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*Aa Basin water surface outlet pipe  Qa Assumed Outlet invert + dout	x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge	e from forebay riser
Bank full discharge should be rele  Qavg bf = have = A = Hole Size Hole Area # of Holes Aactual (bf) = Qave Actual = Tbf  Downstream crown of forebay ou Qavg ff act h =  Sizing for 100-year Flood Qmax= dout Zout hmax=	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99  Atlet pipe = 701.45 0.819 0.45 701.45  1.385 10 701.83 3.17	cfs ft sf in sf ea ea ea sf cfs hrs  Forebay Design + 0.67 = 702.12  cfs ft  cfs ft ft	Vtbf/(144000) 0.667*(Zbf-Zout) Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) : Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*Aa Basin water surface outlet pipe  Qa Assumed Outlet invert + dout (Z100-Zout)	x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge	e from forebay riser
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Bank full discharge should be rele  Qavg bf = have = A = Hole Size Hole Area # of Holes # of Holes Aactual (bf) = Qave Actual = Tbf  Downstream crown of forebay ou Qavg ff act h =  Sizing for 100-year Flood  Qmax= dout Zout hmax= Aout =	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99  Atlet pipe = 701.45 0.819 0.45 701.45  1.385 10 701.83 3.17	cfs ft sf in sf ea ea ea sf cfs hrs  Forebay Design + 0.67 = 702.12  cfs ft  cfs ft ft	Vtbf/(144000) 0.667*(Zbf-Zout) Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) : Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*Aa Basin water surface outlet pipe  Qa Assumed Outlet invert + dout (Z100-Zout)	x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge	e from forebay riser
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Bank full discharge should be rele  Qavg bf =  have =  A =  Hole Size  Hole Area  # of Holes  Aactual (bf) =  Qave Actual =  Tbf  Downstream crown of forebay ou  Qavg ff act  h =  Sizing for 100-year Flood  Qmax= dout  Zout  hmax=  Aout =  dout=	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99  atlet pipe = 701.45 0.819 0.45 701.45  1.385 10 701.83 3.17 0.1563	cfs ft sf in sf ea ea ea sf cfs hrs  Forebay Design + 0.67 = 702.12  cfs ft <702.12	Vtbf/(144000) 0.667*(Zbf-Zout) Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) : Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*Aa Basin water surface outlet pipe  Qa Assumed Outlet invert + dout (Z100-Zout)	x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge	e from forebay riser
Bank full discharge should be rele  Qavg bf =  have =  A =  Hole Size  Hole Area  # of Holes  # of Holes  Aactual (bf) =  Qave Actual =  Tbf  Downstream crown of forebay ou  Qavg ff act  h =  Sizing for 100-year Flood  Qmax=  dout  Zout  hmax=  Aout =  dout=  dout	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99  Atlet pipe = 701.45 0.819 0.45 701.45  1.385 10 701.83 3.17 0.1563 5.35	cfs ft sf in sf ea ea ea sf cfs hrs  Forebay Design + 0.67 = 702.12  cfs ft 702.12</td <td>Vtbf/(144000) 0.667*(Zbf-Zout) Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) : Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*Aa Basin water surface outlet pipe  Qa Assumed Outlet invert + dout (Z100-Zout)</td> <td>x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge</td> <td>e from forebay riser</td>	Vtbf/(144000) 0.667*(Zbf-Zout) Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) : Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*Aa Basin water surface outlet pipe  Qa Assumed Outlet invert + dout (Z100-Zout)	x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge	e from forebay riser
Bank full discharge should be rele  Qavg bf =  have =  A =  Hole Size  Hole Area  # of Holes  Aactual (bf) =  Qave Actual =  Tbf  Downstream crown of forebay ou  Qavg ff act  h =  Sizing for 100-year Flood  Qmax= dout  Zout  hmax=  Aout =  dout=  dout  Aout	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99  atlet pipe = 701.45 0.819 0.45 701.45  1.385 10 701.83 3.17 0.1563 5.35  10.00 0.5454	cfs ft sf in sf ea ea ea sf cfs hrs  Forebay Design + 0.67 = 702.12  cfs ft <702.12  cfs in ft sf in	Vtbf/(144000) 0.667*(Zbf-Zout) Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) : Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*Aa Basin water surface outlet pipe  Qa Assumed Outlet invert + dout (Z100-Zout)	x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge	e from forebay riser
Bank full discharge should be rele  Qavg bf =  have =  A =  Hole Size  Hole Area  # of Holes  # of Holes  Aactual (bf) =  Qave Actual =  Tbf  Downstream crown of forebay ou  Qavg ff act  h =  Sizing for 100-year Flood  Qmax= dout  Zout  hmax=  Aout =  dout=  dout  Aout  do	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99  Atlet pipe = 701.45 0.819 0.45 701.45  1.385 10 701.83 3.17 0.1563 5.35  10.00 0.5454 5.25	cfs ft sf in sf ea ea ea sf cfs hrs  Forebay Design + 0.67 = 702.12  cfs ft 702.12</td <td>Vtbf/(144000) 0.667*(Zbf-Zout) Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) : Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*Aa Basin water surface outlet pipe  Qa Assumed Outlet invert + dout (Z100-Zout)</td> <td>x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge</td> <td>e from forebay riser</td>	Vtbf/(144000) 0.667*(Zbf-Zout) Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) : Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*Aa Basin water surface outlet pipe  Qa Assumed Outlet invert + dout (Z100-Zout)	x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge	e from forebay riser
Bank full discharge should be rele  Qavg bf =  have =  A =  Hole Size  Hole Area  # of Holes  # of Holes  Aactual (bf) =  Qave Actual =  Tbf  Downstream crown of forebay ou  Qavg ff act  h =  Sizing for 100-year Flood  Qmax=  dout  Zout  hmax=  Aout =  dout=  dout  Aout  do  Ao	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99  atlet pipe = 701.45 0.819 0.45 701.45  1.385 10 701.83 3.17 0.1563 5.35  10.00 0.5454 5.25 0.150	cfs ft sf in sf ea ea ea sf cfs hrs  Forebay Design + 0.67 = 702.12  cfs ft <702.12  cfs in ft sf in	Vtbf/(144000) 0.667*(Zbf-Zout) Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) : Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*Aa Basin water surface outlet pipe  Qa Assumed Outlet invert + dout (Z100-Zout)	x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge	e from forebay riser
Bank full discharge should be rele  Qavg bf = have = A = Hole Size Hole Area # of Holes Aactual (bf) = Qave Actual = Tbf  Downstream crown of forebay ou Qavg ff act h =  Sizing for 100-year Flood Qmax= dout Zout hmax= Aout = dout=  dout Aout do Ao Zout act	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99  atlet pipe = 701.45 0.819 0.45 701.45  1.385 10 701.83 3.17 0.1563 5.35  10.00 0.5454 5.25 0.150 701.83	cfs ft sf in sf ea ea ea sf cfs hrs  Forebay Design + 0.67 = 702.12  cfs ft <a href="mailto:right"><a hre<="" td=""><td>Vtbf/(144000)  0.667*(Zbf-Zout)  Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) x Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*Aa Basin water surface outlet pipe  Qa Assumed  Outlet invert + dout (Z100-Zout)  Qmax/(.62 x (32.2 x</td><td>x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge</td><td>e from forebay riser</td></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a>	Vtbf/(144000)  0.667*(Zbf-Zout)  Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) x Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*Aa Basin water surface outlet pipe  Qa Assumed  Outlet invert + dout (Z100-Zout)  Qmax/(.62 x (32.2 x	x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge	e from forebay riser
Bank full discharge should be rele  Qavg bf = have = A = Hole Size Hole Area # of Holes Aactual (bf) = Qave Actual = Tbf  Downstream crown of forebay ou Qavg ff act h =  Sizing for 100-year Flood Qmax= dout Zout hmax= Aout = dout=  dout Aout do Ao Zout act	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99  atlet pipe = 701.45 0.819 0.45 701.45  1.385 10 701.83 3.17 0.1563 5.35  10.00 0.5454 5.25 0.150	cfs ft sf in sf ea ea ea sf cfs hrs  Forebay Design + 0.67 = 702.12  cfs ft 702.12</td <td>Vtbf/(144000) 0.667*(Zbf-Zout) Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) : Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*Aa Basin water surface outlet pipe  Qa Assumed Outlet invert + dout (Z100-Zout)</td> <td>x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge</td> <td>e from forebay riser</td>	Vtbf/(144000) 0.667*(Zbf-Zout) Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) : Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*Aa Basin water surface outlet pipe  Qa Assumed Outlet invert + dout (Z100-Zout)	x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge	e from forebay riser
Bank full discharge should be rele  Qavg bf = have = A = Hole Size Hole Area # of Holes Aactual (bf) = Qave Actual = Tbf  Downstream crown of forebay ou Qavg ff act h =  Sizing for 100-year Flood Qmax= dout Zout hmax= Aout = dout= dout Aout do Ao Zout act	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99  atlet pipe = 701.45 0.819 0.45 701.45  1.385 10 701.83 3.17 0.1563 5.35  10.00 0.5454 5.25 0.150 701.83	cfs ft sf in sf ea ea ea sf cfs hrs  Forebay Design + 0.67 = 702.12  cfs ft <a href="mailto:right"><a hre<="" td=""><td>Vtbf/(144000)  0.667*(Zbf-Zout)  Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) x Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*Aa Basin water surface outlet pipe  Qa Assumed  Outlet invert + dout (Z100-Zout)  Qmax/(.62 x (32.2 x</td><td>x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge</td><td>e from forebay riser</td></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a>	Vtbf/(144000)  0.667*(Zbf-Zout)  Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) x Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*Aa Basin water surface outlet pipe  Qa Assumed  Outlet invert + dout (Z100-Zout)  Qmax/(.62 x (32.2 x	x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge	e from forebay riser
Bank full discharge should be rele  Qavg bf = have = A = Hole Size Hole Area # of Holes # of Holes Aactual (bf) = Qave Actual = Tbf  Downstream crown of forebay ou Qavg ff act h =  Sizing for 100-year Flood  Qmax= dout Zout hmax= Aout = dout=  dout Aout Aout do Ao Zout act havg=	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99  atlet pipe = 701.45 0.819 0.45 701.45  1.385 10 701.83 3.17 0.1563 5.35  10.00 0.5454 5.25 0.150 701.83	cfs ft sf in sf ea ea ea sf cfs hrs  Forebay Design + 0.67 = 702.12  cfs ft <a href="mailto:right"><a hre<="" td=""><td>Vtbf/(144000)  0.667*(Zbf-Zout)  Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) x Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*Aa Basin water surface outlet pipe  Qa Assumed  Outlet invert + dout (Z100-Zout)  Qmax/(.62 x (32.2 x</td><td>x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge  2 x havg)0.5))</td><td>e from forebay riser</td></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a>	Vtbf/(144000)  0.667*(Zbf-Zout)  Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) x Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*Aa Basin water surface outlet pipe  Qa Assumed  Outlet invert + dout (Z100-Zout)  Qmax/(.62 x (32.2 x	x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge  2 x havg)0.5))	e from forebay riser
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Bank full discharge should be rele  Qavg bf = have = A = Hole Size Hole Area # of Holes Aactual (bf) = Qave Actual = Tbf  Downstream crown of forebay ou Qavg ff act h =  Sizing for 100-year Flood Qmax= dout Zout hmax= Aout = dout= dout= Aout Aout do Ao Zout act havg=  Qmax Qa	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99  atlet pipe = 701.45 0.819 0.45 701.45  1.385 10 701.83 3.17 0.1563 5.35  10.00 0.5454 5.25 0.150 701.83 3.17	cfs ft sf in sf ea ea ea sf cfs hrs  Forebay Design + 0.67 = 702.12  cfs ft  cfs in ft sf in sf in	Vtbf/(144000)  0.667*(Zbf-Zout)  Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) x Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*AaBasin water surface outlet pipe  Qa Assumed  Outlet invert + dout (Z100-Zout)  Qmax/(.62 x (32.2 x	x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge  2 x havg)0.5))	e from forebay riser
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Bank full discharge should be releated Qavg bf = have = A = Hole Size Hole Area # of Holes Aactual (bf) = Qave Actual = Tbf  Downstream crown of forebay ou Qavg ff act h = Sizing for 100-year Flood Qmax = dout Zout hmax = Aout = dout = dout Aout do Ao Zout act havg = Qmax Qa Qmax percentage of Qa	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99  Atlet pipe = 701.45 0.819 0.45 701.45  1.385 10 701.83 3.17 0.1563 5.35  10.00 0.5454 5.25 0.150 701.83 3.17 1.331 1.385	cfs ft sf in sf ea ea ea sf cfs hrs  Forebay Design + 0.67 = 702.12  cfs ft  cfs in ft sf in sf in	Vtbf/(144000) 0.667*(Zbf-Zout) Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) : Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*AaBasin water surface outlet pipe  Qa Assumed Outlet invert + dout (Z100-Zout) Qmax/(.62 x (32.2 x (32	x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge  2 x havg)0.5))	e from forebay riser
Bank full discharge should be rele  Qavg bf = have = A = Hole Size Hole Area # of Holes # of Holes Aactual (bf) = Qave Actual = Tbf  Downstream crown of forebay or Qavg ff act h =  Sizing for 100-year Flood Qmax= dout Zout hmax= Aout = dout= dout= dout Aout do Ao Zout act havg=  Qmax Qa Qmax percentage of Qa  Riser Outlet Pipe Slope	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99  Atlet pipe = 701.45 0.819 0.45 701.45  1.385 10 701.83 3.17 0.1563 5.35  10.00 0.5454 5.25 0.150 701.83 3.17 1.331 1.385 3.8%	cfs ft sf in sf ea ea ea sf cfs hrs  Forebay Design + 0.67 = 702.12  cfs ft <a href="mailto:right"><a hre<="" td=""><td>Vtbf/(144000) 0.667*(Zbf-Zout) Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) : Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*AaBasin water surface outlet pipe  Qa Assumed Outlet invert + dout (Z100-Zout) Qmax/(.62 x (32.2 x (32</td><td>x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge  2 x havg)0.5))</td><td>e from forebay riser</td></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a></a>	Vtbf/(144000) 0.667*(Zbf-Zout) Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) : Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*AaBasin water surface outlet pipe  Qa Assumed Outlet invert + dout (Z100-Zout) Qmax/(.62 x (32.2 x (32	x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge  2 x havg)0.5))	e from forebay riser
Bank full discharge should be rele  Qavg bf = have = A = Hole Size Hole Area # of Holes # of Holes Aactual (bf) = Qave Actual = Tbf  Downstream crown of forebay ou Qavg ff act h =  Sizing for 100-year Flood  Qmax= dout Zout hmax= Aout = dout= dout Aout do Ao Zout act havg=  Qmax Qa Qmax percentage of Qa  Riser Outlet Pipe Slope  Qmax	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99  atlet pipe = 701.45 0.819 0.45 701.45  1.385 10 701.83 3.17 0.1563 5.35  10.00 0.5454 5.25 0.150 701.83 3.17 1.331 1.385 3.8%	cfs ft sf in sf ea ea ea sf cfs hrs  Forebay Design + 0.67 = 702.12  cfs ft  cfs in ft sf in sf in	Vtbf/(144000) 0.667*(Zbf-Zout) Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) : Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*AaBasin water surface outlet pipe  Qa Assumed Outlet invert + dout (Z100-Zout) Qmax/(.62 x (32.2 x (32	x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge  2 x havg)0.5))	e from forebay riser
Bank full discharge should be rele  Qavg bf = have = A = Hole Size Hole Area # of Holes # of Holes Aactual (bf) = Qave Actual = Tbf  Downstream crown of forebay or Qavg ff act h =  Sizing for 100-year Flood  Qmax= dout Zout hmax= Aout = dout= dout Aout do Ao Zout act havg=  Qmax Qa Qmax percentage of Qa  Riser Outlet Pipe Slope  Qmax  n	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99  atlet pipe = 701.45 0.819 0.45 701.45  1.385 10 701.83 3.17 0.1563 5.35  10.00 0.5454 5.25 0.150 701.83 3.17  1.331 1.385 3.8%	cfs ft sf in sf ea ea ea sf cfs hrs  Forebay Design + 0.67 = 702.12  cfs ft  cfs in  ft sf in  ft sf in  ft sf in  cfs cfs cfs cfs ft	Vtbf/(144000) 0.667*(Zbf-Zout) Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) : Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*AaBasin water surface outlet pipe  Qa Assumed Outlet invert + dout (Z100-Zout) Qmax/(.62 x (32.2 x (32	x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge  2 x havg)0.5))	e from forebay riser
Bank full discharge should be rele  Qavg bf = have = A = Hole Size Hole Area # of Holes # of Holes Aactual (bf) = Qave Actual = Tbf  Downstream crown of forebay ou Qavg ff act h =  Sizing for 100-year Flood Qmax= dout Zout hmax= Aout = dout= dout Aout do Ao Zout act havg=  Qmax Qa Qmax percentage of Qa  Riser Outlet Pipe Slope Qmax Pipe Size	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99  Atlet pipe = 701.45 0.819 0.45 701.45  1.385 10 701.83 3.17 0.1563 5.35  10.00 0.5454 5.25 0.150 701.83 3.17  1.331 1.385 3.8%	cfs ft sf in sf ea ea ea sf cfs hrs  Forebay Design + 0.67 = 702.12 cfs ft  cfs in  ft sf in  ft sf in  ft sf in  ft sf in  ft cfs cfs in	Vtbf/(144000) 0.667*(Zbf-Zout) Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) : Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*AaBasin water surface outlet pipe  Qa Assumed Outlet invert + dout (Z100-Zout) Qmax/(.62 x (32.2 x (32	x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge  2 x havg)0.5))	e from forebay riser
Bank full discharge should be rele  Qavg bf = have = A = Hole Size Hole Area # of Holes Aactual (bf) = Qave Actual = Tbf  Downstream crown of forebay ou Qavg ff act h =  Sizing for 100-year Flood  Qmax= dout Zout hmax= Aout = dout= dout Aout do Ao Zout act havg=  Qmax Qa Qmax percentage of Qa  Riser Outlet Pipe Slope Qmax	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99  Atlet pipe = 701.45 0.819 0.45 701.45  1.385 10 701.83 3.17 0.1563 5.35  10.00 0.5454 5.25 0.150 701.83 3.17  1.331 1.385 3.8%	cfs ft sf in sf ea ea ea sf cfs hrs  Forebay Design + 0.67 = 702.12  cfs ft  cfs in  ft sf in  ft sf in  ft sf in  cfs cfs cfs cfs ft	Vtbf/(144000) 0.667*(Zbf-Zout) Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) : Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*AaBasin water surface outlet pipe  Qa Assumed Outlet invert + dout (Z100-Zout) Qmax/(.62 x (32.2 x (32	x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge  2 x havg)0.5))	e from forebay riser
Bank full discharge should be rele  Qavg bf = have = A = Hole Size Hole Area # of Holes # of Holes Aactual (bf) = Qave Actual = Tbf  Downstream crown of forebay ou Qavg ff act h =  Sizing for 100-year Flood Qmax= dout Zout hmax= Aout = dout= dout Aout do Ao Zout act havg=  Qmax Qa Qmax percentage of Qa  Riser Outlet Pipe Slope Qmax Pipe Size	1.45 1.35 0.2508 1.0000 0.00545 45.98 45 0.2454 1.4187 40.99  Atlet pipe = 701.45 0.819 0.45 701.45  1.385 10 701.83 3.17 0.1563 5.35  10.00 0.5454 5.25 0.150 701.83 3.17  1.331 1.385 3.8%	cfs ft sf in sf ea ea ea sf cfs hrs  Forebay Design + 0.67 = 702.12 cfs ft  cfs in  ft sf in  ft sf in  ft sf in  ft sf in  ft cfs cfs in	Vtbf/(144000) 0.667*(Zbf-Zout) Qavg bf/(.62 x (32.2)  (0.62 x Aactual (bf) : Vbf/(Qactx3600)  gn Assumptions  ((Qavg ff / (0.62*AaBasin water surface outlet pipe  Qa Assumed Outlet invert + dout (Z100-Zout) Qmax/(.62 x (32.2 x (32	x (32.2 x 2 x have)0.5)  actual bf))^2)/(2*g)  will not inhibit free discharge  2 x havg)0.5))	e from forebay riser
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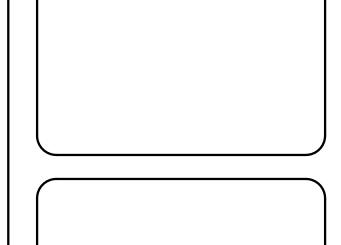
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# SUBARU VEHICLE EVALUATION AREA

STORM WATER CALCULATIONS

SECTION 6
TOWN 3 SOUTH RANGE 8 EAST
VAN BUREN TOWNSHIP
WAYNE COUNTY, MI

NO.	DATE	REVISION
1	09/24/21	SITE PLAN REVIEW

VERIFY SCALES

BAR IS ONE INCH ON ORIGINAL DRAWING

IF NOT ONE INCH ON THIS SHEET,

ADJUST SCALES ACCORDINGLY

DRAFTER DATE

M. FRECKELTON 07-15-21

DESIGNER DATE

A. CHLUDZINSKI 07-15-21

CHECKED DATE

J. SCHROT 07-26-21

PROJECT MANAGER

J. SCHROT

DEPARTMENT MANAGER APPROVAL

J. SCHROT

DEPARTMENT MANAGER APPROVAL

J. SCHROT

DATE

J. SCHROT

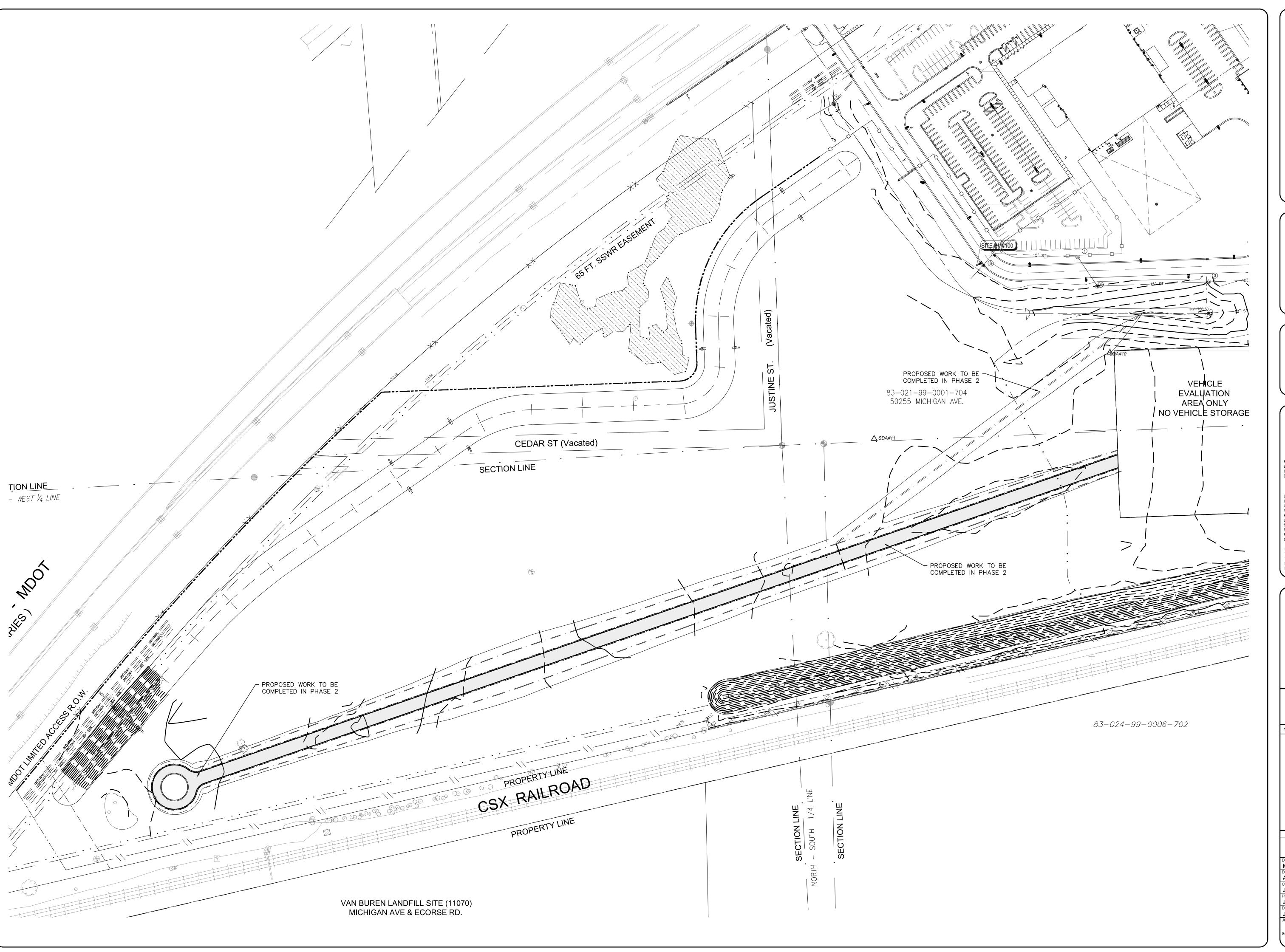
DEPARTMENT MANAGER APPROVAL

J. SCHROT

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DRAWING NO. MN21005 MN21005DRM

SCALE: SHEET NO. C5.2





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# SUBARU VEHICLE EVALUATION AREA

OVERALL SITE PLAN

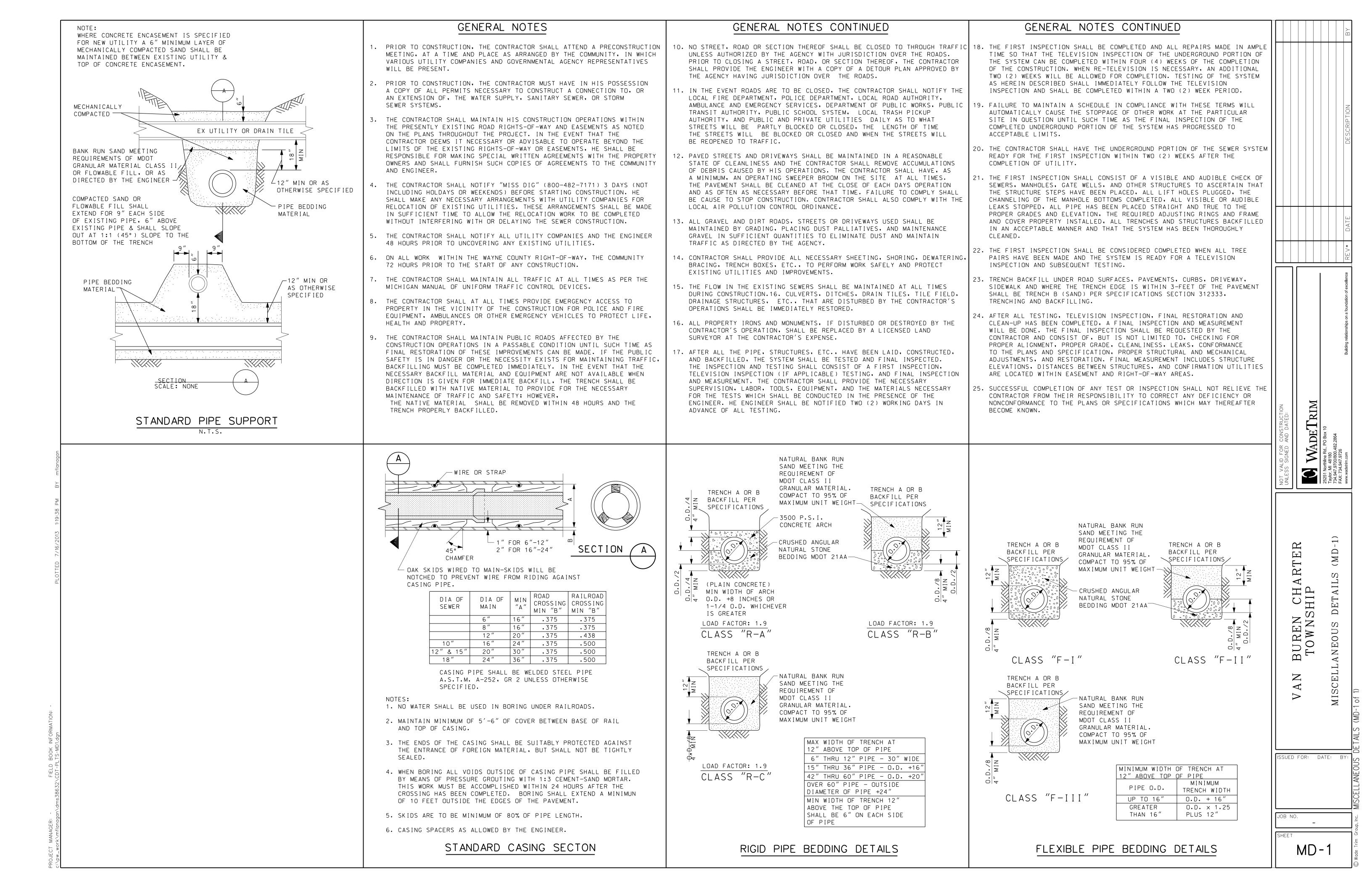
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TOWN 3 SOUTH RANGE 8 EAST
VAN BUREN TOWNSHIP
WAYNE COUNTY, MI

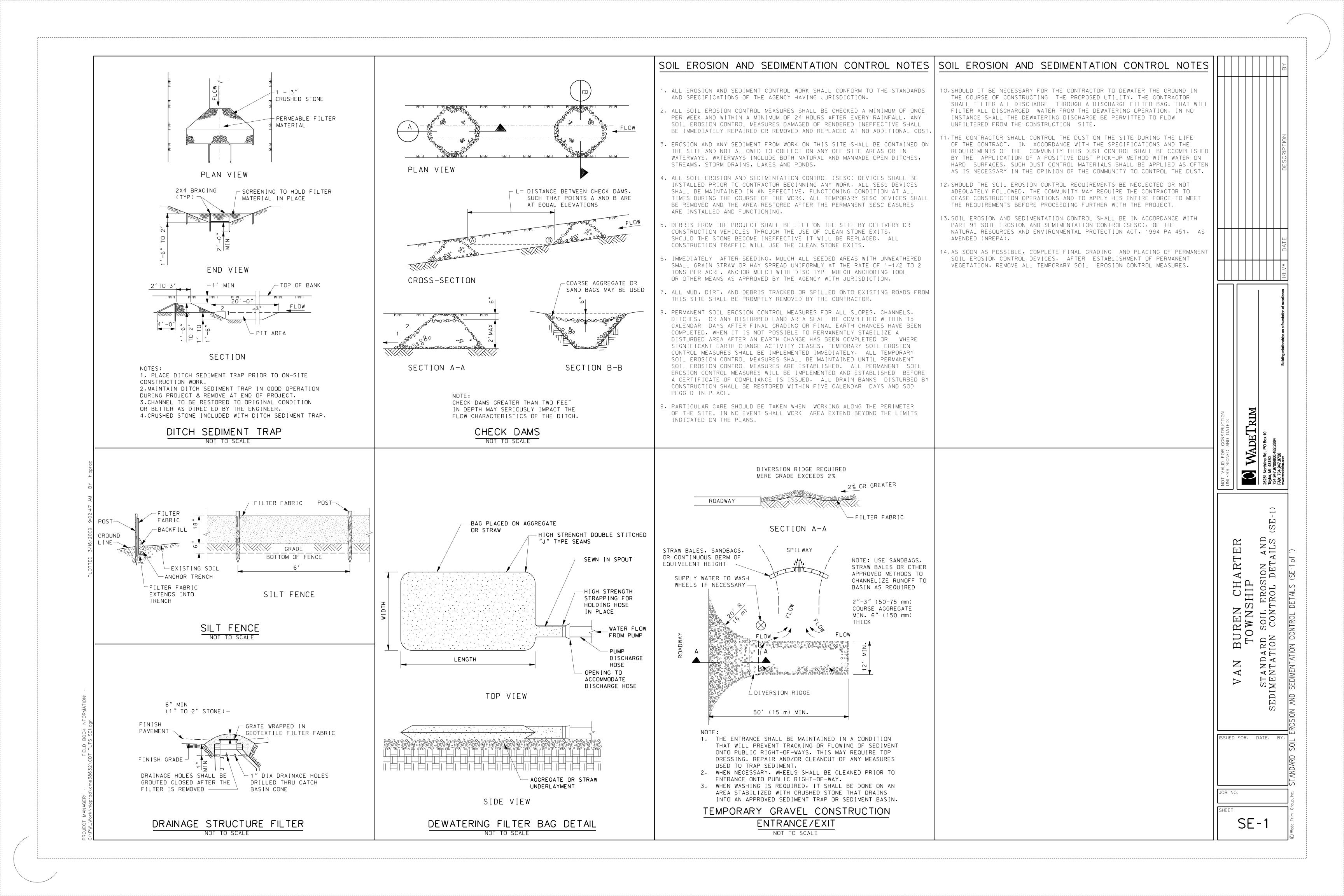
NO.	DATE	REVISION
1	09/24/21	SITE PLAN REVIEW

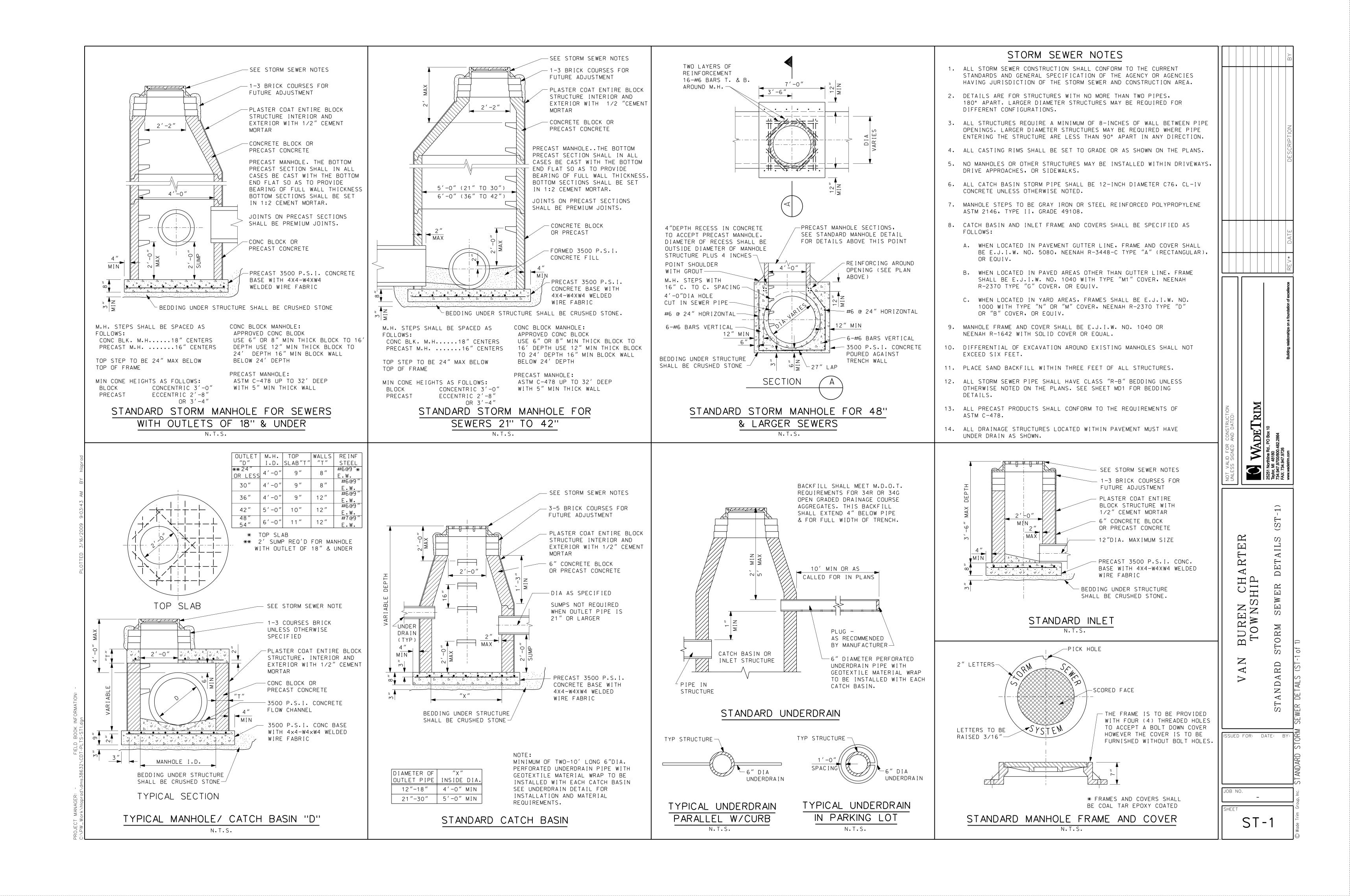
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BAR IS ONE INCH ON ORIGINAL DRAWING
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ADJUST SCALES ACCORDINGLY

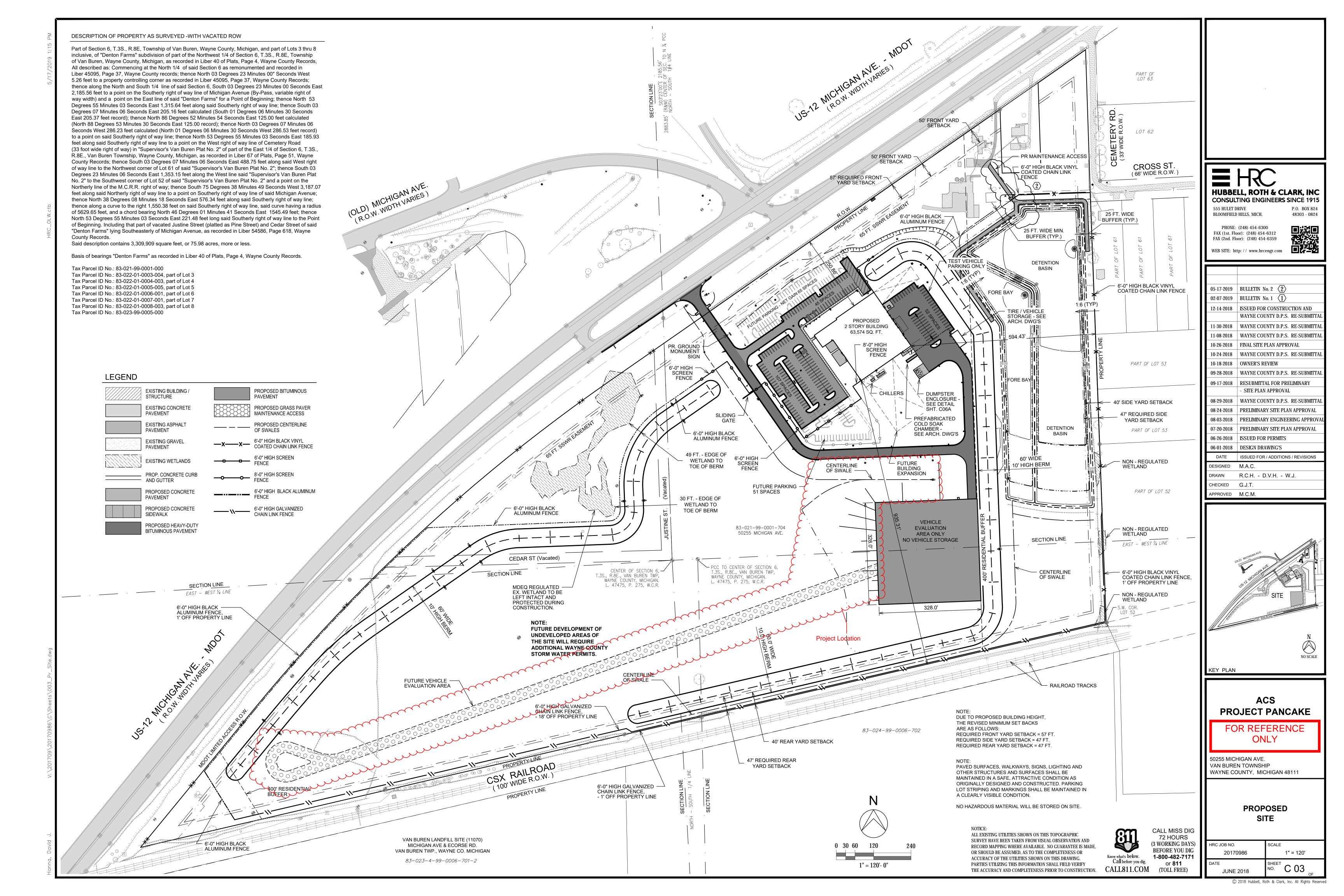
DIVILIT		D/ (  L
M. FRECKELTON		07-15-21
DESIGNER		DATE
A. CHLUDZINSKI		07-15-21
CHECKED		DATE
J. SCHROT		07-26-21
PROJECT MANAGER	•	BID PLAN DATE
J. SCHROT		
DEPARTMENT MANAGER APP	ROVAL	DATE
LCCUDAT		

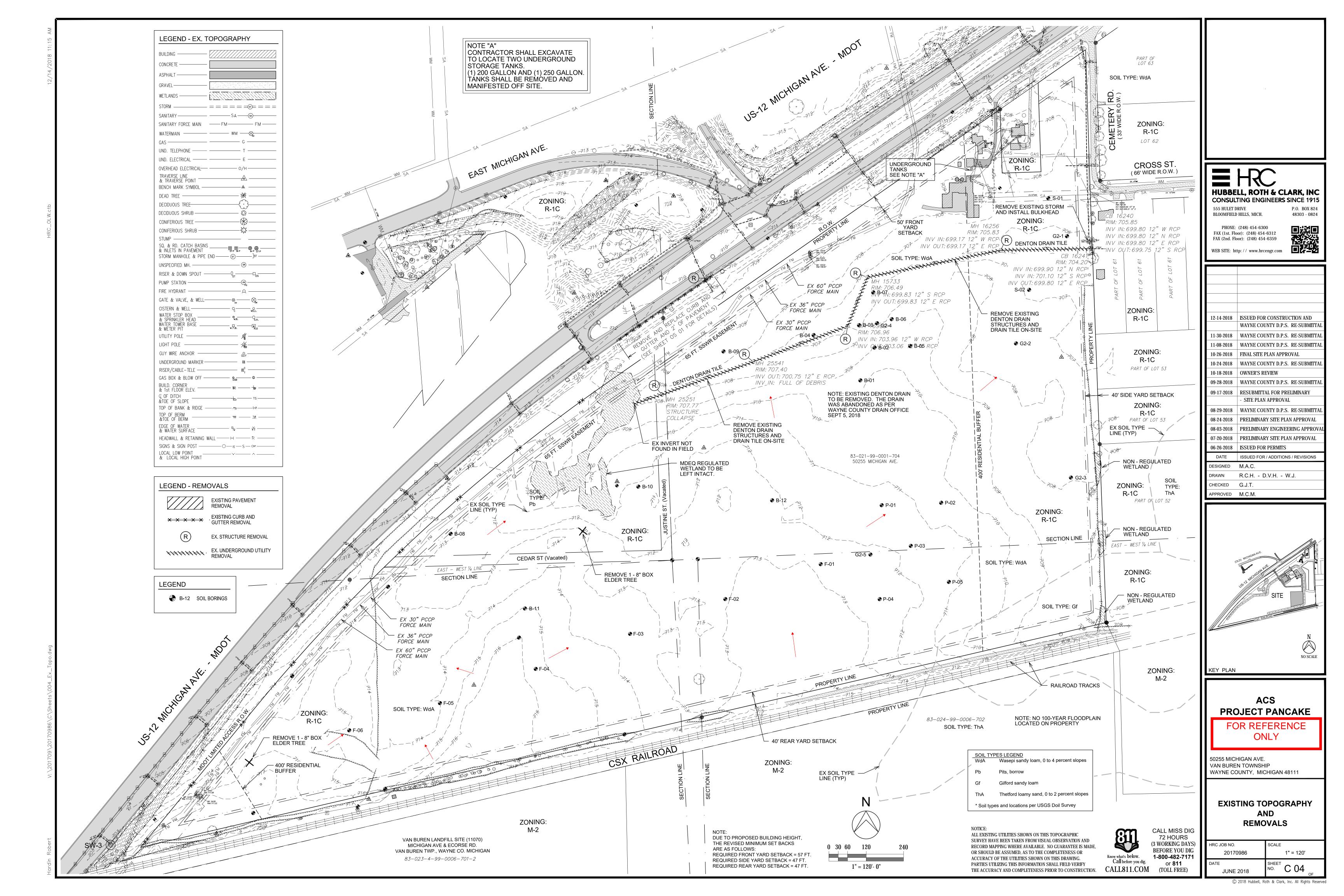
JOB NO. DRAWING NO. MN21005 MN21005SPL SCALE: SHEET NO.

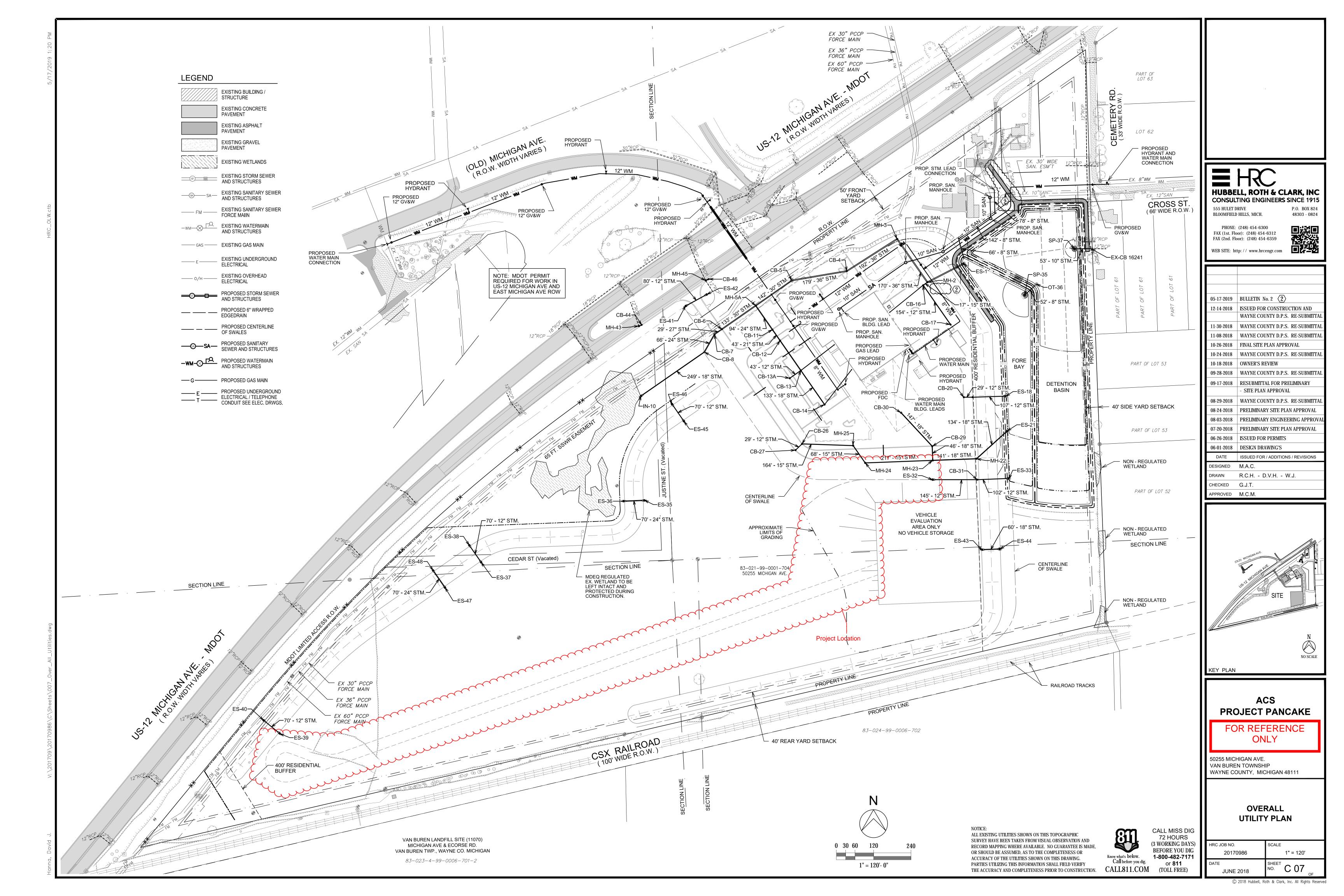


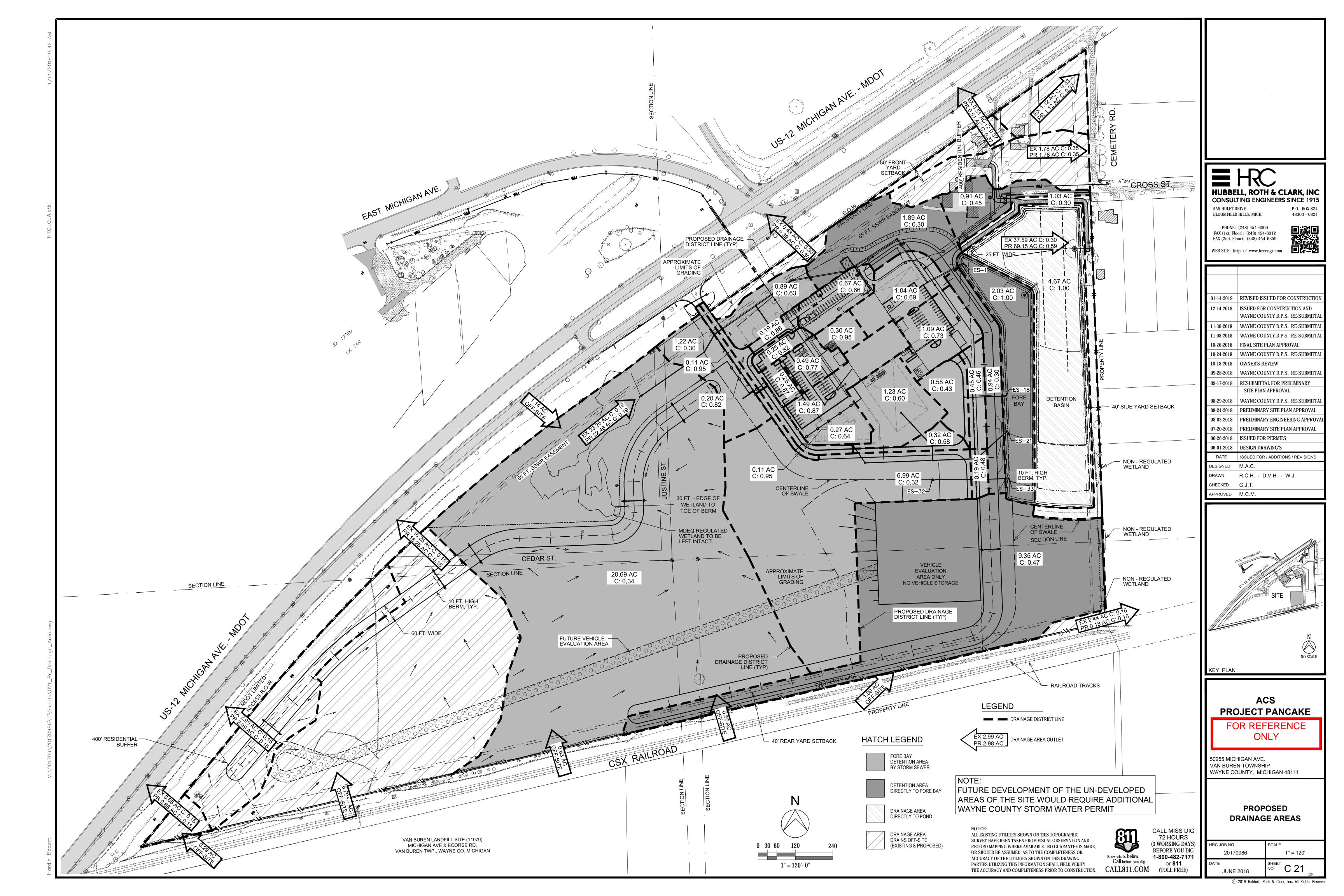


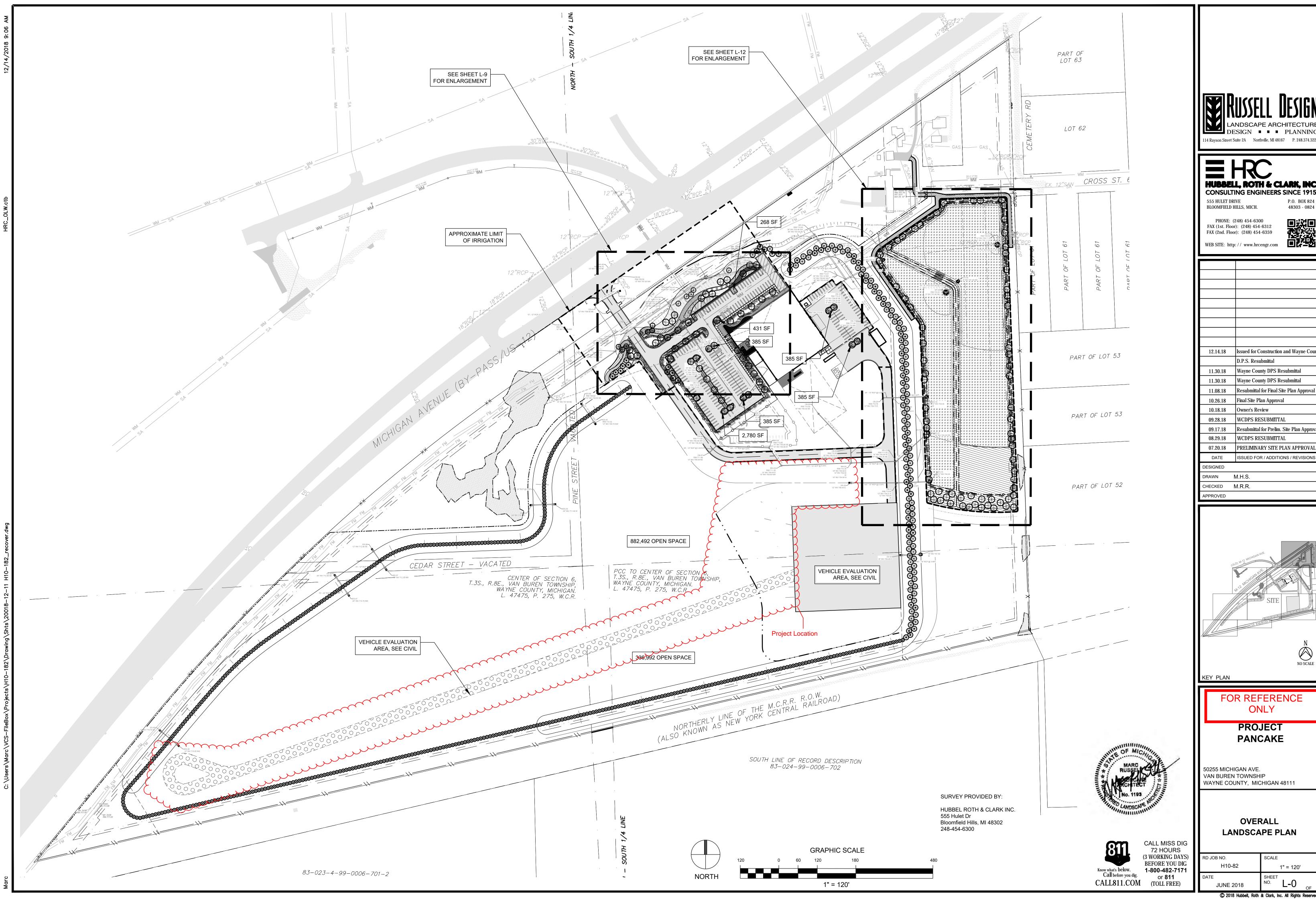




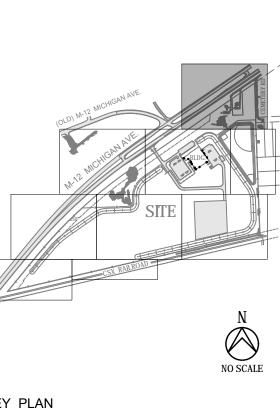








12.14.18 Issued for Construction and Wayne Count



### **PLANNING & ZONING APPLICATION**

Case number	VBT-21-028	Date Submitted
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		APPLICANT INFO	DRMAT	TION
Applicant	Kojaian Van Bu	ren Acquisitions, LLC	Phone	248-644-7600
Address	39400 Woodwar	rd Avenue, Suite: 250	Fax	
City, State	Bloomfield Hills	s, Michigan		48304
E:mail	tantone@kojaia	nn.com		Phone Number
	Same		_	
Property Owner	(if different	t than applicant)	_ rnone	
Address				
City, State	Applicant and	d Owner	_Zip	
Billing Contact _	Applicant and		_ Phone	
Address			_Fax	
City, State			_Zip	
		SITE/ PROJECT IN	FORM.	ATION
Name of Projec	t	evelopment		
Parcel Id No. VI	25-83- 002-99-0	0026-706	Project	t Address Unassigned
		Attach Legal Description of	of Prope	ertv
Droporty I contin		Side of Haggerty		Road; Between Road
Van Bo	THE STREET		Cina	e of Lot Width 1002.2 Depth 230
and	E 200	Road.	.298	M.4
Acreage of Site	Total	Acres of Site to Review		Current Zoning of Site
Project Descript	ion:			
		NO		
Is a re-zoning of	this parcel being rec	quested?		YES (if yes complete next line) NO
Current Zoning	of Site M-1			Requested Zoning
		SPECIAL PERMIT IN	NFORM	MATION
Does the Propos	ed Use Require Spec	cial Approval?		YES (if yes complete next line) NO
-	g Ordinance for whi			
		NO NO		
Is there an offici	al Woodland within	parcel?		Woodland acreage
List total numbe	r of regulated trees o	outside the Woodland area?	28	Total number of trees
Detailed descrip	tion for cutting trees		- Parkets	
Trees lo	cated within the	development are will i	be rem	noved
If applicable app	lication MUST be a	ccompanied with a Tree Sur	vey or s	statement of no trees, which incorporates all the
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By:	Anthony G. An	tone Esq		Date
Its:	Anthony G. An Vice President	tone, Esq.		Date
STATE OF MICHIGA	.N			
COUNTY OF WAYN The undersigned, being		ays that the foregoing statements and a	nswers her	rein contained and accompanied information and date are in all
respects true and corre		10		•
Subscribed and sworn		lay of October 20-	<u>41</u> .	17417
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		>	Oaklan	nd County 10/12/2027
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### **MEMO**

TO: Van Buren Township Planning Commission

FROM: Dan Power– Director of Planning and Economic Development

RE: Case 21-028: Kojaian Industrial Building

DATE: October 21, 2021

The Planning Commission will review the request by applicant and owner Kojaian Van Buren Acquisitions, LLC for preliminary site plan approval to construct a 66,450 square foot speculative industrial building and related site improvements. The property is located at 6615 Haggerty Road, tax parcel 83 002 99 0026 706. The property is zoned M-1 – Light Industrial.

If the Planning Commission recommends approval of the preliminary site plan, the project will be reviewed by the Wayne County Department of Public Services (WCDPS). Pending their approval, the project will undergo a final review by the Township Engineer and final site plan review by both the Township Engineer and Planning Consultant. Pending their recommendation, the project will return to the Planning Commission for their consideration of final site plan approval.

For your reference, this packet includes a completed application form from the applicant and reports from the Van Buren Township Planning Consultant, Township Engineer and Fire Marshal. The packet also includes a 21-page civil site plan sheet set.

I look forward to assisting with this review. Thank you for your consideration.

Sincerely,

Dan Power, AICP

Planning and Economic Development Director

Public Services Department

Charter Township of Van Buren

CC: Greg Bono, PE and James Butler, PE - PEA Group

Tony Antone, Vice President - Kojaian Management Corporation

### MCKENNA



October 20, 2021

Planning Commission Charter Township of Van Buren 46425 Tyler Road Belleville, Michigan 48111

Subject: VBT-21-028; Van Buren Development – 6735 Haggerty Road; Amended Site Plan Review #3

Revised Site Plans Dated September 28, 2021.

#### Dear Commissioners:

The original submittal for this property was approved in 2018 for Neapco. However, subsequent to preliminary approval, Neapco chose to make changes to their existing building to accommodate their needs and abandoned this project. The owner of the property at this time has revised the old site plan and proposed amendments to the site plan that was previously approved. The major amendments to the site plan are as follows:

- The building area has been reduced from 72,830 square feet to 66,450 square feet.
- The number of parking spaces provided has been reduced from 105 spaces to 103 spaces.
- The two (2) cross access driveways connections to the east have been eliminated.
- Four (4) truck doors and an overhead door have been added to the north end of the building.
- Handicap parking has been added to the south side of the building.

We have reviewed the site plan based on Zoning Ordinance standards and sound planning and design principles. Our comments are as follows (items requiring changes or additional information are <u>underlined</u>):

### **COMMENTS**

- 1. Zoning and Use. The site is zoned M-1 Light Industrial District. The applicant notes that the proposed use is light industrial and warehousing. Warehousing uses are permitted by right per Section 3.115 (A) of the Zoning Ordinance. Light Manufacturing and processing uses are also permitted by right. The structure is being built as a speculative warehouse building. Any future tenant will be required to comply with the use description noted. No heavy industrial uses shall be permitted.
- 2. Required Information. All of the site plan information required per Section 12.203 of the Zoning Ordinance has been noted at this time.
- **3.** Lot. The subject site had multiple parcels of land with five (5) different tax identifications numbers. It appears that all of the parcels have been combined into a single 5.31-acre parcel with tax id #: 83-002-99-0026-706.
- **4. Dimensional Requirements.** The M-1 district requires a minimum front yard setback of 50 feet, a minimum side yard setback of 40 feet, and a minimum rear yard setback of 40 feet. The overhang on the northwest corner of the building is shown extending into the front yard setbacks. Per Section 7.118, architectural features may extend or project into a required front yard or rear yard not more than three (3) feet. The overhang is shown as a 3-foot encroachment, and is permitted.

The parking lot is located 11.51 feet from the northern side lot line, and Section 4.102 (P) of the Zoning Ordinance permits a parking lot to be located in a required side yard setback. The parking lot is located right at the rear lot line, and Section 9.101(A) permits a parking lot to be located in a required rear yard setback.

The maximum lot coverage (i.e., buildings and roofed structures) in the M-1 district is 35%. Proposed lot coverage is 28.7% and within allowable limits. The maximum building height in the M-1 district is 30 feet, and the building height has been revised to comply within this height limit.

#### 5. Access and Circulation.

- **a.** Location of Curb Cuts. The site plan proposes two (2) curb cuts off Haggerty Road on the northwest and southwest sides of the site. Both access drives off Haggerty are designed with a width of 30 feet each. Lanes of ingress and egress must be striped on the pavement. In order to comply with fire department requirements, the revised plan includes a cross access connection on the southeast side of the site to the adjacent Neapco parcel.
- **b.** Cross Access. The applicant had eliminated a cross access with the adjacent property to the east citing feasible for safety and operational reasons with a new industrial tenant on the site. However, upon concerns raised by the Fire Department, the cross access has been re-established.
- c. Sidewalks. The site plan indicates a 5-foot wide concrete sidewalk along the site's Haggerty Road frontage, which connect to existing sidewalks on the north and south sides. Section 9.107 of the Zoning Ordinance also requires interior sidewalks within the development to provide circulation between the parking areas and the right-of-way; the parking areas and the building entrance(s); and adjacent development(s) where practical. The plan proposes 8-foot wide concrete sidewalks on the north and south sides of the building, with sidewalk connections to the public sidewalk along Haggerty. A 4' wide concrete sidewalk is shown on the east side of the building providing access out of doors on that side. Minimum required width of the sidewalk is 5'. The sidewalk must be widened by 1 foot.

### 6. Parking and Loading.

- **a. Space Dimensions.** The revised site plan notes the dimensions of the parking spaces as 9.5" x 18'. The spaces overhang 8-foot wide sidewalks on the north and south side of the building. A 10-foot wide greenbelt along the north property line provides sufficient vehicle overhang space for the 18 foot length parking stalls. The parking spaces along the east side property line have a length of 20'. All aisles are 24 feet wide as required and all of the spaces are shown with double striping as required by Section 9.104 (C),
- **b. Number of Parking Spaces.** The minimum number of parking spaces for light industrial uses is five (5), plus either one (1) per each 550 square feet gross floor area or one (1) per each employee at peak shift, whichever is greater. The minimum number of parking spaces for warehouse uses is five (5) plus one (1) per 1,750 square feet of gross floor area plus one (1) per 350 useable square feet of office, sales, or similar space. Based on the square footages noted on the site plan, the site requires a total of 97 parking spaces. The site plan proposes a total of 97 parking spaces, including six (6) handicap accessible spaces. The floor plan does not show an office space for the building, although the parking calculations note 9,500 sq. ft as office space. A revised floor plan must delineate the



<u>various uses of the space.</u> The site plan also does not include an employee count which will be determined when a tenant is finalized. At this time the site plan appears to show the required amount of parking.

- **c. Barrier Free Spaces.** Six (6) barrier free spaces are provided, which is sufficient for a parking lot with 97 spaces.
- **d.** Loading. Section 9.105 requires three (3) usable loading spaces plus one (1) space for each 50,000 square feet in excess of 50,000 square feet each 10' x 50' in area. The 66,450 square feet building will require a total of 4 loading spaces. The plan notes the provision of 4 loading spaces each on the north and south sides of the building within the truck well area.
- **7.** Landscaping and Screening. The applicant had submitted a detailed landscape plan for the site as required. Our comments on individual landscaping requirements are reflected in the following comments:
  - a. Frontage Landscaping. Section 10.103 (A) requires a site's public road frontage (exclusive of driveway openings) to be landscaped with 1 deciduous or evergreen tree per 40 lineal feet of frontage + 1 ornamental tree per 100 lineal feet of frontage + 8 shrubs per 40 lineal feet of frontage. With a frontage of 934.5 feet on Haggerty Road (minus 60 feet for driveways), the total plantings required for Haggerty Road frontage are: 22 deciduous or evergreen + 9 ornamental + 175 shrubs. The applicant must provide a landscape plan as noted above to determine compliance. Previously, the landscape plan noted that the required trees and shrubs were proposed along with 1 existing tree along the frontage. Along the frontage, we counted a total of 1 existing tree to be preserved, 8 ornamental trees proposed, 21 proposed frontage trees (19 deciduous and 2 evergreen), and 175 shrubs planted in frontage shrub beds.
  - **b.** Parking Lot Landscaping. Section 10.103 (B) (1) requires all parking lots to be landscaped and screened from adjoining public or private rights-of-way. The Zoning Ordinance recommends a combination of landscaping, berm, and screen wall to achieve this goal. The landscape plan includes a 10-foot wide buffer on the north and south ends of the site to buffer the parking. The plan proposes a hedge on the north and south sides with a mix of Yew and Viburnum shrubs.
    - **Interior parking lot landscaping.** Section 10.103 (B) (2) requires the provision of landscaping within islands in a parking lot. At a minimum, interior landscaping must account for a minimum of 5% of all paved parking areas, each interior landscaped area must be at least 360 sq. ft., and 1 tree per 300 sq. ft. of interior landscape area is required, including 1 tree per landscape island. The applicant must provide a landscape plan as noted above to determine compliance. Previously, the plans calculated the pavement area to be 47,820 sq. ft., which required 2,391 sq. ft. of landscape area and 8 trees. There were several landscape islands detailed, all of which were at least 360 sq. ft. and contained at least 1 tree. The plan submitted at this time appears to be the same as the original approved plan.
  - **c.** Loading Area Landscaping. The loading area on the north and south sides is mostly concealed by the proposed building. The parking lot landscaping and hedge proposed provide additional screening from north and southbound Haggerty Road.
  - d. Display Area Buffering. This requirement is not applicable.



- **e. Greenbelt Buffering.** The site abuts M-1 zoning to the north, south and east. Section 10.103 (A) requires a 10-foot wide greenbelt planted with 1 tree per 30 lineal feet. The landscape plan notes that existing trees along the east and north property lines met this requirement; however, the trees being counted towards this requirement are located outside the applicant's property lines. The Planning Commission has the discretion to modify the setback and screening standards by determining if the existing and proposed screening is adequate or needs to be substituted with additional plantings. The site abuts another industrial use to the east and the existing greenbelt separation between the properties is adequate to meet the screening intent of the Ordinance. *Therefore, we support this request for modification of the greenbelt standards along the east and north property lines.*
- f. Specific Landscaping Requirements for Zoning Districts. There is no specific landscaping requirement for parcels in the M-1 District.
- **g.** Open Space Landscaping. The Ordinance requires 1 tree per 3,000 square feet of open space area not occupied by buildings or parking. The plan includes calculations and provides 8 trees towards this requirement.
- h. **Detention Pond Landscaping.** Section 10.103 (K) requires landscaping around the detention pond. However, Wayne County has jurisdiction over the landscaping around detention ponds. The proposed detention pond landscaping plan should be resubmitted to the County for its approval.
- **8. Tree Removal Permit.** A tree removal permit is required if the applicant proposes to remove any trees of 5" caliper or larger. The tree survey submitted notes a total of 26 regulated trees to be removed that require replacement. The landscape plan proposes a 1:1 replacement ratio with 13 deciduous trees (3" caliper) and a 1:1.5 replacement ratio with 9 evergreen trees (8 feet high).
- **9. Stormwater Pond.** The site plan indicates a proposed detention pond on the south side of the site. <u>Storm water detention calculations are subject to review and approval by the Township Engineer. The location of any mechanical equipment for operation of the pond must be noted on the plan with screening.</u>
- 10. Lighting. The revised submittal includes a detailed photometric plan. The plan proposes adequate illumination on-site and meets the maximum permitted intensity at the property lines. The plan proposes a mix of single and dual-head light poles at the access drives and within the parking lot areas and wall mounted fixtures on the building. Typical fixture detail indicates a flat lens box design fixture that is downward directed. Proposed pole height is 25 feet from grade to top of fixture which meets ordinance standards.
- 11. Architecture and Building Details. The applicant has submitted detailed elevations and an artistic rendering for the west façade of the proposed building which is to be constructed of concrete panels in two different colors. The main body of the building is to be constructed of light beige panels while the northwest, southwest corner, and middle will have darker brown panels. The façade mass is broken up by creating jogs in the wall and adding narrow banding of vertical elements in different color panels. The roof is prefinished metal and the rooftop mechanical units are screened by metal panels. Based on previously recommendations, the west façade prominently visible on Haggerty Road has been enhanced by the addition of full row of second story windows on the northwest corner. We recommend that building material colors and samples be presented at the Planning Commission meeting along with a colored rendering of the building.



- **12. Dumpster.** The site plan indicates two (2) new dumpster enclosures placed side-by-side at an angle, along the east property line. <u>Typical</u> enclosure details have been noted and include a masonry block enclosure to match the color of the building with steel reinforced wooden gates. Bollards are included to protect the gates. The enclosures are screened from view of Haggerty Road by the building, and a few existing trees provided some screening on the east side.
- **13. Signs.** The site plan indicates a proposed monument sign along the site's Haggerty Road frontage, near the northwest access drive. Section 11.108 (D) regulates signs permitted on the subject site as follows:
  - **a. Wall Signs**. The Zoning Ordinance allows 3 square feet of wall sign area per linear foot of building frontage, not to exceed 200 square feet. A sign permit must be applied for and administratively approved at such time when a tenant is known.
  - **b. Monument Sign.** The Zoning Ordinance allows for 1 monument sign, not to exceed 18 feet in height, with a maximum area of 64 square feet and a minimum setback of 10 feet. The proposed sign is shown at a setback of 11 feet, and Sheet C-2.0 notes that the sign will be 56 sq. ft. The proposed design of the monument sign must be submitted for PC approval.

#### RECOMMENDATION

Most of the site plan related items have been addressed at this time, with a few minor exceptions. Therefore, we recommend that the Planning Commission <u>grant preliminary site plan approval</u> for the proposed speculative light industrial warehouse building, subject to the following conditions to be addressed <u>prior to final site plan approval</u> being granted.:

- 1. Striping of lanes of ingress and egress on the pavement.
- 2. Widening of sidewalk on east side of building to 5 feet.
- 3. Submission of a floor plan with defined area for office and warehouse use as noted in parking calculations.
- 4. Planning Commission approval of a modification to the greenbelt standards of Section 10.103 (A) to allow the existing trees along the east and north property lines (located on the adjacent lots) to meet the greenbelt careening requirement.
- 5. Detention pond landscaping plan approval by Wayne County.
- 6. Township Engineer and Wayne County approval of proposed storm water detention system.
- 7. Planning Commission approval of proposed building materials and colors.
- 8. Administrative approval of proposed wall sign at a future date.
- 9. Submission of details of monument sign.



Respectfully, McKENNA

Vidya Krishnan

Senior Principal Planner

cc:

Dan Power, Director of Planning & Economic Development Paul Kammer, FTCH, Township Engineers David McInally, Van Buren Township Fire Chief







October 21, 2021 Fishbeck Project No. 181554

Dan Power Planning Director Van Buren Township 46425 Tyler Road Van Buren Township, MI 48311

### Kojaian Outlot Development Preliminary Site Plan Review

Dear Director Power:

At the request of Van Buren Township (Township), Fishbeck has reviewed the revised Preliminary Site Plan submitted to the Township for the preliminary plan approval for the proposed Kojaian Outlot Development located at 6703 Haggerty Road. Preliminary development of the site had previously been done by Neapco. Fishbeck had previously recommended Preliminary Site Plan approval in our letter dated September 8, 2021. At this time, Fishbeck will examine and review the feasibility of the engineering aspects of the site design but will not conduct a full engineering review until the engineering review submittal.

This proposed project includes construction of a 66,450 square-foot building; construction of 97 space bituminous pavement parking lot; installation of two drive approaches to Haggerty Road; construction of storm sewer improvements including several catch basins, storm sewer pipes, and a detention basin; construction of a sanitary sewer lead; construction of a water main loop, water service lead, and fire hydrants; and other various landscaping and site plan improvements.

Our review comments are as follows:

### General

The following items are general requirements established as part of the *Engineering Standards Manual, Charter Township of Van Buren* (April 2014). The applicant must include the following items as part of the construction plans:

- 1. Any irrigation will be required with the submittal of the Engineering Plans.
- 2. All easements, proposed, and existing must be indicated on the plans.
- 3. Applicant must indicate the pre- and post-development drainage patterns.
- 4. Soil boring information, including the ground water elevations must be provided.
- 5. Engineering Plans must include the applicable Standard Detail Drawings as found in Appendix A of the Township Engineering Standards Manual. The Township can provide full size sheets of multiple details upon request.
- 6. Preliminary Plans must include a Title Sheet. The Title Sheet must include the project title, listing of permits required (if any), and an index of plan sheets.
- 7. Hatching should be labeled in the legend.
- 8. Plans indicate proposed parcel split and combination will be required for the subject parcel (sheet C-2.2). Township Geographic Information System (GIS) indicates this development is one parcel (parcel ID 83 002 99 0026). Applicant to clarify current development parcel status.
- 9. Any removals of the existing driveways must be indicated on the plans.
- 10. General utility notes should be included on sheet C-4.2.

### **Water Main Service**

**Existing:** The Township GIS records indicate an existing 12-inch water main running north-south along the west side of Haggerty Road and running north-south along the west side of the adjacent 6735 Haggerty Road property.

**Proposed:** The proposed plans indicate an 8-inch water main loop with two connections to the existing 12-inch water main running north-south near the proposed east property line. The proposed water main loops around the proposed building and feeds three fire hydrants and the service leads into the building: a 6-inch fire lead and a 4-inch domestic service lead. A separate fire hydrant and lead are proposed on the east side of the property connecting to the existing 12-inch water main.

### Comments:

- 1. Landscape plans must indicate no trees are planted within the water main easement.
- 2. Plans indicates three areas where proposed water main easements will be required from the adjacent owner. These easements must be obtained prior to scheduling the preconstruction meeting.
- 3. A note must be added to the plans for the water main: "Connection to the existing water main shall not occur until all required hydrostatic and bacteriological testing has been successfully completed and accepted by the Township Engineer."
- 4. On-line gate valve spacing shall be a maximum of 500 feet. Applicant should look to add a valve to the north of the service taps, but south of the hydrant. This allows for the northern leg to be isolated, while still allowing service from the south leg.
- 5. The bend of the proposed water main around the monument sign should be straightened out and the sign adjusted to be further back or in a different location, subject to the Planning Departments requirements.
- 6. For engineering review, and per new Michigan Department of Environment, Great Lakes, and Energy (EGLE) requirements, all water mains must have profiles associated with proposed water main. The applicant must verify the water main depth is a minimum of 6 feet below grade and 7 feet under pavement, which should not include any added depth due to landscape berms. The applicant shall make every effort to move the landscape berms out from on top of the water main.
- 7. Comment No. 6 would also include the service/fire suppression valves, as well as the access to the Fire Department Connection (FDC). Verify the location and access path to the FDC with the Fire Department.
- 8. Water main labels should be updated for the revised fire hydrants layout.

### **Sanitary Sewer**

**Existing:** The Township GIS records indicate there is an existing 21-inch Reinforced Concrete Pipe (RCP) gravity-fed sanitary sewer pipeline running north-south along the east side of Haggerty Road. There is also an existing 10-inch sanitary sewer pipeline running north-south along the west side of the adjacent property (6735 Haggerty Road). Both sanitary sewer pipelines are indicated on the Township GIS to flow to the south.

**Proposed:** The plans indicate constructing a 6-inch sanitary sewer lead from the proposed building connecting to the existing 21-inch sanitary sewer running north-south via a blind wye tap along Haggerty Road.

#### Comments:

1. Applicant must provide Basis of Design (BOD) calculations as part of the Engineering submittal. The sanitary sewer use rates must meet the requirements in the Township standards.

### **Storm Sewer**

**Existing:** Site Plan topography indicates the proposed project area (mostly earth and grass) drains east and west into the existing storm drain inlets and ditches along Haggerty Road and the existing property to the east (6735 Haggerty Road). The existing storm drain system for 6735 Haggerty Road drains into an existing drainage basin on the north side of the property, which discharges into Bell Drain to the north, a Wayne County drain.

**Proposed:** The plans indicate capturing storm water runoff from the site by roof drain leads, and storm drain inlets through an underground storm system and routing the runoff into a water quality pre-treatment structure (Vortechs Model 11000) prior to discharging into a proposed onsite detention basin. The plans also indicate installing an outlet control/overflow structure as part of the proposed detention basin, which discharges into the existing 18-inch storm sewer pipe running north-south along the east side of Haggerty Road.

#### Comments:

- 1. Calculations for the design of the storm sewer system must be provided in accordance with the Township Design Standard Manual. The maximum allowable discharge in the Township for detention basins in 0.1 cubic feet per second (cfs)/acre.
- 2. Applicant must submit for stormwater approval from Wayne County prior to the Township accepting submission for Engineering and Final Site Plan approval. The Township will request to see that Wayne County has reviewed and commented on the stormwater system prior to reviewing the system itself.
- 3. Applicant shall design storm sewer system to have minimum cover of 4 feet above all storm sewers wherever possible. An absolute minimum cover of 2.5 feet is allowable, upon approval from the Engineer.
- 4. Applicant shall follow the Township storm sewer material requirements for industrial and commercial sites. All sewers shall be reinforced concrete pipe, CL IV.

### **Paving and Grading**

- 1. As part of the Engineering review process, the applicant will be required to provide more detailed grading plans that indicate detailed ramp grades for sidewalk ramp areas needing to comply with the Americans with Disabilities Act 2010 (ADA).
- 2. Plans must indicate locations of curb and gutter with reverse gutter pan and include a detail.
- 3. The applicant shall verify the turning movements of a full-size semi-truck and trailer can utilize the northern docking bay. The clearance between the docking ramp and the parking spaces opposite of the ramp are closer on the north side than on the south side. Turning movements are shown on the south side, and appear to work, however, there is more space for wide turning movements.

### Soil Erosion and Sedimentation Control (SESC)

1. The SESC plan provided must be in accordance with the Township *Engineering Standards Manual*, Chapter II, Plan Requirements, Paragraph D, SESC Plan Requirements, and in accordance with Wayne County SESC standards. A permit must be acquired from the Wayne County SESC County Enforcing Agency.

https://www.waynecounty.com/departments/environmental/landresources/soil-erosion.aspx

### Recommendation

At this time, we are recommending Preliminary Site Plan approval for the Kojaian Outlot Development site, subject to the comments listed above and in accordance with the Township's Engineering Standards manual.

If you have any questions regarding this project, please contact Paul Kammer at 248.324.2137 or <a href="mailto:pkammer@fishbeck.com">pkammer@fishbeck.com</a>.

Sincerely.

Paul J. Kammer, PE

Senior Civil Engineer

Stephen C. Clayton, PI

Civil Engineer

By email

Copy: Vidya Krishnan – McKenna Associates

Dave Potter, PE – Fishbeck

Andrew Lenaghan Fire Marshal O: 734-699-8900 ext. 9416 Van Buren Fire Department 46425 Tyler Rd Van Buren Twp., MI 48111



10/15/2021

Director of Building and Planning 46425 Tyler Road Belleville, MI 48111

Re: Kojaian Van Buren Acquisitions, LLC Haggerty Road Van Buren Township, Michigan 48111

To Whom it may concern:

I have reviewed a set of revised plans dated August 18, 2021. This review is a preliminary site plan for the construction of a new building. The focus of this review be fire department access, available water supply, and required fire flow. NFPA 1 2018 has been used for the review.

### **Fire Department Access**

The turning radius of a fire department access road shall be as approved by the AHJ NFPA 1 2018 18.2.3.5.3.1

The turning radius shown in the plans (page C-2.0) is too close to the parking spaces and curb.

The east side fire access lane has been widened to 27 feet.

An updated emergency vehicle access plan showing the turning radius using the following dimensions will need to be verified.

Ladder Truck Length- 48 Feet
Width- 10 feet
Height- 12 feet
Ground Clearance- 1 foet
Distance between tires- 23 feet 8 inches.

Our Mission: The members of the Van Buren Fire Department shall work together in a professional and caring way to protect life and property from the adverse effects of fire, trauma, illness and dangerous conditions. Our services will be provided in a fair, honest, and ethical manner with the highest respect and dignity to all.

Multiple Access Roads More than one fire department access road shall be provided when it is determined by the AHJ that access by a single road could be impaired by vehicle congestion, or other factors that could limit access. A proposed cross access with property owner to the East was mentioned for the South drive, we would like to see the same for the North drive as well.

NFPA 1 2018 18.2.3.3

Eliminated from original plans.

The cross access on the east side of the property has been reintroduced into the plans.

### Water Supply/Fire Flow

The maximum distance to a fire hydrant from the closet point on the building shall not exceed 400 feet.

NFPA 1 2018 18.5.3 (1)

Additional Fire Hydrants will need to be added to the Southeast and Southwest areas of the building.

The fire hydrants requested have been added to the plans.

The length of the building (594 feet) is it too long to deploy hose lines from the North and South sides into the building.

If the plan for the building is to divide it into suites, additional doors will need to be added to the east side of the building. The plans show only 1 door off the east side fire access lane.

### Summary

Since the last review, the east side fire lane has been widened to 27 feet. The original cross access driveways will be in place, with gates secured by Knox padlocks, and fire hydrants on the south side of the building have been added. In addition to the site improvements, this building will be fully suppressed, and all Fire Department Notes on page C-2.1 will be adhered to

If you have any questions about this plan review report, or require more information, please feel free to contact me

Respectfully submitted,

Andrew Lenaghan Fire Marshal Van Buren Fire Department

# VAN BUREN DEVELOPMENT HAGGERTY ROAD BETWEEN ECORSE RD. & VAN BORN RD.

VAN BUREN TOWNSHIP, WAYNE COUNTY, MICHIGAN



# **Sheet List Table** Number **TOPOGRAPHIC SURVEY - NORTH** TOPOGRAPHIC SURVEY - SOUTH PRELIMINARY OVERALL SITE PLAN PRELIMINARY SITE PLAN - NORTH PRELIMINARY GRADING PLAN - NORTH PRELIMINARY GRADING PLAN - SOUTH PRELIMINARY UTILITY PLAN - NORTH PRELIMINARY UTILITY PLAN - SOUTH PRELIMINARY DRAINAGE PLAN DETAILS LANDSCAPE PLAN - NORTH LANDSCAPE PLAN - SOUTH TREE PRESERVATION PLAN PHOTOMETRIC PLAN - NORTH PHOTOMETRIC PLAN - SOUTH PHOTOMETRIC DETAILS ARCHITECTURAL ELEVATIONS ARCHITECTURAL FLOOR PLAN

# VAN BUREN TOWNSHIP NOTES:

- 1. ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS, SPECIFICATIONS, AND GENERAL CONDITIONS OF THE TOWNSHIP.
- 2. THE DEVELOPER IS RESPONSIBLE FOR RESOLVING ANY DRAINAGE PROBLEMS ON ADJACENT PROPERTIES WHICH ARE THE RESULT OF THE DEVELOPER'S ACTIONS.

### **DESIGN TEAM**

CONTRACTOR
CUNNINGHAM LIMP COMPANY
28970 CABOT DRIVE, SUITE 100
NOVI, MI 48377
CONTACT: JASON LIPA
EMAIL: JLIPA@CLC.BUILD

CIVIL ENGINEER

PEA GROUP 2430 ROCHESTER COURT, STE. 100 TROY, MI 48083-1872 CONTACT: GREG BONO, PE PHONE: 844.813.2949 EMAIL: GBONO@PEAGROUP.COM

ARCHITECT

LANDSCAPE ARCHITECT

FAUDIE ARCHITECTURE

26261 EVERGREEN RD., SUITE 123

SOUTHFIELD, MI 48076

CONTACT: DAVID BRINKMEIER

PHONE: 248.619.2354

EMAIL: DBRINKMEIER@FAUDIEARCHITECTURE.COM

PEA GROUP

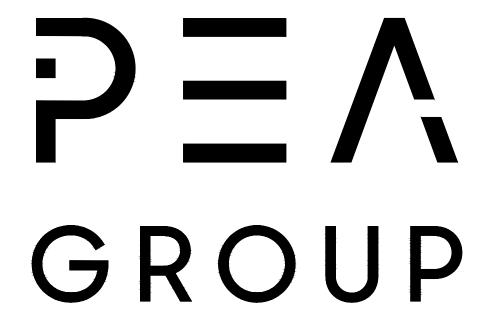
7927 NEMCO WAY, STE. 115

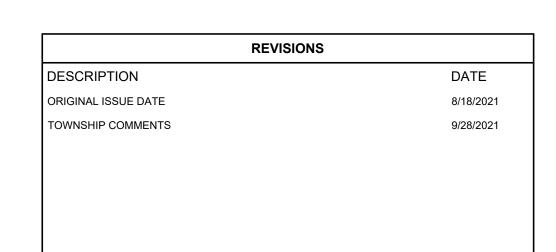
BRIGHTON, MI 48116

CONTACT: JANET EVANS, PLA

PHONE: 844.813.2949

EMAIL: JEVANS@PEAGROUP.COM



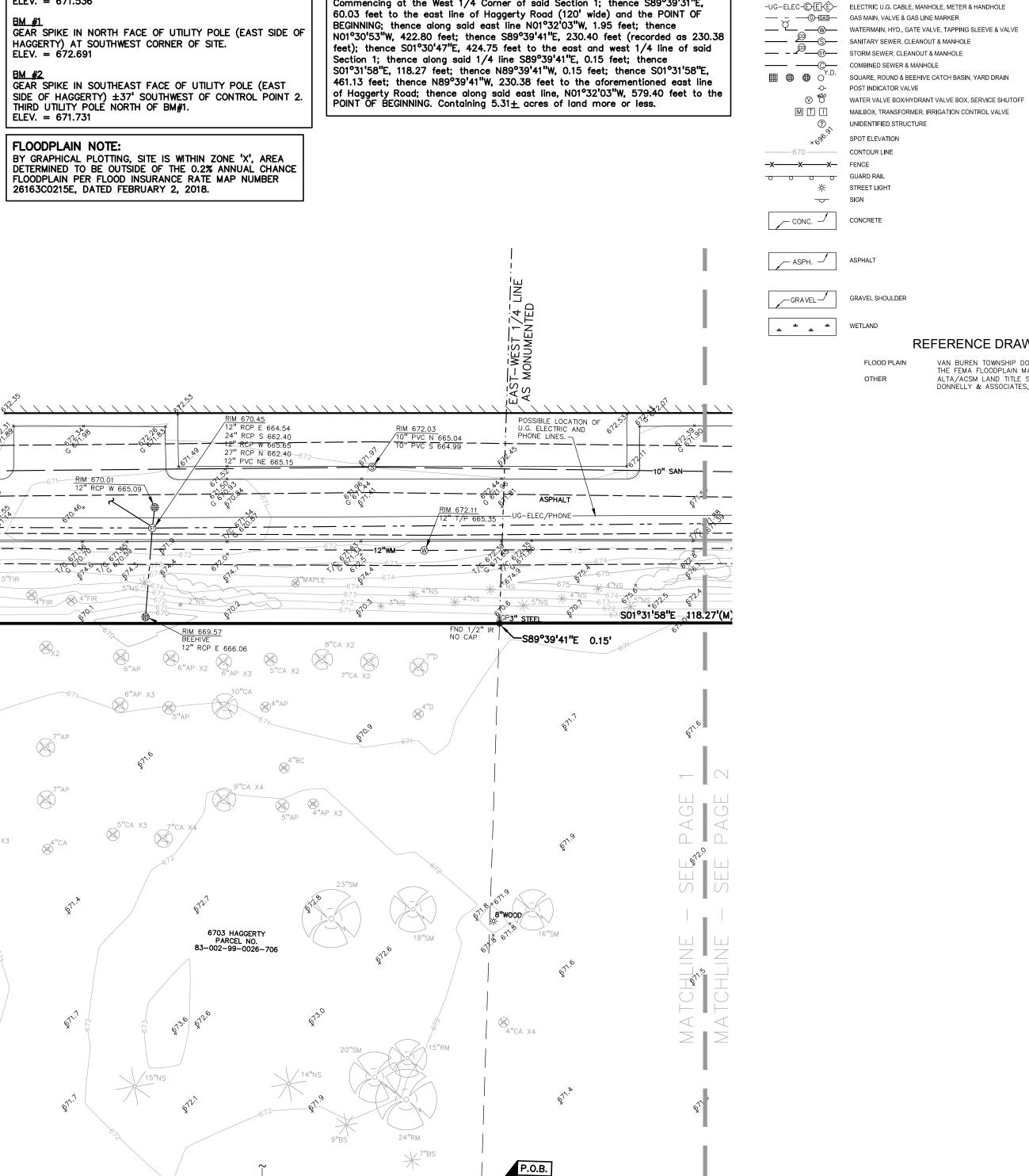




BENCHMARKS (GPS DERIVED - NAVD 88) ADD 0.44 FEET FOR NGVD 29 (PROPERTY CORNER 100, SOUTHWEST CORNER OF SITE) 1/2" IRON BAR WITH CAP (RLS #21563) ELEV. = 671.536 HAGGERTY) AT SOUTHWEST CORNER OF SITE. ELEV. = 672.691 FLOODPLAIN NOTE:

BEGINNING; thence along said east line N01°32'03"W, 1.95 feet; thence Section 1; thence along said 1/4 line S89°39'41"E, 0.15 feet; thence

IRON FOUND LEGAL DESCRIPTION MAIL FOUND  $\varnothing$  NAIL & CAP SET (Combined Parcels per PEA, INC.) Land in a part of the Southwest 1/4 and Northwest 1/4 of Section 1, Town 3 South, Range 8 East, Van Buren Township, Wayne County Michigan being more particularly described as: -OH-ELEC-VV-O--- ELEC., PHONE OR CABLE TV O.H. LINE, POLE & GUY WIRE -UG-CATV-TV- UNDERGROUND CABLE TV, CATV PEDESTAL -⊠-UG-PHONE-①---- TELEPHONE U.G. CABLE, PEDESTAL & MANHOLE Commencing at the West 1/4 Corner of said Section 1; thence S89°39'31"E, 60.03 feet to the east line of Haggerty Road (120' wide) and the POINT OF N01°30'53"W, 422.80 feet; thence S89°39'41"E, 230.40 feet (recorded as 230.38 feet); thence S01°30'47"E, 424.75 feet to the east and west 1/4 line of said S01°31'58"E, 118.27 feet; thence N89°39'41"W, 0.15 feet; thence S01°31'58"E, 461.13 feet; thence N89°39'41"W, 230.38 feet to the aforementioned east line of Haggerty Road; thence along said east line, N01°32'03"W, 579.40 feet to the POINT OF BEGINNING. Containing 5.31± acres of land more or less. CONC. → ∕— ASPH. → \_\_GRAVEL \_\_\_\_ 12" RCP E 664.54



INV 660.54 6703 HAGGERTY PARCEL NO 83-002-99-0026-704

6703 HAGGERTY

\_S01°30'47"E 424.75';

— — PARCEL NO. — — 83-002-99-0026-704

RIM 671.15 10" PVC N 666.13 10" PVC S 666.13

12"E 663.29

10"S 677.04

N RIM 670.42

12"SW 663.18 27"NW 660.99

└RIM 671.42 12"NE 665.20

RIM 671.01 21" RCP N 657.39 21" RCP S 657.34 24"S 661.49 24"N 661.48 <del>RIM 670.39</del> 12"S 657.73 12"N 657.80 \* HAGGERTY, \*ROAD 24"N 662.47 .12"W 663.62 \_\_\_\_\_\_\_ (1.20' WIDE) \_\_\_\_\_ 12" BURIED— IE 668.46 GRAVEL

RIM 670.64 FG 670.59 VACATED BEVERLY ROAD R.O.W. SMALL FARM SUB. PARCEL No. 83-008-99-0045-700

### LEGEND

 BRASS PLUG SET MONUMENT FOUND MONUMENT SET

R RECORDED M MEASURED

REFERENCE DRAWINGS

SEC. CORNER FOUND C CALCULATED

> GROUP t: 844.813.2949 www.peagroup.com









THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION. LOCATION MAP

CLIENT

CAUTION!!

CUNNINGHAM-LIMP COMPANY 39300 WEST 12 MILE ROAD, SUITE #200 FARMINGTON HILLS, MICHIGAN, 48331



PROJECT TITLE

VAN BUREN DEVELOPMENT RD & VAN BORN RD.

REVISIONS	
TOWNSHIP COMMENTS	9/28/21

ORIGINAL ISSUE DATE: AUGUST 18, 2021

**TOPOGRAPHIC** SURVEY -NORTH

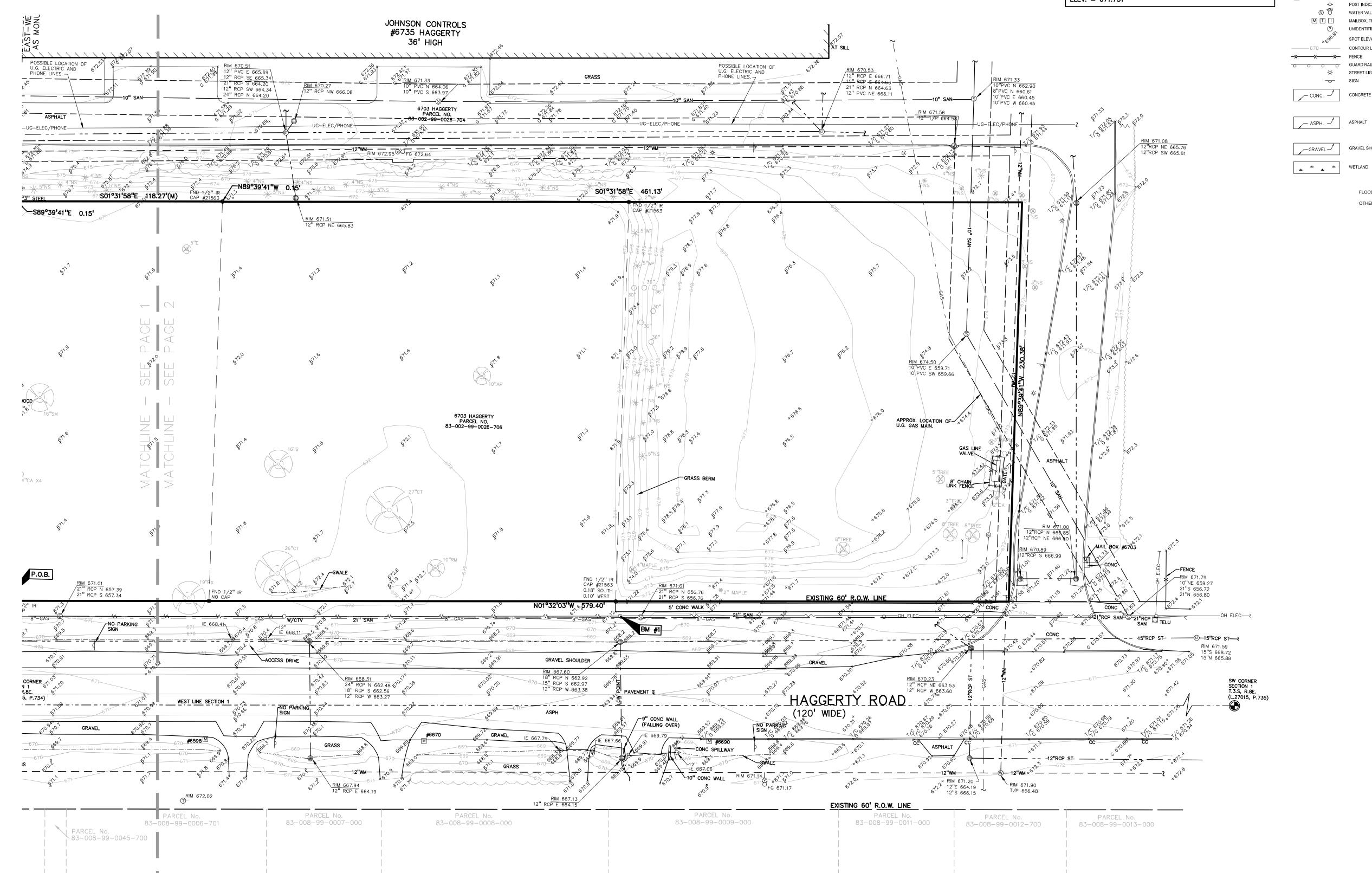
PEA JOB NO.	2007-148
P.M.	JPE
DN.	KRD
DES.	GME
DRAWING NUMBER:	

FLOODPLAIN NOTE: BY GRAPHICAL PLOTTING, SITE IS WITHIN ZONE 'X', AREA DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN PER FLOOD INSURANCE RATE MAP NUMBER 26163C0215E, DATED FEBRUARY 2, 2018.

**BENCHMARKS** (GPS DERIVED - NAVD 88) ADD 0.44 FEET FOR NGVD 29 <u>REF. BM A</u> (PROPERTY CORNER 100, SOUTHWEST CORNER OF SITE) 1/2" IRON BAR WITH CAP (RLS #21563) ELEV. = 671.536

BM\_#1
GEAR SPIKE IN NORTH FACE OF UTILITY POLE (EAST SIDE OF HAGGERTY) AT SOUTHWEST CORNER OF SITE. ELEV. = 672.691

BM #2
GEAR SPIKE IN SOUTHEAST FACE OF UTILITY POLE (EAST SIDE OF HAGGERTY) ±37' SOUTHWEST OF CONTROL POINT 2.
THIRD UTILITY POLE NORTH OF BM#1.
ELEV. = 671.731



LEGEND

-OH-ELEC-W-O-C ELEC., PHONE OR CABLE TV O.H. LINE, POLE & GUY WIRE

-UG-CATV-TV- UNDERGROUND CABLE TV, CATV PEDESTAL

— \_ GAS MAIN, VALVE & GAS LINE MARKER

SANITARY SEWER, CLEANOUT & MANHOLE — - CO ST STORM SEWER, CLEANOUT & MANHOLE

-⊠-UG-PHONE-①---- TELEPHONE U.G. CABLE, PEDESTAL & MANHOLE

-UG-ELEC-E-E-E-ELECTRIC U.G. CABLE, MANHOLE, METER & HANDHOLE

POST INDICATOR VALVE

UNIDENTIFIED STRUCTURE

SPOT ELEVATION

GRAVEL SHOULDER

CONTOUR LINE

☆ STREET LIGHT

SIGN

CONC. →

✓ ASPH. ✓

M T I MAILBOX, TRANSFORMER, IRRIGATION CONTROL VALVE

— — W— WATERMAIN, HYD., GATE VALVE, TAPPING SLEEVE & VALVE

IRON FOUND MAIL FOUND

Ø NAIL & CAP SET

 BRASS PLUG SET MONUMENT FOUND MONUMENT SET

SQUARE, ROUND & BEEHIVE CATCH BASIN, YARD DRAIN

WATER VALVE BOX/HYDRANT VALVE BOX, SERVICE SHUTOFF

SEC. CORNER FOUND R RECORDED M MEASURED C CALCULATED

REFERENCE DRAWINGS

VAN BUREN TOWNSHIP DOES NOT PARTICIPATE IN THE FEMA FLOODPLAIN MAPPING PROGRAM

ALTA/ACSM LAND TITLE SURVEY BY RAYMOND J. DONNELLY & ASSOCIATES, INC. DATED 11-9-00

GROUP

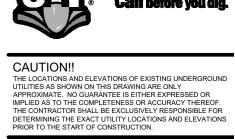
t: 844.813.2949 www.peagroup.com

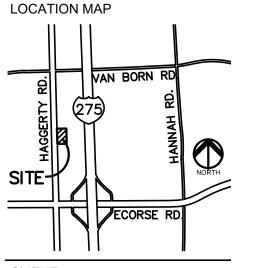






SCALE: 1" = 30'





CLIENT

CUNNINGHAM-LIMP COMPANY 39300 WEST 12 MILE ROAD, SUITE #200 FARMINGTON HILLS, MICHIGAN, 48331



PROJECT TITLE

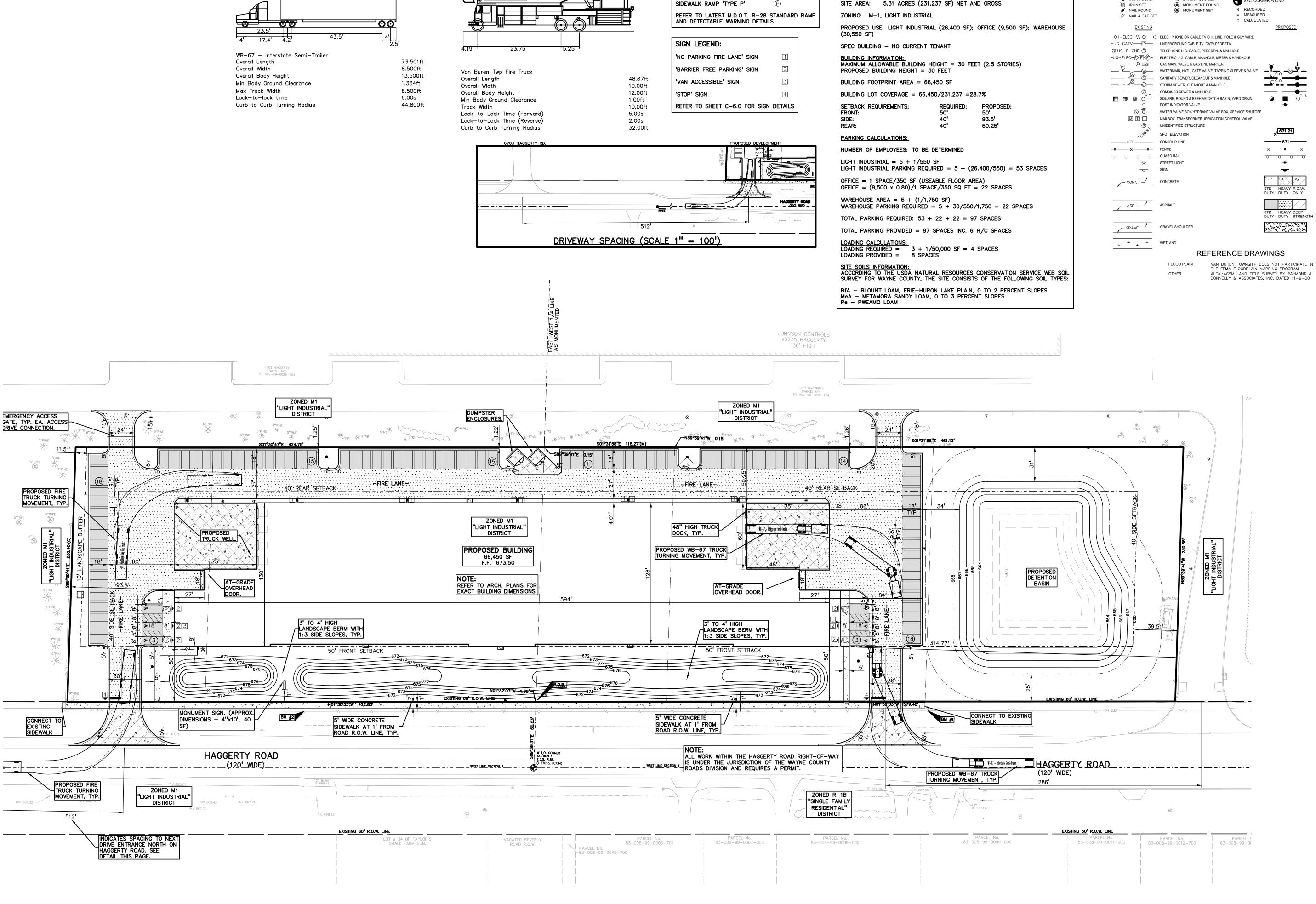
VAN BUREN DEVELOPMENT RD & VAN BORN RD. VAN BUREN TOWNSHIP, WAYNE COUNTY, MICHIGAN

REVISIONS TOWNSHIP COMMENTS

ORIGINAL ISSUE DATE: AUGUST 18, 2021

DRAWING TITLE **TOPOGRAPHIC** SURVEY -SOUTH

PEA JOB NO.	2007-148
P.M.	JPE
DN.	KRE
DES.	GME
DRAWING NUMBER:	



SIDEWALK RAMP LEGEND:

SITE DATA TABLE:

SEC. CORNER FOUND GROUP t: 844.813.2949 www.peagroup.com 671.21 671 -x----x---x-0 0 0 \_

LEGEND

BRASS PLUG SET

IRON FOUND

GREGORY

BONO

ENGINEER

CAUTION!!

SCALE: 1" = 40'

THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION. LOCATION MAP

CLIENT

**CUNNINGHAM-LIMP** COMPANY 39300 WEST 12 MILE ROAD, SUITE #200



PROJECT TITLE

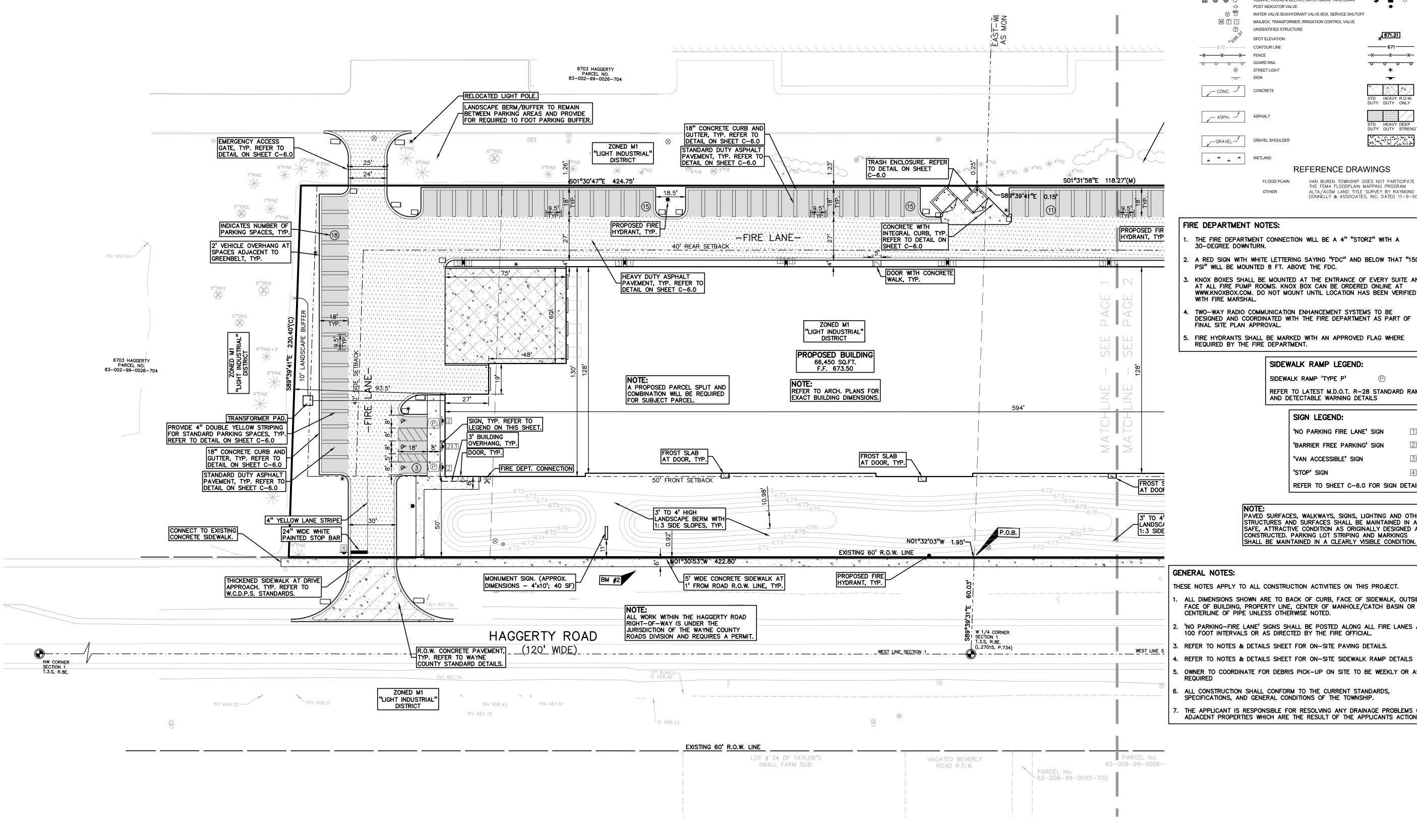
**VAN BUREN** DEVELOPMENT HAGGERTY ROAD BETWEEN ECORSE RD & VAN BORN RD. VAN BUREN TOWNSHIP, WAYNE COUNTY, MICHIGAN

REVISIONS TOWNSHIP COMMENTS

ORIGINAL ISSUE DATE: AUGUST 18, 2021 DRAWING TITLE

**PRELIMINARY OVERALL SITE PLAN** 

2007-148 PEA JOB NO. JPB KRD DES. DRAWING NUMBER:



LEGEND IRON FOUND BRASS PLUG SET SEC. CORNER FOUND MONUMENT FOUND R RECORDED MAIL FOUND MONUMENT SET M MEASURED Ø NAIL & CAP SET C CALCULATED -OH-ELEC-VV-O- ELEC., PHONE OR CABLE TV O.H. LINE, POLE & GUY WIRE -UG-CATV-TV- UNDERGROUND CABLE TV, CATV PEDESTAL -⊠-UG-PHONE-①--- TELEPHONE U.G. CABLE, PEDESTAL & MANHOLE -UG-ELEC-E-E-E- ELECTRIC U.G. CABLE, MANHOLE, METER & HANDHOLE GAS MAIN, VALVE & GAS LINE MARKER WATERMAIN, HYD., GATE VALVE, TAPPING SLEEVE & VALVE SANITARY SEWER, CLEANOUT & MANHOLE — - STORM SEWER, CLEANOUT & MANHOLE COMBINED SEWER & MANHOLE SQUARE, ROUND & BEEHIVE CATCH BASIN, YARD DRAIN POST INDICATOR VALVE WATER VALVE BOX/HYDRANT VALVE BOX, SERVICE SHUTOFF MAILBOX, TRANSFORMER, IRRIGATION CONTROL VALVE UNIDENTIFIED STRUCTURE 671.21 SPOT ELEVATION 671 CONTOUR LINE -x----x---x--X-X-X- FENCE 0 0 0 0 ☆ STREET LIGHT SIGN \_ ASPHALT GRAVEL SHOULDER عثد عثد WETLAND REFERENCE DRAWINGS

VAN BUREN TOWNSHIP DOES NOT PARTICIPATE IN THE FEMA FLOODPLAIN MAPPING PROGRAM

DONNELLY & ASSOCIATES, INC. DATED 11-9-00

### FIRE DEPARTMENT NOTES:

- THE FIRE DEPARTMENT CONNECTION WILL BE A 4" "STORZ" WITH A 30-DEGREE DOWNTURN.
- A RED SIGN WITH WHITE LETTERING SAYING "FDC" AND BELOW THAT "150 PSI" WILL BE MOUNTED 8 FT. ABOVE THE FDC.
- KNOX BOXES SHALL BE MOUNTED AT THE ENTRANCE OF EVERY SUITE AND AT ALL FIRE PUMP ROOMS. KNOX BOX CAN BE ORDERED ONLINE AT WWW.KNOXBOX.COM. DO NOT MOUNT UNTIL LOCATION HAS BEEN VERIFIED
- TWO-WAY RADIO COMMUNICATION ENHANCEMENT SYSTEMS TO BE DESIGNED AND COORDINATED WITH THE FIRE DEPARTMENT AS PART OF
- 5. FIRE HYDRANTS SHALL BE MARKED WITH AN APPROVED FLAG WHERE REQUIRED BY THE FIRE DEPARTMENT.

#### SIDEWALK RAMP LEGEND: SIDEWALK RAMP 'TYPE P' REFER TO LATEST M.D.O.T. R-28 STANDARD RAMP AND DETECTABLE WARNING DETAILS

SIGN LEGEND: 'NO PARKING FIRE LANE' SIGN BARRIER FREE PARKING' SIGN 'VAN ACCESSIBLE' SIGN 'STOP' SIGN

REFER TO SHEET C-6.0 FOR SIGN DETAILS NOTE:
PAVED SURFACES, WALKWAYS, SIGNS, LIGHTING AND OTHER STRUCTURES AND SURFACES SHALL BE MAINTAINED IN A

SAFE, ATTRACTIVE CONDITION AS ORIGINALLY DESIGNED AND

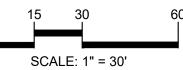
THESE NOTES APPLY TO ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT.

- ALL DIMENSIONS SHOWN ARE TO BACK OF CURB, FACE OF SIDEWALK, OUTSIDE FACE OF BUILDING, PROPERTY LINE, CENTER OF MANHOLE/CATCH BASIN OR CENTERLINE OF PIPE UNLESS OTHERWISE NOTED.
- 'NO PARKING-FIRE LANE' SIGNS SHALL BE POSTED ALONG ALL FIRE LANES AT 100 FOOT INTERVALS OR AS DIRECTED BY THE FIRE OFFICIAL.
- REFER TO NOTES & DETAILS SHEET FOR ON-SITE PAVING DETAILS.
- REFER TO NOTES & DETAILS SHEET FOR ON-SITE SIDEWALK RAMP DETAILS OWNER TO COORDINATE FOR DEBRIS PICK-UP ON SITE TO BE WEEKLY OR AS
- ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS, SPECIFICATIONS, AND GENERAL CONDITIONS OF THE TOWNSHIP.
- THE APPLICANT IS RESPONSIBLE FOR RESOLVING ANY DRAINAGE PROBLEMS ON ADJACENT PROPERTIES WHICH ARE THE RESULT OF THE APPLICANTS ACTIONS.

t: 844.813.2949 www.peagroup.com BONO ENGINEER



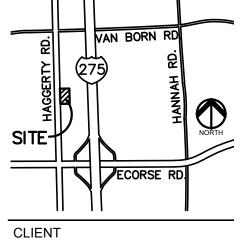






CAUTION!!

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**CUNNINGHAM-LIMP** COMPANY 39300 WEST 12 MILE ROAD, SUITE #200



PROJECT TITLE

RD & VAN BORN RD.

**VAN BUREN DEVELOPMENT** 

REVISIONS

VAN BUREN TOWNSHIP, WAYNE COUNTY, MICHIGAN

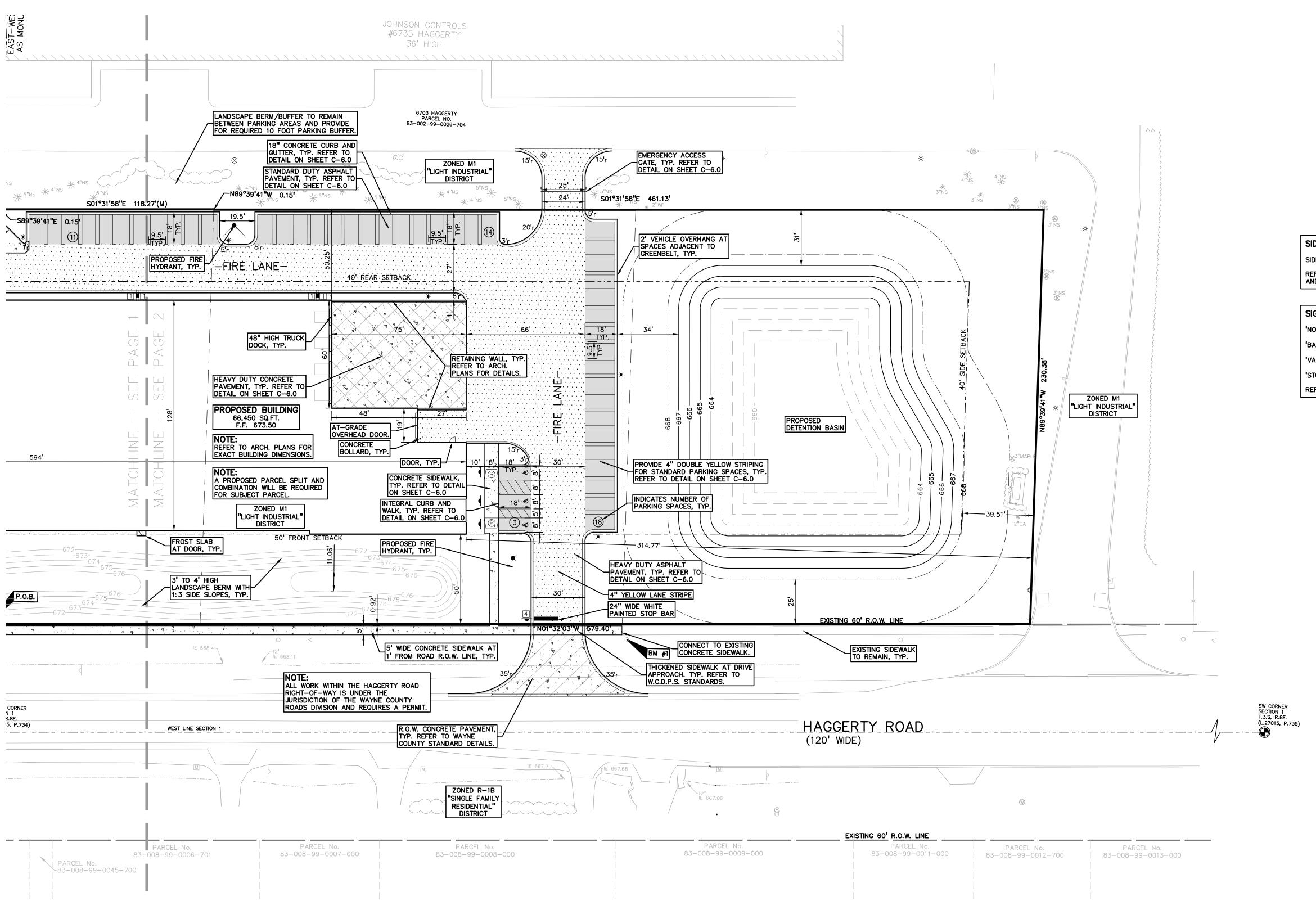
TOWNSHIP COMMENTS 9/28/21

ORIGINAL ISSUE DATE: AUGUST 18, 2021

DRAWING TITLE **PRELIMINARY** SITE PLAN -NORTH

2007-148 PEA JOB NO. JPB KRD DES. GMB

DRAWING NUMBER:



LEGEND IRON FOUND ■ BRASS PLUG SET SEC. CORNER FOUND MONUMENT FOUND R RECORDED MAIL FOUND MONUMENT SET M MEASURED Ø NAIL & CAP SET C CALCULATED -OH-ELEC-VV-O--- ELEC., PHONE OR CABLE TV O.H. LINE, POLE & GUY WIRE -UG-CATV-TV- UNDERGROUND CABLE TV, CATV PEDESTAL -⊠-UG-PHONE-①--- TELEPHONE U.G. CABLE, PEDESTAL & MANHOLE -UG-ELEC-E-E-E-ELECTRIC U.G. CABLE, MANHOLE, METER & HANDHOLE — \_ \_ \_ GAS MAIN, VALVE & GAS LINE MARKER — W— WATERMAIN, HYD., GATE VALVE, TAPPING SLEEVE & VALVE SANITARY SEWER, CLEANOUT & MANHOLE — - STORM SEWER, CLEANOUT & MANHOLE ——— COMBINED SEWER & MANHOLE SQUARE, ROUND & BEEHIVE CATCH BASIN, YARD DRAIN

POST INDICATOR VALVE WATER VALVE BOX/HYDRANT VALVE BOX, SERVICE SHUTOFF MAILBOX, TRANSFORMER, IRRIGATION CONTROL VALVE UNIDENTIFIED STRUCTURE SPOT ELEVATION 671 CONTOUR LINE -x----x---x-**\_X** FENCE 0 0 0 0 ☆ STREET LIGHT ── SIGN \_ CONC. -✓ ASPH. ✓

and the same METLAND REFERENCE DRAWINGS

GRAVEL SHOULDER

VAN BUREN TOWNSHIP DOES NOT PARTICIPATE IN THE FEMA FLOODPLAIN MAPPING PROGRAM DONNELLY & ASSOCIATES, INC. DATED 11-9-00

SIDEWALK RAMP LEGEND: SIDEWALK RAMP 'TYPE P' REFER TO LATEST M.D.O.T. R-28 STANDARD RAMP AND DETECTABLE WARNING DETAILS

\_\_GRAVEL\_\_\_

SIGN LEGEND: 'NO PARKING FIRE LANE' SIGN BARRIER FREE PARKING' SIGN 'VAN ACCESSIBLE' SIGN 'STOP' SIGN REFER TO SHEET C-6.0 FOR SIGN DETAILS

t: 844.813.2949 www.peagroup.com BONO









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CLIENT

CAUTION!!

**CUNNINGHAM-LIMP** COMPANY 39300 WEST 12 MILE ROAD, SUITE #200



PROJECT TITLE

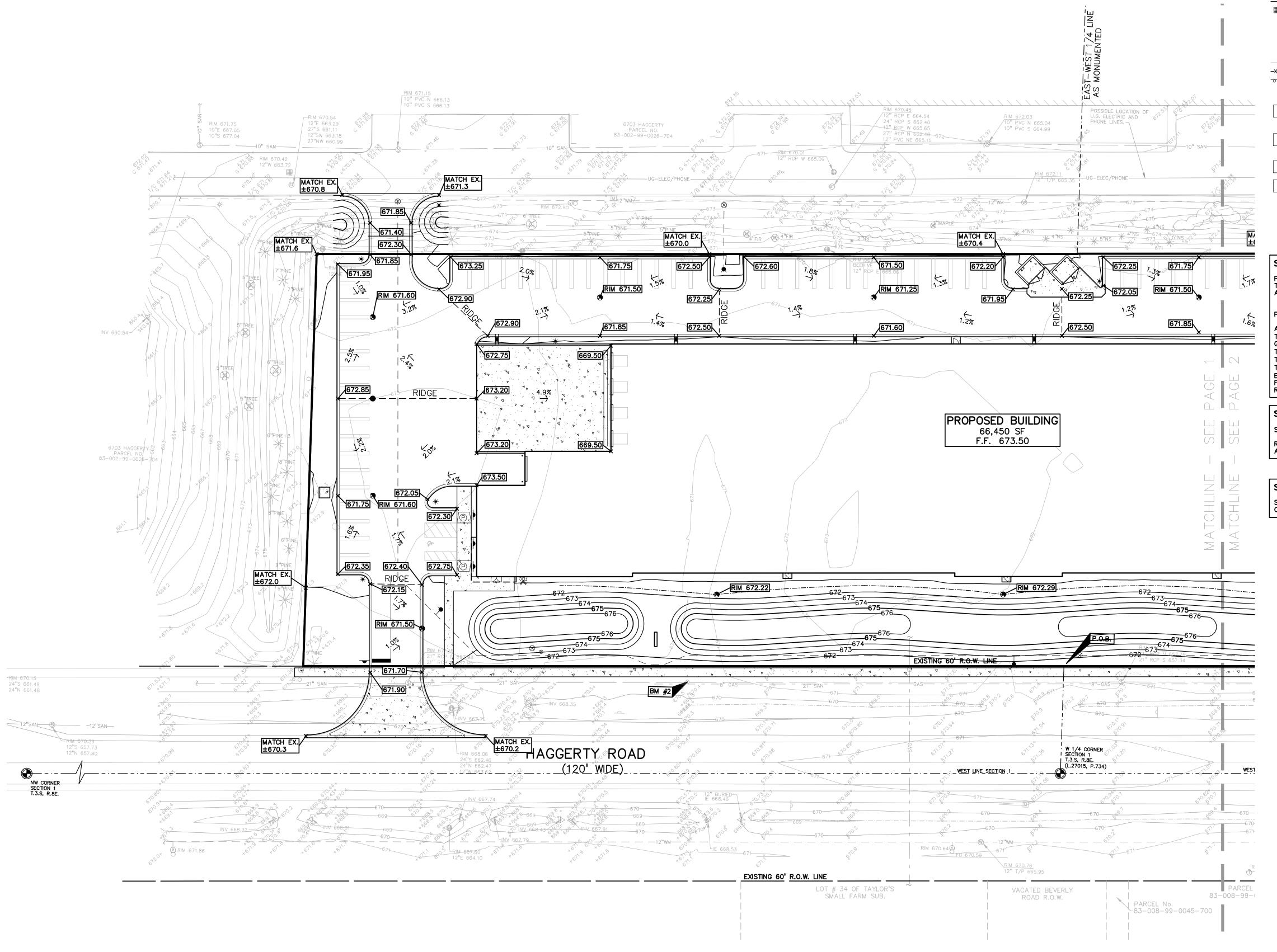
**VAN BUREN** DEVELOPMENT HAGGERTY ROAD BETWEEN ECORSE RD & VAN BORN RD. VAN BUREN TOWNSHIP, WAYNE COUNTY, MICHIGAN

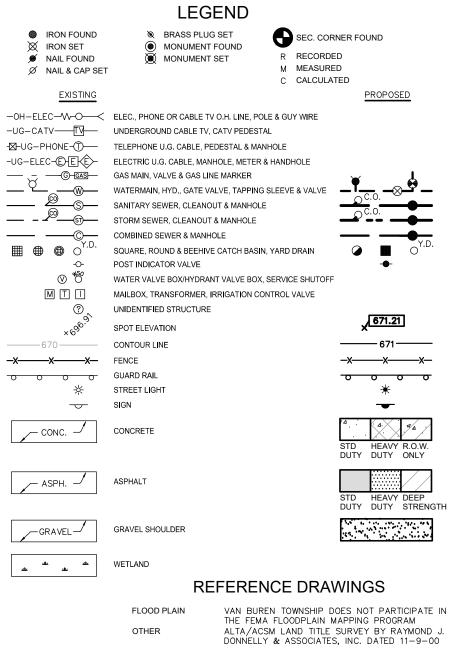
REVISIONS TOWNSHIP COMMENTS

ORIGINAL ISSUE DATE: AUGUST 18, 2021 DRAWING TITLE

**PRELIMINARY SITE PLAN -**SOUTH

PEA JOB NO.	2007-148
P.M.	JPB
DN.	KRD
DES.	GMB
DRAWING NUMBER:	





SYMBOLS: GRADING TYPICALLY TOP OF PAVEMENT IN PAVED AREAS, GUTTER GRADE IN CURB LINES. 622.50 PROPOSED CONTOUR LINE <del>----</del>922---ABBREVIATIONS: T/C = TOP OF CURBG' = GUTTER GRADE

T/P = TOP OF PAVEMENTT/S = TOP OF SIDEWALKT/W = TOP OF WALLB/W = BOTTOM OF WALLF.G. = FINISH GRADE RIM = RIM ELEVATION SIDEWALK RAMP LEGEND:

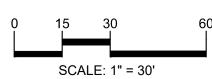
SIDEWALK RAMP 'TYPE P' REFER TO LATEST M.D.O.T. R-28 STANDARD RAMP AND DETECTABLE WARNING DETAILS

SESC NOTE: SOIL EROSION CONTROL MEASURES WILL BE PROVIDED DURING CONSTRUCTION PER WAYNE COUNTY DPS REQUIREMENTS



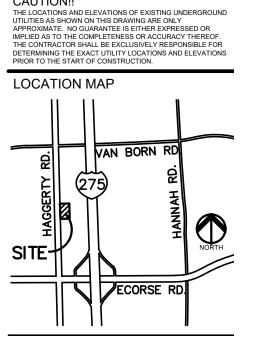








CAUTION!!



CLIENT

**CUNNINGHAM-LIMP** COMPANY 39300 WEST 12 MILE ROAD, SUITE #200



PROJECT TITLE

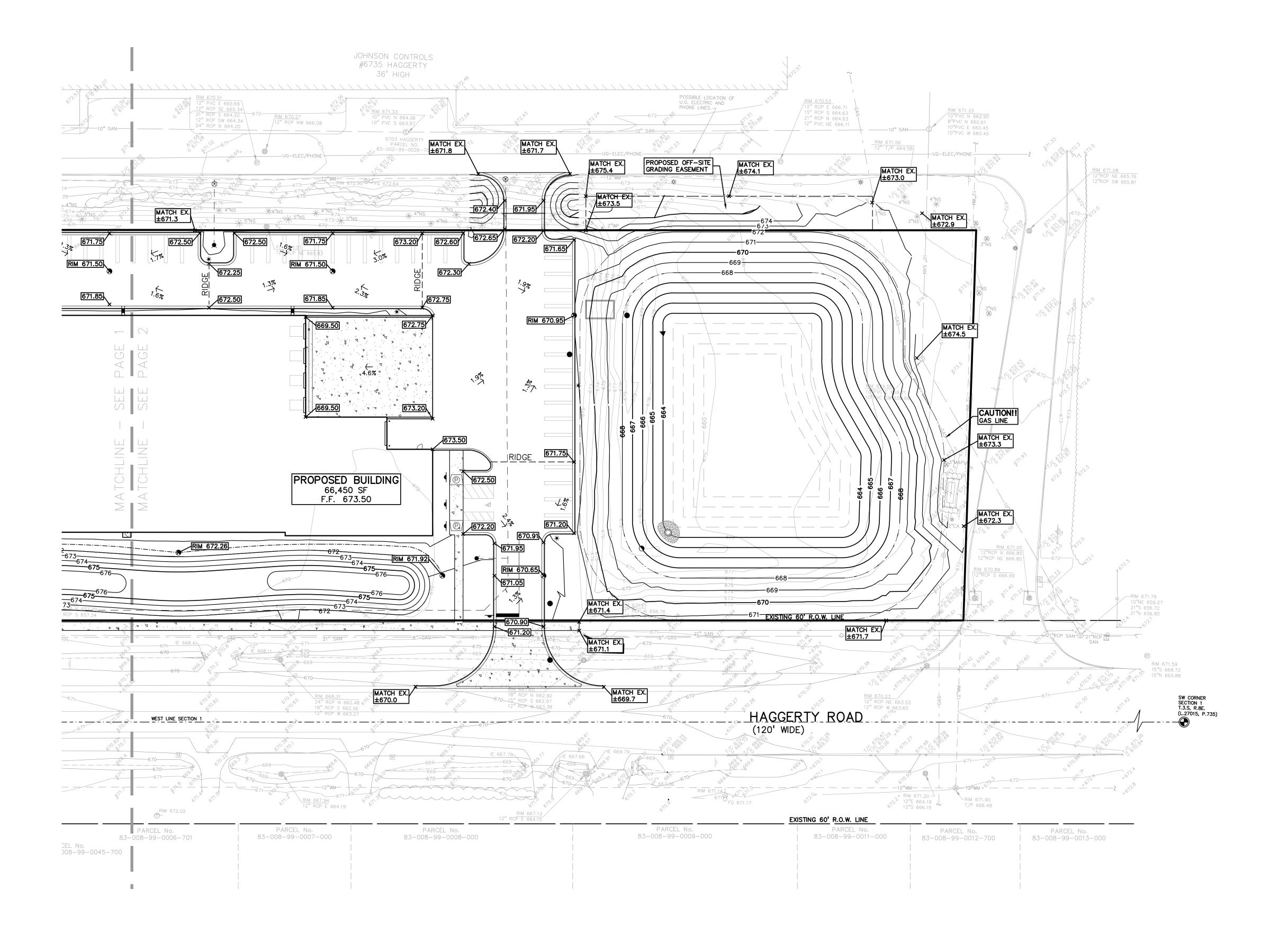
**VAN BUREN DEVELOPMENT** RD & VAN BORN RD. VAN BUREN TOWNSHIP, WAYNE COUNTY, MICHIGAN

REVISIONS TOWNSHIP COMMENTS

ORIGINAL ISSUE DATE: AUGUST 18, 2021 DRAWING TITLE **PRELIMINARY** 

**GRADING PLAN - NORTH** 

PEA JOB NO. 2007-148 KRD DRAWING NUMBER:



LEGEND IRON FOUND ■ BRASS PLUG SET SEC. CORNER FOUND MONUMENT FOUND R RECORDED MAIL FOUND MONUMENT SET M MEASURED Ø NAIL & CAP SET C CALCULATED -OH-ELEC-VV-O--- ELEC., PHONE OR CABLE TV O.H. LINE, POLE & GUY WIRE -UG-CATV-TV- UNDERGROUND CABLE TV, CATV PEDESTAL -⊠-UG-PHONE-①--- TELEPHONE U.G. CABLE, PEDESTAL & MANHOLE -UG-ELEC-E-E-E-E- ELECTRIC U.G. CABLE, MANHOLE, METER & HANDHOLE — \_ \_ \_ GAS MAIN, VALVE & GAS LINE MARKER WATERMAIN, HYD., GATE VALVE, TAPPING SLEEVE & VALVE SANITARY SEWER, CLEANOUT & MANHOLE — – — STORM SEWER, CLEANOUT & MANHOLE SQUARE, ROUND & BEEHIVE CATCH BASIN, YARD DRAIN POST INDICATOR VALVE WATER VALVE BOX/HYDRANT VALVE BOX, SERVICE SHUTOFF MAILBOX, TRANSFORMER, IRRIGATION CONTROL VALVE UNIDENTIFIED STRUCTURE 671.21 SPOT ELEVATION 671 CONTOUR LINE -x----x---x-**\_X** FENCE 0 0 0 0 ☆ STREET LIGHT SIGN \_ CONC. -ASPH. ASPHALT

7 70 70 WETLAND REFERENCE DRAWINGS

VAN BUREN TOWNSHIP DOES NOT PARTICIPATE IN THE FEMA FLOODPLAIN MAPPING PROGRAM ALTA/ACSM LAND TITLE SURVEY BY RAYMOND J. DONNELLY & ASSOCIATES, INC. DATED 11-9-00

SYMBOLS: GRADING PROPOSED SPOT ELEVATION:

TYPICALLY TOP OF PAVEMENT IN PAVED

\* 622.50 AREAS, GUTTER GRADE IN CURB LINES. PROPOSED CONTOUR LINE <del>----</del>922----ABBREVIATIONS: T/C = TOP OF CURBG' = GUTTER GRADET/P = TOP OF PAVEMENTT/S = TOP OF SIDEWALK T/W = TOP OF WALL B/W = BOTTOM OF WALLF.G. = FINISH GRADERIM = RIM ELEVATION

GRAVEL SHOULDER

\_\_GRAVEL\_

SIDEWALK RAMP LEGEND:

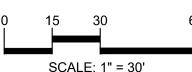
SIDEWALK RAMP 'TYPE P' REFER TO LATEST M.D.O.T. R-28 STANDARD RAMP AND DETECTABLE WARNING DETAILS

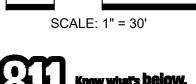


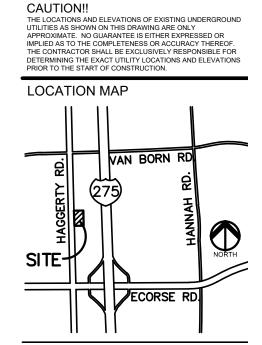
t: 844.813.2949 www.peagroup.com











CLIENT

CUNNINGHAM-LIMP COMPANY 39300 WEST 12 MILE ROAD, SUITE #200 FARMINGTON HILLS, MICHIGAN, 48331



PROJECT TITLE

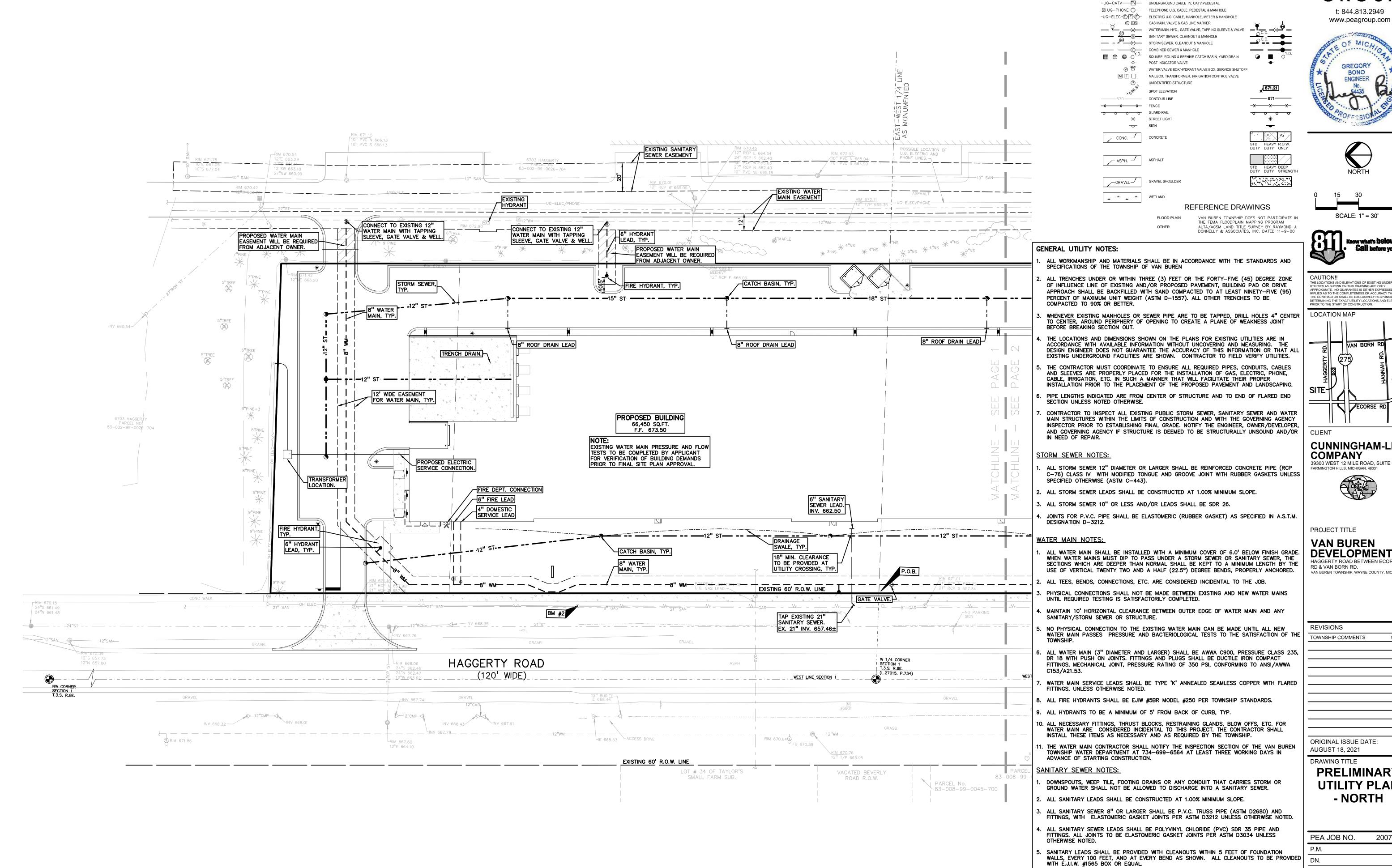
**VAN BUREN** DEVELOPMENT HAGGERTY ROAD BETWEEN ECORSE RD & VAN BORN RD. VAN BUREN TOWNSHIP, WAYNE COUNTY, MICHIGAN

REVISIONS	
TOWNSHIP COMMENTS	9/28/21
-	

ORIGINAL ISSUE DATE: AUGUST 18, 2021

**PRELIMINARY GRADING PLAN - SOUTH** 

PEA JOB NO.	2007-148
P.M.	JPB
DN.	KRD
DES.	GMB
DRAWING NUMBER:	



LEGEND

MONUMENT FOUND

MONUMENT SET

-OH-FLEC-W-O- ELEC. PHONE OR CABLE TV O.H. LINE. POLE & GUY WIRE

SEC. CORNER FOUND

R RECORDED

M MEASURED

C CALCULATED

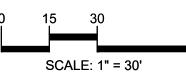
IRON FOUND

MAIL FOUND

Ø NAIL & CAP SET









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**CUNNINGHAM-LIMP** COMPANY 39300 WEST 12 MILE ROAD, SUITE #200



PROJECT TITLE

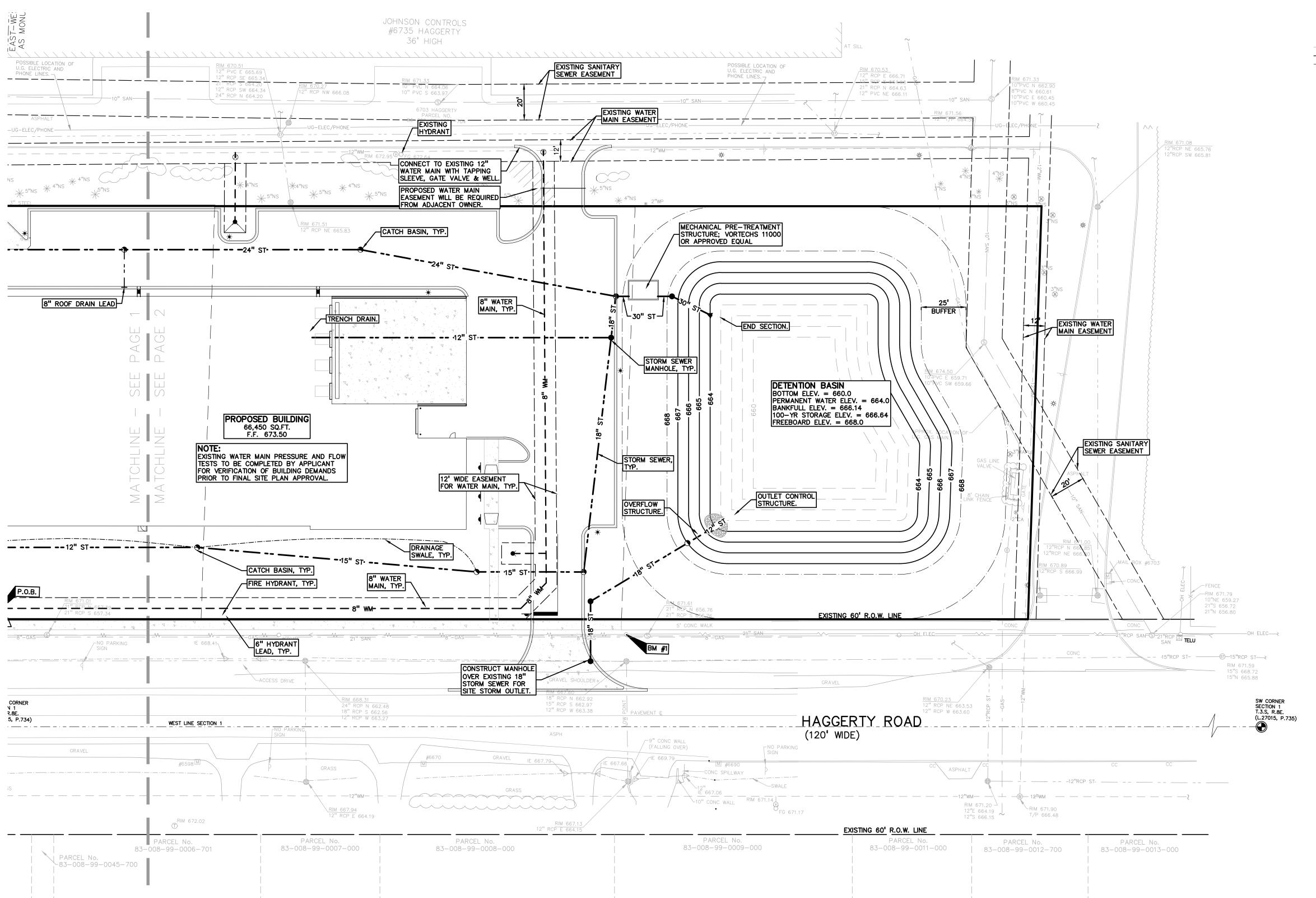
DEVELOPMENT VAN BUREN TOWNSHIP, WAYNE COUNTY, MICHIGAN

TOWNSHIP COMMENTS

ORIGINAL ISSUE DATE: AUGUST 18, 2021

DRAWING TITLE **PRELIMINARY UTILITY PLAN** - NORTH

2007-148 PEA JOB NO. JPB KRD DES. GMB DRAWING NUMBER:



#### LEGEND IRON FOUND ■ BRASS PLUG SET SEC. CORNER FOUND MONUMENT FOUND R RECORDED MAIL FOUND MONUMENT SET M MEASURED Ø NAIL & CAP SET C CALCULATED -OH-ELEC-VV-O--- ELEC., PHONE OR CABLE TV O.H. LINE, POLE & GUY WIRE -UG-CATV-TV- UNDERGROUND CABLE TV, CATV PEDESTAL -⊠-UG-PHONE-①--- TELEPHONE U.G. CABLE, PEDESTAL & MANHOLE -UG-ELEC-E-E-E-ELECTRIC U.G. CABLE, MANHOLE, METER & HANDHOLE — \_ GAS MAIN, VALVE & GAS LINE MARKER WATERMAIN, HYD., GATE VALVE, TAPPING SLEEVE & VALVE SANITARY SEWER, CLEANOUT & MANHOLE — - STORM SEWER, CLEANOUT & MANHOLE COMBINED SEWER & MANHOLE SQUARE, ROUND & BEEHIVE CATCH BASIN, YARD DRAIN POST INDICATOR VALVE WATER VALVE BOX/HYDRANT VALVE BOX, SERVICE SHUTOFF M T I MAILBOX, TRANSFORMER, IRRIGATION CONTROL VALVE UNIDENTIFIED STRUCTURE 671.21 SPOT ELEVATION 671 \_\_\_\_\_670 \_\_\_\_\_ CONTOUR LINE -x----x---x-**\_X** FENCE 0 0 0 0 ☆ STREET LIGHT SIGN \_ CONC. -\_\_ ASPH. \_/ | ASPHALT GRAVEL SHOULDER GRAVEL ит ит мт WETLAND REFERENCE DRAWINGS

VAN BUREN TOWNSHIP DOES NOT PARTICIPATE IN THE FEMA FLOODPLAIN MAPPING PROGRAM ALTA/ACSM LAND TITLE SURVEY BY RAYMOND J. DONNELLY & ASSOCIATES, INC. DATED 11—9—00

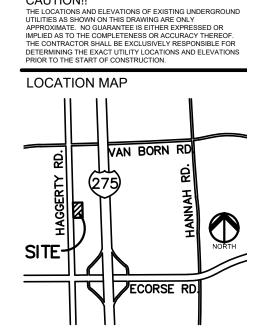
t: 844.813.2949











CLIENT

CUNNINGHAM-LIMP COMPANY 39300 WEST 12 MILE ROAD, SUITE #200



PROJECT TITLE

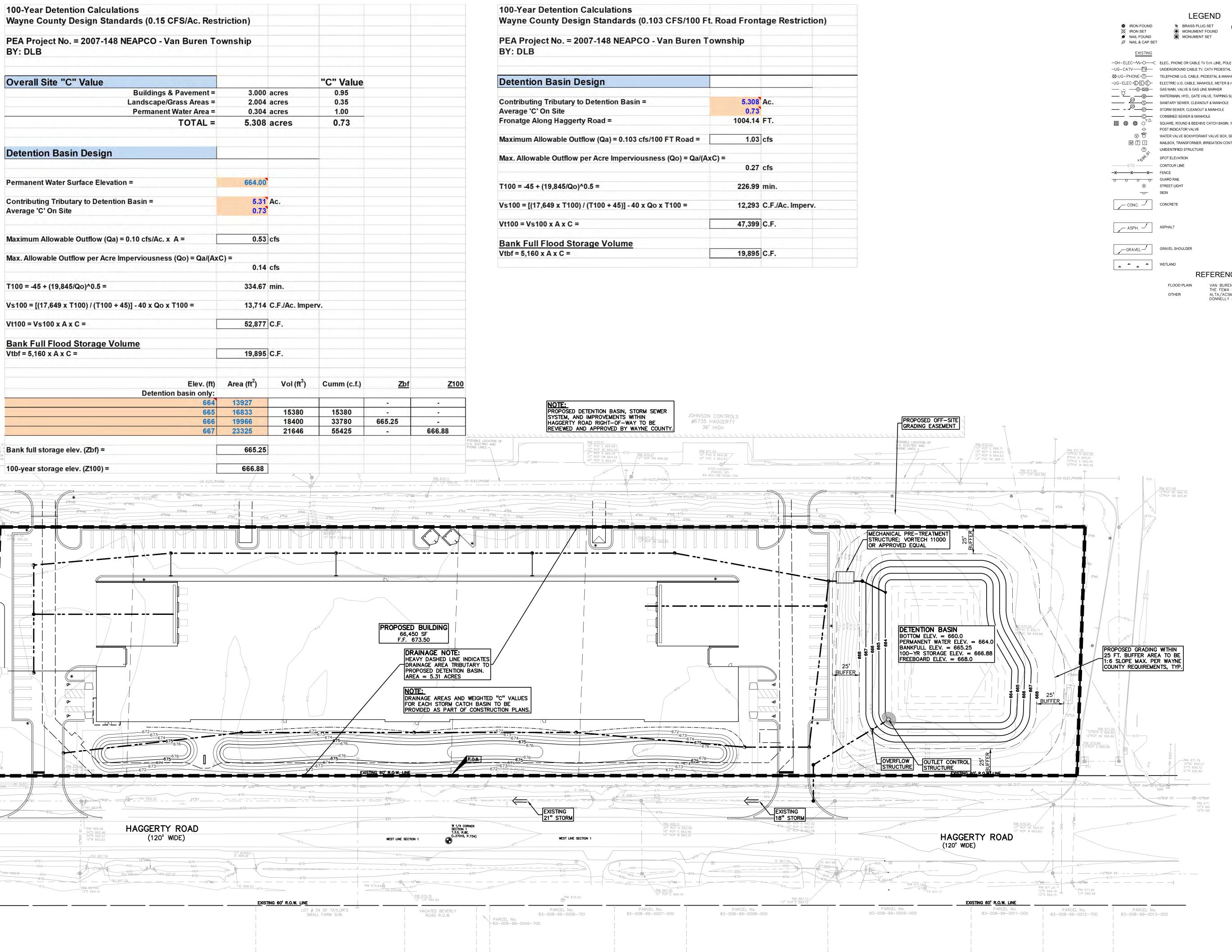
VAN BUREN DEVELOPMENT RD & VAN BORN RD.

REVISIONS	
TOWNSHIP COMMENTS	9/28/21

ORIGINAL ISSUE DATE: AUGUST 18, 2021 DRAWING TITLE

**PRELIMINARY UTILITY PLAN** - SOUTH

PEA JOB NO.	2007-148
P.M.	JPE
DN.	KRD
DES.	GME
DRAWING NUMBER:	



SEC. CORNER FOUND R RECORDED M MEASURED C CALCULATED -OH-ELEC-W-O- ELEC., PHONE OR CABLE TV O.H. LINE, POLE & GUY WIRE -⊠-UG-PHONE-①--- TELEPHONE U.G. CABLE, PEDESTAL & MANHOLE -UG-ELEC-E-E-E-ELECTRIC U.G. CABLE, MANHOLE, METER & HANDHOLE — WATERMAIN, HYD., GATE VALVE, TAPPING SLEEVE & VALVE SQUARE, ROUND & BEEHIVE CATCH BASIN, YARD DRAIN WATER VALVE BOX/HYDRANT VALVE BOX, SERVICE SHUTOFF MAILBOX, TRANSFORMER, IRRIGATION CONTROL VALVE 671.21 671 -x----x---x-0 0 0 0 \_

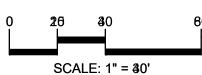
REFERENCE DRAWINGS

VAN BUREN TOWNSHIP DOES NOT PARTICIPATE IN THE FEMA FLOODPLAIN MAPPING PROGRAM ALTA/ACSM LAND TITLE SURVEY BY RAYMOND J. DONNELLY & ASSOCIATES, INC. DATED 11-9-00

t: 844.813.2949 www.peagroup.com









THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION. LOCATION MAP

CLIENT

**CUNNINGHAM-LIMP** COMPANY 39300 WEST 12 MILE ROAD, SUITE #200



PROJECT TITLE

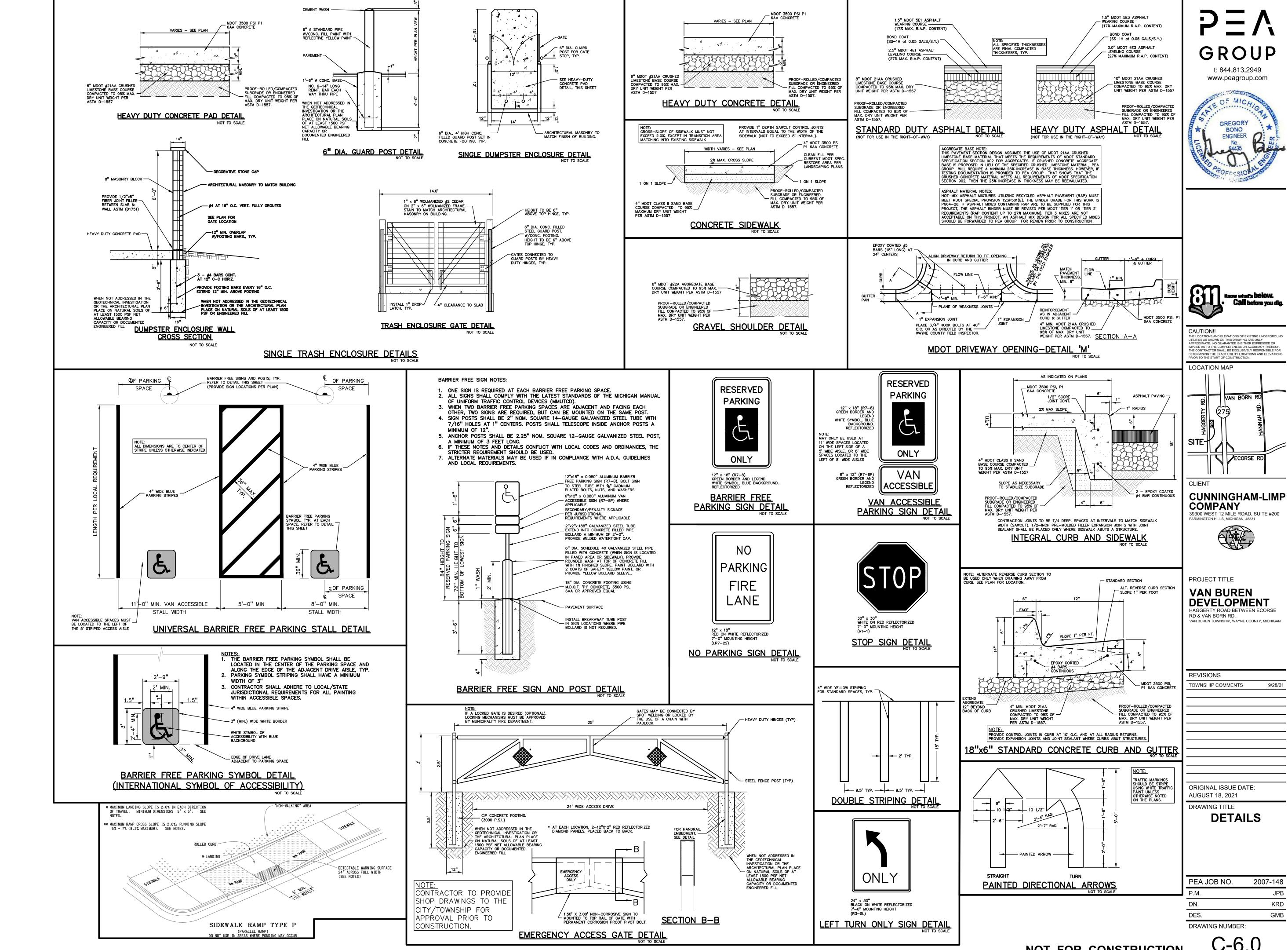
**VAN BUREN** DEVELOPMENT RD & VAN BORN RD.

REVISIONS TOWNSHIP COMMENTS

ORIGINAL ISSUE DATE: AUGUST 18, 2021

DRAWING TITLE **PRELIMINARY DRAINAGE PLAN** 

2007-148 PEA JOB NO. KRD DES. DRAWING NUMBER:



NOT FOR CONSTRUCTION

#### LANDSCAPE CALCULATIONS: REVISED PER TOWNSHIP OF VAN BUREN ZONING ORDINANCE; M-1

FRONTAGE LANDSCAPE: REQUIRED: 1 DEC. OR EVG. / 40 LF, 1 ORN./ 100 LF AND 8 SHRUBS / 40 LF FRONTAGE; (LESS DRIVES AND SIDEWALKS); HAGGERTY RD 934.6 - 60'= 874.6/40 =22 DEC. OR EVG.

PROVIDED: 1 EXISTING TREE, 19 PROPOSED DEC. & 2 EVG., 9 ORN. AND 175 SHRUBS

### PARKING LOT LANDSCAPING

REQUIRED: 10' WIDE BUFFER, PARKING TO BE SCREENED FROM PUBLIC VIEW BY BUILDING OR A 5' WIDE, DEC. OR EVG. SHRUB HEDGE, 3' HT. AT 2' MIN. BEHIND CURB, BERM OR WALL.

EAST SIDE: EXISTING BERM AND EXISTING PLANTINGS
NOTE: WAIVER REQUESTED FOR THE SHARED EAST BUFFER
NORTH SIDE: PROPOSED HEDGE ADJ. TO PARKING SPACES
SOUTH SIDE: PROPOSED HEDGE ADJ. TO PARKING SPACES

#### INTERIOR PARKING LOT LANDSCAPE:

24,502 SF / 3,000 = 8 TREES

REQUIRED: MIN. OF 5% OF ALL PVMT. WITH 1 DEC. TREE / FOR EACH 300 SF OF INTERIOR LANDSCAPE, 360 SF MIN. SIZE. TREE MUST BE PLANTED WITHIN 20' OF PVMT. AREA, ISLAND MAX. OF 40 SPACES SPAN, 360 SF MIN. ISLAND AREA. 49,608 SF PVT X .05 = 2,480 SF /300 SF = 8 TREES REQ.

PROVIDED: 8 PROPOSED TREES AND 2775 SF LA ISLANDS

OPEN SPACE LANDSCAPE: REQUIRED: ALL REMAINING OPEN AREAS THAT ARE NOT REQUIRED LANDSCAPE AREA (FRONTAGE, PARKING LOT, LOADING, GREENBELT, DETENTION BASIN) SHALL HAVE 1 DEC OR EVG. TREE. / 3000 SF.

PROVIDED: 8 TREES (6 DOUBLING AS LOADING BUFFER EVG.)

#### LOADING AREAS: REQUIRED: ALL LOADING AREAS UNLESS SCREENED BY AN INTERVENING BUILDING, MUST BE SCREENED FROM PUBLIC ST.

R.O.W., BY A 6' HT. WALL, OPAQUE FENCE OR 8' HT. EVG. STAGGERED SPACING, 15' OC., 70 LF/15= 5 EVG. PROVIDED: 5, 8' HT. EVG. AT SOUTH LOADING AND

6 EVG AT NORTH LOADING AREA 874.6/100 = 9 ORN. AND 175 SHRUBS

#### REQUIRED: 10' WIDE BUFFER WITH 1 TREE / 30 LF, ADJACENT TO M1, NORTH AND EAST SIDES. NORTH: 230/ 30 LF = 8 TREES EAST: 778/ 30 LF = 26 TREES

PROVIDED: NORTH: 8 EXISTING TREES MIN.; 18 EXISTING TREES ACTUALLY SHOWN ON NORTH SIDE, PROVIDES MORE THAN ADEQUATE EAST: 26 EXISTING TREES MIN.; 39 EXISTING TREES ACTUALLY SHOWN ON EAST SIDE, PROVIDÉS MORE THAN ADEQUATE BUFFER

## NOTE: WAIVER REQUESTED FOR THE SHARED 10' WIDE BUFFER OF EXISTING TREES ON THE NORTH AND EAST PROPERTY LINES.

DETENTION BASIN:
REQUIRED: THE SIDE SLOPES AND BASIN BOTTOM SHALL BE PLANTED WITH NATIVE SEED MIX, AND NATIVE TREES AROUND BASIN PERIMETER ABOVE FREE BOARD LINE.

PROVIDED: SEED MIX ON SIDE SLOPES, 2' PERMANENT WATER AT BASIN BOTTOM, 20 PROPOSED NATIVE REPLACEMENT TREES. NOTE: WAYNE COUNTY TO REVIEW FOR THEIR APPROVAL THE LANDSCAPE DETENTION AREA PLANTINGS.

### TREE REPLACEMENT PROTECTED TREE REPLACEMENT: (5" DBH AND ABOVE) NO REPLACEMENT FOR DEAD OR POOR CONDITION TREES.

NO REPLACEMENT FOR DOMESTIC FRUIT TREES AND TWPS. LIST OF INVASIVE SPECIES, SECTION 8.106 D.17

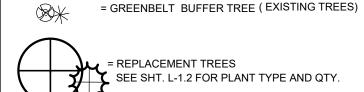
REPLACE AT 1:1, OR PRESERVE MIN. 37% OF PROTECTED EXISTING TREES. REQUIRED: 26 PROTECTED TREES REMOVED TO BE REPLACED PROVIDED: 13, 3" CAL. DEC. TREES (RATIO 1:1) AND 9, 8' HT. EVG. (RATIO 1:1.5, EQUIV. TO 10 TREES) (13 + 13 EQUIVALENT = 26 TREES)

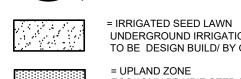
## FRONTAGE TREE AND SHRUB SEE SHT. L-1.1- L-1.2 FOR PLANT TYPE AND QTY.

= PARKING LOT TREE AND SHRUB



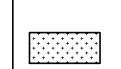






KEY:

UNDERGROUND IRRIGATION SYSTEM TO BE DESIGN BUILD/ BY OTHERS = UPLAND ZONE ECONOMY PRAIRIE SEED MIX BY: CARDNO



= EDGE ZONE SWALE SEED MIX BY: CARDNO NATIVE PLANT NURSERY 574-586-2412 PROVIDE EROSION MAT ON SLOPES

NATIVE PLANT NURSERY 574-586-2412 PROVIDE EROSION MAT ON SLOPES



= EXISTING TREE TO REMAIN WITH TREE PROTECTION FENCE





LAWN AND PLANTING AREA TO BE IRRIGATED WITH WITH AN UNDERGROUND IRRIGATION SYSTEM TO BE DETAILED DURING CONSTRUCTION DRAWINGS

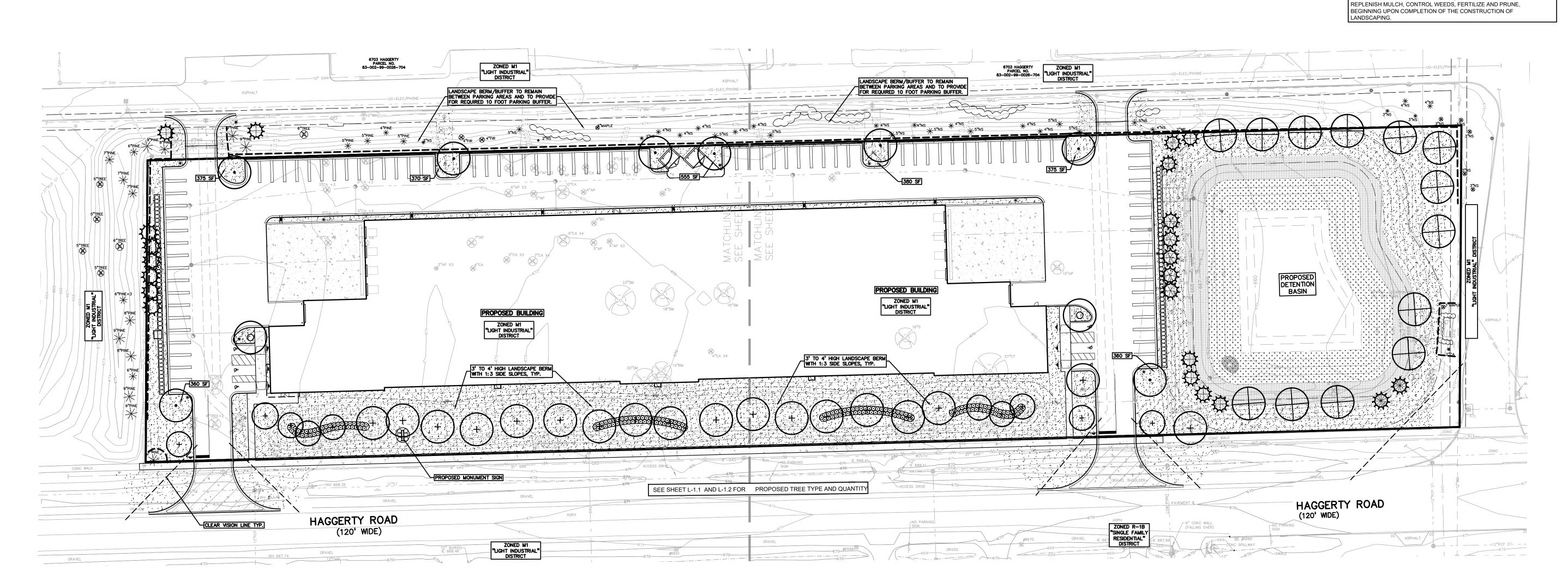
OR PROPERTY LINE. 2YR. WARRANTY ON NATIVE SEED AT BASIN.

AND UP KEEP OF THE LANDSCAPE AND IRRIGATION SYSTEM.

OWNER WILL REPLACE ALL DISEASED, DEAD OR DAMAGED PLANTS

4" TOPSOIL FOR LAWN AREAS.

MIN. 3" CAL. DECIDUOUS TREE; MIN. 2" CAL. ORN.; 8' HT. EVG. TREE. OWNER SHALL BE RESPONSIBLE FOR THE SEASONAL MAINTENANCE



TREES/ SHRUBS SHALL BE PLACED AT A MINIMUM OF 4' OFF FENCE LINE

ECORSE

t: 844.813.2949

www.peagroup.com

EVANS LANDSCAPE ARCHITECT

SCALE: 1" = 40'

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CLIENT

CAUTION!!

LOCATION MAP

CUNNINGHAM-LIMP COMPANY 39300 WEST 12 MILE ROAD, SUITE #200 FARMINGTON HILLS, MICHIGAN, 48331



PROJECT TITLE **VAN BUREN DEVELOPMENT** 

RD & VAN BORN RD.

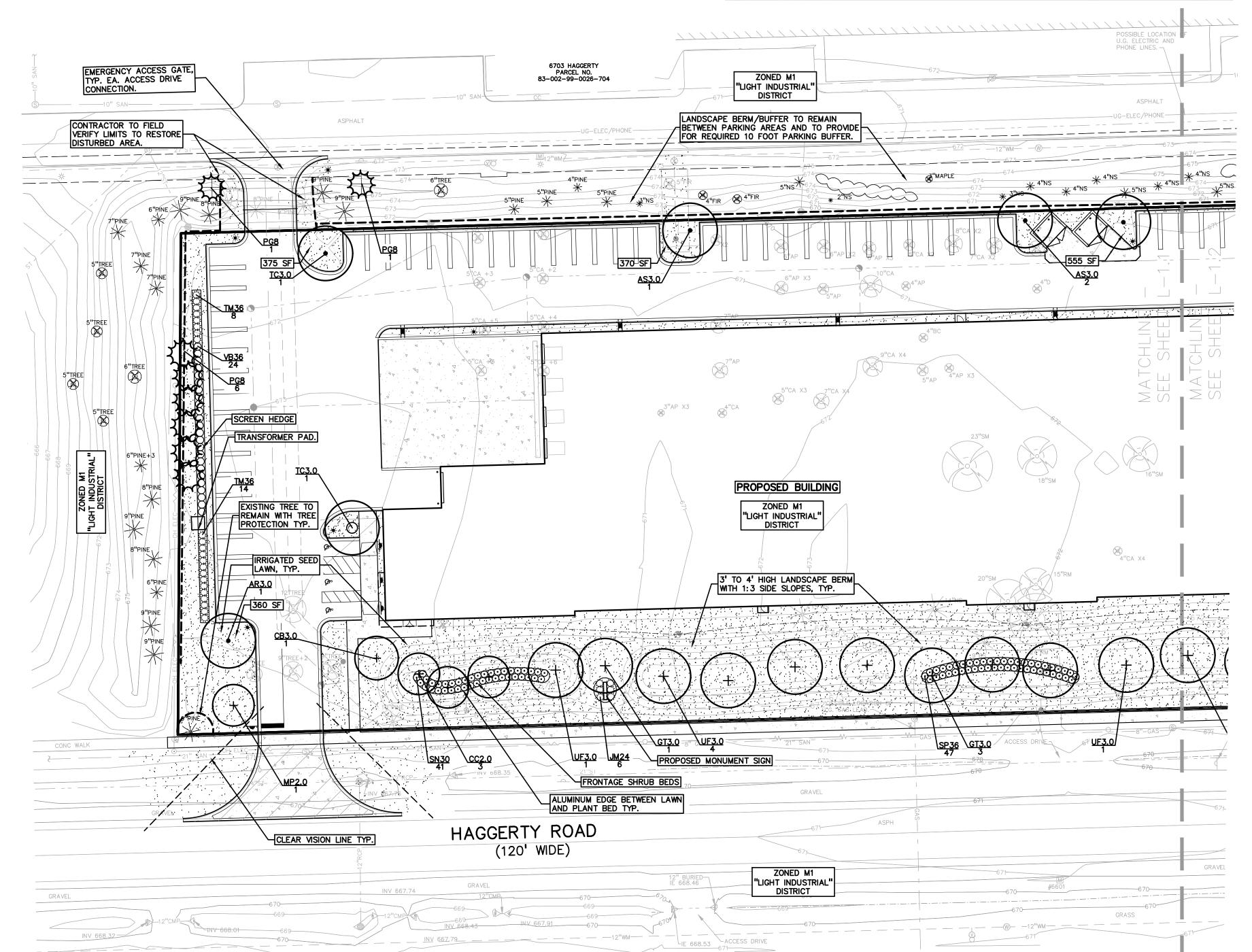
REVISIONS TOWNSHIP COMMENTS

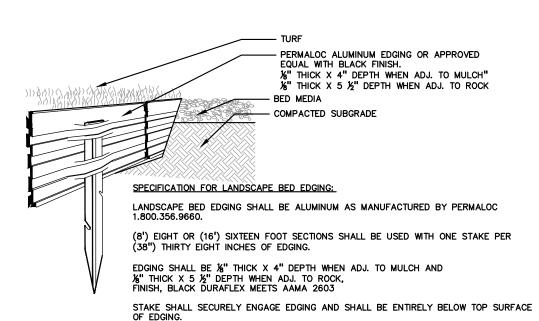
ORIGINAL ISSUE DATE AUGUST 18, 2021

**LANDSCAPE PLAN** 

PEA JOB NO.	2007-148
P.M.	JPE
DN.	JLE
DES.	JLE
DRAWING NUMBER:	

L-1.1					
DECIDUO	US TREE PL	ANT LIST:			
QUANTITY	KEY SYMBOL	COMMON NAME	SCIENTIFIC NAME	SIZE	SPEC
1	AR3.0	Red Maple	Acer rubrum	3.0" Cal.	B&B
3	AS3.0	Legacy Sugar Maple	Acer saccharum 'Legacy'	3.0" Cal.	B&B
1	CB3.0	Columnar European Hornbeam	Carpinus betulus 'Columnaris'	3.0" Cal.	B&B
3	CC2.0	Eastern Redbud	Cercis canadensis	2.0" Cal.	B&B
4	GT3.0	Skyline Honeylocust	Gleditsia triacanthos 'Skyline' Inermis	3.0" Cal.	B&B
1	MP2.0	Prairifire Crab	Malus 'Prairifire'	2.0" Cal.	B&B
2	TC3.0	Greenspire Linden	Tilia cordata 'Greenspire'	3.0" Cal.	B&E
6	UF3.0	Frontier Elm	Ulmus 'Frontier'	3.0" Cal.	B&B
21	TOTAL DEC.				
EVERGRE	EEN TREE PL	ANT LIST:			
QUANTITY	KEY SYMBOL	COMMON NAME	SCIENTIFIC NAME	SIZE	SPEC
8	PG8	White Spruce	Picea glauca 'Densata'	8' Ht.	B&B
8	TOTAL EVG.				
SHRUB P	LANT LIST:				
QUANTITY	KEYSYMBOL	COMMON NAME	SCIENTIFIC NAME	SIZE	SPEC
6	JM24	Moor Dense Juniper	Juniperus sabina 'Monard'	24" Sprd	Cont
41	SN30	Neon Flash Spirea	Spiraea japonica 'Neon Flash'	30" Ht.	Cont
47	SP36	Miss Kim Lilac	Syringa patula 'Miss Kim'	36" Ht.	Cont
22	TM36	Dense Yew	Taxus x media 'Densiformis'	36" Ht.	Cont
24	VB36	Blue Muffin Viburnum	Viburnum dentatum 'Christom'	36" Ht.	Cont
140	TOTAL SHRUB	s			

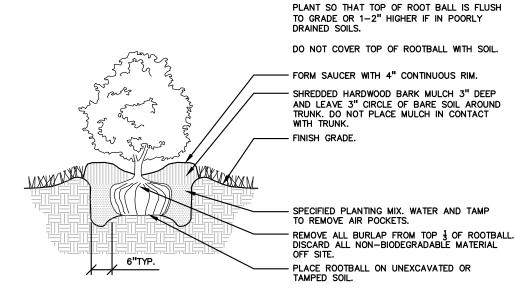




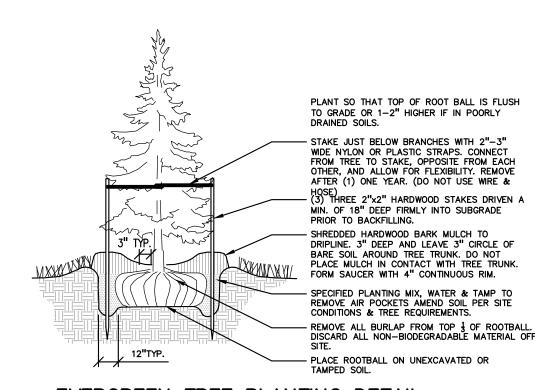
INSTALL AS PER MANUFACTURER'S SPECIFICATIONS WITH TOP OF EDGING  $\sharp$ "  $- \sharp$ " above compacted finish grade. Finish grade to be compacted on either side of edging to maintain stability.

EDGING SHALL HAVE A MINIMUM OF (2") TWO INCHES OF INTERLOCKING OVERLAP BETWEEN SECTIONS.

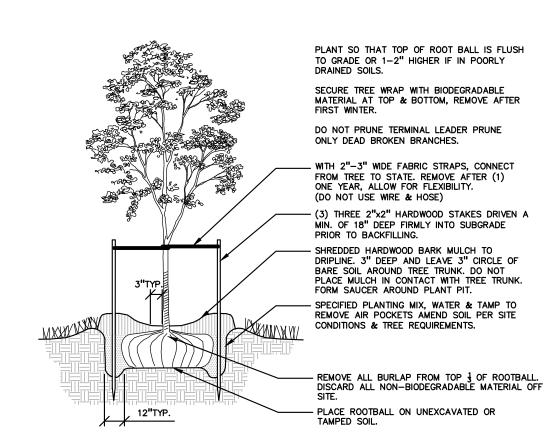
### ALUMINUM EDGE DETAIL



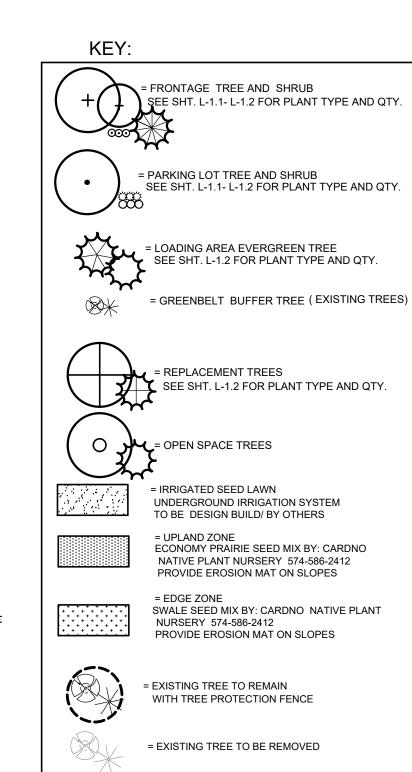
SHRUB PLANTING DETAIL



### **EVERGREEN TREE PLANTING DETAIL**



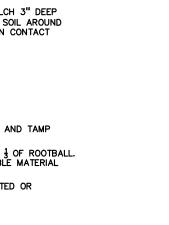
**DECIDUOUS TREE PLANTING DETAIL** 

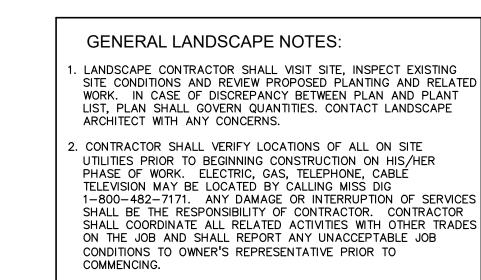


LAWN AND PLANTING AREA TO BE IRRIGATED WITH

TO BE DETAILED DURING CONSTRUCTION DRAWINGS

WITH AN UNDERGROUND IRRIGATION SYSTEM

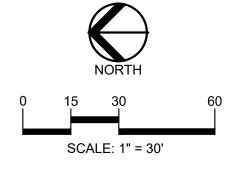




- . ALL PLANT MATERIAL TO BE PREMIUM GRADE NURSERY STOCK AND SHALL SATISFY AMERICAN ASSOCIATION OF NURSERYMEN STANDARD FOR NURSERY STOCK. ALL LANDSCAPE MATERIAL SHALL BE NORTHERN GROWN, NO. 1. GRADE.
- . CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON LANDSCAPE PLAN PRIOR TO PRICING THE WORK. 5. THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO REJECT
- ANY PLANT MATERIAL NOT MEETING SPECIFICATIONS. 3. ALL SINGLE STEM SHADE TREES TO HAVE STRAIGHT TRUNKS AND SYMMETRICAL CROWNS.
- . ALL SINGLE TRUNK SHADE TREES TO HAVE A CENTRAL LEADER; TREES WITH FORKED OR IRREGULAR TRUNKS WILL NOT BE ACCEPTED.
- 8. ALL MULTI STEM TREES SHALL BE HEAVILY BRANCHED AND HAVE SYMMETRICAL CROWNS. ONE SIDED TREES OR THOSE WITH THIN OR OPEN CROWNS SHALL NOT BE ACCEPTED.
- 9. ALL EVERGREEN TREES SHALL BE HEAVILY BRANCHED AND FULL TO THE GROUND, SYMMETRICAL IN SHAPE AND NOT SHEARED FOR THE LAST FIVE GROWING SEASONS.
- 10.ALL TREES TO HAVE CLAY OR CLAY LOAM BALLS, TREES WITH SAND BALLS WILL BE REJECTED. 1.NO MACHINERY IS TO BE USED WITHIN THE DRIP LINE OF
- EXISTING TREES; HAND GRADE ALL LAWN AREAS WITHIN THE DRIP LINE OF EXISTING TREES. 2.ALL TREE LOCATIONS SHALL BE STAKED BY LANDSCAPE CONTRACTOR AND ARE SUBJECT TO THE APPROVAL OF THE
- LANDSCAPE ARCHITECT PRIOR TO INSTALLATION OF THE PLANT 13.IT IS MANDATORY THAT POSITIVE DRAINAGE IS PROVIDED AWAY FROM ALL BUILDINGS.
- 4.ALL PLANTING BEDS SHALL RECEIVE 3" SHREDDED HARDWOOD BARK MULCH WITH PRE EMERGENT, SEE SPECIFICATIONS. SHREDDED PALETTE AND DYED MULCH WILL NOT BE ACCEPTED. 15.ALL LANDSCAPED AREAS SHALL RECEIVE 3" COMPACTED
- 16.SEE SPECIFICATIONS FOR ADDITIONAL COMMENTS, REQUIREMENT PLANTING PROCEDURES AND WARRANTY STANDARDS. 17.FOR NON-LAWN SEED MIX AREAS, AS NOTED ON PLAN, BRUSH MOW ONCE SEASONALLY FOR INVASIVE SPECIES CONTROL.









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CLIENT

**CUNNINGHAM-LIMP** 39300 WEST 12 MILE ROAD, SUITE #200 FARMINGTON HILLS, MICHIGAN, 48331



RD & VAN BORN RD.

PROJECT TITLE **VAN BUREN** DEVELOPMENT HAGGERTY ROAD BETWEEN ECORSE

VAN BUREN TOWNSHIP, WAYNE COUNTY, MICHIGAN

REVISIONS	
TOWNSHIP COMMENTS	9/28/21
·	

ORIGINAL ISSUE DATE: AUGUST 18, 2021

DRAWING TITLE **LANDSCAPE PLAN NORTH** 

	PEA JOB NO.	2007-148
	P.M.	JPB
TS,	DN.	JLE
н	DES.	JLE
	DRAWING NUMBER:	

L-1.2					
DECIDUO	US TREE PL	ANT LIST:			
QUANTITY	KEY SYMBOL	COMMON NAME	SCIENTIFIC NAME	SIZE	SPEC
3	AR3.0	Red Maple	Acer rubrum	3.0" Cal.	B&B
3	AS3.0	Legacy Sugar Maple	Acer saccharum 'Legacy'	3.0" Cal.	B&B
3	CC2.0	Eastern Redbud	Cercis canadensis	2.0" Cal.	B&B
3	GT3.0	Skyline Honeylocust	Gleditsia triacanthos 'Skyline' Inermis	3.0" Cal.	B&B
2	MP2.0	Prairifire Crab	Malus 'Prairifire'	2.0" Cal.	B&B
6	PA3.0	Encore London Planetree	Platanus x acerifolia 'Encore'	3.0" Cal.	B&B
5	QB3.0	Swamp White Oak	Quercus bicolor	3.0" Cal.	B&B
2	TC3.0	Greenspire Linden	Tilia cordata 'Greenspire'	3.0" Cal.	B&B
3	UF3.0	Frontier Elm	Ulmus 'Frontier'	3.0" Cal.	B&B
30	TOTAL DEC.				
EVERGRE	EN TREE PL	ANT LIST:			
QUANTITY	KEY SYMBOL	COMMON NAME	SCIENTIFIC NAME	SIZE	SPEC
5	AC8	Concolor Fir	Abies concolor	8' Ht.	B&B
4	PA8	Norway Spruce	Picea abies	8' Ht.	B&B
5	PO8	Serbian Spruce	Picea omorika	8' Ht.	B&B
14	TOTAL EVG.				
SHRUB P	LANT LIST:				
QUANTITY	KEY SYMBOL	COMMON NAME	SCIENTIFIC NAME	SIZE	SPEC
40	SN30	Neon Flash Spirea	Spiraea japonica 'Neon Flash'	30" Ht.	Cont.
47	SP36	Miss Kim Lilac	Syringa patula 'Miss Kim'	36" Ht.	Cont.
30	TM36	Dense Yew	Taxus x media 'Densiformis'	36" Ht.	Cont.
19	VB36	Blue Muffin Viburnum	Viburnum dentatum 'Christom'	36" Ht.	Cont.
136	TOTAL SHRUB	S			

DETENTION BASIN BOTTOM ELEV. = 660.0

ECONOMY PRAIRIE SEED MIX, TYP.

SWALE SEED MIX TYP.

PROPOSED DETENTION BASIN

HAGGERTY ROAD (120' WIDE)

CONTRACTOR TO FIELD VERIFY LIMITS TO RESTORE DISTURBED AREA.

-9" CONC WALL (FALLING OVER)

6703 HAGGERTY
PARCEL NO.
83-002-99-0026-704

"LIGHT INDUSTRIAL"

LANDSCAPE BERM/BUFFER TO REMAIN BETWEEN PARKING AREAS AND TO PROVIDE FOR REQUIRED 10 FOOT PARKING BUFFER.

PROPOSED BUILDING

ZONED M1
"LIGHT INDUSTRIAL"
DISTRICT

3' TO 4' HIGH LANDSCAPE BERM WITH 1:3 SIDE SLOPES, TYP.

ASPHALT

ZONED M1

IRRIGATED SEED LAWN, TYP.

ZONED R-1B
"SINGLE FAMILY
RESIDENTIAL"
DISTRICT

CONTRACTOR TO FIELD
VERIFY LIMITS TO RESTORE

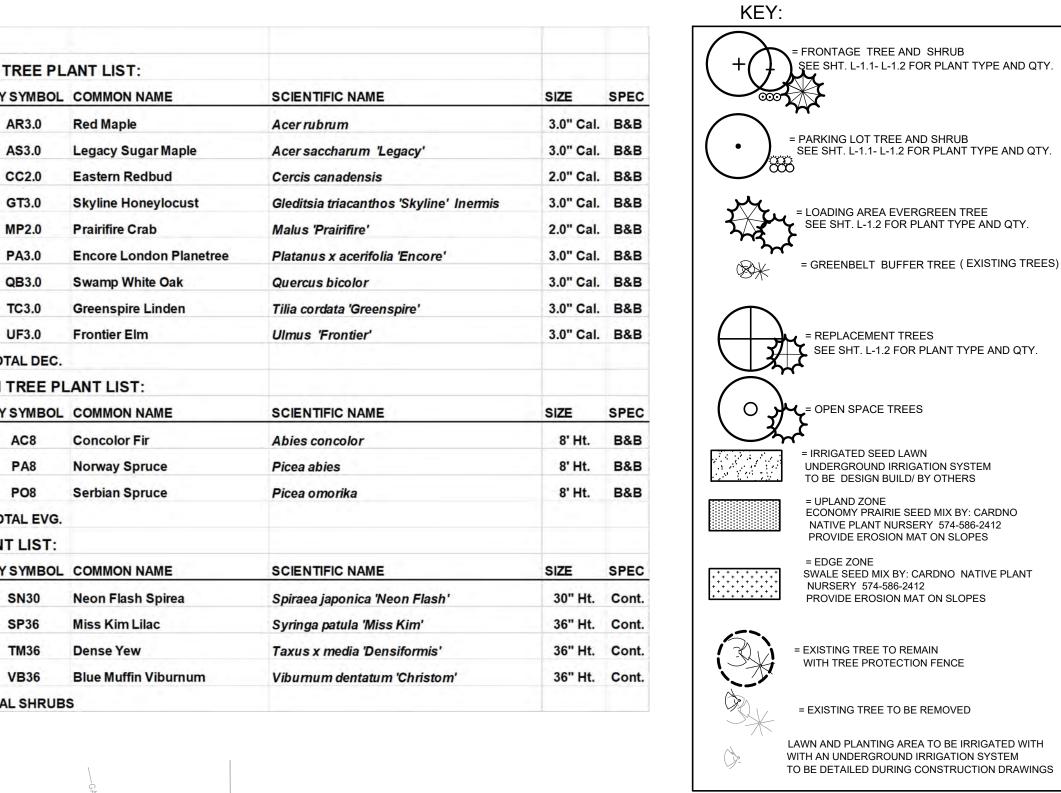
PERMANENT WATER ELEV. = 664.0

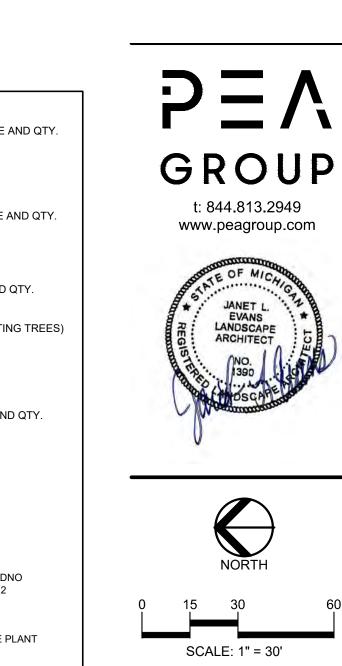
BANKFULL ELEV. = 666.14

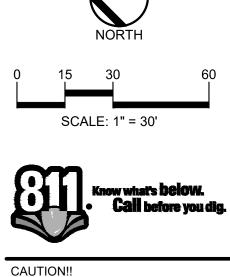
100-YR STORAGE ELEV. = 666.64

FREEBOARD ELEV. = 668.0

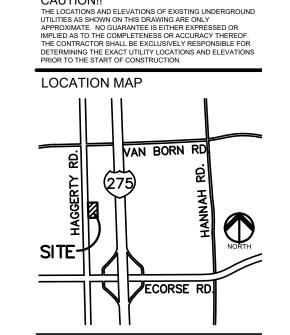








JANET L. EVANS LANDSCAPE ARCHITECT



CLIENT

CUNNINGHAM-LIMP COMPANY 39300 WEST 12 MILE ROAD, SUITE #200 FARMINGTON HILLS, MICHIGAN, 48331



PROJECT TITLE VAN BUREN DEVELOPMENT

RD & VAN BORN RD.

REVISIONS TOWNSHIP COMMENTS

ORIGINAL ISSUE DATE: AUGUST 18, 2021 DRAWING TITLE

# LANDSCAPE PLAN SOUTH

PEA JOB NO.	2007-148
P.M.	JPB
DN.	JLE
DES.	JLE
DRAWING NUMBER:	

BENCHMARKS

(GPS DERIVED - NAVD 88)

REF. BM A
(PROPERTY CORNER 100, SOUTHWEST CORNER OF SITE)
1/2" IRON BAR WITH CAP (RLS #21563)

ELEV. = 671.536BM #1
GEAR SPIKE IN NORTH FACE OF UTILITY POLE (EAST SIDE OF

HAGGERTY) AT SOUTHWEST CORNER OF SITE.

ELEV. = 672.691

BM #2
GEAR SPIKE IN SOUTHEAST FACE OF UTILITY POLE (EAST SIDE OF HAGGERTY) ±37' SOUTHWEST OF CONTROL POINT 2.
THIRD UTILITY POLE NORTH OF BM#1.
ELEV. = 671.731

FLOODPLAIN NOTE: BY GRAPHICAL PLOTTING, SITE IS WITHIN ZONE 'X', AREA DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN PER FLOOD INSURANCE RATE MAP NUMBER 26163C0215E, DATED FEBRUARY 2, 2018.

#### LEGAL DESCRIPTION:

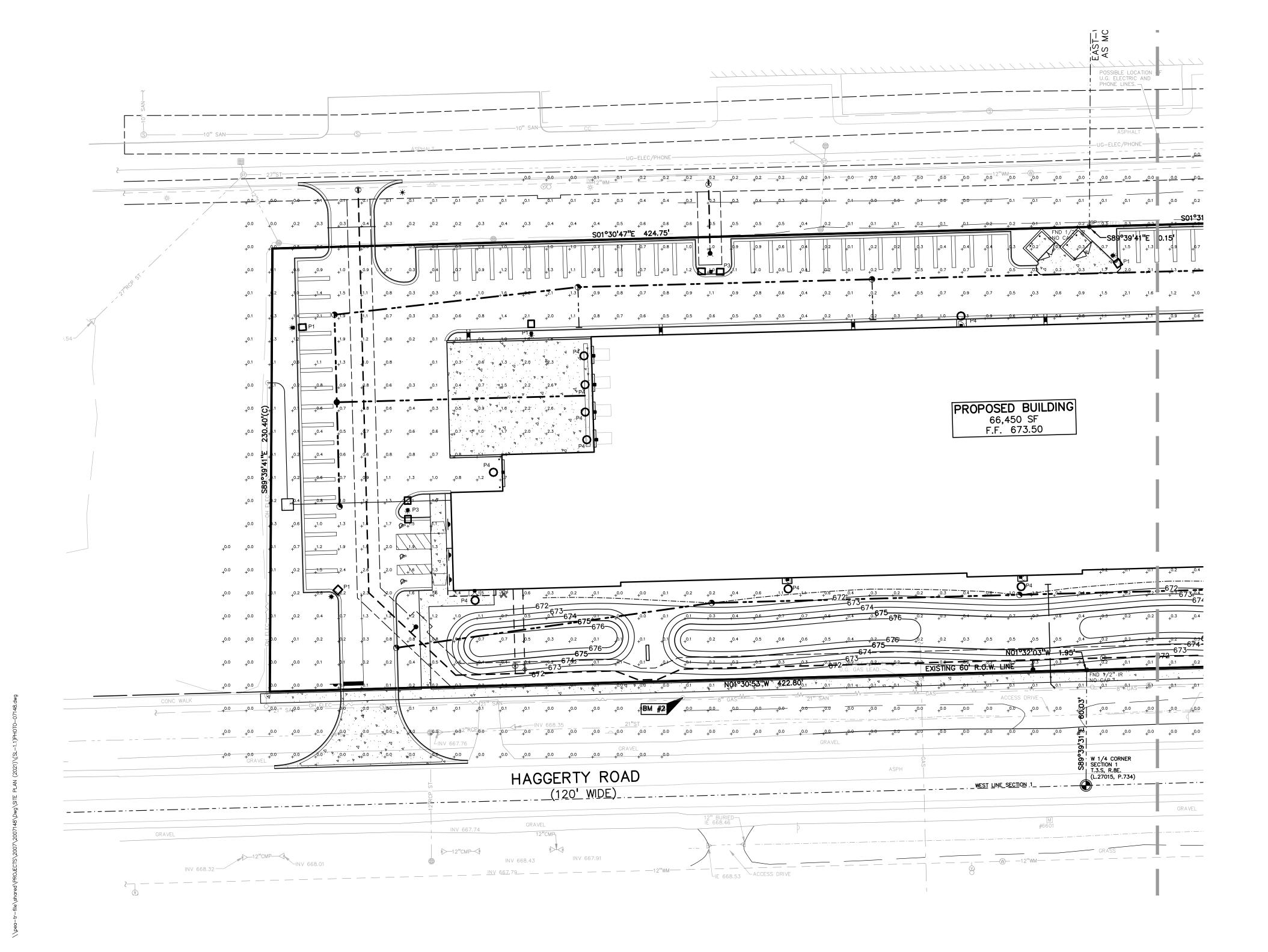
(Combined Parcels per PEA, INC.)

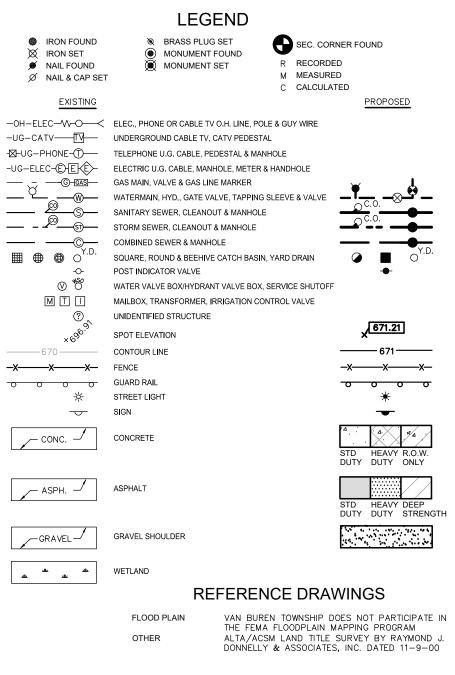
Land in a part of the Southwest 1/4 and Northwest 1/4 of Section 1, Town 3 South, Range 8 East, Van Buren Township, Wayne County Michigan being more particularly described as:

Commencing at the West 1/4 Corner of said Section 1; thence

S89°39'31"E, 60.03 feet to the east line of Haggerty Road (120' wide) and the POINT OF BEGINNING; thence along said east line N01°32'03"W, 1.95 feet; thence N01°30'53"W, 422.80 feet; thence S89°39'41"E, 230.40 feet (recorded as 230.38 feet); thence S01°30'47"E, 424.75 feet to the east and west 1/4 line of said Section 1; thence along said 1/4 line S89°39'41"E, 0.15 feet; thence S01°31'58"E, 118.27 feet; thence N89°39'41"W, 0.15 feet; thence S01°31'58"E, 393.54 feet; thence N89°39'41"W, 230.38 feet to the aforementioned east line of Haggerty Road; thence along said east line, N01°32'03"W, 511.81 feet to the POINT OF BEGINNING. Containing  $4.95 \pm$  acres of land more or less.

Schedule											
Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
	P1	5	Lithonia Lighting	DSX1 LED 30C 1000 50K TFTM MVOLT HS MA	DSX1 LED WITH (1) 30 LED LIGHT ENGINES, RIGHT ROTATED TYPE TFTM OPTIC, 5000K, @ 1000mA WITH HOUSE SIDE SHIELD, FOR MAST ARM MOUNTING	LED	1	DSX1_LED_30C_10 00_50K_TFTM_MVO LT_HS_MA.ies	6747	0.95	104.19
• •	P2	1	Lithonia Lighting	DSX1 LED 30C 1000 50K TFTM MVOLT HS MA	DSX1 LED WITH (1) 30 LED LIGHT ENGINES, RIGHT ROTATED TYPE TFTM OPTIC, 5000K, @ 1000mA WITH HOUSE SIDE SHIELD, FOR MAST ARM MOUNTING	LED	1	DSX1_LED_30C_10 00_50K_TFTM_MVO LT_HS_MA.ies	6747	0.95	208.38
0.0	P3	4	Lithonia Lighting	DSX1 LED 30C 530 30K TFTM MVOLT HS MA	DSX1 LED WITH (1) 30 LED LIGHT ENGINES, TYPE TFTM OPTIC, 3000K, @ 530mA WITH HOUSE SIDE SHIELD, FOR MAST ARM MOUNTING	LED	1	DSX1_LED_30C_53 0_30K_TFTM_MVOL T_HS_MA.ies	3121	0.95	104.82
0	P4	16	Lithonia Lighting	DSXW1 LED 20C 1000 AMBPC T4M MVOLT HS	DSXW1 LED WITH (2) 10 LED LIGHT ENGINES, TYPE T4M OPTIC, AMBER PC, @ 1000mA WITH HOUSE-SIDE SHIELDS.	LED	1	DSXW1_LED_20C_1 000_AMBPC_T4M_M VOLT_HS.ies	3269	0.95	73.2

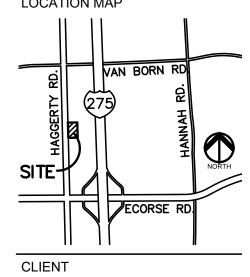




CAUTION!! THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION. LOCATION MAP

BONO

ENGINEER



**CUNNINGHAM-LIMP** 

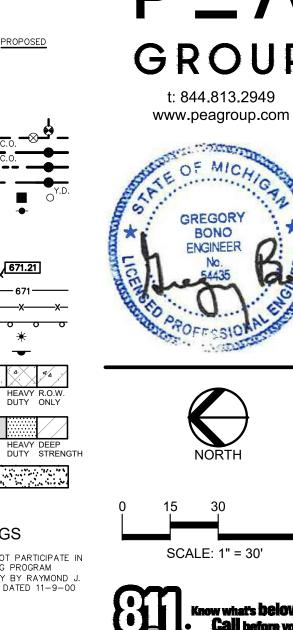
39300 WEST 12 MILE ROAD, SUITE #200

FARMINGTON HILLS, MICHIGAN, 48331

SITE PHOTOMETRIC DATA:					
1	SITE FOOTCANDLE	ALLOWED	PROPOSED		
••	(PARKING LOT AND SIDEWALK):	1.0 Fc. (MAX. AVG)	1.0 Fc. (AVG)		
2.	FIXTURE HEIGHT				
	(SITE):	25 FT. (MAX)	25 FT.		
	(BUILDING):	N/A	25 FT.		
3.	FOOTCANDLE AT PROP LINE:	0.5 Fc. (MAX)	0.5 Fc. (MAX)		

# GENERAL SITE LIGHTING NOTES:

- THE LIGHTING PATTERN REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, AND OTHER VARIABLE FIELD
- ALL POLES ARE TO BE MOUNTED ON CONCRETE PEDESTALS 2 FEET ABOVE GRADE AS SHOWN IN DETAIL.
- ALL POLES LOCATED OUTSIDE OF THE PARKING LOT AREA SHALL BE LOCATED 3 FEET FROM BACK OF CURB OR EDGE OF SIDEWALKS.
- SHOP DRAWINGS FOR THE ELECTRICAL WIRING OF THE FIXTURES NEED TO BE SUPPLIED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR
- COORDINATION OF UNDERGROUND CONDUIT AND APPROVAL OF LAYOUT. 5. ALL AREA LIGHT FIXTURES ARE TO BE DOWNWARD DIRECTED.
- CONTRACTOR SHALL FURNISH, INSTALL AND CONNECT ALL MATERIALS AND EQUIPMENT FOR THIS WORK UNLESS OTHERWISE NOTED.
- 7. COORDINATE LIGHT FIXTURE PLACEMENT AND INSTALLATION WITH LANDSCAPE.
- 8. ALL CONDUCTORS SHALL BE IN CONDUIT.
- 9. ALL POLES SHALL BE THE COLOR BLACK.



PROJECT TITLE
VAN BUREN
DEVEL OBMENT

DEVELOPMENT HAGGERTY ROAD BETWEEN ECORSE RD & VAN BORN RD. VAN BUREN TOWNSHIP, WAYNE COUNTY, MICHIGAN

REVISIONS	
TOWNSHIP COMMENTS	9/28/21

ORIGINAL ISSUE DATE: AUGUST 18, 2021

DRAWING TITLE **PHOTOMETRIC PLAN - NORTH** 

PEA JOB NO.	2007-148
P.M.	JPB
DN.	KRD
DES	GMB

DRAWING NUMBER:

BENCHMARKS (GPS DERIVED - NAVD 88)

REF. BM A
(PROPERTY CORNER 100, SOUTHWEST CORNER OF SITE)
1/2" IRON BAR WITH CAP (RLS #21563)
ELEV. = 671.536

BM #1
GEAR SPIKE IN NORTH FACE OF UTILITY POLE (EAST SIDE OF HAGGERTY) AT SOUTHWEST CORNER OF SITE. ELEV. = 672.691

BM #2
GEAR SPIKE IN SOUTHEAST FACE OF UTILITY POLE (EAST SIDE OF HAGGERTY) ±37' SOUTHWEST OF CONTROL POINT 2.
THIRD UTILITY POLE NORTH OF BM#1.
ELEV. = 671.731

FLOODPLAIN NOTE:

26163C0215E, DATED FEBRUARY 2, 2018.

BY GRAPHICAL PLOTTING, SITE IS WITHIN ZONE 'X', AREA DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODLAIN PER FLOOD INSURANCE RATE MAP NUMBER

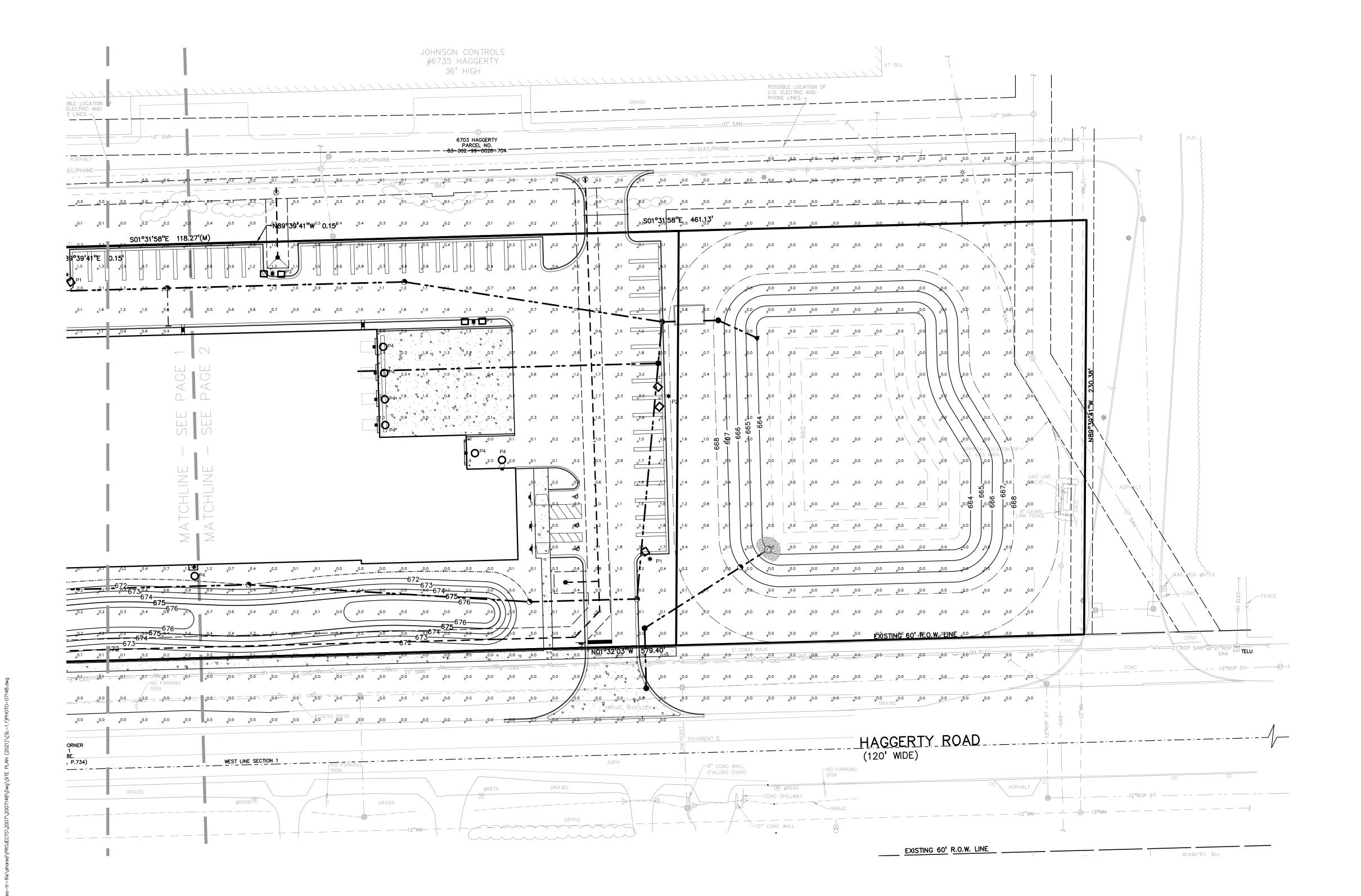
### **LEGAL DESCRIPTION:**

(Combined Parcels per PEA, INC.)

Land in a part of the Southwest 1/4 and Northwest 1/4 of Section 1, Town 3 South, Range 8 East, Van Buren Township, Wayne County Michigan being more particularly described as:

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#### LEGEND IRON FOUND RASS PLUG SET SEC. CORNER FOUND MONUMENT FOUND R RECORDED MAIL FOUND MONUMENT SET M MEASURED Ø NAIL & CAP SET C CALCULATED -OH-ELEC-W-O- ELEC., PHONE OR CABLE TV O.H. LINE, POLE & GUY WIRE -⊠-UG-PHONE-①---- TELEPHONE U.G. CABLE, PEDESTAL & MANHOLE -UG-ELEC-E-E- ELECTRIC U.G. CABLE, MANHOLE, METER & HANDHOLE — \_ \_ \_ GAS MAIN, VALVE & GAS LINE MARKER WATERMAIN, HYD., GATE VALVE, TAPPING SLEEVE & VALVE - T\_\_\_ -SANITARY SEWER, CLEANOUT & MANHOLE — – CO ST— STORM SEWER, CLEANOUT & MANHOLE COMBINED SEWER & MANHOLE SQUARE, ROUND & BEEHIVE CATCH BASIN, YARD DRAIN POST INDICATOR VALVE WATER VALVE BOX/HYDRANT VALVE BOX, SERVICE SHUTOFF MAILBOX, TRANSFORMER, IRRIGATION CONTROL VALVE UNIDENTIFIED STRUCTURE 671.21 SPOT ELEVATION 671 CONTOUR LINE -X-X-X- FENCE -x----x---x-0 0 0 0 ☆ STREET LIGHT SIGN \_ $\overline{\phantom{a}}$ CONC. -✓ ASPH. ✓ GRAVEL SHOULDER \_\_GRAVEL\_ REFERENCE DRAWINGS FLOOD PLAIN

VAN BUREN TOWNSHIP DOES NOT PARTICIPATE IN THE FEMA FLOODPLAIN MAPPING PROGRAM ALTA/ACSM LAND TITLE SURVEY BY RAYMOND J. DONNELLY & ASSOCIATES, INC. DATED 11-9-00

t: 844.813.2949

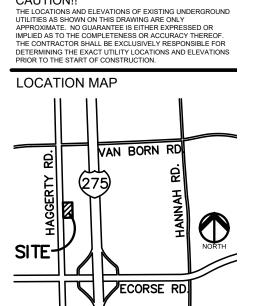
www.peagroup.com











CLIENT

CAUTION!!

**CUNNINGHAM-LIMP** COMPANY 39300 WEST 12 MILE ROAD, SUITE #200



PROJECT TITLE

**VAN BUREN** DEVELOPMENT RD & VAN BORN RD.

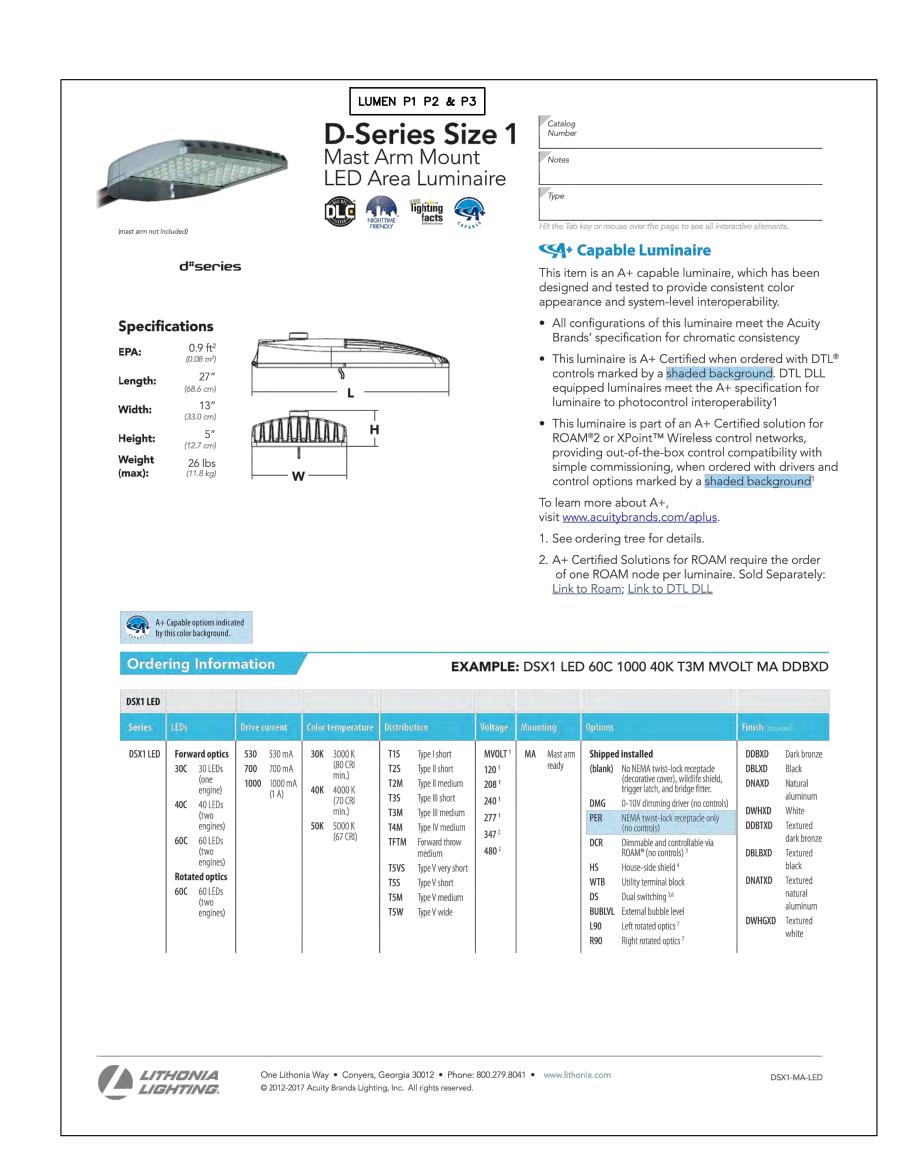
REVISIONS	
TOWNSHIP COMMENTS	9/28/21

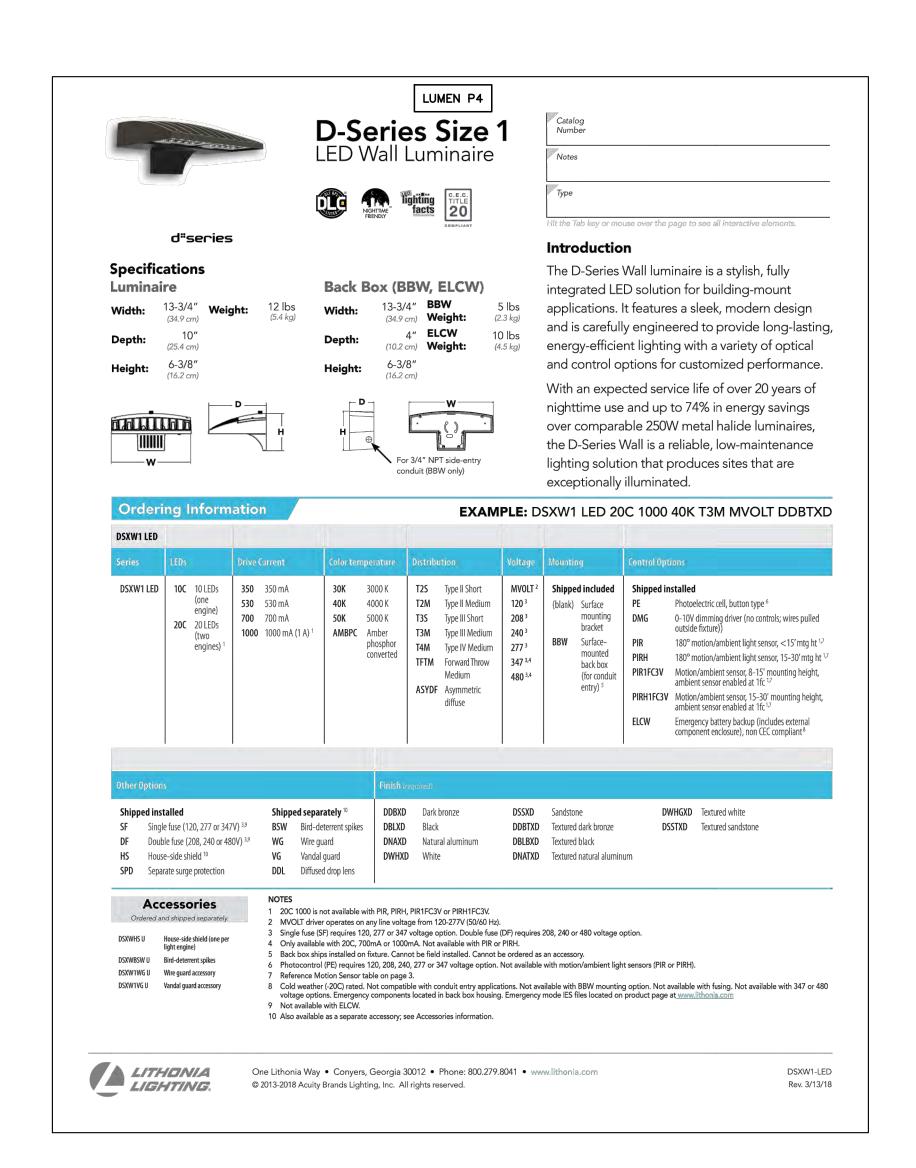
ORIGINAL ISSUE DATE: AUGUST 18, 2021

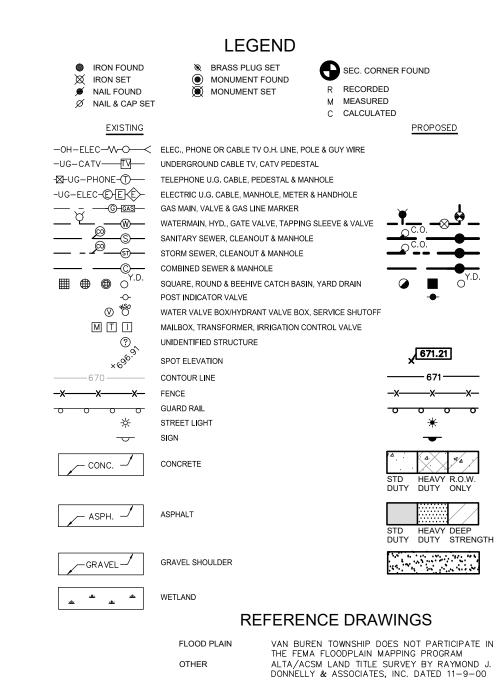
DRAWING TITLE **PHOTOMETRIC PLAN - SOUTH** 

PEA JOB NO.	2007-148
P.M.	JPB
DN.	KRD
DES	GMB

DRAWING NUMBER:







CAUTION!! LIGHT POLE

GALVANIZED STEEL
CONDUIT "ELL"

P.V.C. CONDUIT WITH
GREEN GROUND WIRE

CONCRETE BASE DETAIL

RIGID STEEL TO P.V.C. CONNECTION.

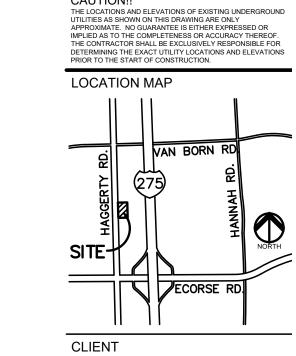
-4 #8 VERT. REINF. BARS

ANCHOR BOLTS.

ROUND FORMED— CONCRETE BASE 2'-0" DIA.

NOTE: IN GREEN BELTS, "2'-6" — ABOVE GUTTER

ELEVATION", OR "2"-0" ABOVE T/



GROUP

t: 844.813.2949

www.peagroup.com

BONO

ENGINEER

SCALE: 1" = 30'

**CUNNINGHAM-LIMP** COMPANY 39300 WEST 12 MILE ROAD, SUITE #200 FARMINGTON HILLS, MICHIGAN, 48331



PROJECT TITLE

**VAN BUREN** DEVELOPMENT HAGGERTY ROAD BETWEEN ECORSE RD & VAN BORN RD. VAN BUREN TOWNSHIP, WAYNE COUNTY, MICHIGAN

REVISIONS	
TOWNSHIP COMMENTS	9/28/21
-	

ORIGINAL ISSUE DATE: AUGUST 18, 2021

DRAWING TITLE

### **PHOTOMETRIC DETAILS**

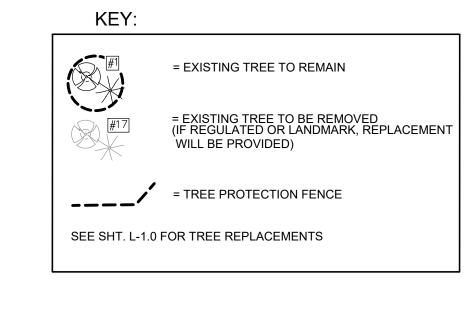
PEA JOB NO.	2007-148
P.M.	JPI
DN.	KRI
DES.	GME
DRAWING NUMBER:	

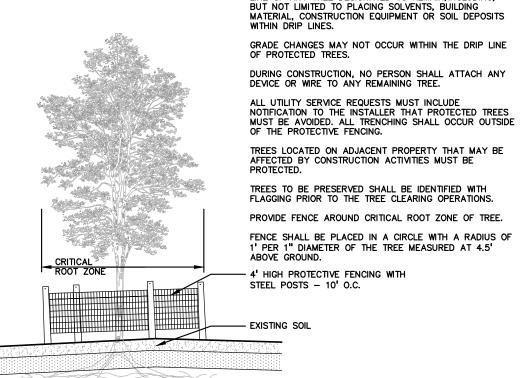
NOT FOR CONSTRUCTION SL-1.3

#### EXISTING TREE LIST: STRIKE THROUGH INDICATES TREE TO BE REMOVED. SEE LANDSCAPE CALCULATIONS THIS SHEET FOR TREE REPLACEMENT INFO.

rag no.	CODE	DBH	COMMON NAME	LATIN NAME	COND	COMMENTS		
1	WP 9"		9" (Eastern) White Pine Pinus			SAVE		
2	ÇĄ	<del>7"</del>	Crab Apple	Malus caronaria		REPLACE		
3	RM	<del>12"</del>	Red Maple	Acer rubrum		REPLACE		
4	ÇA	<del>9"</del>	Crab Apple	Malus caronaria		REPLACE		
5	ÇA	9"	Crab Apple	Malus caronaria		REPLAÇE		
6	₩₽	<del>10</del>	(Eastern) White Pine	Pinus strobus		REPLACE		
7	<del>2</del> 14	<del>15"</del>	Norway Spruce	Picea Abies		REPLACE		
8	<del>S</del> 4	14"	Norway Spruce	Picea Abies		REPLACE		
8	BS	9"	Blue Spruce	Picea pungens		REPLACE		
10	BS	<del>7"</del>	Blue Spruce	Picea pungens		REPLACE		
11	RM	<del>24"</del>	Red Maple	Acer rubrum		REPLACE		
<del>12</del>	SM	<del>20"</del>	Silver Maple	Acer saccharinum		INVASIVE/NO REPLACEMENT		
13	RM	15"	Red Maple	Acer rubrum		REPLACE		
14	<del>CA</del>	4"	Crab-Apple	Malus caronaria		SIZE/NO-REPLACEMENT		
<del>15</del>	BX	<del>19"</del>	Box elder			INVASIVE/NO REPLACEMENT		
<del>16</del>	CT	<del>+8_</del> <del>26"</del>	Cottonwood	Acer negundo		INVASIVE/NO REPLACEMENT		
	\$ \$			Populus deltoides Platanus occidentalis		<u> </u>		
17		<del>16"</del>	Sycamore			REPLACE		
<del>18</del>	<del>CT</del>	<del>27"</del>	Cottonwood	Populus deltoides		INVASIVE/NO REPLACEMENT		
19	RM	<del>19"</del>	Red Maple	Acer rubrum		REPLACE		
20	RM	4"	Red Maple	Acer rubrum		SIZE/NO REPLACEMENT		
21	RM	<u>2"</u>	Red Maple	Acer rubrum		SIZE/NO REPLACEMENT		
22	RM	8"	Red Maple	Acer rubrum		REPLACE		
<del>23</del>	ŞM	<del>16"</del>	<del>Silver Maple</del>	Acer saccharinum		INVASIVE/NO REPLACEMENT		
<del>2</del> 4	SM	<del>18"</del>	Silver Maple	Acer saccharinum		INVASIVE/NO REPLACEMENT		
25	SM	23"	Silver-Maple	Acer-saccharinum		INVASIVE/NO-REPLACEMENT		
<del>26</del>	AP	<del>4"</del>	Domestic Apple	Malus sylvestris		SIZE/NO REPLACEMENT		
<del>27</del>	₿Ç	<del>4"</del>	Wild Black Cherry	Prunus serotina		SIZE/NO REPLACEMENT		
<del>28</del>	Ą	5	Domestic Apple	Malus sylvestris	POOR	COND/NO REPLACEMENT		
29	CA	<del>9</del>	Domestic Apple	Malus sylvestris	POOR	COND/NO REPLACEMENT		
30	ÇA	<del>7"</del>	Crab Apple	Malus caronaria	POOR	COND/NO REPLACEMENT		
31	CA	<del>5"</del>	Crab Apple	Malus caronaria	POOR	COND/NO REPLACEMENT		
32	CA	4"	Crab Apple	Malus caronaria	POOR	SIZE/NO REPLACEMENT		
33	₽	3"	Domestic Apple	Malus sylvestris	POOR	SIZE/NO REPLACEMENT		
34	<del>AP</del>	3	Domestic Apple	Malus sylvestris	POOR	SIZE/NO REPLACEMENT		
35	AP.	<del>7"</del>	Domestic Apple	Malus sylvestris	POOR	COND/NO REPLACEMENT		
<del>36</del>	ÇĄ	<del>5</del> "	Crab Apple	Malus caronaria	POOR	COND/NO REPLACEMENT		
<del>3</del> 7	CA	<del>5"</del>	Crab Apple	Malus caronaria	POOR	COND/NO REPLACEMENT		
38	CA	5	Crab Apple	Malus caronaria	POOR	COND/NO REPLACEMENT		
<del>39</del>	ÇA	<del>5"</del>	<del>Crab Apple</del>	Malus caronaria	POOR	COND/NO REPLACEMENT		
<del>40</del>	CA	<del>5"</del>	Crab Apple	Malus caronaria	POOR	COND/NO REPLACEMENT		
41	СA	<del>5"</del>	Crab Apple	Malus caronaria	POOR	COND/NO REPLACEMENT		
42	ÇA	<del>5"</del>	Crab Apple	Malus caronaria	POOR	COND/NO REPLACEMENT		
43	CA	5"	Crab Apple	Malus caronaria	POOR	COND/NO REPLACEMENT		
45	<del>C</del> A	<del>2"</del>	Crab Apple	Malus caronaria	POOR	SIZE/NO REPLACEMENT		
<del>46</del>	A₽	<u>6"</u>	Domestic Apple	Malus sylvestris	POOR	COND/NO REPLACEMENT		
47	AP	6	Domestic Apple	Malus sylvestris	POOR	COND/NO REPLACEMENT		
48	A₽	<del>6"</del>	Domestic Apple	Malus sylvestris	POOR	COND/NO REPLACEMENT		
49	A₽	<del>5"</del>	Domestic Apple	Malus sylvestris	POOR	COND/NO REPLACEMENT		
50	ΑP	6"	Domestic-Apple	Malus-sylvestris	POOR	COND/NO-REPLACEMENT		
<del>51</del>	A₽	<del>10"</del>	Domestic Apple	Malus sylvestris	<del>POOR</del>	COND/NO REPLACEMENT		
<del>52</del>	ΑP	<del>4"</del>	Domestic Apple	Malus sylvestris	POOR	SIZE/NO REPLACEMENT		
53	<b>C</b> A	5"	Crab-Apple	Malus-caronaria	POOR	COND/NO-REPLACEMENT		
<del>54</del>	CA	<u>8"</u>	Crab Apple	Malus caronaria	POOR	COND/NO REPLACEMENT		

TAG NO.	CODE	DBH	COMMON NAME	LATIN NAME	COND	COMMENTS
55	CA	7"	Crab Apple	Malus caronaria	POOR	COND/NO REPLACEMENT
<del>56</del>	Ð	<u>4"</u>	Dogwood	Cornus florida		SIZE/NO REPLACEMENT
<del>57</del>	Đ	7"	Dogwood	Cornus florida		REPLACE
<del>58</del>	E	<del>5"</del>	American Elm	Ulmus americana		REPLACE
59	NS	5"	Norway Spruce	Picea Abies	ADJ. PROP.	SAVE
60	NS	4 <u>"</u>	Norway Spruce	Picea Abies	ADJ. PROP.	SIZE/NO REPLACEMENT
61	NS	5"	Norway Spruce	Picea Abies	ADJ. PROP.	SAVE
62	WP	2"	(Eastern) White Pine	Pinus strobus	ADJ. PROP.	SAVE
63	₩₽	<del>5"</del>	(Eastern) White Pine	Pinus strobus		REPLACE
64	₩₽	<del>5"</del>	(Eastern) White Pine	Pinus strobus		REPLACE
65	NS	<u>4"</u>	Norway Spruce	Picea Abies		SIZE/NO REPLACEMENT
66	NS	4 <u>"</u>	Norway Spruce	Picea Abies		SIZE/NO REPLACEMENT
67	NS	<u>4"</u>	Norway Spruce	Picea Abies		SIZE/NO REPLACEMENT
68	NS	<del>3"</del>	Norway Spruce	Picea Abies		SIZE/NO REPLACEMENT
69	NS	<u>4"</u>	Norway Spruce	Picea Abies		SIZE/NO REPLACEMENT
70	NS	<del>5"</del>	Norway Spruce	Picea Abies		REPLACE
71	₿₽	<del>8"</del>	Bradford Pear	Pyrus calleryanna		REPLACE
72	₿₽	8"	Bradford Pear	Pyrus calleryanna		REPLACE
73	CA	<del>3"</del>	Crab Apple	Malus caronaria		SIZE/NO REPLACEMENT
74	RM	<del>5"</del>	Red Maple	Acer rubrum		REPLACE
75	BF	<del>5"</del>	Balsam Fir	Abies balsamea	ADJ. PROP.	REPLACE
76	WP	9"	(Eastern) White Pine	Pinus strobus	ADJ. PROP.	SAVE
77	₩₽	9"	(Eastern) White Pine	Pinus strobus	ADJ. PROP.	REPLACE
78	₩₽	8"	(Eastern) White Pine	Pinus strobus	ADJ. PROP.	REPLACE
<del>79</del>	₩₽	8"	(Eastern) White Pine	Pinus strobus	ADJ. PROP.	REPLACE
80	WP	8"	(Eastern) White Pine	Pinus strobus	ADJ. PROP.	SAVE
81	A₽	<del>10"</del>	Domestic Apple	Malus sylvestris		COND/NO REPLACEMENT

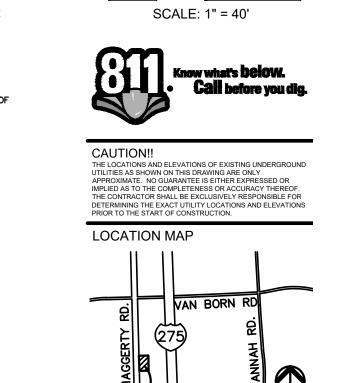




TREE PROTECTION WILL BE ERECTED PRIOR TO START OF CONSTRUCTION ACTIVITIES AND SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE. NO PERSON MAY CONDUCT ANY ACTIVITY WITHIN THE DRIP LINE OF ANY TREE DESIGNATED TO REMAIN; INCLUDING, BUT NOT LIMITED TO PLACING SOLVENTS, BUILDING MATERIAL, CONSTRUCTION EQUIPMENT OR SOIL DEPOSITS WITHIN DRIP LINES. GRADE CHANGES MAY NOT OCCUR WITHIN THE DRIP LINE OF PROTECTED TREES. DURING CONSTRUCTION, NO PERSON SHALL ATTACH ANY DEVICE OR WIRE TO ANY REMAINING TREE. ALL UTILITY SERVICE REQUESTS MUST INCLUDE NOTIFICATION TO THE INSTALLER THAT PROTECTED TREES MUST BE AVOIDED. ALL TRENCHING SHALL OCCUR OUTSIDE OF THE PROTECTIVE FENCING. TREES LOCATED ON ADJACENT PROPERTY THAT MAY BE AFFECTED BY CONSTRUCTION ACTIVITIES MUST BE PROTECTED. TREES TO BE PRESERVED SHALL BE IDENTIFIED WITH FLAGGING PRIOR TO THE TREE CLEARING OPERATIONS. PROVIDE FENCE AROUND CRITICAL ROOT ZONE OF TREE.

- 4' HIGH PROTECTIVE FENCING WITH STEEL POSTS - 10' O.C.

TREE PROTECTION DETAIL



GROUP

t: 844.813.2949 www.peagroup.com

CLIENT

CUNNINGHAM-LIMP COMPANY 39300 WEST 12 MILE ROAD, SUITE #200 FARMINGTON HILLS, MICHIGAN, 48331



PROJECT TITLE **VAN BUREN** DEVELOPMENT

RD & VAN BORN RD.

REVISIONS TOWNSHIP COMMENTS

ORIGINAL ISSUE DATE: AUGUST 18, 2021

**TREE PRESERVATION PLAN** 

PEA JOB NO.	2007-148
P.M.	JPB
DN.	JLE
DES.	JLE
DRAWING NUMBER:	

