HOWELL TOWNSHIP PLANNING COMMISSION
REGULAR MEETING

3525 Byron Road
Howell, MI 48855
March 24, 2026
6:30 pm

1. Call to Order

2. Roll Call:

( ) Wayne Williams - Chair	( ) Matt Stanley
( ) – Vice Chair	( ) Trent Holman
( ) Sharon Lollio – Secretary	( ) Cory Alchin
( ) Tim Boal – Board Rep.	

3. Pledge of Allegiance

4. Approval of the Agenda: Planning Commission Regular Meeting – March 24, 2026

5. Approval of the Minutes: Regular Meeting - February 24, 2026

6. Call to the Public:

7. Zoning Board of Appeals Report:

8. Township Board Report: Draft Meeting Minutes - March 10, 2026

9. Ordinance Violation Report: February Permit List and Ordinance Violation Report

10. Scheduled Public Hearings:
    A. PC2026-05: Elmhurst St. LLC, Request to Rezone Parcel # 4706-22-100-014, Vacant Land from Agricultural Residential (AR) to Single Family Residential (SFR),

11. Other Matters to be Reviewed by the Planning Commission:
    A. Livingston County Planning's Quarterly Newsletter
    B. Email Accounts and Document Retention Information
    C. Planning Commission Subcommittee Report
    D. Appointment of new Vice-Chairperson
    E. Livingston County's Master Plan Notice

12. Business Items
    A. Old Business:
    B. New Business:
        1. PC2026-01: Heritage Square (M/I Homes) PUD Phase II Final Site Plan Review, Parcel # 4706-32-400-016
        2. PC2026-04: EV Go, Amendment to Approved Site Plan, 1475 N. Burkhart Rd.
        3. PC2026-06: Temporary Use – Various Craft Shows, 1475 N. Burkhart Rd.
        4. Resident Research Committee – Decibel Limits & Noise Research

13. Call to the Public:

14. Adjournment

This meeting is open to all members of the public under Michigan's Open Meetings Act.
Persons with disabilities who need accommodations to participate in this meeting should contact the Township Clerk's Office at 517-546-2817 at least two (2) business days prior to the meeting.

Public Hearings. All public hearings held by the Planning Commission must be held as part of a regular or special meeting of the Planning Commission. The following rules of procedure shall apply to public hearings held by the Planning Commission:

1. Chairperson opens the public hearing and announces the subject.

2. Chairperson summarizes the procedures/rules to be followed during the hearing.

3. Township Planner/Engineer/other consultants present their report and recommendation.

4. Applicant presents the main points of the application.

5. Persons having comments on the application are recognized.

6. Chairperson closes the public hearing and returns to the regular/special meeting.

7. Planning Commission begins deliberation and arrives at a decision.

To ensure everyone has the opportunity to speak, the Chairperson may elect to limit the time permitted for each person to speak, except that the applicant may be permitted additional time as the Chairperson allows. The Chairperson may also elect to allow persons to speak only once, until all persons have had the opportunity to speak, at which time the Chairperson, in his/her discretion, may permit additional comments.

All comments by the public, staff and the Planning Commission shall be directed to the Chairperson. All comments shall be related to the land use request; unrelated comments shall be ruled out of order.

A written notice containing the decision of the Planning Commission will be sent to petitioners and originators of the request.

HOWELL TOWNSHIP PLANNING COMMISSION
REGULAR MEETING MINUTES
3525 Byron Road Howell, MI 48855
February 24, 2026
6:30 P.M.

MEMBERS PRESENT:		**MEMBERS ABSENT:**
Wayne Williams	Chair	
Robert Spaulding	Vice Chair	
Sharon Lollio	Secretary	
Tim Boal	Board Representative	
Matt Stanley	Commissioner	
Trent Holman	Commissioner	
Cory Alchin	Commissioner	

ALSO IN ATTENDANCE:
Township Planner Brady Heath, Applicant Robert Dickerson with Ditch Witch, Greg Petru with KEBS Inc., and Zoning Administrator Jonathan Hohenstein

Chairman Williams called the meeting to order at 6:30 pm. The roll was called. Chairman Williams requested members rise for the Pledge of Allegiance.

APPROVAL OF THE AGENDA:
Commissioner Alchin requested to add Data Center, Data Center subcommittee and Supervisor position discussions. The commission approved to discuss Data Center subcommittee and the Supervisor position update will be discussed during the Township Board Report. Board Representative Boal requested to move Old and New Business Items in front of Other Matters to be Reviewed. **Motion** by Boal, **Second** by Spaulding, **"To approve the amended agenda as we discussed."** Motion carried.

APPROVAL OF THE MEETING MINUTES:
January 27, 2026
Motion by Stanley, **Second** by Lollio, **"To approve the minutes."** Motion carried.

CALL TO THE PUBLIC

Angela Barbash, 4211 Crandall Rd- Spoke on Industrial impacts to communities and financial guarantees

ZONING BOARD OF APPEALS REPORT:
None

TOWNSHIP BOARD REPORT:
Draft minutes are included in the packet: Board Representative Boal gave an overview of the meeting. A motion was passed for Carlise Wortman to create a Master Plan for future municipal complex on Township property off Tooley Road. Financial audit done by Gabridge and Company reported the Township is in a healthy financial condition, the Board accepted an offer of purchase the vacant 22 acre property at Tooley and Bowen Roads, Jodi Fulton was appointed to the Trustee vacant seat, the Board accepted the resignation of Supervisor Mike

Coddington and the position has been posted on the Township website, cleanup bids for 5057 Warner have been postponed until the end of March to give the homeowner more time as requested to get his property cleaned up and financial update from Assessor Brent Kilpela. Chairman Williams questioned the transfer of sewer funds from Sewer Fund to General Fund. Commissioner Lollio questioned the building ideas proposed at the Township Tooley Road property.

ORDINANCE VIOLATION REPORTS:
Report in packet. Commissioner Lollio questioned the time frame for submitting site plans on the Haslock project.

SCHEDULED PUBLIC HEARINGS:
None

OLD BUSINESS:
None

NEW BUSINESS:

1. Michigan Underground Specialists (Ditch Witch), PC2026-02, 3401 W. Grand River Ave., Parcel # 4706-28-200-040, Preliminary Site Plan Review- Township Planner Heath gave an overview of the project and answered questions. The applicant is looking for proposed improvements including equipment storage facilities, new parking spaces, and discussed items to be addressed. Applicant Robert Dickerson, service manager for Ditch Witch and Greg Petru with KEBS Inc. discussed their project and answered questions. They would like to add storage for more equipment; there will be a fence around the storage area. They would like to move light poles to the edge of the fence and will update their lighting plan. Chairman Williams questioned the fencing and if gates will be present. Board Representative Boal questioned if there were going to be any changes to the original building, height of building, setbacks, if they have gotten approval from the Livingston County Road Commission, are they planning on adding more employees, how many parking spaces are proposed and if they will be paved, landscaping berms, lot lines, drainage, survey issues and any restrictions on the property. Commissioner Lollio questioned the type of materials that will be stored. Vice Chairman Spaulding questioned if the parking was going to be behind the fence and how many parking spots will be needed. Commissioner Alchin questioned if there were any parking spaces in the rear of the building. Discussion followed. **Motion** by Boal, **Second** by Spaulding, with an amendment **"To table Michigan Underground Specialists PC2026-02 at 3401 W. Grand River Ave. pending an updated landscaping plan and the front parking area and the lighting issue."** Motion carried.

2. Zoning Ordinance Update-Layout and Schedule: Township Planner Heath gave an overview and answered questions of how the outline will work for updating ordinances. At each meeting there will be articles to review, discuss and direct. There will be consideration to hold workshops for the Planning Commission to discuss topics of interest, like Planned Unit Developments (PUD). Vice chair Spaulding questioned how often these workshops would be held. Commissioner Lollio asked for clarification of a Planned Unit Development. Board Representative Boal questioned how many articles are anticipated for review and approximate time frame to start, how much time they will have to review before the meeting and how long does the Planner anticipate this taking. Discussion followed.

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OTHER MATTERS TO BE REVIEWED BY THE PLANNING COMMISSION:

A. MSU Extension- Planning and Zoning Brief- Informational. Board Representative Boal spoke on some of the information provided.

B. Zoning Case Law Review- Fahey Schltz Burzych Rhodes- Informational

C. Conway Township Master Plan Review Letter- Informational

D. Data Center Subcommittee- Chairman Williams, Planner Heath, Commissioner Stanley, and Board Representative Boal gave their overviews from the subcommittee meeting at the Township regarding Overlay Districts, types of noise, distance from residential properties and sensitive receptors. Commissioner Alchin spoke on his concerns of the legal process with the Data Center subcommittee and how they are operating. Discussion followed.

CALL TO THE PUBLIC:

Angela Barbash, 4211 Crandall Rd- Spoke on attorneys and extending the Moratorium

Board Representative Boal spoke on Michigan Township Association article.

ADJOURNMENT:

Motion by Boal, **Second** by Stanley, **"For adjournment."** Motion carried. The meeting was adjourned at 8:25 P.M.

_____ _____
Date Sharon Lollio
Planning Commission Secretary

_____
Marnie Hebert
Recording Secretary

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HOWELL TOWNSHIP REGULAR BOARD
MEETING MINUTES
3525 Byron Road Howell, MI 48855
March 10, 2026
6:30 P.M.

MEMBERS PRESENT:		**MEMBERS ABSENT:**
Sue Daus	Clerk	
Jonathan Hohenstein	Treasurer	
Matthew Counts	Trustee	
Tim Boal	Trustee	
Jodi Fulton	Trustee	
Bob Wilson	Trustee	

Also in Attendance:
21 people signed in

Clerk Daus called the meeting to order at 6:30 p.m. The roll was called. Clerk Daus requested members rise for the Pledge of Allegiance.

CALL TO THE BOARD:
Treasurer Hohenstein asked Trustee Boal if he was interested in chairing the meeting. Trustee Boal agreed to Chair the meeting. **Motion** by Hohenstein, **Second** by Daus, **"To have Trustee Boal Chair the meeting tonight."** Motion carried.

APPROVAL OF BOARD MEETING MINUTES:
February 9, 2026
REGULAR BOARD MEETING MINUTES
Motion by Daus, **Second** by Hohenstein**, "To accept the minutes from February 9th."** Motion carried.

CALL TO THE PUBLIC:
Kristina Lyke: Introduced herself and announced that she is running for Circuit Court Judge.

Todd Kozakiewicz, 6205 Raddatz Rd.: Spoke in support of the Resident Research Advisory Committee.

UNFINISHED BUSINESS:

A. Trustee Input on the Agenda
   The Board discussed the process for Trustees to add topics to the meeting agenda. Following discussion, the Board reached a consensus to add a Trustees category under the Reports section of the agenda to allow Trustees to bring forward items for discussion.

B. McCririe v. Howell Township
   Treasurer Hohenstein reported that the court documents for McCririe v. Howell Township were included in the packet for the Board's review.

NEW BUSINESS:

A. MHOG – New Operations Contract

Greg Tetara, MHOG Utility Director, presented the updated Operations Contract and requested the Board's approval of the revised agreement. Board discussion followed. **Motion** by Hohenstein, **Second** by Counts, **"To approve the MHOG Utilities Services Agreement from April 1, 2026, through September 30, 2031, as amended."** Motion carried.

B. Sewer and Water Rate Discussion

Treasurer Hohenstein reported that the Township Board had previously indicated that once the sewer and water debt was paid off, the debt fee would be removed from the water usage charges, and a rate study would be conducted. Treasurer Hohenstein noted that there are two companies capable of performing these studies and is requesting the Board's approval to proceed. Board discussion. **Motion** by Hohenstein, **Second** by Counts, **"To remove the Township debt fee from the water rates and to set the Township water rate to the MHOG rate moving forward."** Motion carried. Board discussion followed. **Motion** by Fulton, **Second** by Wilson, **"To approve Utility Financial Solutions for the five-year financial tracking and one-year rate design."**

Treasurer Hohenstein reported on the potential cost savings for the Township from implementing quarterly billing vs monthly billing and asked for the Board's input. Board discussion followed. **Motion** by Counts, **Second** by Hohenstein, **"To move to quarterly billing as presented, based on the timeline as set by MHOG billing and Howell Township Office Staff."** Motion carried.

C. Road Projects

Treasurer Hohenstein reported on the five-year road project plan and asked how the Board would like to proceed forward. The Board discussed the matter. **Motion** by Hohenstein, **Second** by Counts, **"To approve the Byron Road crack sealing from M-59 to Allen, and the Tooley Road crack sealing from M-59 to the end of pavement, as long as the Livingston County Road Commission still has funds in their road maintenance."** Board discussion regarding Crandall Road project. **Motion** by Counts, **Second** by Hohenstein, **"To approve the gravel road project for Crandall Road, as presented."** Motion carried.

D. Mann IT – Quote

Treasurer Hohenstein reported that the final step in transitioning the office staff to new computers involves the IT company completing the software installation onto the new computers. The bid from Mann IT to perform this work was included in the meeting packet, and Treasurer Hohenstein requested the Board's approval to move forward. Board discussion followed. **Motion** by Hohenstein, **Second** by Counts, **"To accept the bid from Mann IT to finish the laptop set-up for $1800.00, as presented."** Motion carried.

E. Township Email Discussion

Treasurer Hohenstein requested the Board's guidance on necessary updates needed for the Township's phone and internet services to enhance security. Board discussion followed. The Board reached a consensus to obtain quotes for the required phone and internet services.

Trustee Boal emphasized the need for all Township Board members to have their own Township email accounts to conduct official Township business. Board discussion followed. It was the

consensus of the Board to obtain quotes from Mann IT for services to maintain Township email accounts.

Assessor Kilpela requested a budget amendment to increase IT support expenses by $3000.00. **Motion** by Wilson, **Second** by Daus, **"To increase IT expense by $3000.00."** Motion carried.

F. Appointment to Supervisor Open Seat
Trustee Boal invited the applicant to stand and introduce himself. Rob Spaulding introduced himself and answered questions from the Board. **Motion** by Hohenstein, **Second** by Daus, **"To appoint Rob Spaulding to the position of Supervisor."** Motion carried.

G. Flag Contract – Renewal
Motion by Hohenstein, **Second** by Daus, **"To accept the annual flag renewal from Rocket Enterprises, as presented."** Motion carried.

H. Resident Research Advisory Committee – Revised Organizational Structure
Dan Bonello stated that with Cory Alchin's appointment to the Planning Commission and Jodi Fulton's appointment to the Township Board, the Resident Research Advisory Committee membership needed to be restructured. Greg Lehr and Angela Barbash were added as members, and Bob Wilson was removed from the committee. **Motion** by Hohenstein, **Second** by Wilson, **"To accept the membership change to the Resident Research Advisory Committee, as presented."** Motion carried.

CALL TO THE PUBLIC:
Mark Mannisto, 2330 Tooley Rd.: Spoke in opposition of Tooley Rd. rezoning.

Debra Mannisto, 2330 Tooley Rd.: Spoke in opposition to the Tooley Rd. rezoning.

REPORTS:

A. SUPERVISOR:
No report

B. TREASURER:
Treasurer Hohenstein reported that the Treasury Department has completed the tax collection and is now in the process of settling with the County.

C. CLERK:
Clerk Daus reported that the Clerk's Department is managing FOIA requests and preparing for the upcoming 2026 elections.

D. ZONING:
Zoning Administrator Hohenstein requested the Board's approval to attend the 2026 Master Citizen Planner class. **Motion** by Daus, **Second** by Boal, **"To approve educational classes."** Motion carried. Board discussion followed.

E. ASSESSING:
Assessor Kilpela reported that the Land Division Act has been revised under State guidelines.

F. FIRE AUTHORITY:
See report

G. MHOG:
Treasurer Hohenstein gave a brief overview.

H. PLANNING COMMISSION:
Trustee Boal reported on Planning Commission. See draft minutes.

I. ZONING BOARD OF APPEALS (ZBA):
No report

J. WWTP:
See report

H. HAPRA:
See report

I. PROPERTY COMMITTEE:
No report

J. PARK & RECREATION COMMITTEE:
No report

K. SHIAWASSEE RIVER COMMITTEE:
No report

DISBURSEMENTS: REGULAR PAYMENTS AND CHECK REGISTER:
Motion by Hohenstein, **Second** by Daus, **"Move to accept the disbursements as presented and any normal and customary payments for the month."** Motion carried.

ADJOURNMENT: Motion by Counts, **Second** by Daus, "To adjourn." Motion carried. The meeting was adjourned at 8:59 pm.

DRAFT

_____
Robert Spaulding, Howell Township Supervisor

_____
Sue Daus, Howell Township Clerk

_____
Tanya Davidson, Recording Secretary

Monthly Permit List

Commercial Land Use

Permit #	Applicant	Address	Fee Total	Const. Value
P26-027	Armijo, Kahilee	1475 N BURKHART RD # D-150	$50.00	$0.00
	Work Description: Indoor sensory play and learning space in Kensington Valley Outlet			
P26-024	GUNS N HOSES	3985 TOWER DR	$50.00	$0.00
	Work Description: Tear off 1 layer and replace 2 of OSB, replace 2 pipe boots, re-install shingles.			

Total Permits For Type: 2
Total Fees For Type: $100.00
Total Const. Value For Type: $0.00

MHOG

Permit #	Applicant	Address	Fee Total	Const. Value
PMHOG25-007	HERRON CURT AND MARGARET	123 CASTLEWOOD	$0.00	$0.00
	Work Description: MHOG Connection Fee			
PMHOG25-004	THE SUMMIT COMPANY ANNA HALSTEAD	3275 COUNTY AIRPORT DRIVE	$0.00	$0.00
	Work Description: 2" meter package + flushing fee			

Total Permits For Type: 2
Total Fees For Type: $0.00
Total Const. Value For Type: $0.00

Residential Land Use

Permit #	Applicant	Address	Fee Total	Const. Value
P26-022	RENEWAL BY ANDERSEN	5437 ARBORETUM TRL	$10.00	$0.00
	Work Description: Six new replacement windows			
P26-029	SMOLYANOV HOME IMPROVEMENTS LLC	5455 ARBORETUM TRL	$10.00	$0.00
	Work Description: Tear off and re-roof on back slope of house only			
P26-021	RUNYAN BROTHERS CONSTRUCTION CO.	5700 BYRON RD	$75.00	$0.00
	Work Description: New front porch, along with remove existing front wall and building a new exterior wall at edge of porch cap. New kitchen cabinets in kitchen.			
P26-030	Services, Handyman	5704 CRANDALL RD	$50.00	$0.00
	Work Description: TARP FENCE PANELS NEEDS TO BE TAKEN DOWN. Galvanized cattle fence panels. Posts and panels 50 inches high			
P26-019	MICHIGAN ELECTRICAL SERVICE TOM WATSON	122 EDGEMONT DR	$10.00	$0.00
	Work Description: Installation of a 18 kw generator and a 100 amp transfer switch.			
P26-023	AYERS BASEMENT SYSTEMS	2880 W GRAND RIVER AVE	$75.00	$0.00

Work Description: Installing indoor shotcrete and Smart Jacks, foundation repairs

P26-028	PUNG JACOB AND DANA	HENDERSON - VACANT	$75.00	$0.00

Work Description: 2,154 sq ft home with walk out basement and 12" overhangs
576 sq ft detached garage

Revised plans on 02/24/2026

P26-017	RENEWAL BY ANDERSEN	2798 POPPLE LN	$10.00	$0.00

Work Description: Replace 4 windows

P26-020	MI HOMES OF MICHIGAN LLC A DELAWARE LIMITED LIABILITY COMPANY	4560 SEDGEVIEW CIRCLE	$75.00	$0.00

Work Description: New Single Family Home

P26-026	MI HOMES OF MICHIGAN LLC A DELAWARE LIMITED LIABILITY COMPANY	4570 SEDGEVIEW CIRCLE	$75.00	$0.00

Work Description: New Single Family Home

P26-025	MI HOMES OF MICHIGAN LLC A DELAWARE LIMITED LIABILITY COMPANY	350 SEDGEVIEW COURT	$75.00	$0.00

Work Description: New Single Family Home

Total Permits For Type: 11
Total Fees For Type: $540.00
Total Const. Value For Type: $0.00

Sewer Connection

Permit #	Applicant	Address	Fee Total	Const. Value
PWS25-142	MHOG	123 CASTLEWOOD	$0.00	$0.00

Work Description: Property does not have sewer lead. MHOG's contractor will install sewer lead by drilling under the road for $13,700 funds will be placed in escrow and paid when invoice is received.

PWS26-009	MI HOMES OF MICHIGAN LLC A DELAWARE LIMITED LIABILITY COMPANY	4560 SEDGEVIEW CIRCLE	$5000.00	$0.00

Work Description: Sewer Connection

PWS26-013	MI HOMES OF MICHIGAN LLC A DELAWARE LIMITED LIABILITY COMPANY	4570 SEDGEVIEW CIRCLE	$5000.00	$0.00

Work Description: Sewer Connection

PWS26-011	MI HOMES OF MICHIGAN LLC A DELAWARE LIMITED LIABILITY COMPANY	350 SEDGEVIEW COURT	$5000.00	$0.00

Work Description: Sewer Connection

Total Permits For Type: 4
Total Fees For Type: $15000.00
Total Const. Value For Type: $0.00

Water Connection

Permit #	Applicant	Address	Fee Total	Const. Value
PWS26-010	MI HOMES OF MICHIGAN LLC A DELAWARE LIMITED	4560 SEDGEVIEW CIRCLE	$5000.00	$0.00

	LLC A DELAWARE LIMITED LIABILITY COMPANY			
	Work Description: Water Connection			
PWS26-014	MI HOMES OF MICHIGAN LLC A DELAWARE LIMITED LIABILITY COMPANY	4570 SEDGEVIEW CIRCLE	$5000.00	$0.00
	Work Description: Water Connection			
PWS26-012	MI HOMES OF MICHIGAN LLC A DELAWARE LIMITED LIABILITY COMPANY	350 SEDGEVIEW COURT	$5000.00	$0.00
	Work Description: Water Connection			

Total Permits For Type:	3
Total Fees For Type:	$15000.00
Total Const. Value For Type:	$0.00

Grand Total Fees:	$30,640.00
Grand Total Permits:	22.00

Code Enforcement List

03/02/2026

Address	Owners Name	Parcel Number	Date Filed	Origin	Status
1682 PINECROFT LANE	PINEVIEW VILLLAGE	4706-27-201-071	01/14/2026	PUBLIC - COMPL	OPEN - COMPLANT RECEIVE

Complaint

Ongoing construction activity at the Pineview Village, new development is creating noise and vibrations in violation of Howell township Ordinance No. 123.Noise Violation:On 10/09/2025 at approximately 6:30 a.m. EST, construction activity produced load equipment and impact noise that was plainly audible inside my residence and woke my household.On 01/08/2026 and approximately 6:32 a.m. EST, a heavy dumpster delivery and construction activity again produced noise plainly audible and inside my residence and woke my household.Both incidents occurred prior to the permitted 7:00a.m. start time for construction activity under Township Ordinance No. 123.Vibration Violations:On most weekdays during active construction, Heavy machinery (including excavators, compactors, and trucks) produces vibrations that are felt inside my residence. Ordinance No. 123 requires vibrations from any operation to be controlled so they cannot be felt beyond the property line. These vibrations are perceptible inside my home and disturb normal use and enjoyment of the residence.I am requesting Township Investigation and enforcement of the noise and vibration provisions of Ordinance No. 123

Comments

01/12/26 - Email received from resident of Pineview Village in reference to construction activity prior to 0700. Responded to resident advising him to complete Ord Enforcement Complaint form.
01/13/26 - Arrived in Pineview Village 6:00 am checking for construction activity. remained onsite until 6:55 am. No activity in construction areas, no workers arriving at work.
01/14/26 - Arrived in PV at 6:10 am, no activity in construction areas. GFL arrives in area at approx 6:35 am for garbage collection.
01/16/26 - In PV approx 6:35 am no activity in construction areas. Official complaint form received and entered into computer.
01/19/26- Checked the area between 6-7 am, no activity
01/21/26 - Area checked, no activity.

Code Enforcement List

03/02/2026

Address	Owners Name	Parcel Number	Date Filed	Origin	Status
5704 CRANDALL RD	JEWETT RICHARD L &	4706-05-200-004	11/25/2024	PUBLIC - EMAIL	OPEN - COMPLANT RECEIVE

Complaint

A person is living in an RV in the back of the property against Township Ordinance.

Comments

12.10.24 - Site visit completed. RV is located in the back of the property. Letter sent to owner.
1.27.25 - Site visit completed. No visible change. Letter sent to owner.
2.11.25 - Requested additional information from complainant
3.10.25 - January letter returned unclaimed.
3.11.25 - December letter returned unclaimed.
3.31.25 - Site visit completed. New letter mailed out.
4.7.25 - Copy of letter given to homeowner. Spoke to homeowner - admitted that someone is living in the RV. Follow up letter sent to owner.
4.14.25 - Spoke to homeowner on the phone. Spoke to Jake at LCHD on the phone, they received a complaint about sewage being discharged onto the ground from one of the RVs. Spoke to person staying in the RV (Wes Gray) on the phone. Jake from LCHD and I made a visit to the site, spoke to Wes. Wes understands that he cannot live in an RV on the property. We agreed to 30 days to remove his things from the site.
4.30.25 - Site visit completed, Wes appears to be working on getting his things removed.
5.14.25 - Spoke to the homeowner, Wes moved some things but has started building a new trailer. Owner will call the Sheriff's Department to understand her options to get Wes removed from her property.
5.19.25 - Spoke to Wes, he has removed a lot of stuff but would like until June 1, 2025 to remove the rest of his stuff. He will provide receipts for the dumpster that he used. Twp will make a site visit and confirm that progress has been made. If progress has been made then we are willing to extend deadline to June 1.
5.19.25 - Site visit completed, some clean up has taken place, photos attached. Spoke to homeowner, admits a lot of work has been done and has no issue with Wes's request to extend deadline to June 1. Letter sent to owner to confirm same.
06-02-25- MH- Spoke with Wes and he doesn't have any where to go, fractured his hand and hurt his back moving stuff off the property. He is still trying to move stuff off the property. Jonathan is out of the office so I let him know he would be contacted when he returns.
6.12.25 - Spoke to Wes, said he has hurt his hand but still intends to remove his things from the property. We agreed to an extension to July 31st for all things to be removed from the property, no further extensions will be granted for any reason. Will prepare letter to owners RE same.
6.16.25 - Site visit completed, some changes have been made, photos attached.
7.21.25 - Site visit completed, photos attached.
8.4.25 - Site visit completed, Wes has not removed his belongings from the property, still living in the RV. Spoke to owner. Personally issued MCI Citation ticket #0162 to Denise Stach. Personally issued MCI Citation ticket #0163 to Wes Gray.
8.16.25 - Denise Stach paid ticket #0162 at court
9.9.25 - Wes Gray has requested a formal hearing.

10/2/25 - Stopped to speak with home-owner ref upcoming court date and take updated photos. Mrs Stach stated she is willing to go to court. Photos taken.
10.20.25 - Court hearing started, adjourned to a later date. Working with Wes Gray on settlement.
11.6.25 - Wes Gray signed agreement for consent judgment. Case has been closed.
12.11.25 - Wes Gray reached out to Twp Attorney because Wes is now living in the house. We have submitted to the court a modified agreement to allow the storage of the RV as long as it conforms to the Ordinance and is not used for on-site human habitation and all other items are either removed from the property or permits are applied for and reviewed for conformance with the Ordinance.

Code Enforcement List

03/02/2026

Address	Owners Name	Parcel Number	Date Filed	Origin	Status

01/20/25 - No change at address in regards to clean up. Spoke with neighbor who advised subject still residing in the camper. While in the area in observed Gray go to the area of the camper and he did not come back out.
2/9/26 - Drive by inspection of property, fencing and tarp wall still up.
2/26/26 - Tarp wall and fencing still in place. Spoke with Ms. Stach on the matter advised that if tarp wall is removed and fencing planels taken down they could leave the fence post intact if they get a permit to install fence.
2/28/26. Tarp wall is gone fencing is still up however I see a permit has been issued for a fence.

3590 W GRAND RIVER	HASLOCK PROPERTIE	4706-28-100-024	05/06/2024		OPEN - FIRST LETTER SENT

Complaint

Zoning Violations:Outdoor storage without screening, setback issues, parking not hard surfaced, no sign permit.

Comments

5.13.24 - Violation letter to Occupant returned.
5.20.24 - Received phone call from owner. Will be preparing a site plan to take before the Planning Commission for approval.
6.20.24 - Received phone call from owner, discussed site plan requirements.
9.4.24 - Sent letter to owner RE site plan progress.
9.12.24 - Spoke to owner, Engineer has site plans almost complete. Will submit for review in the near future.
2.27.25 - Spoke to owner, Engineer will be submitting plans in the next week or two.
3.31.25 - Site visit completed, violations still present
4.30.25 - Site visit completed, violations still present
5.1.25 - Property owner turned in site plan. Currently considering if they would like to schedule a pre-conference prior to formally submitting the site plan.
6.9.25 - Spoke to the owner about next steps to move the site plan forward, owner is considering pairing down what has been proposed.
6.16.25 - Site visit completed, photos attached.
7.21.25 - Site visit completed, photos attached.
8.11.25 - Owner stopped in to discuss the site plan, will get the site plans printed out and submitted for review.
9.10.25 - Owner dropped off site plan and application, sent out for outside review, expected to be on October PC agenda
10.29.25 - Met with owner and engineer to discuss revisions to site plan requested by Township's Engineer and Planner. They will update the plan and resubmit for review.
12.16.25 - Owner and Engineer before the PC for preliminary site plan approval. Application tabled until updates are made to plans including: landscaping, parking, screening, storm water
2.25.26 - Owner indicated that site plan is still being updated per PC requirements, contemplating other changes to the site plan as well

---

5057 WARNER RD	HARTER EDWARD H	4706-19-200-005	03/14/2022	PUBLIC/ EMAIL	OPEN - SECOND LETTER SEN

Complaint

LARGE AMOUNT OF JUNK AND LITTER IN THE YARD.

Comments

Code Enforcement List

03/02/2026

Address	Owners Name	Parcel Number	Date Filed	Origin	Status

4.17.2023 THERE IS MORE JUNK NOW THEN THERE WAS LAST MARCH OF 2022 OR JANUARY OF 2023.
5.25.2023 I SPOKE WITH MR. HARTER HE IS STARTING TO CLEAN THE SITE UP, HE SAID THAT IT WILL TAKE SOME TIME TO GET IT ALL CLEANED UP. I WILL BEE CHECKING ON HIS PROGRESS EVERY FEW WEEKS TO MAKE SURE HE IS MAKING PROGRESS.
6.29.2023 SOME PROGRESS HAS BEEN MADE. WILL CHECK BACK IN A COUPLE OF WEEKS.
1.9.2024 did a site vist there has been no progress made on the clean up.
1.11.2024 Finial letter sent.

3.20.24 - Site visit. No remediation of issues has taken place. Photos attached.

3.25.24 Spoke to owner. Owner is working on cleaning up the property, has dumpsters being delivered, scrap is in piles and ready to be taken to the scrap yard. Has requested 3 months to get the property cleaned up. Letter sent in confirmation of agreement. Scheduled visit for June 25th.

4.23.24 - Site visit. Violation still present. Scheduled reinspection.
5.20.24 - Site visit. Work has been started. Violation still present. Scheduled reinspection.
6.18.24 - Site visit. Violation still present, no evidence of continued clean up activity. Will reinspect on June 25th as agreed.
6.25.24 - Site visit. Minimal changes to site, violation still present. Letter sent to owner.
8.1.24 - Site visit completed. Owner still working on clean-up.
9.4.24 - Site visit completed, spoke to homeowner. Owner claims to have back of property nearly complete. Dumpster to be arriving next week, neighbors helping to remove scrap in the next few days.
10.8.24 - Site visit completed. No evidence of activity. Final violation letter sent to owner.
11.6.24 - Site visit completed. No evidence of activity. Will check property on 11.14.24 per letter.
11.14.24 - Site visit completed. No evidence of activity. Ticket number 0204 issued. Ticket mailed to homeowner 11.18.24.
12.4.24 - Spoke to homeowner. He will be completing a clean-up schedule and providing it to the Township. If the schedule is followed and clean-up of property is achieved ticket will be waived.
12.10.24 - Schedule has not been provided to Township. Site visit completed, no change.
1.27.25 - Site visit completed, no change. Schedule has not been provided to Township. Final violation letter sent to owner.
2.3.25 - Received phone call from owner's wife, owner is currently in jail. By February 24th they will contact the Township to discuss deadlines for removing the junk from the site. Letter sent to owner to confirm same.
2.24.25 - Spoke to owner's wife.
2.28.25 - Spoke to owner's wife, came to agreement on clean up schedule. Letter on agreement sent to owner.
3.17.25 - 2.28 letter returned. Mailed out letter again.
3.21.25 - Homeowner left message stating that all scrap metal has been removed, two vehicles will be removed this week. We may stop by any time to see the progress.
3.31.25 - Site visit completed, violation still present
4.30.25 - Site visit completed, violation still present. May 4th is the clean-up deadline, will make site visit Monday May 5th to check status.
5.7.25 - Site visit completed, violation still present. Posted ticket #0159 to the structure, filed ticket with the District Court and requested an informal hearing, mailed copy of ticket to owner.
5.19.25 - Received information from District Court setting formal hearing date. Contacted the court to switch to an informal hearing as originally requested.
6.10.25 - Called Court RE informal hearing date, Court's system indicated that the ticket had been paid and closed.
6.16.25 - Site visit completed, no apparent change, photos attached. Ticket filed with Court - requested informal hearing, ticket posted to structure and mailed to owner.
7.16.25 - Magistrate refused to hear the case, claimed he did not have the authority for injunctive relief, ticket dismissed.
7.21.25 - Site visit completed, no apparent change, photos attached. Ticket 0161 filed with the Court requesting formal hearing. Ticket posted to structure and mailed to owner.

Code Enforcement List

03/02/2026

Address	Owners Name	Parcel Number	Date Filed	Origin	Status

7.29.25 - Formal Court hearing scheduled.
9.8.25 - Formal hearing held, Judge Bain granted 45-day limit to get site cleaned up, indicated that he would drive by the property, follow-up hearing scheduled by Judge.
10.20.25 - Court status hearing held. Next hearing scheduled for November.
11.10.25 - Site visit made, photos attached. Progress has been made, violations still exist. Court hearing held, Judge ordered follow up hearing in December.
12.7.25 - Site visit completed, photos attached.
12.8.25 - Court hearing held. Final extension to owner granted by court. Rehearing scheduled.
1/16/26 - Inspection from road and new photos taken. All cleanup has stopped. Large amounts of debris still on site and visible in multiple areas of the yard.
1.26.26 - Court Hearing held, Court will uphold the order filed in September allowing the Township to clean up the site and charge the owner. Court also issued fees and fines. Court case is closed; our file will remain open until the site has been brought into compliance with the Ordinance.
2.9.26 - Township Board granted owner extension to March 31, 2026 to get property into compliance with the Ordinance

Records: 4

Population: All Records

RECEIVED

FEB 24 2026

HOWELL TOWNSHIP

HOWELL TOWNSHIP

Application for Re-Zoning/Text Amendment

3525 Byron Road Howell, MI 48855
Phone: 517-546-2817 ext. 108
Email: inspector@howelltownshipmi.org

Fee: $1000.00

TC 2026-05

Parcel ID #: 4706-22-100-014 Date 02/23/26

Applicant Name Elmhurst Street LLC Applicant Address [redacted]

Phone [redacted] Fax _____ Email _____

Property Owner Name Howell Township

Phone _____ Fax _____ Email _____

Current Zoning Classification AR Proposed Zoning Classification SFR

Existing Use Vacant / Farm Proposed Use Single Family Residential Site Condc

Legal Description (attach copy if necessary):
SEC. 22 T3N, R4E COMM W 1/4 POST SEC 22 TH N 00^ 10' 58" W 184.00 FT FOR POB TH N 00^ 10' 58" W 651.17 FT TH N 89^ 59' 07" E 1272.21 FT TH S 00^ 28' 17" E 835.19 FT TH S 89^ 59' 07" W 937.41 FT TH N 00^ 09' 59" W 184.00 FT TH S 89^ 59' 08" W 339.05 FT TO POB 23 AC PARCEL A1 SPLIT 1/16/2006 FROM -002 LEGAL CORRECTED 8/7/06

Requested change in Ordinance / Zoning Map:

Reason for Requested Change:
Proposed development of a single family residential site condominium

Has the Applicant made a previous request to rezone the property?

☑ Yes ☐ No

If yes, state when and the decision of the Township Board:
Planning Commission motion did not carry to recommend approval of request to rezone.

Owner, being first fully sworn, on oath deposes and says that all of the above statements in this application herewith are true.

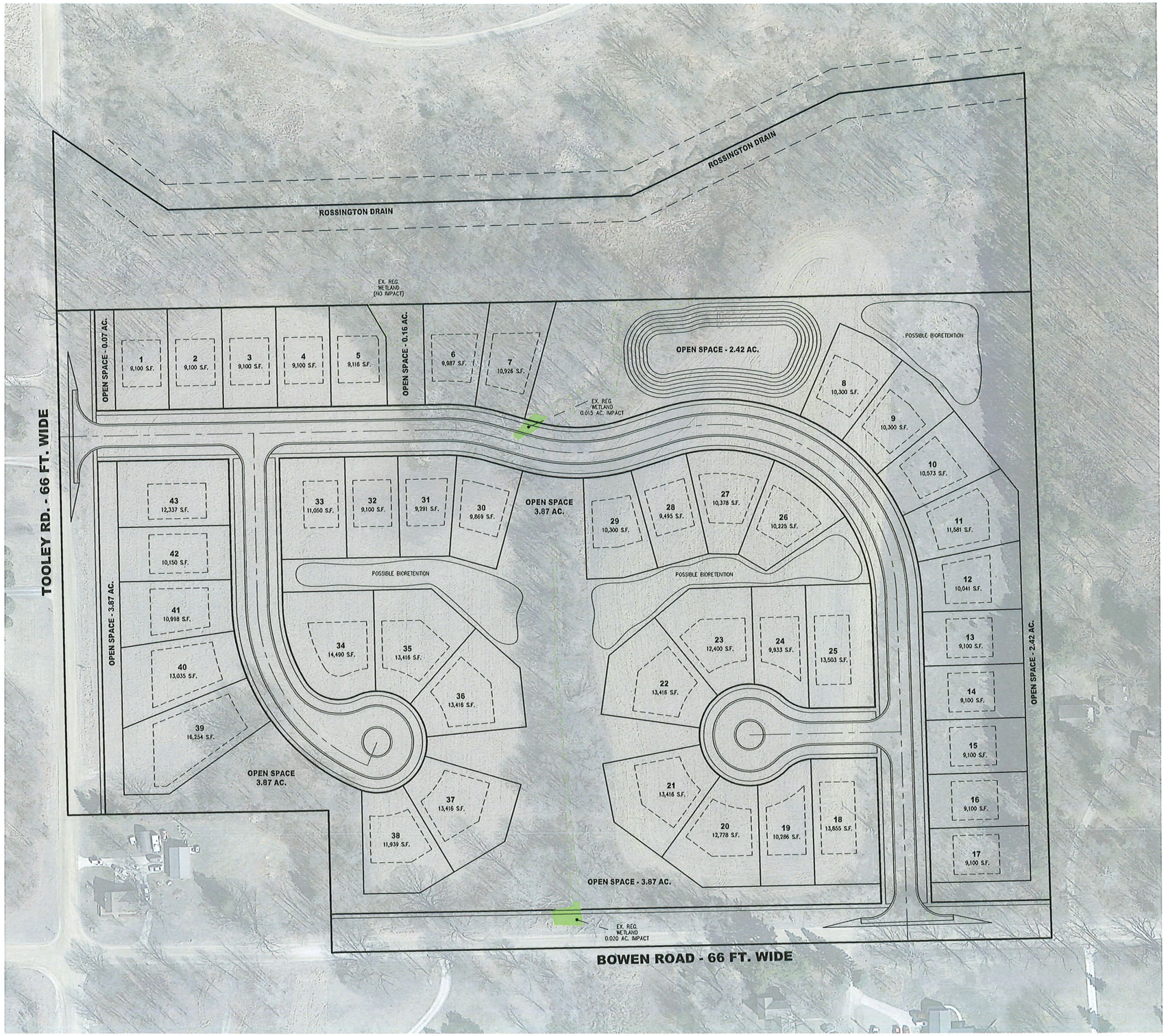
Owner Signature _____ Date 02/23/26

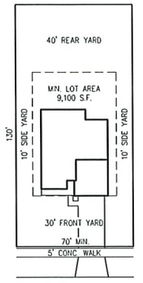
Printed Name Ryan M Joss.

Subscribed and sworn to before me
This 23rd day of February, 2026

_____
Notary Public
Washtenaw County, Michigan
My commission expires: 10/24/29

SANDRA L. GOETZ
NOTARY PUBLIC - STATE OF MICHIGAN
COUNTY OF WASHTENAW
My Commission Expires 10/24/29
Acting in the County of





TYPICAL UNIT DETAIL
1" = 40'

SITE DATA:

Current Zoning	AR
Proposed Zoning	SFR
Gross Area	23.00 Acres
Tooley Road Right-of-Way	0.75 Acres
Bowen Road Right-of-Way	1.08 Acres
Net Area	21.17
Number of Units Proposed	43 Units
Net Density	2.03 Units/Ac.
Minimum Lot Width, Area and Setbacks:	
Minimum Lot Width	70 Feet
Min Lot Area Provided	9,100 Sq. Ft.**
Front Yard (minimum)	30 Feet
Rear Yard (minimum)	40 Feet
Side Yard (minimum)	10 Feet
Side Yard (total of two)	20 Feet
Open Space Proposed	6.53 Ac. (28%)

** Will require approval of PC, which may allow up to 10% reduction from 10,000 s.f. min.)

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

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

CONSTRUCTION SITE SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS EMPLOYED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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UMLOR GROUP
40987 WEST ROAD WIXOM, MI 48393
TEL 248.773.7656 - FAX 866.690.4307

SECTION 21 | T. 3 N., R. 4 E. | HOWELL TOWNSHIP | LIVINGSTON COUNTY, MICHIGAN

DATE: 2/21/2026

REVISIONS

RIVERBLUFFS

CLIENT: RYAN JOSS
13155 WAYNE ROAD
LIVONIA, MI 48150

CONCEPTUAL DEVELOPMENT PLAN

DR BY: SA
CK BY: MN
PM: SA
SCALE: 0 30 60

JOB NO. 230915
SHEET NO. 1
SHEET 1 OF 1

M:\UMLOR GROUP PROJECT FOLDERS\RYAN JOSS\230915 – RIVERBLUFFS PH1 HOWELL\DESIGN FILES & PLAN SETS\BASE AUTOCAD FILES\RIVERBLUFFS CONCEPT 021926.DWG

THE RESERVE

GROSS FINISHED AREA

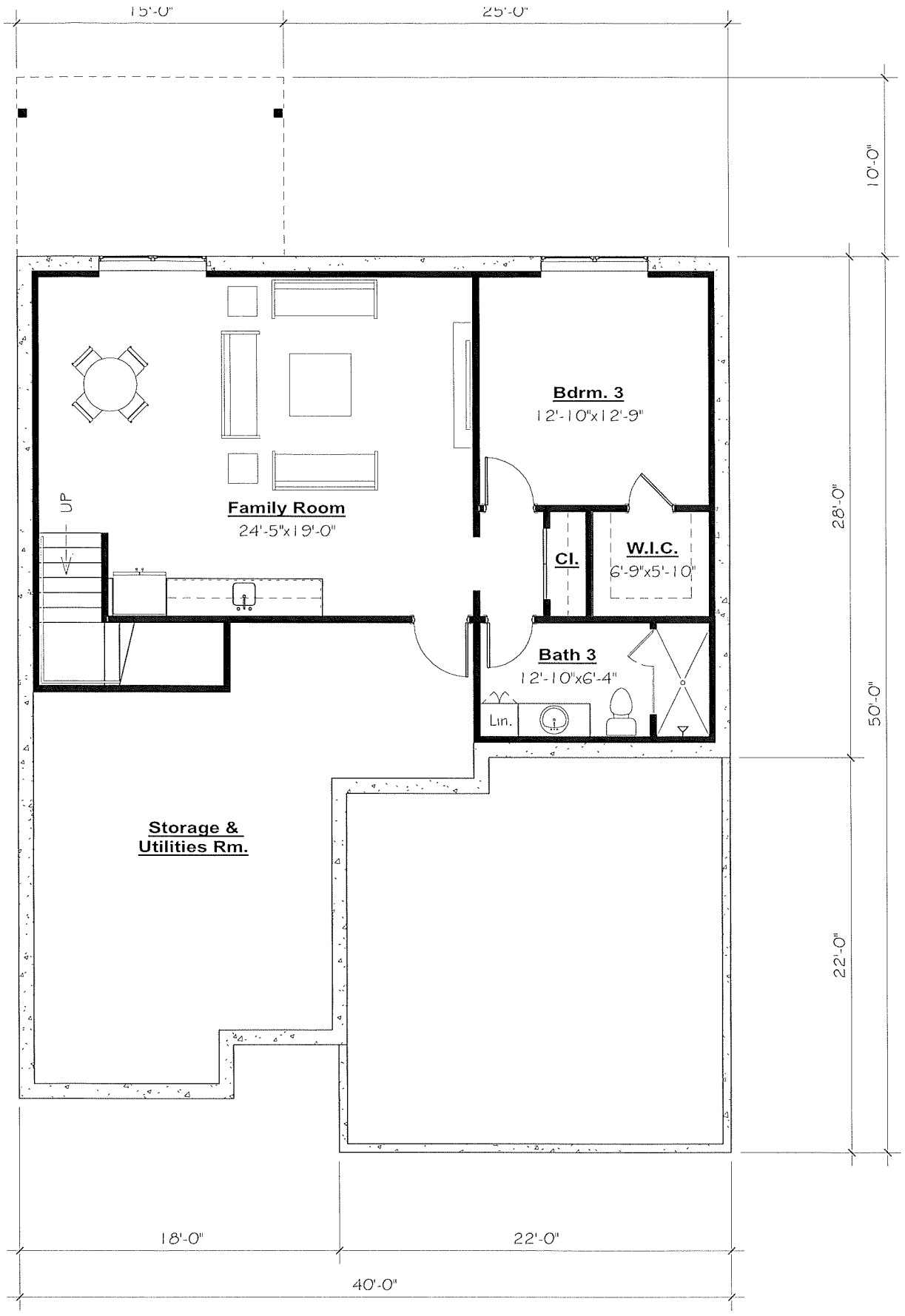
1ST FLOOR	1,468 SF
FINISHED BASEMENT AREA	845 SF
TOTAL	2,313 SF

1ST FLOOR PLAN

1/8" = 1'-0"

ARK ARCHITECTS®

NEW RESIDENCE
"THE STERLING" PLAN
JOSS FAMILY HOMES
10.24.25

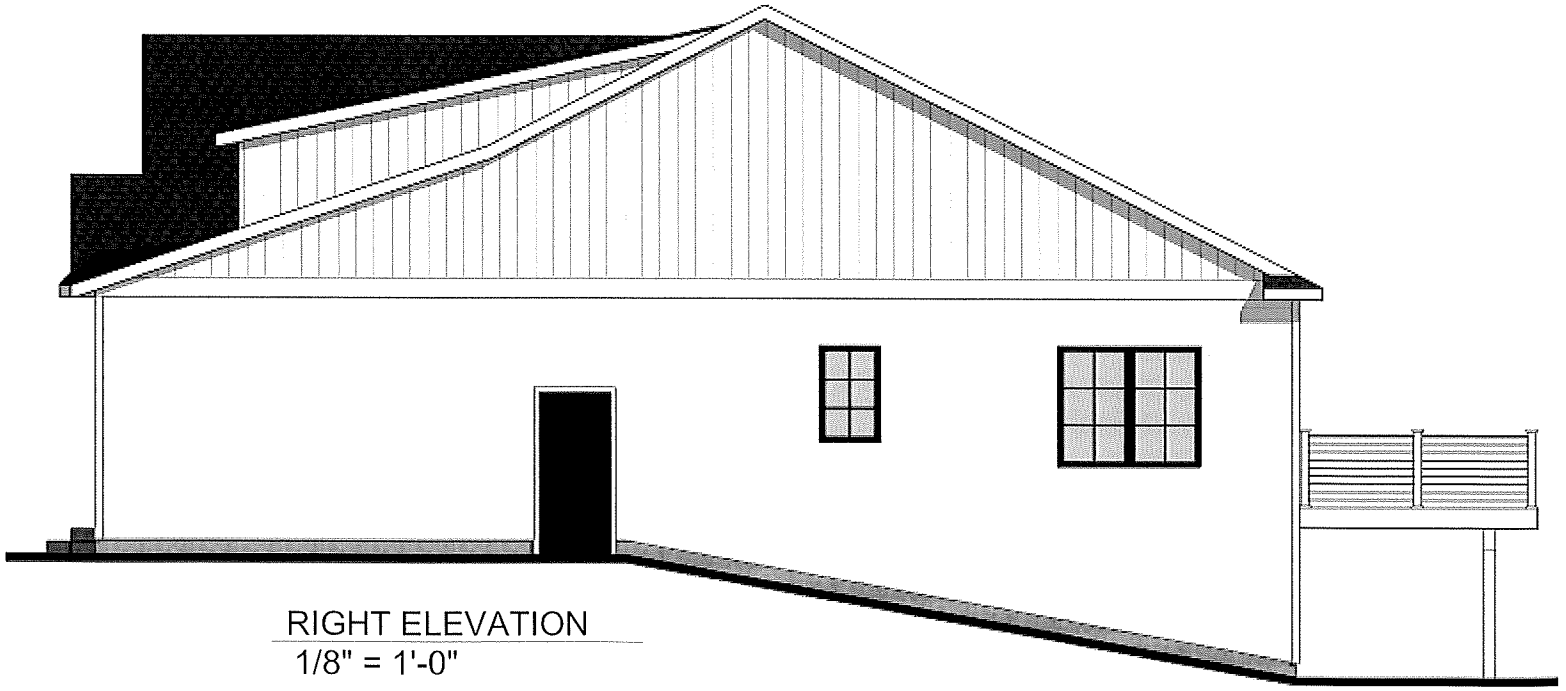


BASEMENT PLAN
1/8" = 1'-0"

ARK ARCHITECTS®

NEW RESIDENCE
"THE STERLING" PLAN
JOSS FAMILY HOMES
10.24.25

FRONT ELEVATION
1/8" = 1'-0"

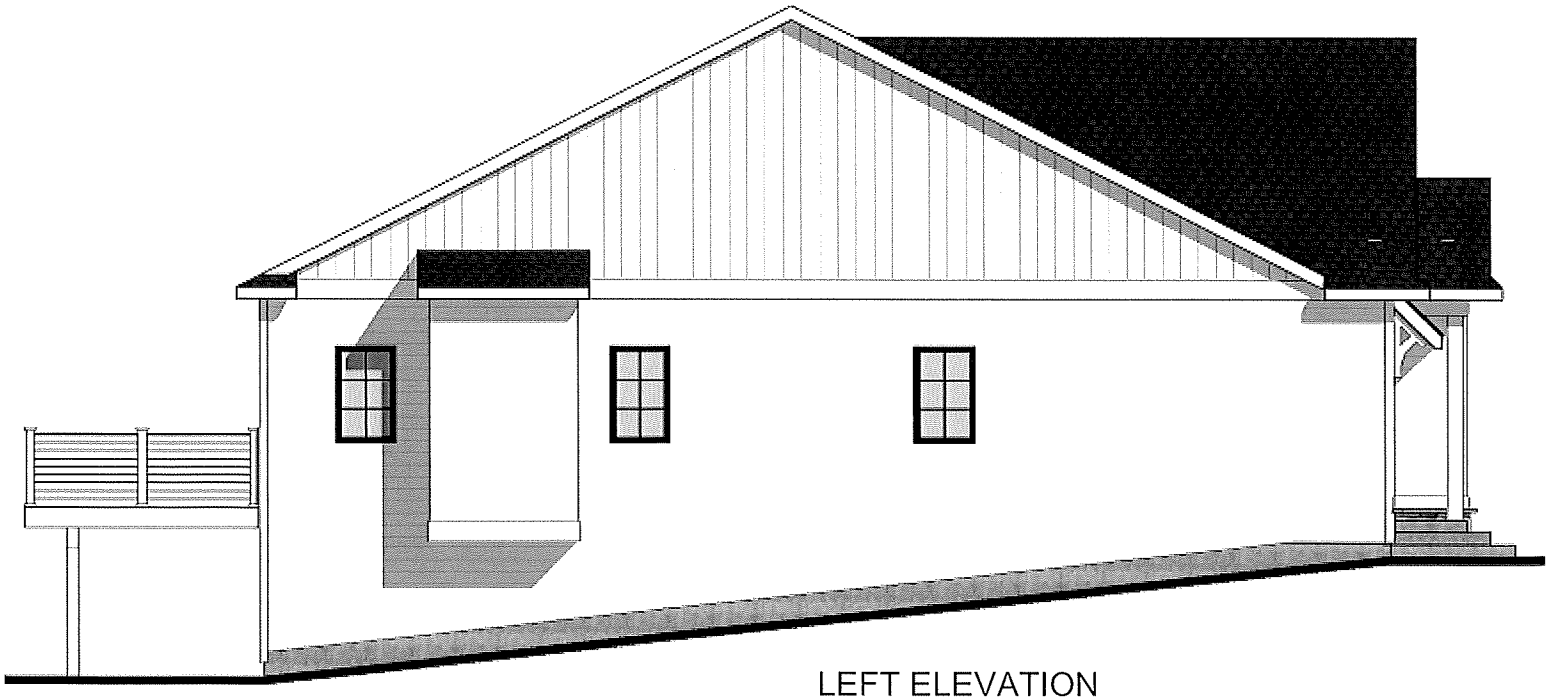


RIGHT ELEVATION
1/8" = 1'-0"

ARK ARCHITECTS®

NEW RESIDENCE
"THE STERLING" PLAN
JOSS FAMILY HOMES
10.24.25

REAR ELEVATION
1/8" = 1'-0"



LEFT ELEVATION
1/8" = 1'-0"

ARK ARCHITECTS®

NEW RESIDENCE
"THE STERLING" PLAN
JOSS FAMILY HOMES
10.24.25

Carlisle | Wortman
ASSOCIATES, INC.
117 NORTH FIRST STREET SUITE 70 ANN ARBOR, MI 48104 734.662.2200 734.662.1935 FAX

Date: March 18, 2026

Land Use and Zoning Analysis
For
Howell Township, Michigan

Applicant: Elmhurst Street, LLC

Project Name: Riverbluff Rezoning

Location: Parcel # 4706-22-100-014

Current Zoning: AR - Agricultural Residential

Action Requested: Rezoning from AR - Agricultural Residential to SFR - Single Family Residential

PETITION

The applicant is requesting a rezoning for parcel #4706-22-100-014 at the northeast corner of Tooley Rd. and Bowen Rd. The petitioner requests to rezone the approximately 22.27-acre site from AR - Agricultural Residential to SFR - Single Family Residential (shown on Figure 1 on the next page).

The applicant has stated that the reason for the proposed rezoning is to develop a single-family site condominium. A concept site plan that is not being reviewed as part of this rezoning petition was submitted along with the application.

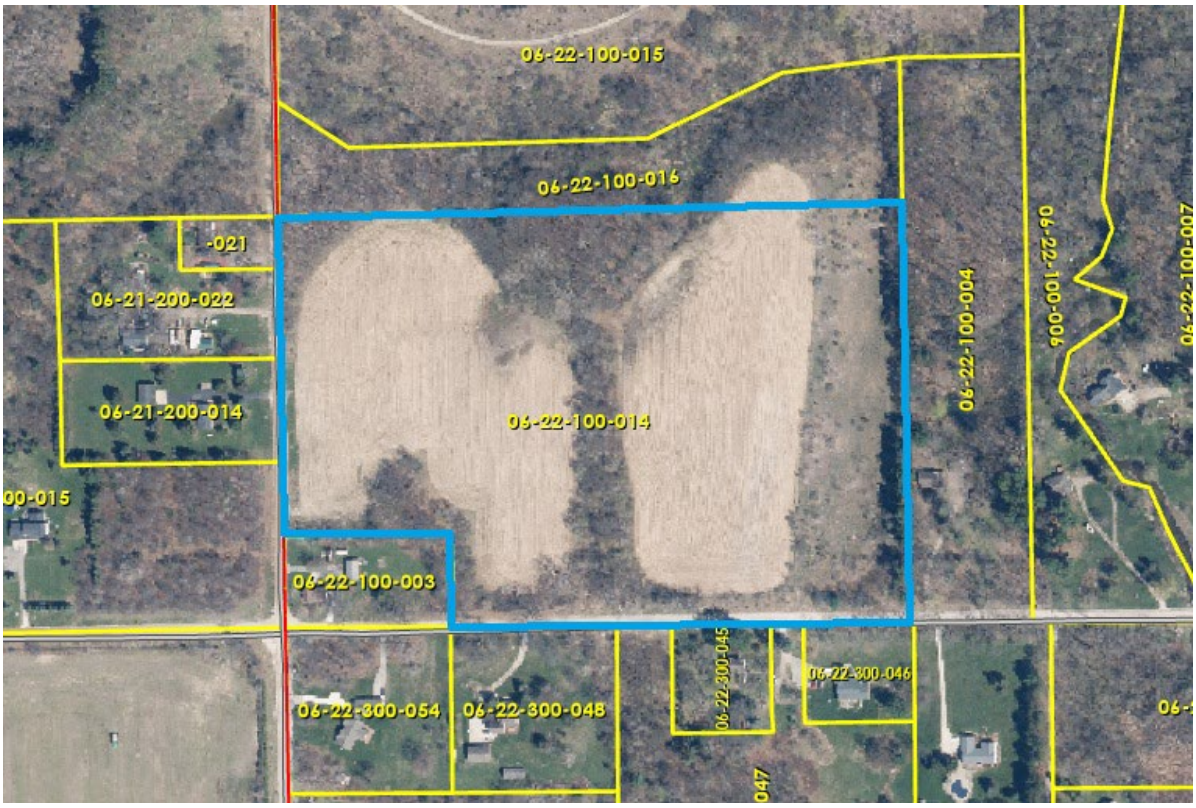
SITE DESCRIPTION/CURRENT USE

The subject site is approximately 22.27-acres and is rectangular in shape except for roughly 184 by 339 foot parcel that cuts out the southwest corner of the subject parcel located immediately at the intersection of Tooley Rd. and Bowen Rd. The site is surrounded by residential to the west, south and east. There is an undeveloped wooded parcel to the north. The site is currently

Benjamin R. Carlisle, *President* John L. Enos, *Vice President* Douglas J. Lewan, *Principal*
David Scurto, *Principal* Sally M. Elmiger, *Principal* R. Donald Wortman, *Principal* Craig Strong, *Principal*
Paul Montagno, *Principal* Megan Masson-Minock, *Principal* Laura Kreps, *Principal*
Richard K. Carlisle, *Past President/Senior Principal*

undeveloped but appears to be used for crop farming. There are trees along the perimeter of the site along with a row of trees that runs through the middle from north to south.

Figure 1 - Aerial Image of Site and Surroundings



Source: Livingston Couty Parcel Viewer

SURROUNDING ZONING, LAND USE, AND FUTURE LAND USE

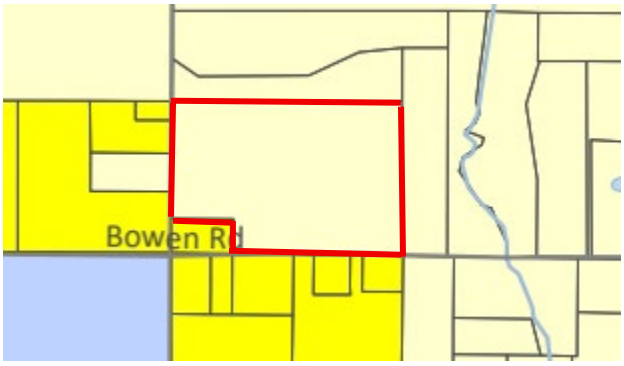
Table 1 below summarizes the zoning, existing land use, and the future land use designation from the Township Master Plan of the subject parcel and the surrounding parcels.

Table 1. Zoning, land use, and future land use of subject parcel and vicinity

	Zoning	Existing Land Use	Future Land Use Designation
Subject parcel	AR – Agricultural Residential	Farm Land	Residential – Medium Density
North	SFR – Single Family Residential	Vacant	Residential – Medium Density
South	SFR – Single Family Residential	Residential	Residential – Medium Density Residential – Low Density
East	AR – Agricultural Residential	Residential	Recreation and Preservation

West	AR – Agricultural Residential	Residential	Residential – Medium Density
Southwest	RT - Research & Technology	Airport Property	Airport

Figure 2. Zoning of Subject Properties



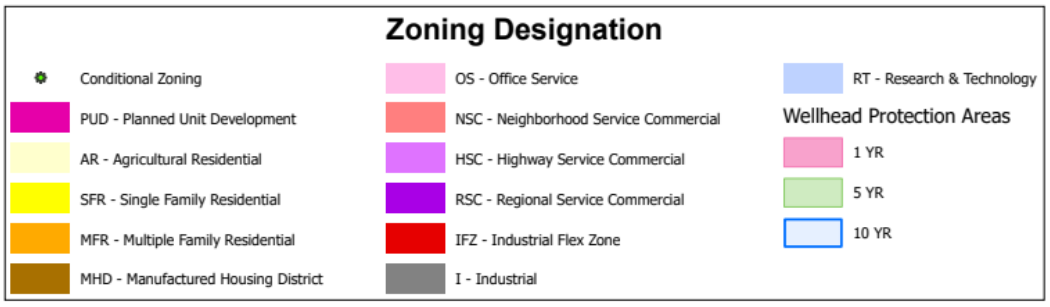
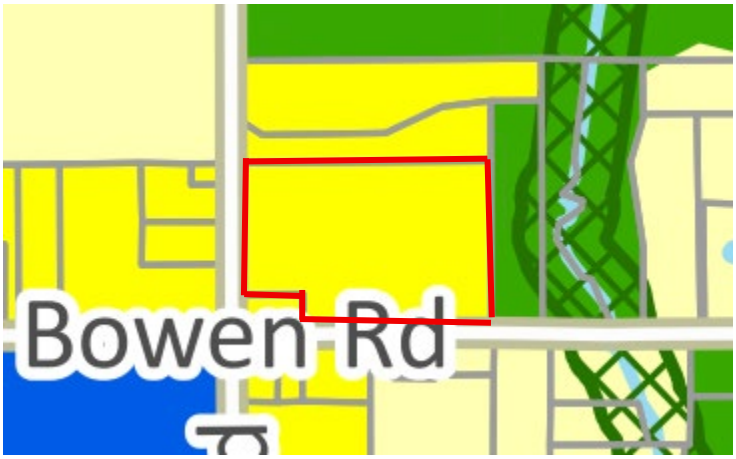


Figure 3. Future Land Use Map



As shown in Table 1 and Figure 2, the subject parcel and the parcels to the north and east are all zoned AR – Agricultural Residential. The parcels to the South and west are zoned as SFR – Single Family Residential.

The Future Land Use map designates the subject site as Residential – Medium Density along with the parcels to the north, south and west. The parcel to the east is designated as Recreation and Preservation.

The Master Plan states the following regarding Medium Density Residential: These areas are intended to provide more dense housing in close proximity to developed areas. These areas would support attached multifamily developments that might include duplexes, single story attached condos, townhomes, or even low-density apartment complexes. All of these housing products should have design characteristics that are similar to the single-family development that exists in the surrounding areas of the Township. These developments should have similar amenities to single family neighborhoods such as sidewalks, pedestrian scale lighting and neighborhood scale parks. The intent of these areas are to have higher density development closer to more intense land uses so that residents have more direct access to retail, services and transportation.

DEVELOPMENT POTENTIAL

Current Zoning

The current AR – Agricultural Residential zoning is intended to provide for the compatible arrangement and development of parcels of land for conventional residential building purposes in a pastoral, agricultural, woodland or open land areas, that will remain unserved by public water distribution and waste water disposal systems in the foreseeable future and that is more suitable for residential purposes and which can accommodate healthful on-site water supply and wastewater disposal, but which reserves and conserves that land which is most adaptable for present and future agricultural, woodland, natural resource and other extensive land use..

Proposed Zoning

The proposed SFR – Single Family Residential zoning is to provide for single family housing neighborhoods free from other uses except those which are (1) normally accessory and (2)

compatibly supportive and convenient to the residents living within such a district. The size of lots and parcels in this district should be planned to be of such an area and width and density so that on-site water supply and wastewater disposal systems are not to be permitted and development can only be allowed if and when public water supply and wastewater sanitary sewer systems are available as a direct abutting service to each lot or parcel planned to be used for housing or other permitted use in the district. The language of the PURPOSE shall not preclude development of existing lots and parcels where sewer and or water are not available provided they or any future subdivision of them can meet the onsite water supply and wastewater disposal permit requirements of the Livingston County Public Health Department and other requirements of the SFR Zoning District and this Zoning Ordinance.

Permitted uses in the SFR district are primarily single-family housing and accessory uses. The district also allows for state licensed day care and foster care facilities.

FINDINGS FOR REZONING

According to Section 23.02.D.5 in the Zoning Ordinance states, in reviewing an application for the rezoning of land, whether the application be made with or without an offer of conditions, factors that should be considered by the Planning Commission and the Township Board include, but are not limited to, the following:

A. Whether the rezoning is consistent with the policies and uses proposed for that area in the Township's Master Land Use Plan;

The zoning plan on page 16 of the Township Master Plan indicates that the zoning associated with the Residential – Medium Density future land use designation is MFR – Multiple family residential. The proposed SFR zoning district is less dense than MFR, but still consistent as far as they are both intended for residential use.

B. Whether all uses allowed under the proposed rezoning would be compatible with other zones and uses in the surrounding area;

The rezoning will be compatible with the surrounding uses. The site is surrounded by single family residential uses. The Livingston County Airport is to the southwest of the site, but the flight path of planes does not go towards the subject site.

C. Whether any public services and facilities would be significantly adversely impacted by a development or use allowed under the requested rezoning; and

The site is within the Township's planned municipal sewer and water districts. The roads that provide access to this site are not paved. Based on the concept plan, the site could be developed for potential 43 new homes which might generate 406 daily vehicle trips based on the ITE trip generation manual.

D. Whether the uses allowed under the proposed rezoning would be equally or better suited to the area than uses allowed under the current zoning of the land.

The proposed rezoning would be better suited for the area because it aligns with the policies and uses proposed in the Master Plan. The site is generally surrounded by existing residential uses.

RECOMMENDATIONS

The Planning Commission should review each of the findings from Section 23.02.D.5 in the Zoning Ordinance to determine if the proposed rezoning is appropriate before making a recommendation to the Township Board.

CARLISLE/WORTMAN ASSOC., INC.
Paul Montagno, AICP
Principal

Brady Heath

CARLISLE/WORTMAN ASSOC., INC.
Brady Heath
Community Planner

#308-2603

CC: Joanathan Hohenstein, Township Zoning Administrator
Marnie Hebert, Administrator

Outlook

Vacant property on tooley rd

From Nicole Shaw [redacted]
Date Sun 3/1/2026 4:05 PM
To Howell Township Inspector <inspector@howelltownshipmi.org>

To whom it may concern,
I recently saw the request for the rezoning on Tooley Rd (parcel 4706-22-100-014). We live across the street (2735 Bowen rd). I I know we probably speak for all of our neighbors that we are also against rezoning from AR to SFL for this property. I feel like our area has been constantly under attack between the potential data center and now the potential for group of single family homes to be built.. We love our home because of the wildlife & peacefulness that we get, adding a neighborhood of homes will increase traffic, noise and decrease homes for the animals (that we love watching everyday). Please let's keep this part of Howell as it is.... quiet, with animals and their freedom. Once we start allowing this so close to our homes, this is when our area goes down hill.

Nicole & Alan Shaw
2735 Bowen rd
Howell, mi 48855

Sent from my iPhone

NO! To rezone request!

Parcel Zoning

To Jonathan Hohenstein 3-11-26

RECEIVED
MAR 16 2026
HOWELL TOWNSHIP

regarding public hearing

Vacant land on Tooley rd parcel 4706-22-100-014

Tried to voice my opinion to you via email- link would not go through to you- apologize for my handwriting - Arthritis - years ago we were forced out of our home on the old Tooley rd, due to Airport Expansion! We moved just a ways down the ~~road~~ road to Bowen- East of Tooley-

We have been blessed by beautiful wildlife, peaceful days, nights, and appreciation for it all.

Here are our concerns!

#1 These dirt ~~roads~~ roads Are not well taken care of! They grade, next few days, same pot holes are back!

Adding more traffic to these roads will make it worse!
Not to mention how fast people fly up and down this road! Lots of accidents!

#2 We lose power A LOT!
even on a nice day! Adding homes only adds to more problems taxing the power grid!

#3 Strangers - in a scary world, we trust that nothing would happen to us -

Years ago, when Howell Township, allowed sewers to go through property next to ours, we had strangers on our property, trespassers who drained a ton of water onto our property!

The grade was changed in the field and now when we have downpours, the water pours across our yard and washes away any progress we had made with our lawn!

The Township did nothing, except we were able to take some rocks from that said field next to us!

We just want to keep our quiet life – More houses – More problems!
And, unfortunately I dont see Township doing anything to solve any problems –

Thank you for reading –

Linda & William Turner
2700 Bowen Rd Howell, MI 48855

just another comment –
After writing this, we lost power again! With no storm.

Thankyou
for your time

At-a-Glance

Planning Commission Summary

December, January, February

Brighton Charter Township: *December*, *January* and *February* : No Meetings.

City of Brighton: *December*: Public Hearing: City Master Plan. Discussed: Zoning ordinance text amendments for the following: Off-street parking regulations , Certificate of Occupancy requirements and Accessory buildings or uses.

January: Tabled: Resolution for the Master Plan Update. Scheduled Public Hearing: Amendments to the Zoning Map to modify conditionally zoned parcels to C2-General Business for 3 parcels (4718-30-100-031, 4718-30-100-087, 4718-30-100-066). Discussed: Amendments to the Zoning Ordinance.

February: Public Hearing: and considered a recommendation for text amendments for Off-Street Parking Requirements: to prohibit parking on grass in the rear yard.

Public Hearing: and considered a recommendation for text amendment for Certificate of Occupancy and Compliance: To require a commercial tenet to notify the City of a change in occupancy prior to certificate of occupancy, even if the use remains the same.

Public Hearing: and considered a recommendation to rezone three parcels from Conditional Zoned, C2-General Business, to C2-General Business. (4718-30-100-031, 4718-30-100-087, 4718-30-100-066)

Reviewed: Resolution of adoption for the Master Plan Update.

City of Howell: *December*: Recommended to Deny: Special land use and site plan for a gas station (WOW! Marketplace). Located at: 1002 E Grand River Ave. The location of the former Rite Aid. (4717-36-402-060, 4717-36-402-055, 4717-36-402-069).

January & February: No Meetings

Cohoctah Township: *December*: Approved: Temporary mobile home permit for 4340 Cherish Ln.

January: Discussed: Essential Services Ordinance.

February: Discussed: Zoning text amendment for an Essential Services Ordinance.

Conway Township: *December*: Discussed: Essential Services Ordinance. Discussed: Master Plan update. Discussed: Data Center and Bitcoin Mining Center Regulatory Ordinance.

January: Discussed: Data Center and Bitcoin Mining Center Regulatory Ordinance. Discussed: Essential Services Ordinance. Recommended Approval: To distribute Draft Township Master Plan for 63-day review and comment period.

February: Discussed: Draft Data Center and Bitcoin Mining Center Regulatory Ordinance. Discussed: Essential Services Ordinance. Reviewed: Moratorium Ordinance. Reviewed: Planning Commission By-Laws.

Deerfield Township: *December*: Recommended Approval: To rezone a 20 acre parcel from General Agricultural (20 acre minimum lot size) to A-4, Small Farms (2 acre minimum lot size). Located at: Off White Road north of Center Rd. (4703-16-300-004)

January and February: No meetings

For a copy of the official agenda and minutes contact your municipality or visit their website.

At-a-Glance

Planning Commission Summary

December, January, February

Genoa Charter Township: *December*: No Meeting
January: Tabled: The special use permit, site plan and environmental impact assessment for proposed two (2), two-hundred and fifty (250) gallon above ground, fuel storage tanks. Located at: 2025 Euler Rd.

Tabled: The special use, site plan and environmental impact assessment for a proposed family day care home. Located at: 554 S. Hughes Road.

Tabled: The the special use, site plan and environmental impact assessment for a proposed indoor dog park, coffee shop and bakery. Located in the multi-tenet shopping center at: 4060 Grand River Ave. (Previous location of Eternity Brewing.)

Tabled: Zoning ordinance amendment to Article 13 entitled “Environmental Protection Regulation” related to “Hazardous Materials and Fuel Storage and Wetland Protection Standards”.

February: Recommended Approval: For the special use, site plan and environment impact assessment for proposed family day care home (up to 14 children). Located at: 554 S. Hughes Rd.

Recommended Approval: For the special use, site plan and environmental impact assessment for proposed two (2), two-hundred and fifty (250) gallon above ground fuel storage tanks. Located at: 2025 Euler Rd.

Recommended Approval: For the special use, site plan and environmental impact assessment for proposed indoor dog park, coffee shop, and bakery. Located in the multi-tenet shopping center at: 4060 Grand River Ave. (Previous location of Eternity Brewing.) [Township Board Approved in February].

Recommended Approval with Conditions: For special use, site plan and environmental impact assessment for proposed expansion of outdoor storage for the existing Truck and Trailer Specialties business.
Located at: 900 Grand Oaks Dr. (4711-05-300-054).

Recommended Approval: For zoning ordinance amendments to Article 13 entitled “Environmental Protection Regulation” related to “Hazardous Materials and Fuel Storage and Wetland Protection Standards.”

Green Oak Charter Township: *December*: Approved: The 2026 Planning Commission meeting dates and election of officers.

January: Recommended Approval: To rezone 3.72 acres from Residential Multiple (RM) to Limited Industrial (LI). Located at: 12600 Grand River, Brighton, MI (4716-02-200-003).

February (1): Discussed: Establishing a High Resource Demand Facility including Data Centers Zoning Ordinance. The proposed ordinance would create a High Resource Demand Facility including Data Centers Overlay District to provide standards and regulations for the siting, development, and operation of data center facilities within designated areas of the Township. The ordinance addresses permitted uses, development standards, infrastructure requirements, and other related provisions.

February (2): Postponed Action: On a site plan for a building addition and parking modifications on a 2.76 acre parcel. Located at: 12639 Silver Lake Rd. (4716-11-400-041).

Public Hearing: To rezone property from Local Business (LB) to Limited Industrial (LI) on 25 acres. Located at:10910 Whitmore Lake Rd. (4716-29-300-034).

For a copy of the official agenda and minutes contact your municipality or visit their website.

At-a-Glance

Planning Commission Summary

December, January, February

Green Oak Charter Township Continued: Recommended Approval: To add new ordinance establishing a High Resource Demand Facility including Data Centers to the Green Oak Charter Township Zoning Ordinance. The proposed ordinance would create a High Resource Demand Facility Ordinance to provide standards and regulations for the siting, development, and operation of data center facilities.The ordinance addresses permitted uses, development standards, infrastructure requirements, and other related provisions.

Upcoming meetings will address the proposed High Resource Demand Facility Overlay Map Amendments.

Hamburg Township: *December & January*: No Meetings

February: Recommended Approval: For the special land use for a White Water Car Wash.

Recommended Approval with Conditions: For the preliminary site plan for White Water Express Car Wash. Located within the Chilson Commons shopping area at: 5580 East M-36 Hamburg Township (4715-22-400-023 & 4715-22-402-900).

Handy Township: *December:* Discussed: Annual Zoning Administrator Report.

January: Recommended Approval: For a special use permit for the Judd Road Mining Operation. Located near the Judd Rd and Nicholson Rd (4705-29-200-022, 4705-29-200-029 and 4705-29-200-019).

February: Discussed: Text amendment to regulate Cryptocurrency Data Mining Facilities and Data Centers.

Hartland Township: *December*: Recommended Approval: For the Preliminary Site Plan and to rezone the property from General Commercial to Planned Development for a drive-through service (Chick-fil-A). Located at: 10587 Highland Road (former Big Boy location).

January: No Meetings

February: Recommended Approval: For the Final Planned Development Site Plan and to rezone the property from General Commercial To Planned Development for Chick-fil-A. Located at: 10587 Highland Rd (former Big Boy location).

Public Hearing and Discussed: Zoning text amendment for Accessory Dwelling Units.

Howell Township: *December*: Tabled: The preliminary site plan for a gravel & storage yard. Located at: 3590 W. Grand River Ave. (4706-28-100-024) .

Approved: A site plan amendment to construct 10 standard electric vehicle charging stalls in an existing parking area. Located at: 3590 W. 1475 N. Burkhart Rd., Kensington Valley Outlet Mall.

Discussed: Data Center Ordinance.

Township Board-Discussed: Proposed data center rezoning from Agriculture Residential to Research and Technology for 1000 acres. Located near W Grand River Ave and Flemming Rd. Applicant withdrew their application and no further action was taken.

January: Discussed: Data Center Ordinance. Recommended Approval: A site plan amendment for Agape City Church. Located off Grand River Ave. near M-59. (4706-28-400-017).

For a copy of the official agenda and minutes contact your municipality or visit their website.

At-a-Glance

Planning Commission Summary

December, January, February

Howell Township Continued: Township Board- *January*: Denied: Rezoning request to rezone 7 acres from Regional Service Commercial (RSC) to Industrial Flex Zone (IFZ). Located off Tooley Rd. (4706-22-300-042). Denied: Rezoning request to rezone 10 acres from Agricultural Residential (AR) to Industrial Flex Zone (IFZ). Located at off Tooley Rd. (4706-22-300-003).

February: Reviewed: Preliminary site plan for an excavation company (Ditch Witch). Located at: 3401 W. Grand River Ave. (4706-28-200-040).

Iosco Township: *December*: No Meeting.

Township Board: Denied: A Conditional Rezoning request from Agriculture Residential to Large Solar Energy System Overlay. Located in the southeast portion of the township, approximately 825 and 950 acres

January: Discussed: Master Plan Review. Discussed: Data Centers.

February: Discussed: The Township Master Plan and public notification. Discussed: Data Centers

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Marion Township: *December*: Discussed: Storage containers; uses other than storage.

January: Discussed: Keeping of Chickens Ordinance. Discussed: Data Center Ordinance.

February: Discussed: Text amendment for Private Roads. Discussed: Hyper-Scale Data Center Ordinance.
Reviewed: Draft Storage Container Ordinance. Discussed: Definition language for livestock.
Reviewed: Planning Commission By-Laws. Discussed: Definition of fence as an accessory structure.

Oceola Township: Approved: Special use and site plan for non-home based child care center. Located at: 5202 E. Highland Rd (4707-27-100-011).

Recommended Approval: Residential Planned Unit Development Amendment for Bethel Green at Highland Knolls LLC for 80 apartment units in 9 two-story buildings with an in-ground swimming pool. Located at: 3601 Highland Knolls (4707-29-200-031). [Approved by Township Board in January]

January: No Meeting

February: Reviewed: Special use permit for permitted an accessory building in the front yard in the Agricultural Residential District. Located at: 2990 Bogue Creek Dr. (4707-19-200-022).

Putnam Township: *December*: Discussed: The southwest area of the Master Plan Future Land Use Map.

January: Discussed: The southeast section of Future Land Use Map. Discussed: Zoning Ordinance Commercial Zoning District and the associated Table of Uses. Discussed: General Master Plan Updates. Discussed: Alternative Energy and Battery Storage.

February: No Meeting.

Tyrone Township: *December:* Approved with Conditions: Request to increase accessory structure size. Discussed: Data Centers. Discussed: Accessory Structure Regulations.

January: Discussed: Annual Report. Discussed: Accessory Structure Regulations. Discussed: Data Centers.

For a copy of the official agenda and minutes contact your municipality or visit their website.

At-a-Glance

Planning Commission Summary

December, January, February

Tyrone Township Continued: *February*: Approved: Request to rebuild dwelling. Located at: 4704-08-402-008. Discussed: Data Center Ordinance.

Discussed: Michigan Medical Marihuana Act (MMA) Caregiver Regulations.

Unadilla Township: *December:* No Meeting *January*: Recommended Approval: Zoning text amendment for violations and penalties. *February*: No Meeting

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Village of Fowlerville: *December:* Recommended Approval: Of zoning text amendments for non-residential design requirements. [Village Council Approved in January]. Recommended Approval: Sign Ordinance to address sign limits, temporary signs, and wall signs. [Village Council Approved in January].

Discussed: Zoning text amendment for Accessory Solar Energy Systems. Discussed: Performance bond ordinance language.

January and February: No Meetings

Village of Pinckney: *December*: Postponed Action: To amend zoning districts from Research Technology Office (RTO) District to Commercial Outdoor Recreation (COR) District. Discussed: Changes to Temporary Sign Ordinance. Discussed: Master Plan Update.

Discussed: Prohibited parking in the Village. Discussed: Rental Housing Ordinance.

January: Recommended Approval: For zoning text amendment for off-street parking to allow limited front and side-yard parking and rear yard storage of recreational vehicles and equipment.

Approved: Site plan for Mugg & Bopp's, gas station and convenience store. Located at: 75 Dexter Rd. (4714-23-400-013). Approved: Site plan for Grant's Place to convert a former church into a multi-family housing building. Located at: 551 E Hamburg St. and parcel across the road. (4714-23-301-010, 4714-23-304-080). Discussed: Rental Housing Zoning Ordinance.

February: Recommended Approval: For the proposed land division for Grant's Place. Located at: 4714-23-301-010, 4714-23-304-080. Discussed: Rental Housing Ordinance.

Livingston County Planning Commission: *December:* Recommended Approval: For the proposed PA 116 Farmland Preservation of 3 parcels for a total of 198 acres. Located in Handy Township, at: 810 N. Dietz Rd. Webberville.

Recommended Approval: For the proposed PA 116 Farmland Preservation for 76 acres. Located in Handy Township at: 810 Dietz Rd. Webberville.

Recommended Approval: For Howell Township rezoning of 7 acres from Regional Service Commercial (RSC) to Industrial Flex Zone (IFZ) Located off Tooley Rd (4706-22-300-042).

Recommended Approval: For Howell Township rezoning of 10 acres from Agricultural Residential (AR) to Industrial Flex Zone (IFZ). Located at off Tooley Rd (4706-22-300-003).

Recommended Disapproval: For Brighton Township rezoning of 43 acres from Single Family Residential (R-2) to Planned Unit Development (PUD). Located on Woodland Lake (4712-18-300-011) and (4712-18-400-027).

For a copy of the official agenda and minutes contact your municipality or visit their website.

At-a-Glance

Planning Commission Summary

December, January, February

Livingston County Planning Commission Continued: Recommended Disapproval: Of Tyrone Township's proposed text amendments for Section 21.55 Medical Marijuana Caregiver Operations.

Recommended Approval: For Hamburg Township rezoning of 192 acres from Medium Density Residential (RA) to Public Parks Recreation Facilities (PPRF). Located at: 10405 Merrill Rd. (4715-26-100-028) and (4715-26-100-023).

Recommended Approval with Conditions: Of Conway Township's proposed text amendments for Section 6.23 Airports, Camping as an Accessory Use.

Recommended Approval: Of Marion Township's proposed text amendments of various Zoning Ordinance sections.

January: Recommended Approval: For Hartland Township rezoning of 1.7 acres from General Commercial to Planned Development. Located at: 10587 Highland Rd. (4708-21-400-062).

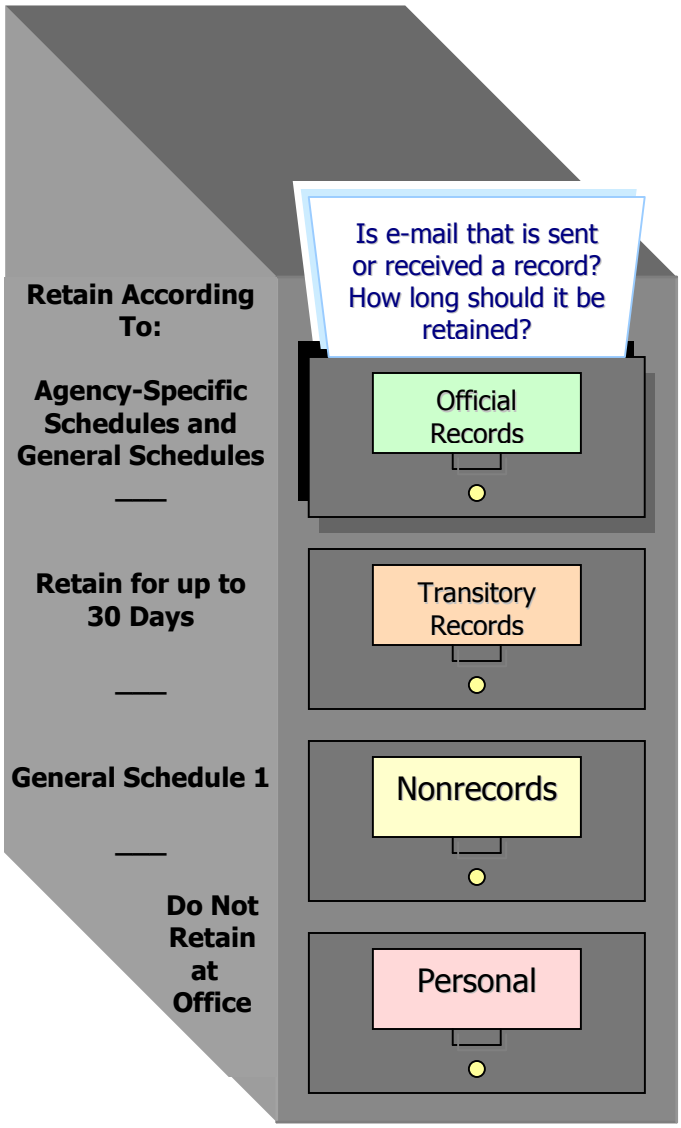
February: Recommended Approval: Conway Township Master Plan.

Recommended Disapproval: Of the Green Oak Township rezoning of 3.72 acres from Multi-Family Residential (RM) to Limited Industrial (LI). Located at:12600 Grand River Ave Brighton (4716-02-200-003).

Recommended Approval: Unadilla Township Text Amendments, Section 3.05 Violations and Penalties.

For a copy of the official agenda and minutes contact your municipality or visit their website.

Michigan Department of History, Arts and Libraries
Records Management Services
Electronic Mail Retention Guidelines



Warning! Do not dispose of (or allow the automatic disposal of) any relevant e-mail message, even if its retention period has expired, that is responsive to a FOIA request or which is likely to be required in litigation.

Caution! Litigation/discovery and FOIA requests both apply to all relevant e-mail messages, including metadata associated with messages and any associated data stored on server back-up tapes.

Definitions and Examples

Official Records: recorded information that is prepared, owned, used, in the possession of, or retained by an agency in the performance of an official function.

TO: Joe
FROM: Jim
DATE: February 13, 2005
SUBJECT: Contract
Please change the fourth paragraph in contract #10775 to read, "payment must be received within 30 days", removing the phrase "60 days."

TO: Bob
FROM: Carol, Personnel Director
DATE: May 10, 2005
SUBJECT: Reallocation
After further review, it is our decision that there is not sufficient justification to approve the reallocation for Susan's position, based upon the fact that . . .

TO: Vendor
FROM: Lisa
DATE: February 18, 2005
SUBJECT: Contract
Thank you for your question. The intent is to guarantee unit prices to all state agencies and to provide a mechanism to easily obtain imaging services.

TO: Mark
FROM: John
DATE: April 19, 2005
SUBJECT: Appointment
This is your official notification of your appointment to the Taxation Committee. Your responsibilities include . . .

Transitory Records: records relating to agency activities that have temporary value and do not need to be retained once their intended purpose has been fulfilled.

TO: Staff
FROM: Janet
DATE: January 6, 2005
SUBJECT: staff meetings
The staff meetings will be held on Tuesday mornings from now on instead of Thursday afternoons.

TO: Marilyn
FROM: Doug
DATE: March 12, 2005
SUBJECT: supplies
I noticed that there are no more blue ink pens in the supply cabinet. Can you please order more? Thanks.

TO: Doug
FROM: Becky
DATE: July 20, 2004
SUBJECT: Retention Schedule
Would you please send me a copy of the schedule for Administrative Services through ID mail or fax it to me at . . . ?"

TO: Debbie
FROM: Jim
DATE: September 7, 2004
SUBJECT: training
You have my approval to attend the seminar "Buying over the Internet." Please complete your registration form within the next two weeks.

Nonrecords: recorded information in the possession of an agency that is not needed to document the performance of an official function.

TO: Jim
FROM: Marilyn
CC: Brice
DATE: October 4, 2004
SUBJECT: Contract
For your information, the contract has been mailed to Purchasing.

TO: Debbie
FROM: ARMA
DATE: February 23, 2005
SUBJECT: Books
The Association of Records Managers and Administrators has four new books for sale regarding e-commerce. They are . . .

TO: DMB
FROM: Susan
DATE: November 1, 2004
SUBJECT: Give Blood!
The American Red Cross Blood Drive will be held in Baker-Olin West on December 20, 2000.

TO: Dave
FROM: Karen
DATE: August 11, 2004
SUBJECT: brochure
The attached Word document is a draft for your review. Please let me know if you have any comments. Thanks.

Personal Records: records that document non-government business or activities. Note: agencies may have policies that prohibit the use of personal e-mail.

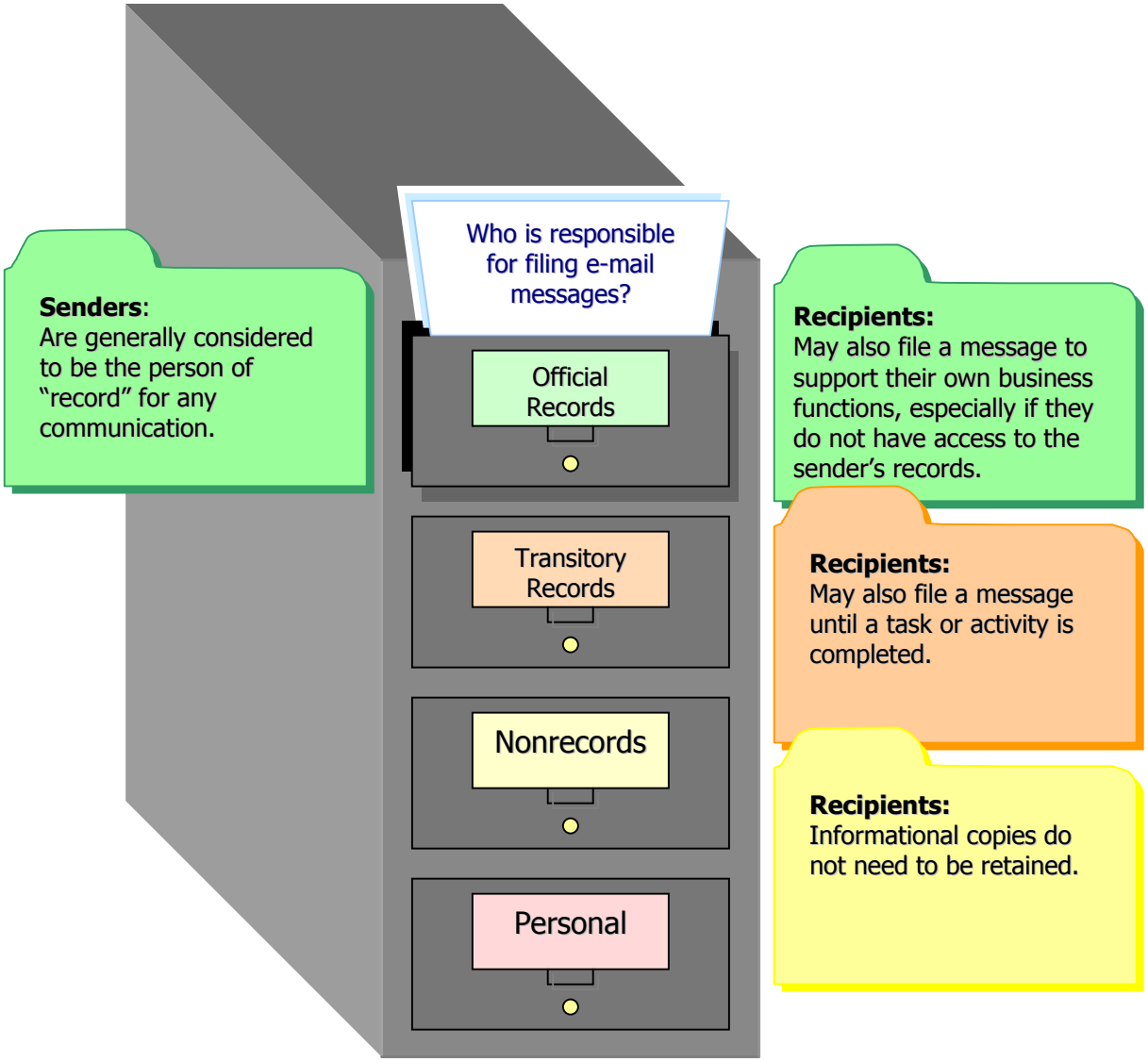
TO: Sandy
FROM: Debbie
DATE: June 3, 2004
SUBJECT: Good luck!
Congratulations on your new job! It has been great working with you these past three years. Keep in touch!

TO: Jane Smith
FROM: John Smith
DATE: May 27, 2004
SUBJECT: late
Honey. My meeting is running later than expected. Please save dinner for me. Thanks.

TO: All Division Employees
FROM: John Smith, Director
DATE: October 29, 2004
SUBJECT: holiday
This year's annual holiday buffet will be held on December 21 at noon in the conference room. Please remember to sign-up to bring a dish to pass.

TO: Fairlane Building Employees
FROM: Phyllis
DATE: January 16, 2005
SUBJECT: car
FYI. I noticed that a blue Oldsmobile in the parking lot with the license plate XYZ 123 has its lights on.

Electronic Mail Filing Guidelines



QUESTIONS MAY BE DIRECTED TO:
Records Management Services
Michigan Department of History, Arts and Libraries
(517) 335-9132
http://www.michigan.gov/recordsmanagement/

State of Michigan
Records Management Services
General Schedule #35 – Local Government Administrative Records

Item #	Series Title	Series Description	Retention Period	Approval Date
100	Administrative Subject Files	These records document various topics, issues, projects, or activities that a local government agency or employee is involved in. They may include, but may not be limited to, topical reference files about issues, strategic planning files for the agency or specific initiatives, special project files, budget documents, audit documents, and development files for policies, press releases, publications, and forms. Document types may include topical correspondence, memoranda, reports, research, articles, meeting notes, and related background materials.	RETAIN UNTIL: Topic is no longer considered to be of ongoing interest PLUS: 5 years THEN: Destroy *(some topical files may have historical value and should be preserved permanently)*	
101	Calendars and Planners	These records document an individual employee's work-related meetings, assignments, and tasks. They may include, but may not be limited to, appointments, meetings, calendars, and planners.	RETAIN UNTIL: Event date PLUS: 2 years OR RETAIN UNTIL: Employee separation PLUS: 30 days THEN: Destroy	
102	Correspondence Records - General	These records document correspondence received or sent that is not pertinent to an active project, matter, or case being handled by the local government. They may include, but may not be limited to, requests for information that do require administrative action, a policy decision, special compilation of research, analysis, or referral correspondence. This series also includes correspondence indexing and tracking tools.	RETAIN UNTIL: Date sent or received PLUS: 2 years THEN: Destroy	
103	Delegation of Authority Records	These records document when an individual or entity delegates its authority to conduct or approve an action or activity to another individual or entity. They may include, but may not be limited to, correspondence and supporting documentation.	RETAIN UNTIL: Delegation of authority expires, is replaced, or is revoked PLUS: 10 years THEN: Destroy	
104	Department Budget	These records document the amount of	RETAIN UNTIL:	

Item #	Series Title	Series Description	Retention Period	Approval Date
	Records	money that is appropriated for each account or line item for the current and previous fiscal years for the department. They may include, but may not be limited to, budget requests, statistics, budget amendments, budget summaries, and balance sheets.	Fiscal year ends PLUS: 5 years THEN: Destroy	
105	Event Logistical Records	These records document the planning and logistics for events (routine or special), training, workshops, seminars, conferences, symposiums, informational meetings, etc. They may document arrangements with speakers, facilities, catering, registrations, participant feedback, etc. They may include, but may not be limited to, registration forms, attendance sheets, correspondence, planning notes, and participant surveys and evaluations. *Note: specific state or federal laws or regulations may require that these records be kept longer to document compliance with education requirements about certain topics. If so, agencies should comply with those laws and regulations.*	RETAIN UNTIL: Event date PLUS: 2 years THEN: Destroy	
106	Forms History Records	These records document each form or template used by an agency. They may include, but may not be limited to, approved versions of the forms and templates, and requests to create or revised forms and templates.	RETAIN UNTIL: Document is replaced by a new version PLUS: 5 years THEN: Destroy	
107	Freedom of Information Act (FOIA) Request Records	These records document requests for information and public records maintained by state agencies. They may include requests for information, correspondence, a copy of the information released, and billing documentation. (MCL 15.233 (2))	RETAIN UNTIL: Response is sent, or request is denied PLUS: 1 year THEN: Destroy	
108	Grant Application Files - Denied	These records document grants that were applied for, but were not received. They may have reference value for preparing future grant applications. They may include, but may not be limited to, application forms, budget proposals, letters	RETAIN UNTIL: Grant application is denied or withdrawn PLUS: 1 year THEN: Destroy	

Item #	Series Title	Series Description	Retention Period	Approval Date
		of support, narrative plans, and supporting documentation.		
109	Grant Files - Received	These records document grants that are received by the office from state, federal and private agencies. They may include applications, budgets, worksheets, adjustments, plans, rules and regulations, award letters, committee records, staffing sheets with account numbers, grant evaluation and monitoring reports, audits, and periodic progress reports.	RETAIN UNTIL: Grant is closed out, unless otherwise specified by the granting agency for auditing purposes *(final reports and products of the grant may be kept longer for use and reference purposes)* PLUS: 7 years THEN: Destroy	
110	Legislative Records	These records document local government agency involvement in the legislative process both at the local, state, and federal levels. They may include, but may not be limited to, copies of local ordinances or resolutions, copies of House and Senate bills, analyses, program bulletins, and correspondence. They do not include the records maintained by the governing body.	RETAIN UNTIL: Legislation is passed or abandoned PLUS: 5 years THEN: Destroy	
111	Litigation Files	These records document litigation that the local government is a party to. They may include, but may not be limited to, pleadings and filings made with courts, decisions from courts, correspondence and communications, discovery materials, transcripts, legal holds, and memoranda. They do not include the official litigation files maintained by the local government's legal counsel.	RETAIN UNTIL: Case is closed, including all appeals PLUS: 5 years THEN: Destroy	
112	Meeting Records - Audio and Video Recordings	These records document the official activities of public bodies that are subject to the provisions of the Open Meetings Act. They may include, but may not be limited to, audio and video recordings of meetings	RETAIN UNTIL: Meeting minutes are approved PLUS: 1 day THEN: Destroy	

Item #	Series Title	Series Description	Retention Period	Approval Date
		of a public body. (MCL 15.269)		
113	Meeting Records - Internal Agency Staff, Project, and Committees	These records document meetings of employees that are internal to local government. They may include, but may not be limited to, meeting minutes, agendas, recordings, and distribution materials.	RETAIN UNTIL: Meeting date PLUS: 2 years THEN: Destroy	
114	Meeting Records - Posted Notices of a Public Meeting	These records document the posting of notices that a public meeting will be held in compliance with the Open Meetings Act (MCL 15.265). They may include, but may not be limited to, posted notices of any meeting, including annual schedules and special meetings.	RETAIN UNTIL: Meeting is held or cancelled PLUS: 1 year THEN: Destroy	
115	Meeting Records - Public Body Closed Meetings	These records document the official activities of public bodies that are subject to the provisions of the Open Meetings Act (such as official governing boards, commissions, committees, advisory boards, task forces or other legislatively mandated decision-making bodies). They may include, but may not be limited to, approved meeting minutes, agendas, audio and video recordings, and other supporting documentation related to closed meeting sessions only.	RETAIN UNTIL: Approval of the minutes of the regular meeting at which the closed session occurred, per MCL 15.267(2) PLUS: 1 year and 1 day THEN: Destroy	
116	Meeting Records - Public Body Open Meetings	These records document the official activities of public bodies that are subject to the provisions of the Open Meetings Act (such as official governing boards, commissions, committees, advisory boards, task forces or other legislatively mandated decision-making bodies). They may include, but may not be limited to, approved meeting minutes, agendas, and other supporting documentation. The clerk may retain the official copy of the agenda packets and the minutes. If so, the department's copy would be a duplicate non-record.	Permanent	
117	Periodic Activity Reporting Records	These records document periodic progress reports (narrative and/or statistical) that	RETAIN UNTIL: Calendar year	

Item #	Series Title	Series Description	Retention Period	Approval Date
		are prepared by employees or offices about their duties and activities, and that are submitted to supervisors or managers.	ends PLUS: 5 years THEN: Destroy	
118	Policy and Procedure Records	These records document local government agency expectations for employee conduct and customer interaction, public conduct when receiving services, roles and responsibilities, standards for operation, procedures, and activities of an office, etc. They may include, but may not be limited to, policies, procedures, orders, regulations, circulars, policy memos, information sheets, standards, instructions, user manuals, process maps and analyses, and supporting documentation.	RETAIN UNTIL: Document is revised and superseded by a new version, or until the document is deemed obsolete THEN: Destroy	
119	Public Body Member Files	These records document individuals who are elected, selected, or appointed to serve as a member of a public body. They may include, but may not be limited to, Governor's appointment letters, resumes, biographies, photographs, correspondence, disclosure documents, and supporting documentation.	RETAIN UNTIL: Individual is no longer a member of the public body PLUS: 2 years THEN: Destroy	
120	Publications	These records document publications that are developed by local governments that are used to distribute information to the public or publicize local government activities. They may include, but may not be limited to, brochures, pamphlets, training materials, reports, fact sheets, books, magazines, newsletters, calendars, maps, posters, and public relations materials.	RETAIN UNTIL: No longer of reference value THEN: Destroy *(agencies are strongly encouraged to keep one copy permanently for historical purposes)*	
121	Rosters, Mailing Lists, and Contact Lists	These records document contact information for individuals or organizations with whom the local government agency communicates. They may be used to generate labels or other documents. They may contain name, email address, mailing address, phone numbers and other contact information.	RETAIN UNTIL: Updated or obsolete THEN: Destroy	

Item #	Series Title	Series Description	Retention Period	Approval Date
122	Special Event and Activity Records	These records document events and activities of the government agency. They may include, but may not be limited to, photographs, audio-video recordings, news clippings, certificates, awards, and memorabilia.	RETAIN UNTIL: No longer of reference value THEN: Destroy *(agencies are strongly encouraged to keep one copy permanently for historical purposes)*	
123	Training Records - Curriculum	These records document the content of training, education and information programs offered by state agencies, as well as speeches and presentations delivered by state employees. These programs may include workshops, seminars, conferences, symposiums, informational meetings, online training, etc. The records may include, but may not be limited to, presentations, audio-video content, manuals, guidance documents, tip sheets, handouts, class exercises, speaker notes, and user instructions. *Note: specific state or federal laws or regulations may require that these records be kept longer to document compliance with education requirements about certain topics. If so, agencies should comply with those laws and regulations.*	RETAIN UNTIL: Revised and replaced by new content, or until deemed obsolete THEN: Destroy	
124	Transitory Records	These records document local government activities that have temporary value and do not need to be retained once their intended purpose has been fulfilled. They may include, but may not be limited to, routine requests for information that require no: administrative action, policy decision, special compilation of research; requests or matters that are addressed by creating other records; and reminders.	RETAIN UNTIL: Activity is completed THEN: Destroy	
125	Visitor Logs and Registers	These records document who visited a particular office, what entity that person represented, which employee or office was	RETAIN UNTIL: Calendar year ends	

Item #	Series Title	Series Description	Retention Period	Approval Date
		visited, when they arrived, and when they left. They may be used to track visitor statistics and/or for security purposes.	PLUS: 5 years THEN: Destroy	

Howell Township
Planning Commission Subcommittee Meeting
Meeting: March 4, 2026 5:30 pm

Attending: Paul Montagno, Brady Heath, Wayne Williams, Tim Boal, Matt Stanely, Jim McEvoy, Jodi Fulton, Dan Bonello, Kristin Dennison, Marnie Hebert, Jonathan Hohenstein

The subcommittee met to discuss the Data Center Ordinance. Paul and Brady discussed the changes that they made to the draft ordinance per discussion at the last subcommittee meeting. Research Committee members brought their own version of the draft ordinance to the meeting along with a list of other items they would like to add to the ordinance and discussed their requested changes.

Topics included:
Setbacks, noise levels, cooling technology, overlay district, generators, decommissioning, performance guarantees

Paul and Brady instructed the Planning Commissioners to review the material and provide any comments to them prior to the next meeting. Paul and Brady will provide an updated draft ordinance for discussion at the next subcommittee meeting.

Respectfully submitted,
Jonathan Hohenstein

Livingston County Department of Planning

TO: Livingston County Municipal Legislative Bodies, Contiguous Municipal Bodies, Livingston County Board of Commissioners, Southeast Michigan Council of Governments, Public Utility Companies and Railroad Companies

FROM: Livingston County Planning Department

DATE: March 12, 2026

RE: Public Hearing Notice

On November 24, 2025, the Livingston County Board of Commissioners approved the distribution of the Draft 2026 Livingston County Master Plan for public review and comment. The 63-day review and comment period concluded on January 26, 2026, and public comments received by the County Planning Department have been integrated into the plan. A public hearing has been scheduled by the Livingston County Planning Commission to hear verbal comments. A public hearing notification was published in the Livingston County Press & Argus on February 27, 2026, pursuant to the Michigan Planning Enabling Act (Act 33 of 2008, as amended). Details of the public hearing notice are noted below:

NOTICE OF PUBLIC HEARING
2026 LIVINGSTON COUNTY MASTER PLAN

NOTICE IS HEREBY GIVEN THAT THE LIVINGSTON COUNTY PLANNING COMMISSION, pursuant to Public Act 33 of 2008 (MCL 125.3801 et seq.), will hold a Public Hearing to take public comment on the proposed Livingston County Master Plan, a general guide for land use development in Livingston County.

The Public Hearing on the proposed Livingston County Master Plan will be held prior to the Livingston County Planning Commission Meeting on Wednesday, March 18, 2026, commencing at 6:30 p.m. at the Livingston County Administration Building, 304 E. Grand River, Howell, MI, 48843.

A copy of the proposed Livingston County Master Plan is available to the public for inspection during regular business hours, (8:00 a.m. to 5:00 p.m.), at the Livingston County Planning Department office, 304 East Grand River, Suite 206, Howell, MI, 48843. The plan is also available for review on the County Planning website at https://milivcounty.gov/planning/2026-master-plan/. Please call the Planning Department at (517) 546-7555 with any questions.

Thank you for your consideration of this matter. If you have any questions regarding this correspondence, please contact Livingston County Planning Department at (517) 546-7555 or by email at planning@livgov.com

Scott Barb
AICP, PEM
Director

Robert A. Stanford
AICP
Principal Planner

Martha Haglund
AICP
Principal Planner

Department Information

Administration Building
304 E. Grand River Avenue
Suite 206
Howell, MI 48843-2323

(517) 546-7555
Fax (517) 552-2347

Web Site
milivcounty.gov

HOWELL TOWNSHIP

APPLICATION FOR SITE PLAN REVIEW

PARCEL ID #4706 32 - 400 - 016 FILE # PC ____ - ____

DATE OF APPLICATION: 09/25/2024

CHECK ONE:
___ Preliminary Site Plan Review (20.06)
_X_ Final Site Plan Review (20.07)
___ Temporary Use Section (14.34)

Commercial/Industrial Development ____
Subdivision/Site Condo X
Multi Family/Condo ____
Planned Unit Development (PUD) X
Type: 1.____ 2.____ 3.____ 4. X 5.____

1. APPLICANT: Heritage Square Single Family Phases 2 and 3

Company Name M/I Homes of Michigan, LLC Owner: ____

Phone #: [redacted] E-Mail: see below

Address: 40950 Woodward Ave, Ste 203, Bloomfield Hills , MI 48304

Applicant: David Straub E-Mail: ____

Phone #: [redacted] E-Mail: [redacted]

Address: 40950 Woodward Ave, Ste 203, Bloomfield Hills , MI 48304

All Representatives to receive information and/or reports:

Contact Name: David Straub E-Mail: [redacted]

Contact Name: Brandon Guest E-Mail: [redacted]

Contact Name: ____ E-Mail: ____

2. LOCATION OF PROPERTY: North of Mason Road, West of Burkhart Road. Northwest of Chestnut Crossing.

a. Attach legal description of property. See Plan

b. Current zoning district. PUD - Type 4

c. Existing use. Agricultural

d. Description of proposed use. Single Family Residential

HOWELL TOWNSHIP

APPLICATION FOR SITE PLAN REVIEW

3. The Site Plan is to contain the following information or the drawing submitted under the Land Use Permit can be utilized if it also contains the following information and is accurately drawn to scale:

   a. The date, north arrow and scale. The scale shall be not less than 1" = 20' for property under three (3) acres and at least 1" = 100' for those (3) acres or more.

   b. Statistical data including number of dwelling units, size of dwelling units, if any, and total gross acreage involved. In the case of mobile home park, the size and location of each mobile home site shall be shown.

   c. The location and height of all existing and proposed structures on and within 100' of the subject property's boundary.

   d. All lot and/or property lines are to be shown and dimensioned, including building setback lines on corner lots.

   e. The location and dimensions of all existing and proposed drives, sidewalks, curb openings, signs, exterior lighting, curbing, parking areas (show dimensions of a typical parking space), unloading areas and recreation areas.

   f. Vehicular traffic and pedestrian circulation features within and without the site.

   g. The location of all proposed landscaping, fences or walls.

   h. Size and location of existing and proposed utilities, including proposed connection to public sewer or water supply system.

   i. A location map indicating the relationship of the site to the surrounding land uses.

   j. The location and pavement width and right-of-way width of all abutting roads, streets, alleys or easements.

   k. Show properties and respective zoning abutting the subject property.

   l. The location and size of all surface water drainage facilities.

   m. Contour intervals shall be shown at a maximum of 2' intervals, with 1' intervals preferred for topographic features of the site.

4. Applicant to initial the following statements:

   a. Planning Commission has sixty (60) days from filing date to approve or deny Site Plan. _____

   b. Acknowledgement that approval of Preliminary Site Plan is valid for a period of one (1) year from date of approval. _____

HOWELL TOWNSHIP

APPLICATION FOR SITE PLAN REVIEW

c. Acknowledge that a one (1) year extension may be granted upon written request of the applicant and approval by Planning Commission _____

d. Acknowledge that the approval of Preliminary Site Plan shall expire one year after approval of Final Site Plan unless zoning permit has been obtained. _____

e. Applicant acknowledges approval of the Final Site Plan expires six (6) months after approval unless a Land Use Permit Application is applied for and granted. _____

f. Applicant acknowledges that the Final Site Plan approval shall expire one year following the date of approval unless construction has begun on the property in accordance with the plan. _____

g. Applicant acknowledges that he can appeal the Planning Commission's ruling of the Final Site Plan to the Board of Appeals within ten (10) days of its decision on all matters except use of the land, use of buildings or structures. _____

i. The Planning Commission has sixty (60) days from the date of the Planning Commission meeting at which the Final Site Plan was received to approve or disapprove. _____

j. Improvements not in conformance with the Final Site Plan shall be deemed a violation of the ordinance and be subject to the penalties of the ordinance.

k. Applicant acknowledges that sewer system tap in fee, if applicable, must be paid prior to issuance of a Land Use Permit. _____

5. Twelve (**12**) copies of the Preliminary Site Plan drawing shall be submitted with an Application for Site Plan Review (20.06a) **30 DAYS PRIOR TO MEETING.** _____

APPLICANT HERBY DEPOSES AND SAYS THAT ALL THE ABOVE STATEMENTS AND INFORMATION CONTAINED IN THIS APPLICATON AND ANY STATEMENTS SUBMITTED HEREWITH OR ON THE SITE PLAN ARE TRUE AND ACCURATE.

_____ David Straub

Owner Signature Print Name

Subscribed and sworn to before me this 23 day of December, 2025.

_____ _____ County, Michigan

Notary Public

My Commission Expires: _____, 20____.

TRACY KENDALL
NOTARY PUBLIC - STATE OF MICHIGAN
COUNTY OF LAPEER
My Commission Expires July 28, 2030
Acting in the County of Oakland

Revised: 7-8-2021

HOWELL TOWNSHIP

APPLICATION FOR SITE PLAN REVIEW

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APPLICANT HERBY DEPOSES AND SAYS THAT ALL THE ABOVE STATEMENTS AND INFORMATION CONTAINED IN THIS APPLICATON AND ANY STATEMENTS SUBMITTED HEREWITH OR ON THE SITE PLAN ARE TRUE AND ACCURATE.

Owner Signature _____ Danny Dedvukaj
Print Name

Subscribed and sworn to before me this 23rd day of February, 20 26.

Notary Public Brandon C.S. Guest _____ Oakland County, Michigan

My Commission Expires: January 20, 20 28.

BRANDON C.S. GUEST
NOTARY PUBLIC
State of Michigan
My Commission Expires
January 20, 2028

Revised: 7-8-2021

February 23, 2026

To: Howell Township
Livingston County
State of Michigan

To Whom It May Concern:

Mason and Burkhart LLC, a Michigan Limited Liability is the owner of the property located on the northwest quadrant of Mason and Burkhart Roads in Howell Township, Livingston County, Michigan, being tax parcel 06-32-400-016 (the "Property"). We have entered into a Purchase Contract with M/I Homes of Michigan, LLC, as Buyer, for the sale of the Property.

This letter confirms that M/I Homes of Michigan, LLC has the right and authority to apply for and obtain from Howell Township, Livingston County, EGLE, and any other governmental agencies having jurisdiction, for such governmental approvals and permits that are required for the development of Phase(s) II and III of the Single Family portion of the Heritage Square PUD, Water and Sewer Agreements, a Development Agreement for the Property as a residential project.

Sincerely,

Mason and Burkhart LLC
a Michigan limited liability company

By: Danny Dedvukaj
Title: Authorized Agent

FINAL SITE PLAN FOR

HERITAGE SQUARE

SINGLE FAMILY

PHASES 2 & 3

LEGAL DESCRIPTION (AS PROVIDED)

**(PER TITLE AGENCY: ATA NATIONAL TITLE GROUP
TITLE COMMITMENT NO: 47-23889492-SCM,
EFFECTIVE DATE: SEPTEMBER 05,2023)**

PARCEL TAX NUMBER: 47-06-32-400-013

SITUATED IN THE TOWNSHIP OF HOWELL, COUNTY OF LIVINGSTON, STATE OF MICHIGAN

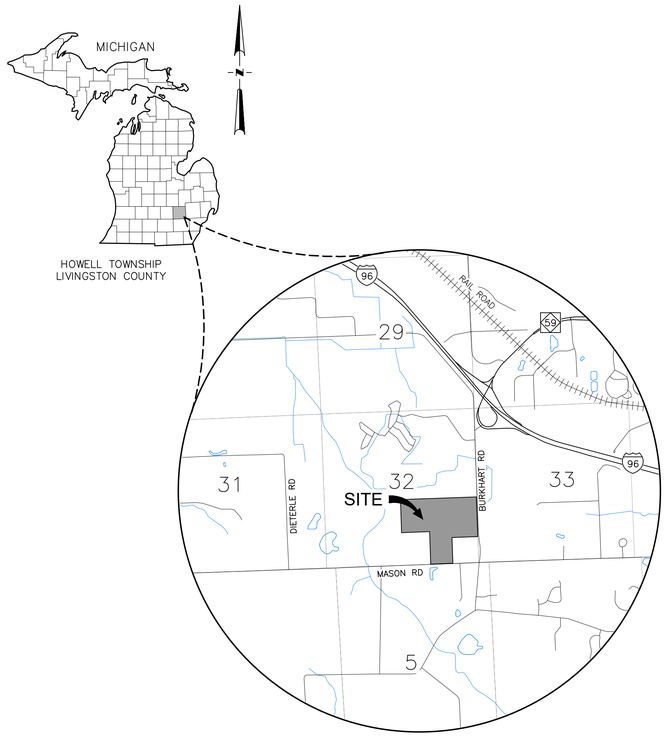
PART OF THE SOUTHEAST 1/4 OF SECTION 32 AND PART OF THE SOUTHWEST 1/4 OF SECTION 33, TOWN 3 NORTH, RANGE 4 EAST, DESCRIBED AS FOLLOWS: BEGINNING AT A POINT ON THE SOUTH LINE OF SAID SECTION 32, SAID POINT BEING SOUTH 89 DEGREES 55 MINUTES 08 SECONDS WEST 903.41 FEET FROM THE SOUTHEAST CORNER OF SECTION 32; THENCE SOUTH 89 DEGREES 55 MINUTES 08 SECONDS WEST 769.27 FEET ALONG THE SOUTH SECTION LINE; THENCE NORTH 00 DEGREES 05 MINUTES 59 SECONDS EAST 1133.64 FEET; THENCE SOUTH 89 DEGREES 55 MINUTES 08 SECONDS WEST 980.63 FEET TO THE NORTH-SOUTH 1/4 LINE; THENCE NORTH 00 DEGREES 04 MINUTES 04 SECONDS EAST 1155.25 FEET ALONG THE NORTH-SOUTH 1/4 LINE; THENCE SOUTH 89 DEGREES 59 MINUTES 30 SECONDS EAST 2649.93 FEET TO THE EAST SECTION LINE; THENCE SOUTH 00 DEGREES WEST 1374.40 FEET ALONG THE EAST SECTION LINE; THENCE SOUTH 03 DEGREES 58 MINUTES 40 SECONDS EAST 10.20 FEET ALONG THE CENTERLINE OF BURKHART ROAD; THENCE SOUTH 89 DEGREES 55 MINUTES 08 SECONDS WEST 904.12 FEET; THENCE SOUTH 00 DEGREES WEST 900.16 FEET TO THE POINT OF BEGINNING.

LAND USE SUMMARY

	CHARACTERISTIC	EXISTING CONDITIONS	PROPOSED CONDITIONS
LAND USE DATA	TOTAL DEVELOPMENT AREA (AC)	95.02 AC	95.02 AC
	IMPERVIOUS AREA (AC)	0.00 AC	29.95 AC
	TOTAL PERVIOUS AREA (AC)	95.02 AC	65.07 AC
PERVIOUS AREA	PERVIOUS AREA BREAKDOWN BY COVER TYPE		
	MEADOW/FALLOW/NATURAL AREAS (NON-CULTIVATED)	19.07 AC	16.12 AC
	PREDOMINANT NRCS SOIL TYPE (A, B, C, OR D)	TYPE C	TYPE C
	IMPROVED AREAS (TURF GRASS, LANDSCAPE, ROW CROPS)	45.28 AC	38.68 AC
	PREDOMINANT NRCS SOIL TYPE (A, B, C, OR D)	TYPE B	TYPE B
	WOODED AREAS	30.67 AC	10.27 AC
	PREDOMINANT NRCS SOIL TYPE (A, B, C, OR D)	TYPE C	TYPE C
	CPVC VOLUME CALCULATED (CF)		174,380 CF
	CPVC VOLUME PROVIDED (CF) *		0 CF
	CPRC (EXTENDED DETENTION) VOLUME PROVIDED (CF)		254,863 CF

*** NOTED CPVC VOLUME PROVIDED = 0 DUE TO LACK OF INFILTRATION CAUSED BY HIGH GROUND WATER.**

THE PROFESSIONAL ENGINEER WHO SIGNS AND SEALS THIS SITE PLAN CERTIFIES THAT THE VALUES IN THIS TABLE REFLECT THE WRC STORMWATER CALCULATIONS REQUIRED FOR THIS DEVELOPMENT AND THAT GEOTECHNICAL INVESTIGATIONS WERE PERFORMED THAT PROVIDE CONCLUSIVE DOCUMENTATION THAT DEMONSTRATES WHETHER INFILTRATION (I.E. CPVC VOLUME CONTROL) IS PRACTICABLE.



LOCATION MAP

DESIGN ENGINEER/SURVEYOR

MONUMENT ENGINEERING GROUP ASSOCIATES, INC

INNOVATIVE GEOSPATIAL &
ENGINEERING SOLUTIONS

298 VETERANS DRIVE,
FOWLERVILLE, MI 48836
PHONE: 517-223-3512

SINGLE FAMILY DEVELOPER

M/I HOMES OF MICHIGAN, LLC

40950 WOODWARD AVE
SUITE 203
BLOOMFIELD HILLS, MI 48304
POC: DAVID STRAUB
PHONE: 248-221-5011

ARCHITECT

FELINO PASCUAL ASSOCIATES
24333 Orchard Lake Road
Suite G
Farmington Hills, MI 48336
POC: Felino A. Pascual (Joel), RLA, CLARB Pas
PHONE: 248-557-5588

NOTE: BUILDING PERMITS (BUILDING, ELECTRICAL, PLUMBING, MECHANICAL, ETC.) ARE TRACKED SEPARATELY ON THE ARCHITECTURAL PLANS.

INNOVATIVE GEOSPATIAL & ENGINEERING SOLUTIONS

298 VETERANS DRIVE
FOWLERVILLE,
MICHIGAN 48836
(OFFICE) 517-223-3512
MONUMENTENGINEERING.COM

SERVICE DISABLED VETERAN OWNED SMALL BUSINESS (SDVOSB)

KEVIN C. MCDEVITT
ENGINEER
NO. 6201043260

Call MISS DIG
3 full working days before you dig:
Michigan's One-Call — Utility Notification Organization
1-800-482-7171
www.missdig.org
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO REPRESENTATION 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.

CLIENT :

M/I HOMES OF MICHIGAN, L.L.C.

40950 WOODWARD AVE
SUITE 203
BLOOMFIELD HILLS, MI 48304
POC: DAVID STRAUB
(248)-221-5011

COVER

HERITAGE SQUARE (SINGLE FAMILY)
95 AC. NW CORNER BURKHART & MASON ROADS
PART OF THE SE 1/4 OF SEC. 32, T3N, R4E,
HOWELL TWP, LIVINGSTON COUNTY, MICHIGAN

PLAN SUBMITTALS/REVISIONS	DATE
SITE PLAN SUBMITTAL	05/09/2024
PHASE 1 FINAL SITE PLAN SUBMITTAL	09/18/2024
MODIFIED COVERAGE CALCULATION	11/25/2024
REVISED PHASE 1 FINAL SITE PLAN	02/20/2025
PHASE 2&3 FINAL SITE PLAN SUBMITTAL	12/22/2025

ORIGINAL ISSUE DATE: 5/09/2024

PROJECT NO: 21-075C

SCALE: N/A
0 1/2" 1"

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

G-1.0

NOT FOR CONSTRUCTION

FILE:P:\Projects\2021\21-075 Heritage Square PUD\21-075C Heritage Square (Single-Family)\Dwg\Engineering\PH 2-3 FSP PLANS\21-075C_SF_PH2 FSP_G-1.0_Cover.dwg PLOT DATE:12/22/2025 11:49 AM

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		PLAN SUBMITTALS																
		SITE PLAN SUBMITTAL	PHASE 1 FINAL SITE PLAN SUBMITTAL	MODIFIED COVERAGE CALCULATION	REVISED PHASE 1 FINAL SITE PLAN	PHASE 2&3 FINAL SITE PLAN SUBMITTAL												
		5/09/2024	9/18/2024	11/25/2024	2/20/2025	12/22/2025												
		INCLUDED SHEETS																
	GENERAL																	
SHEET G-1.0	COVER	●	●	●	●	●												
SHEET G-1.1	SHEET INDEX	●	●	●	●	●												
	SURVEY																	
SHEET V-1.0	TOPO SURVEY AND DEMO PLAN	●	●	●	●	●												
	SITE PLAN																	
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SHEET C-1.0	SITE PLAN – OVERVIEW	●	●	●	●	●												
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SHEET C-1.3	DIMENSION AND PAVING PLAN – PHASE 2 (EAST)	●	●		●	●												
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SHEET C-1.6	DIMENSION AND PAVING PLAN – PHASE 5	●																
SHEET C-1.7	DIMENSION AND PAVING PLAN – PHASE 6	●																
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SHEET C-2.3	WETLAND IMPACTS – WETLAND Y			●	●	●												
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SHEET C-3.4	SANITARY SEWER AND WATERMAIN PLAN – PHASE 3	●				●												
SHEET C-3.5	SANITARY SEWER AND WATERMAIN PLAN – PHASE 4	●																
SHEET C-3.6	SANITARY SEWER AND WATERMAIN PLAN – PHASE 5	●																
SHEET C-3.7	SANITARY SEWER AND WATERMAIN PLAN – PHASE 6	●																
SHEET C-3.8	SANITARY SEWER AND WATERMAIN PLAN – HIGHLANDER PARK DR (PH2)	●				●												
SHEET C-4.1	SANITARY SEWER PROFILES – SHAGBARK DR (NORTH) & AMERICAN ELM DR	●																
SHEET C-4.2	SANITARY SEWER PROFILES – FORESTRY RD & SEDGEVIEW CIRCLE (WEST)	●																
SHEET C-4.3	SANITARY SEWER PROFILES – SEDGEVIEW CIRCLE (NORTH) & SEDGEVIEW COURT	●																
SHEET C-4.4	SANITARY SEWER PROFILES – SHAGBARK DR (WEST) & FORESTRY ROAD	●																
SHEET C-4.5	SANITARY SEWER PROFILES – SEDGEVIEW CIRCLE (EAST)	●																
SHEET C-4.6	SANITARY SEWER PROFILES – SEDGEVIEW CIRCLE (SOUTH & WEST)	●																
SHEET C-4.7	SANITARY SEWER PROFILES – HERITAGE SQ DR & FORESTRY RD (EAST)	●																
SHEET C-4.8	SANITARY SEWER PROFILES – IRON OAK LANE & MULBERRY LANE	●																
SHEET C-5.1	WATER MAIN PROFILES – SHAGBARK DRIVE (WEST) & FORESTRY ROAD	●																
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SHEET C-5.3	WATER MAIN PROFILES – AMERICAN ELM DRIVE (SOUTH)	●																
SHEET C-5.4	WATER MAIN PROFILES – SEDGEVIEW CIRCLE (EAST AND SOUTH)	●																
SHEET C-5.5	WATER MAIN PROFILES – SEDGEVIEW CIRCLE (SOUTH, WEST & NORTH)	●																
SHEET C-5.6	WATER MAIN PROFILES – SEDGEVIEW CIRCLE (NORTH & EAST)	●																
SHEET C-5.7	WATER MAIN PROFILES – SEDGEVIEW COURT	●																
SHEET C-5.8	WATER MAIN PROFILES – FORESTRY ROAD	●																
SHEET C-5.9	WATER MAIN PROFILES – HERITAGE SQUARE DRIVE	●																
SHEET C-5.10	WATER MAIN PROFILES – MULBERRY LANE	●																
SHEET C-5.11	WATER MAIN PROFILES – IRON OAK LANE	●																
SHEET C-5.12	WATER MAIN PROFILES – HIGHLANDER PARK DRIVE	●																
SHEET C-5.13	WATER MAIN PROFILES – MASON ROAD	●																
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SHEET C-6.2	STORM SEWER PLAN (PHASE 2) – (WEST)	●				●												
SHEET C-6.3	STORM SEWER PLAN (PHASE 2) – (EAST)	●				●												
SHEET C-6.4	STORM SEWER PLAN (PHASE 3)	●				●												
SHEET C-6.5	STORM SEWER PLAN (PHASE 4)	●																
SHEET C-6.6	STORM SEWER PLAN (PHASE 5)	●																
SHEET C-6.7	STORM SEWER PLAN (PHASE 6)	●																
SHEET C-6.8	STORM SEWER PLAN – HIGHLANDER PARK DRIVE (PHASE 2)	●				●												
SHEET C-6.9	STORM SEWER AND ROAD PLAN & PROFILE – HERITAGE SQUARE DRIVE	●	●		●													
SHEET C-6.10	STORM SEWER AND ROAD PLAN & PROFILE – SEDGEVIEW CIRCLE (NORTH)	●	●		●													
SHEET C-6.11	STORM SEWER AND ROAD PLAN & PROFILE – SEDGEVIEW COURT	●	●		●													
SHEET C-6.12	STORM SEWER AND ROAD PLAN & PROFILE – SEDGEVIEW CIRCLE (EAST)	●	●		●	●												
SHEET C-6.13	STORM SEWER AND ROAD PLAN & PROFILE – SEDGEVIEW CIRCLE (WEST)	●	●		●	●												
SHEET C-6.14	STORM SEWER AND ROAD PLAN & PROFILE – FORESTRY ROAD (WEST)	●				●												
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		PLAN SUBMITTALS																
		SITE PLAN SUBMITTAL	PHASE 1 FINAL SITE PLAN SUBMITTAL	MODIFIED COVERAGE CALCULATION	REVISED PHASE 1 FINAL SITE PLAN	PHASE 2&3 FINAL SITE PLAN SUBMITTAL												
		5/09/2024	9/18/2024	11/25/2024	2/20/2025	12/22/2025												
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SHEET C-6.18	STORM SEWER AND ROAD PLAN & PROFILE – MULBERRY LANE	●																
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SHEET C-6.20	STORM SEWER AND ROAD PLAN & PROFILE – SHAGBARK DRIVE (NORTH)	●																
SHEET C-6.21	STORM SEWER AND ROAD PLAN & PROFILE – IRON OAK LANE	●																
SHEET C-6.22	STORM SEWER AND ROAD PLAN & PROFILE – HIGHLANDER PARK DRIVE (S)	●				●												
SHEET C-6.23	STORM SEWER AND ROAD PLAN & PROFILE – HIGHLANDER PARK DRIVE (N)	●				●												
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SHEET C-6.25	STORM SEWER PROFILES	●				●												
SHEET C-6.26	STORM SEWER PROFILES	●				●												
SHEET C-6.27	STORM SEWER PROFILES	●				●												
SHEET C-6.28	STORM SEWER PROFILES	●				●												
SHEET C-6.29	STORM SEWER PROFILES	●				●												
SHEET C-6.30	STORM SEWER PROFILES	●				●												
SHEET C-6.31	STORM SEWER PROFILES	●																
SHEET C-6.32	STORM SEWER PROFILES	●				●												
	GRADING																	
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SHEET C-7.2	GRADING PLAN (PHASE 2 – WEST)	●				●												
SHEET C-7.3	GRADING PLAN (PHASE 2 – EAST)	●				●												
SHEET C-7.4	GRADING PLAN (PHASE 3)	●				●												
SHEET C-7.5	GRADING PLAN (PHASE 4)	●																
SHEET C-7.6	GRADING PLAN (PHASE 5)	●																
SHEET C-7.7	GRADING PLAN (PHASE 6)	●																
SHEET C-7.8	GRADING PLAN – HIGHLANDER PARK DR (PHASE 2)	●				●												
	SOIL EROSION & SEDIMENTATION CONTROL (SESC)																	
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SHEET C-8.2	LCDC SESC NOTES AND DETAILS	●																
SHEET C-8.3	LCDC SESC DETAILS	●																
	STORM WATER MANAGEMENT																	
SHEET C-9.0	EAST POND DRAINAGE AREA PLAN	●																
SHEET C-9.1	EAST POND DRAINAGE AREA CALCS	●																
SHEET C-9.2	EAST POND STORM SEWER CALCS	●																
SHEET C-9.3	EAST POND DETENTION BASIN CALCS	●																
SHEET C-9.4	EAST POND DETENTION BASIN DETAILS	●																
SHEET C-9.5	WEST POND DRAINAGE AREA PLAN	●																
SHEET C-9.6	WEST POND DRAINAGE AREA PLAN	●																
SHEET C-9.7	WEST POND DRAINAGE AREA CALCS	●																
SHEET C-9.8	WEST POND STORM SEWER CALCS	●																
SHEET C-9.9	WEST POND DETENTION BASIN CALCS	●																
SHEET C-9.10	WEST POND DETENTION BASIN DETAILS	●																
	ROAD PLANS																	
SHEET C-10.0	TYPICAL COUNTY ROAD SECTIONS	●	●		●	●												
SHEET C-10.1	EXISTING CONDITIONS, REMOVAL & CONSTRUCTION PLAN – BURKHART ROAD	●	●		●													
SHEET C-10.2	EXISTING CONDITIONS, REMOVAL & CONSTRUCTION PLAN – MASON ROAD	●				●												
SHEET C-10.3	GRADING PLAN – BURKHART ROAD	●	●		●													
SHEET C-10.4	GRADING PLAN – MASON ROAD	●				●												
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SHEET C-10.6	MAINTENANCE OF TRAFFIC PLAN – MASON ROAD	●																
SHEET C-10.7	PAVEMENT MARKING AND SIGNAGE PLAN – BURKHART ROAD	●																
SHEET C-10.8	PAVEMENT MARKING AND SIGNAGE PLAN – MASON ROAD	●																
	DETAILS																	
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SHEET C-11.1	MISCELLANEOUS DETAILS	●			●	●												
SHEET C-11.1	MDOT DETAILS				●	●												
	SPECIFICATIONS																	
SHEET C-12.0	SPECIFICATIONS	●																
SHEET C-12.1	SPECIFICATIONS	●																
	LANDSCAPE																	
SHEET LS-1	OVERALL LANDSCAPE PLAN VIEW		●		●	●												
SHEET LS-2	PLANTING DETAIL PLAN (SINGLE FAMILY)		●		●	●												
SHEET LS-3	PLANTING DETAIL PLAN (SINGLE FAMILY)		●		●	●												
SHEET LS-4	PLANTING DETAIL PLAN (DETENTION POND)		●		●	●												
SHEET LS-5	PLANTING DETAIL PLAN (SOD AND SEEDING)		●		●	●												
	DTE LIGHTING																	
SHEET 1-6	DTE LIGHTING PLANS		●		●	●												

HOWELL TOWNSHIP, MHOG, LIVINGSTON COUNTY STANDARD DETAILS

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40950 WOODWARD AVE
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BLOOMFIELD HILLS, MI 48304
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(248)-221-5011

SHEET INDEX

HERITAGE SQUARE (SINGLE FAMILY)
95 AC. NW CORNER BURKHART & MASON ROADS
PART OF THE SE 1/4 OF SEC. 32, T3N, R4E,
HOWELL TWP, LIVINGSTON COUNTY, MICHIGAN

PLAN SUBMITTALS/REVISIONS	DATE
SITE PLAN SUBMITTAL	05/09/2024
PHASE 1 FINAL SITE PLAN SUBMITTAL	09/18/2024
MODIFIED COVERAGE CALCULATION	11/25/2024
REVISED PHASE 1 FINAL SITE PLAN	02/20/2025
PHASE 2&3 FINAL SITE PLAN SUBMITTAL	12/22/2025

ORIGINAL ISSUE DATE: 5/09/2024

PROJECT NO: 21-075C

SCALE: N/A
0 1/2" 1"

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

G-1.1

NOT FOR CONSTRUCTION

WETLAND NOTE

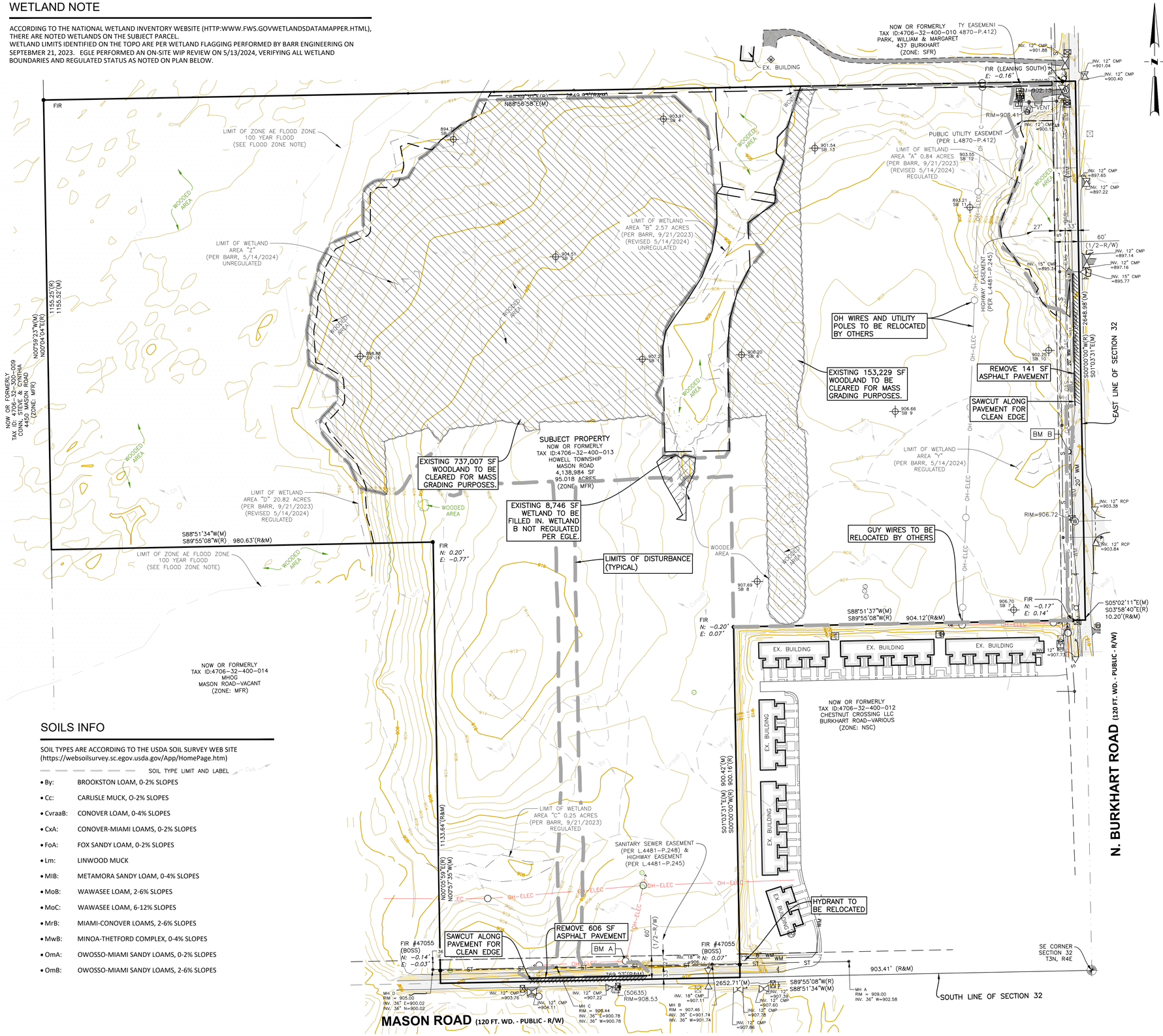
ACCORDING TO THE NATIONAL WETLAND INVENTORY WEBSITE (HTTP:WWW.FWS.GOVWETLANDSDATAMAPPER.HTML), THERE ARE NOTED WETLANDS ON THE SUBJECT PARCEL.
WETLAND LIMITS IDENTIFIED ON THE TOPO ARE PER WETLAND FLAGGING PERFORMED BY BARR ENGINEERING ON SEPTEBMER 21, 2023. EGLE PERFORMED AN ON-SITE WIP REVIEW ON 5/13/2024, VERIFYING ALL WETLAND BOUNDARIES AND REGULATED STATUS AS NOTED ON PLAN BELOW.

SOILS INFO

SOIL TYPES ARE ACCORDING TO THE USDA SOIL SURVEY WEB SITE (https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm)

SOIL TYPE LIMIT AND LABEL

- By: BROOKSTON LOAM, 0-2% SLOPES
- Cc: CARLISLE MUCK, O-2% SLOPES
- CvraaB: CONOVER LOAM, 0-4% SLOPES
- CxA: CONOVER-MIAMI LOAMS, 0-2% SLOPES
- FoA: FOX SANDY LOAM, 0-2% SLOPES
- Lm: LINWOOD MUCK
- MIB: METAMORA SANDY LOAM, 0-4% SLOPES
- MoB: WAWASEE LOAM, 2-6% SLOPES
- MoC: WAWASEE LOAM, 6-12% SLOPES
- MrB: MIAMI-CONOVER LOAMS, 2-6% SLOPES
- MwB: MINOA-THETFORD COMPLEX, 0-4% SLOPES
- OmA: OWOSSO-MIAMI SANDY LOAMS, 0-2% SLOPES
- OmB: OWOSSO-MIAMI SANDY LOAMS, 2-6% SLOPES



EXISTING LEGEND

DECIDUOUS TREE, CONIFEROUS TREE, SHRUB
TREE LINE/ CANOPY
DITCH/ DRAINING COURSE
UG TELE, MH, TELE PED, CABLE PED
UG FIBER, PED, LINE MARKER, VAULT
UG ELEC, MH, TRANSFORMER, AC UNIT, METER, BOX
OH ELEC, UTIL POLE, GUY WIRE
GROUND LIGHT, POLE, POLE W/ ARM LT
LIGHT MH, LT CTRL BOX, PARK. METER, CAR CHARGER
ELEC HAND HOLE, OUTLET, SIGNAL MH, SIGNAL BOX
UG GAS, MH, VALVE, LINE MARKER
GAS WELL, METER, VENT
WATER MAIN, MH, VALVE IN BOX, HYDRANT, FDC
WATER WELL, METER, STOP BOX, POST INDICATOR VALVE
IRRIGATION CONTROL VALVE, SPRINKLER HEAD
STORM SEWER, MH, CB, INLET, YARD DRAIN, DOWN SPOUT
CULVERT/ END SECTION
SANITARY SEWER, MH, CLEAN OUT
COMBINED SEWER, MH
STEAM LINE, MH
MISC. MANHOLE, HAND HOLE, HAND BOX
PARKING BLOCK, SIGN, FLAG POLE, POST, ROCK, MAIL BOX
SECTION LINE, SECTION CORNER
FOUND IRON ROD (FIR), FD MON, FD PK
SET IRON ROD (SIR), SET PK, MAG NAIL
FINISH FLOOR ELEVATION, SPOT ELEVATION
CONTOUR
FENCE
GUARD RAIL
RAILROAD SIGNAL, SIGNAL BOX
SOIL BORING
EX. ASPHALT
EX. CONCRETE
EX. GRAVEL

REMOVAL LEGEND

WETLAND IMPACT
WOODLAND CLEARING

FLOOD ZONE

FEMA MAP SCALES DO NOT SUPPLY SUFFICIENT LEVEL OF DETAIL TO PLOT ACCURATELY. ZONES IF PLOTTED HEREIN ARE APPROXIMATE.

BY SCALED MAP LOCATION AND GRAPHIC PLOTTING ONLY, THE SUBJECT PROPERTY APPEARS TO LIE PARTIALLY IN ZONE (X) AREA DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN AND ALSO PARTIALLY IN ZONE (AE) THE 1% ANNUAL CHANCE FLOOD (100 YEAR FLOOD), ALSO KNOWN AS THE BASE FLOOD, IS THE FLOOD THAT HAS A 1% CHANCE OF BEING EQUALED OR EXCEEDED IN ANY GIVEN YEAR. THE SPECIAL FLOOD HAZARD AREA IS THE AREA SUBJECT TO FLOODING BY THE 1% ANNUAL CHANCE FLOOD. AREAS OF SPECIAL FLOOD HAZARD MAY INCLUDE ZONES A, AE, AH, AO, A99, V AND VE. THE BASE FLOOD ELEVATION IS THE WATER-SURFACE ELEVATION OF THE 1% ANNUAL CHANCE FLOOD; BASED FLOOD ELEVATIONS DETERMINED ACCORDING TO THE FLOOD INSURANCE RATE MAP FOR THE COUNTY OF LIVINGSTON, COMMUNITY PANEL NO. (26093C0282D) & (26093C0301D), BOTH WITH EFFECTIVE DATE 9/17/2008.

UTILITY REFERENCES

WM: MARION, HOWELL, OCEOLA & GENOA TOWNSHIPS (MHOG)
RECEIVED: 8/16/21

SAN: MARION, HOWELL, OCEOLA & GENOA TOWNSHIPS (MHOG)
RECEIVED: 8/16/21

STORM: MARION, HOWELL, OCEOLA & GENOA TOWNSHIPS (MHOG)
RECEIVED: 8/16/21

GAS: CONSUMERS ENERGY
RECEIVED: N/A

ELEC: DETROIT EDISON
RECEIVED: N/A

PHONE/CABLE: AT&T ~ CHARTER ~ COMCAST
RECEIVED: N/A ~ N/A ~ N/A

UTILITY NOTES

1. MISS DIG WAS NOT PERFORMED AT TIME OF SURVEY.
2. ANY UTILITIES SHOWN ARE FROM ABOVE GROUND VISIBILITY AND ANY PLANS PROVIDED.
3. 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.

BENCHMARKS

DATUM: NAVD88

BM A:
SET BENCH TIE IN S/SIDE OF UTILITY POLE ON NORTH SIDE OF MASON ROAD 290'± WEST OF EAST PROPERTY LINE.
ELEV = 909.83

BM B:
ARROW ON HYDRANT ON WEST SIDE OF BURKHART ROAD 430'± NORTH OF SOUTH PROPERTY LINE.
ELEV = 906.59

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TOPO SURVEY AND DEMO PLAN

HERITAGE SQUARE (SINGLE FAMILY)
95 AC. NW CORNER BURKHART & MASON ROADS
PART OF THE SE 1/4 OF SEC. 32, T3N, R4E,
HOWELL TWP, LIVINGSTON COUNTY, MICHIGAN

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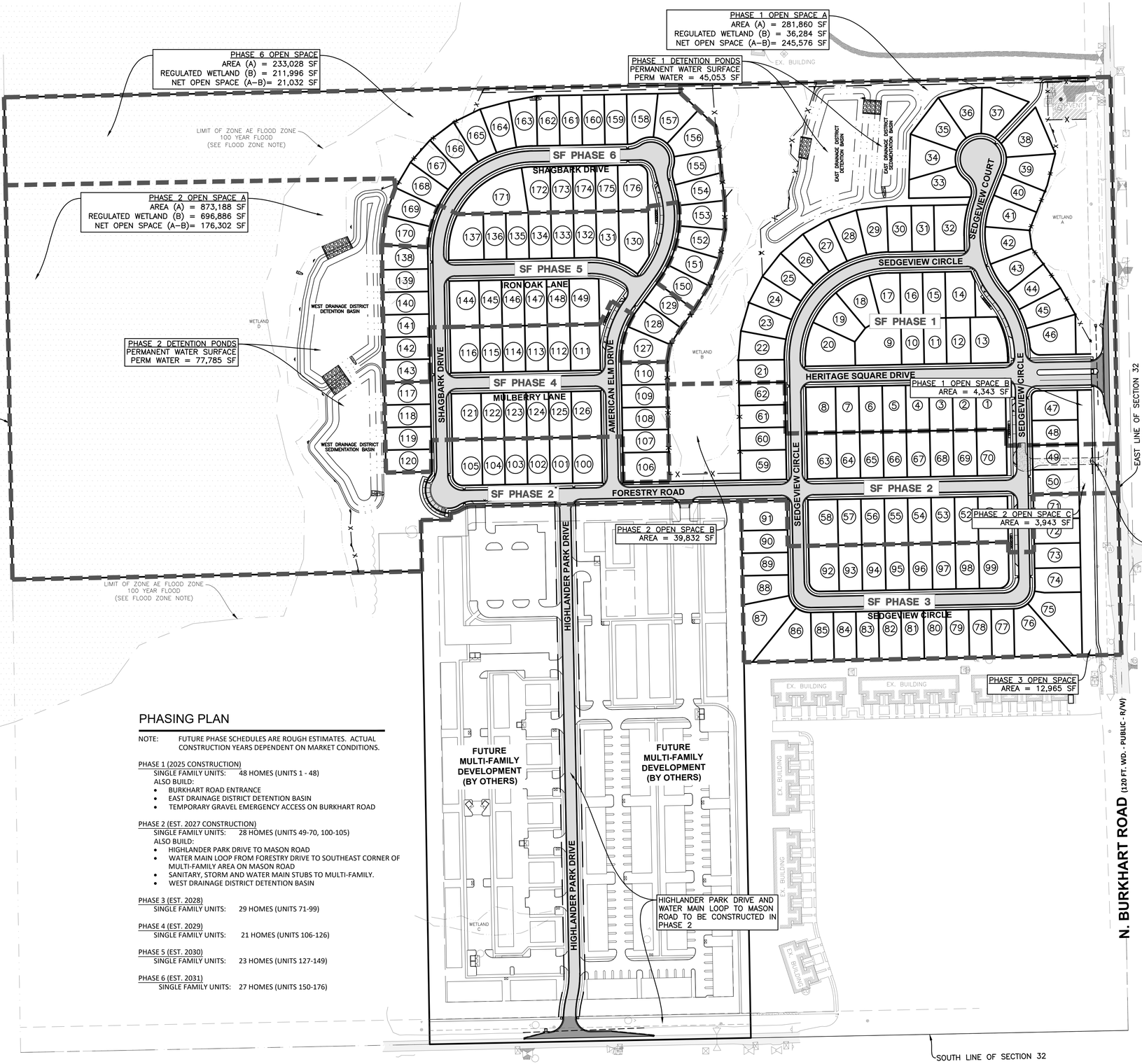
0 1/2" 1"

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

V-1.0

NOT FOR CONSTRUCTION

FILE:P:\Projects\2021\21-075 Heritage Square PUD\21-075C Heritage Square (Single-Family)\Dwg\Engineering\PH 2-3 FSP PLANS\21-075C_SF_PH2 FSP_V-1.0_Topo-Demo.dwg PLOT DATE:12/22/2025 11:50 AM



PHASING PLAN

NOTE: FUTURE PHASE SCHEDULES ARE ROUGH ESTIMATES. ACTUAL CONSTRUCTION YEARS DEPENDENT ON MARKET CONDITIONS.

PHASE 1 (2025 CONSTRUCTION)
SINGLE FAMILY UNITS: 48 HOMES (UNITS 1 - 48)
ALSO BUILD:
- BURKHART ROAD ENTRANCE
- EAST DRAINAGE DISTRICT DETENTION BASIN
- TEMPORARY GRAVEL EMERGENCY ACCESS ON BURKHART ROAD

PHASE 2 (EST. 2027 CONSTRUCTION)
SINGLE FAMILY UNITS: 28 HOMES (UNITS 49-70, 100-105)
ALSO BUILD:
- HIGHLANDER PARK DRIVE TO MASON ROAD
- WATER MAIN LOOP FROM FORESTRY DRIVE TO SOUTHEAST CORNER OF MULTI-FAMILY AREA ON MASON ROAD
- SANITARY, STORM AND WATER MAIN STUBS TO MULTI-FAMILY.
- WEST DRAINAGE DISTRICT DETENTION BASIN

PHASE 3 (EST. 2028)
SINGLE FAMILY UNITS: 29 HOMES (UNITS 71-99)

PHASE 4 (EST. 2029)
SINGLE FAMILY UNITS: 21 HOMES (UNITS 106-126)

PHASE 5 (EST. 2030)
SINGLE FAMILY UNITS: 23 HOMES (UNITS 127-149)

PHASE 6 (EST. 2031)
SINGLE FAMILY UNITS: 27 HOMES (UNITS 150-176)

DENSITY AND UNIT COUNT

TOTAL SITE AREA: 92 ACRES

NOTE: DENSITY CALCULATIONS FROM APPROVED PUD PLAN. MULTIFAMILY DEVELOPMENT AND SENIOR LIVING BY OTHERS. SEE UNDERLYING PUD PLAN FOR DETAILS.

AREA CURRENTLY ZONED SFR: 26.8 AC (24.0 AC UPLAND)
AREA CURRENTLY ZONED MFR: 65.2 AC (44.4 AC UPLAND)

OPEN SPACE REQUIRED (27.07.E)
10% OF TOTAL LAND AREA EXCLUSIVE OF WATER SURFACES
10% * (68.4 ACRES UPLAND) = 6.84 ACRES

OPEN SPACES PROVIDED = 8.48 ACRES (11.9% OF UPLAND AREA)

ALLOWED DENSITY (27.07.A)

UPLAND AREA SFR = 24.0 ACRES
REDUCED 10% FOR REQUIRED OPEN SPACE = 21.6 ACRES
SFR = 3.0 UNITS/ACRE x 1.25 = 3 x 21.6 x 1.25 = 81 UNITS

UPLAND AREA MFR = 44.44 ACRES
REDUCED 10% FOR REQUIRED OPEN SPACE = 40 ACRES
MFR = 12 UNITS/ACRE x 1.25 = 12 x 40 x 1.25 = 600 UNITS

TOTAL ALLOWED UNITS = 681

UNITS PROPOSED

SINGLE FAMILY UNITS: 176 PROPOSED

MULTI-FAMILY UNITS: 288 PROPOSED
- 55 - 3 BR / 2 BA - RANCH STYLE TOWNHOMES
- 81 - 2 BR/ 2.5 BA - 2-STORY TOWNHOMES
- 40 - 1 BR / 1 BA - GARDEN STYLE APARTMENTS
- 112 - 3 BR / 2.5 BA - 2 STORY TOWNHOMES W/ GARAGE

3 - STORY SENIOR LIVING BUILDING: APPROX. 90 PROPOSED

TOTAL: 554 RESIDENTIAL UNITS

OPEN SPACE CALCULATOINS - BY PHASE

TOTAL SINGLE FAMILY AREA	= 3,061,947 SF (70.29 ACRES)
TOTAL SINGLE FAMILY AREA (- REG. WETLAND)	= 2,116,782 SF (48.59 ACRES)
TOTAL SINGLE FAMILY OPEN SPACE	= 381,155 SF
(EXLUDES REGULATED WETLANDS AND PERMANENT WATER SURFACES)	
PHASE 1	
PHASE 1 AREA	= 749,909 SFT (17.22 ACRES)
PHASE 1 OPEN SPACE =	= 286,203 SFT
PERMANENT WATER AREA	= 45,053 SFT
REGULATED WETLAND AREA	= 36,284 SFT
NET OPEN SPACE (EXC. WATER & WL)	= 204,866 SFT
OPEN SPACE PERCENT	= 27.3 %
PHASE 2	
PHASE 2 AREA	= 1,208,468 SF (27.74 ACRES)
TOTAL AREA (PHASE 1-2)	= 1,958,377 SF (44.96 ACRES)
PHASE 2 OPEN SPACE	= 916,963 SF
PERMANENT WATER AREA	= 77,785 SF
REGULATED WETLAND AREA	= 696,886 SF
NET OPEN SPACE (EXC. WATER & WL)	= 142,292 SF
TOTAL NET OPEN SPACE (PHASE 1-2)	= 347,158 SF
OPEN SPACE PERCENT	= 17.7%
PHASE 3	
PHASE 3 AREA	= 259,260 SF (5.95 ACRES)
TOTAL DEVELOPED AREA	= 2,217,637 SF (50.91 ACRES)
PHASE 3 OPEN SPACE	= 12,965 SF
TOTAL NET OPEN SPACE (PHASE 1-3)	= 360,123 SF
OPEN SPACE PERCENT	= 16.2%
PHASE 4	
PHASE 4 AREA	= 182,324 SF (4.19 ACRES)
TOTAL DEVELOPED AREA	= 2,399,961 SF (55.10 ACRES)
NO ADDITIONAL OPEN SPACE	
TOTAL NET OPEN SPACE (PHASE 1-4)	= 360,123 SF
OPEN SPACE PERCENT	= 15.0%
PHASE 5	
PHASE 5 AREA	= 205,415 SF (4.72 ACRES)
TOTAL DEVELOPED AREA	= 2,605,376 SF (59.81 ACRES)
NO ADDITIONAL OPEN SPACE	
TOTAL NET OPEN SPACE (PHASE 1-5)	= 360,123 SF
OPEN SPACE PERCENT	= 13.8%
PHASE 6	
PHASE 6 AREA	= 456,572 SF (10.48 ACRES)
TOTAL DEVELOPED AREA	= 3,061,947 SF (70.29 ACRES)
PHASE 6 OPEN SPACE	= 233,028 SF
REGULATED WETLAND AREA	= 211,996 SF
NET OPEN SPACE (EXC. WATER & WL)	= 21,032 SFT
TOTAL NET OPEN SPACE (PHASE 1-6)	= 381,155 SF
OPEN SPACE PERCENT	= 12.4 %

TOWNSHIP PUD ORDINANCE REQUIRES 10% MINIMUM OPEN SPACE.

NOTE: AREAS DO NOT INCLUDE BURKHART ROAD RIGHT OF WAY.

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PHASING PLAN – OVERVIEW

HERITAGE SQUARE (SINGLE FAMILY)
95 AC. NW CORNER BURKHART & MASON ROADS
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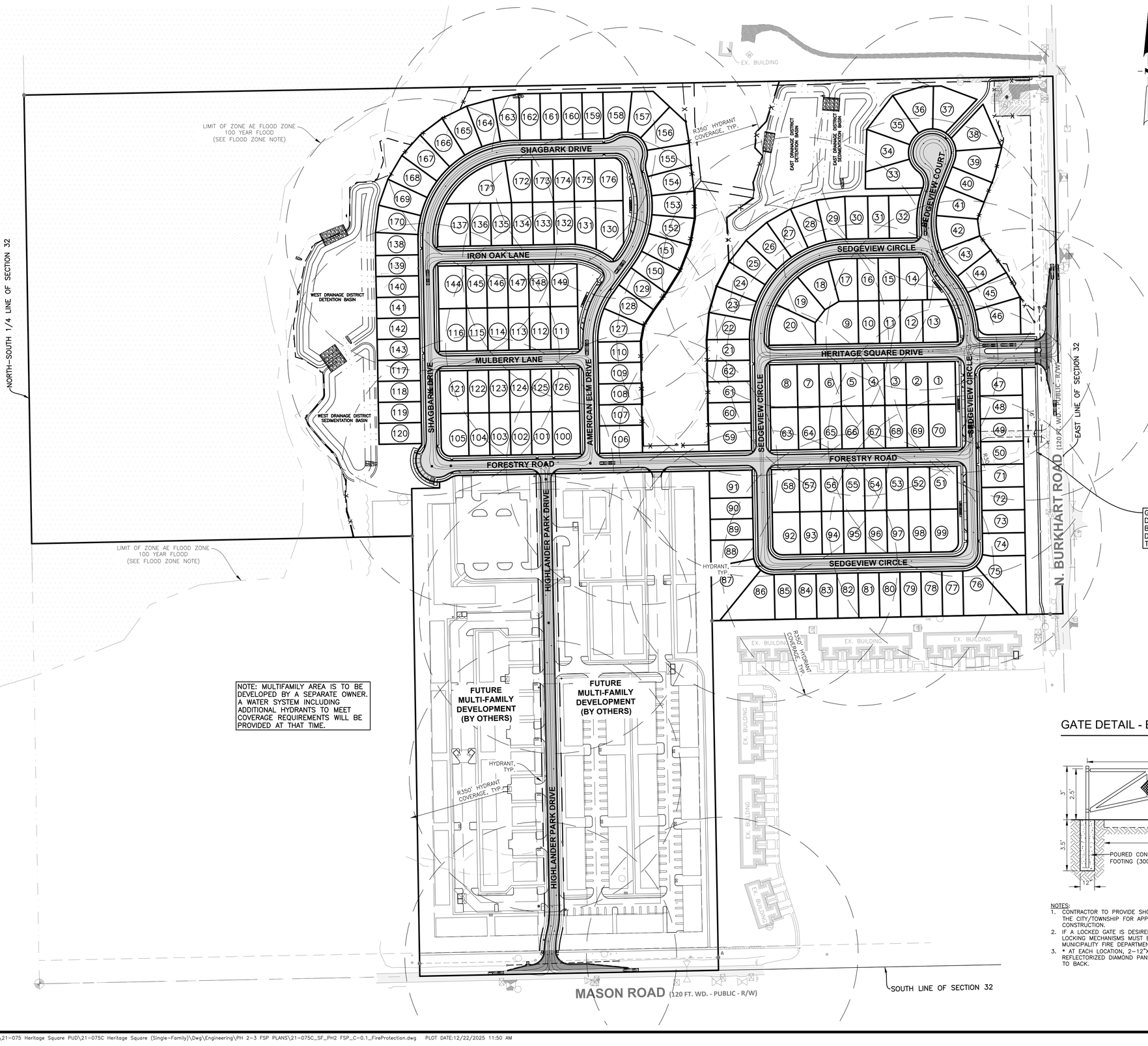
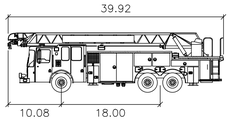
FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

C-0.0

NOT FOR CONSTRUCTION



EMERGENCY VEHICLE



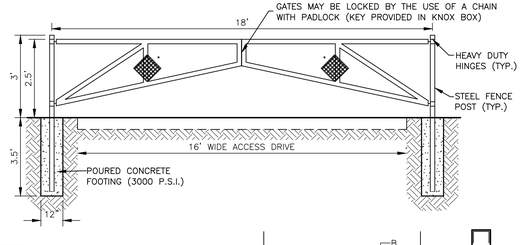
Smeal Aerial RM 100ft

	feet
Width	: 8.33
Track	: 7.92
Lock to Lock Time	: 6.0
Steering Angle	: 45.0

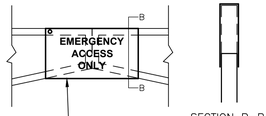
FIRE PROTECTION NOTES

1. PARKING SHALL ONLY BE ALLOWED ON ONE SIDE OF THE INTERNAL STREETS. EACH STREET SHALL HAVE 12"X18" R8-31 "NO PARKING FIRE LANE" SIGNS POSTED AT A MAXIMUM SPACING OF 100 FEET ON THE SIDE OF THE STREET ADJACENT TO HYDRANTS.
2. 12"X18" R8-31 "NO PARKING FIRE LANE" SIGNS SHALL BE POSTED ON BOTH SIDES OF THE TEMPORARY EMERGENCY ACCESS ROAD LOCATED THROUGH UNIT 50, OFF NORTH BURKHART ROAD. SIGNS SHALL BE PLACED FACING TRAFFIC AT BOTH ENDS.
3. EMERGENCY ACCESS DRIVE THROUGH UNIT 50 SHALL REMAIN IN SERVICE THROUGHOUT CONSTRUCTION OF PHASES 1 AND 2, UNTIL HIGHLANDER PARK DRIVE TO MASON ROAD HAS BEEN OPENED TO TRAFFIC.
4. NO OCCUPANCY SHALL BE ALLOWED FOR ANY UNITS BEYOND PHASE 1 UNTIL HIGHLANDER PARK DRIVE IS OPEN TO TRAFFIC. ONCE HIGHLANDER PARK DRIVE IS OPEN TO TRAFFIC, THE CONTRACTOR SHALL REMOVE THE EMERGENCY ACCESS DRIVE (EXCEPT FOR THE APPROACH AND CULVERT, WHICH SHALL REMAIN IN PLACE FOR MHOG AND FIRE AUTHORITY USE).
5. A EMERGENCY ALERT TORNADO SIREN SHALL BE INSTALLED WITHIN THE PARK AT THE INTERSECTION OF FORESTRY ROAD AND SHAGBARK DRIVE. LOCATION OF THE SIREN SHALL BE COORDINATED WITH THE FIRE MARSHAL AND HOWELL TOWNSHIP.
6. A KNOX BOX SHALL BE MOUNTED TO THE EMERGENCY ENTRANCE GATE.

GATE DETAIL - EMERGENCY - ACCESS



NOTES:
1. CONTRACTOR TO PROVIDE SHOP DRAWINGS TO THE CITY/TOWNSHIP FOR APPROVAL PRIOR TO CONSTRUCTION.
2. IF A LOCKED GATE IS DESIRED (OPTIONAL), LOCKING MECHANISMS MUST BE APPROVED BY MUNICIPALITY FIRE DEPARTMENT.
3. * AT EACH LOCATION, 2-12"X12" RED REFLECTORIZED DIAMOND PANELS, PLACED BACK TO BACK.



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KEVIN C. MCDEVITT
ENGINEER
NO. 6201043260

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40950 WOODWARD AVE
SUITE 203
BLOOMFIELD HILLS, MI 48304
POC: DAVID STRAUB
(248)-221-5011

FIRE PROTECTION PLAN

HERITAGE SQUARE (SINGLE FAMILY)
95 AC. NW CORNER BURKHART & MASON ROADS
PART OF THE SE 1/4 OF SEC. 32, T3N, R4E,
HOWELL TWP, LIVINGSTON COUNTY, MICHIGAN

PLAN SUBMITTALS/REVISIONS	DATE
SITE PLAN SUBMITTAL	05/09/2024
PHASE 1 FINAL SITE PLAN SUBMITTAL	09/18/2024
MODIFIED COVERAGE CALCULATION	11/25/2024
REVISED PHASE 1 FINAL SITE PLAN	02/20/2025
PHASE 2&3 FINAL SITE PLAN SUBMITTAL	12/22/2025

ORIGINAL ISSUE DATE: 5/09/2024

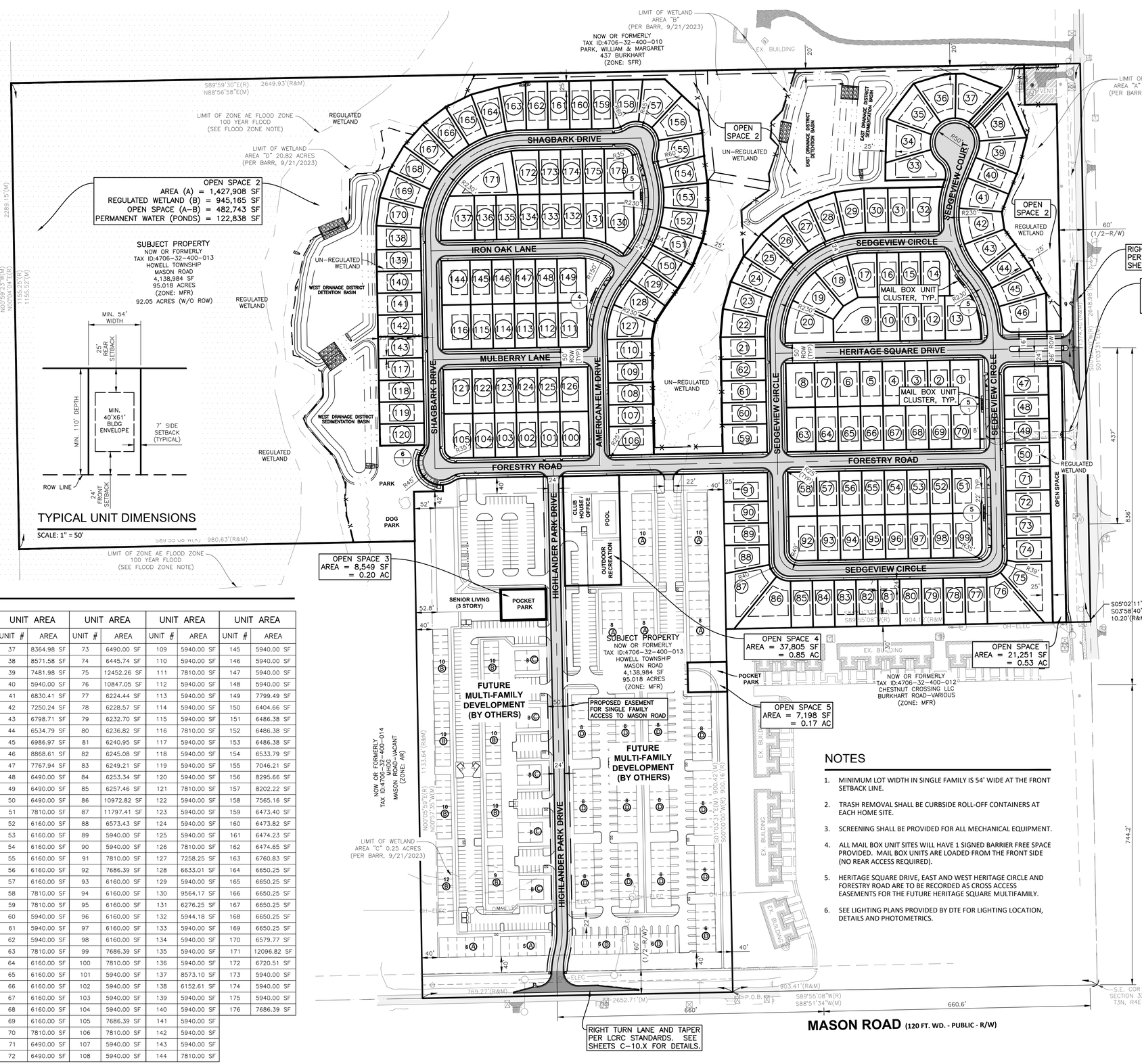
PROJECT NO: 21-075C

SCALE: 1" = 120'
0 1/2" 1"

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

C-0.1

NOT FOR CONSTRUCTION



PAVEMENT LEGEND

- EX. ASPHALT
- EX. CONCRETE
- EX. GRAVEL
- PR. STANDARD DUTY ASPHALT
- PR. CONCRETE
- STANDARD CURB AND GUTTER
- STRAIGHT CURB
- PROPOSED CLUSTER MAILBOX

PROVIDED SETBACKS

SINGLE FAMILY RESIDENTIAL

FRONT SETBACK:	24 FEET
SIDE SETBACK:	7 FEET (14 TOTAL)
REAR SETBACK:	25 FEET (INTERNAL)
	40 FEET (PERIMETER ADJACENT SFR)
	30 FEET (PERIMETER ADJACENT MFR)

OPEN SPACE

OPEN SPACE IN SINGLE FAMILY (OPEN SPACE 1 & 2)	= 503,994 SF
OPEN SPACE IN MULTI-FAMILY (OPEN SPACE 3, 4 & 5)	= 53,452 SF
TOTAL OPEN SPACE	= 557,446 SF
TOTAL PERMANENT WATER SURFACE IN OPEN SPACE	= 122,838 SF
PERMANENT WATER PERCENT OF TOTAL OPEN SPACE	= 22.0 %
PERMANENT WATER PERCENT ALLOWED	= 25.0 % MAX.
TOTAL OPEN SPACE EXCLUDING WATER = 434,608 SF	= 9.98 ACRES
PERCENT OPEN SPACE = 9.98 / 92.0 ACRES	= 10.8 %
PERCENT OPEN SPACE REQUIRED	= 10%

COVERAGE

NOTE: COVERAGE CALCULATION BELOW IS BASED ON THE LARGEST FLOOR PLAN OPTION, ON THE SMALLEST UNIT SIZE.

SINGLE FAMILY RESIDENTIAL

AVERAGE PAVED/BLDG AREA PER UNIT:	2371 SF
MAX. HOME FOOTPRINT : (JULIET W/BONUS ROOM & DECK)	1911 SF +/-
DRIVE (25' X 16') :	400 SF
CONNECTOR WALK (5' X 12'):	60 SF
MINIMUM LOT AREA :	5940 SF

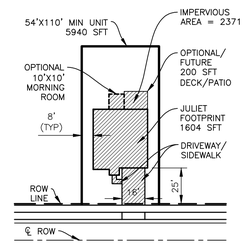
PROPOSED MAXIMUM COVERAGE = 40%
(COVERAGE ALLOWED PER SFR ZONING = 30%)

AMOUNT OF OPEN SPACE PER UNIT
OPEN SPACE IN SINGLE FAMILY (OPEN SPACE 1 AND OPEN SPACE 2)
21,251 SF + 434,451 SF = 455,702 SF

OPEN SPACE PER SINGLE FAMILY UNIT
455,702 SF / 176 UNITS = 2,589 SF

COVERAGE WITH OPEN SPACE INCLUDED
MIN LOT AREA + OPEN SPACE = 5940 SF + 2589 SF = 8,529 SF

COVERAGE (INCL. OPEN SPACE) = 2,371 SF / 8,529 SF = 28%



TYPICAL UNIT LAYOUT

SCALE: 1" = 50'

NOTE: LAYOUT MAY VARY BASED ON FLOOR PLAN AND OWNER SELECTED OPTIONS. TYPICAL UNIT LAYOUT BASED ON JULIET FLOOR PLAN (LARGEST OFFERED BY DEVELOPER). FOOTPRINT SIZE OF OTHER TYPICAL FLOORPLANS BY THIS DEVELOPER ARE AS FOLLOWS (MAX COVERAGE):

JULIET:	1604 SFT (39.9%)
PEYTON:	1508 SFT (38.3%)
AUBREY:	1472 SFT (37.7%)
BROOKLYN:	1419 SFT (36.8%)
SAWYER:	1330 SFT (35.3%)

NOTES

1. MINIMUM LOT WIDTH IN SINGLE FAMILY IS 54' WIDE AT THE FRONT SETBACK LINE.
2. TRASH REMOVAL SHALL BE CURBSIDE ROLL-OFF CONTAINERS AT EACH HOME SITE.
3. SCREENING SHALL BE PROVIDED FOR ALL MECHANICAL EQUIPMENT.
4. ALL MAIL BOX UNIT SITES WILL HAVE 1 SIGNED BARRIER FREE SPACE PROVIDED. MAIL BOX UNITS ARE LOADED FROM THE FRONT SIDE (NO REAR ACCESS REQUIRED).
5. HERITAGE SQUARE DRIVE, EAST AND WEST HERITAGE CIRCLE AND FORESTRY ROAD ARE TO BE RECORDED AS CROSS ACCESS EASEMENTS FOR THE FUTURE HERITAGE SQUARE MULTIFAMILY.
6. SEE LIGHTING PLANS PROVIDED BY DTE FOR LIGHTING LOCATION, DETAILS AND PHOTOMETRICS.

NOTE: THIS OVERVIEW PLAN IDENTIFIES FEATURES TO BE CONSTRUCTED BY OTHERS WITHIN THE MULTIFAMILY PORTION OF THE PUD. THIS PLAN SET IS ONLY FOR CONSTRUCTION OF THE SINGLE FAMILY AREA, HIGHLANDER PARK DRIVE, AND THE WATER MAIN LOOP TO MASON ROAD ONLY, THESE PLANS ARE NOT TO BE USED FOR, OR IMPLY APPROVAL OF ANY OTHER CONSTRUCTION WITHIN THE MULTI–FAMILY AREAS.

UNIT AREAS

UNIT #	AREA	UNIT #	AREA	UNIT #	AREA	UNIT #	AREA	UNIT #	AREA
1	7810.00 SF	37	8364.98 SF	73	6490.00 SF	109	5940.00 SF	145	5940.00 SF
2	6160.00 SF	38	8571.58 SF	74	6445.74 SF	110	5940.00 SF	146	5940.00 SF
3	6160.00 SF	39	7481.98 SF	75	12452.26 SF	111	7810.00 SF	147	5940.00 SF
4	6160.00 SF	40	5940.00 SF	76	10847.05 SF	112	5940.00 SF	148	5940.00 SF
5	6160.00 SF	41	6830.41 SF	77	6224.44 SF	113	5940.00 SF	149	7799.49 SF
6	6160.00 SF	42	7250.24 SF	78	6228.57 SF	114	5940.00 SF	150	6404.66 SF
7	6160.00 SF	43	6798.71 SF	79	6232.70 SF	115	5940.00 SF	151	6486.38 SF
8	7810.00 SF	44	6534.79 SF	80	6236.82 SF	116	7810.00 SF	152	6486.38 SF
9	10872.09 SF	45	6986.97 SF	81	6240.95 SF	117	5940.00 SF	153	6486.38 SF
10	5940.00 SF	46	8868.61 SF	82	6245.08 SF	118	5940.00 SF	154	6533.79 SF
11	5940.00 SF	47	7767.94 SF	83	6249.21 SF	119	5940.00 SF	155	7046.21 SF
12	6380.00 SF	48	6490.00 SF	84	6253.34 SF	120	5940.00 SF	156	8295.66 SF
13	8953.35 SF	49	6490.00 SF	85	6257.46 SF	121	7810.00 SF	157	8202.22 SF
14	7708.24 SF	50	6490.00 SF	86	10972.82 SF	122	5940.00 SF	158	7565.16 SF
15	5940.00 SF	51	7810.00 SF	87	11797.41 SF	123	5940.00 SF	159	6473.40 SF
16	5940.00 SF	52	6160.00 SF	88	6573.43 SF	124	5940.00 SF	160	6473.82 SF
17	6740.01 SF	53	6160.00 SF	89	5940.00 SF	125	5940.00 SF	161	6474.23 SF
18	7246.25 SF	54	6160.00 SF	90	5940.00 SF	126	7810.00 SF	162	6474.65 SF
19	7303.38 SF	55	6160.00 SF	91	7810.00 SF	127	7258.25 SF	163	6760.83 SF
20	9574.50 SF	56	6160.00 SF	92	7686.39 SF	128	6633.01 SF	164	6650.25 SF
21	5964.21 SF	57	6160.00 SF	93	6160.00 SF	129	5940.00 SF	165	6650.25 SF
22	6512.90 SF	58	7810.00 SF	94	6160.00 SF	130	9564.17 SF	166	6650.25 SF
23	6512.90 SF	59	7810.00 SF	95	6160.00 SF	131	6276.25 SF	167	6650.25 SF
24	6512.90 SF	60	5940.00 SF	96	6160.00 SF	132	5944.18 SF	168	6650.25 SF
25	6512.90 SF	61	5940.00 SF	97	6160.00 SF	133	5940.00 SF	169	6650.25 SF
26	6512.90 SF	62	5940.00 SF	98	6160.00 SF	134	5940.00 SF	170	6579.77 SF
27	6512.90 SF	63	7810.00 SF	99	7686.39 SF	135	5940.00 SF	171	12096.82 SF
28	6512.90 SF	64	6160.00 SF	100	7810.00 SF	136	5940.00 SF	172	6720.51 SF
29	6832.77 SF	65	6160.00 SF	101	5940.00 SF	137	8573.10 SF	173	5940.00 SF
30	6372.18 SF	66	6160.00 SF	102	5940.00 SF	138	6152.61 SF	174	5940.00 SF
31	5940.00 SF	67	6160.00 SF	103	5940.00 SF	139	5940.00 SF	175	5940.00 SF
32	8114.74 SF	68	6160.00 SF	104	5940.00 SF	140	5940.00 SF	176	7686.39 SF
33	8404.92 SF	69	6160.00 SF	105	7686.39 SF	141	5940.00 SF		
34	8184.99 SF	70	7810.00 SF	106	7810.00 SF	142	5940.00 SF		
35	8184.99 SF	71	6490.00 SF	107	5940.00 SF	143	5940.00 SF		
36	8076.40 SF	72	6490.00 SF	108	5940.00 SF	144	7810.00 SF		

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SITE PLAN - PUD OVERVIEW

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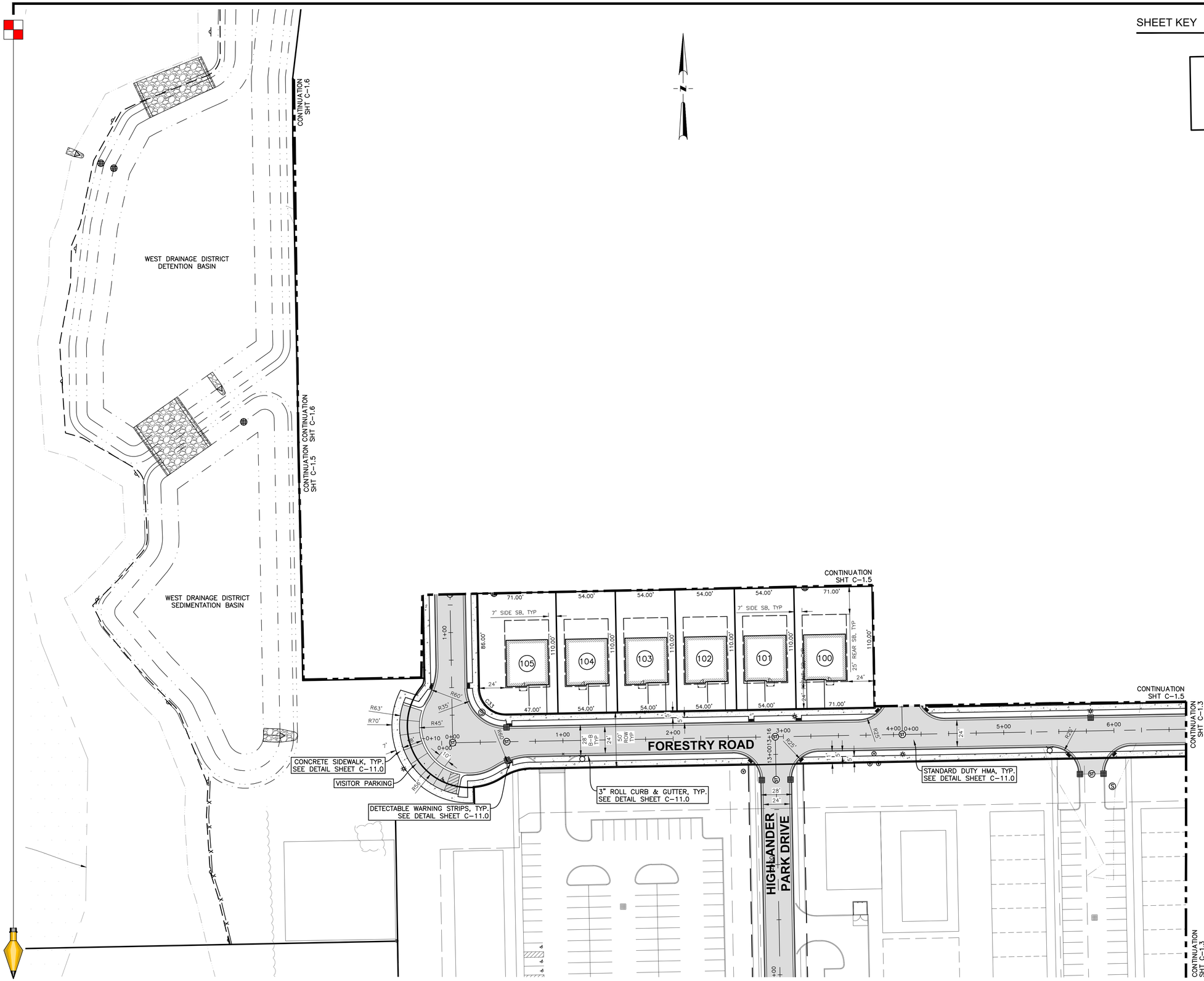

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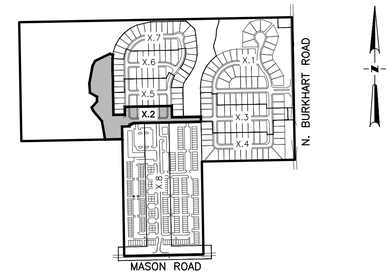

PAVEMENT LEGEND

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- EX. GRAVEL
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- PR. HEAVY DUTY ASPHALT
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- PR. GRAVEL
- STANDARD CURB AND GUTTER
- REVERSE CURB AND GUTTER

CURVE TABLE				
CURVE #	LENGTH	RADIUS	DELTA	CHORD
C33	37.70'	24.00'	90°00'00"	N46°03'31"W 33.94'

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DIMENSION AND PAVING PLAN PH2W

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C-1.2

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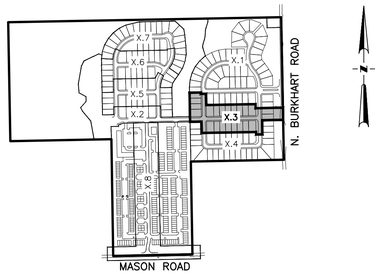

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- PR. CONCRETE
- PR. GRAVEL
- STANDARD CURB AND GUTTER
- REVERSE CURB AND GUTTER

CONTINUATION SHT C–1.1

CONTINUATION SHT C–1.2

CONTINUATION SHT C–1.4

SEDGEVIEW CIRCLE

FORESTRY ROAD

N. BURKHART ROAD

OPEN SPACE

EAST LINE OF SECTION 32

CONCRETE SIDEWALK, TYP. SEE DETAIL SHEET C–11.0

STANDARD DUTY HMA, TYP. SEE DETAIL SHEET C–11.0

DETECTABLE WARNING STRIPS, TYP. SEE DETAIL SHEET C–11.0

3" ROLL CURB & GUTTER, TYP. SEE DETAIL SHEET C–11.0

MAILBOX PARKING

VISITOR PARKING

MAILBOX CLUSTER, TYP. SEE DETAIL SHEET C–11.0

END PHASE 1 PAVING @ STA 3+60

TEMPORARY GRAVEL DRIVE AND EMERGENCY ACCESS GATE TO BE CONSTRUCTED IN PHASE 1, AND REMOVED AFTER OPENING HIGHLANDER PARK DRIVE TO TRAFFIC IN PHASE 2.

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MEGA

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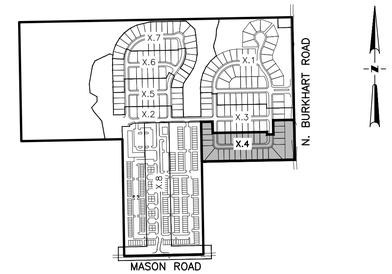

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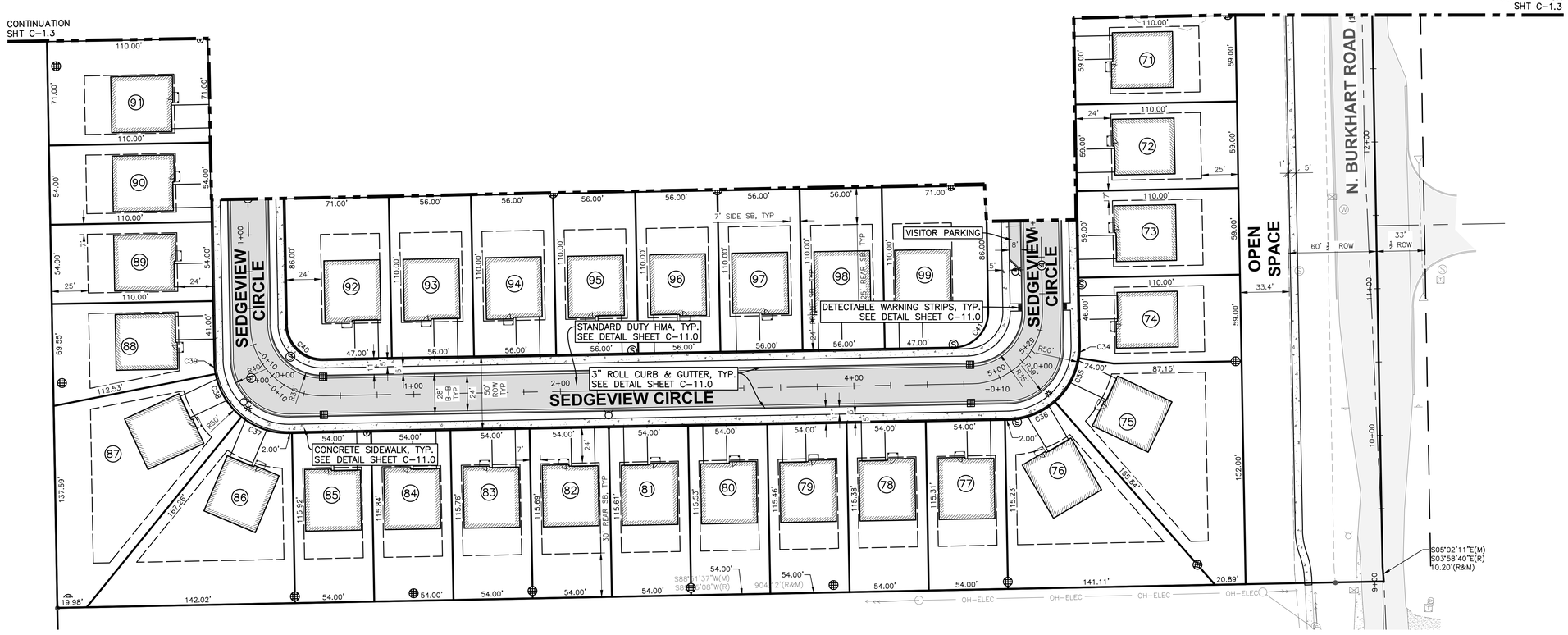
- REVERSE CURB AND GUTTER

CURVE TABLE				
CURVE #	LENGTH	RADIUS	DELTA	CHORD
C34	8.83'	50.00'	10°07'05"	N04°00'01"E 8.82'
C35	34.69'	50.00'	39°45'13"	N28°56'11"E 34.00'
C36	35.02'	50.00'	40°07'42"	N68°52'38"E 34.31'
C37	35.02'	50.00'	40°07'42"	S70°59'40"E 34.31'
C38	34.69'	50.00'	39°45'13"	S31°03'12"E 34.00'
C39	8.83'	50.00'	10°07'05"	S06°07'03"E 8.82'
C40	37.70'	24.00'	90°00'00"	N46°03'31"W 33.94'
C41	37.70'	24.00'	90°00'00"	S43°56'29"W 33.94'



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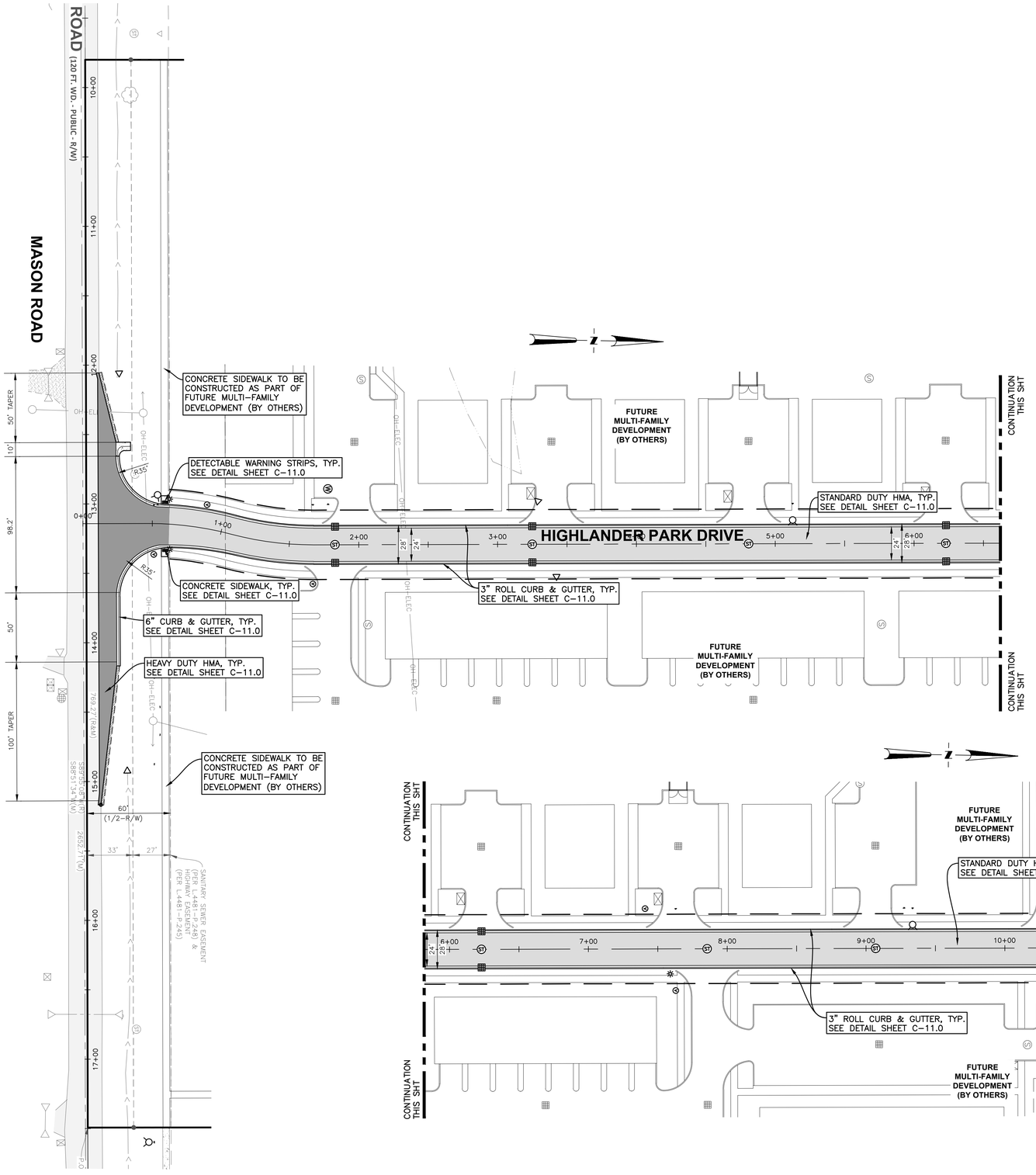
FILE:P:\Projects\2021\21-075 Heritage Square PUD\21-075C Heritage Square (Single-Family)\Dwg\Engineering\PH 2-3 FSP PLANS\21-075C_SF_PH2 FSP_C-1.1_Dim-Pav.dwg PLOT DATE:12/22/2025 11:52 AM



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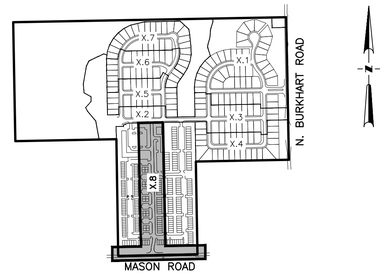

PAVEMENT LEGEND

- EX. ASPHALT
- EX. CONCRETE
- EX. GRAVEL
- PR. STANDARD DUTY ASPHALT
- PR. HEAVY DUTY ASPHALT
- PR. CONCRETE
- PR. GRAVEL
- STANDARD CURB AND GUTTER
- REVERSE CURB AND GUTTER

NOTE: IMPROVEMENTS ON THIS SHEET ARE TO BE CONSTRUCTED DURING PHASE 2.

CONSTRUCT IN PHASE 2

DIMENSION AND PAVING PLAN PH2

HERITAGE SQUARE (SINGLE FAMILY)
95 AC. NW CORNER BURKHART & MASON ROADS
PART OF THE SE 1/4 OF SEC. 32, T3N, R4E,
HOWELL TWP, LIVINGSTON COUNTY, MICHIGAN

INNOVATIVE GEOSPATIAL & ENGINEERING SOLUTIONS

Monument Engineering Group Associates, Inc. MEGA

298 VETERANS DRIVE
FOWLERVILLE,
MICHIGAN 48836
(OFFICE) 517-223-3512
MONUMENTENGINEERING.COM

SERVICE DISABLED VETERAN OWNED SMALL BUSINESS (SDVOSB)

KEVIN C. MCDEVITT
ENGINEER
NO. 6201043260

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40950 WOODWARD AVE
SUITE 203
BLOOMFIELD HILLS, MI 48304
POC: DAVID STRAUB
(248)-221-5011

PLAN SUBMITTALS/REVISIONS	DATE
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MODIFIED COVERAGE CALCULATION	11/25/2024
REVISED PHASE 1 FINAL SITE PLAN	02/20/2025
PHASE 2&3 FINAL SITE PLAN SUBMITTAL	12/22/2025

ORIGINAL ISSUE DATE: 5/09/2024

PROJECT NO: 21-075C

SCALE: 1" = 40'
0 1/2" 1"

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

C-1.8

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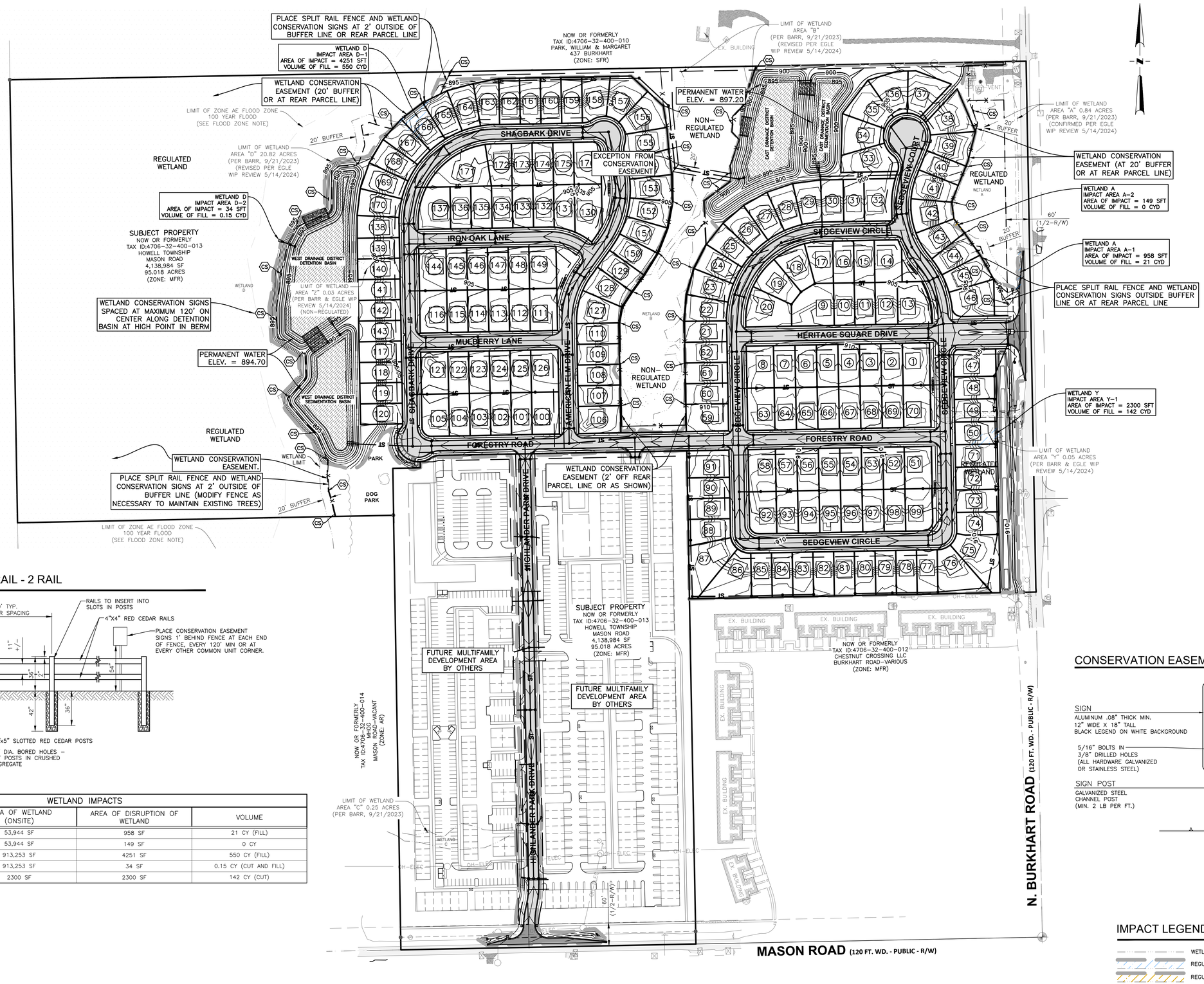
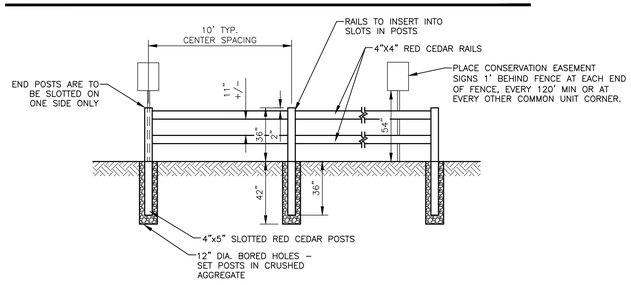
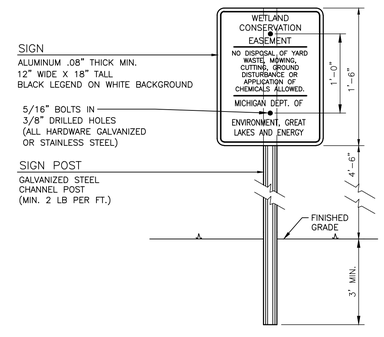


FENCE DETAIL - SPLIT RAIL - 2 RAIL



WETLAND IMPACTS			
WETLAND	AREA OF WETLAND (ONSITE)	AREA OF DISRUPTION OF WETLAND	VOLUME
WETLAND A – IMPACT A-1	53,944 SF	958 SF	21 CY (FILL)
WETLAND A – IMPACT A-2	53,944 SF	149 SF	0 CY
WETLAND D – IMPACT D-1	913,253 SF	4251 SF	550 CY (FILL)
WETLAND D – IMPACT D-2	913,253 SF	34 SF	0.15 CY (CUT AND FILL)
WETLAND Y – IMPACT Y-1	2300 SF	2300 SF	142 CY (CUT)

CONSERVATION EASEMENT SIGN DETAIL



IMPACT LEGEND

- WETLAND LIMITS
- REGULATED WETLAND FILL
- REGULATED WETLAND IMPACT (NO FILL)
- CS — CONSERVATION EASEMENT SIGN

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WETLAND IMPACT PLAN - OVERALL

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CHECK BY: KM

C-2.0

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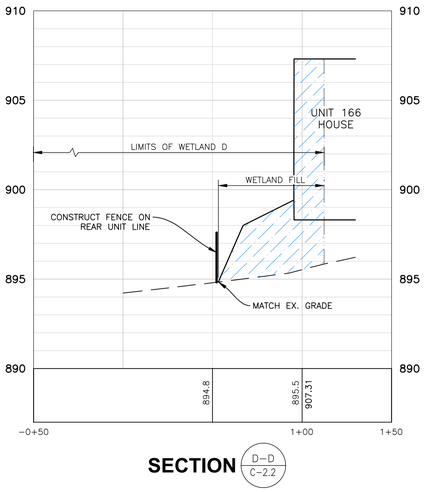
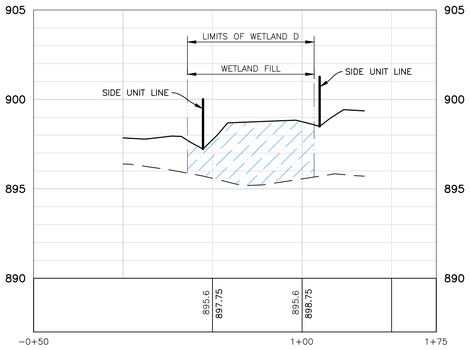
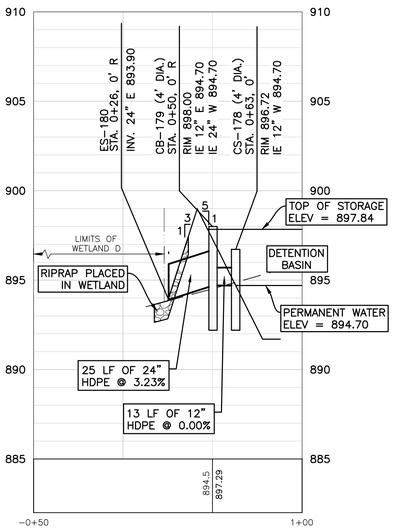


SECTION D–D / C–2.2



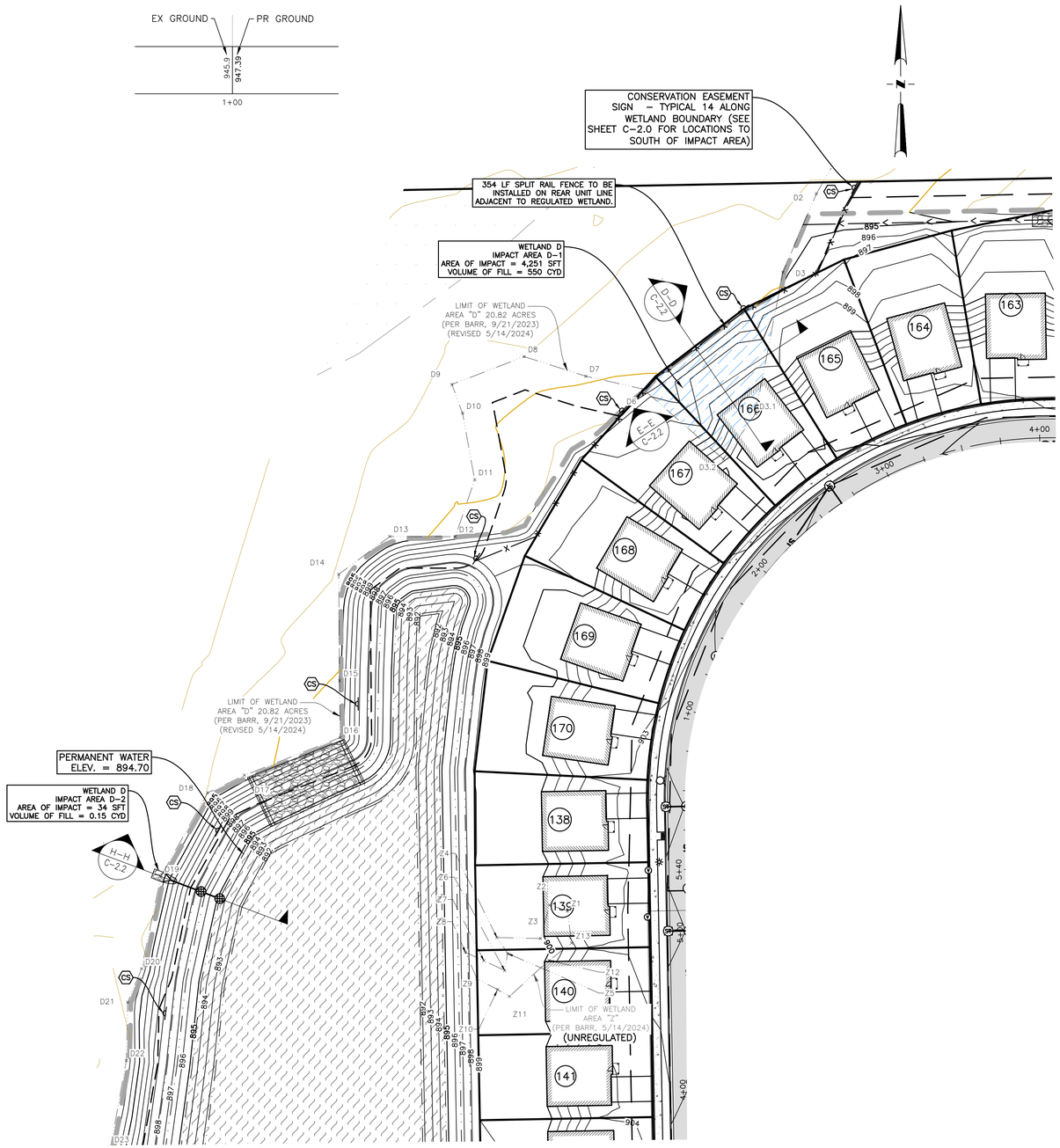
SECTION E–E / C–2.2



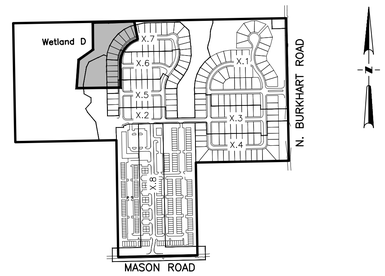
SECTION H–H / C–2.2

SECTION LEGEND

- WETLAND FILL
- EXISTING GROUND
- PROPOSED GROUND
- WETLAND LIMIT



SHEET KEY



TOPOGRAPHIC LEGEND

- 900 — EXISTING CONTOUR
- 900 — PROPOSED CONTOUR
- LIMITS OF DISTURBANCE

IMPACT LEGEND

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BENCHMARKS

DATUM: NAVD88

BM A:
SET BENCH TIE IN S/SIDE OF UTILITY POLE ON NORTH SIDE OF MASON ROAD 290'± WEST OF EAST PROPERTY LINE.
ELEV = 909.83

BM B:
ARROW ON HYDRANT ON WEST SIDE OF BURKHART ROAD 430'± NORTH OF SOUTH PROPERTY LINE.
ELEV = 906.59

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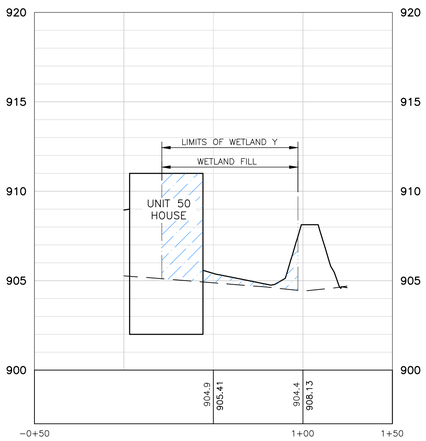
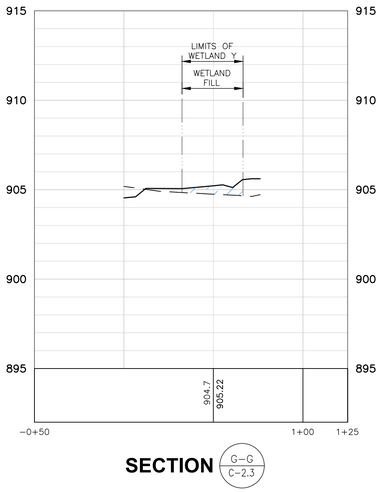


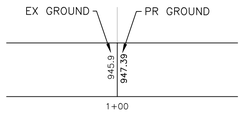
SECTION F-F C-2.3

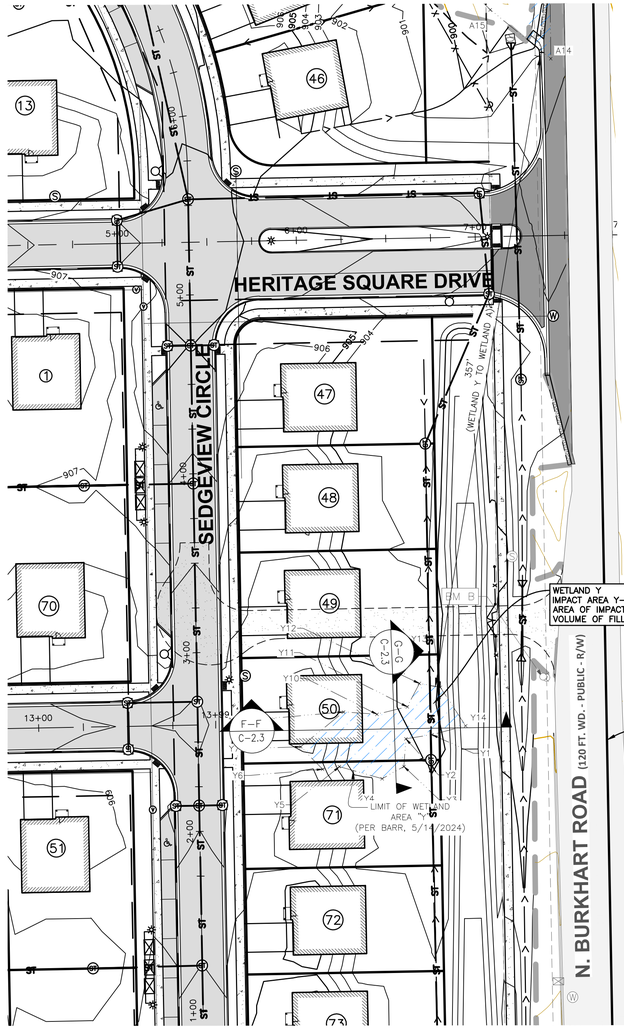


SECTION G-G C-2.3

SECTION LEGEND

- WETLAND FILL
- EXISTING GROUND
- PROPOSED GROUND
- WETLAND LIMIT





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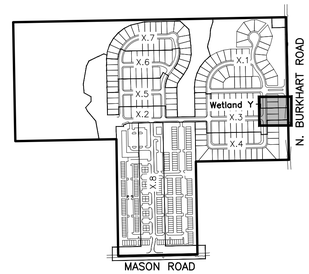

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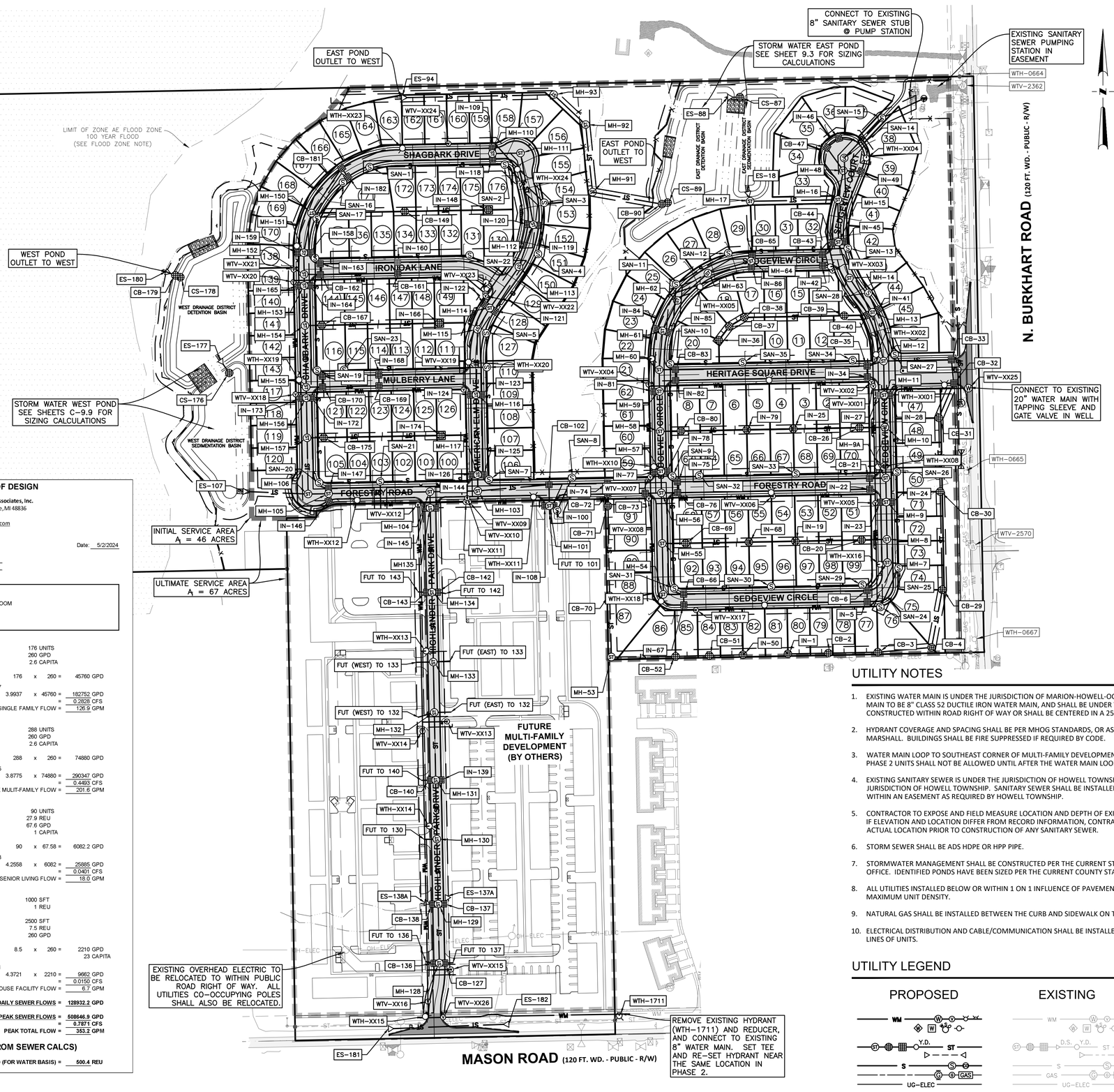

SANITARY SEWER BASIS OF DESIGN

Monument Engineering Group Associates, Inc.
298 Veterans Drive, Fowlerville, MI 48836
(517) 223-3512
monumentengineering.com

Date: 5/2/2024

PROJECT NAME: Heritage Square PUD
PROJECT LOCATION: Howell Township, Livingston County, Michigan
MEGA PROJECT NO.: 21-075C

METHODOLOGY UTILIZED IN THE FOLLOWING CALCULATIONS:
- 1 SINGLEFAMILY OR MUTIFAMILY UNIT = 1 REU
- SENIOR LIVING APARTMENT BUILDING EQUALS .31 REU PER BEDROOM
- CLUBHOUSE = OFFICE = 1 REU PER 1000 SFT (1000 SFT) + POOL = 3 PER 1000 SFT (2500 SFT)
- 1 REU = 260 GPD (2.6 PERSONS PER REU, 100 GPD PER CAPITA)

SINGLE FAMILY DEVELOPMENT

NUMBER OF SINGLE FAMILY UNITS =	176 UNITS			
ASSUMED FLOW PER REU (GALLONS PER DAY) =	260 GPD			
ASSUMED PEOPLE PER UNIT (FLOW/100 GPD)=	2.6 CAPITA			
AVERAGE DAILY FLOW = DEVELOPMENT UNITS x 260 GPD =	176	x	260 =	45760 GPD
PEAKING FACTOR = (18 + (P^0.5) / (4 + (P^0.5)) =	3.9937			
PEAK HOUR FLOW = PEAKING FACTOR x AVERAGE DAILY FLOW =	3.9937	x	45760 =	182752 GPD
			=	0.2828 CFS
SINGLE FAMILY FLOW =				126.9 GPM

MULTI-FAMILY DEVELOPMENT

NUMBER OF MULTI-FAMILY UNITS =	288 UNITS			
ASSUMED FLOW PER REU (GALLONS PER DAY) =	260 GPD			
ASSUMED PEOPLE PER UNIT (FLOW/100 GPD)=	2.6 CAPITA			
AVERAGE DAILY FLOW = DEVELOPMENT UNITS x 260 GPD =	288	x	260 =	74880 GPD
PEAKING FACTOR = (18 + (P^0.5) / (4 + (P^0.5)) =	3.8775			
PEAK HOUR FLOW = PEAKING FACTOR x AVERAGE DAILY FLOW =	3.8775	x	74880 =	290347 GPD
			=	0.4493 CFS
PEAK MULIT-FAMILY FLOW =				201.6 GPM

SENIOR LIVING BUILDING

NUMBER OF SENIOR LIVING APARTMENTS (1 BEDROOM) =	90 UNITS			
NUMBER OF REU'S (0.31 REU / BEDROOM) =	27.9 REU			
ASSUMED FLOW PER REU (GALLONS PER DAY) =	67.6 GPD			
ASSUMED PEOPLE PER UNIT (FLOW/100 GPD)=	1 CAPITA			
AVERAGE DAILY FLOW = DEVELOPMENT UNITS x 218 GPD =	90	x	67.58 =	6082.2 GPD
PEAKING FACTOR = (18 + (P^0.5) / (4 + (P^0.5)) =	4.2558			
PEAK HOUR FLOW = PEAKING FACTOR x AVERAGE DAILY FLOW =	4.2558	x	6082 =	25885 GPD
			=	0.0401 CFS
PEAK SENIOR LIVING FLOW =				18.0 GPM

CLUBHOUSE FACILITY

ESTIMATED OFFICE AREA	1000 SFT			
REU = 1 PER 1000 SQ FT =	1 REU			
ESTIMATED POOL BUILDING AREA	2500 SFT			
REU = 3 PER 1000 SQ FT =	7.5 REU			
FLOW PER REU =	260 GPD			
AVERAGE DAILY FLOW = REU x FLOW PER REU =	8.5	x	260 =	2210 GPD
EQUIVALENT POPULATION = ADF / 100 GPD PER CAPITA =				23 CAPITA
PEAKING FACTOR = (18 + (P^0.5) / (4 + (P^0.5)) =	4.3721			
PEAK HOUR FLOW = PEAKING FACTOR x AVERAGE DAILY FLOW =	4.3721	x	2210 =	9662 GPD
			=	0.0150 CFS
PEAK CLUBHOUSE FACILITY FLOW =				6.7 GPM
TOTAL ESTIMATED DAILY SEWER FLOWS =				**128932.2 GPD**
TOTAL ESTIMATED PEAK SEWER FLOWS =				**508646.9 GPD**
			=	**0.7871 CFS**
PEAK TOTAL FLOW =				**353.2 GPM**

WATER BASIS OF DESIGN (REU'S FROM SEWER CALCS)

TOTAL REU'S CALCULATED (FOR WATER BASIS) = 500.4 REU

SANITARY SEWER QUANTITIES (ALL PHASES)

QTY	UNIT	ITEM
7498	LF	8" PVC SDR 26
9009	LF	6" PVC SDR 23.5
36	EA	4' MANHOLE
2	EA	CLEANOUT

WATER MAIN QUANTITIES (ALL PHASES)

QTY	UNIT	ITEM
9993	LF	8" DI CL 52 WATER MAIN
173	LF	6" DI CL 52 WATER MAIN
9667	LF	1" TYPE K, COPPER WATER SERVICE
1	EA	8" CROSS
17	EA	8"x8"x8" TEE
24	EA	8"x8"x6" TEE
43	EA	8" 45° BEND
24	EA	8" 22.5° BEND
14	EA	8" 11.25° BEND
1	EA	8" TO 6" REDUCER
1	EA	20"x8" TSV&W
26	EA	8" GVB IN 2'X2' CONCRETE APRON
25	EA	STANDARD HYDRANT ASSEMBLY

UTILITY NOTES

1. EXISTING WATER MAIN IS UNDER THE JURISDICTION OF MARION-HOWELL-OCEOLA-GENOA WATER AUTHORITY (MHOG). PROPOSED WATER MAIN TO BE 8" CLASS 52 DUCTILE IRON WATER MAIN, AND SHALL BE UNDER THE JURISDICTION OF MHOG. WATER MAIN SHALL BE CONSTRUCTED WITHIN ROAD RIGHT OF WAY OR SHALL BE CENTERED IN A 25' WIDE EASEMENT AS REQUIRED BY MHOG.
2. HYDRANT COVERAGE AND SPACING SHALL BE PER MHOG STANDARDS, OR AS MODIFIED BY THE HOWELL AREA FIRE DEPARTMENT FIRE MARSHALL. BUILDINGS SHALL BE FIRE SUPPRESSED IF REQUIRED BY CODE.
3. WATER MAIN LOOP TO SOUTHEAST CORNER OF MULTI-FAMILY DEVELOPMENT TO BE CONSTRUCTED IN PHASE 2. HOME OCCUPATION OF PHASE 2 UNITS SHALL NOT BE ALLOWED UNTIL AFTER THE WATER MAIN LOOP IS PLACED INTO SERVICE.
4. EXISTING SANITARY SEWER IS UNDER THE JURISDICTION OF HOWELL TOWNSHIP. PROPOSED 8 INCH SANITARY SEWER SHALL BE UNDER THE JURISDICTION OF HOWELL TOWNSHIP. SANITARY SEWER SHALL BE INSTALLED WITHIN PROPOSED RIGHT OF WAY, OR SHALL BE PLACED WITHIN AN EASEMENT AS REQUIRED BY HOWELL TOWNSHIP.
5. CONTRACTOR TO EXPOSE AND FIELD MEASURE LOCATION AND DEPTH OF EXISTING 8" SANITARY STUB OUT OF THE EXISTING PUMP STATION. IF ELEVATION AND LOCATION DIFFER FROM RECORD INFORMATION, CONTRACTOR TO INFORM THE OWNER, TOWNSHIP AND MHOG OF ACTUAL LOCATION PRIOR TO CONSTRUCTION OF ANY SANITARY SEWER.
6. STORM SEWER SHALL BE ADS HDPE OR HPP PIPE.
7. STORMWATER MANAGEMENT SHALL BE CONSTRUCTED PER THE CURRENT STANDARDS OF THE LIVINGSTON COUNTY DRAIN COMMISSIONER'S OFFICE. IDENTIFIED PONDS HAVE BEEN SIZED PER THE CURRENT COUNTY STANDARDS.
8. ALL UTILITIES INSTALLED BELOW OR WITHIN 1 ON 1 INFLUENCE OF PAVEMENT SHALL BE BACKFILLED WITH CLASS II SAND COMPACTED TO 95% MAXIMUM UNIT DENSITY.
9. NATURAL GAS SHALL BE INSTALLED BETWEEN THE CURB AND SIDEWALK ON THE SAME SIDE OF THE ROAD AS THE WATER MAIN.
10. ELECTRICAL DISTRIBUTION AND CABLE/COMMUNICATION SHALL BE INSTALLED UNDERGROUND IN AN EASEMENT ALONG THE REAR PROPERTY LINES OF UNITS.

UTILITY LEGEND

PROPOSED	EXISTING	
WM	WM	WATER MAIN, MH, VALVE IN BOX, HYDRANT
W	W	WATER WELL, METER, STOP BOX, POST INDICATOR VALVE
Y.D. ST	D.S. Y.D. ST DS	STORM SEWER, MH, CB, INLET, DOWN SPOUT, YARD DRAIN CULVERT/ END SECTION
S	S	SANITARY SEWER, MH, CLEAN OUT
GAS	GAS	UG GAS, MH, VALVE, LINE MARKER
UG-ELEC	UG-ELEC	UG ELEC (ELEC, CABLE, FIBER)

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CLIENT :

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40950 WOODWARD AVE
SUITE 203
BLOOMFIELD HILLS, MI 48304
POC: DAVID STRAUB
(248)-221-5011

UTILITY PLAN

HERITAGE SQUARE (SINGLE FAMILY)
95 AC. NW CORNER BURKHART & MASON ROADS
PART OF THE SE 1/4 OF SEC. 32, T3N, R4E,
HOWELL TWP, LIVINGSTON COUNTY, MICHIGAN

PLAN SUBMITTALS/REVISIONS	DATE
SITE PLAN SUBMITTAL	05/09/2024
PHASE 1 FINAL SITE PLAN SUBMITTAL	09/18/2024
MODIFIED COVERAGE CALCULATION	11/25/2024
REVISED PHASE 1 FINAL SITE PLAN	02/20/2025
PHASE 2&3 FINAL SITE PLAN SUBMITTAL	12/22/2025

ORIGINAL ISSUE DATE: 5/09/2024

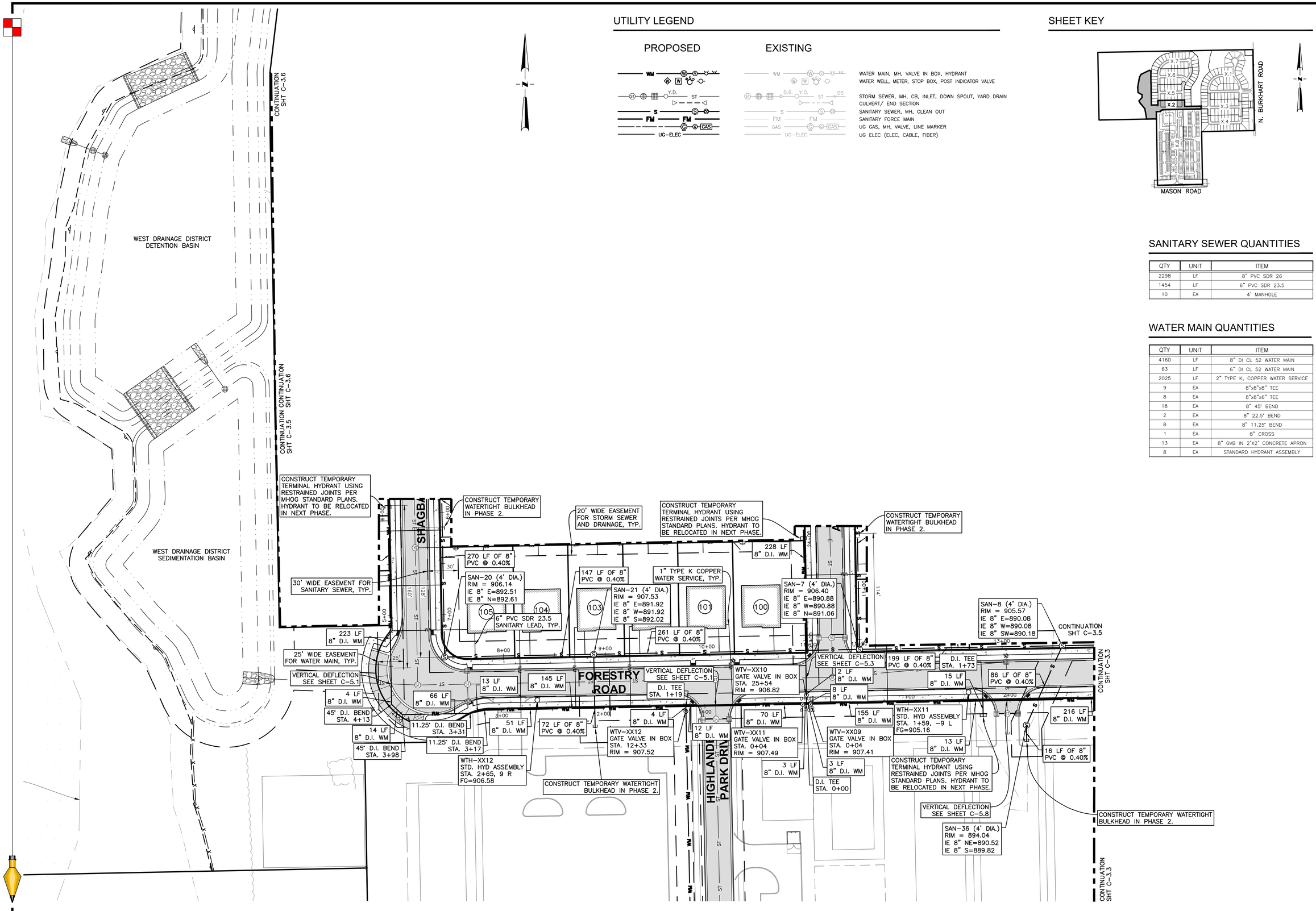
PROJECT NO: 21-075C

SCALE: 1" = 120'
0 1/2" 1"

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

C-3.0

NOT FOR CONSTRUCTION



UTILITY LEGEND

PROPOSED

EXISTING

WM	WATER MAIN, MH, VALVE IN BOX, HYDRANT
W	WATER WELL, METER, STOP BOX, POST INDICATOR VALVE
ST	STORM SEWER, MH, CB, INLET, DOWN SPOUT, YARD DRAIN
Y.D.	CULVERT/ END SECTION
S	SANITARY SEWER, MH, CLEAN OUT
FM	SANITARY FORCE MAIN
GAS	UG GAS, MH, VALVE, LINE MARKER
UG-ELEC	UG ELEC (ELEC, CABLE, FIBER)

SHEET KEY

SANITARY SEWER QUANTITIES

QTY	UNIT	ITEM
2298	LF	8" PVC SDR 26
1454	LF	6" PVC SDR 23.5
10	EA	4' MANHOLE

WATER MAIN QUANTITIES

QTY	UNIT	ITEM
4160	LF	8" DI CL 52 WATER MAIN
63	LF	6" DI CL 52 WATER MAIN
2025	LF	2" TYPE K, COPPER WATER SERVICE
9	EA	8"x8"x8" TEE
8	EA	8"x8"x6" TEE
18	EA	8" 45° BEND
2	EA	8" 22.5° BEND
8	EA	8" 11.25° BEND
1	EA	8" CROSS
13	EA	8" GVB IN 2'X2' CONCRETE APRON
8	EA	STANDARD HYDRANT ASSEMBLY

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C-3.2

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UTILITY LEGEND

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WM	WM	WATER MAIN, MH, VALVE IN BOX, HYDRANT
W	W	WATER WELL, METER, STOP BOX, POST INDICATOR VALVE
ST, Y.D., ST	ST, D.S., Y.D., ST, DS	STORM SEWER, MH, CB, INLET, DOWN SPOUT, YARD DRAIN
		CULVERT/ END SECTION
S	S	SANITARY SEWER, MH, CLEAN OUT
FM	FM	SANITARY FORCE MAIN
GAS	GAS	UG GAS, MH, VALVE, LINE MARKER
UG-ELEC	UG-ELEC	UG ELEC (ELEC, CABLE, FIBER)

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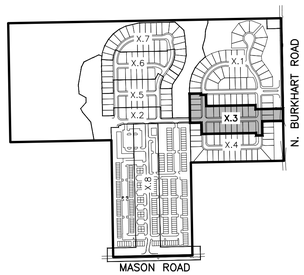

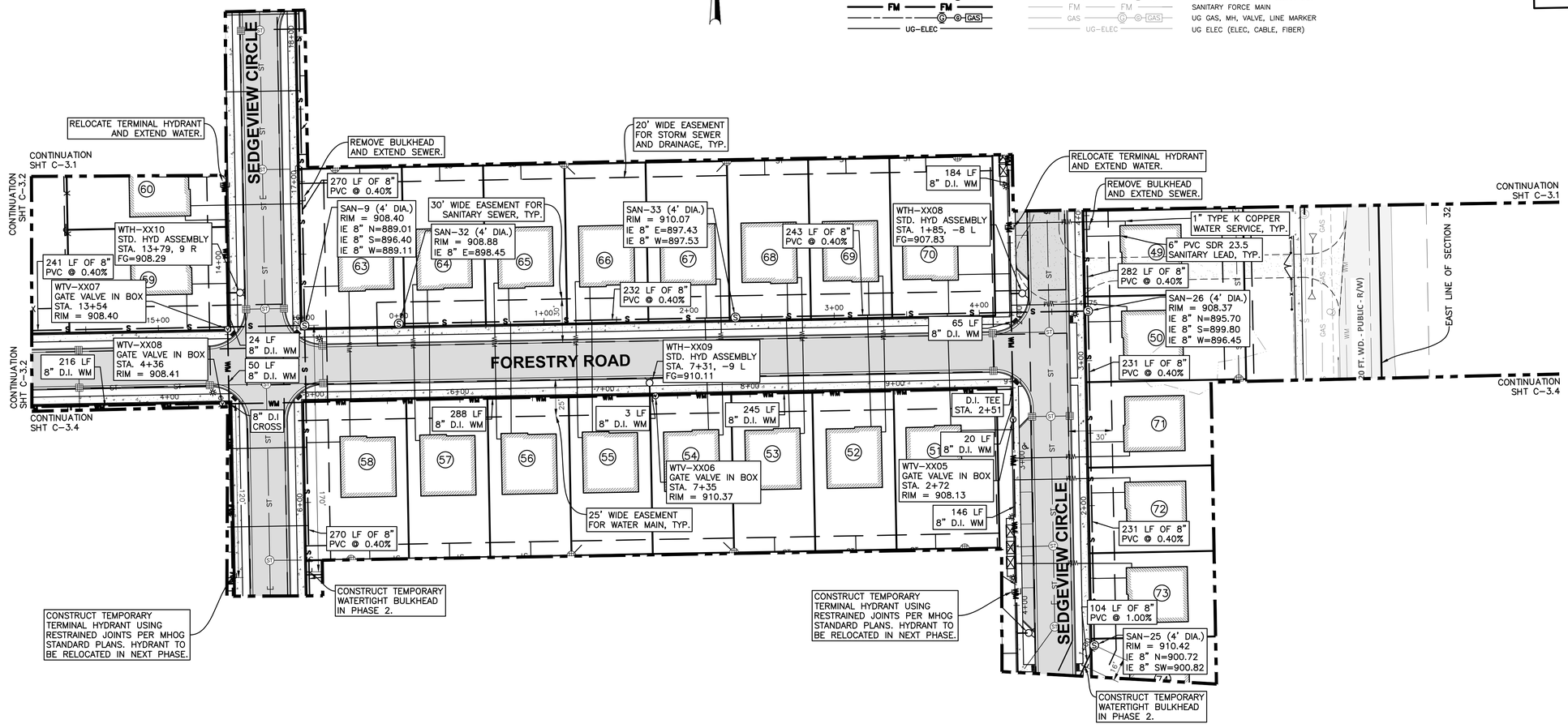

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W	W	WATER WELL, METER, STOP BOX, POST INDICATOR VALVE
ST, Y.D., ST	ST, D.S., Y.D., ST, DS	STORM SEWER, MH, CB, INLET, DOWN SPOUT, YARD DRAIN
		CULVERT/ END SECTION
S	S	SANITARY SEWER, MH, CLEAN OUT
FM	FM	SANITARY FORCE MAIN
GAS	GAS	UG GAS, MH, VALVE, LINE MARKER
UG-ELEC	UG-ELEC	UG ELEC (ELEC, CABLE, FIBER)

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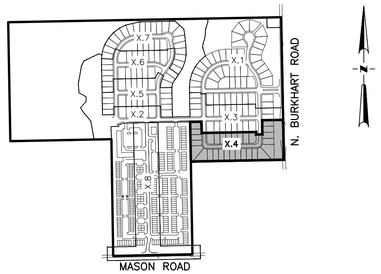

CONTINUATION SHT C-3.3

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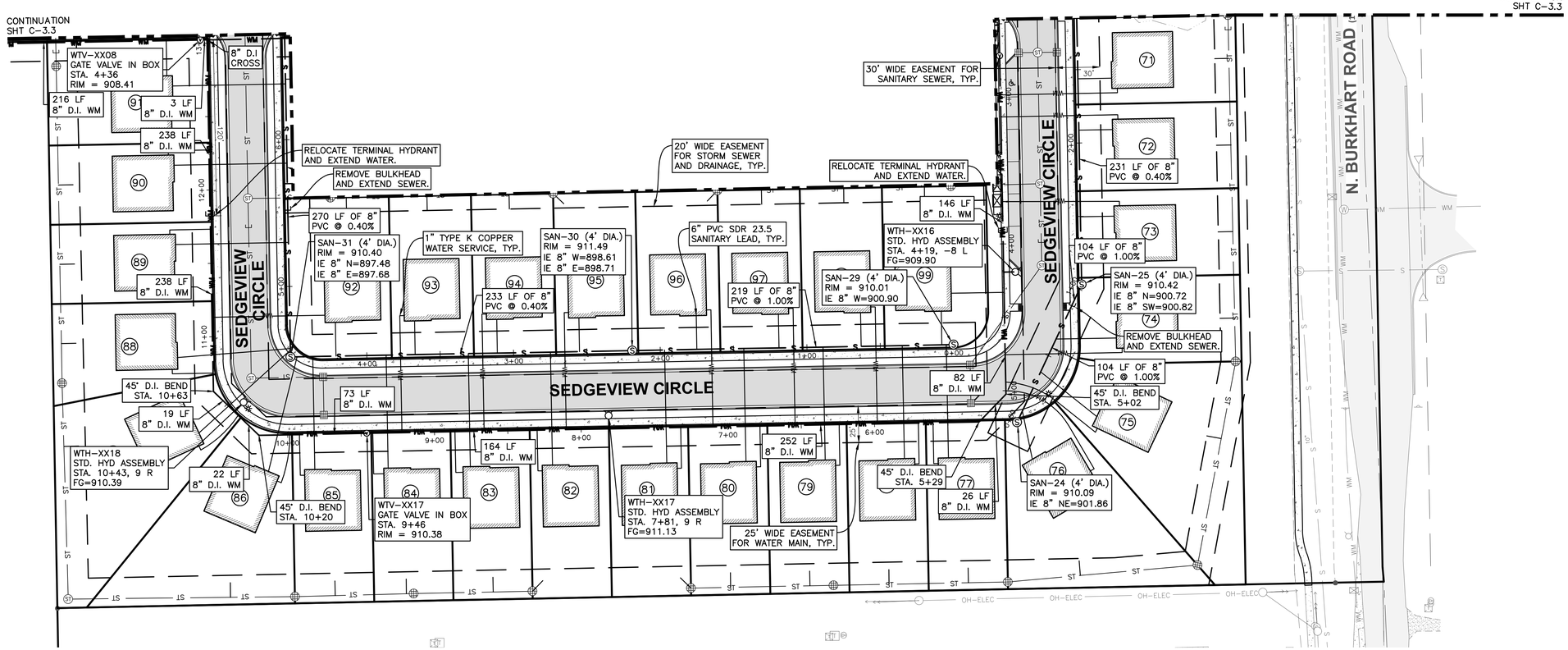

SANITARY SEWER QUANTITIES

QTY	UNIT	ITEM
640	LF	8" PVC SDR 26
1319	LF	6" PVC SDR 23.5
4	EA	4' MANHOLE

WATER MAIN QUANTITIES

QTY	UNIT	ITEM
783	LF	8" DI CL 52 WATER MAIN
21	LF	6" DI CL 52 WATER MAIN
1274	LF	2" TYPE K, COPPER WATER SERVICE
3	EA	8"x8"x6" TEE
4	EA	8" 45° BEND
1	EA	8" GVB IN 2'X2' CONCRETE APRON
3	EA	STANDARD HYDRANT ASSEMBLY

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C-3.4

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FILE:P:\Projects\2021\21-075 Heritage Square PUD\21-075C Heritage Square (Single-Family)\Dwg\Engineering\PH 2-3 FSP PLANS\21-075C_SF_PH2 FSP_C-3.1_San-Wm.dwg PLOT DATE:12/22/2025 11:55 AM

UTILITY LEGEND

PROPOSED	EXISTING	
WM	WM	WATER MAIN, MH, VALVE IN BOX, HYDRANT
W	W	WATER WELL, METER, STOP BOX, POST INDICATOR VALVE
ST	ST	STORM SEWER, MH, CB, INLET, DOWN SPOUT, YARD DRAIN
Y.D.	D.S. Y.D.	CULVERT/ END SECTION
S	S	SANITARY SEWER, MH, CLEAN OUT
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UG–ELEC	UG–ELEC	UG ELEC (ELEC, CABLE, FIBER)

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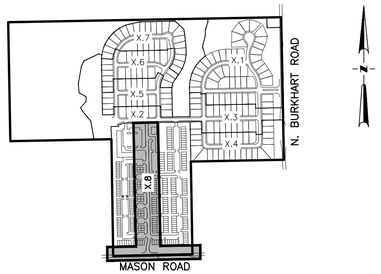

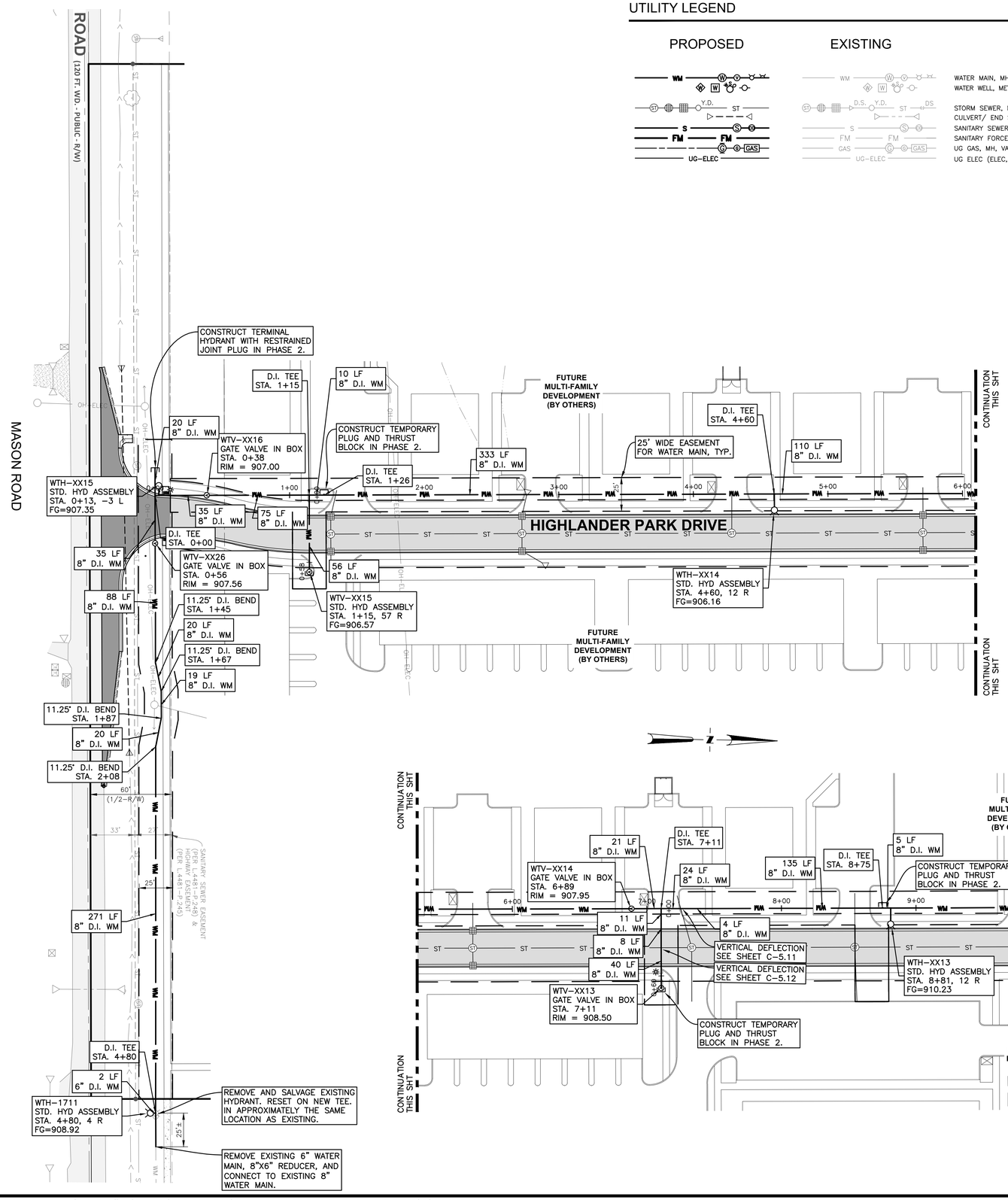

CONSTRUCT IN PHASE 2

SANITARY SEWER AND WATERMAIN PLAN

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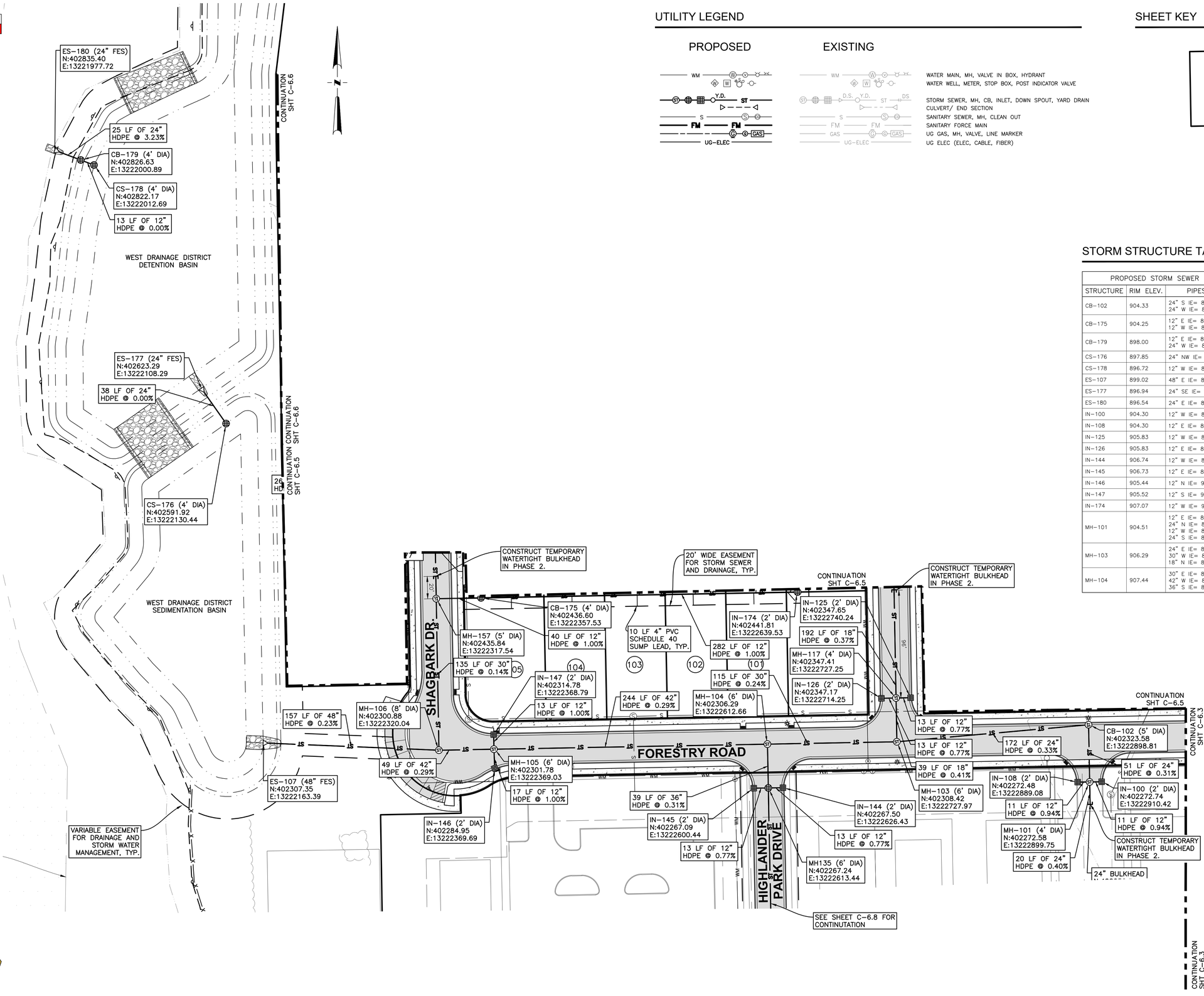

UTILITY LEGEND

PROPOSED

EXISTING

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WATER WELL, METER, STOP BOX, POST INDICATOR VALVE

STORM SEWER, MH, CB, INLET, DOWN SPOUT, YARD DRAIN
CULVERT/ END SECTION
SANITARY SEWER, MH, CLEAN OUT
SANITARY FORCE MAIN
UG GAS, MH, VALVE, LINE MARKER
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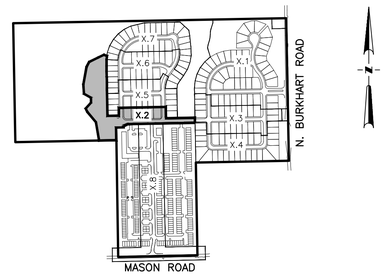

STORM STRUCTURE TABLE

PROPOSED STORM SEWER		
STRUCTURE	RIM ELEV.	PIPES
CB-102	904.33	24" S IE= 897.85 24" W IE= 897.75
CB-175	904.25	12" E IE= 898.60 12" W IE= 898.60
CB-179	898.00	12" E IE= 894.70 24" W IE= 894.70
CS-176	897.85	24" NW IE= 894.70
CS-178	896.72	12" W IE= 894.70
ES-107	899.02	48" E IE= 894.70
ES-177	896.94	24" SE IE= 894.70
ES-180	896.54	24" E IE= 893.90
IN-100	904.30	12" W IE= 898.91
IN-108	904.30	12" E IE= 898.91
IN-125	905.83	12" W IE= 899.70
IN-126	905.83	12" E IE= 899.70
IN-144	906.74	12" W IE= 898.23
IN-145	906.73	12" E IE= 898.23
IN-146	905.44	12" N IE= 901.34
IN-147	905.52	12" S IE= 901.30
IN-174	907.07	12" W IE= 901.42
MH-101	904.51	12" E IE= 898.81 24" N IE= 898.01 12" W IE= 898.81 24" S IE= 898.01
MH-103	906.29	24" E IE= 897.19 30" W IE= 896.94 18" N IE= 897.44
MH-104	907.44	30" E IE= 896.66 42" W IE= 896.16 36" S IE= 896.41

PROPOSED STORM SEWER		
STRUCTURE	RIM ELEV.	PIPES
MH-105	905.78	42" E IE= 895.45 42" W IE= 895.45 12" S IE= 901.17 12" N IE= 901.17
MH-106	906.27	42" E IE= 895.31 48" W IE= 895.06 30" N IE= 895.81
MH-117	906.09	18" N IE= 897.60 18" S IE= 897.60 12" E IE= 899.60 12" W IE= 899.60
MH-157	904.92	24" N IE= 896.25 30" S IE= 896.00 12" E IE= 898.20
MH135	907.00	12" E IE= 898.13 36" N IE= 896.53 36" S IE= 896.53 12" W IE= 898.13

STORM SEWER NOTES

1. YARD "IN" & "CB" STRUCTURES SHALL HAVE EJIW 1020 FRAME WITH TYPE O1 BEEHIVE COVER.
2. MOUNTABLE CURB "IN" & "CB" STRUCTURES SHALL HAVE EJIW 7060 FRAME WITH TYPE T1 BACK AND M1 GRATE.
3. STRAIGHT CURB "IN" & "CB" STRUCTURES SHALL HAVE EJIW 7010 FRAME WITH TYPE T1 BACK AND M1 GRATE.
4. STORM "MH" STRUCTURES SHALL HAVE EJIW 1040 FRAME WITH A TYPE A PERFORATED COVER.
5. END SECTIONS 18" AND LARGER SHALL HAVE ANIMAL GRATES.
6. THE PROPOSED DRAINAGE SYSTEMS ARE TO BE OWNED AND PROPERLY MAINTAINED BY THE SITE CONDOMINIUM PROPERTY OWNER'S ASSOCIATION.
7. ALL STORM SEWER OUTSIDE ROAD RIGHT OF WAY SHALL BE LOCATED IN A MINIMUM 20' WIDE STORM EASEMENT.

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STORM SEWER PLAN (PHASE 2)

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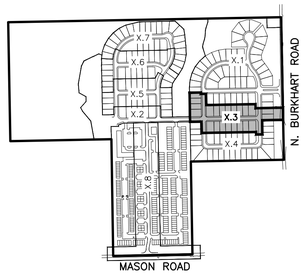
FM, FM	FM, FM	SANITARY FORCE MAIN
GAS	GAS	UG GAS, MH, VALVE, LINE MARKER
UG-ELEC	UG-ELEC	UG ELEC (ELEC, CABLE, FIBER)

SHEET KEY



NOTE:
SUMP LEADS FOR UNITS 59 TO 62 DAYLIGHT TO OPEN SPACE

SEE SHEET C-6.1 FOR PHASE 1 STORM SEWER CONSTRUCTION

SEDGEVIEW CIRCLE

FORESTRY ROAD

N. BURKHART ROAD (120 FT. WD. - PUBLIC - R/W)

EAST LINE OF SECTION 32

437'

CONTINUATION SHT C-6.1

CONTINUATION SHT C-6.2

CONTINUATION SHT C-6.4

13 LF OF 12" HDPE @ 0.30%
60
96 LF OF 18" HDPE @ 0.57%
REMOVE BULKHEAD AND EXTEND SEWER.
IN-77 (2' DIA) N:402355.32 E:13223155.12
MH-57 (4' DIA) N:402355.56 E:13223168.12
10 LF 4" PVC SCHEDULE 40 SUMP LEAD, TYP.
20' WIDE EASEMENT FOR STORM SEWER AND DRAINAGE, TYP.
122 LF OF 18" HDPE @ 0.30%
39 LF OF 12" HDPE @ 0.30%
CB-21 (4' DIA) N:402338.82 E:13223669.51
IN-74 (2' DIA) N:402327.18 E:13223039.62
13 LF OF 12" HDPE @ 0.30%
IN-78 (2' DIA) N:402355.80 E:13223181.12
26 LF OF 12" HDPE @ 0.30%
64
65
66
67
68
69
70
CB-73 (4' DIA) N:402302.85 E:13223130.09
IN-75 (2' DIA) N:402330.28 E:13223207.60
IN-22 (2' DIA) N:402312.82 E:13223670.00
CB-72 (4' DIA) N:402301.18 E:13223040.10
26 LF OF 12" HDPE @ 0.31%
90 LF OF 12" HDPE @ 0.30%
13 LF OF 12" HDPE @ 0.30%
IN-23 (2' DIA) N:402281.25 E:13223696.58
MH-9 (4' DIA) N:402281.49 E:13223709.58
29 LF OF 12" HDPE @ 0.30%
CB-76 (4' DIA) N:402304.29 E:13223208.08
152 LF OF 12" HDPE @ 1.00%
MH-56 (4' DIA) N:402303.57 E:13223169.08
58
39 LF OF 12" HDPE @ 0.30%
39 LF OF 12" HDPE @ 0.30%
121 LF OF 12" HDPE @ 0.75%
56
55
54
53
52
51
89 LF OF 15" HDPE @ 0.28%
52 LF OF 18" HDPE @ 0.47%
10 LF 4" PVC SCHEDULE 40 SUMP LEAD, TYP.
159 LF OF 12" HDPE @ 1.00%
MH-8 (4' DIA) N:402192.08 E:13223711.23
MH-55 (4' DIA) N:402182.10 E:13223171.33
CB-69 (4' DIA) N:402182.62 E:13223227.43
IN-68 (2' DIA) N:402185.43 E:13223379.30
IN-19 (2' DIA) N:402187.50 E:13223491.28
CB-20 (4' DIA) N:402190.44 E:13223650.25
REMOVE BULKHEAD AND EXTEND SEWER.
10 LF 4" PVC SCHEDULE 40 SUMP LEAD, TYP.
49
177 LF OF 12" HDPE @ 0.30%
MH-9A (4' DIA) N:402339.54 E:13223708.51
58 LF OF 18" HDPE @ 0.31%
13 LF OF 12" HDPE @ 0.30%
IN-24 (2' DIA) N:402281.73 E:13223722.58
71
CB-30 (4' DIA) N:402306.95 E:13223839.13
236 LF OF 12" HDPE @ 0.30%
CONSTRUCT TEMPORARY WATERTIGHT BULKHEAD IN PHASE 2.
CONSTRUCT TEMPORARY WATERTIGHT BULKHEAD IN PHASE 2.
56 LF OF 12" HDPE @ 0.30%
123 LF OF 12" HDPE @ 0.40%
CONSTRUCT TEMPORARY WATERTIGHT BULKHEAD IN PHASE 2.
56 LF OF 12" HDPE @ 0.30%

STORM SEWER NOTES

1. YARD "IN" & "CB" STRUCTURES SHALL HAVE EJIW 1020 FRAME WITH TYPE O1 BEEHIVE COVER.
2. MOUNTABLE CURB "IN" & "CB" STRUCTURES SHALL HAVE EJIW 7060 FRAME WITH TYPE T1 BACK AND M1 GRATE.
3. STRAIGHT CURB "IN" & "CB" STRUCTURES SHALL HAVE EJIW 7010 FRAME WITH TYPE T1 BACK AND M1 GRATE.
4. STORM "MH" STRUCTURES SHALL HAVE EJIW 1040 FRAME WITH A TYPE A PERFORATED COVER.
5. END SECTIONS 18" AND LARGER SHALL HAVE ANIMAL GRATES.
6. THE PROPOSED DRAINAGE SYSTEMS ARE TO BE OWNED AND PROPERLY MAINTAINED BY THE SITE CONDOMINIUM PROPERTY OWNER'S ASSOCIATION.
7. ALL STORM SEWER OUTSIDE ROAD RIGHT OF WAY SHALL BE LOCATED IN A MINIMUM 20' WIDE STORM EASEMENT.

NOTE

SEE PROFILES ON SHEETS C-6.9 TO C-6.32 FOR SEWER AND STRUCTURE DETAILS

STORM STRUCTURE TABLE

PROPOSED STORM SEWER		
STRUCTURE	RIM ELEV.	PIPES
CB-20	907.15	12" W IE= 902.98 12" E IE= 902.98
CB-21	907.71	12" S IE= 902.81 12" E IE= 902.81
CB-30	904.92	12" S IE= 900.00 12" N IE= 900.00
CB-69	907.32	12" E IE= 902.64 12" W IE= 902.64
CB-72	905.94	12" S IE= 901.65 12" E IE= 901.65 12" N IE= 901.65
CB-73	907.55	12" W IE= 901.38 12" E IE= 901.38
CB-76	907.77	12" N IE= 901.68 12" W IE= 901.68
IN-19	908.74	12" E IE= 904.57 4" NW IE= 905.07 4" SW IE= 905.07
IN-22	907.71	12" N IE= 902.89
IN-23	907.66	12" E IE= 902.69
IN-24	907.66	12" W IE= 902.69
IN-68	908.74	12" W IE= 904.16 4" NE IE= 904.66 4" SE IE= 904.66
IN-74	905.94	12" S IE= 901.73
IN-75	907.77	12" S IE= 901.76
IN-77	907.79	12" E IE= 902.36
IN-78	907.79	12" W IE= 902.36
MH-8	909.01	12" S IE= 904.30 15" N IE= 902.60 12" W IE= 902.80
MH-9	907.92	15" S IE= 902.35 18" N IE= 902.15 12" W IE= 902.65 12" E IE= 902.65
MH-9A	908.03	18" S IE= 901.97 18" N IE= 901.97 12" W IE= 902.69
MH-55	909.52	12" S IE= 903.97 12" N IE= 902.47 12" E IE= 902.47

PROPOSED STORM SEWER		
STRUCTURE	RIM ELEV.	PIPES
MH-56	908.27	12" S IE= 901.56 18" N IE= 901.16 12" W IE= 901.26 12" E IE= 901.56
MH-57	908.05	18" S IE= 900.92 18" N IE= 900.92 12" W IE= 902.32 12" E IE= 902.32

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KEVIN C. MCDEVITT ENGINEER NO. 6201043260

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CLIENT :

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40950 WOODWARD AVE
SUITE 203
BLOOMFIELD HILLS, MI 48304
POC: DAVID STRAUB
(248)-221-5011

STORM SEWER PLAN (PHASE 2)

HERITAGE SQUARE (SINGLE FAMILY)
95 AC. NW CORNER BURKHART & MASON ROADS
PART OF THE SE 1/4 OF SEC. 32, T3N, R4E,
HOWELL TWP, LIVINGSTON COUNTY, MICHIGAN

PLAN SUBMITTALS/REVISIONS	DATE
SITE PLAN SUBMITTAL	05/09/2024
PHASE 1 FINAL SITE PLAN SUBMITTAL	09/16/2024
MODIFIED COVERAGE CALCULATION	11/25/2024
REVISED PHASE 1 FINAL SITE PLAN	02/20/2025
PHASE 2&3 FINAL SITE PLAN SUBMITTAL	12/22/2025

ORIGINAL ISSUE DATE: 5/09/2024

PROJECT NO: 21-075C

SCALE: 1" = 40'
0 1/2" 1"

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

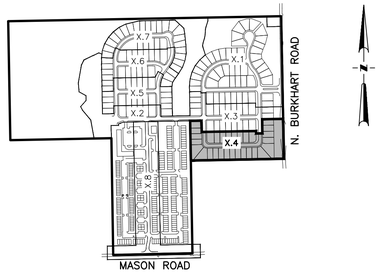
C-6.3

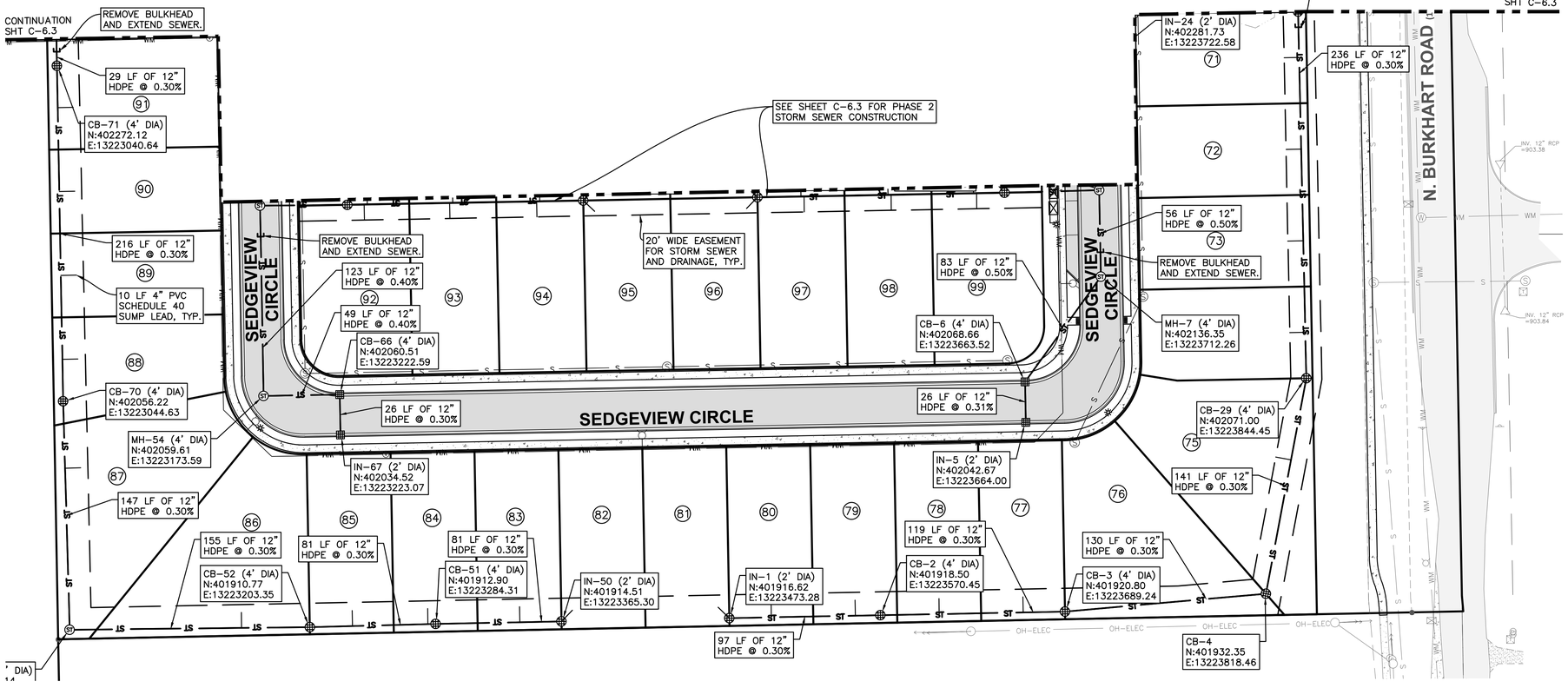
NOT FOR CONSTRUCTION

UTILITY LEGEND

PROPOSED	EXISTING	
WM	WM	WATER MAIN, MH, VALVE IN BOX, HYDRANT
W	W	WATER WELL, METER, STOP BOX, POST INDICATOR VALVE
ST, Y.D., ST	ST, D.S., Y.D., ST, DS	STORM SEWER, MH, CB, INLET, DOWN SPOUT, YARD DRAIN
		CULVERT/ END SECTION
S	S	SANITARY SEWER, MH, CLEAN OUT
FM	FM	SANITARY FORCE MAIN
GAS	GAS	UG GAS, MH, VALVE, LINE MARKER
UG-ELEC	UG-ELEC	UG ELEC (ELEC, CABLE, FIBER)

SHEET KEY





STORM SEWER NOTES

1. YARD "IN" & "CB" STRUCTURES SHALL HAVE EJIW 1020 FRAME WITH TYPE O1 BEEHIVE COVER.
2. MOUNTABLE CURB "IN" & "CB" STRUCTURES SHALL HAVE EJIW 7060 FRAME WITH TYPE T1 BACK AND M1 GRATE.
3. STRAIGHT CURB "IN" & "CB" STRUCTURES SHALL HAVE EJIW 7010 FRAME WITH TYPE T1 BACK AND M1 GRATE.
4. STORM "MH" STRUCTURES SHALL HAVE EJIW 1040 FRAME WITH A TYPE A PERFORATED COVER.
5. END SECTIONS 18" AND LARGER SHALL HAVE ANIMAL GRATES.
6. THE PROPOSED DRAINAGE SYSTEMS ARE TO BE OWNED AND PROPERLY MAINTAINED BY THE SITE CONDOMINIUM PROPERTY OWNER'S ASSOCIATION.
7. ALL STORM SEWER OUTSIDE ROAD RIGHT OF WAY SHALL BE LOCATED IN A MINIMUM 20' WIDE STORM EASEMENT.

NOTE

SEE PROFILES ON SHEETS C-6.9 TO C-6.32 FOR SEWER AND STRUCTURE DETAILS

STORM STRUCTURE TABLE

PROPOSED STORM SEWER		
STRUCTURE	RIM ELEV.	PIPES
CB-2	905.60	12" W IE= 901.87 12" E IE= 901.87
CB-3	906.76	12" W IE= 901.52 12" E IE= 901.52
CB-4	906.69	12" N IE= 901.13 12" W IE= 901.13
CB-6	909.16	12" S IE= 905.00 12" NE IE= 905.00
CB-29	907.41	12" N IE= 900.70 12" S IE= 900.70
CB-51	906.30	12" E IE= 903.53 12" W IE= 903.53
CB-52	906.57	12" E IE= 903.29 12" W IE= 903.29
CB-66	909.57	12" S IE= 904.66 12" W IE= 904.66
CB-70	907.01	12" N IE= 902.38 12" S IE= 902.38
CB-71	906.47	12" S IE= 901.74 12" N IE= 901.74
IN-1	906.57	12" E IE= 902.16 4" NW IE= 903.11
IN-5	909.16	12" N IE= 905.08
IN-50	906.57	12" W IE= 903.78 4" NE IE= 904.25
IN-67	909.57	12" N IE= 904.74
MH-7	909.78	12" SW IE= 904.58 12" N IE= 904.58
MH-53	907.65	12" E IE= 902.83 12" N IE= 902.83
MH-54	910.02	12" E IE= 904.46 12" N IE= 904.46

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BLOOMFIELD HILLS, MI 48304
POC: DAVID STRAUB
(248)-221-5011

STORM SEWER PLAN (PHASE 3)

HERITAGE SQUARE (SINGLE FAMILY)
95 AC. NW CORNER BURKHART & MASON ROADS
PART OF THE SE 1/4 OF SEC. 32, T3N, R4E,
HOWELL TWP, LIVINGSTON COUNTY, MICHIGAN

PLAN SUBMITTALS/REVISIONS	DATE
SITE PLAN SUBMITTAL	05/09/2024
PHASE 1 FINAL SITE PLAN SUBMITTAL	09/18/2024
MODIFIED COVERAGE CALCULATION	11/25/2024
REVISED PHASE 1 FINAL SITE PLAN	02/20/2025
PHASE 2&3 FINAL SITE PLAN SUBMITTAL	12/22/2025

ORIGINAL ISSUE DATE: 5/09/2024

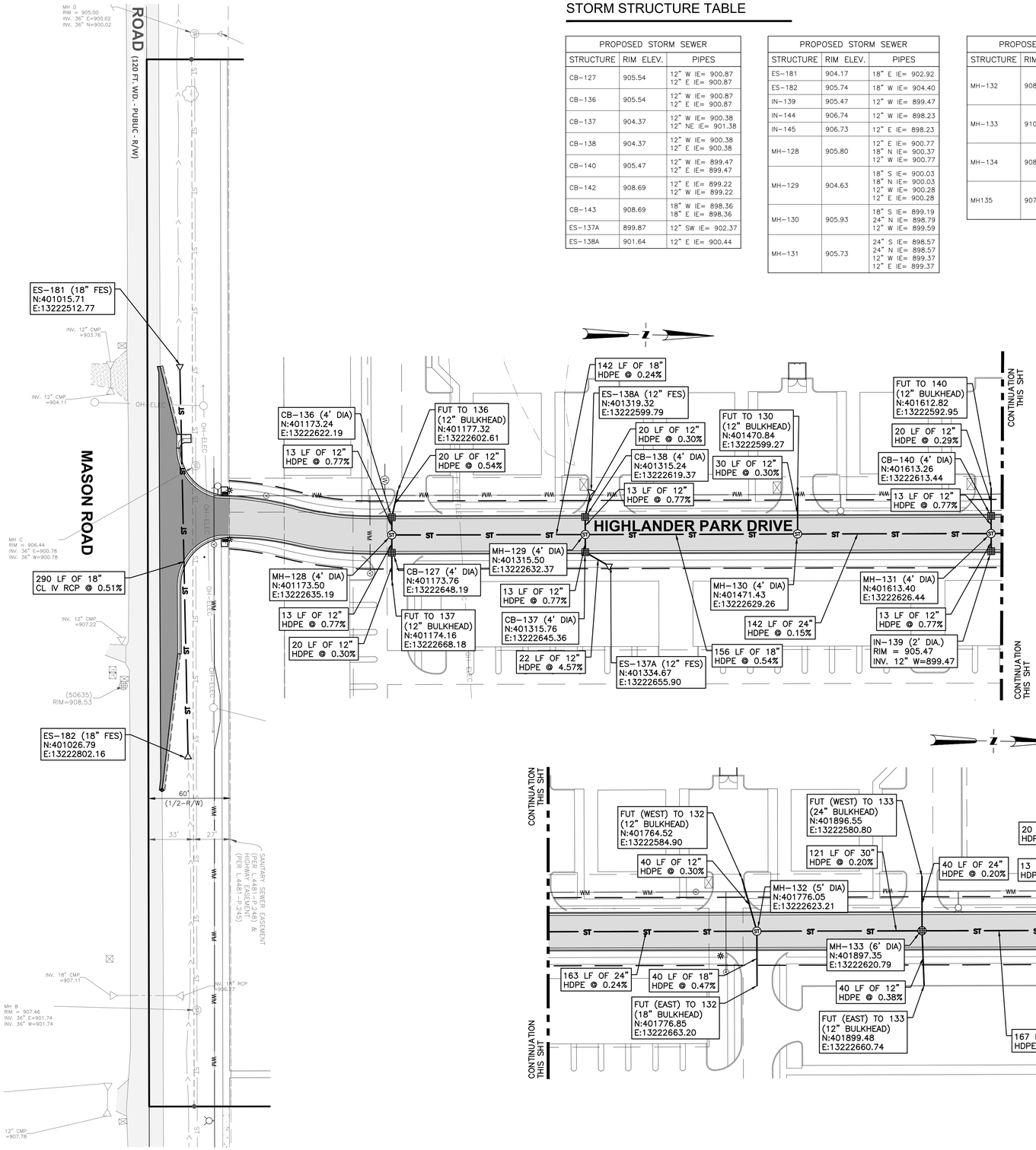
PROJECT NO: 21-075C

SCALE: 1" = 40'
0 1/2" 1"

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

C-6.4

NOT FOR CONSTRUCTION



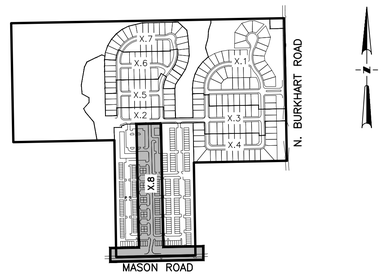
STORM STRUCTURE TABLE

PROPOSED STORM SEWER		
STRUCTURE	RIM ELEV.	PIPES
CB-127	905.54	12" W IE= 900.87 12" E IE= 900.87
CB-136	905.54	12" W IE= 900.87 12" E IE= 900.87
CB-137	904.37	12" W IE= 900.38 12" NE IE= 901.38
CB-138	904.37	12" W IE= 900.38 12" E IE= 900.38
CB-140	905.47	12" W IE= 899.47 12" E IE= 899.47
CB-142	908.69	12" E IE= 899.22 12" W IE= 899.22
CB-143	908.69	18" W IE= 898.36 18" E IE= 898.36
ES-137A	899.87	12" SW IE= 902.37
ES-138A	901.64	12" E IE= 900.44

PROPOSED STORM SEWER		
STRUCTURE	RIM ELEV.	PIPES
ES-181	904.17	18" E IE= 902.92
ES-182	905.74	18" W IE= 904.40
IN-139	905.47	12" W IE= 899.47
IN-144	906.74	12" W IE= 898.23
IN-145	906.73	12" E IE= 898.23
MH-128	905.80	12" E IE= 900.77 18" N IE= 900.37 12" W IE= 900.77
MH-129	904.63	18" S IE= 900.03 18" N IE= 900.03 12" W IE= 900.28 12" E IE= 900.28
MH-130	905.93	18" S IE= 899.19 24" N IE= 898.79 12" W IE= 899.59
MH-131	905.73	24" S IE= 898.57 24" N IE= 898.57 12" W IE= 899.37 12" E IE= 899.37

PROPOSED STORM SEWER		
STRUCTURE	RIM ELEV.	PIPES
MH-132	908.80	24" S IE= 898.18 30" N IE= 897.93 18" E IE= 898.73 12" W IE= 900.73
MH-133	910.22	30" S IE= 897.69 36" N IE= 897.44 24" W IE= 898.24 12" E IE= 899.04
MH-134	908.95	36" S IE= 897.12 36" N IE= 897.12 12" E IE= 899.12 18" W IE= 898.32
MH135	907.00	12" E IE= 898.13 36" N IE= 896.53 36" S IE= 896.53 12" W IE= 898.13

SHEET KEY



STORM SEWER NOTES

1. YARD "IN" & "CB" STRUCTURES SHALL HAVE EJIW 1020 FRAME WITH TYPE O1 BEEHIVE COVER.
2. MOUNTABLE CURB "IN" & "CB" STRUCTURES SHALL HAVE EJIW 7060 FRAME WITH TYPE T1 BACK AND M1 GRATE.
3. STRAIGHT CURB "IN" & "CB" STRUCTURES SHALL HAVE EJIW 7010 FRAME WITH TYPE T1 BACK AND M1 GRATE.
4. STORM "MH" STRUCTURES SHALL HAVE EJIW 1040 FRAME WITH A TYPE A PERFORATED COVER.
5. END SECTIONS 18" AND LARGER SHALL HAVE ANIMAL GRATES.
6. THE PROPOSED DRAINAGE SYSTEMS ARE TO BE OWNED AND PROPERLY MAINTAINED BY THE SITE CONDOMINIUM PROPERTY OWNER'S ASSOCIATION.
7. ALL STORM SEWER OUTSIDE ROAD RIGHT OF WAY SHALL BE LOCATED IN A MINIMUM 20' WIDE STORM EASEMENT.

UTILITY LEGEND

PROPOSED	EXISTING	
WM	WM	WATER MAIN, MH, VALVE IN BOX, HYDRANT
W	W	WATER WELL, METER, STOP BOX, POST INDICATOR VALVE
ST	D.S. Y.D. ST DS	STORM SEWER, MH, CB, INLET, DOWN SPOUT, YARD DRAIN
Y.D.		CULVERT/ END SECTION
S	S	SANITARY SEWER, MH, CLEAN OUT
FM	FM	SANITARY FORCE MAIN
GAS	GAS	UG GAS, MH, VALVE, LINE MARKER
UG-ELEC	UG-ELEC	UG ELEC (ELEC, CABLE, FIBER)

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BLOOMFIELD HILLS, MI 48304
POC: DAVID STRAUB
(248)-221-5011

CONSTRUCT IN PHASE 2

STORM SEWER PLAN (OFFSITE)

HERITAGE SQUARE (SINGLE FAMILY)
95 AC. NW CORNER BURKHART & MASON ROADS
PART OF THE SE 1/4 OF SEC. 32, T3N, R4E,
HOWELL TWP, LIVINGSTON COUNTY, MICHIGAN

PLAN SUBMITTALS/REVISIONS	DATE
SITE PLAN SUBMITTAL	05/09/2024
PHASE 1 FINAL SITE PLAN SUBMITTAL	09/18/2024
MODIFIED COVERAGE CALCULATION	11/25/2024
REVISED PHASE 1 FINAL SITE PLAN	02/20/2025
PHASE 2&3 FINAL SITE PLAN SUBMITTAL	12/22/2025

ORIGINAL ISSUE DATE: 5/09/2024

PROJECT NO: 21-075C

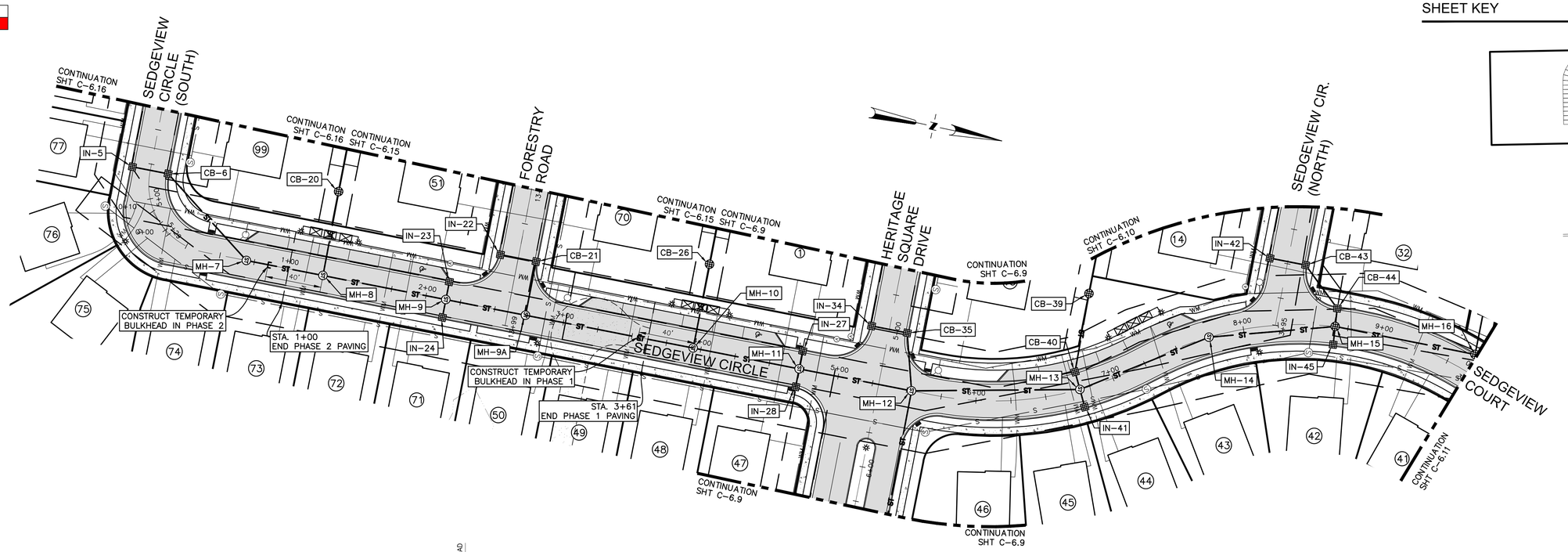
SCALE: 1" = 40'
0 1/2" 1"

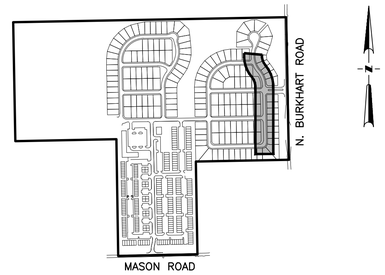
FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

C-6.8

NOT FOR CONSTRUCTION

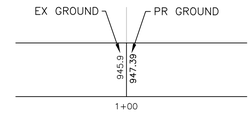
SHEET KEY





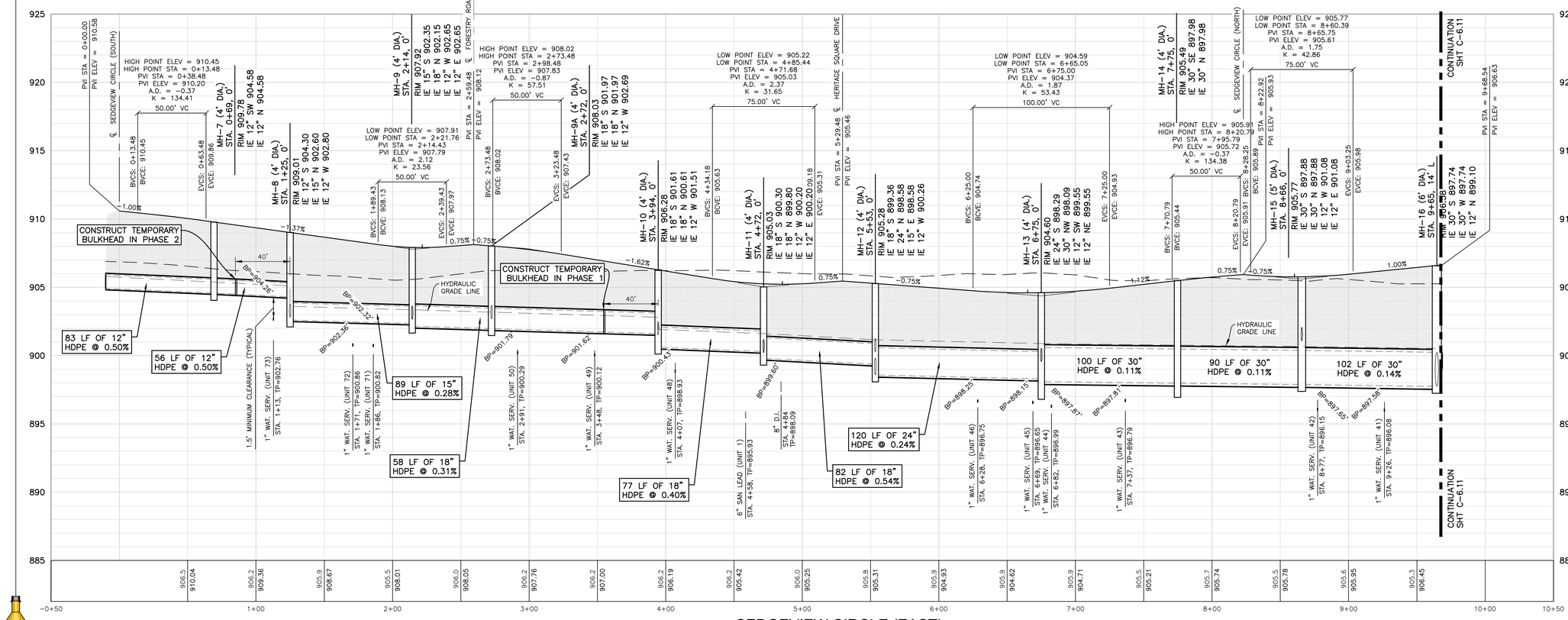
PROFILE LEGEND

- (x) UTILITY CROSSING
- SAND BACKFILL (REFER TO TRENCH DETAILS)
- EXISTING GROUND
- PROPOSED GROUND
- H.G. LINE



NOTES

1. SAND BACKFILL AND BEDDING TO BE MDOT CL II.
2. MAINTAIN MINIMUM 18" VERTICAL CLEARANCE BETWEEN ALL UTILITIES.
3. ALL PIPES SHOWN TO OUTSIDE DIAMETER.



SEDGEVIEW CIRCLE (EAST)
STA. 0+00 TO 8+23

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

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BLOOMFIELD HILLS, MI 48304
POC: DAVID STRAUB
(248)-221-5011

STORM SEWER AND ROAD PLAN & PROFILE

HERITAGE SQUARE (SINGLE FAMILY)
95 AC. NW CORNER BURKHART & MASON ROADS
PART OF THE SE 1/4 OF SEC. 32, T3N, R4E,
HOWELL TWP, LIVINGSTON COUNTY, MICHIGAN

PLAN SUBMITTALS/REVISIONS	DATE
SITE PLAN SUBMITTAL	05/09/2024
PHASE 1 FINAL SITE PLAN SUBMITTAL	09/18/2024
MODIFIED COVERAGE CALCULATION	11/25/2024
REVISED PHASE 1 FINAL SITE PLAN	02/20/2025
PHASE 2&3 FINAL SITE PLAN SUBMITTAL	12/22/2025

ORIGINAL ISSUE DATE: 5/09/2024

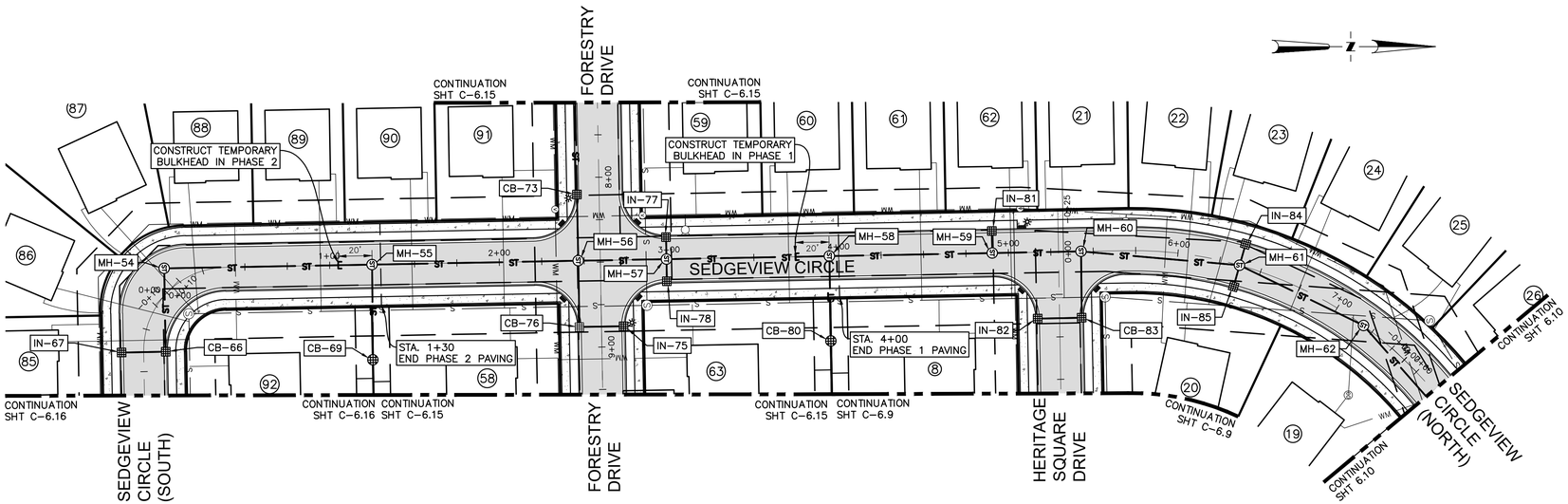
PROJECT NO: 21-075C

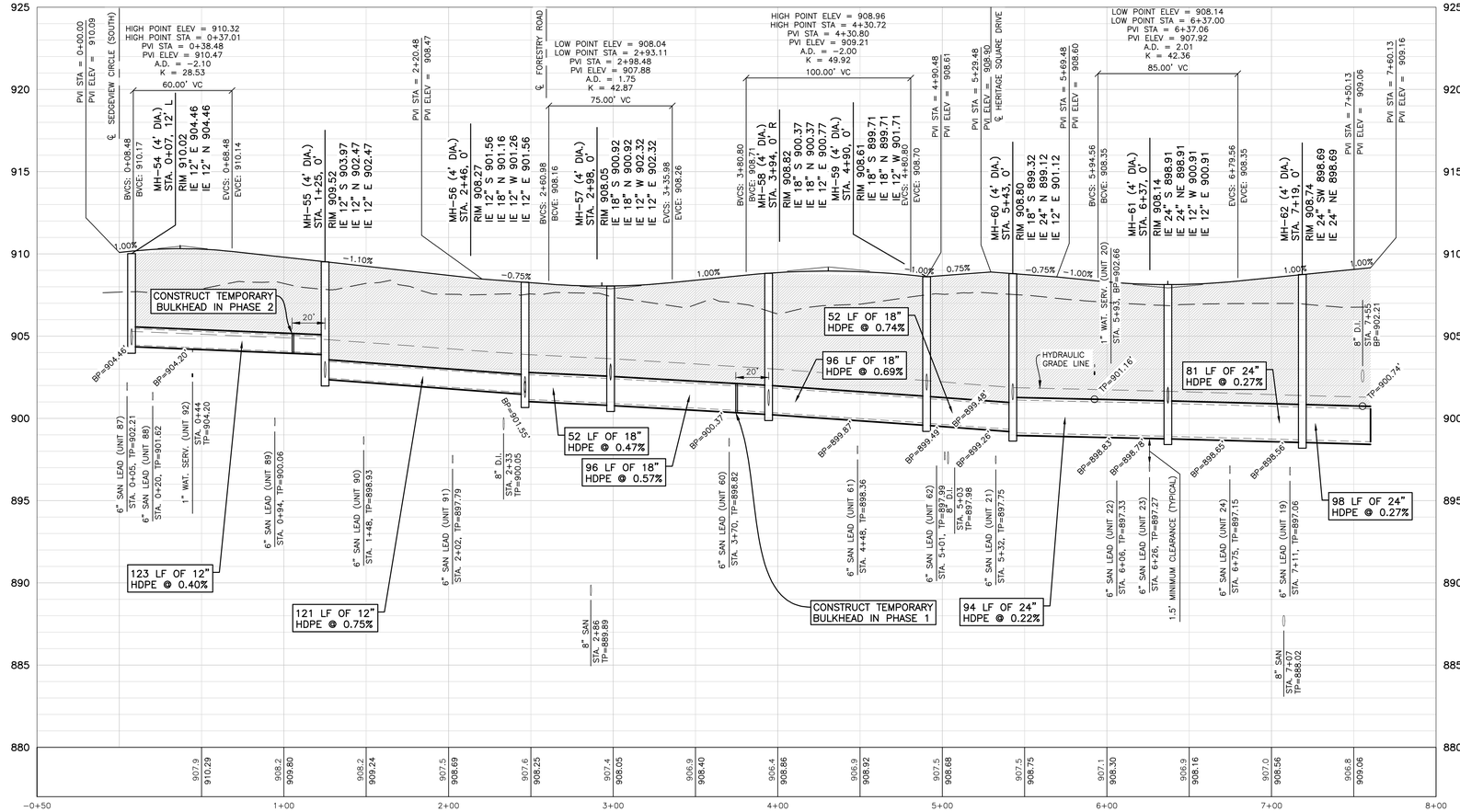
SCALE: 1" = 40'
0 1/2" 1"

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

C-6.12

NOT FOR CONSTRUCTION

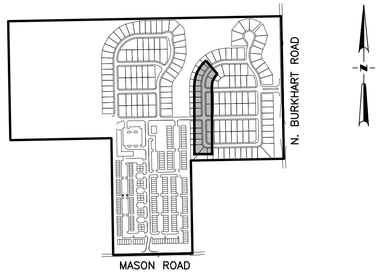




SEDGEVIEW CIRCLE (WEST)
STA. 0+00 TO 7+60

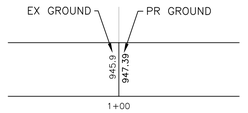
PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

SHEET KEY



PROFILE LEGEND

- UTILITY CROSSING
- SAND BACKFILL (REFER TO TRENCH DETAILS)
- EXISTING GROUND
- PROPOSED GROUND
- H.G. LINE



NOTES

1. SAND BACKFILL AND BEDDING TO BE MDOT CL II.
2. MAINTAIN MINIMUM 18" VERTICAL CLEARANCE BETWEEN ALL UTILITIES.
3. ALL PIPES SHOWN TO OUTSIDE DIAMETER.

INNOVATIVE GEOSPATIAL & ENGINEERING SOLUTIONS

Monument Engineering Group Associates, Inc. MEGA

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(OFFICE) 517-223-3512
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KEVIN C. MCDEVITT
ENGINEER
NO. 6201043260

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40950 WOODWARD AVE
SUITE 203
BLOOMFIELD HILLS, MI 48304
POC: DAVID STRAUB
(248)-221-5011

STORM SEWER AND ROAD PLAN & PROFILE

HERITAGE SQUARE (SINGLE FAMILY)
95 AC. NW CORNER BURKHART & MASON ROADS
PART OF THE SE 1/4 OF SEC. 32, T3N, R4E,
HOWELL TWP, LIVINGSTON COUNTY, MICHIGAN

PLAN SUBMITTALS/REVISIONS	DATE
SITE PLAN SUBMITTAL	05/09/2024
PHASE 1 FINAL SITE PLAN SUBMITTAL	09/18/2024
MODIFIED COVERAGE CALCULATION	11/25/2024
REVISED PHASE 1 FINAL SITE PLAN	02/20/2025
PHASE 2&3 FINAL SITE PLAN SUBMITTAL	12/22/2025

ORIGINAL ISSUE DATE: 5/09/2024

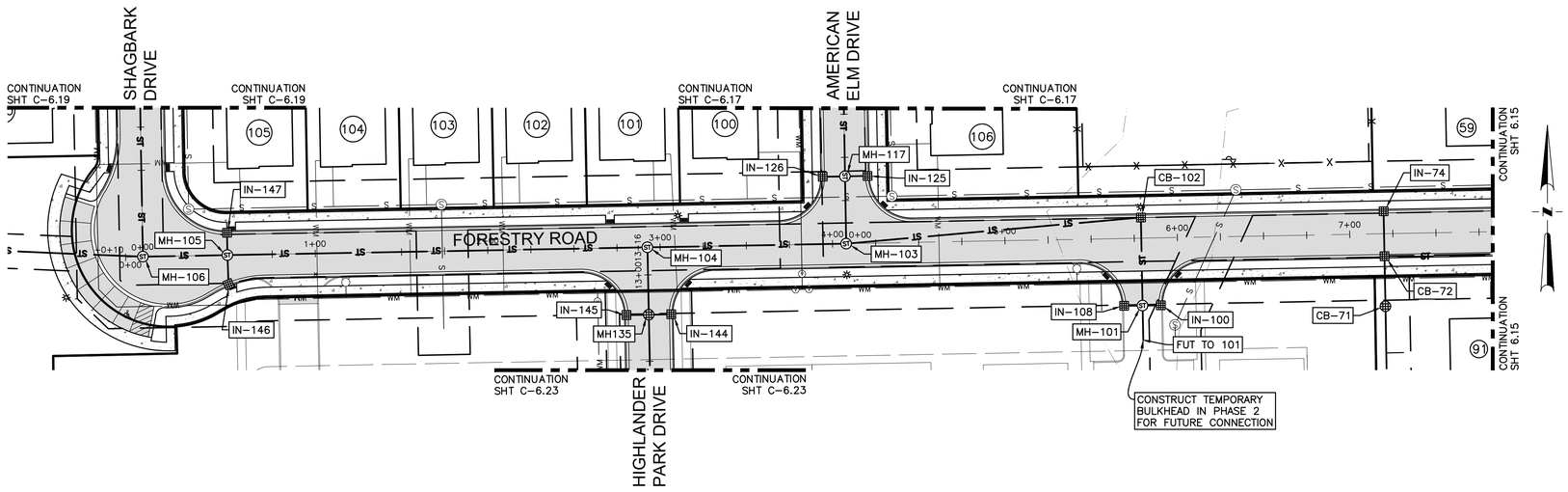
PROJECT NO: 21-075C

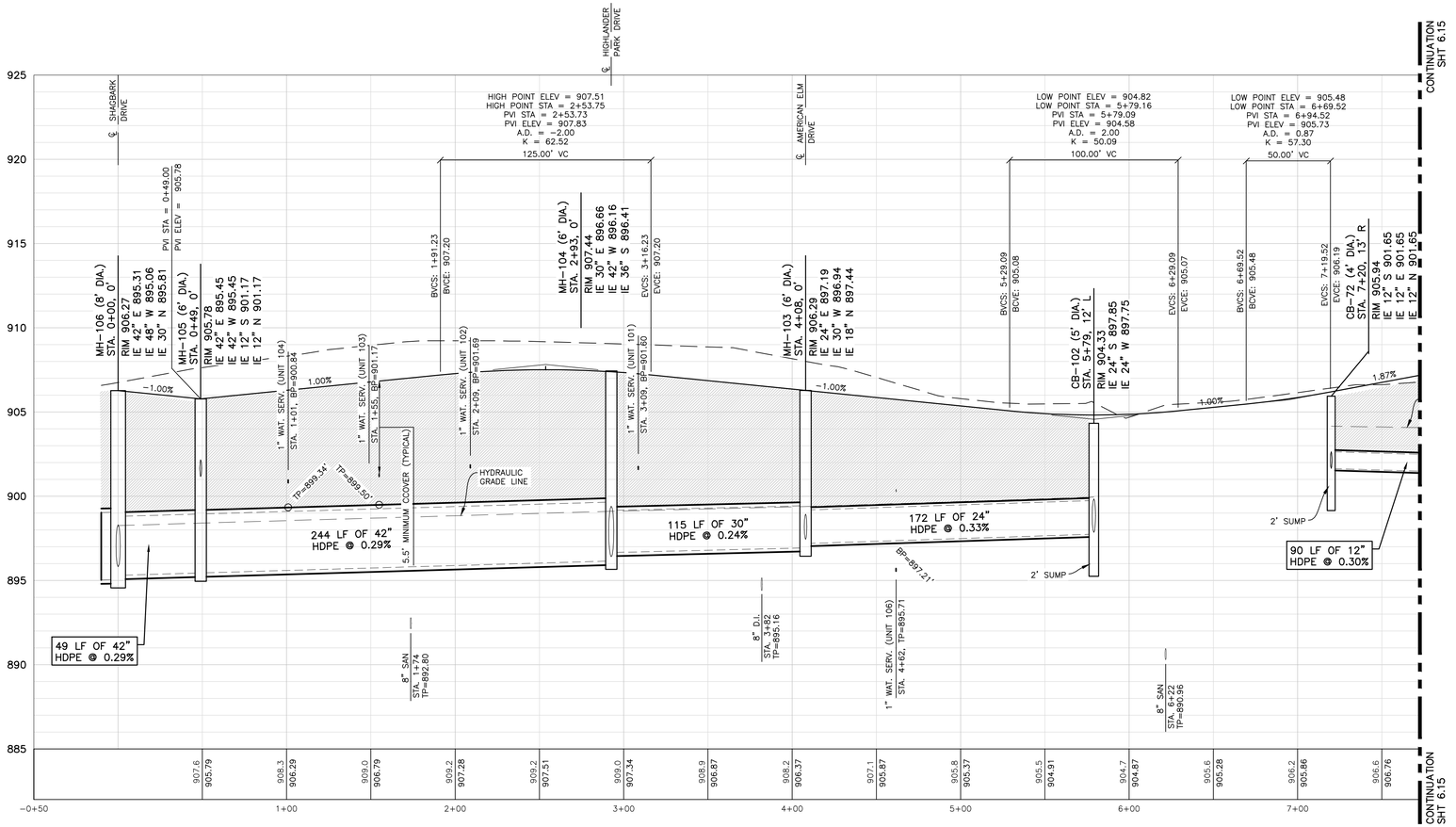
SCALE: 1" = 40'
0 1/2" 1"

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

C-6.13

NOT FOR CONSTRUCTION

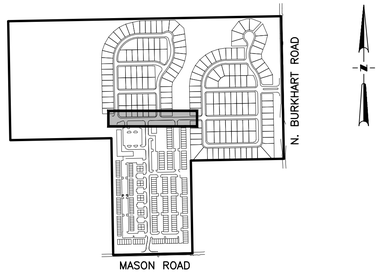




FORESTRY ROAD
STA. 0+00 TO 7+75

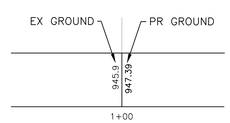
PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

SHEET KEY



PROFILE LEGEND

- UTILITY CROSSING
- SAND BACKFILL (REFER TO TRENCH DETAILS)
- EXISTING GROUND
- PROPOSED GROUND
- H.G. LINE



NOTES

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2. MAINTAIN MINIMUM 18" VERTICAL CLEARANCE BETWEEN ALL UTILITIES.
3. ALL PIPES SHOWN TO OUTSIDE DIAMETER.

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REVISED PHASE 1 FINAL SITE PLAN	02/20/2025
PHASE 2&3 FINAL SITE PLAN SUBMITTAL	12/22/2025

ORIGINAL ISSUE DATE: 5/09/2024

PROJECT NO: 21-075C

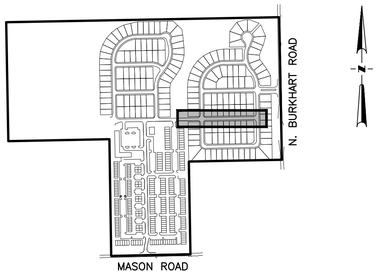
SCALE: 1" = 40'
0 1/2" 1"

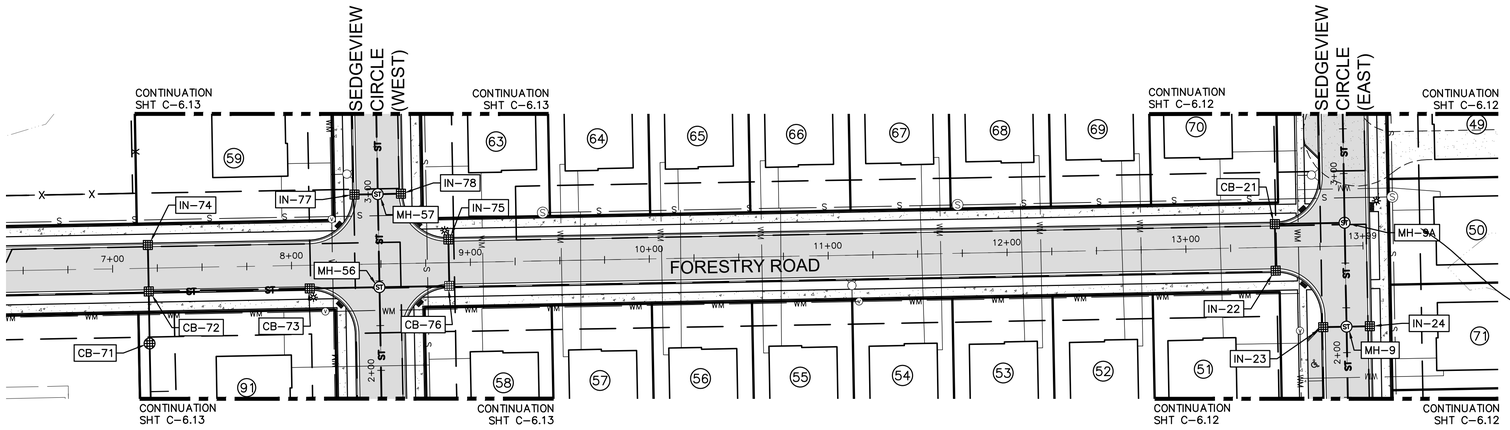
FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

C-6.14

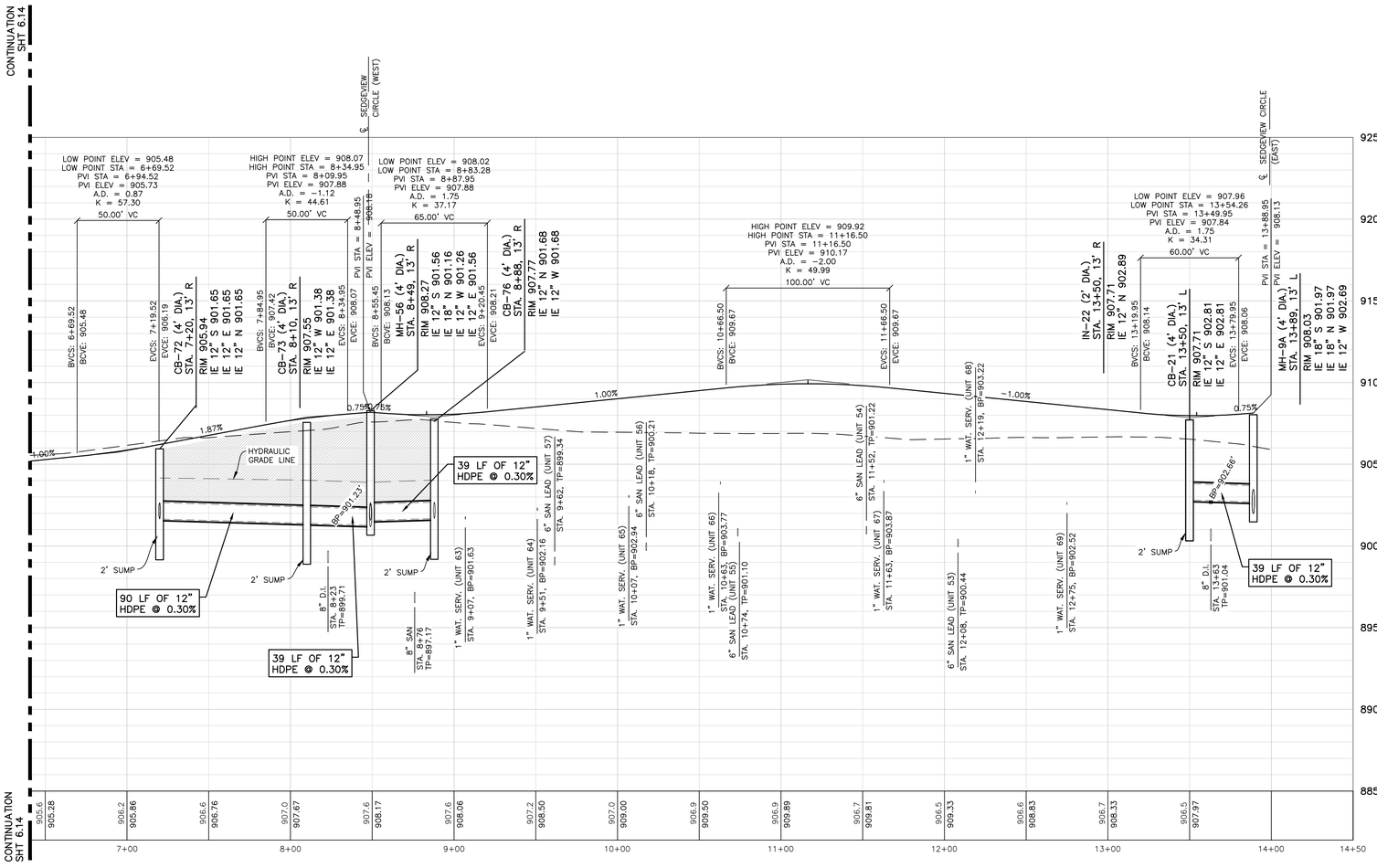
NOT FOR CONSTRUCTION

SHEET KEY





DURING PHASE 2 CONSTRUCTION, MAINTAIN TEMPORARY ACCESS DRIVE THROUGHOUT CONSTRUCTION UNTIL OPENING FORESTRY DRIVE AND HIGHLANDER PARK DRIVE TO TRAFFIC (MASON ROAD ACCESS).

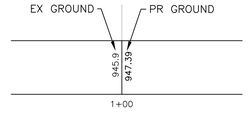


FORESTRY ROAD
STA. 7+75 TO 13+89

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

PROFILE LEGEND

- (X) UTILITY CROSSING
- SAND BACKFILL (REFER TO TRENCH DETAILS)
- EXISTING GROUND
- PROPOSED GROUND
- H.G. LINE



NOTES

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REVISED PHASE 1 FINAL SITE PLAN	02/20/2025
PHASE 2&3 FINAL SITE PLAN SUBMITTAL	12/22/2025

ORIGINAL ISSUE DATE: 5/09/2024

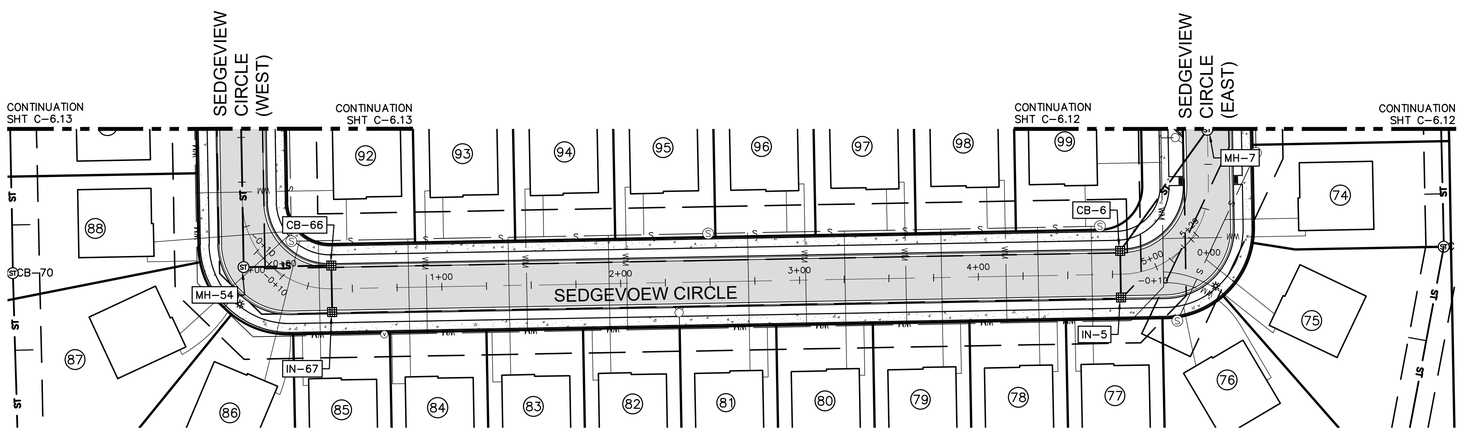
PROJECT NO: 21-075C

SCALE: 1" = 40'
0 1/2" 1"

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

C-6.15

NOT FOR CONSTRUCTION



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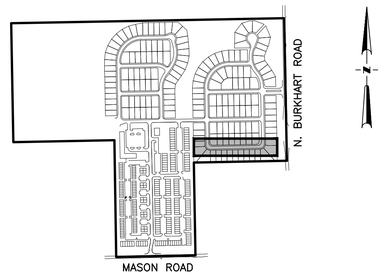
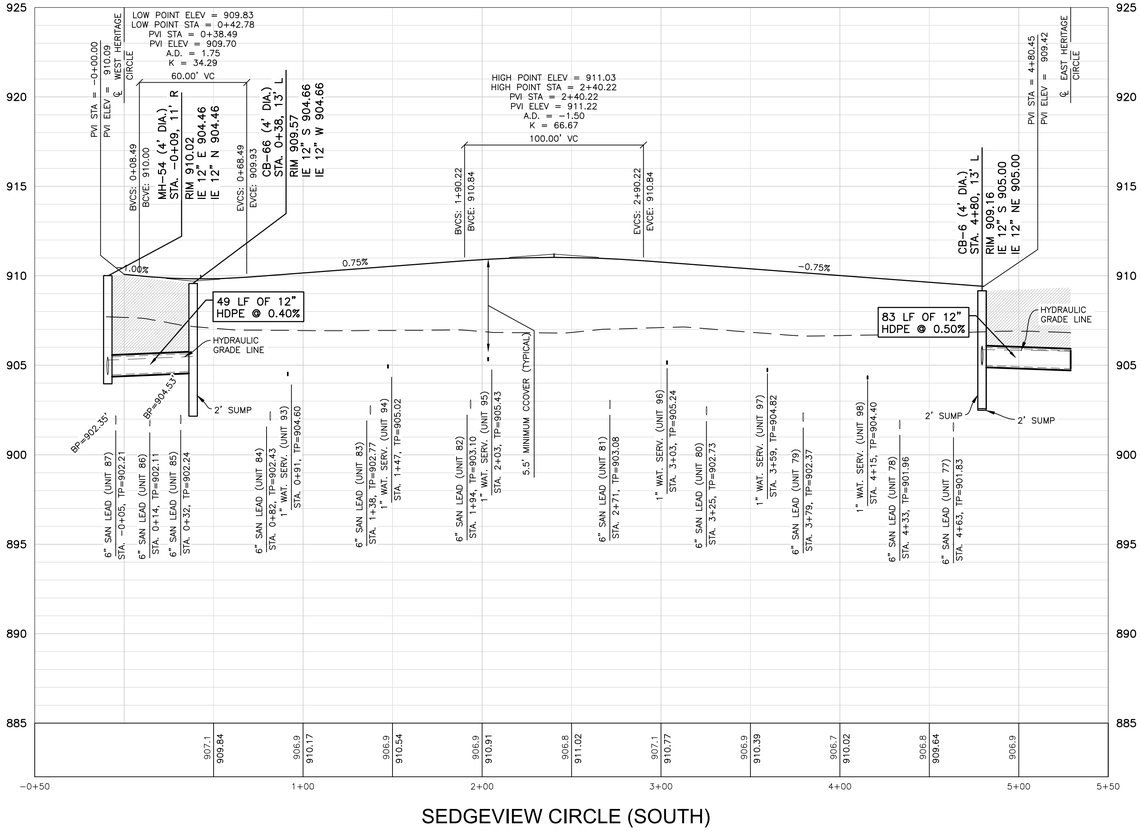


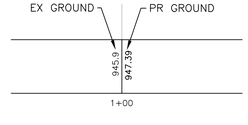


SEDGEVIEW CIRCLE (SOUTH)
STA. 0+00 TO 5+29

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

PROFILE LEGEND

- UTILITY CROSSING
- SAND BACKFILL (REFER TO TRENCH DETAILS)
- EXISTING GROUND
- PROPOSED GROUND
- H.G. LINE



NOTES

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PHASE 2&3 FINAL SITE PLAN SUBMITTAL	12/22/2025

ORIGINAL ISSUE DATE: 5/09/2024

PROJECT NO: 21-075C

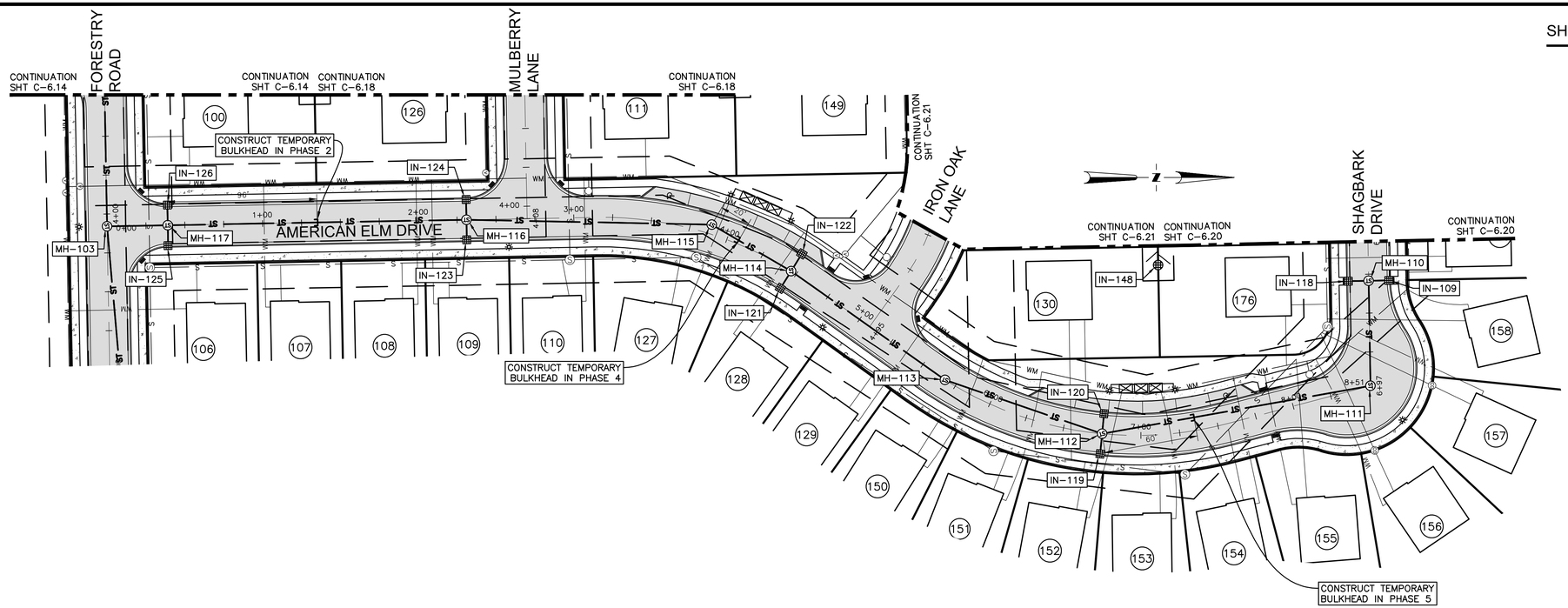
SCALE: 1" = 40'
0 1/2" 1"

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

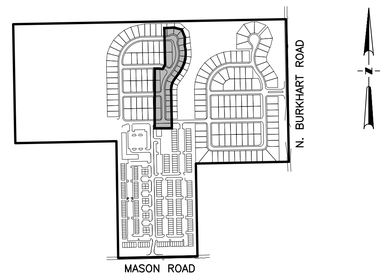
C-6.16

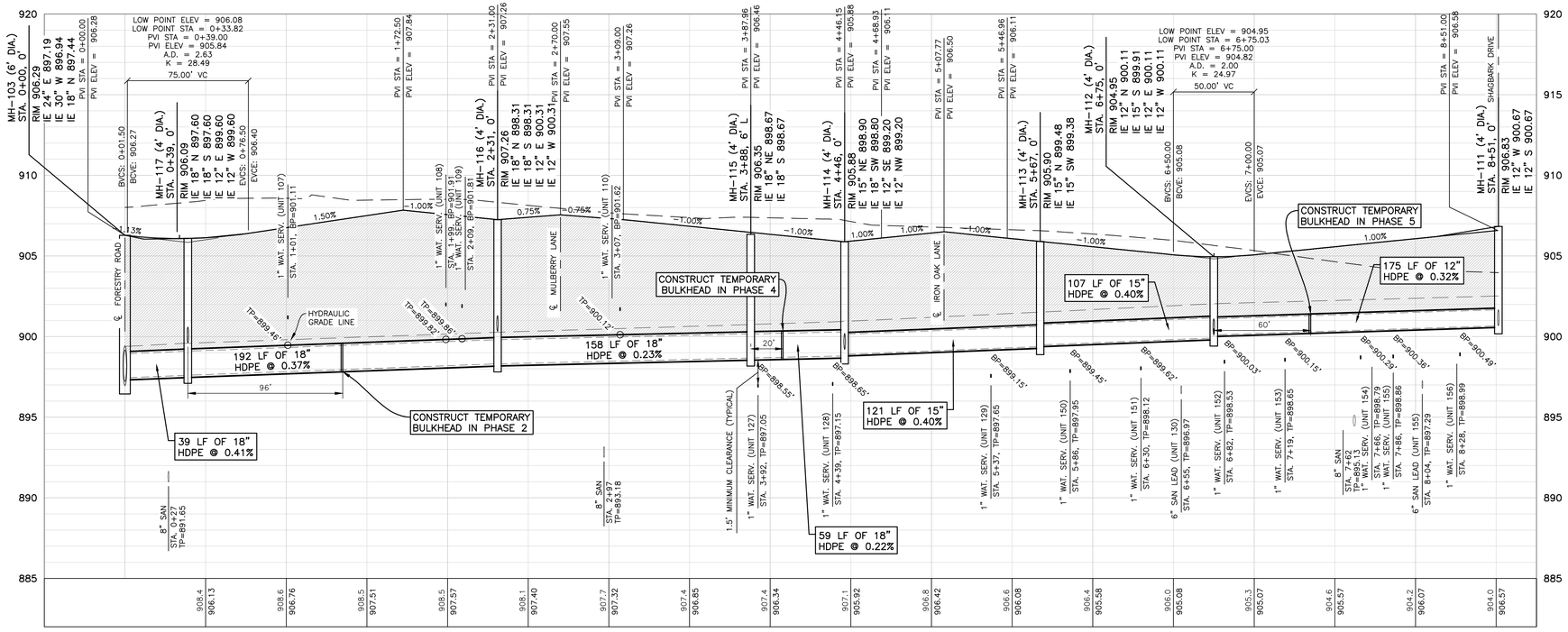
NOT FOR CONSTRUCTION

FILE:P:\Projects\2021\21-075 Heritage Square PUD\21-075C Heritage Square (Single-Family)\Dwg\Engineering\PH 2-3 FSP PLANS\21-075C_SF_PH2 FSP_C-6.9_Storm-Road Plan & Profile.dwg PLOT DATE:12/22/2025 11:59 AM



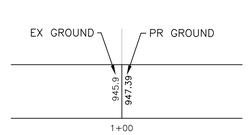
SHEET KEY





PROFILE LEGEND

- (X) UTILITY CROSSING
- SAND BACKFILL (REFER TO TRENCH DETAILS)
- EXISTING GROUND
- PROPOSED GROUND
- H.G. LINE



NOTES

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AMERICAN ELM DRIVE
STA. 0+00 TO 8+51

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

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ORIGINAL ISSUE DATE: 5/09/2024

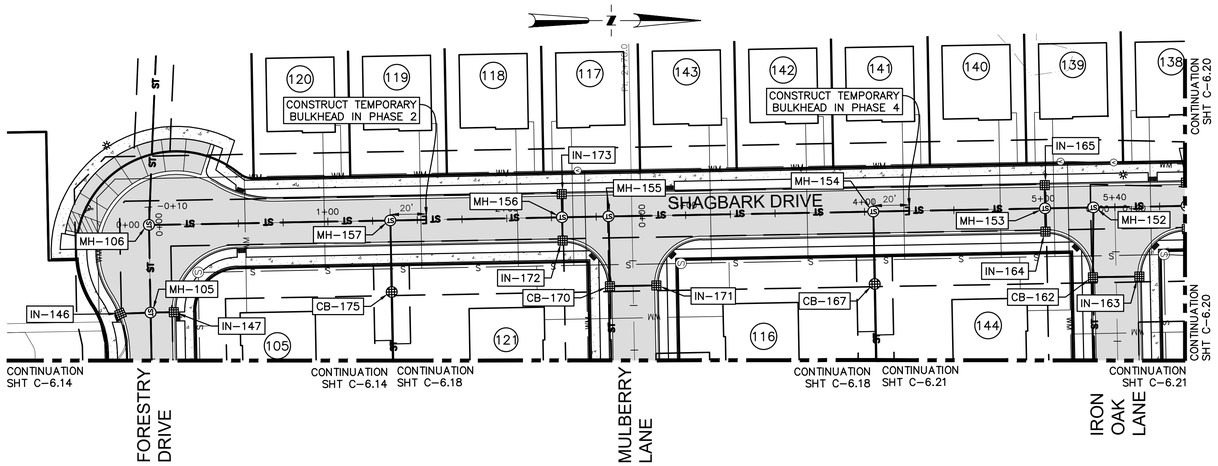
PROJECT NO: 21-075C

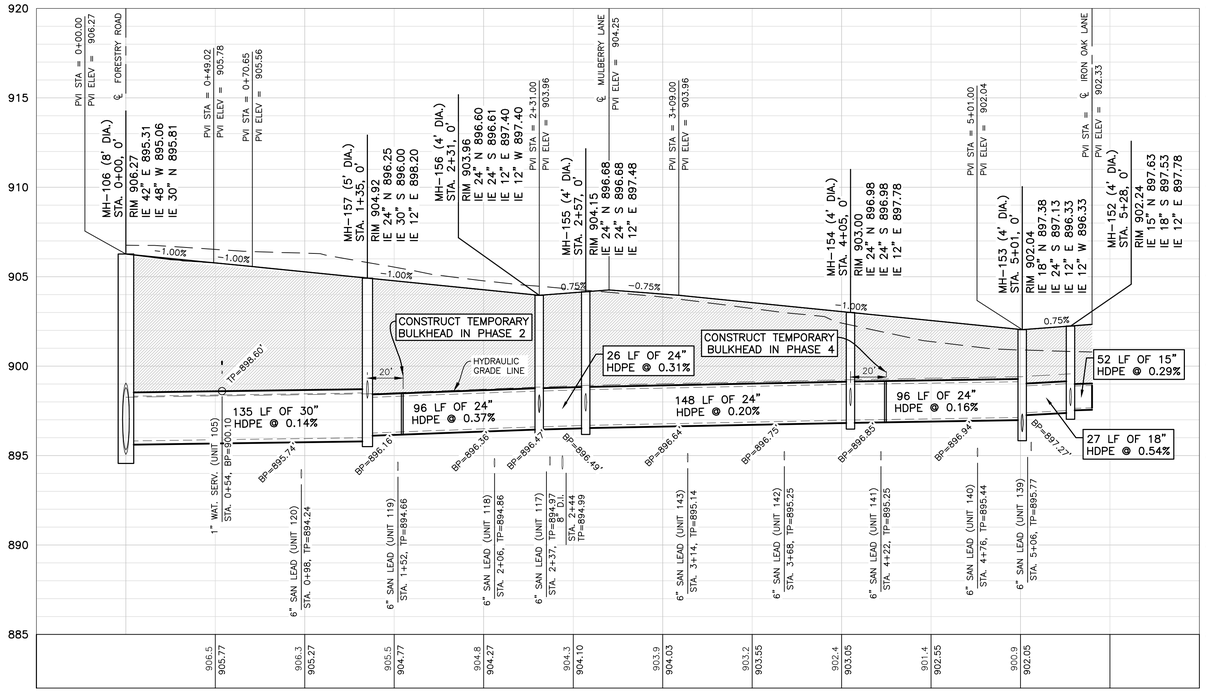
SCALE: 1" = 40'
0 1/2" 1"

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

C-6.17

NOT FOR CONSTRUCTION

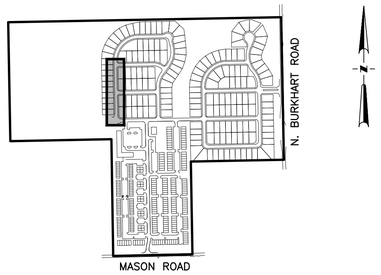




SHAGBARK DRIVE - SOUTH
STA. 0+00 TO 5+40

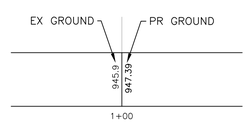
PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

SHEET KEY



PROFILE LEGEND

- UTILITY CROSSING
- SAND BACKFILL (REFER TO TRENCH DETAILS)
- EXISTING GROUND
- PROPOSED GROUND
- H.G. LINE



NOTES

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HOWELL TWP, LIVINGSTON COUNTY, MICHIGAN

PLAN SUBMITTALS/REVISIONS	DATE
SITE PLAN SUBMITTAL	05/09/2024
PHASE 1 FINAL SITE PLAN SUBMITTAL	09/18/2024
MODIFIED COVERAGE CALCULATION	11/25/2024
REVISED PHASE 1 FINAL SITE PLAN	02/20/2025
PHASE 2&3 FINAL SITE PLAN SUBMITTAL	12/22/2025

ORIGINAL ISSUE DATE: 5/09/2024

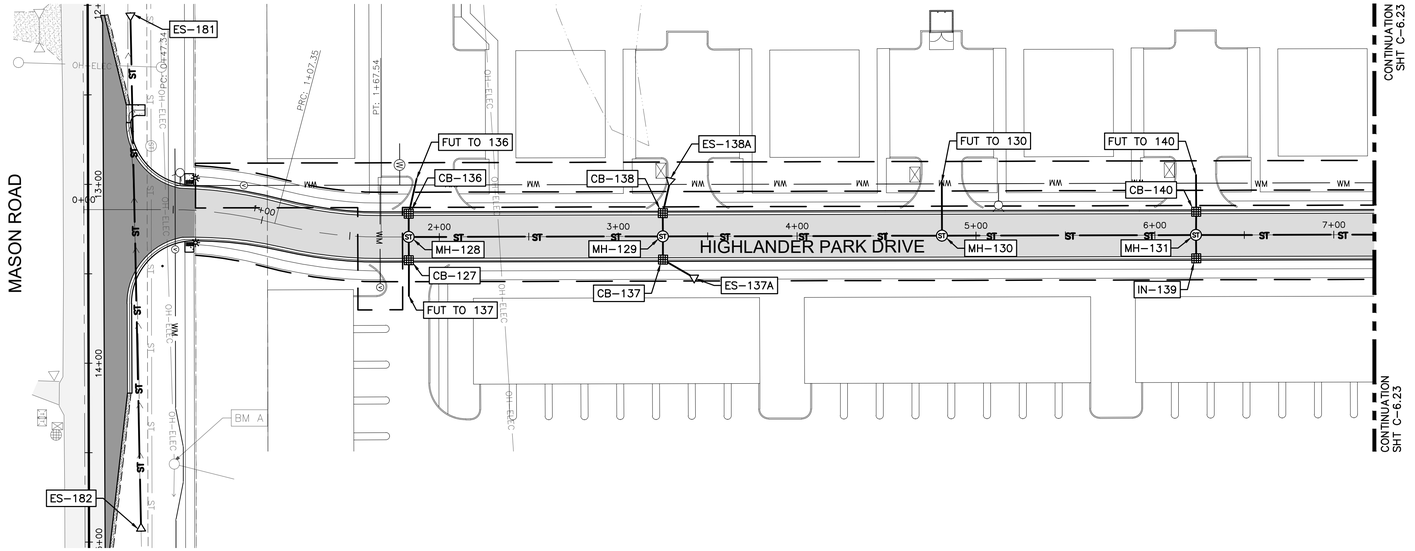
PROJECT NO: 21-075C

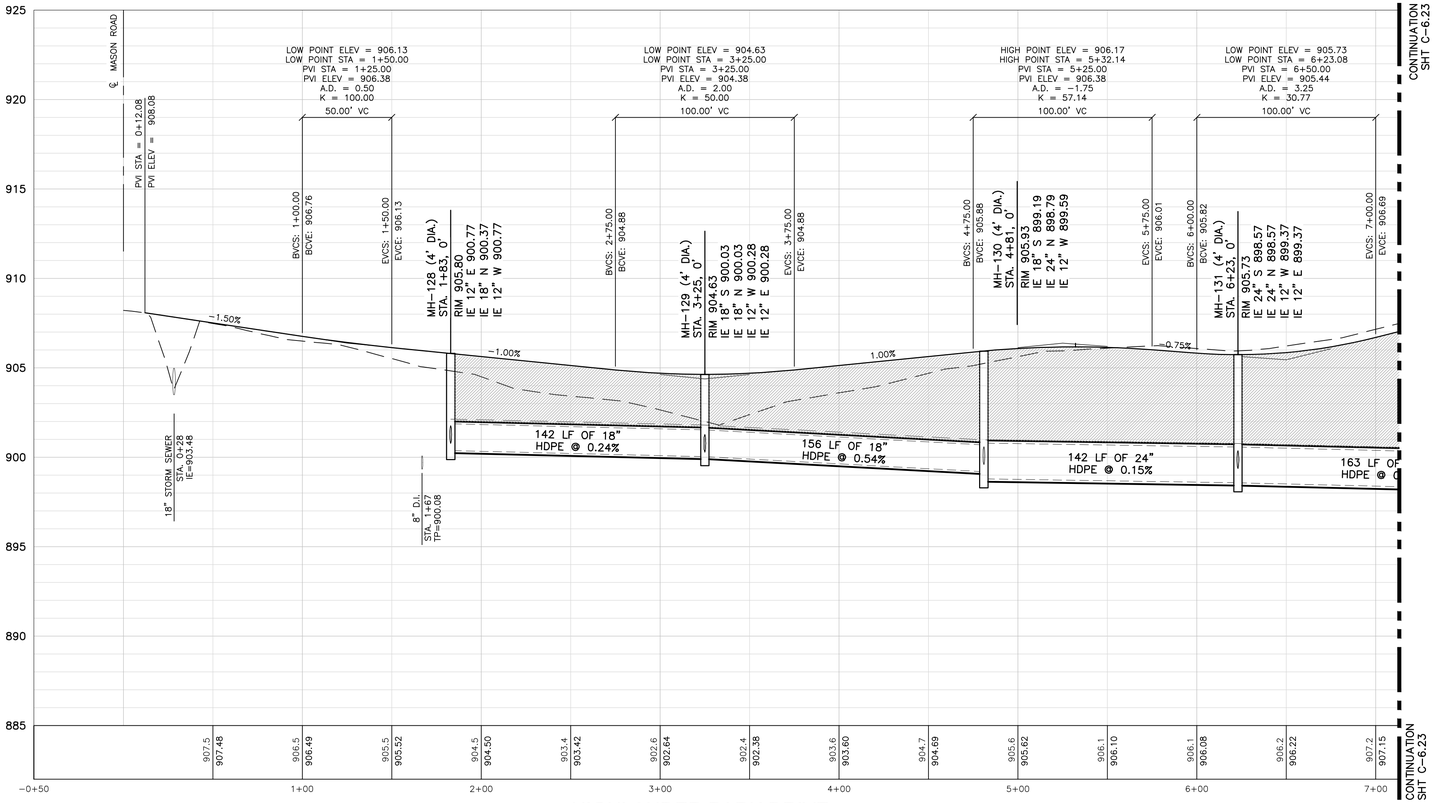
SCALE: 1" = 40'
0 1/2" 1"

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

C-6.19

NOT FOR CONSTRUCTION

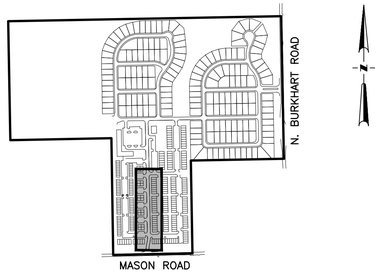




HIGHLANDER PARK DRIVE
STA. 0+00 TO 7+00

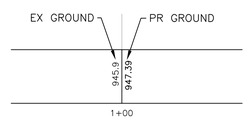
PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

SHEET KEY



PROFILE LEGEND

- UTILITY CROSSING
- SAND BACKFILL (REFER TO TRENCH DETAILS)
- EXISTING GROUND
- PROPOSED GROUND
- H.G. LINE



NOTES

1. SAND BACKFILL AND BEDDING TO BE MDOT CL II.
2. MAINTAIN MINIMUM 18" VERTICAL CLEARANCE BETWEEN ALL UTILITIES.
3. ALL PIPES SHOWN TO OUTSIDE DIAMETER.

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ENGINEER
NO. 6201043260

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CLIENT :

M/I HOMES OF MICHIGAN, L.L.C.
40950 WOODWARD AVE
SUITE 203
BLOOMFIELD HILLS, MI 48304
POC: DAVID STRAUB
(248)-221-5011

STORM SEWER AND ROAD PLAN & PROFILE

HERITAGE SQUARE (SINGLE FAMILY)
95 AC. NW CORNER BURKHART & MASON ROADS
PART OF THE SE 1/4 OF SEC. 32, T3N, R4E,
HOWELL TWP, LIVINGSTON COUNTY, MICHIGAN

PLAN SUBMITTALS/REVISIONS	DATE
SITE PLAN SUBMITTAL	05/09/2024
PHASE 1 FINAL SITE PLAN SUBMITTAL	09/18/2024
MODIFIED COVERAGE CALCULATION	11/25/2024
REVISED PHASE 1 FINAL SITE PLAN	02/20/2025
PHASE 2&3 FINAL SITE PLAN SUBMITTAL	12/22/2025

ORIGINAL ISSUE DATE: 5/09/2024

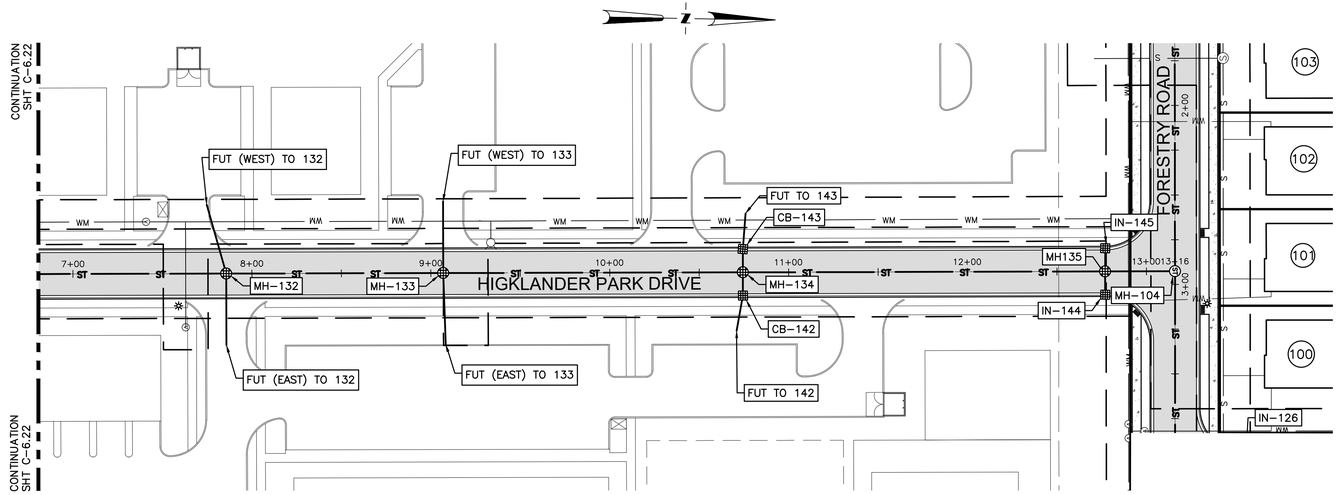
PROJECT NO: 21-075C

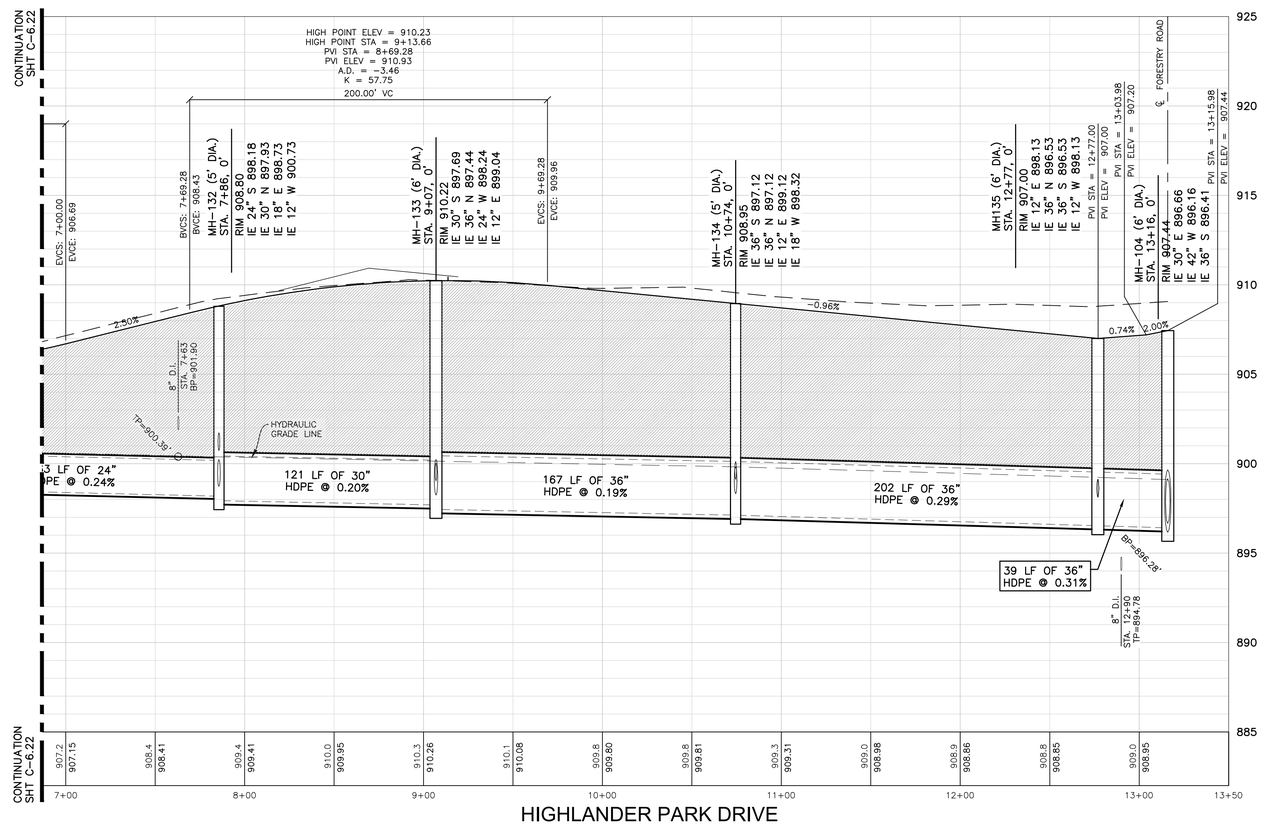
SCALE: 1" = 40'
0 1/2" 1"

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

C-6.22

NOT FOR CONSTRUCTION

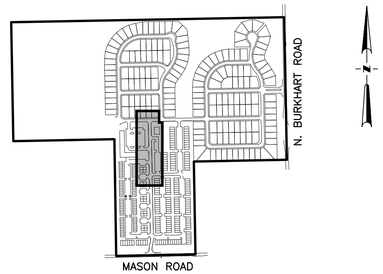




HIGHLANDER PARK DRIVE
STA. 7+00 TO 13+16

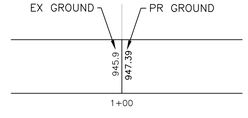
PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

SHEET KEY



PROFILE LEGEND

- UTILITY CROSSING
- SAND BACKFILL (REFER TO TRENCH DETAILS)
- EXISTING GROUND
- PROPOSED GROUND
- H.G. LINE



NOTES

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3. ALL PIPES SHOWN TO OUTSIDE DIAMETER.

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PHASE 1 FINAL SITE PLAN SUBMITTAL	09/16/2024
MODIFIED COVERAGE CALCULATION	11/25/2024
REVISED PHASE 1 FINAL SITE PLAN	02/20/2025
PHASE 2&3 FINAL SITE PLAN SUBMITTAL	12/22/2025

ORIGINAL ISSUE DATE: 5/09/2024

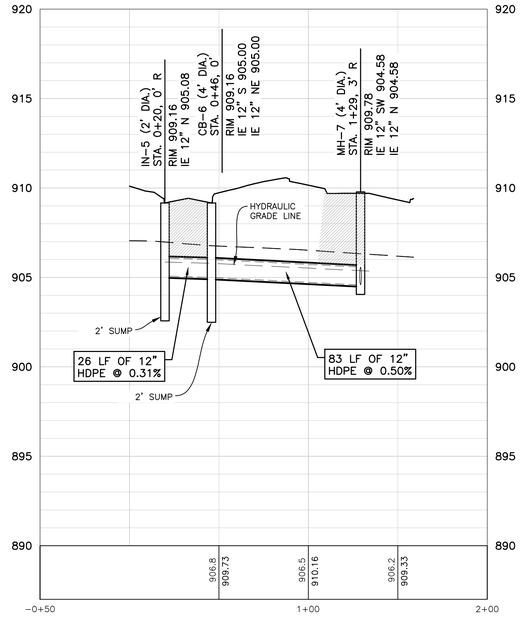
PROJECT NO: 21-075C

SCALE: 1" = 40'
0 1/2" 1"

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

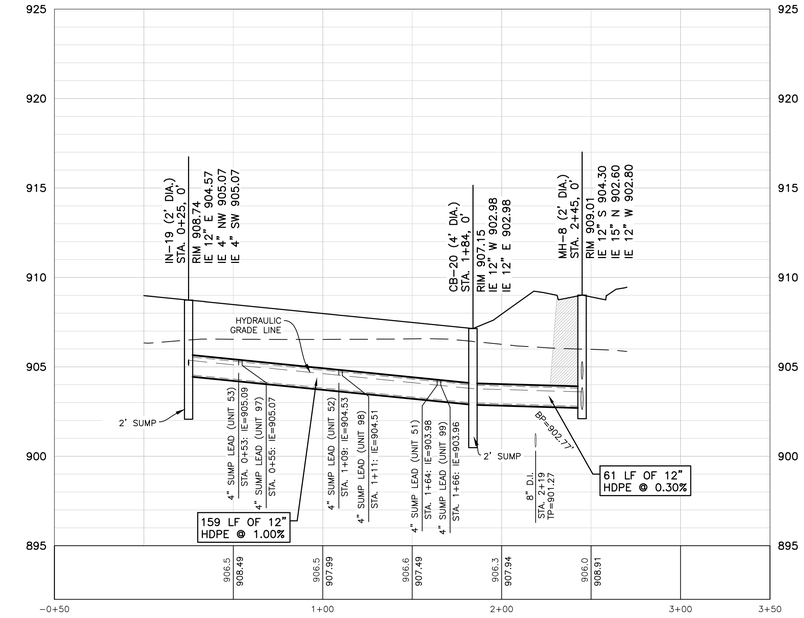
C-6.23

NOT FOR CONSTRUCTION



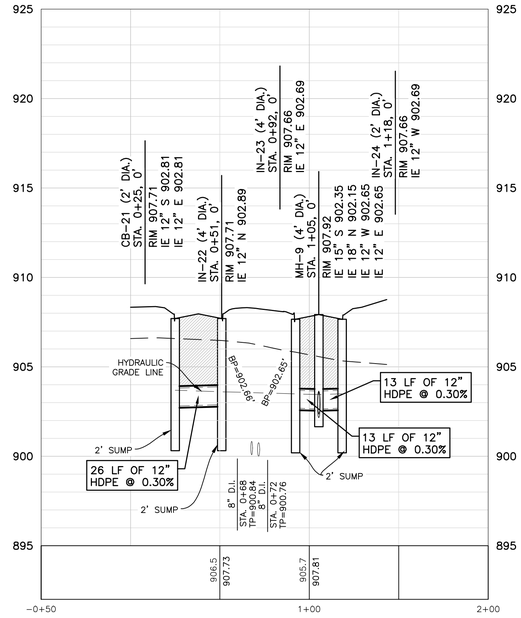
STORM PROFILE - IN-5 TO MH-7

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'



STORM PROFILE - IN19 TO MH8

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

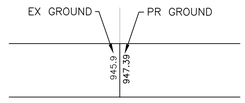


STORM PROFILE - IN-21 TO IN-24

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

PROFILE LEGEND

- UTILITY CROSSING
- SAND BACKFILL (REFER TO TRENCH DETAILS)
- EXISTING GROUND
- PROPOSED GROUND
- H.G. LINE



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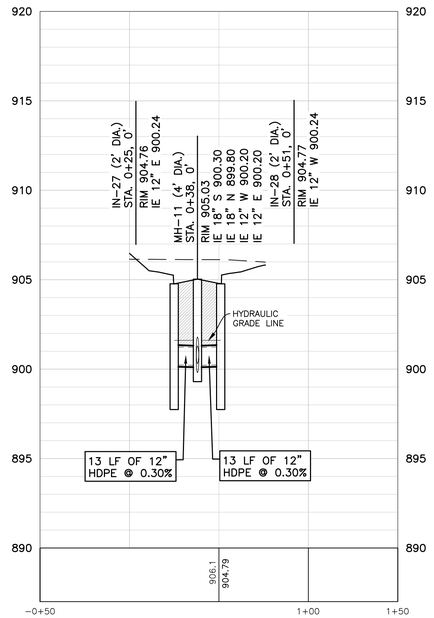
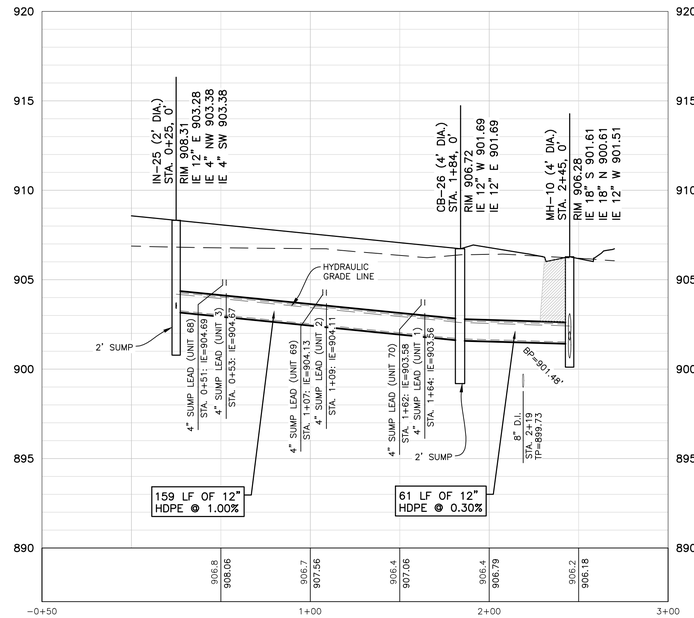


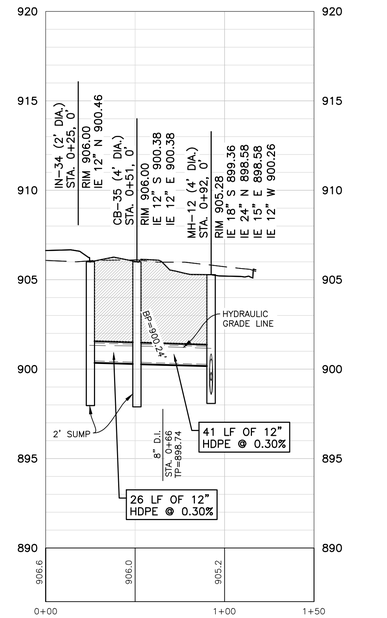
STORM PROFILE - IN-27 TO IN-28

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'



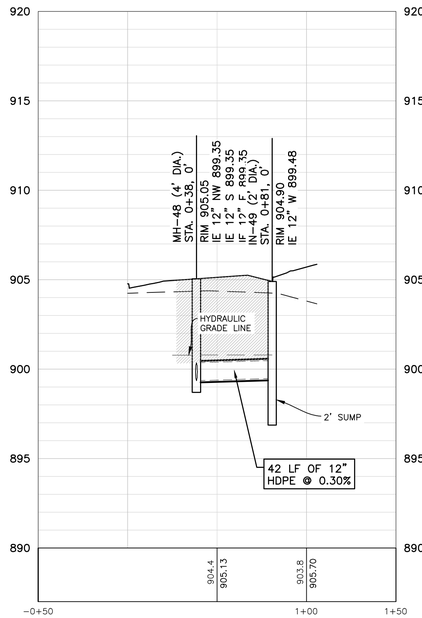
STORM PROFILE - IN-25 TO MH-10

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'



STORM PROFILE - IN-34 TO MH-12

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'



STORM PROFILE - IN-49 TO MH-48

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

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STORM SEWER PROFILES

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PLAN SUBMITTALS/REVISIONS	DATE
SITE PLAN SUBMITTAL	05/09/2024
PHASE 1 FINAL SITE PLAN SUBMITTAL	09/18/2024
MODIFIED COVERAGE CALCULATION	11/25/2024
REVISED PHASE 1 FINAL SITE PLAN	02/20/2025
PHASE 2&3 FINAL SITE PLAN SUBMITTAL	12/22/2025

ORIGINAL ISSUE DATE:
5/09/2024

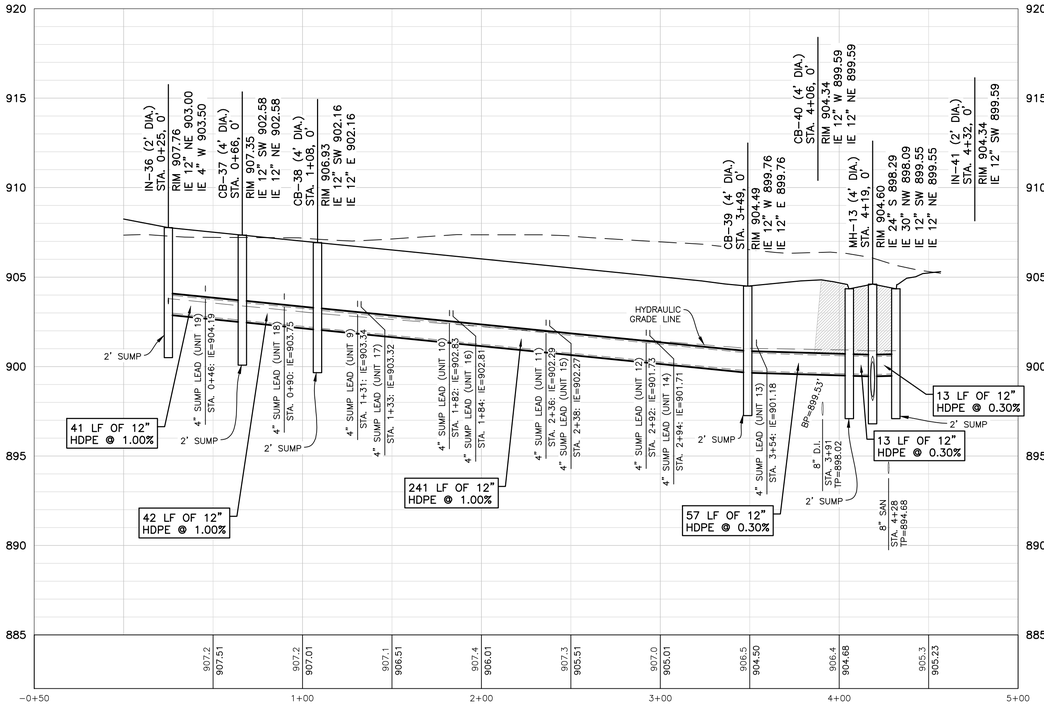
PROJECT NO: 21-075C

SCALE: 1" = 40'
0 1/2" 1"

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

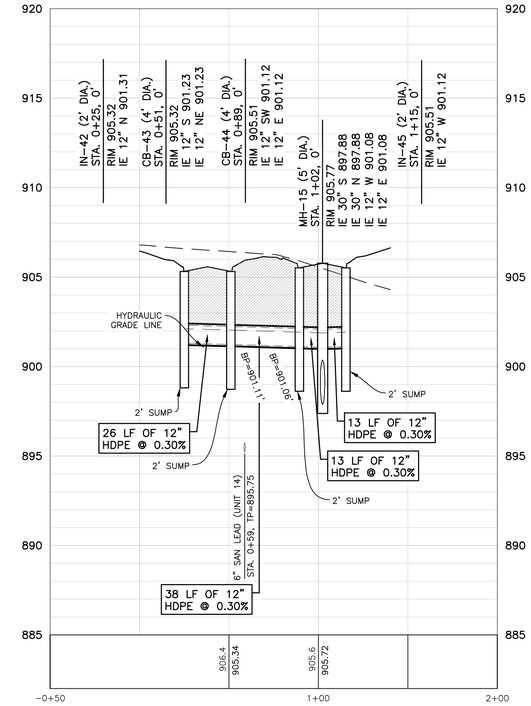
C-6.24

NOT FOR CONSTRUCTION



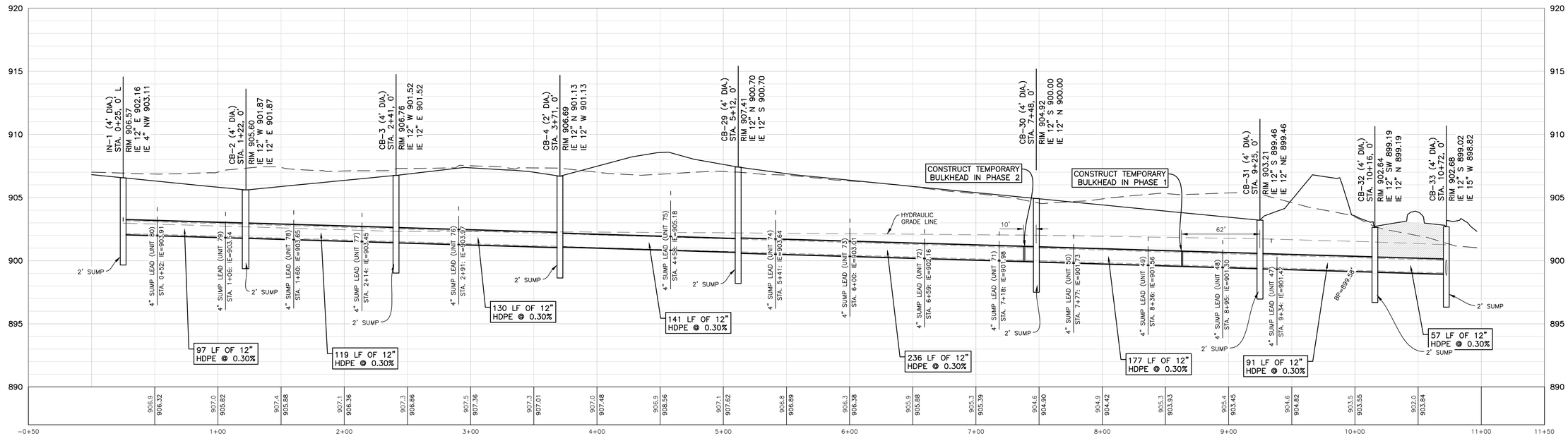
STORM PROFILE - IN-36 TO IN-41

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'



STORM PROFILE - IN-42 TO IN-45

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

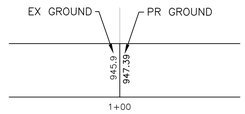


STORM PROFILE - IN-1 TO CB-33

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

PROFILE LEGEND

- UTILITY CROSSING
- SAND BACKFILL (REFER TO TRENCH DETAILS)
- EXISTING GROUND
- PROPOSED GROUND
- H.G. LINE



NOTES

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ORIGINAL ISSUE DATE: 5/09/2024

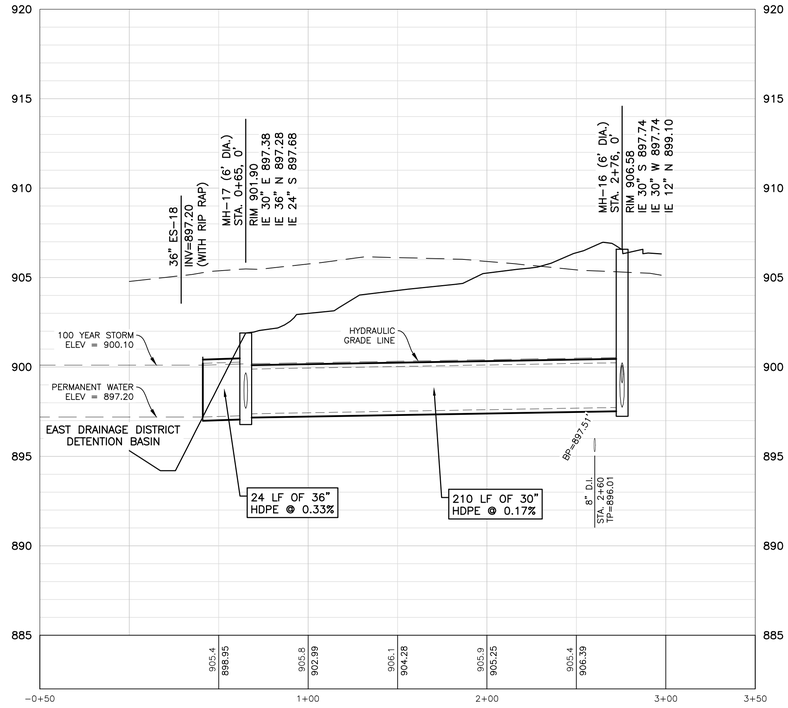
PROJECT NO: 21-075C

SCALE: 1" = 40'
0 1/2" 1"

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

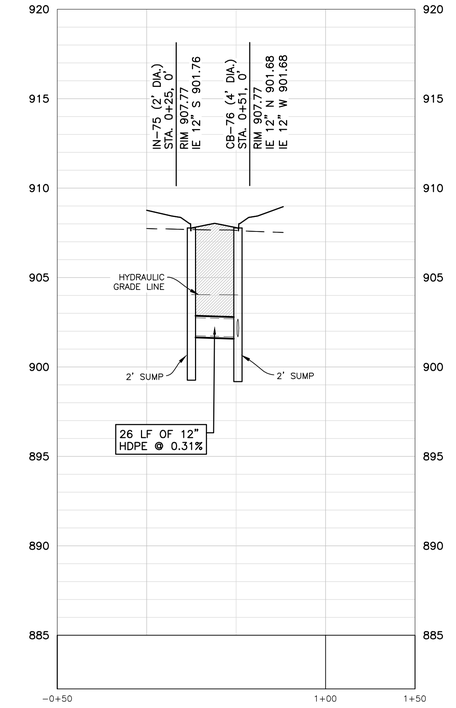
C-6.25

NOT FOR CONSTRUCTION



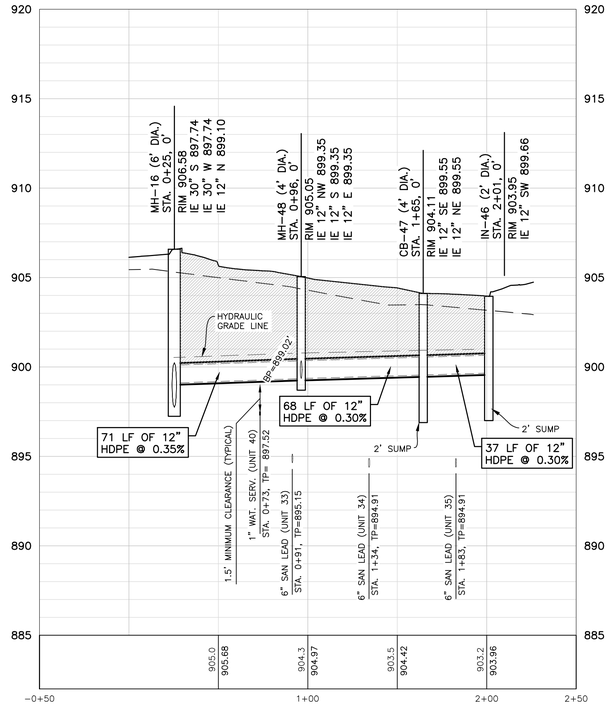
STORM PROFILE - ES-18 TO MH-16

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'



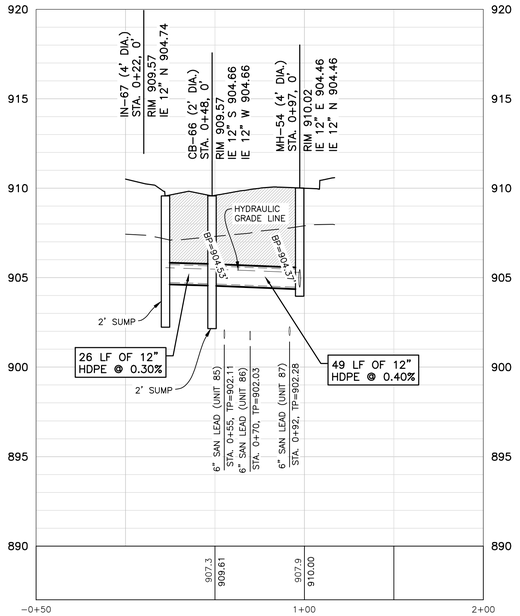
STORM PROFILE - IN-75 TO CB-76

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'



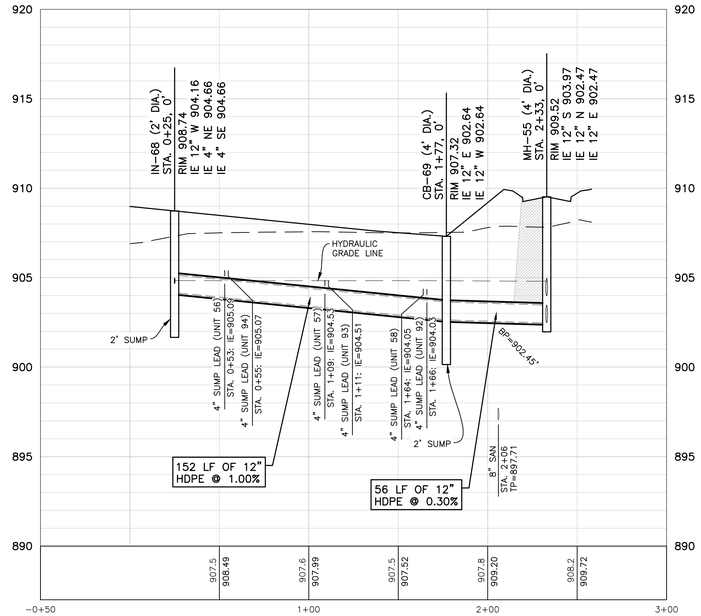
STORM PROFILE - MH-16 TO IN-46

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'



STORM PROFILE - IN-67 TO MH-54

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

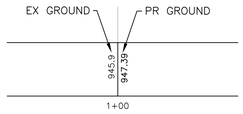


STORM PROFILE - IN-68 TO MH-55

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

PROFILE LEGEND

- UTILITY CROSSING
- SAND BACKFILL (REFER TO TRENCH DETAILS)
- EXISTING GROUND
- PROPOSED GROUND
- H.G. LINE



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HOWELL TWP, LIVINGSTON COUNTY, MICHIGAN

PLAN SUBMITTALS/REVISIONS	DATE
SITE PLAN SUBMITTAL	05/09/2024
PHASE 1 FINAL SITE PLAN SUBMITTAL	09/18/2024
MODIFIED COVERAGE CALCULATION	11/25/2024
REVISED PHASE 1 FINAL SITE PLAN	02/20/2025
PHASE 2&3 FINAL SITE PLAN SUBMITTAL	12/22/2025

ORIGINAL ISSUE DATE: 5/09/2024

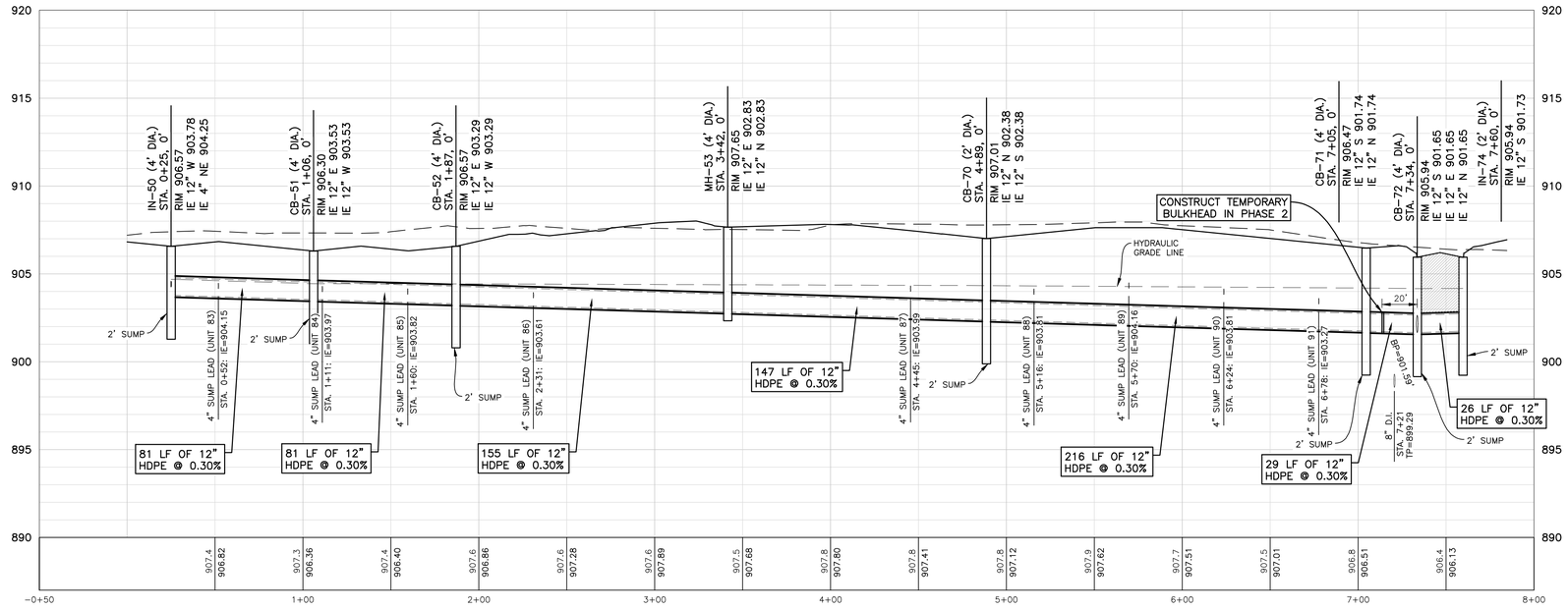
PROJECT NO: 21-075C

SCALE: 1" = 40'
0 1/2" 1"

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

C-6.26

NOT FOR CONSTRUCTION

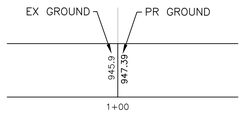


STORM PROFILE - IN-50 TO IN-74

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

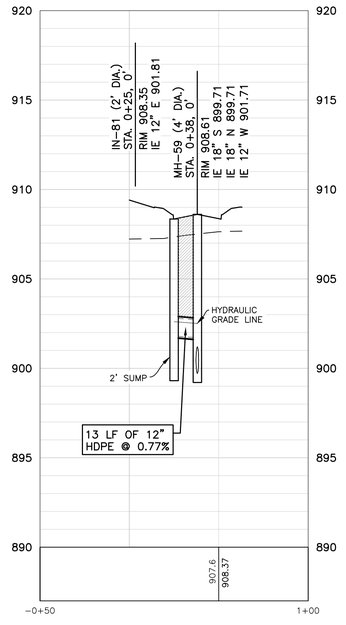
PROFILE LEGEND

- UTILITY CROSSING
- SAND BACKFILL (REFER TO TRENCH DETAILS)
- EXISTING GROUND
- PROPOSED GROUND
- H.G. LINE



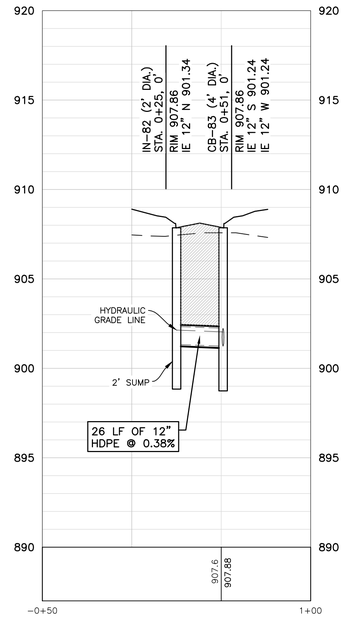
NOTES

1. SAND BACKFILL AND BEDDING TO BE MDOT CL II.
2. MAINTAIN MINIMUM 18" VERTICAL CLEARANCE BETWEEN ALL UTILITIES.
3. ALL PIPE SHOWN TO OUTSIDE DIAMETER.



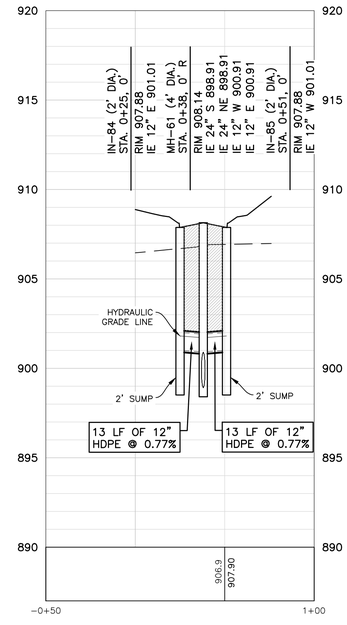
STORM PROFILE - IN-81 TO MH-59

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'



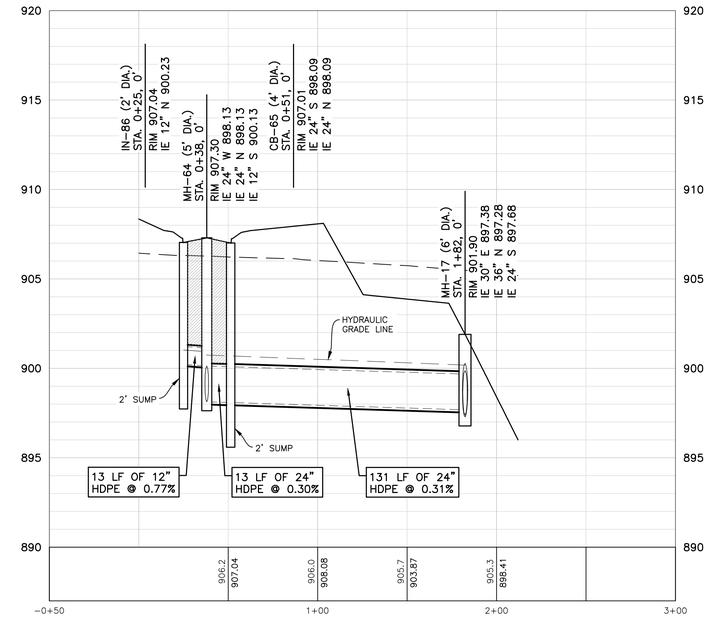
STORM PROFILE - IN-82 TO CB-83

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'



STORM PROFILE - IN -84 TO IN-85

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'



STORM PROFILE - IN-86 TO MH-17

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

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POC: DAVID STRAUB
(248)-221-5011

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ORIGINAL ISSUE DATE:
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PROJECT NO: 21-075C

SCALE: 1" = 40'
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FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

C-6.27

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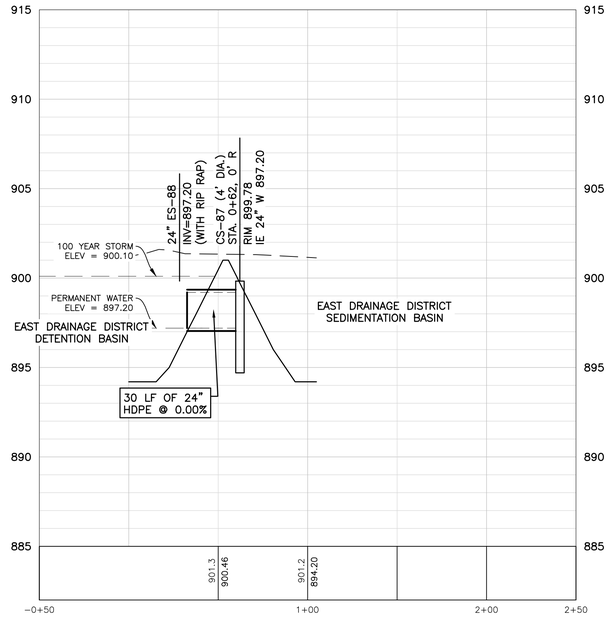
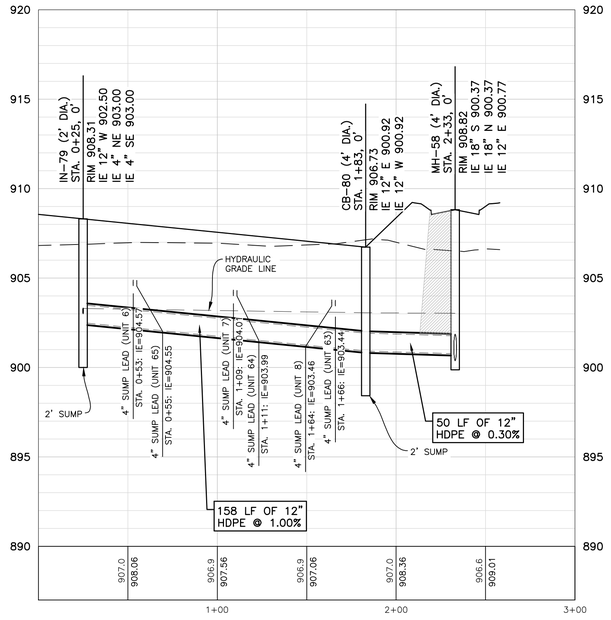


STORM PROFILE - IN-77 TO IN-78

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

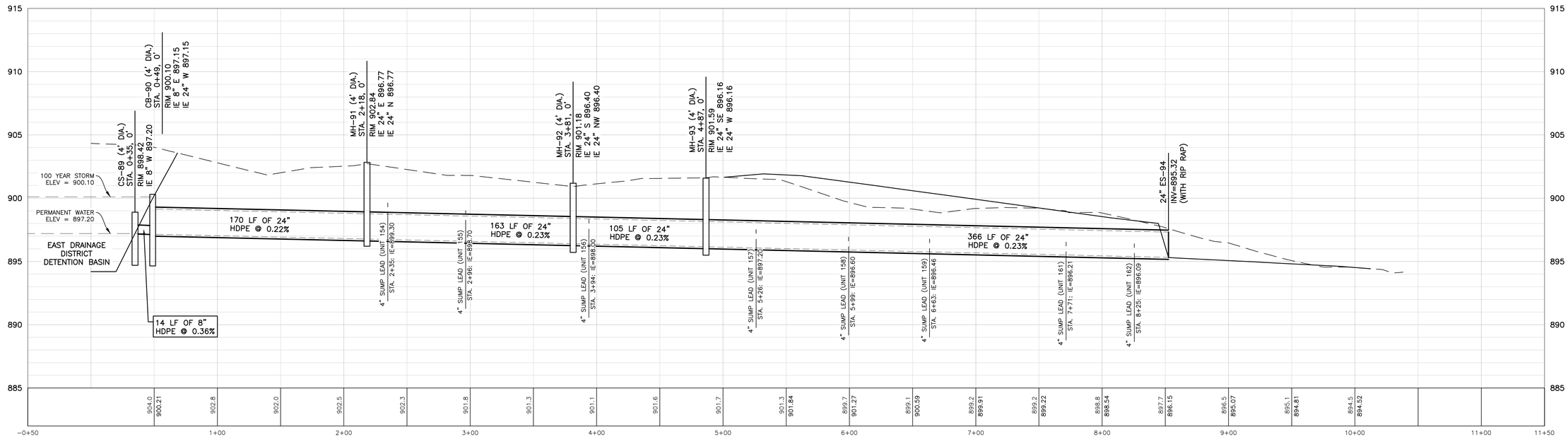
STORM PROFILE - CS-87 TO ES-88

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'



STORM PROFILE - IN-79 TO MH-58

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

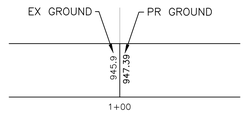


STORM PROFILE - CS-89 TO ES-94

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

PROFILE LEGEND

- UTILITY CROSSING
- SAND BACKFILL (REFER TO TRENCH DETAILS)
- EXISTING GROUND
- PROPOSED GROUND
- H.G. LINE



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CHECK BY: KM

C-6.28

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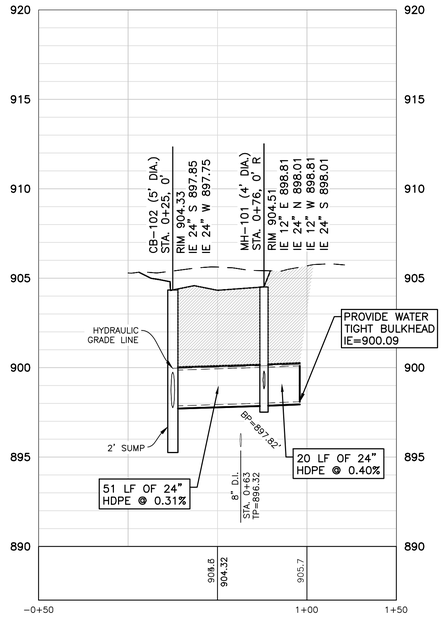
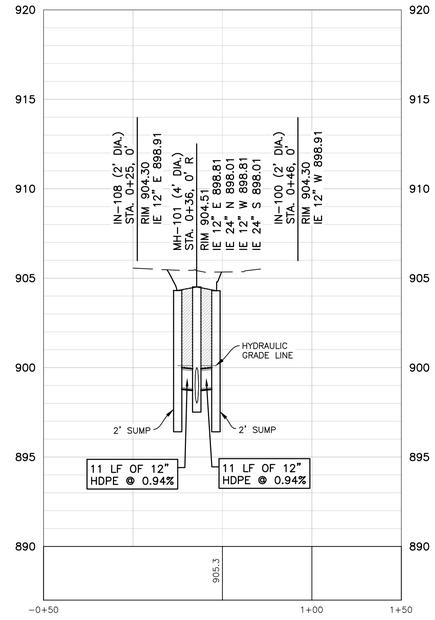


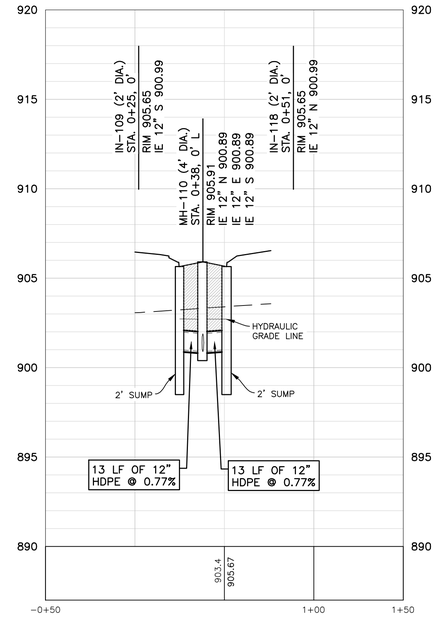
STORM PROFILE - CB-102 TO MH 101

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'



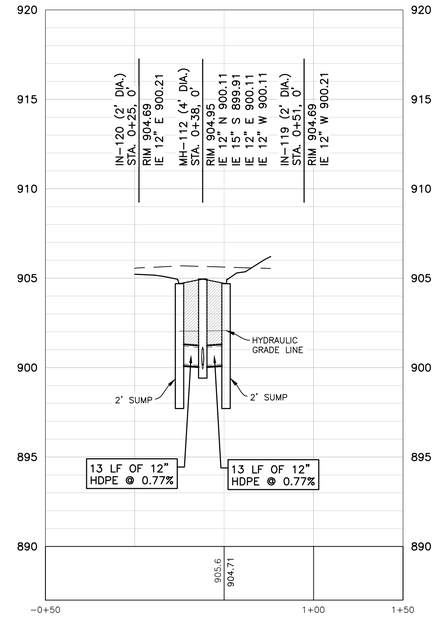
STORM PROFILE - IN-108 TO IN-100

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'



STORM PROFILE - IN-109 TO IN-118

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

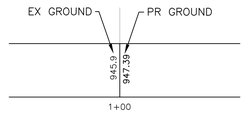


STORM PROFILE - IN-120 TO IN-119

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

PROFILE LEGEND

- UTILITY CROSSING
- SAND BACKFILL (REFER TO TRENCH DETAILS)
- EXISTING GROUND
- PROPOSED GROUND
- H.G. LINE



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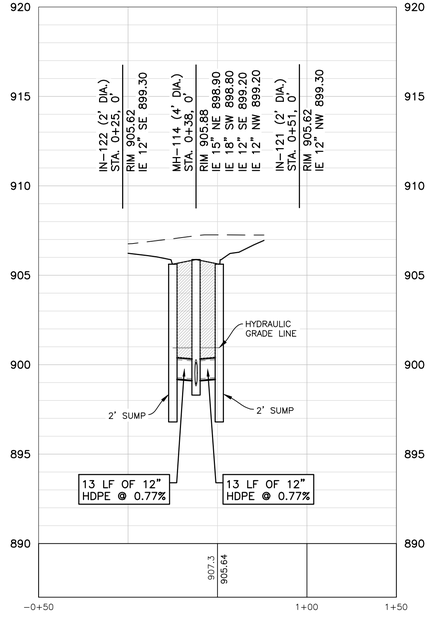
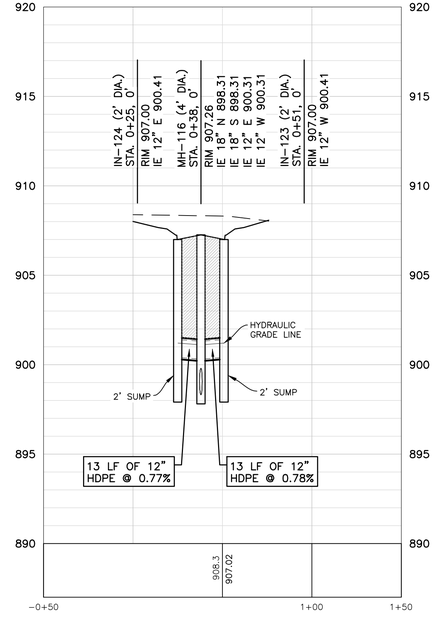


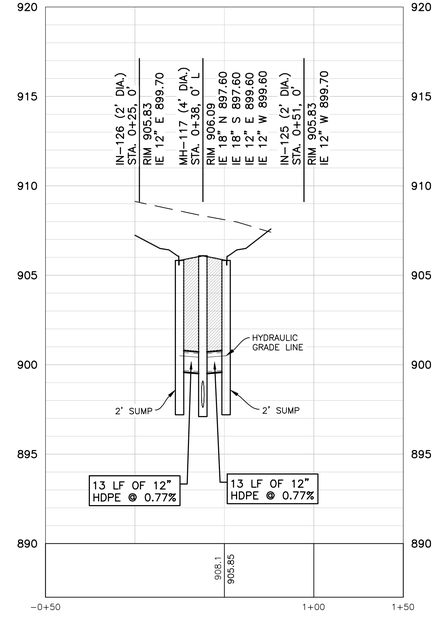
STORM PROFILE - IN-122 TO IN-121

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'



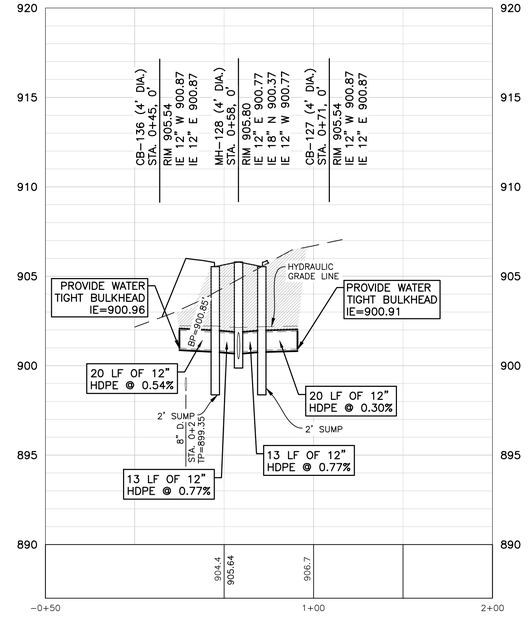
STORM PROFILE - IN124 TO IN123

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'



STORM PROFILE - IN-126 TO IN-125

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'



STORM PROFILE - CB-136 TO CB-127

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

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PROJECT NO: 21-075C

SCALE: 1" = 40'
0 1/2" 1"

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

C-6.29

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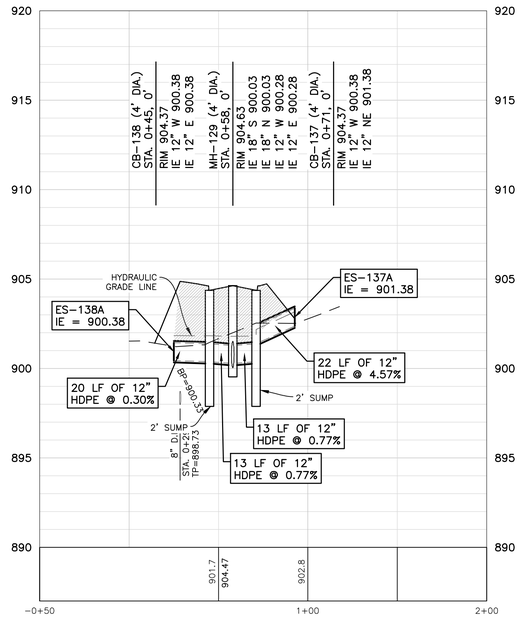
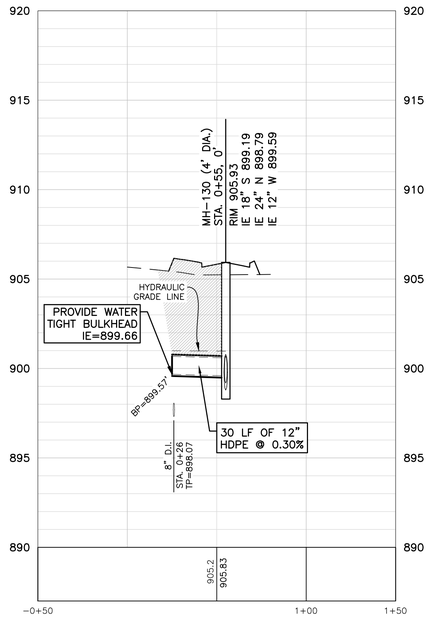


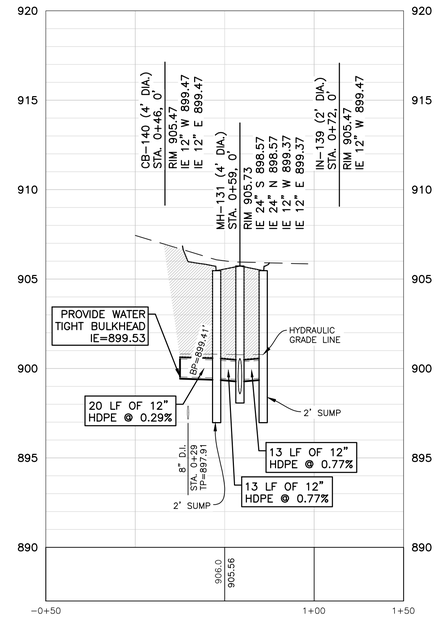
STORM PROFILE - CB-138 TO ES-137A

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'



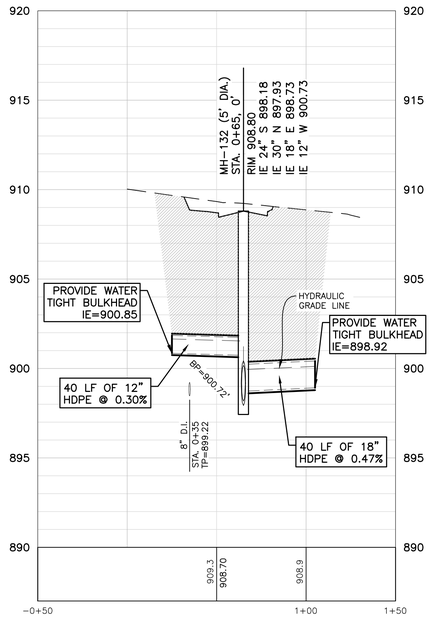
STORM PROFILE - FUTURE TO MH-130

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'



STORM PROFILE - CB-140 TO IN-139

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

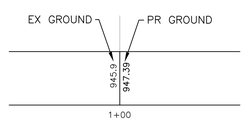


STORM PROFILE - FUTURE TO MH-132

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

PROFILE LEGEND

- UTILITY CROSSING
- SAND BACKFILL (REFER TO TRENCH DETAILS)
- EXISTING GROUND
- PROPOSED GROUND
- H.G. LINE



NOTES

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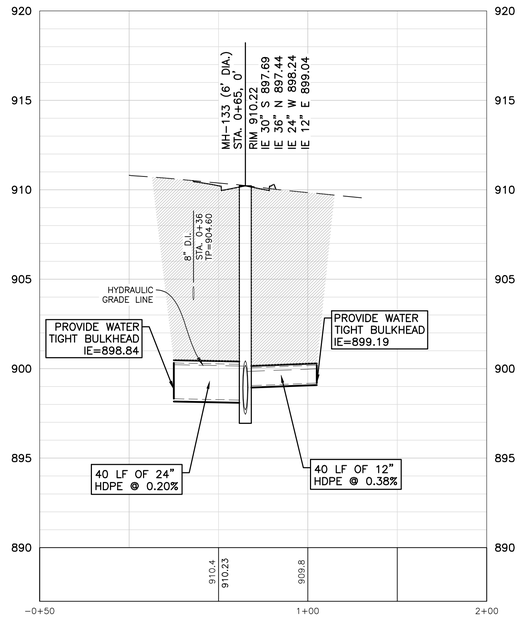
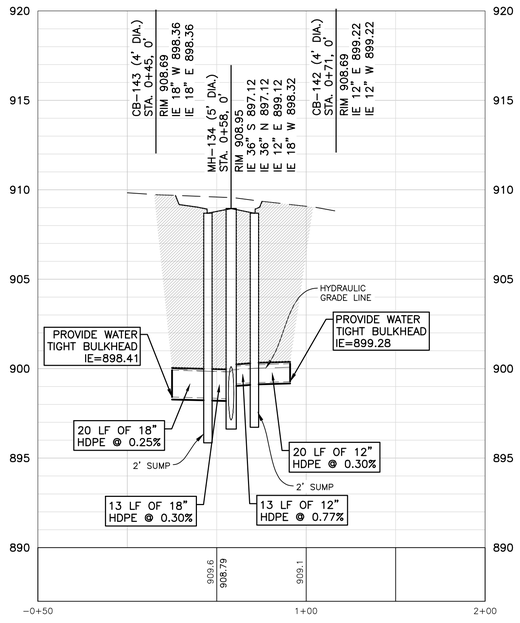


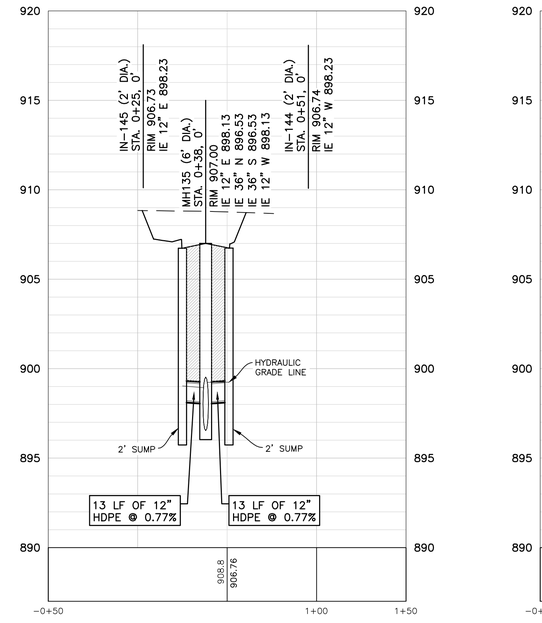
STORM PROFILE - FUTURE TO MH-133

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'



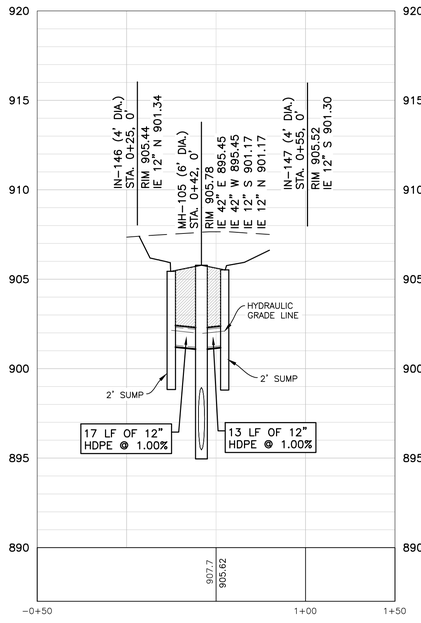
STORM PROFILE - CB-143 TO CB-142

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'



STORM PROFILE - IN-145 TO IN-144

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'



STORM PROFILE - IN-146 TO IN-147

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

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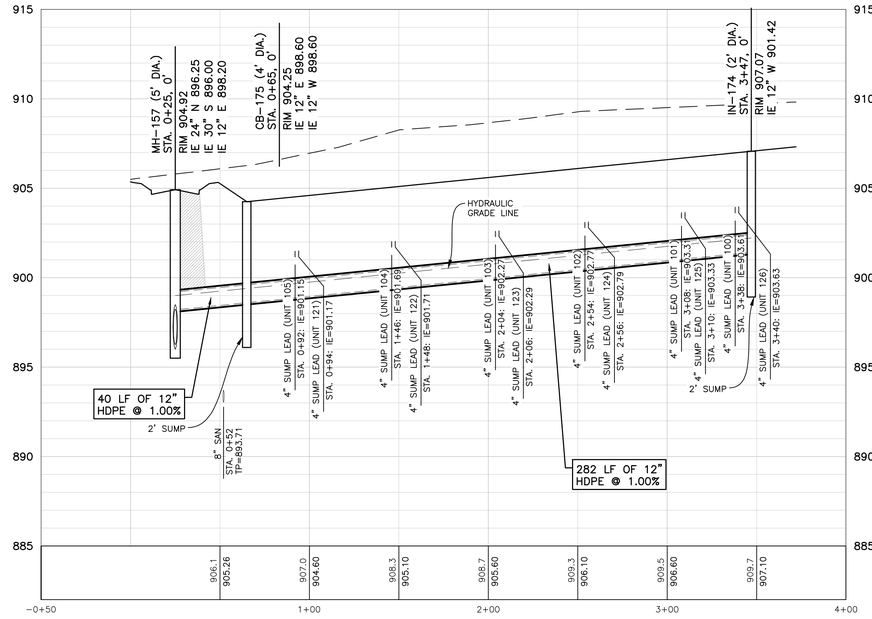
FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

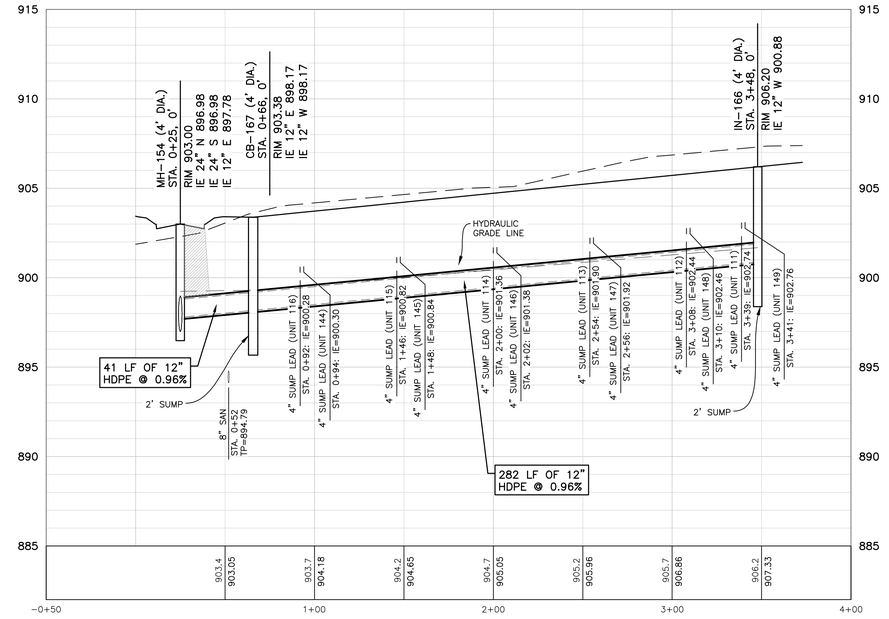
C-6.30

NOT FOR CONSTRUCTION



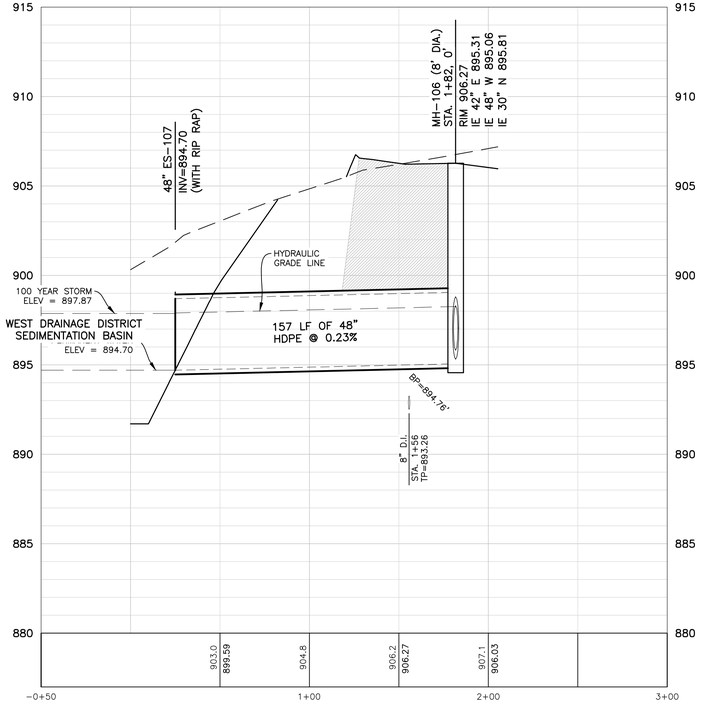
STORM PROFILE - MH-157 TO IN-174

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'



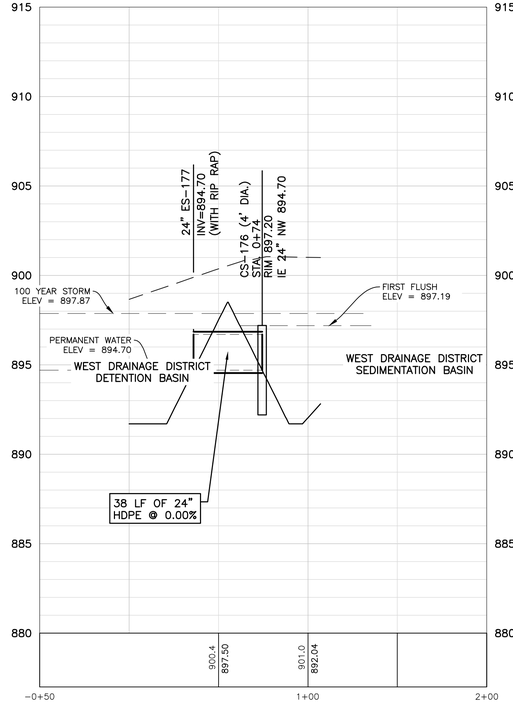
STORM PROFILE - MH-154 TO IN 166

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'



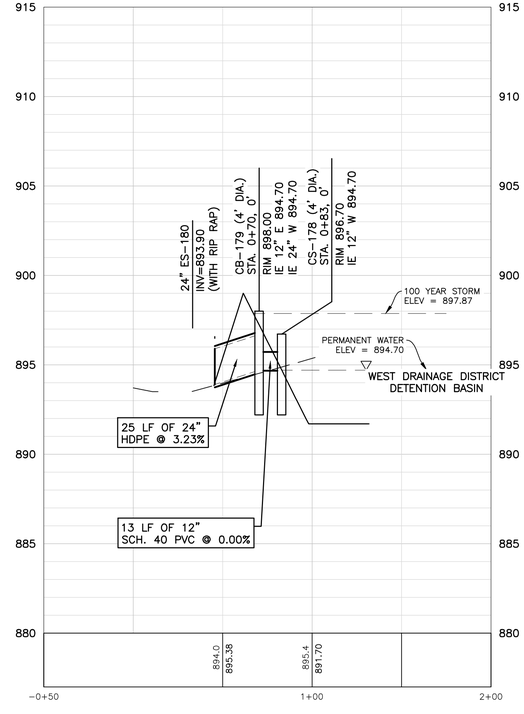
STORM PROFILE ES-107 TO MH-106

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'



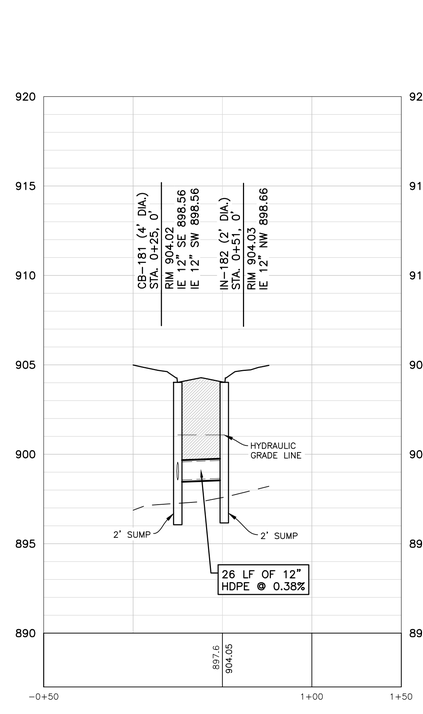
STORM PROFILE - ES-177 TO CS-176

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'



STORM PROFILE - ES-180 TO CS-178

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

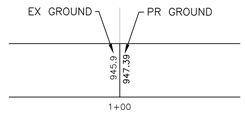


STORM PROFILE - CB-181 TO IN-180

PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=4'

PROFILE LEGEND

- UTILITY CROSSING
- SAND BACKFILL (REFER TO TRENCH DETAILS)
- EXISTING GROUND
- PROPOSED GROUND
- H.G. LINE



NOTES

1. SAND BACKFILL AND BEDDING TO BE MDOT CL II.
2. MAINTAIN MINIMUM 18" VERTICAL CLEARANCE BETWEEN ALL UTILITIES.
3. ALL PIPE SHOWN TO OUTSIDE DIAMETER.

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40950 WOODWARD AVE
SUITE 203
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STORM SEWER PROFILES

HERITAGE SQUARE (SINGLE FAMILY)
95 AC. NW CORNER BURKHART & MASON ROADS
PART OF THE SE 1/4 OF SEC. 32, T3N, R4E,
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SITE PLAN SUBMITTAL	05/09/2024
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REVISED PHASE 1 FINAL SITE PLAN	02/20/2025
PHASE 2&3 FINAL SITE PLAN SUBMITTAL	12/22/2025

ORIGINAL ISSUE DATE: 5/09/2024

PROJECT NO: 21-075C

SCALE: 1" = 40'
0 1/2" 1"

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

C-6.32

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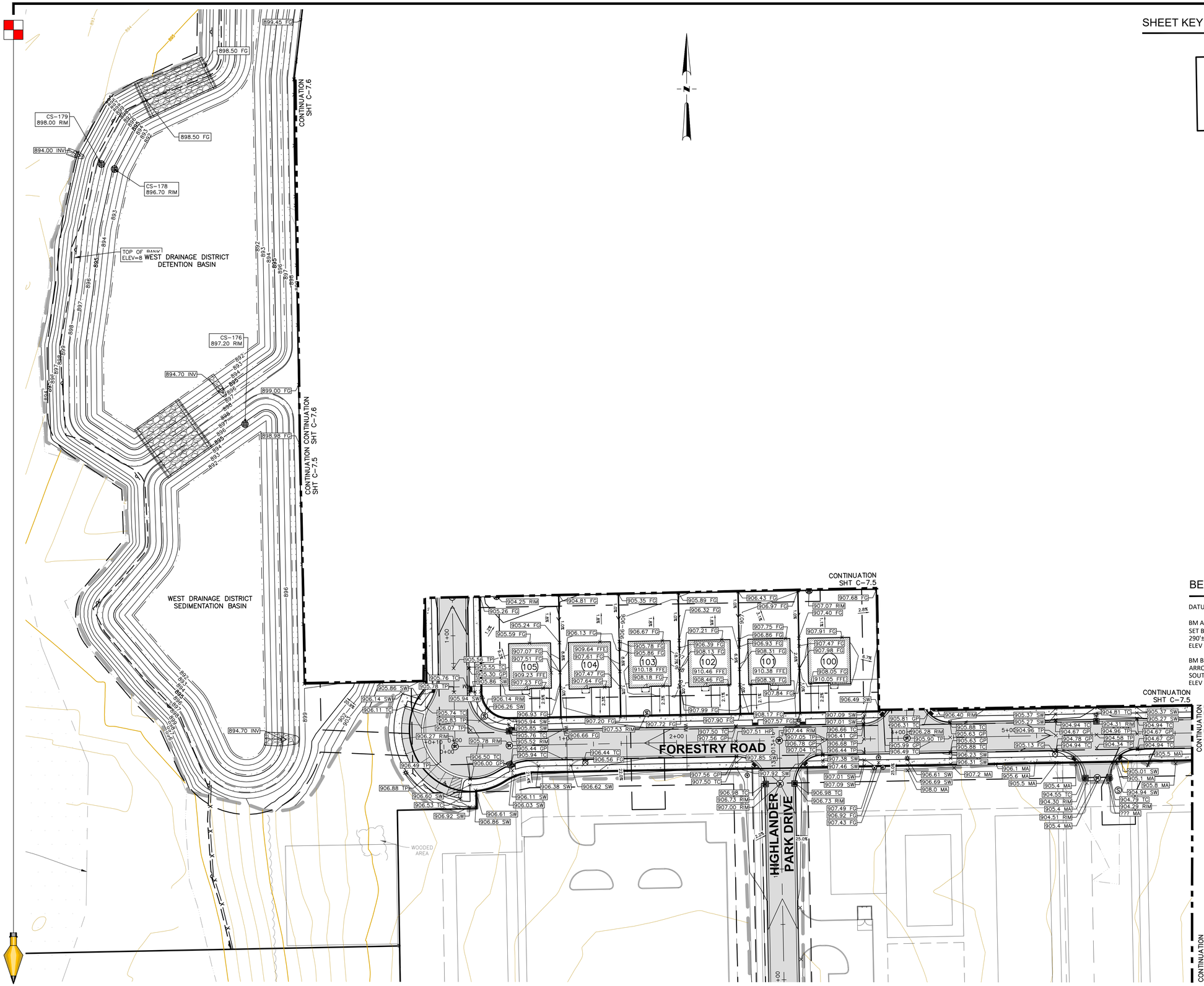
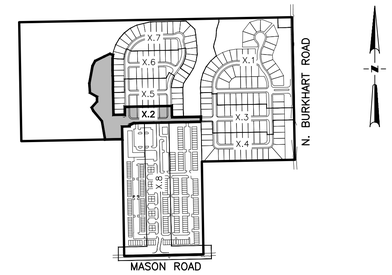


SHEET KEY



GRADING LEGEND

940.00 TP	PROPOSED TOP OF PAVEMENT GRADE
940.00 SW	PROPOSED SIDEWALK GRADE
940.00 FG	PROPOSED FINISH GRADE
940.00 TC	PROPOSED TOP OF CURB GRADE
940.00 GP	PROPOSED GUTTER PAN GRADE
940.00 TW	PROPOSED TOP OF WALL GRADE
940.00 BW	PROPOSED BOTTOM OF WALL GRADE
940.0 MA	MATCH EXISTING GRADE
940.0 FFE	PROPOSED FINISH FLOOR GRADE
940.00 RIM	PROPOSED RIM GRADE
940.00 ADJ-RIM	ADJUSTED RIM GRADE
940.00 INV	PROPOSED INVERT GRADE
940.00 FFE	FIRST FLOOR ELEV (STANDARD GRADING)
940.00 FFE 931.37 WO	PROPOSED FIRST FLOOR ELEVATION AND BASEMENT FLOOR (WALKOUT)
940.00 FFE 935.04 DL	PROPOSED FIRST FLOOR ELEVATION AND LOWEST OPENING (DAYLIGHT)
R	ADA COMPLIANT SIDEWALK RAMP
L	ADA COMPLIANT SIDEWALK LANDING
900	EXISTING CONTOUR
900	PROPOSED CONTOUR
	LIMITS OF DISTURBANCE
	OVERFLOW ROUTE

BENCHMARKS

DATUM: NAVD88

BM A:
SET BENCH TIE IN S/SIDE OF UTILITY POLE ON NORTH SIDE OF MASON ROAD 290'± WEST OF EAST PROPERTY LINE.
ELEV = 909.83

BM B:
ARROW ON HYDRANT ON WEST SIDE OF BURKHART ROAD 430'± NORTH OF SOUTH PROPERTY LINE.
ELEV = 906.59

GRADING NOTES

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PART OF THE SE 1/4 OF SEC. 32, T3N, R4E,
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PHASE 2&3 FINAL SITE PLAN SUBMITTAL	12/22/2025

ORIGINAL ISSUE DATE: 5/09/2024

PROJECT NO: 21-075C

SCALE: 1" = 40'
0 1/2" 1"

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

C-7.2

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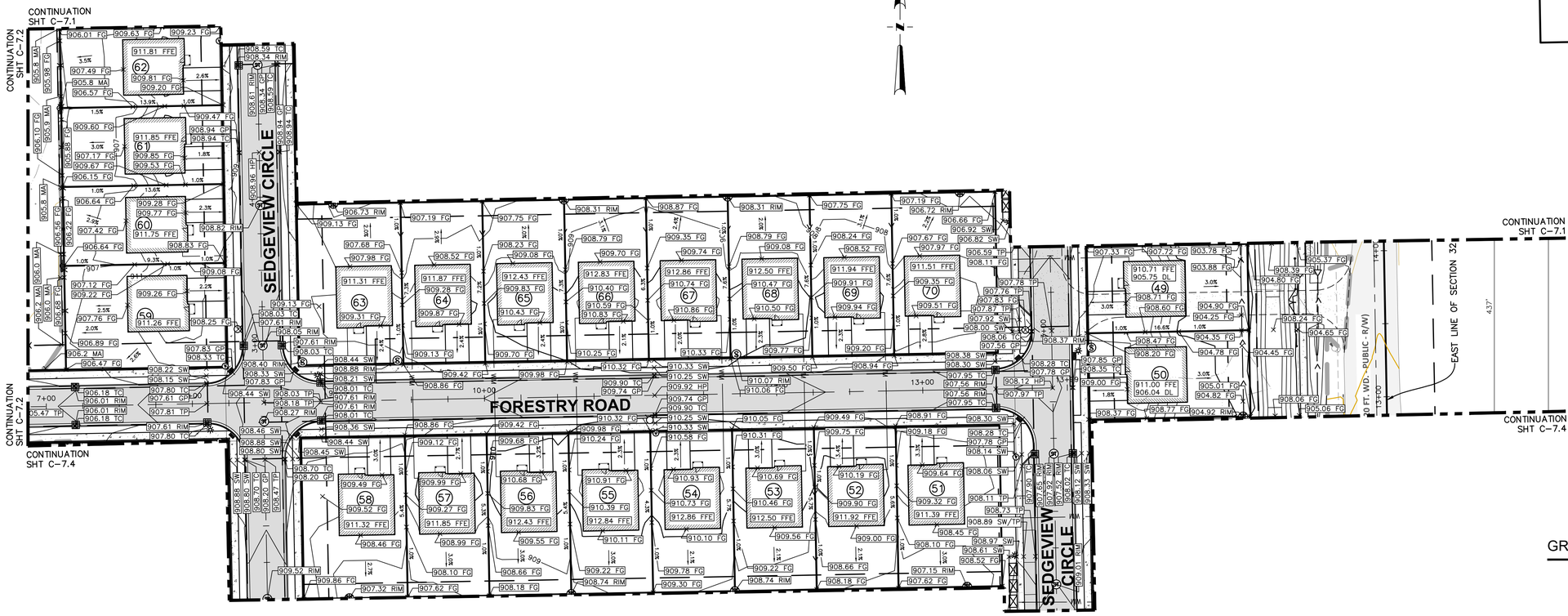

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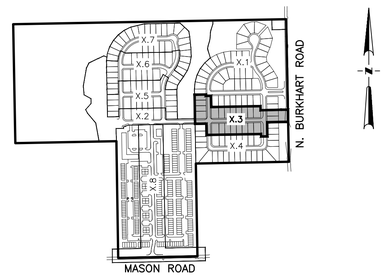

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940.0 MA	MATCH EXISTING GRADE
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940.00 FFE 935.04 DL	PROPOSED FIRST FLOOR ELEVATION AND LOWEST OPENING (DAYLIGHT)
R	ADA COMPLIANT SIDEWALK RAMP
L	ADA COMPLIANT SIDEWALK LANDING
900	EXISTING CONTOUR
900	PROPOSED CONTOUR
	LIMITS OF DISTURBANCE
	OVERFLOW ROUTE

GRADING NOTES

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BENCHMARKS

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PHASE 2&3 FINAL SITE PLAN SUBMITTAL	12/22/2025

ORIGINAL ISSUE DATE: 5/09/2024

PROJECT NO: 21-075C

SCALE: 1" = 40'
0 1/2" 1"

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

C-7.3

NOT FOR CONSTRUCTION

GRADING LEGEND

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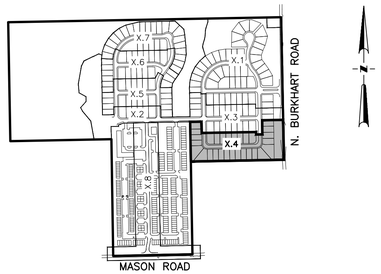

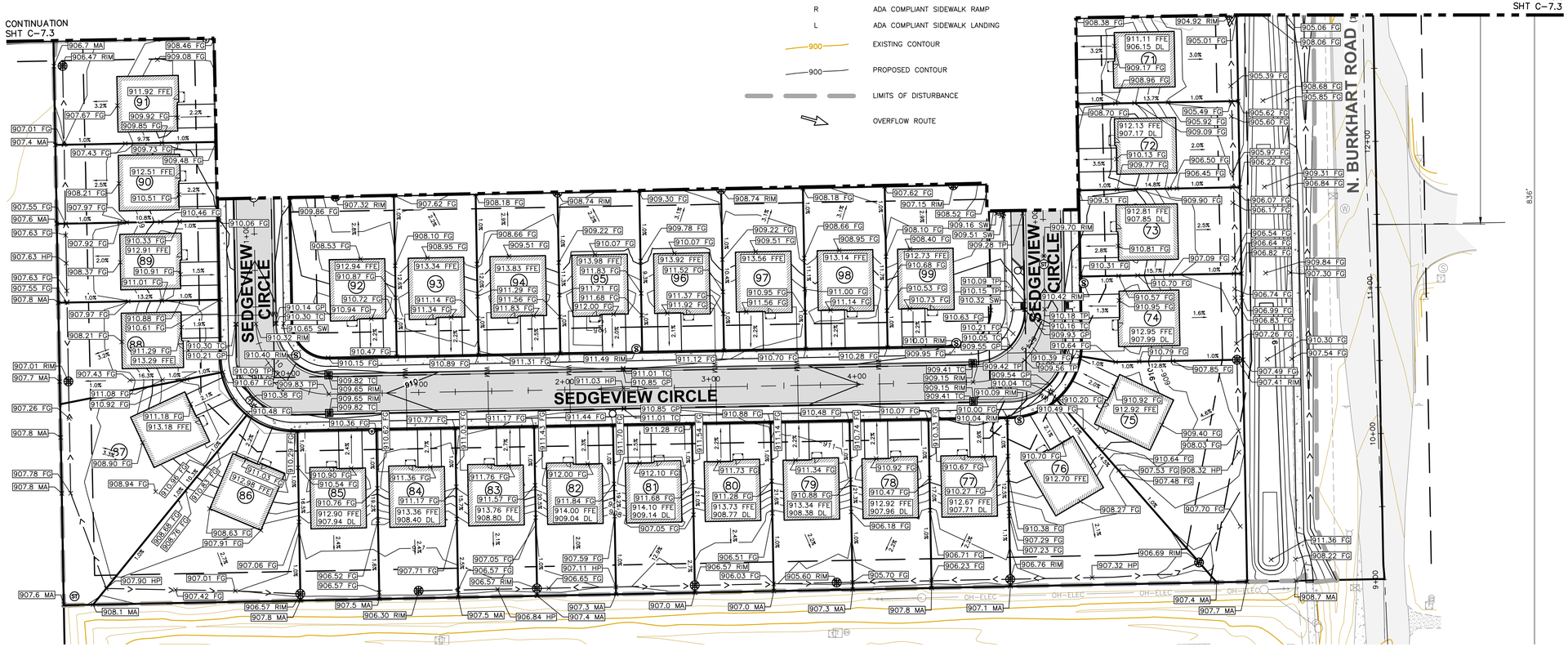

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PROJECT NO: 21-075C

SCALE: 1" = 40'
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FIELD:
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DESIGN BY: KM
CHECK BY: KM

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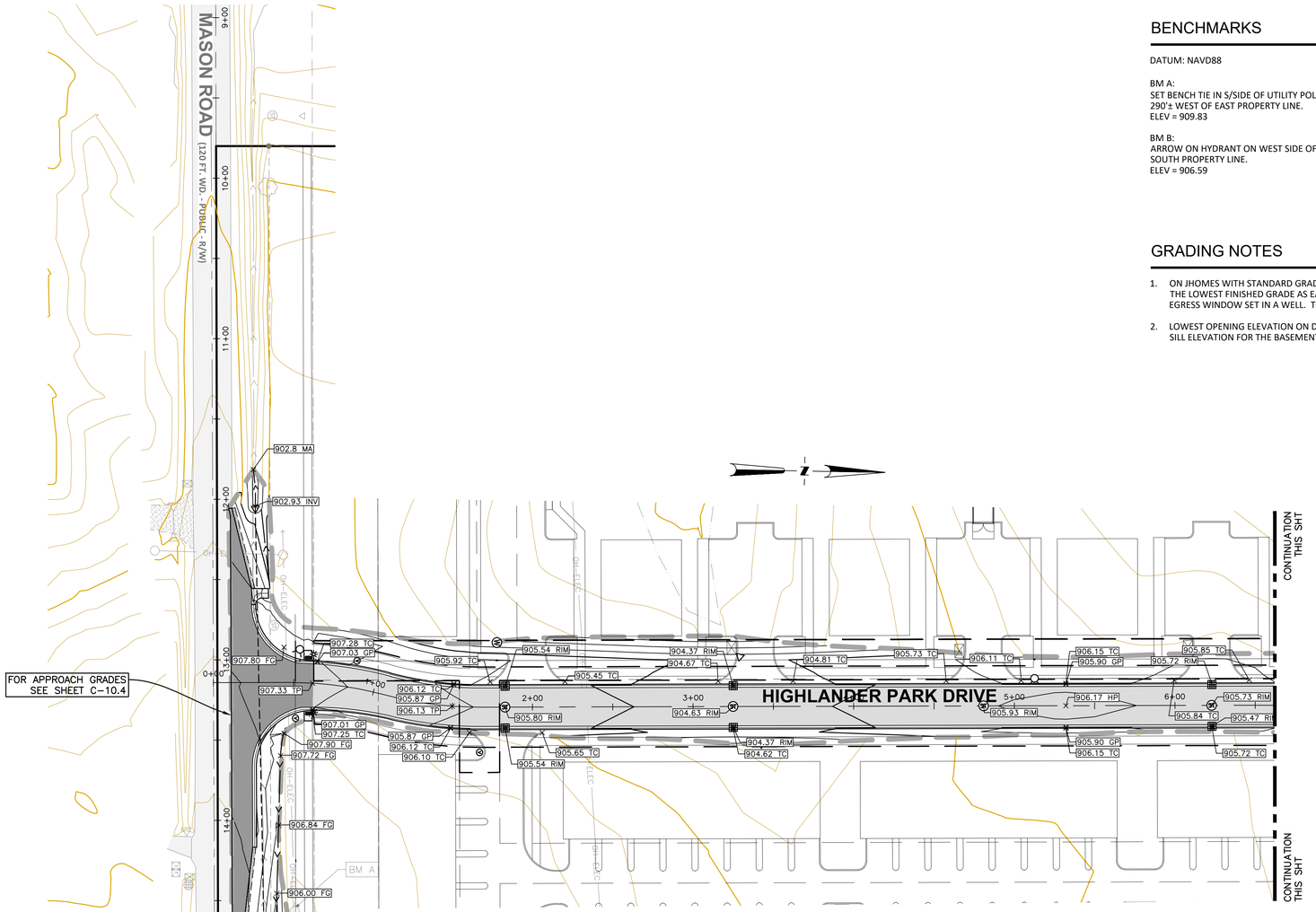

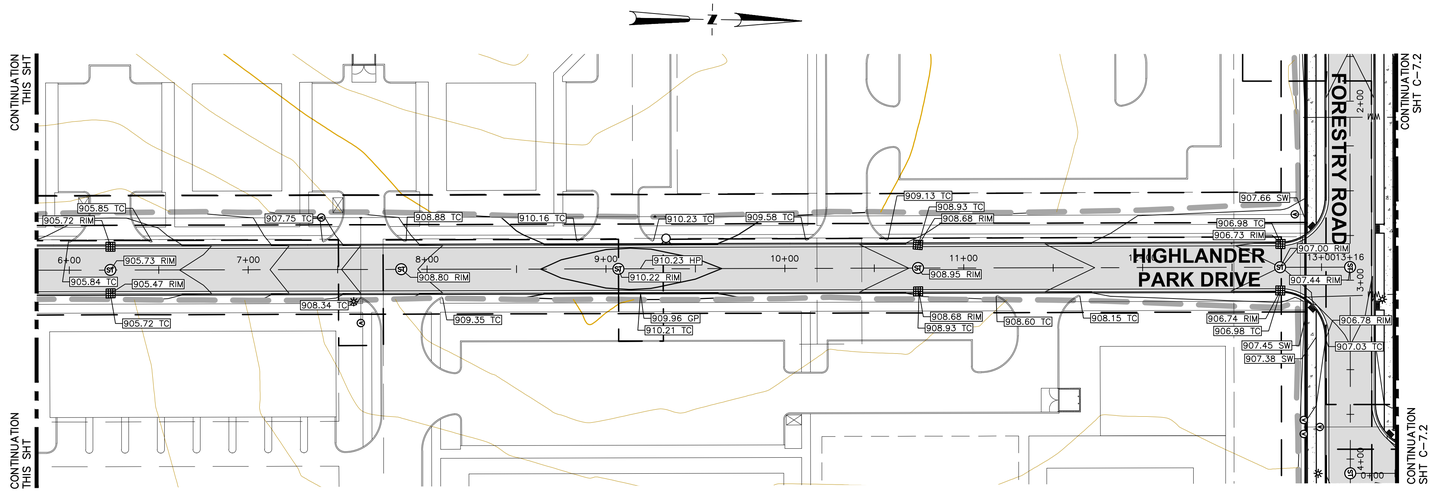

BENCHMARKS

DATUM: NAVD88

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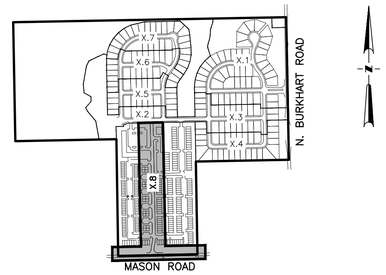

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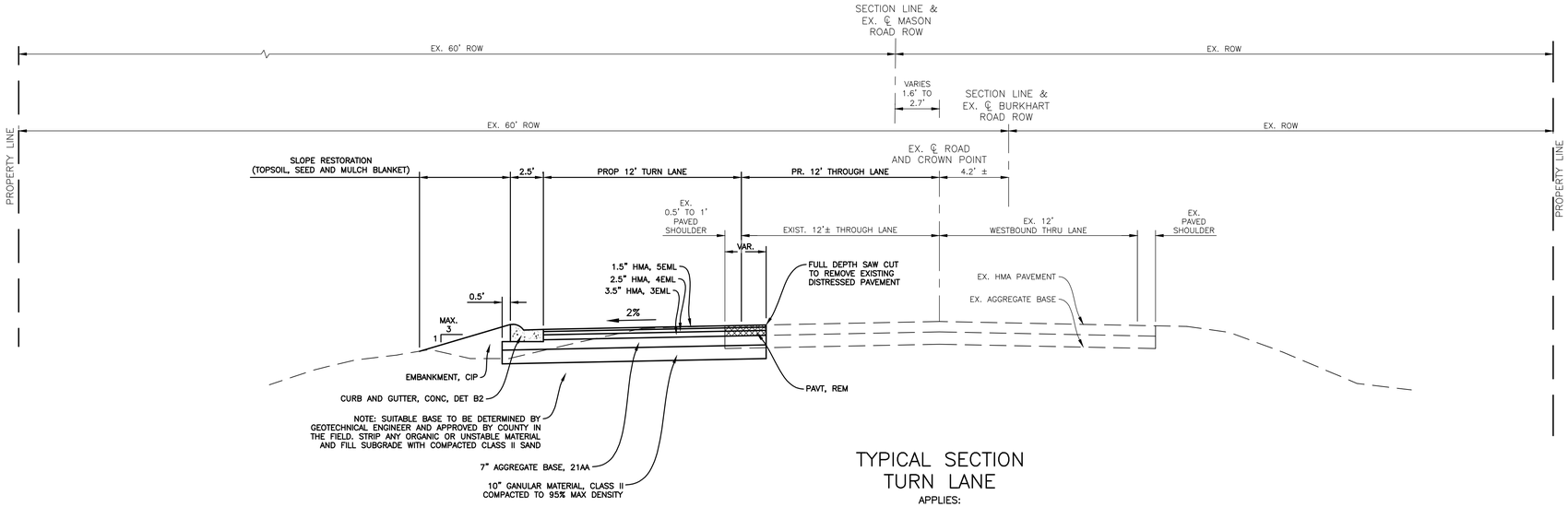
DESIGN BY: KM
CHECK BY: KM

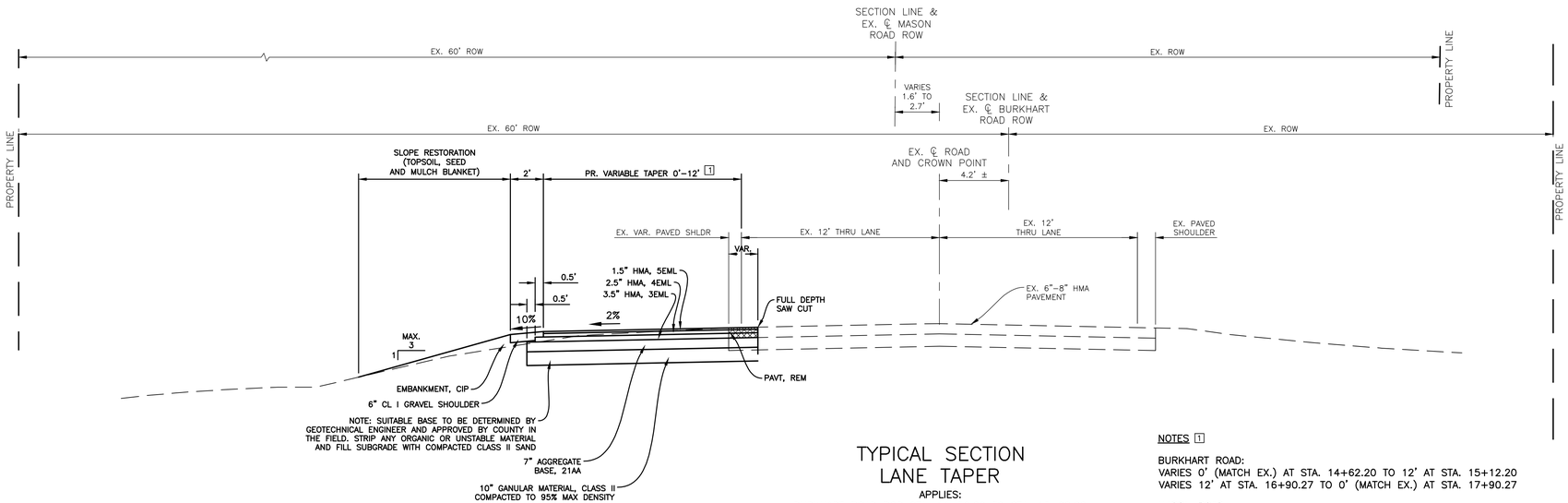
C-7.8

NOT FOR CONSTRUCTION



TYPICAL SECTION
TURN LANE

APPLIES:
BURKHART ROAD STA. 15+02.20 TO STA. 16+90.27
MASON ROAD STA. 12+55.63 TO STA. 14+13.84



TYPICAL SECTION
LANE TAPER

APPLIES:
BURKHART ROAD POB STA. 14+52.20 TO STA. 15+02.20
BURKHART ROAD STA. 16+80.27 TO STA. 17+80.27
MASON ROAD POB STA. 12+07.51 TO STA. 12+57.51
MASON ROAD STA. 14+11.65 TO STA. 15+11.65

NOTES [1]

BURKHART ROAD:
VARIES 0' (MATCH EX.) AT STA. 14+62.20 TO 12' AT STA. 15+12.20
VARIES 12' AT STA. 16+90.27 TO 0' (MATCH EX.) AT STA. 17+90.27

MASON ROAD:
VARIES 0' (MATCH EX.) AT STA. 12+05.63 TO 12' AT STA. 12+55.63
VARIES 12' AT STA. 14+13.84 TO 0' (MATCH EX.) AT STA. 15+13.84

HMA APPLICATION TABLE

IDENTIFICATION NO.	ITEM	THICKNESS	RATE PER SYD	PERFORMANCE GRADE	COMMENTS
5EML	HMA, 5EML	1.5 INCHES	165 LBS	64–22	AWI 260
4EML	HMA, 4EML	2.5 INCHES	275 LBS	64–22	
3EML	HMA, 3EML	3.5 INCHES	385 LBS	58–22	
	BOND COAT		0.05 TO 0.15 GALLONS		SS–1h (FOR INFORMATION ONLY)

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NO. 6201043260

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CLIENT :

M/I HOMES OF MICHIGAN, L.L.C.
40950 WOODWARD AVE
SUITE 203
BLOOMFIELD HILLS, MI 48304
POC: DAVID STRAUB
(248)–221–5011

TYPICAL ROAD SECTIONS

HERITAGE SQUARE (SINGLE FAMILY)
95 AC. NW CORNER BURKHART & MASON ROADS
PART OF THE SE 1/4 OF SEC. 32, T3N, R4E,
HOWELL TWP, LIVINGSTON COUNTY, MICHIGAN

PLAN SUBMITTALS/REVISIONS	DATE
SITE PLAN SUBMITTAL	05/09/2024
PHASE 1 FINAL SITE PLAN SUBMITTAL	09/18/2024
MODIFIED COVERAGE CALCULATION	11/25/2024
REVISED PHASE 1 FINAL SITE PLAN	02/20/2025
PHASE 2&3 FINAL SITE PLAN SUBMITTAL	12/22/2025

ORIGINAL ISSUE DATE: 5/09/2024

PROJECT NO: 21–075C

SCALE: N/A
0 1/2" 1"

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

C-10.0

NOT FOR CONSTRUCTION

REMOVAL NOTES

1. UTILITY OBJECTS SUCH AS GAS METER, TRANSFORMER, TELEPHONE PEDESTAL, UTILITY POLE & WIRES ARE TO BE REMOVED BY OTHERS.
2. ANY TREES NOT MARKED PER PLAN ARE TO BE PROTECTED & PRESERVED DURING CONSTRUCTION.
3. REMOVAL LIMITS SHOWN FOR UNDERGROUND CONSTRUCTION ARE APPROXIMATE ONLY. CONTRACTOR TO DETERMINE APPROPRIATE REMOVALS NEEDED FOR SAFE EXCAVATION PRACTICES AND TO COMPLY WITH APPLICABLE SAFETY STANDARDS.
4. AT LEAST THREE (3) WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL CONTACT MISS DIG (1-800-482-7171) TO VERIFY THE LOCATION OF ANY EXISTING UNDERGROUND UTILITIES AND SHALL NOTIFY REPRESENTATIVES OF OTHER UTILITIES IN THE VICINITY OF THE WORK.

REMOVAL LEGEND

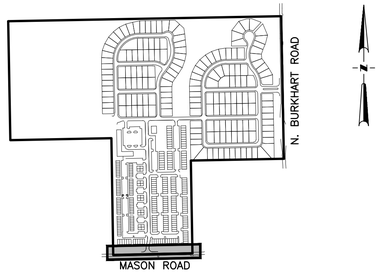
- ABANDON IN PLACE
- ABANDON LINEAR FEATURE
- SAWCUT
- REMOVE LINEAR FEATURE
- LIMITS OF DISTURBANCE
- REMOVE OBJECT
- REMOVE PAVEMENT

EXISTING LEGEND

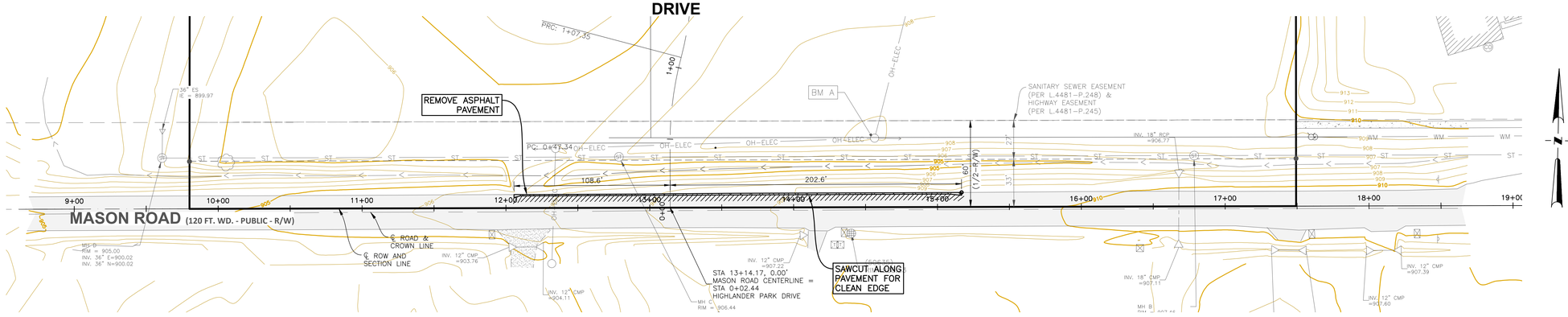
- DECIDUOUS TREE, CONIFEROUS TREE, SHRUB
- TREE LINE/ CANOPY
- DITCH/ DRAINING COURSE
- UG TELE, MH, TELE PED, CABLE PED
- UG FIBER, PED, LINE MARKER, VAULT
- UG ELEC, MH, TRANSFORMER, AC UNIT, METER, BOX
- OH ELEC, UTIL POLE, GUY WIRE
- GROUND LIGHT, POLE, POLE W/ ARM LT
- LIGHT MH, LT CTRL BOX, PARK. METER, CAR CHARGER
- ELEC HAND HOLE, OUTLET, SIGNAL MH, SIGNAL BOX
- UG GAS, MH, VALVE, LINE MARKER
- GAS WELL, METER, VENT
- WATER MAIN, MH, VALVE IN BOX, HYDRANT, FDC
- WATER WELL, METER, STOP BOX, POST INDICATOR VALVE
- IRRIGATION CONTROL VALVE, SPRINKLER HEAD
- STORM SEWER, MH, CB, INLET, YARD DRAIN, DOWN SPOUT
- CULVERT/ END SECTION
- SANITARY SEWER, MH, CLEAN OUT
- COMBINED SEWER, MH
- STEAM LINE, MH

- MISC. MANHOLE, HAND HOLE, HAND BOX
- PARKING BLOCK, SIGN, FLAG POLE, POST, ROCK, MAIL BOX
- SECTION LINE, SECTION CORNER
- FOUND IRON ROD (FIR), FD MON, FD PK
- SET IRON ROD (SIR), SET PK, MAG NAIL
- FINISH FLOOR ELEVATION, SPOT ELEVATION
- CONTOUR
- FENCE
- GUARD RAIL
- RAILROAD SIGNAL, SIGNAL BOX
- SOIL BORING
- EX. ASPHALT
- EX. CONCRETE
- EX. GRAVEL

SHEET KEY

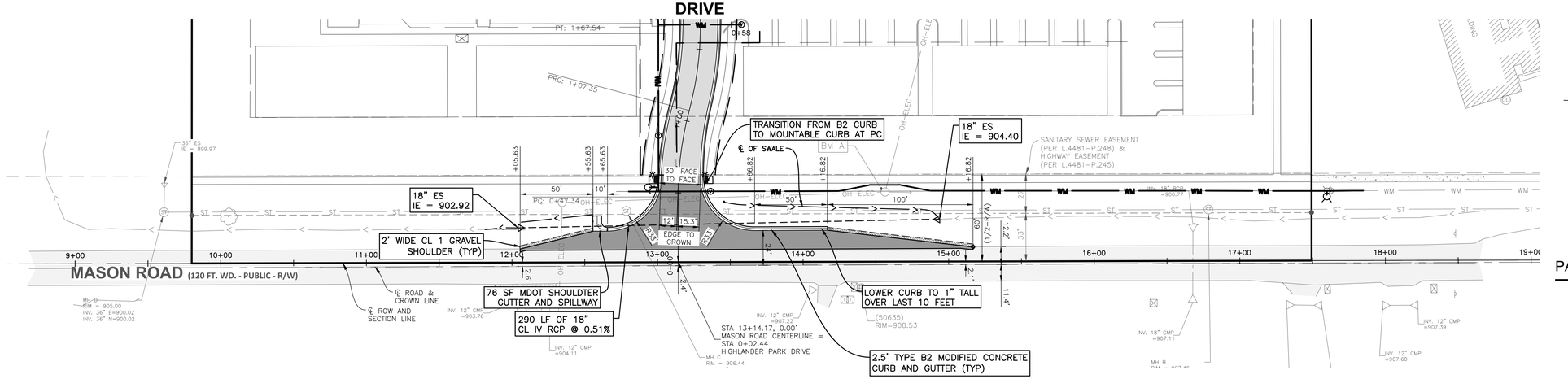


HIGHLANDER PARK DRIVE



EXISTING CONDITIONS AND REMOVAL PLAN

HIGHLANDER PARK DRIVE



CONSTRUCTION PLAN

PAVEMENT LEGEND

- EX. ASPHALT
- EX. CONCRETE
- EX. GRAVEL
- PR. STANDARD DUTY ASPHALT
- PR. HEAVY DUTY ASPHALT
- PR. CONCRETE
- PR. GRAVEL
- STANDARD CURB AND GUTTER
- REVERSE CURB AND GUTTER

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EX. CONDITIONS, REMOVAL & CONSTRUCTION PLAN

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PHASE 2&3 FINAL SITE PLAN SUBMITTAL	12/22/2025

ORIGINAL ISSUE DATE: 5/09/2024

PROJECT NO: 21-075C

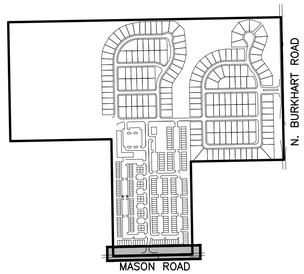
SCALE: 1" = 40'
0 1/2" 1"

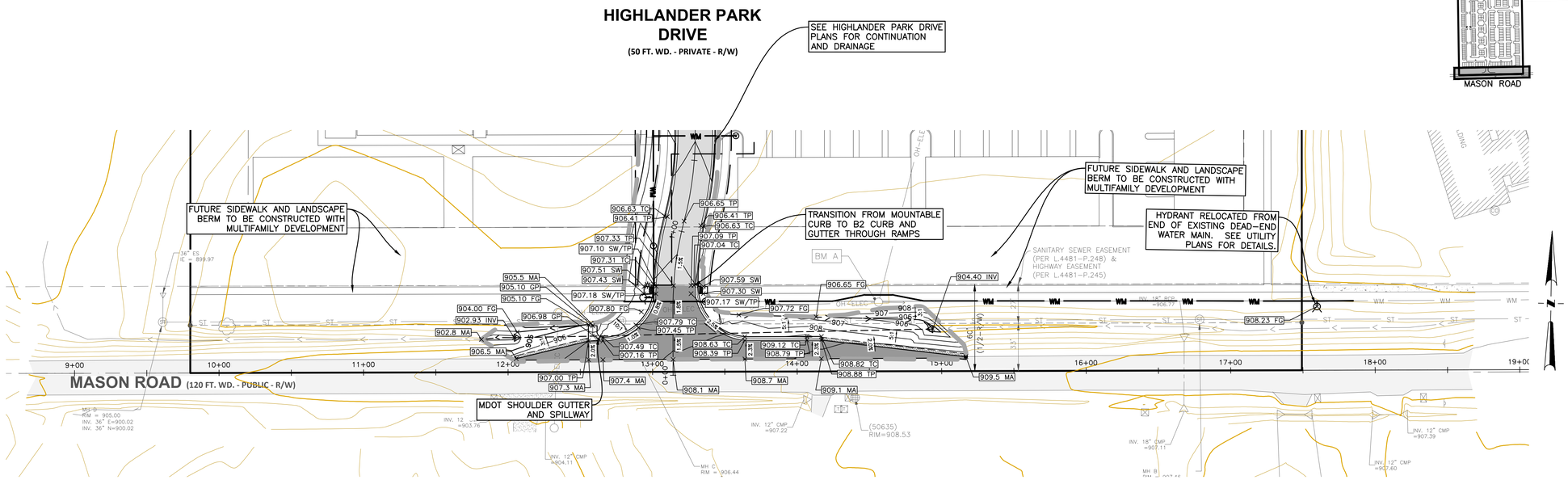
FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

C-10.2

NOT FOR CONSTRUCTION

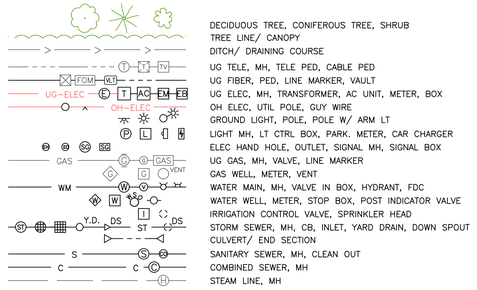
SHEET KEY





GRADING

EXISTING LEGEND



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- UG ELEC, MH, TRANSFORMER, AC UNIT, METER, BOX
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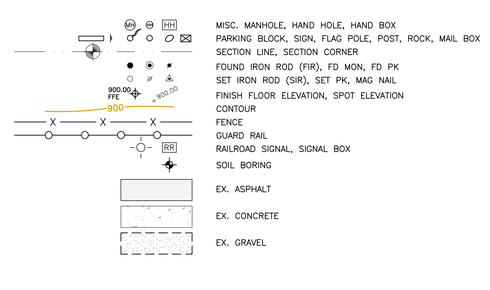
- CULVERT/ END SECTION
- SANITARY SEWER, MH, CLEAN OUT
- COMBINED SEWER, MH
- STEAM LINE, MH



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- EX. ASPHALT
- EX. CONCRETE
- EX. GRAVEL

GRADING LEGEND

940.00 TP	PROPOSED TOP OF PAVEMENT GRADE
940.00 SW	PROPOSED SIDEWALK GRADE
940.00 FG	PROPOSED FINISH GRADE
940.00 TC	PROPOSED TOP OF CURB GRADE
940.00 GP	PROPOSED GUTTER PAN GRADE
940.00 TW	PROPOSED TOP OF WALL GRADE
940.00 BW	PROPOSED BOTTOM OF WALL GRADE
940.0 MA	MATCH EXISTING GRADE
940.0 FFE	PROPOSED FINISH FLOOR GRADE
940.00 RIM	PROPOSED RIM GRADE
940.00 ADJ-RIM	ADJUSTED RIM GRADE
940.00 INV	PROPOSED INVERT GRADE
R	ADA COMPLIANT SIDEWALK RAMP
L	ADA COMPLIANT SIDEWALK LANDING
900	EXISTING CONTOUR
900	PROPOSED CONTOUR
	LIMITS OF DISTURBANCE
	OVERFLOW ROUTE

BENCHMARKS

DATUM: NAVD88

BM A:
SET BENCH TIE IN S/SIDE OF UTILITY POLE ON NORTH SIDE OF MASON ROAD 290'± WEST OF EAST PROPERTY LINE.
ELEV = 909.83

BM B:
ARROW ON HYDRANT ON WEST SIDE OF BURKHART ROAD 430'± NORTH OF SOUTH PROPERTY LINE.
ELEV = 906.59

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GRADING PLAN - MASON ROAD

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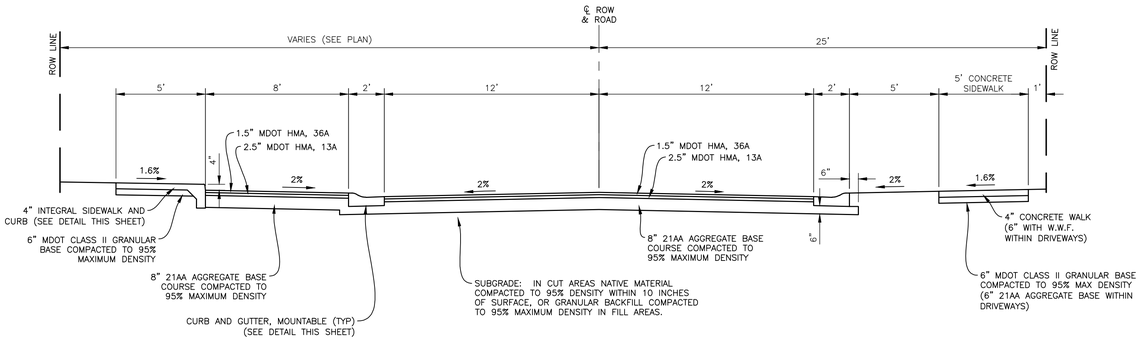
SCALE: 1" = 40'
0 1/2" 1"

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

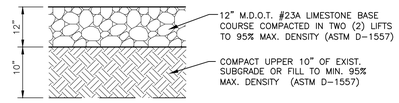
C-10.4

NOT FOR CONSTRUCTION

ON-SITE ROADWAY TYPICAL SECTION

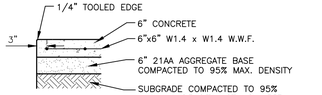


EMERGENCY ACCESS DRIVE GRAVEL PAVEMENT SECTION



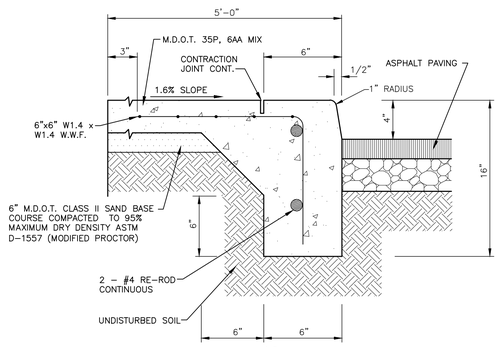
CONCRETE DRIVEWAY SECTION

Applies to: Driveways



NOTE:
PROVIDE 1.5" DEEP TOOLED OR SAW CUT (⅛" WIDE) CONTROL JOINTS AT MAXIMUM 10' SPACING.

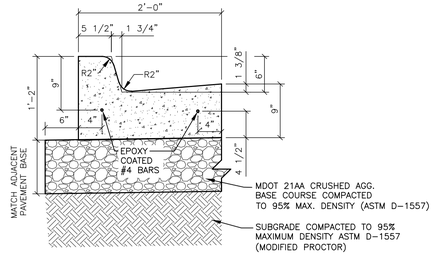
INTEGRAL SIDEWALK AND CURB DETAIL



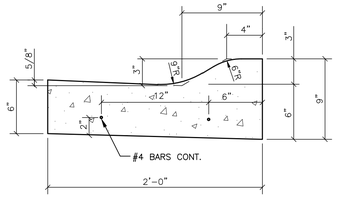
CONTRACTION JOINTS TO BE 2 1/2" DEEP, SPACED AT 5' INTERVALS (TOOLED). EXPANSION JOINTS TO BE 1/2" PREMOLDED FILLER, SPACED A MAXIMUM OF 30' APART.

BARRIER CURB AND GUTTER - CONCRETE

NOTE: TO BE USED ON HERITAGE SQUARE BOULEVARD FROM BURKHART ROAD TO SEDGEVIEW CIRCLE.

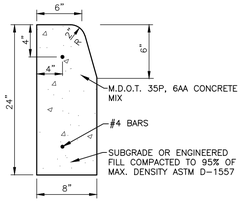


CURB & GUTTER DETAIL - MOUNTABLE - 24" W 3" H 9" D

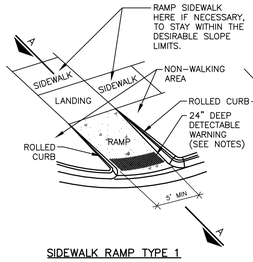


SEE BARRIER CIRB FOR BASE DETAIL.

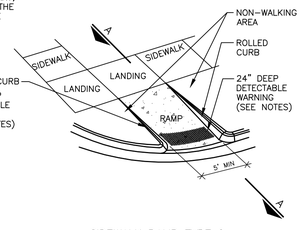
CURB DETAIL - CONCRETE - STRAIGHT - 6" HT 24" DEEP



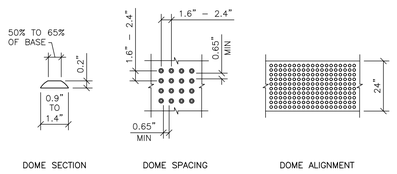
SIDEWALK RAMP DETAIL - WITH NOTES



SIDEWALK RAMP TYPE 1

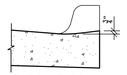


SIDEWALK RAMP TYPE 2

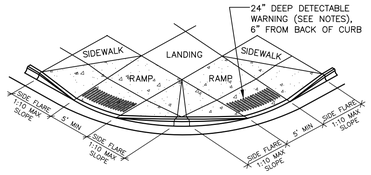


DOME SECTION | DOME SPACING | DOME ALIGNMENT

DETECTABLE WARNING DETAILS

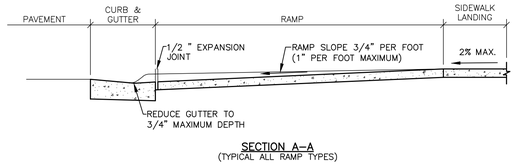


SECTION THROUGH CURB CUT
(TYPICAL ALL RAMP TYPES)



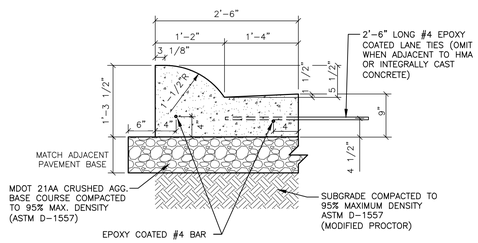
SIDEWALK RAMP TYPE 4
(TWO RAMPS SHOWN)

NOTES:
1. SIDEWALK RAMPS ARE TO BE LOCATED AS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
2. SURFACE TEXTURE OF THE RAMP SHALL BE THAT OBTAINED BY A COURSE BROOMING, TRANSVERSE TO THE SLOPE OF RAMP.
3. CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON THE RAMP, FREE OF SAGS AND SHORT GRADE CHANGES. WHERE CONDITIONS PERMIT, IT IS DESIRABLE THAT THE SLOPE OF THE RAMP BE IN ONLY ONE DIRECTION, PARALLEL TO THE DIRECTION OF TRAVEL.
4. THE NORMAL GUTTER LINE PROFILE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.
5. THE TOP OF THE JOINT FILLER FOR ALL RAMP TYPES SHALL BE FLUSH WITH THE ADJACENT CONCRETE.
6. CROSSWALK AND STOP LINE MARKINGS, IF USED, SHALL BE LOCATED AS TO STOP TRAFFIC SHORT OF THE RAMP CROSSING. SPECIFIC DETAILS FOR MARKING APPLICATIONS ARE GIVEN IN THE "MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES".
7. DETECTABLE WARNINGS SHALL EXTEND THE FULL WIDTH OF THE CURB RAMP. THEY SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6" TO 8" FROM THE CURB LINE.
8. FLARED SIDES WITH A SLOPE OF 1:10 MAXIMUM, MEASURED ALONG THE CURB LINE, SHALL BE PROVIDED WHERE A CIRCULATION PATH CROSSES THE SIDEWALK RAMP. FLARED SIDES ARE NOT REQUIRED WHERE THE EDGES OF A SIDEWALK RAMP ARE PROTECTED BY LANDSCAPING OR OTHER BARRIERS TO TRAVEL BY WHEELCHAIR USERS OR PEDESTRIANS ACROSS THE EDGE OF THE SIDEWALK RAMP.



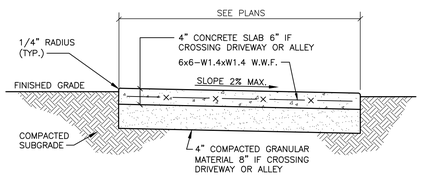
SECTION A-A
(TYPICAL ALL RAMP TYPES)

CURB AND GUTTER DETAIL - MDOT - B2 - MODIFIED (USE IN COUNTY ROW)



NOTE
MDOT B2 MODIFIED CURB AND GUTTER IS TO BE USED ON COUNTY ROAD APPROACHES AND WIDENING LANES.

SIDEWALK DETAIL - CONCRETE



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(OFFICE) 517-223-3512
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SERVICE DISABLED VETERAN OWNED SMALL BUSINESS (SDVOSB)

KEVIN C. MCDEVITT
ENGINEER
NO. 6201043260

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40950 WOODWARD AVE
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BLOOMFIELD HILLS, MI 48304
POC: DAVID STRAUB
(248)-221-5011

MISCELLANEOUS DETAILS

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95 AC. NW CORNER BURKHART & MASON ROADS
PART OF THE SE 1/4 OF SEC. 32, T3N, R4E,
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PLAN SUBMITTALS/REVISIONS	DATE
SITE PLAN SUBMITTAL	05/09/2024
PHASE 1 FINAL SITE PLAN SUBMITTAL	09/18/2024
MODIFIED COVERAGE CALCULATION	11/25/2024
REVISED PHASE 1 FINAL SITE PLAN	02/20/2025
PHASE 2&3 FINAL SITE PLAN SUBMITTAL	12/22/2025

ORIGINAL ISSUE DATE: 5/09/2024

PROJECT NO: 21-075C

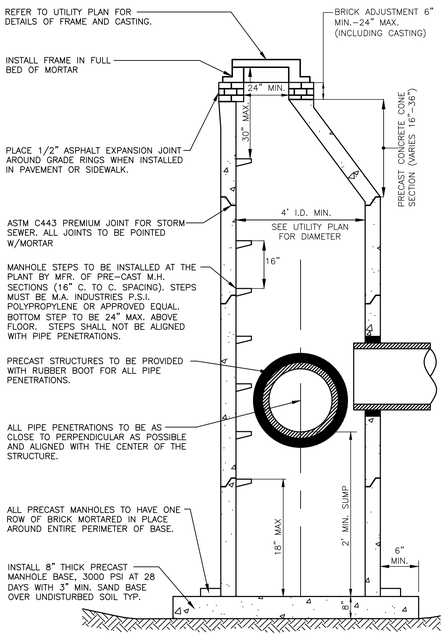
SCALE: N/A (0, 1/2", 1")

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

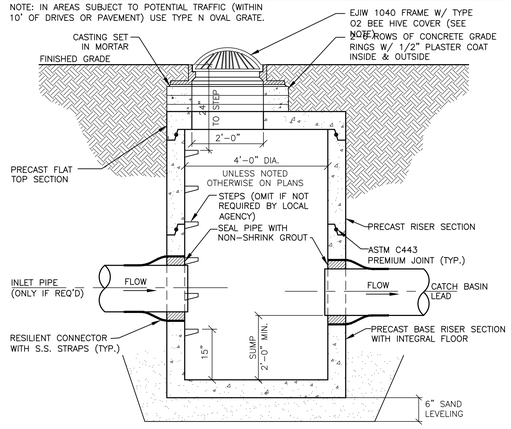
C-11.0

NOT FOR CONSTRUCTION

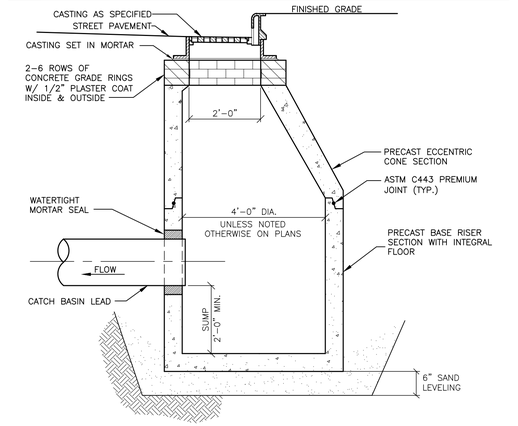
CATCH BASIN DETAIL - 4' DIA. - WITH SUMP - STANDARD



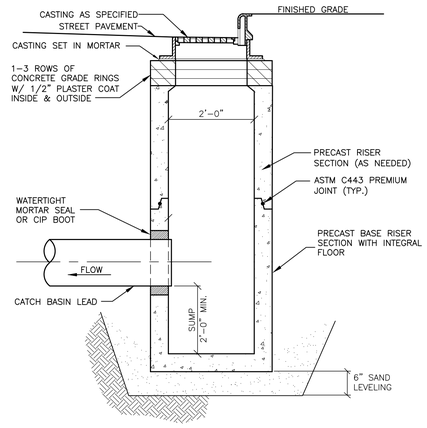
CATCH BASIN DETAIL - 4' DIA. - WITH SUMP - 2 PIPES - WITH BEE HIVE GRATE



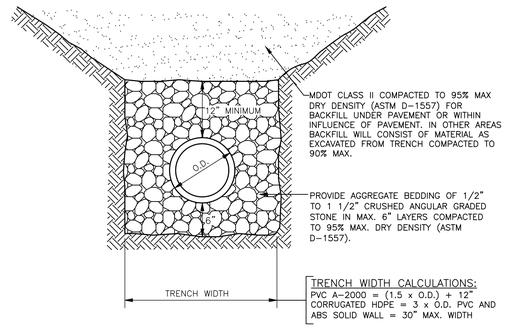
CATCH BASIN CURB DETAIL 4' DIA. - WITH SUMP - OFF-CENTERED



CATCH BASIN CURB DETAIL 2' DIA.



TRENCH PIPE BEDDING DETAIL - FOR FLEXIBLE PIPE



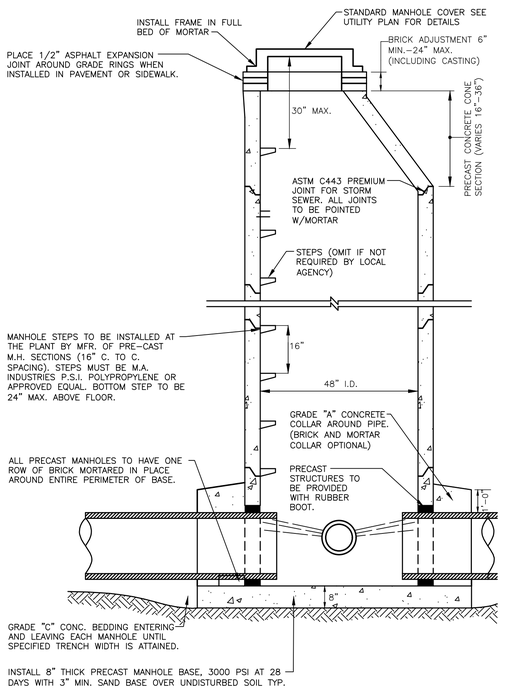
MDOT CLASS II COMPACTED TO 95% MAX DRY DENSITY (ASTM D–1557) FOR BACKFILL UNDER PAVEMENT OR WITHIN INFLUENCE OF PAVEMENT. IN OTHER AREAS BACKFILL WILL CONSIST OF MATERIAL AS EXCAVATED FROM TRENCH COMPACTED TO 90% MAX.

PROVIDE AGGREGATE BEDDING OF 1/2" TO 1 1/2" CRUSHED ANGULAR GRADED STONE IN MAX. 6" LAYERS COMPACTED TO 95% MAX. DRY DENSITY (ASTM D–1557).

TRENCH WIDTH CALCULATIONS:
PVC A–2000 = (1.5 x O.D.) + 12"
CORRUGATED HDPE = 3 x O.D. PVC AND ABS SOLID WALL = 30" MAX. WIDTH

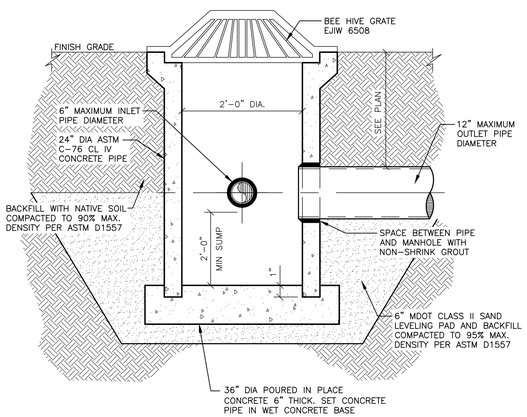
SAND BACKFILL NOTE:
ALL UTILITIES UNDER PAVEMENT OR WITHIN 5' OF THE EDGE OF PAVEMENT (OR WITHIN THE 45° LINE OF INFLUENCE OF PAVEMENT) SHALL HAVE M.D.O.T. CLASS II GRANULAR BACKFILL COMPACTED TO 95% MAX. DRY DENSITY (ASTM D–1557)

STORM MANHOLE DETAIL - 4' DIA. - STANDARD

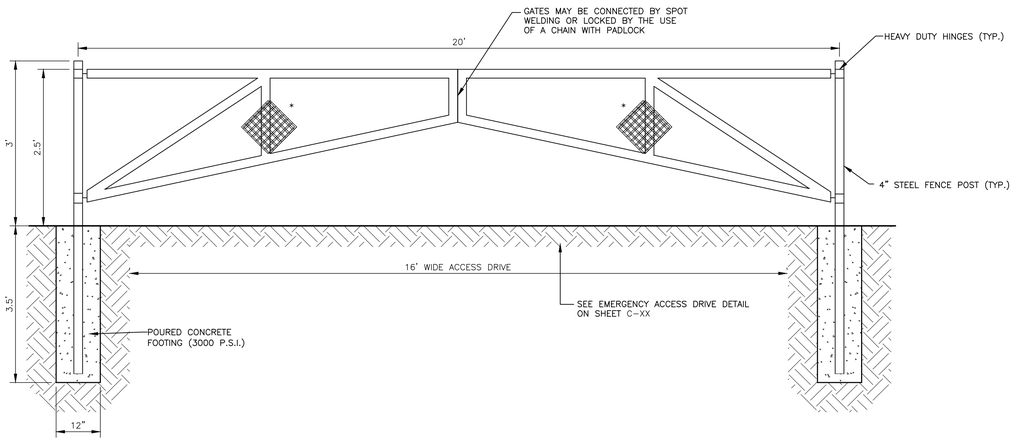


YARD BASIN DETAIL (2' DIA.) - WITH BEE HIVE GRATE

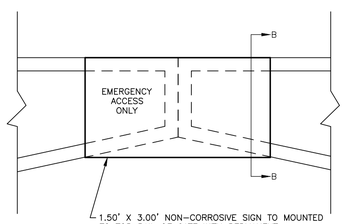
TO BE USED ONLY IN AREAS OUTSIDE PAVEMENT AND NOT SUBJECT TO TRAFFIC.

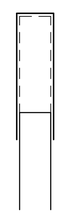


GATE DETAIL - EMERGENCY - ACCESS



NOTES:
1. CONTRACTOR TO PROVIDE SHOP DRAWINGS TO THE CITY/TOWNSHIP FOR APPROVAL PRIOR TO CONSTRUCTION.
2. IF A LOCKED GATE IS DESIRED (OPTIONAL), LOCKING MECHANISMS MUST BE APPROVED BY MUNICIPALITY FIRE DEPARTMENT.
3. * AT EACH LOCATION, 2–12"X12" RED REFLECTORIZED DIAMOND PANELS, PLACED BACK TO BACK.





SECTION B–B

INNOVATIVE GEOSPATIAL & ENGINEERING SOLUTIONS
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ORIGINAL ISSUE DATE: 5/09/2024

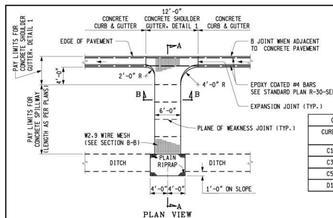
PROJECT NO: 21-075C

SCALE: N/A
0 1/2" 1"

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

C-11.1

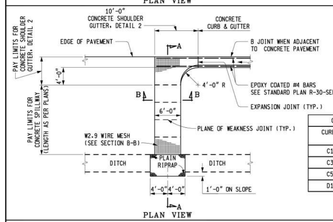
NOT FOR CONSTRUCTION



PLAN VIEW

COMPONENTS OF CONCRETE SHOULDER GUTTER, DETAIL 1		
CURB & GUTTER DETAIL	STEEL REINFORCEMENT LBS	CONCRETE CYD
C1 OR C2	39	1.5
C3 OR C4	39	1.7
C5 OR C6	39	1.8
D1 OR D2	39	1.8

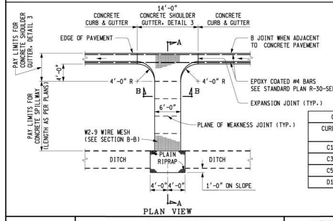
DETAIL 1
USED AS INTERMEDIATE OPENING IN CURB & GUTTER



PLAN VIEW

COMPONENTS OF CONCRETE SHOULDER GUTTER, DETAIL 2		
CURB & GUTTER DETAIL	STEEL REINFORCEMENT LBS	CONCRETE CYD
C1 OR C2	36	1.4
C3 OR C4	36	1.5
C5 OR C6	36	1.7
D1 OR D2	36	1.6

DETAIL 2
USED AT END OF CURB



PLAN VIEW

COMPONENTS OF CONCRETE SHOULDER GUTTER, DETAIL 3		
CURB & GUTTER DETAIL	STEEL REINFORCEMENT LBS	CONCRETE CYD
C1 OR C2	41	1.7
C3 OR C4	41	1.9
C5 OR C6	41	2.1
D1 OR D2	41	2.1

DETAIL 3
USED AT LOW POINT IN GUTTER LINE

PREPARED BY DESIGN DIVISION
DRAWN BY: R.L.T.
CHECKED BY: M.K.P.

DEPARTMENT DIRECTOR
Paul C. Ajegba

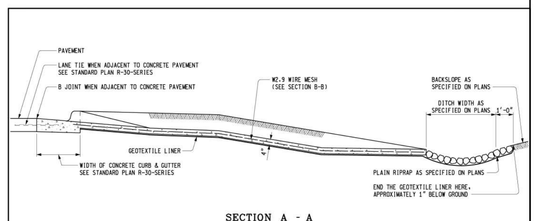
APPROVED BY: Gregg Brunner, P.E. Jul 24 2019 11:23 AM
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: Bradley C. Wieferich Bradley C. Wieferich Jul 3 2019 9:01 AM
DIRECTOR, BUREAU OF DEVELOPMENT

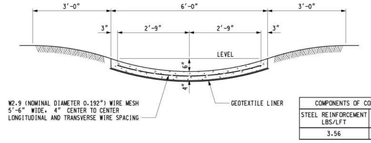
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

CONCRETE SHOULDER GUTTER AND SPILLWAY

5-18-2020 F.H.W.A. APPROVAL	7-30-2018 PLAN DATE	R-35-E	SHEET 1 OF 2



SECTION A - A



SECTION B - B

COMPONENTS OF CONCRETE SPILLWAY	
STEEL REINFORCEMENT LBS/LFT	CONCRETE CYD/LFT
3.56	0.074

NOTES:

A GRADUAL UNIFORM TRANSITION SHALL BE MADE FROM THE STANDARD CONCRETE CURB AND GUTTER TO THE CONCRETE SPILLWAY.

PLANE OF WEAKNESS JOINT SPACING SHALL BE AT UNIFORM INTERVALS OF APPROXIMATELY 4'-0".

THE SPILLWAY SHOULDERS AND FORESLOPES WILL BE UNDERLAID WITH GEOTEXTILE LINER FROM THE BACK SIDE OF CURB TO THE FAR END OF THE PLAIN RIPRAP INCLUDING THE ENTIRE FOOTPRINT OF THE PLAIN RIPRAP.

WHEN USING SPILLWAYS IN OTHER AREAS, SUCH AS BACKSLOPES, THE GEOTEXTILE LINER SHALL UNDERLAY THE FULL LENGTH OF THE SPILLWAY AND THE ENTIRE FOOTPRINT OF THE PLAIN RIPRAP. THE GEOTEXTILE LINER SHALL HAVE A MINIMUM WIDTH EQUAL TO THE WIDTH OF THE SPILLWAY.

THE SPILLWAY SHALL BE GIVEN A TRANSVERSE COARSE BROOM FINISH.

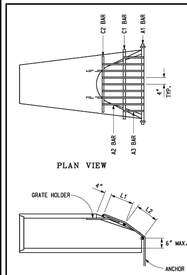
WHILE CONCRETE SPILLWAY IS SHOWN ON THE FORESLOPE, IT MAY BE USED ON THE BACKSLOPE, AS SPECIFIED ON THE PLANS. CONCRETE SHOULDER GUTTER WOULD BE CORRESPONDINGLY OMITTED.

THE CURB AND GUTTER SHALL BE ALIGNED WITH THE BEAM GUARDRAIL AS SPECIFIED ON STANDARD PLAN R-67-SERIES. THE LOCATION OF GUARDRAIL POSTS SHOULD BE DETERMINED PRIOR TO LOCATING THE SPILLWAY OR DOWNSPOUT HEADER.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

CONCRETE SHOULDER GUTTER AND SPILLWAY

5-18-2020 F.H.W.A. APPROVAL	7-30-2018 PLAN DATE	R-35-E	SHEET 2 OF 2



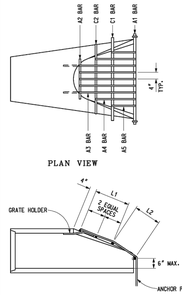
PLAN VIEW

LONGITUDINAL SECTION

STEEL REINFORCEMENT QUANTITIES									
DIAMETER		12"			15"			18"	
BAR	BAR SIZE	NUMBER REQUIRED	LENGTH	WEIGHT (LBS)	NUMBER REQUIRED	LENGTH	WEIGHT (LBS)	NUMBER REQUIRED	LENGTH	WEIGHT (LBS)
A1	#10	1	34"	12	1	40"	14	1	48"	17
A2	#6	5	24"	15	5	28"	17	7	28"	24
A3	#6				2	14"	3	2	14"	3
C1	#10	1	36"	13	1	40"	14	1	44"	16
C2	#8	1	30"	6	1	34"	7	1	36"	8
ANCHOR PIN GRATE HOLDER	#6	2	36"	9	2	36"	9	2	36"	9
	#8	2	20"	5	2	20"	5	2	20"	5
TOTAL STEEL WEIGHT (LBS)				60			69			82

DIMENSIONS		
DIAMETER	L1	L2
12"	12"	12"
15"	14"	14"
18"	14"	14"

GRATE FOR 12" THROUGH 18" DIAMETER PIPE WITH CONCRETE END SECTION



PLAN VIEW

LONGITUDINAL SECTION

STEEL REINFORCEMENT QUANTITIES				
DIAMETER		21"		
BAR	BAR SIZE	NUMBER REQUIRED	LENGTH	WEIGHT (LBS)
A1	#10	1	54"	19
A2	#8	1	24"	5
A3	#6	5	37"	23
A4	#6	2	26½"	7
A5	#6	2	16"	4
C1	#10	1	52"	18
C2	#8	1	44"	9
ANCHOR PIN GRATE HOLDER	#6	2	36"	9
	#6	2	20"	5
TOTAL STEEL WEIGHT (LBS)				99

DIMENSIONS		
DIAMETER	L1	L2
21"	21"	16"

GRATE FOR 21" DIAMETER PIPE WITH CONCRETE END SECTION

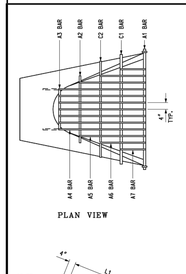
PREPARED BY DESIGN DIVISION
DRAWN BY: R.L.T.
CHECKED BY: M.K.P.

ENGINEER OF CONSTRUCTION & TECHNOLOGY
ENGINEER OF MAINTENANCE
ENGINEER OF TRAFFIC AND SAFETY
ENGINEER – ROAD DESIGN
ENGINEER OF DESIGN
DEPARTMENT DIRECTOR
Gregory J. Rosine
BY: CHIEF ENGINEER/DEPUTY DIRECTOR
BUREAU OF HIGHWAY TECHNICAL SERVICES

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY TECHNICAL SERVICES STANDARD PLAN FOR

STEEL GRATES FOR END SECTIONS

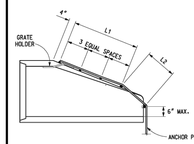
9-14-2001 F.H.W.A. APPROVAL	2-26-2001 PLAN DATE	R-92-C	SHEET 1 OF 6



PLAN VIEW

STEEL REINFORCEMENT QUANTITIES									
DIAMETER		24"			27"			30"	
BAR	BAR SIZE	NUMBER REQUIRED	LENGTH	WEIGHT (LBS)	NUMBER REQUIRED	LENGTH	WEIGHT (LBS)	NUMBER REQUIRED	LENGTH	WEIGHT (LBS)
A1	#10	1	60"	21	1	66"	23	1	72"	25
A2	#8	1	32"	7	1	34"	7	1	40"	9
A3	#8	1	24"	5	1	24"	5	1	24"	5
A4	#6	7	45¼"	39	7	52¼"	46	7	58¼"	51
A5	#6	2	34¾"	9	2	40¾"	10	2	45	11
A6	#6	2	24¼"	6	2	28¼"	7	2	31¾"	8
A7	#6				2	18½"	4	2	18½"	5
C1	#10	1	60"	21	1	62"	22	1	68"	24
C2	#8	1	52"	11	1	54"	12	1	60"	13
ANCHOR PIN GRATE HOLDER	#6	2	36"	9	2	36"	9	2	36"	9
	#6	2	20"	5	2	20"	5	2	20"	5
TOTAL STEEL WEIGHT (LBS)				133			150			165

DIMENSIONS		
DIAMETER	L1	L2
24"	31¼"	14"
27"	36"	16½"
30"	39¾"	18½"



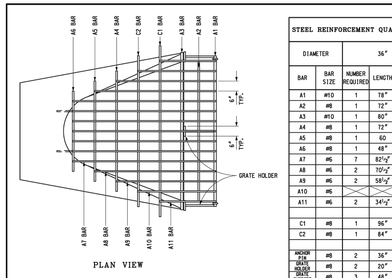
LONGITUDINAL SECTION

GRATE FOR 24" THROUGH 30" DIAMETER PIPE WITH CONCRETE END SECTION

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY TECHNICAL SERVICES STANDARD PLAN FOR

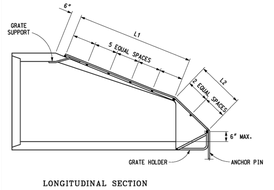
STEEL GRATES FOR END SECTIONS

9-14-2001 F.H.W.A. APPROVAL	2-26-2001 PLAN DATE	R-92-C	SHEET 2 OF 6



PLAN VIEW

STEEL REINFORCEMENT QUANTITIES				
DIAMETER		36"		
BAR	BAR SIZE	NUMBER REQUIRED	LENGTH	WEIGHT (LBS)
A1	#10	1	78"	28
A2	#8	1	72"	16
A3	#10	1	80"	28
A4	#8	1	72"	16
A5	#8	1	60	13
A6	#8	1	48"	10
A7	#6	1	82½"	72
A8	#6	2	70½"	18
A9	#6	2	58½"	15
A10	#6			
A11	#6	2	34½"	9
C1	#8	1	96"	21
C2	#8	1	84"	18
ANCHOR PIN GRATE HOLDER	#8	2	36"	16
	#8	2	20"	9
GRATE SUPPORT	#8	3	48"	31
TOTAL STEEL WEIGHT (LBS)				320



LONGITUDINAL SECTION

DIMENSIONS		
DIAMETER	L1	L2
36"	60"	22½"
42"	60"	26¼"
48"	70"	27½"

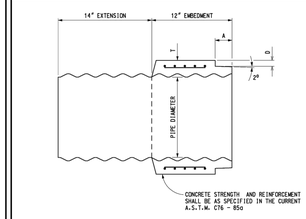
STEEL REINFORCEMENT QUANTITIES							
DIAMETER		42"			48"		
BAR	BAR SIZE	NUMBER REQUIRED	LENGTH	WEIGHT (LBS)	NUMBER REQUIRED	LENGTH	WEIGHT (LBS)
A1	#10	1	84"	30	1	90"	32
A2	#8	1	72"	16	1	84"	18
A3	#10	1	86"	30	1	94"	33
A4	#8	1	72"	16	1	72"	16
A5	#8	1	60"	13	1	60"	13
A6	#8	1	48"	10	1	48"	10
A7	#6	7	86½"	75	7	97½"	85
A8	#6	2	74½"	19	2	83½"	21
A9	#6	2	62½"	16	2	69½"	17
A10	#6	2	50½"	13	2	55½"	14
A11	#6	2	38½"	10	2	41½"	10
C1	#8	1	96"	21	1	108"	23
C2	#8	1	96"	21	1	96"	21
ANCHOR PIN GRATE HOLDER	#6	2	36"	9	2	36"	9
	#6	2	20"	5	2	20"	5
GRATE SUPPORT	#8	3	48"	31	3	48"	31
TOTAL STEEL WEIGHT (LBS)				335			358

GRATE FOR 36" THROUGH 48" DIAMETER PIPE WITH CONCRETE END SECTION

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY TECHNICAL SERVICES STANDARD PLAN FOR

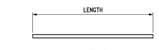
STEEL GRATES FOR END SECTIONS

9-14-2001 F.H.W.A. APPROVAL	2-26-2001 PLAN DATE	R-92-C	SHEET 3 OF 6



PIPE DIAMETER	DIMENSIONS		
	T	A	D
12"	2"	2½"	⅝"
15"	2½"	2½"	¾"
18"	2½"	2¾"	⅝"
21"	2¾"	2¾"	⅝"
24"	3"	3"	⅝"
27"	3½"	4"	¾"
30"	3½"	4½"	1"
36"	4"	4½"	1"
42"	4½"	5"	1"
48"	5"	5"	2¾"

CONNECTING ADAPTOR
(CORRUGATED STEEL PIPE TO CONCRETE PIPE OR CONCRETE END SECTION)



A BAR

C BAR
(FOR 12" DIAMETER THROUGH 30" DIAMETER PIPE)

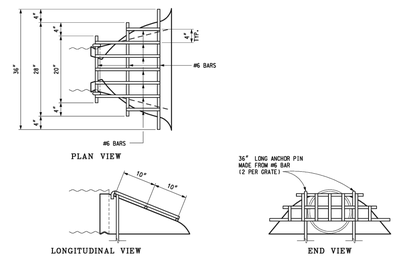
C BAR
(FOR 36" DIAMETER THROUGH 48" DIAMETER PIPE)

BAR DETAILS

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY TECHNICAL SERVICES STANDARD PLAN FOR

STEEL GRATES FOR END SECTIONS

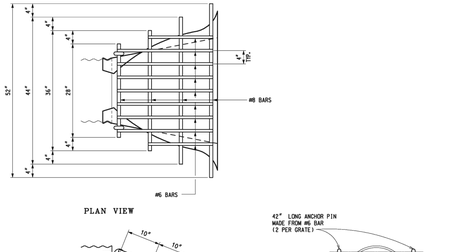
9-14-2001 F.H.W.A. APPROVAL	2-26-2001 PLAN DATE	R-92-C	SHEET 4 OF 6



PLAN VIEW

LONGITUDINAL VIEW END VIEW

GRATE FOR 12" DIAMETER PIPE WITH STEEL END SECTION
34 LBS STEEL REQUIRED PER GRATE



PLAN VIEW

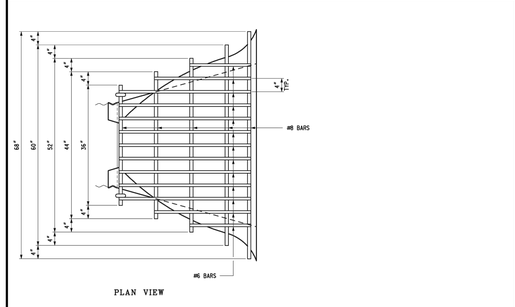
LONGITUDINAL VIEW END VIEW

GRATE FOR 18" DIAMETER PIPE WITH STEEL END SECTION
76 LBS STEEL REQUIRED PER GRATE

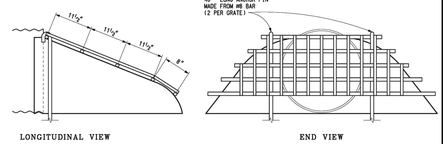
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY TECHNICAL SERVICES STANDARD PLAN FOR

STEEL GRATES FOR END SECTIONS

9-14-2001 F.H.W.A. APPROVAL	2-26-2001 PLAN DATE	R-92-C	SHEET 5 OF 6



PLAN VIEW



LONGITUDINAL VIEW END VIEW

GRATE FOR 24" DIAMETER PIPE WITH STEEL END SECTION
137 LBS STEEL REQUIRED PER GRATE

NOTES:

ALL MATERIALS AND WORKMANSHIP SHALL BE ACCORDING TO THE CURRENT STANDARD SPECIFICATIONS.

FABRICATION OF GRATE SHALL BE BY WELDING EACH BAR INTERSECTION.

SEE STANDARD PLAN R-86-SERIES FOR PRECAST CONCRETE END SECTIONS.

PRECAST CONCRETE END SECTIONS FROM DIFFERENT MANUFACTURERS VARY IN EXACT WIDTH AND SHAPE OF THE OPENING. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE GRATE WILL ADEQUATELY COVER THE OPENING.

SEE STANDARD PLAN R-88-SERIES FOR STEEL END SECTIONS.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY TECHNICAL SERVICES STANDARD PLAN FOR

STEEL GRATES FOR END SECTIONS

9-14-2001 F.H.W.A. APPROVAL	2-26-2001 PLAN DATE	R-92-C	SHEET 6 OF 6

INNOVATIVE GEOSPATIAL & ENGINEERING SOLUTIONS

MEGA Engineering Group Associates, Inc.

298 VETERANS DRIVE
FOWLERVILLE,
MICHIGAN 48836
(OFFICE) 517-223-3512
MONUMENTENGINEERING.COM

SERVICE DISABLED VETERAN OWNED SMALL BUSINESS (SDVOSB)

KEVIN C. MCDEVITT
ENGINEER
NO. 6201043260

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Utility Notification Organization
1-800-482-7171
www.missdig.org

THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO REPRESENTATION 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.

CLIENT :

M/I HOMES OF MICHIGAN, L.L.C.
40950 WOODWARD AVE
SUITE 203
BLOOMFIELD HILLS, MI 48304
POC: DAVID STRAUB
(248)-221-5011

MDOT DETAILS

HERITAGE SQUARE (SINGLE FAMILY)
95 AC. NW CORNER BURKHART & MASON ROADS
PART OF THE SE 1/4 OF SEC. 32, T3N, R4E,
HOWELL TWP, LIVINGSTON COUNTY, MICHIGAN

PLAN SUBMITTALS/REVISIONS	DATE
SITE PLAN SUBMITTAL	05/09/2024
PHASE 1 FINAL SITE PLAN SUBMITTAL	09/18/2024
MODIFIED COVERAGE CALCULATION	11/25/2024
REVISED PHASE 1 FINAL SITE PLAN	02/20/2025
PHASE 2&3 FINAL SITE PLAN SUBMITTAL	12/22/2025

ORIGINAL ISSUE DATE: 5/09/2024

PROJECT NO: 21-075C

SCALE: N/A
0 1/2" 1"

FIELD:
DRAWN BY: DC,MN,CK,DJ
DESIGN BY: KM
CHECK BY: KM

C-11.2

NOT FOR CONSTRUCTION

FILE:P:\Projects\2021\21-075 Heritage Square PUD\21-075C Heritage Square (Single-Family)\Dwg\Engineering\PH 2-3 FSP PLANS\21-075C_SF_PH2 FSP_C-11.0_Details.dwg PLOT DATE:12/22/2025 12:05 PM

Howell Area Fire Department
Fire Marshal Division

1211 W Grand River Ave - Howell, MI 48843
office: 517-546-0560 fax: 517-546-6011
firemarshal@howellfire.net

DATE: March 4, 2026

TO: Jonathan Hohenstein
Howell Township Zoning Administrator
3525 Byron Rd
Howell, MI 48855

FROM: Bryan Hager-Fire Inspector

PROJECT: Heritage Square phases 2 & 3 **Site Plan**, Howell Township

COMMENTS:

I have reviewed the above listed site plan and find that it is ***satisfactory*** as presented as long as the following conditions are met:

1. Where the road is 20' wide to 26' wide then I would require that no parking be allowed on both side of the street and be posted with "No Parking-Fire Lane" signs. Where the road is more than 26' wide to 32' wide then I would require that no parking be allowed on the hydrant side of the street and be posted with "No Parking this side of street" signs.
2. All cul-de-sacs shall have a minimum turning radius of 28' and be 96' diameter in size.
3. All dead-end roads in excess of 150' shall be provided with an approved width and turnaround provisions.
4. All roads in this development shall not exceed 10 percent in grade.
5. Fire Hydrants shall be installed at all street intersections and at intermediate locations so that in no case will the distance between hydrants exceeds 400' via dedicated right-of-away. Where near a street intersection, hydrants shall be located 15' in back of the intersecting street ROW. Hydrants shall generally be located between the edge of road and sidewalk, if applicable, minimum of 3 feet, maximum of 10 feet off pavement. A Fire hydrant shall be installed on the end of dead end mains.

6. Building(s) shall have approved building numbers or approved building identification placed in a position that is plainly legible and visible from the street or road fronting the property. These numbers shall be at least 6" high and shall contrast with their background.

7. Phase 2 shows the connection road Highlander Park Dr. If there is to be the installation of a security gate across the roadway, it shall be approved by the fire department.

    - The use of a Knox Rapid Entry system padlock or Knox key switch is required if a gate is going to be installed. Application can be obtained on-line at www.knoxbox.com.

Any changes in this site plan shall be submitted to the Howell Fire Department for additional approval. If there is anything further that you need, please feel free to give me a call. Thank you for the opportunity to review this site plan.

Carlisle | Wortman
ASSOCIATES, INC.

117 NORTH FIRST STREET SUITE 70 ANN ARBOR, MI 48104 734.662.2200 734.662.1935 FAX

TO: Howell Township Planning Commission

FROM: Paul Montagno, AICP, Principal
Brady Heath, Community Planner

DATE: March 19, 2026

RE: Heritage Square, Phase 2 and 3 Final Site Plan

We received the final site plan for Phase 2 and 3 of the Heritage Square Planned Unit Development (PUD). The plans have revision dates of 12/22/25. We have reviewed the plans for consistency with the PUD plan that was approved for the overall development. Because the developer intended to build the development in phases, phase lines were established on the overall plan, allowing the developer to submit individual final site plans for the construction of one or more phases at a time. We have reviewed the Phase 2 and 3 plans for consistency with the approved PUD plan and find the following:

- The phase lines are consistent with the approved PUD.
- Dimensional requirements for individual home sites are consistent with the approved PUD.
- Open space provided for the proposed phases are consistent with the approved PUD.
- Proposed access for the phases is consistent with the approved PUD.
- No lighting plan has been provided.
- No landscaping plan has been provided.

Recommendation

The plans are generally consistent with the approved PUD. We would recommend approval of the final site plan for Phases 2 and 3 of the Heritage Square PUD with the condition that the applicant submit plans for administrative review that:

1. Including lighting plan details.

Benjamin R. Carlisle, *President* John L. Enos, *Vice President* Douglas J. Lewan, *Principal*
David Scurto, *Principal* Sally M. Elmiger, *Principal* R. Donald Wortman, *Principal* Craig Strong, *Principal*
Paul Montagno, *Principal* Megan Masson-Minock, *Principal* Laura Kreps, *Principal* Brent Strong, *Principal*
Richard K. Carlisle, *Past President/Senior Principal*

2. Including landscaping details.

3. Address any outstanding comments for the township engineer.

4. Address any outstanding comments from the Fire Marshal.

CARLISLE/WORTMAN ASSOC., INC.
Paul Montagno, AICP
Principal

Brady Heath
CARLISLE/WORTMAN ASSOC., INC.
Brady Heath
Community Planner

#308-2106

CC: Joanathan Hohenstein, Township Zoning Administrator
Marnie Hebert, Administrator

HOWELL TOWNSHIP

Request for Amendment to Approved Site Plan

3525 Byron Road Howell, MI 48855
Phone: 517-546-2817 ext. 108
Email: inspector@howelltownshipmi.org

Fee: $350.00, submitted with application

Parcel ID #: 4706-29-400-008 Date 11/06/25

Location of Property 1475 N Burkhart Road, Howell, MI

Applicant Name Chris Locke Applicant Address 3000 Town Center, Southfield MI

Phone [redacted] Fax _____ Email [redacted]

Type/Nature of Business Electric Vehicle Charging Stations at Tanger Howell

Property Owner Name/Title Howell 70 West 36 Equities LLC By: Time Equities, Inc., as Agent

Phone [redacted] Fax [redacted] Email [redacted]

Briefly state a description of the amendment requested and minimums required. Attach drawings or other pertinent information for review.

The development of the addition of electric vehicle charging stations in the existing Tanger Howell retail, is proposing to redesign 16 standard parking stalls into 8 standard EV charging stalls and 2 van accessible EV charging stalls. This development is only bringing a loss of 6 total parking stalls. Additionally, the development is proposing 2 light poles within the parking stalls. The proposed lighting is operational 24/7 and will be motion detecting. Adding additional lighting brings better security to this equipment and the users and ultimately the shopping retailers as well.

Applicant Signature _____ Date 11/11/25

Representative's Owner Signature _____ Date 11/11/2025

EVgo

FAST CHARGING

PROPERTY ID: P117489

INSTALLATION OF ELECTRIC VEHICLE CHARGING INFRASTRUCTURE

KENSINGTON VALLEY OUTLETS
1475 N BURKHART ROAD - EV
HOWELL, MI 48855

SITE INFORMATION

CONTACT ENGINEER:
KIMLEY-HORN OF MICHIGAN, INC.
CONTACT: LIZZ BRAGG, P.E.
PHONE: (205) 732-8055
EMAIL: LIZZ.BRAGG@KIMLEY-HORN.COM

POWER COMPANY:
DTE ELECTRIC
CONTACT: LATHA E. JACOB
EMAIL: LATHA.JACOB@DTEENERGY.COM

SURVEYOR:
WESTWOOD PROFESSIONAL SERVICES MICHIGAN, LLC
CONTACT: CHRISTOPHER FOLEY
PHONE: (952) 937-5150
EMAIL: CHRIS.FOLEY@WESTWOODPS.COM

PROPERTY OWNER:
HOWELL 70 WEST 36 EQUITIES LLC
CONTACT: EVAN KUPFERBERG
PHONE: (212) 206-6135
EMAIL: EKUPFERBERG@TIMEEQUITIES.COM

SITE COUNTY:
LIVINGSTON COUNTY

SITE ADDRESS:
1475 N BURKHART ROAD - EV
HOWELL, MI 48855

ASSESSOR PARCEL NUMBER (APN):
4706-29-400-008

LATITUDE (NAD83):
42.623282

LONGITUDE (NAD83):
-83.998298

BENCHMARK & BASIS OF BEARING

BENCHMARK: 924.22' (NAVD 88)

BASIS OF BEARING:
THE VERTICAL DATUM FOR THIS PROJECT SHALL BE THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD-88) AND THE HORIZONTAL DATUM SHALL BE THE NORTH AMERICAN DATUM OF 1983 (NAD-83) IN THE STATE PLANE OF MI STATE PLANE, SOUTH ZONE, US FOOT.

ZONING INFORMATION

PERMITTING JURISDICTION: HOWELL TOWNSHIP

ZONING CLASS: COMMERCIAL

FLOOD HAZARD AREA NOTE

THE PROPERTY SHOWN HEREON IS LOCATED IN ZONE X, AN AREA DETERMINED TO BE 0.2% ANNUAL CHANCE FLOOD, ZONE A, & ZONE AE, AN AREA DETERMINED TO BE 1% ANNUAL CHANCE FLOOD, AS GRAPHICALLY SHOWN ON FIRM MAP COMMUNITY PANEL NUMBER 26093C0301D, EFFECTIVE DATE 09/17/2008.

APPLICABLE CODES

ALL WORK SHALL COMPLY WITH THE FOLLOWING APPLICABLE CODES:

- 2024 INTERNATIONAL BUILDING CODE
- 2024 INTERNATIONAL FIRE CODE
- 2023 NATIONAL ELECTRICAL CODE
- 2021 INTERNATIONAL ENERGY CONSERVATION CODE
- 2024 INTERNATIONAL MECHANICAL CODE
- 2024 INTERNATIONAL PLUMBING CODE

NOTE:
IN THE EVENT OF CONFLICT, THE MOST RESTRICTIVE CODE SHALL PREVAIL.

CONTRACTOR NOTE

CONTRACTOR SHALL COMPLETE INSTALL PER THE SIGNED AND THE SEALED SET OF DRAWINGS. ANY NECESSARY DEVIATIONS FROM THE DRAWINGS MUST BE SUBMITTED THROUGH AN RFI REQUEST PROCESS WITH ENGINEERING FOR AN APPROVAL PRIOR TO CONTRACTOR PROCEEDING WITH A DEVIATION OF THE SIGNED AND SEALED SET OF DRAWINGS.

CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE THEN IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

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

CAUTION!!
CONTRACTOR IS TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.

VICINITY MAP

NOT TO SCALE

AERIAL MAP

NOT TO SCALE

PROJECT DESCRIPTION

THIS PLAN IS DEVELOPED WITH THE INTENT TO PROVIDE PUBLIC ELECTRIC VEHICLE (EV) CHARGING STATIONS FOR THE EXISTING HOWELL 70 WEST 36 EQUITIES LLC AT THIS LOCATION. THE EXTENT OF DESIGN WITHIN THIS CONSTRUCTION DOCUMENT INCLUDES THE EV CHARGING STATIONS AND THEIR ACCOMPANYING CIVIL AND ELECTRICAL INFRASTRUCTURE. THE PROJECT IS PROPOSED TO BE INSTALLED IN PHASES AS SHOWN THROUGHOUT THE PLANS AND INDICATED IN THE EV PARKING DATA TABLE ON SHEET G3.0.

- DEMOLITION OF EXISTING SURFACES FOR THE INSTALLATION OF EV CHARGERS.
- GRADING OF SURFACES ASSOCIATED WITH EVSE TO COMPLY WITH ADA REQUIREMENTS.
- CONVERTING (18) STANDARD PARKING STALLS TO (8) EV PARKING STALLS AND (2) ACCESSIBLE EV PARKING STALLS.
- INSTALL (1) UTILITY TRANSFORMER TO BE COORDINATED WITH DTE ELECTRIC.
- INSTALL (1) LOW VOLTAGE SWITCHBOARD ASSEMBLY.
- INSTALL (5) 350KW DELTA POWER CABINETS.
- INSTALL (5) 350KW DELTA EV CHARGING DISPENSERS.
- INSTALL (1) LIGHT POLE AND BASE WITH (2) FIXTURES.
- RELOCATE (1) LIGHT POLE AND BASE WITH (2) FIXTURES.
- INSTALL (1) EV SIGN POST.
- INSTALL (6) PIPE BOLLARDS.

DRAWING INDEX

Sheet Number	Sheet Title
G0.0	COVER SHEET
G1.0	GENERAL NOTES
G1.1	GENERAL NOTES
C1.0	EXISTING CONDITIONS
C2.0	DEMOLITION PLAN
C3.0	SITE PLAN
C4.0	GRADING PLAN
C5.0	CIVIL DETAILS
C5.1	CIVIL DETAILS
C5.2	CIVIL DETAILS
C5.3	CIVIL DETAILS
E1.0	ELECTRICAL NOTES
E2.0	ELECTRICAL SITE PLAN
E3.0	SINGLE LINE DIAGRAM & PANEL SCHEDULES
E4.0	ELECTRICAL DETAILS
E4.1	ELECTRICAL DETAILS
E5.1	CHARGER SPECIFICATIONS
L1.0	LANDSCAPE PLAN
L1.1	LANDSCAPE NOTES & DETAILS

FOR REFERENCE ONLY DRAWINGS

- PROPERTY SURVEY / EXISTING CONDITIONS, SEE SHEET C1.0 - EXISTING CONDITIONS
- EVSE SPECIFICATIONS, SEE SHEET E5.1 - CHARGER SPECIFICATIONS

IMAGE REFERENCE

AERIAL IMAGERY PROVIDED BY:
NEARMAP US, INC. ©2025 NEARMAP, HERE.

Nearmap

ENGINEER(S) OF RECORD

CIVIL ENGINEER:
KIMLEY-HORN OF MICHIGAN, INC.
CONTACT: LIZZ BRAGG, P.E.
PHONE: (205) 732-8055
EMAIL: LIZZ.BRAGG@KIMLEY-HORN.COM

ELECTRICAL ENGINEER:
KIMLEY-HORN OF MICHIGAN, INC.
CONTACT: JOSEPH BRADSHAW, P.E.
PHONE: (775) 200-1961
EMAIL: JOSEPH.BRADSHAW@KIMLEY-HORN.COM

EVgo
FAST CHARGING
EVGO
1661 E FRANKLIN AVE
EL SEGUNDO, CA 90245

Kimley»Horn of Michigan, Inc.
3000 TOWN CENTER SUITE 2600,
SOUTHFIELD, MI 48075
Main: (313) 572-1560 | www.kimley-horn.com

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KENSINGTON VALLEY OUTLETS
EV INFRASTRUCTURE PLAN
1475 N BURKHART ROAD - EV
HOWELL, MI 48855

DOCUMENTS WITHOUT SIGNATURE AND REQUIRED SEAL OF AOR / EOR ARE NOT FOR CONSTRUCTION

DRAFT
PRELIMINARY PLANS
NOT FOR CONSTRUCTION

No.	DATE	BY
0	01/13/26	GHH
1	02/04/26	GHH
2		
3		
4		
5		
6		
7		
8		
9		
10		

ISSUE BLOCK
CD30
CD90

DESIGNED BY:	EGB
DRAWN BY:	GHH
CHECKED BY:	RS
KHA PROJECT No.	017777049
DOCUMENT DATE:	JANUARY 13, 2026

SHEET TITLE
COVER SHEET

SHEET NUMBER
G0.0

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GENERAL CONSTRUCTION NOTES

FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
GENERAL CONTRACTOR: TBD
PROPERTY OWNER: TANGER PROPERTIES, LLC

1. ALL SITE WORK SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS.
2. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. GENERAL CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF WORK.
3. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES, AND APPLICABLE REGULATIONS.
4. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY UNLESS OTHERWISE NOTED. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS THE MINIMUM REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS, SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF WORK AND PREPARED BY THE ENGINEER PRIOR TO PROCEEDING WITH WORK.
5. WORK PREVIOUSLY COMPLETED IS REPRESENTED BY LIGHT SHADED LINES AND NOTES. THE SCOPE OF WORK FOR THIS PROJECT IS REPRESENTED BY DARK SHADED LINES AND NOTES. CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR OF ANY EXISTING CONDITIONS THAT DEVIATE FROM THE DRAWINGS PRIOR TO BEGINNING CONSTRUCTION.
6. THE CONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO THE CONSTRUCTION MANAGER 48 HOURS (CONTRACTOR SHALL CONFIRM TIMELINE WITH EVGO) PRIOR TO COMMENCEMENT OF WORK.
7. THE CONTRACTOR SHALL PROVIDE UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
8. THE GENERAL CONTRACTOR SHALL MAINTAIN IN GOOD CONDITION ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDENDA, AND CHANGE ORDERS ON THE PREMISES AT ALL TIMES.
9. THE CONTRACTOR SHALL PROVIDE PORTABLE FIRE EXTINGUISHERS WITH A RATING OF NOT LESS THAN 2-A:10-B:C AND SHALL BE WITHIN 25 FEET OF TRAVEL DISTANCE TO ALL PORTIONS OF WHERE THE WORK IS BEING COMPLETED DURING CONSTRUCTION.
10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. THE CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS SHALL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION, B) CONFINED SPACE, C) ELECTRICAL SAFETY, AND D) TRENCHING & EXCAVATION.
11. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED, CAPPED, PLUGGED OR OTHERWISE DISCONNECTED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE OWNER AND/OR LOCAL UTILITIES.
12. THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION.
13. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE FEDERAL AND LOCAL JURISDICTION FOR EROSION AND SEDIMENT CONTROL.
14. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
15. THE SUBGRADE SHALL BE BROUGHT TO A SMOOTH UNIFORM GRADE AND COMPACTED TO 95 PERCENT STANDARD PROCTOR DENSITY UNDER PAVEMENT AND STRUCTURES AND 80 PERCENT STANDARD PROCTOR DENSITY IN OPEN SPACE. ALL TRENCHES IN PUBLIC RIGHT OF WAY SHALL BE BACKFILLED WITH FLOWABLE FILL OR OTHER MATERIAL PRE-APPROVED BY THE LOCAL JURISDICTION.
16. ALL BROCHURES, OPERATING AND MAINTENANCE MANUALS, CATALOGS, SHOP DRAWINGS, AND OTHER DOCUMENTS SHALL BE TURNED OVER TO THE GENERAL CONTRACTOR AT COMPLETION OF CONSTRUCTION AND PRIOR TO PAYMENT.
17. THE CONTRACTOR SHALL SUBMIT A COMPLETE SET OF AS-BUILT REDLINES TO THE GENERAL CONTRACTOR AND OWNER (EVGO) UPON COMPLETION OF PROJECT AND PRIOR TO FINAL PAYMENT.
18. INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM SITE VISITS AND/OR DRAWINGS PROVIDED BY THE SITE OWNER. CONTRACTORS SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
19. THE TERM "DESIGN ENGINEER" USED HEREIN SHALL MEAN THE ENGINEER WHO HAS SIGNED AND SEALED HIS/HER RESPECTIVE PLAN SHEETS AND IS IN RESPONSIBLE CHARGE OF THE ENGINEERING DESIGN ON THOSE SHEETS. THE TERM "CONTRACTOR" USED HEREIN SHALL MEAN ANY GENERAL CONTRACTOR OR SUBCONTRACTOR USING THESE PLANS.
20. THE DESIGN ENGINEER SHALL NOT PROVIDE, OBSERVE, COMMENT ON NOR ENFORCE ANY SAFETY MEASURES OR REGULATIONS. THE CONTRACTOR SHALL DESIGN, IMPLEMENT, AND MAINTAIN ALL SAFETY MEASURES AND SHALL BE SOLELY RESPONSIBLE FOR ALL REQUIRED SAFETY MEASURES, PROCEDURES AND PROGRAMS AND COMPLYING WITH ALL LOCAL, STATE AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS, AND REGULATIONS. THE CONTRACTOR AGREES THAT SHE/HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOBSITE CONDITIONS AND SAFETY OF ALL PERSONS AND PROPERTY DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.
21. THE DESIGN ENGINEER SHALL HAVE NO RESPONSIBILITY FOR ANY OF THE CONTRACTOR'S MEANS AND METHODS OF CONSTRUCTION, TECHNIQUES, EQUIPMENT CHOICE AND USAGE, SEQUENCE, SCHEDULE, SAFETY PROGRAMS, OR SAFETY PRACTICES, NOR SHALL THE DESIGN ENGINEER HAVE ANY AUTHORITY OR RESPONSIBILITY TO DIRECT OR STOP THE WORK OF ANY CONTRACTOR.
22. ANY CHANGES MADE BY THE CONTRACTOR TO THE CONTRACTUALLY AGREED UPON SCOPE, SCHEDULE AND/OR FEE, WITHOUT THE EXPRESS WRITTEN AUTHORIZATION OF THE OWNER, IS THE SOLE RESPONSIBILITY AND LIABILITY OF THE CONTRACTOR. THE DESIGN ENGINEER IS NOT RESPONSIBLE FOR DIRECTING, IMPLICITLY OR EXPLICITLY ANY SUCH CHANGES AND THE CONTRACTOR ASSUMES ALL RISK OF UNDERTAKING ANY SUCH CHANGES.
23. THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE DESIGN ENGINEER AND OWNER, THEIR OFFICERS, AGENTS AND EMPLOYEES, HARMLESS FROM ANY AND ALL CLAIMS, DEMANDS, JUDGMENTS, LOSS, DAMAGES, COSTS, EXPENSES, FEES OR LIABILITY WHATSOEVER, REAL OR ALLEGED, IN CONNECTION WITH, IN WHOLE OR IN PART, DIRECTLY OR INDIRECTLY, THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE OR CONCURRENT NEGLIGENCE OF THE OWNER OR THE DESIGN ENGINEER.
24. IF THERE ARE ANY QUESTIONS REGARDING THESE PLANS, THE CONTRACTOR SHALL ISSUE A RFI IN WRITING FROM THE DESIGN ENGINEER AND THE OWNER, REQUESTING A CLARIFICATION BEFORE PERFORMING ANY RELATED OR IMPACTED WORK. ANY ELECTRONIC FILES ARE PROVIDED ONLY FOR THE CONVENIENCE OF THE RECEIVING PARTY AND ARE INTENDED SOLELY FOR THE EXCLUSIVE USE BY THAT PARTY FOR THE PURPOSES EXPRESSLY AUTHORIZED. IN ACCORDANCE WITH STANDARD INDUSTRY PRACTICE, ONLY PRINTED COPIES OF DOCUMENTS DESIGNATED AS "ISSUED FOR CONSTRUCTION", OR EQUIVALENT DESIGNATION, MAY BE RELIED UPON.
25. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PREPARING ITS BID, IN WHOLE AND IN PART, BASED UPON THE DESIGN SHOWN ON THESE PLANS. THE CONTRACTOR IS NOT AUTHORIZED TO USE ANY QUANTITIES SHOWN ON THESE PLANS WITHOUT THE EXPLICIT WRITTEN PERMISSION OF THE ENGINEER OF RECORD. THE DESIGN ENGINEER MAKES NO WARRANTY OR REPRESENTATION AS TO THE SUITABILITY OF ANY INFORMATION SHOWN HEREON FOR DETERMINING A CONTRACTOR BID.
26. ANYTHING MENTIONED IN THE SPECIFICATIONS, IF ANY, AND NOT SHOWN ON THE DRAWINGS, OR SHOWN ON THE DRAWINGS AND NOT MENTIONED IN THE SPECIFICATIONS, SHALL BE OF LIKE EFFECT AS IF SHOWN OR MENTIONED IN BOTH.
27. THE EXISTENCE, LOCATION, TYPE, CONDITION AND SIZE OF UNDERGROUND UTILITIES, FACILITIES OR STRUCTURES ("FACILITIES") SHOWN ON THESE PLANS WAS OBTAINED FROM A SEARCH OF READILY AVAILABLE RECORDS, OR AS PROVIDED BY OTHERS. NO REPRESENTATION IS MADE AS TO THE ACCURACY OR COMPLETENESS OF SAID INFORMATION. THE CONTRACTOR SHALL CONFIRM SAID INFORMATION BY FIELD MEASUREMENTS, OBSERVATIONS AND WHATEVER MEANS NECESSARY, PRIOR TO CONSTRUCTION. THE CONTRACTOR WILL IMMEDIATELY INFORM THE DESIGN ENGINEER IN WRITING IF ANY DISCREPANCIES OR CONFLICTING INFORMATION IS FOUND. THE CONTRACTOR SHALL PROTECT THE FACILITIES SHOWN HEREON AND ANY OTHERS NOT OF RECORD OR NOT SHOWN ON THESE PLANS, AS NEEDED. ALL DAMAGES THERETO CAUSED BY THE CONTRACTOR SHALL BE REPAIRED TO THE APPROPRIATE SPECIFICATIONS AND STANDARDS AT THE SOLE EXPENSE OF THE CONTRACTOR.
28. THE CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS AND LOCATE EXISTING UNDERGROUND FACILITIES AS NEEDED, SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS IF REVISIONS ARE NECESSARY DUE TO THE ACTUAL LOCATION, SIZE, TYPE, OR CONDITION OF EXISTING FACILITIES DIFFERING FROM WHAT IS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE FOR ALL DAMAGES DUE TO THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ALL SUCH FACILITIES WHETHER NOTED ON THESE PLANS OR NOT. THE DESIGN ENGINEER ASSUMES NO LIABILITY FOR ANY DAMAGES SUSTAINED OR COST INCURRED BECAUSE OF THE OPERATIONS IN THE VICINITY OF EXISTING FACILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF ANY DAMAGE TO THE EXISTING IMPROVEMENTS AND REPLACEMENT TO THE SATISFACTION OF THE OWNER AND/OR AUTHORITY HAVING JURISDICTION AS NEEDED.
29. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO STARTING WORK ADJACENT TO, ABOVE OR BELOW THEIR FACILITIES AND SHALL COORDINATE ALL WORK WITH UTILITY COMPANY REPRESENTATIVES.
30. THE CONTRACTOR SHALL VERIFY ALL EXISTING AND PROPOSED GRADING ELEMENTS BEFORE THE START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE DESIGN ENGINEER OF ANY DISCREPANCIES.
31. UNLESS EXPLICITLY STATED OTHERWISE HEREIN, THE EARTHWORK QUANTITIES SHOWN ON THESE PLANS ARE APPROXIMATE IN PLACE VOLUMES CALCULATED FROM THE EXISTING GROUND TO THE PROPOSED FINISHED GRADE. EXISTING GROUND IS DEFINED BY THE CONTOURS AND SPOT GRADES ON THE BASE SURVEY. PROPOSED FINISHED GRADE IS DEFINED AS THE FINAL GRADE AS INDICATED ON THE GRADING PLAN(S) AS FINISHED GROUND, FINISHED SURFACE, AND FINISHED FLOOR ELEVATIONS. NO REPRESENTATIONS OF SUCH QUANTITIES OR A BALANCED SITE CONDITION ARE MADE BY THE ENGINEER OF RECORD. THE EARTHWORK QUANTITIES SHOWN ON THESE PLANS ARE FOR PERMITTING PURPOSES ONLY. UNLESS EXPLICITLY STATED OTHERWISE HEREIN, THEY HAVE NOT BEEN FACTORED TO ACCOUNT FOR CHANGES IN VOLUME DUE TO BULKING, CLEARING AND GRUBBING, SHRINKAGE, SUBSIDENCE, OVER-EXCAVATION AND RE-COMPACTION, AND CONSTRUCTION METHODS. NOR DO THEY ACCOUNT FOR THE THICKNESS OF PAVEMENT SECTIONS, STORMWATER QUALITY MEDIA SECTIONS, UTILITY PIPES, TRENCHING AND BEDDING MATERIALS, BUILDING OR WALL FOOTINGS, BUILDING SLABS THICKNESSES AND UNDERLYING BASE OR SAND LAYERS, REUSE OF PULVERIZED MATERIALS THAT WILL UNDERLIE PAVEMENTS, ETC. THE CONTRACTOR IS NOT AUTHORIZED TO USE THE ESTIMATES HEREIN FOR BIDDING AND CONSTRUCTION PURPOSES WITHOUT THE EXPLICIT WRITTEN PERMISSION OF THE ENGINEER OF RECORD.
32. PROPOSED BUILDING PAD ELEVATIONS, IF SHOWN, ARE BASED ON INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS. CONTRACTOR SHALL CONFIRM SLAB STRUCTURAL SECTION THICKNESSES AND PAD PREPARATION REQUIREMENTS PRIOR TO GRADING FINISHED PADS.
33. THE CONTRACTOR SHALL THOROUGHLY CHECK COORDINATION OF CIVIL, LANDSCAPE, MEP, ARCHITECTURAL AND ALL OTHER PLANS PRIOR TO COMMENCING CONSTRUCTION. SHOULD DISCREPANCIES OR CONFLICTING INFORMATION BE FOUND ON ANY PLANS, OR IN ANY SPECIFICATIONS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND DESIGN ENGINEER IN WRITING BEFORE PROCEEDING WITH THE WORK IN QUESTION.
34. THE PROPOSED BUILDING FOOTPRINT(S) AND OTHER STRUCTURE FOOTPRINTS SHOWN IN THESE PLANS WERE PROVIDED TO THE DESIGN ENGINEER BY THE PROJECT ARCHITECT AT THE TIME OF PREPARATION OF THESE PLANS. THE DESIGN ENGINEER MAKES NO REPRESENTATION AS TO THE ACCURACY OF THESE FOOTPRINTS AND THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONFIRMING WITH THE RELEVANT DESIGN TEAM PROFESSIONALS, AND USING THE FINAL, CORRECT VERSION OF THE FOOTPRINTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONFIRMING THE STRUCTURE'S FINAL POSITION ON THE SITE BASED UPON THE FINAL ARCHITECTURAL FOOTPRINT, CIVIL PLANS, SURVEY AND ANY OTHER RELEVANT DOCUMENTS. ANY DIFFERENCES FOUND SHALL BE IMMEDIATELY REPORTED TO THE DESIGN ENGINEER AND OWNER/PROJECT ARCHITECT.
35. THE CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO PROTECT THE PROJECT PROPERTY FROM ANY EROSION AND SILTATION THAT RESULT FROM CONTRACTOR OPERATIONS, BY APPROPRIATE MEANS, OR BY SPECIFIC MEANS DESCRIBED IN THE PROJECT'S PLANS, SPECIFICATIONS OR STORM WATER POLLUTION PREVENTION REPORT, UNTIL SUCH TIME THAT THE PROJECT IS COMPLETED AND ACCEPTED FOR MAINTENANCE BY WHOMEVER IS TO BE ULTIMATELY RESPONSIBLE FOR MAINTENANCE AND THE AGENCY HAVING JURISDICTION. THE DESIGN ENGINEER SHALL HAVE NO RESPONSIBILITY TO DIRECT THE CONTRACTOR REGARDING THE MEANS AND METHODS OF STORMWATER POLLUTION PREVENTION, SEQUENCE, OR SCHEDULE.
36. ALL SHOP DRAWINGS, RFIS AND ANY OTHER DOCUMENTS THAT REQUIRE DESIGN ENGINEER REVIEW SHALL BE SUBMITTED BY THE CONTRACTOR SUFFICIENTLY IN ADVANCE OF CONSTRUCTION OF THAT ITEM, TO ALLOW ADEQUATE REVIEW, COORDINATION AND RESPONSE. SAID DOCUMENTS ARE NOT A DIRECTION FROM THE DESIGN ENGINEER TO MODIFY THE CONTRACTORS SCOPE, SCHEDULE OR PRICE, AND THE CONTRACTOR WARRANTS NOT TO USE THEM AS SUCH.
37. THE CONTRACTOR SHALL ENSURE APPROPRIATE LICENSED PROFESSIONALS HAVE BEEN RETAINED BY THE CONTRACTOR TO PROVIDE ANY/ALL REQUIRED PROJECT CERTIFICATIONS AS MAY BE REQUIRED BY ANY AUTHORITY HAVING JURISDICTION. THE DESIGN ENGINEER WILL NOT PROVIDE ANY PROJECT CERTIFICATIONS UNLESS SPECIFICALLY RETAINED BY THE OWNER TO PROVIDE LIMITED SERVICES.
38. CONTRACTOR SHALL RETAIN A LICENSED SURVEYOR TO DOCUMENT ALL CHANGES TO THE APPROVED CONSTRUCTION DOCUMENTS DURING CONSTRUCTION. THE LICENSED SURVEYOR SHALL PREPARE A SIGNED AND SEALED "AS-BUILT" DRAWING UPON COMPLETION OF CONSTRUCTION. THE DESIGN ENGINEER IS NOT RESPONSIBLE FOR THE PREPARATION IN WHOLE OR IN PART OF THE "AS-BUILT" DRAWINGS.
39. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MONUMENTATION AND BENCHMARKS WHICH WILL BE DISTURBED OR DESTROYED BY CONSTRUCTION. SUCH POINTS SHALL BE REFERENCED AND REPLACED WITH APPROPRIATE MONUMENTATION BY A LICENSED LAND SURVEYOR OR REGISTERED CIVIL ENGINEER AUTHORIZED TO PRACTICE LAND SURVEYING. A CORNER RECORD OR RECORD OF SURVEY, AS APPROPRIATE, SHALL BE FILED BY THE LICENSED LAND SURVEYOR OR REGISTERED CIVIL ENGINEER AS REQUIRED BY THE MOST CURRENT VERSION OF THE LAND SURVEYORS ACT.

TYPICAL ABBREVIATIONS LIST

A, AMP(S)	AMPERE	DC	DIRECT CURRENT	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	MFR	MANUFACTURER	SJI	STEEL JOIST INSTITUTE
AB	ANCHOR BOLT	DEMO	DEMOLITION	HDG	HOT DIPPED GALVANIZED	MH	MANHOLE	SPA	SPACING
AC	ALTERNATING CURRENT / ACRE	Ø, DIA	DIAMETER	HOA	HAND-OFF-AUTO	MLO	MAIN LUGS ONLY	SPEC	SPECIFICATION
ADA	AMERICANS WITH DISABILITIES ACT	DIST	DISTANCE	HP	HORSEPOWER	MPZ	MINI POWER-ZONE	SQ	SQUARE
AFC	AUTOMATIC FREQUENCY CONTROL	DN	DOWN	HT	HEIGHT	MSB	MAIN SWITCHBOARD	SS	STAINLESS STEEL
AIC	AMPERE INTERRUPTING CURRENT	DP	DISTRIBUTION PANEL	HV	HIGH VOLTAGE	MSG	MAIN SWITCHGEAR	SSWR	SANITARY SEWER
AHJ	AUTHORITY HAVING JURISDICTION	(E), EX	EXISTING	HVAC	HEATING, VENTILATION, AIR CONDITIONING	MTG	MOUNTING	STD	STANDARD
AL	ALUMINUM	EA	EACH	HZ	HERTZ	MV	MEDIUM VOLTAGE	STE	SUITE
ART	ARTICLE	E&S	EROSION PREVENTION & SEDIMENT CONTROL	I	CURRENT	MVA	MEGA VOLT AMPERES	STP	SHIELDED TWISTED PAIR
ATS	AUTOMATIC TRANSFER SWITCH	EGC	EQUIPMENT GROUNDING CONDUCTOR	ID	INNER DIAMETER / IDENTIFICATION	NEUT	NEUTRAL	SWBD	SWITCHBOARD
AUX	AUXILIARY	ESA	ENVIRONMENTAL SITE ASSESSMENT	IMC	INTERMEDIATE METAL CONDUIT	NEC	NATIONAL ELECTRIC CODE	SYM	SYMMETRICAL
AWG	AMERICAN WIRE GAUGE	ESMT	EASEMENT	IN	INCH	NO	NUMBER	TBD	TO BE DETERMINED
BAY	BAYONET FUSE	EMT	ELECTRIC METALLIC TUBING	ISC	INTERRUPTING SHORT CIRCUIT	NTS	NOT TO SCALE	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
BLDG	BUILDING	ENCL	ENCLOSURE	IG	ISOLATED GROUND	OC	ON CENTER	TYP	TYPICAL
BOL	BOLLARD	EPO	EMERGENCY POWER OFF	JB	JUNCTION BOX	OCPD	OVERCURRENT PROTECTION DEVICE	UG	UNDERGROUND
BOT	BOTTOM	EQ	EQUAL / EQUIDISTANT	KAIC	KILO AMPERES INTERRUPTION CAPACITY	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED	UON	UNLESS OTHERWISE NOTED
C	CONDUIT	EQPT	EQUIPMENT	KCMIL	KILO CIRCULAR MILS	OH	OVERHEAD	UTL	UTILITY
CC	CENTER TO CENTER	ETC	ET CETERA	KV	KILOVOLTS	OP	OUTSIDE OF PIPE	UTP	UNSHIELDED TWISTED PAIR
CCS	COMBINED CHARGING SYSTEM	EV	ELECTRIC VEHICLE	KVA	KILOVOLT AMPERE	P, ᵩ	PHASE	V	VOLT
CCS1/CCS2	CCS TYPE 1 / CCS TYPE 2	EVCS	ELECTRIC VEHICLE CHARGING STATION	KW	KILOWATT	PDU	POWER DISTRIBUTION UNIT	VA	VOLT-AMPERE
CEC	CALIFORNIA ELECTRICAL CODE	EVSE	ELECTRIC VEHICLE SUPPLY EQUIPMENT	KWH	KILO WATT-HOURS	PNL	PANEL	VAC	VOLTS ALTERNATING CURRENT
CHAdeMO	CHARGE DE MOVE (EV CHARGING STANDARD)	EVSG	ELECTRIC VEHICLE SWITCH GEAR	LCP	LIGHTING CONTROL PANEL	POCC	POINT OF COMMON CONNECTION	VFD	VARIABLE FREQUENCY DRIVE
CKT	CIRCUIT	FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY	LF	LINEAR FEET	POI	POINT OF INTERCONNECTION	VFI	VACUUM FUSED INTERRUPTER
℄	CENTER LINE	FFE	FINISHED FLOOR ELEVATION	LVE	LOW VOLTAGE ENCLOSURE	PPE	PERSONAL PROTECTION EQUIPMENT	VP	VAPOR PROOF
CLF	CURRENT LIMITING FUSE	FLA	FULL LOAD AMPERES	LVSB	LOW VOLTAGE SWITCHBOARD	PV	PHOTOVOLTAIC	W	WATT, WIRE
CLR	CLEARANCE	FSC	FUTURE SERVICE CENTER	M	METER	PVC	POLYVINYL CHLORIDE	W/	WITH
COMM	COMMUNICATION	FT	FEET	MAX	MAXIMUM	QTY	QUANTITY	W/O	WITHOUT
CONC	CONCRETE	GA	GAUGE	MBSL	MINIMUM BUILDING SETBACK LINE	RMC	RIGID METALLIC CONDUIT	WP	WEATHERPROOF
CT	CURRENT TRANSFORMER	GALV	GALVANIZED	MCC	MOTOR CONTROL CENTER	SCA	SHORT CIRCUIT AVAILABLE	WT	WATERTIGHT
CU	COPPER	GEC	GROUNDING ELECTRODE CONDUCTOR	MCP	MOTOR CIRCUIT PROTECTOR	SCH	SCHEDULE	XFMR	TRANSFORMER
', D	DEPTH	GND	GROUND	MIN	MINIMUM	SEC	SECONDARY	XLPE	CROSS-LINKED POLYETHYLENE
DB	DIRECT BURIAL	GRS	GALVANIZED RIGID STEEL	MCB	MAIN CIRCUIT BREAKER	SF	SQUARE FEET	XP	EXPLOSION PROOF

STRUCTURAL STEEL NOTES

1. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING REQUIREMENTS, UNLESS NOTED OTHERWISE: WIDE FLANGE SHAPE: A992, 50KSI
   ANGLE AND CHANNEL SHAPE: ASTM A36, 36 KSI PLATE: ASTM A36, 36KSI
   PIPE: ASTM A53 GRADE B, 35 KSI
   HSS: ASTM A500 GRADE B, 46KSI
2. HIGH-STRENGTH BOLTS SHALL CONFORM TO ASTM A325: ONE HIGH-STRENGTH BOLT ASSEMBLY SHALL CONSIST OF A HEAVY HEX STRUCTURAL BOLT, A HEAVY NUT, A HARDENED WASHER CONFORMING TO ASTM F436. THE HARDENED WASHER SHALL BE INSTALLED AGAINST ELEMENT TURNED IN TIGHTENING. UNLESS NOTED OTHERWISE ON THE DRAWINGS, ALL CONNECTIONS SHALL BE BEARING TYPE CONNECTIONS.
3. WELDING ELECTRODES SHALL COMPLY WITH AWS D1.1 USING A5.1 OR A5.5 E70XX AND SHALL BE COMPATIBLE WITH THE WELDING PROCESS SELECTED. WELDERS SHALL BE QUALIFIED AS PRESCRIBED IN AWS D1.1.
4. UNLESS NOTED OTHERWISE ON THE DRAWING, ALL ANCHOR BOLTS SHALL CONFORM TO ASTM F1554 WITH HEAVY HEXAGONAL NUT.
5. FABRICATE ITEMS OF STRUCTURAL STEEL IN ACCORDANCE WITH AISC SPECIFICATION.
6. ALL EXPOSED STRUCTURAL STEEL AND BOLTS SHALL BE HOT DIP GALVANIZED PER ASTM A123.
7. SUBMIT FABRICATION AND ERECTION DRAWINGS SHOWING ALL DETAILS, CONNECTIONS, MATERIAL DESIGNATIONS, AND TOP STEEL ELEVATIONS FOR APPROVAL. THE SHOP DRAWINGS WILL BE REVIEWED FOR GENERAL CONFORMANCE TO THE CONTRACT DRAWINGS. SUCH APPROVAL SHALL NOT RELIEVE THE FABRICATOR/CONTRACTOR OF THE RESPONSIBILITY FOR EITHER THE ACCURACY OF THE DETAILED DIMENSIONS IN THE SHOP AND ERECTION DRAWINGS OR THE GENERAL FIT-UP OF PARTS THAT ARE TO BE ASSEMBLED IN THE FIELD.
8. PRIMER SHALL BE RED OXIDE-CHROMATE PRIME COMPLYING WITH STEEL STRUCTURES PAINTING COUNCIL (SSPC) PAINT SPECIFICATION NUMBER 11.

REINFORCED CONCRETE NOTES

1. CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI IN 28 DAYS UNLESS OTHERWISE NOTED CONTINUOUS INSPECTION IS NOT REQUIRED. SLUMP: 4" MIN / 6" MAX.
   i. AIR ENTRAINMENT: 4 1/2% - 7% BY VOLUME
2. REINFORCEMENT SHALL BE A NEW BILLET STEEL DEFORMED BARS CONFORMING TO ASTM SPECIFICATION A615 GRADE 60, MAXIMUM COARSE AGGREGATE SIZE SHALL BE 3/4".
3. REINFORCEMENT SHALL COMPLY WITH THE LATEST EDITION OF ACI 318 FOR MINIMUM CLEARANCES AND CONCRETE COVER.
4. ALL EMBEDDED ITEMS SHALL BE SECURELY HELD IN POSITION PRIOR TO PLACEMENT OF CONCRETE. ALL CONCRETE SHALL BE READY-MIXED IN ACCORDANCE WITH ASTM C94.
5. MAINTAIN TEMPERATURE OF CAST IN PLACE CONCRETE BETWEEN 50 DEGREES AND 90 DEGREES FAHRENHEIT.
6. DO NOT USE RETEMPERED CONCRETE, OR ADD WATER TO READY-MIX CONCRETE AT THE JOB SITE.
7. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.7.
8. EXCEPT AS DETAILED OR AUTHORIZED, MAKE BARS CONTINUOUS AROUND CORNERS WHERE PERMITTED, SPLICES MADE BY CONTACT LAPS SHALL BE CLASS "B" TENSION LAPS UNLESS NOTED OTHERWISE.
9. DETAIL BARS IN ACCORDANCE WITH "ACI DETAILING MANUAL", PUBLICATION SP-66 AND " BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI 318.
10. PROVIDE ACCESSORIES NECESSARY TO PROPERLY SUPPORT REINFORCING.
11. EXPANSION JOINTS SHALL BE CONSTRUCTED AT LOCATIONS WHERE THE CONCRETE PAD ABUTS CONCRETE CURBS, DRIVEWAYS, AND SIMILAR STRUCTURES, AND AS SHOWN ON APPROVED PLANS. EXPANSION JOINTS SHALL BE FORMED WITH ONE-HALF INCH PRE-FABRICATED NON-EXTRUDING FILLER AND SHALL EXTEND THE FULL DEPTH OF THE SLAB.

ANCHORAGE INSTALLATION NOTES

1. DRILLING THROUGH EXISTING SLAB REBAR DURING POST-INSTALLED ANCHOR BOLTS INSTALLATION IS NOT PERMITTED.
2. POST-INSTALLED ANCHOR BOLT INSTALLATION SHALL BE PERFORMED BY PERSONNEL TRAINED TO INSTALL THE SYSTEM PER THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS (MPII), AS INCLUDED IN THE ANCHOR PACKAGING.
3. EXPANSION AND ADHESIVE ANCHORS SHALL BE INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS USING STANDARD EMBEDMENT AND EDGE DISTANCES UNLESS NOTED OTHERWISE ON THE DRAWINGS.
4. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING REQUIREMENTS, UNLESS NOTED OTHERWISE: WIDE FLANGE SHAPE: A992, 50KSI
   ANGLE AND CHANNEL SHAPE: ASTM A36, 36 KSI PLATE: ASTM A36, 36KSI
   PIPE: ASTM A53 GRADE B, 35 KSI
   HSS: ASTM A500 GRADE B, 46KSI
5. HIGH-STRENGTH BOLTS SHALL CONFORM TO ASTM A325: ONE HIGH-STRENGTH BOLT ASSEMBLY SHALL CONSIST OF A HEAVY HEX STRUCTURAL BOLT, A HEAVY NUT, A HARDENED WASHER CONFORMING TO ASTM F436. THE HARDENED WASHER SHALL BE INSTALLED AGAINST ELEMENT TURNED IN TIGHTENING. UNLESS NOTED OTHERWISE ON THE DRAWINGS, ALL CONNECTIONS SHALL BE BEARING TYPE CONNECTIONS.
6. WELDING ELECTRODES SHALL COMPLY WITH AWS D1.1 USING A5.1 AND SHALL BE COMPATIBLE WITH THE WELDING PROCESS SELECTED. WELDERS SHALL BE QUALIFIED AS PRESCRIBED IN AWS D1.1.
7. UNLESS NOTED OTHERWISE ON THE DRAWING, ALL ANCHOR BOLTS SHALL CONFORM TO ASTM F1554 WITH HEAVY HEXAGONAL NUT.
8. FABRICATE ITEMS OF STRUCTURAL STEEL IN ACCORDANCE WITH AISC SPECIFICATION.
9. ALL EXPOSED STRUCTURAL STEEL AND BOLTS SHALL BE HOT DIP GALVANIZED PER ASTM A123.
10. SUBM

GENERAL SITE WORK NOTES

PART 1 - GENERAL

CLEARING, GRUBBING, STRIPPING, EROSION CONTROL, SURVEY, LAYOUT, SUBGRADE PREPARATION AND FINISH GRADING AS REQUIRED TO COMPLETE THE PROPOSED WORK SHOWN IN THESE PLANS.

1. REFERENCES:
   - A. MDOT (STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION-CURRENT EDITION).
   - B. ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS).
   - C. OSHA (OCCUPATION SAFETY AND HEALTH ADMINISTRATION).

2. INSPECTION AND TESTING:
   - A. GENERAL CONTRACTOR SHALL PERFORM ALL WORK IN CONFORMANCE WITH THE PLANS AND SPECIFICATIONS. PERFORM INSPECTIONS BEFORE CONCEALING WORK WITH FOLLOW-ON ACTIVITIES (BACKFILL, CONCRETE POUR, ETC).

3. SITE MAINTENANCE AND PROTECTION:
   - A. PROVIDE ALL NECESSARY JOB SITE MAINTENANCE FROM COMMENCEMENT OF WORK UNTIL COMPLETION OF THE CONTRACT.
   - B. AVOID DAMAGE TO THE SITE AND TO EXISTING FACILITIES, STRUCTURES, TREES, AND SHRUBS DESIGNATED TO REMAIN. TAKE PROTECTIVE MEASURES TO PREVENT EXISTING FACILITIES THAT ARE NOT DESIGNATED FOR REMOVAL FROM BEING DAMAGED BY THE WORK.
   - C. KEEP SITE FREE OF ALL PONDING WATER.
   - D. PROVIDE EROSION CONTROL MEASURES IN ACCORDANCE WITH STATE DOT, LOCAL PERMITTING AGENCY AND EPA REQUIREMENTS.
   - E. PROVIDE AND MAINTAIN ALL TEMPORARY FENCING, BARRICADES, WARNING SIGNALS AND SIMILAR DEVICES NECESSARY TO PROTECT AGAINST THEFT FROM PROPERTY DURING THE ENTIRE PERIOD OF CONSTRUCTION. REMOVE ALL SUCH DEVICES UPON COMPLETION OF THE WORK.
   - F. EXISTING UTILITIES: DO NOT INTERRUPT EXISTING UTILITIES SERVING FACILITIES OCCUPIED BY THE OWNER OR OTHERS, EXCEPT WHEN PERMITTED IN WRITING BY THE CONSTRUCTION MANAGER AND THEN ONLY AFTER ACCEPTABLE TEMPORARY UTILITY SERVICES HAVE BEEN PROVIDED.
   - G. PROVIDE A MINIMUM 48-HOUR (CONTRACTOR SHALL CONFIRM TIMELINE WITH REPUBLIC SERVICES) NOTICE TO THE CONSTRUCTION MANAGER AND RECEIVE WRITTEN NOTICE TO PROCEED BEFORE INTERRUPTING ANY UTILITY SERVICE.
   - H. SOD PLANTED IN THE FALL MUST ESTABLISH ITS ROOTS BEFORE THE FIRST WINTER FROST. DETERMINE WHEN THE FIRST FROST USUALLY OCCURS, AND PLANT THE SOD NO LATER THAN ONE MONTH BEFORE THE FIRST FROST. IF THE CONSTRUCTION IS FINISHED LATER THAN ONE MONTH BEFORE THE FIRST FROST, USE STRAW UNTIL SOD CAN BE INSTALLED.

PART 2 - PRODUCTS

1. SUITABLE MATERIAL – SUITABLE MATERIAL ARE USED FOR GRADING AND BACKFILL. SUITABLE MATERIALS ARE ON SITE SOILS REMOVED FROM EXCAVATIONS THAT EXCLUDE FROZEN SOIL, ROOTS OR ORGANIC MATERIAL, DEBRIS, TRASH, REFUSE, OR PARTICLES SIZE GREATER THAN 3-INCH. SUITABLE SOILS HAVE MOISTURE CONTENTS THAT ALLOW THEM TO BE COMPACTED TO THE SAME DENSITY AS THE NATIVE SOILS.
2. UNSUITABLE MATERIAL – SOILS THAT ARE FROZEN, CONTAIN ROOTS OR ORGANIC MATERIAL, DEBRIS, TRASH, REFUSE, OR PARTICLES SIZES GREATER THAN 3-INCH. SOILS THAT ARE TOO WET OR TOO DRY TO BE COMPACTED TO THE SAME DENSITY AS THE NATIVE SOILS ARE UNSUITABLE.
3. GRANULAR BACKFILL – SHALL MEET THE FOLLOWING GRADATION

SIEVE SIZE	TOTAL PERCENT PASSING
1 1/2 INCH (37.5 MM)	100
No. 4 (4.75 MM)	30 TO 60
NO 200 (0.075 MM)	3 TO 15

4. GRANULAR BEDDING – WELL-GRADED SAND MEETING THE GRADATION REQUIREMENT OF ASTM C 33 FINE AGGREGATE.
5. CONTROLLED LOW STRENGTH MATERIAL (CLSM)– A SELF LEVELING AND SELF COMPACTING CEMENTITIOUS MATERIAL COMPOSED OF SAND, COARSE AGGREGATE, CEMENT, FLY ASH, WATER AND ADMIXTURES. CLSM SHALL BE EXCAVATABLE AND SHALL HAVE A DESIGNED UNCONFINED COMPRESSIVE STRENGTH OF BETWEEN 50 TO 100 PSI.
6. BACKFILL – PRODUCTS MEETING THE REQUIREMENTS OF SUITABLE MATERIAL, GRANULAR BEDDING, GRANULAR BACKFILL OR CLSM.
7. TOPSOIL – SOIL WITH AN ORGANIC CONTENT SUFFICIENT TO ALLOW VEGETATIVE GROWTH.

PART 3 - EXECUTION

1. GENERAL:
   - A. BEFORE STARTING GENERAL SITE PREPARATION ACTIVITIES, INSTALL EROSION AND SEDIMENT CONTROL MEASURES. THE WORK AREA SHALL BE CONSTRUCTED AND MAINTAINED IN SUCH CONDITION THAT IN THE EVENT OF RAIN THE SITE WILL BE DRAINED AT ALL TIMES.
   - B. BEFORE ALL SURVEY, LAYOUT, STAKING, AND MARKING, ESTABLISH AND MAINTAIN ALL LINES, GRADES, ELEVATIONS AND BENCHMARKS NEEDED FOR EXECUTION OF THE WORK. CONDUCT UTILITY LOCATE IN ACCORDANCE WITH THE ONE-CALL NOTIFICATION.
   - C. CLEAR AND GRUB THE AREA WITHIN THE LIMITS OF THE SITE. REMOVE TREES, BRUSH, STUMPS, RUBBISH AND OTHER DEBRIS AND VEGETATION RESTING ON OR PROTRUDING THROUGH THE SURFACE OF THE SITE AREA TO BE CLEARED.
   - D. REMOVE THE FOLLOWING MATERIALS TO A DEPTH OF NO LESS THAN 12 INCHES BELOW THE ORIGINAL GROUND SURFACE: ROOTS, STUMPS, AND OTHER DEBRIS, BRUSH, AND REFUSE EMBEDDED IN OR PROTRUDING THROUGH THE GROUND SURFACE, RAKE, DISK OR PLOW THE AREA TO A DEPTH OF NO LESS THAN 6 INCHES, AND REMOVE TO A DEPTH OF 12 INCHES ALL ROOTS AND OTHER DEBRIS THEREBY EXPOSED.
   - E. REMOVE TOPSOIL MATERIAL COMPLETELY FROM THE SURFACE UNTIL THE SOIL NO LONGER MEETS THE DEFINITION OF TOPSOIL. AVOID MIXING TOPSOIL WITH SUBSOIL OR OTHER UNDESIRABLE MATERIALS. SUFFICIENT TOPSOIL MAY BE STOCKPILED ON SITE FOR USE DURING FINAL SITE GRADING.
   - F. EXCEPT WHERE EXCAVATION TO GREATER DEPTH IS INDICATED, FILL DEPRESSIONS RESULTING FROM CLEARING, GRUBBING AND DEMOLITION WORK COMPLETELY WITH SUITABLE MATERIAL.
   - G. REMOVE FROM THE SITE AND DISPOSE IN AN AUTHORIZED LANDFILL ALL DEBRIS RESULTING FROM CLEARING AND GRUBBING OPERATIONS. BURNING WILL NOT BE PERMITTED.
   - H. PRIOR TO EXCAVATING, THOROUGHLY EXAMINE THE AREA TO BE EXCAVATED AND/OR TRENCHED TO VERIFY THE LOCATIONS OF FEATURES INDICATED ON THE DRAWINGS AND TO ASCERTAIN THE EXISTENCE AND LOCATION OF ANY STRUCTURE, UNDERGROUND STRUCTURE, OR OTHER ITEM NOT SHOWN THAT MIGHT INTERFERE WITH THE PROPOSED CONSTRUCTION. NOTIFY THE CONSTRUCTION MANAGER OF ANY OBSTRUCTIONS THAT WILL PREVENT ACCOMPLISHMENT OF THE WORK AS INDICATED ON THE DRAWINGS.
   - I. SEPARATE AND STOCK PILE ALL EXCAVATED MATERIALS SUITABLE FOR BACKFILL. ALL EXCESS EXCAVATED AND UNSUITABLE MATERIALS SHALL BE DISPOSED OF OFF-SITE IN A LEGAL MANNER.
   - J. DURING EXCAVATION, THE CONTRACTOR SHALL PROVIDE SHORING, SHEETING, AND BRACING AS REQUIRED TO PREVENT CAVING OR SLOUGHING OF EXCAVATION.

2. BACKFILL:
   - A. AS SOON AS PRACTICAL, AFTER COMPLETING CONSTRUCTION OF THE RELATED STRUCTURE, INCLUDING EXPIRATION OF THE SPECIFIED MINIMUM CURING PERIOD FOR CAST-IN-PLACE CONCRETE, BACKFILL THE EXCAVATION WITH APPROVED MATERIAL TO RESTORE THE REQUIRED FINISHED GRADE.
   - B. PRIOR TO PLACING BACKFILL AROUND STRUCTURES, ALL FORMS SHALL BE REMOVED AND THE EXCAVATION CLEANED OF ALL TRASH, DEBRIS, AND UNSUITABLE MATERIALS.
   - C. DO NOT PLACE FROZEN MATERIAL IN AS BACKFILL.
   - D. PLACE BACKFILL MATERIAL OR SELECT GRANULAR BACKFILL MATERIAL WHEN REQUIRED IN UNIFORM HORIZONTAL LAYERS OF NO GREATER THAN 8-INCHES LOOSE THICKNESS AND COMPACT TO THE SAME DENSITY AS NATIVE SOIL. WHERE HAND OPERATED COMPACTORS ARE USED, THE FILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 4 INCHES IN LOOSE DEPTH AND COMPACTED.
   - E. WHENEVER TESTING INDICATES THAT THE CONTRACTOR HAS NOT OBTAINED THE SPECIFIED DENSITY, THE SUCCEEDING LAYER SHALL NOT BE PLACED UNTIL THE REQUIREMENTS ARE MET UNLESS OTHERWISE AUTHORIZED BY THE CONSTRUCTION MANAGER. THE CONTRACTOR SHALL TAKE WHATEVER APPROPRIATE ACTION IS NECESSARY, SUCH AS DRYING, ADDING WATER, OR INCREASING THE COMPACTIVE EFFORT TO MEET THE COMPACTION REQUIREMENTS.

3. TRENCH EXCAVATION:
   - A. UTILITY TRENCHES SHALL BE EXCAVATED TO THE LINES AND GRADES SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE GENERAL CONTRACTOR. PROVIDE SHORING, SHEETING AND BRACING AS REQUIRED TO PREVENT CAVING OR SLOUGHING OF THE TRENCH WALLS.
   - B. EXTEND THE TRENCH WIDTH A MINIMUM OF 6 INCHES BEYOND THE OUTSIDE EDGE OF THE OUTERMOST CONDUIT.
   - C. WHEN SOFT YIELDING, OR OTHERWISE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, EXCAVATE THE REQUIRED TRENCH TO A DEPTH OF NO LESS THAN 12 INCHES BELOW THE REQUIRED ELEVATION, THEN BACKFILL WITH 12" OF GRANULAR BEDDING MATERIAL.

4. TRENCH BACKFILL:
   - A. PROVIDE GRANULAR BEDDING MATERIAL OR FLOWABLE FILL IN ACCORDANCE WITH THE DRAWINGS AND THE UTILITY REQUIREMENTS.
   - B. NOTIFY THE GENERAL CONTRACTOR 24 HOURS IN ADVANCE OF BACKFILLING.
   - C. CONDUCT UTILITY CHECK TESTS BEFORE BACKFILLING. BACKFILL AND COMPACT TRENCH BEFORE ACCEPTANCE TESTING.
   - D. PLACE GRANULAR TRENCH BACKFILL UNIFORMLY ON BOTH SIDES OF THE CONDUITS IN 6-INCH UNCOMPACTED LIFTS UNTIL 12 INCHES OVER THE CONDUITS. SOLIDLY RAM AND TAMP BACKFILL INTO SPACE AROUND CONDUITS.
   - E. PROTECT CONDUIT FROM LATERAL MOVEMENT, IMPACT DAMAGE, OR UNBALANCED LOADING.
   - F. ABOVE THE CONDUIT EMBEDMENT ZONE, PLACE AND COMPACT SATISFACTORY BACKFILL MATERIAL IN 8-INCH MAXIMUM LOOSE THICKNESS LIFTS TO RESTORE THE REQUIRED FINISHED SURFACE GRADE.
   - G. COMPACT FINAL TRENCH BACKFILL TO A DENSITY EQUAL TO OR GREATER THAN THAT OF THE EXISTING UNDISTURBED MATERIAL IMMEDIATELY ADJACENT TO THE TRENCH.

5. FINISH GRADING:
   - A. PERFORM ALL GRADING TO PROVIDE POSITIVE DRAINAGE AWAY FROM STRUCTURES AND SMOOTH, EVEN SURFACE DRAINAGE OF THE ENTIRE AREA WITHIN THE LIMITS OF CONSTRUCTION. GRADING SHALL BE COMPATIBLE WITH ALL SURROUNDING TOPOGRAPHY AND STRUCTURES.
   - B. UTILIZE SATISFACTORY FILL MATERIAL RESULTING FROM THE EXCAVATION WORK IN THE CONSTRUCTION OF FILLS, EMBANKMENTS AND FOR REPLACEMENT OF REMOVED UNSUITABLE MATERIALS.
   - C. REPAIR ALL ACCESS ROADS AND SURROUNDING AREAS USED DURING THE COURSE OF THIS WORK TO THEIR ORIGINAL CONDITION.

6. ASPHALT PAVING ROAD:
   - A. CONTRACTOR RESPONSIBLE FOR RE-STRIPING AND APPLYING SEALCOATING, UNLESS OTHERWISE NOTED.
   - B. #014DOT (STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION-CURRENT EDITION)

7. STAGING:
   - A. WORK / STAGING AREA TO BE CONFIRMED AT PRE-CONSTRUCTION SITE MEETING AND SURROUNDED BY TEMPORARY FENCE (SEE DETAIL BELOW) DURING CONSTRUCTION.
   - B. POSSIBLE LOCATION FOR TEMPORARY DRIVE AISLE CLOSURE DURING CONSTRUCTION.
   - C. CONTRACTOR TO PROVIDE TEMPORARY SIGNS TO DIRECT TRAFFIC FLOW.
   - D. SHORT TERM FENCING TO BE PROVIDED OUTSIDE OF TEMPORARY FENCE FOR ANY OPEN TRENCHES LEFT OVER NIGHT OR UNATTENDED.
   - E. TEMPORARY FENCE SHALL BE CLOSED AND LOCKED AT ALL TIMES. IF GATE MUST BE OPEN FOR MOVING EQUIPMENT OR MATERIALS, A SPOTTER SHALL BE PROVIDED TO TO PREVENT UNAUTHORIZED ENTRY.
   - F. NO EQUIPMENT OR MATERIALS SHALL BE STORED OUTSIDE THE TEMPORARY FENCE FOR ANY AMOUNT OF TIME.

GROUNDING NOTES

1. COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
2. FOR GROUND BOND TO STEEL ONLY: INSERT A CADMIUM FLAT WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
3. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).
4. ALL BELOW GRADE BONDS TO BE EXOTHERMIC WELDS OR IRREVERSIBLE COMPRESSION-TYPE CONNECTIONS LISTED FOR USE IN THE APPLICATION WHICH THEY ARE INSTALLED.
5. ALL HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
6. 2014 NEC 250.121 EXCEPTION: A WIRE-TYPE EQUIPMENT GROUNDING CONDUCTOR INSTALLED IN COMPLIANCE WITH 250.6(A) AND THE APPLICABLE REQUIREMENTS FOR BOTH THE EQUIPMENT GROUNDING CONDUCTOR AND THE GROUNDING ELECTRODE CONDUCTOR IN PARTS II, III, AND VI OF THIS ARTICLE SHALL BE PERMITTED TO SERVE AS BOTH AN EQUIPMENT GROUNDING CONDUCTOR AND A GROUNDING ELECTRODE CONDUCTOR.

GEOTECHNICAL NOTE

THESE DRAWINGS WERE PRODUCED WITHOUT THE BENEFIT OF A CURRENT GEOTECHNICAL REPORT. CONTRACTOR SHALL VERIFY ALL EXISTING SITE CONDITIONS TO BE IN CONFORMANCE WITH THE CURRENT GEOTECHNICAL REPORT AND NOTIFY ENGINEER AND PROJECT TEAM OF ANY DISCREPANCIES PRIOR TO THE SCHEDULING OF ANY SITE DISTURBANCE ACTIVITIES. CONTRACTOR SHALL COORDINATE UPDATING THE CURRENT GEOTECHNICAL REPORT AS REQUIRED OR SHALL EMPLOY THE GEOTECHNICAL RECOMMENDATIONS OF THE PREVIOUSLY APPROVED PLAN.

DEMOLITION NOTES

1. THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THIS PLAN HAVE BEEN DETERMINED FROM AVAILABLE RECORDS AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. PRIOR TO THE START OF ANY DEMOLITION ACTIVITY, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES FOR MARKING ONSITE LOCATIONS OF EXISTING UTILITIES.
2. IT IS THE CONTRACTORS RESPONSIBILITY TO CONTACT THE VARIOUS UTILITY COMPANIES WHICH MAY HAVE BURIED OR AERIAL UTILITIES WITHIN OR NEAR THE CONSTRUCTION AREA BEFORE COMMENCING WORK. THE CONTRACTOR SHALL PROVIDE 72 HOURS MINIMUM NOTICE TO ALL UTILITY COMPANIES PRIOR TO BEGINNING CONSTRUCTION.
3. ALL EXISTING UTILITIES SHOWN ARE LOCATED ACCORDING TO THE INFORMATION AVAILABLE TO THE ENGINEER AT THE TIME THE DRAWINGS WERE PREPARED AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR THE ENGINEER. GUARANTEE IS NOT MADE THAT ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN OR THAT THE LOCATION OF THOSE SHOWN ARE ACCURATE. FINDING THE ACTUAL LOCATION OF ANY EXISTING UTILITIES IS THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE DONE BEFORE HE COMMENCES ANY WORK IN THE VICINITY. FURTHERMORE, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ANY AND ALL DAMAGE DUE TO THE CONTRACTORS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE OWNER OR ENGINEER WILL ASSUME NO LIABILITY FOR ANY DAMAGES SUSTAINED OR COST INCURRED BECAUSE OF THE OPERATIONS IN THE VICINITY OF EXISTING UTILITIES OR STRUCTURES, NOR FOR TEMPORARY BRACING AND SHORING OF SAME. IF IT IS NECESSARY TO SHORE, BRACE, SWING OR RELOCATE A UTILITY, THE UTILITY COMPANY OR DEPARTMENT AFFECTED SHALL BE CONTACTED BY THE CONTRACTOR AND THEIR PERMISSION OBTAINED REGARDING THE METHOD TO USE FOR SUCH WORK.
4. THE CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE AT ALL TIMES ONE COPY OF THE CONTRACT DOCUMENTS INCLUDING PLANS, SPECIFICATIONS, COPIES OF ANY REQUIRED CONSTRUCTION PERMITS, AND EROSION CONTROL PLANS AND INSPECTION REPORTS (SWPPP).
5. ANY DISCREPANCIES ON THE DRAWINGS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER / ENGINEER BEFORE COMMENCING WORK. NO FIELD CHANGES OR DEVIATIONS FROM DESIGN ARE TO BE MADE WITHOUT PRIOR APPROVAL OF THE OWNER AND NOTIFICATION TO THE ENGINEER. NO CONSIDERATION WILL BE GIVEN TO CHANGE ORDERS FOR WHICH THE OWNER AND ENGINEER WERE NOT CONTACTED PRIOR TO CONSTRUCTION OF THE AFFECTED ITEM.

PAVING NOTES

1. PRIVATE CURB RAMPS ON THE SITE (I.E. OUTSIDE PUBLIC STREET RIGHT-OF-WAY) SHALL CONFORM TO ADA STANDARDS.
2. ALL ACCESSIBLE RAMPS, CURB RAMPS, STRIPING, AND PAVEMENT MARKINGS SHALL CONFORM TO ADA STANDARDS, LATEST EDITION.
3. CONTRACTOR SHALL FURNISH AND INSTALL ALL PAVEMENT MARKINGS FOR FIRE LANES, PARKING STALLS, HANDICAPPED PARKING SYMBOLS, AND MISCELLANEOUS STRIPING WITHIN PARKING LOT AND AROUND BUILDING AS SHOWN ON THE PLANS. ALL PAINT AND PAVEMENT MARKINGS SHALL ADHERE TO HOWELL TOWNSHIP AND OWNER STANDARDS.
4. THE MINIMUM LENGTH OF OFFSET JOINTS AT RADIUS POINTS SHALL BE 2 FEET.
5. BEFORE PLACING PAVEMENT, CONTRACTOR SHALL VERIFY THAT SUITABLE ACCESSIBLE PEDESTRIAN ROUTES (PER ADA) EXIST TO AND FROM EVERY DOOR AND ALONG SIDEWALKS, ACCESSIBLE PARKING SPACES, ACCESS AISLES, AND ACCESSIBLE ROUTES. IN NO CASE SHALL AN ACCESSIBLE RAMP SLOPE EXCEED 1 VERTICAL TO 12 HORIZONTAL. IN NO CASE SHALL SIDEWALK CROSS SLOPE EXCEED 2.0 PERCENT. IN NO CASE SHALL LONGITUDINAL SIDEWALK SLOPE EXCEED 5.0 PERCENT. ACCESSIBLE PARKING SPACES AND ACCESS AISLES SHALL NOT EXCEED 2.0 PERCENT SLOPE IN ANY DIRECTION.
6. EXISTING ASPHALT / CONCRETE PAVEMENT SHALL REQUIRE THE REMOVAL AND REPLACEMENT OF A MINIMUM 2' WIDE SECTION FOR CONSTRUCTION AND PLACEMENT OF CONCRETE FORMS WHERE ADJACENT TO NEW CONCRETE. CONTRACTOR SHALL MATCH EXISTING ASPHALT SECTION.

EROSION PREVENTION & SEDIMENT CONTROL NOTES

1. STOCKPILED TOPSOIL OR FILL MATERIAL IS TO BE TREATED SO THE SEDIMENT RUN-OFF WILL NOT CONTAMINATE SURROUNDING AREAS OR ENTER NEARBY STREAMS. STOCK PILE LOCATIONS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO GRADING ACTIVITIES. EROSION & SEDIMENT CONTROL PRACTICE SHALL BE INSTALLED PRIOR TO STOCKPILE OPERATIONS.
2. ANY SITE USED FOR DISPOSAL AND/OR STOCKPILE OF ANY MATERIAL SHALL BE PROPERLY PERMITTED FOR SUCH ACTIVITY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEE THAT ALL REQUIRED PERMITS ARE SECURED FOR EACH PROPERTY UTILIZED. A COPY OF THE APPROVED PERMIT MUST BE PROVIDED TO THE INSPECTOR PRIOR TO COMMENCEMENT OF WORK ON ANY PROPERTY. FAILURE TO DO SO MAY RESULT IN THE CONTRACTOR REMOVING ANY ILLEGALLY PLACED MATERIAL AT HIS OWN EXPENSE.
3. MULCH AND SEED ALL DISTURBED AREAS AS SOON AS POSSIBLE AFTER FINAL GRADING IS COMPLETED (WITHIN 15 DAYS OF ACHIEVED FINAL GRADES) UNLESS OTHERWISE INDICATED. CONTRACTOR SHALL TAKE WHATEVER MEANS NECESSARY TO ESTABLISH PERMANENT SOIL STABILIZATION. STEEP SLOPES (GREATER THAN 3:1) SHALL BE STABILIZED WITHIN 7 DAYS OF FINAL GRADING.
4. REMOVE SEDIMENT FROM ALL DRAINAGE STRUCTURES BEFORE ACCEPTANCE BY LOCAL GOVERNING AGENCY OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
5. CLEAN SILT BARRIERS WHEN THEY ARE APPROXIMATELY 50% FILLED WITH SEDIMENT OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE. SILT BARRIERS SHALL BE REPLACED AS EFFECTIVENESS IS SIGNIFICANTLY REDUCED OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
6. REMOVE THE TEMPORARY EROSION AND WATER POLLUTION CONTROL DEVICES ONLY AFTER A SOLID STAND OF GRASS HAS BEEN ESTABLISHED ON GRADED AREAS AND, WHEN IN THE OPINION OF THE OWNER'S REPRESENTATIVE, THEY ARE NO LONGER NEEDED.
7. DO NOT DISTURB VEGETATION OR REMOVE TREES EXCEPT WHEN NECESSARY FOR GRADING PURPOSES.
8. STABILIZATION MEASURES (SEED & MULCH, TRIM WHERE INDICATED) SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, EXCEPT IN THE FOLLOWING TWO CASES.
   - 8.a. WHERE THERE IS SNOW COVER OR FROZEN GROUND CONDITIONS, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE OR WHERE CONSTRUCTION ACTIVITY ON A PORTION OF THE SITE IS TEMPORARILY CEASED, AND EARTH DISTURBING ACTIVITIES WILL BE RESUMED WITHIN 15 DAYS. TEMPORARY STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF SITE.
   - 8.b. ALL EROSION CONTROL MEASURES SHALL BE CHECKED TWICE WEEKLY DURING PROLONGED RAINFALL DAILY CHECKING IS NECESSARY. DOCUMENTATION OF ALL CHECKS AND CORRECTIVE MEASURES SHALL BE KEPT AT THE PROJECT. A MONITORING REPORT CAN BE FOUND IN THE HOWELL TOWNSHIP EROSION AND SEDIMENT CONTROL HANDBOOK.
9. CONTRACTOR SHALL PROVIDE AN AREA FOR CONCRETE WASH DOWN AND EQUIPMENT FUELING IN ACCORDANCE WITH HOWELL TOWNSHIP STANDARDS. CONTRACTOR TO COORDINATE EXACT LOCATION WITH NPDES DEPARTMENT DURING PRECONSTRUCTION MEETING. CONTROL OF OTHER SITE WASTES SUCH AS DISCARDED BUILDING MATERIALS, CHEMICALS, LITTER, AND SANITARY WASTES THAT MAY CAUSE ADVERSE IMPACTS TO WATER QUALITY IS ALSO REQUIRED BY THE GRADING PERMITTEE.
10. TREE PROTECTION FENCING IS TO REMAIN IN PLACE UNTIL FINAL INSPECTION AND SIGN-OFF ON THE MASTER BUILDING PERMIT AND CERTIFICATE OF OCCUPANCY BY THE URBAN FORESTER. STORMWATER SIGN-OFF AND REMOVAL OF EROSION CONTROL MEASURES IS NOT JUSTIFICATION TO REMOVE TREE PROTECTION FENCING.

EROSION PREVENTION & SEDIMENT CONTROL CONSTRUCTION SEQUENCE

INITIAL E&S

1. PROVIDE TEMPORARY CONSTRUCTION ACCESS(ES) AT THE POINT(S) WHERE CONSTRUCTION VEHICLES EXIT THE CONSTRUCTION AREA. MAINTAIN PUBLIC ROADWAYS FREE OF TRACKED MUD AND DIRT.
2. CONSTRUCT INITIAL EPSC MEASURES BEFORE BEGINNING GRADING OPERATIONS.
3. CONTRACTOR TO INSTALL CONSTRUCTION ENTRANCES, SILT FENCE, TREE PROTECTION FENCING, FIBER ROLLS, AND CONCRETE WASHOUTS ON-SITE PRIOR TO DEMOLITION BEGINNING.
4. SILT FENCE IS TO BE INSTALLED AROUND ALL BIORETENTION AREAS TO PROTECT FROM SOIL COMPACTION DURING CONSTRUCTION.
5. AFTER PERIMETER MEASURES ARE INSTALLED, CONTRACTOR SHALL SCHEDULE PRE-CONSTRUCTION MEETING WITH AHJ.
6. CONTRACTOR TO CONTACT AHJ TO OBTAIN STORMWATER PERMIT. THE CONTRACTOR SHALL CONTACT APPROPRIATE PARTY FOR INSPECTION OF EROSION CONTROL DEVICES.
7. ALL 3:1 OR STEEPER SLOPES TO BE STABILIZED WITHIN 7 DAYS.

FINAL E&S

1. CONTRACTOR TO CLEAR, GRUB, EXCAVATE EXISTING UTILITIES ON-SITE AND GRADE REMAINING SITE.
2. INSTALL PROPOSED UTILITIES.
3. CONSTRUCT REMAINING SITE ACCORDING TO THE APPROVED PLANS, OR AS INSTRUCTED BY THE EROSION CONTROL INSPECTOR.
4. PERMANENTLY STABILIZE SITE.
5. UPON PERMANENT SITE STABILIZATION, REMOVE ALL TEMPORARY EROSION & SEDIMENT CONTROL MEASURES.
6. FINISH INSTALLING PERMANENT STORMWATER BMP'S SHOWN ON PLANS.

FROST DESIGN NOTES

1. CONCRETE FOUNDATIONS SHOULD BEAR DIRECTLY ON A PROPERLY COMPACTED FREE-DRAINING GRANULAR FILL CONSISTING OF NO. 57 STONE OR AN APPROVED EQUIVALENT.
2. GRANULAR FILL SHOULD EXTEND VERTICALLY TO THE MINIMUM RECOMMENDED REGIONAL FROST DEPTH AND LATERALLY 2/3RD FROM THE FOUNDATION PERIMETER (EXCLUDING SIDE OF PERIMETER ADJACENT TO CURB). GRANULAR FILL SHOULD BE PLACED IN 8-INCH LOOSE LIFTS AND COMPACTED WITH A VIBRATORY COMPACTOR. THE COMPACTION EQUIPMENT SHOULD BE OPERATED OVER THE FULL WIDTH OF THE FOUNDATION UNDERCUT AREAS UNTIL VISIBLE DEFORMATION OF THE BACKFILL CEASES. LOCAL FROST DEPTH IS LISTED ON SHEET C0.0. CONTRACTOR SHALL VERIFY LOCAL FROST DEPTH WITH AHJ PRIOR TO CONSTRUCTION.
3. GEOTEXTILE (FILTER FABRIC) SHOULD BE PLACED BETWEEN THE GRANULAR BACKFILL AND COHESIVE SOILS TO PRECLUDE THE INFILTRATION OF FINES. SPEC AS FOLLOWS:
   - 3.1. SEPARATION GEOTEXTILE: WOVEN GEOTEXTILE FABRIC , MANUFACTURED FOR SEPARATION APPLICATIONS, MADE FROM POLYOLEFINS OR POLYESTERS; WITH ELONGATION LESS THAN 50 PERCENT; COMPLYING WITH AASHTO M 288 AND THE FOLLOWING, MEASURED PER TEST METHODS REFERENCED:
   - 3.1.1. SURVIVABILITY: CLASS 2; AASHTO M 288
   - 3.1.2. GRAB TENSILE STRENGTH: 222 LBF (990 N); ASTM4632
   - 3.1.3. TEAR & PUNCTURE STRENGTH: 90 LBF (400 N); ASTM 4533
   - 3.1.4. APPARENT OPENING SIZE: NO. 60 (0.250-MM) SIEVE, MAXIMUM; ASTM 4751
   - 3.1.5. PERMITTIVITY: 0.02 PER SECOND, MINIMUM; ASTM D 4491
   - 3.1.6. UV STABILITY: 50 PERCENT AFTER 500 HOURS' EXPOSURE; ASTM 4355

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GENERAL NOTES

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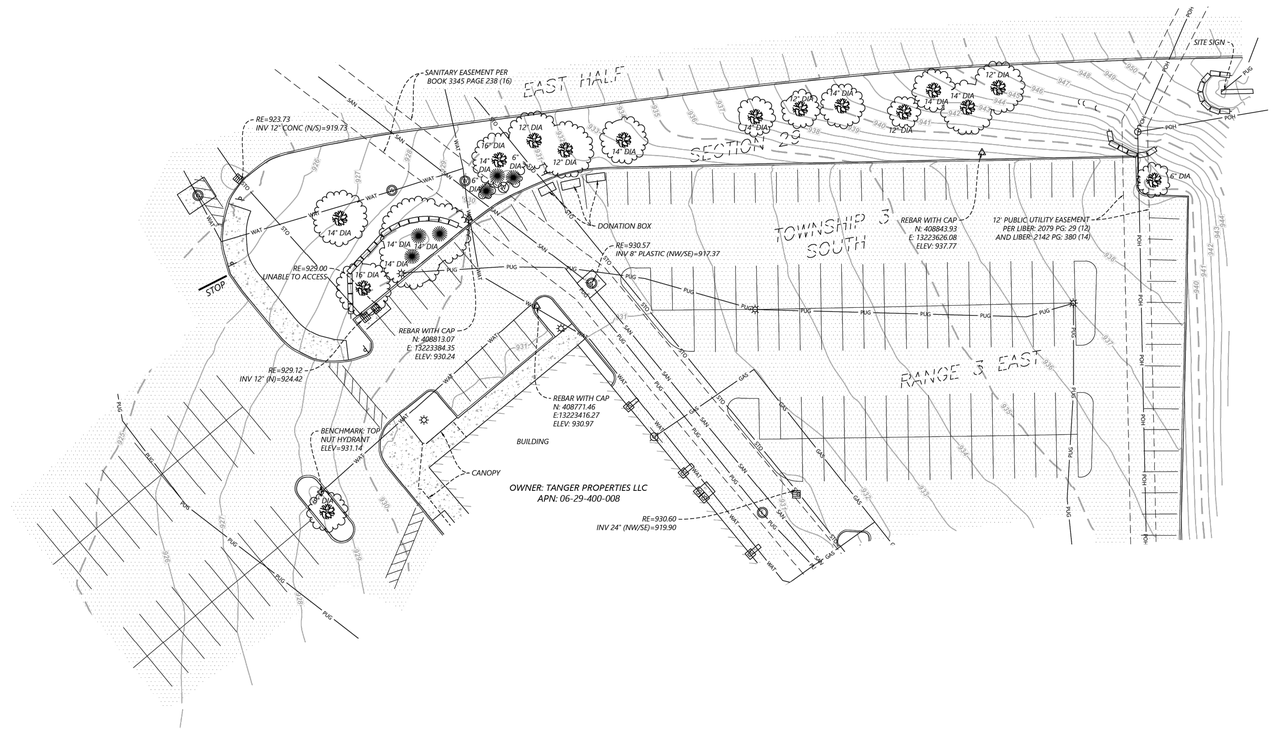
VICINITY MAP

(NOT TO SCALE)



NOT TO SCALE
FOR REFERENCE ONLY

LEGEND

RE	RIM ELEVATION
INV	INVERT ELEVATION
XX" DIA	DIAMETER OF TREE
	CATCH BASIN
	DOWNSPOUT
	SANITARY MANHOLE
	HYDRANT
	WATER MANHOLE
W	WATER RISER
E	ELECTRIC MANHOLE
	STREET LIGHT
	GUY WIRE
	POWER POLE
	NATURAL GAS METER
	SIGN
	CONIFEROUS TREE
	DECIDUOUS TREE
	EASEMENT LINE
	TREE CANOPY
GAS	GAS LINE
POH	POWER OVERHEAD
PUG	POWER UNDERGROUND
STO	STORM SEWER
WAT	WATERMAIN
	WALL
x	FENCE LINE
	CURB & GUTTER
	CONCRETE SURFACE
	BITUMINOUS SURFACE
XX	PHOTO LOCATION NUMBER
	CONTROL POINT

PROPERTY DESCRIPTION

PER COVENANT DEED - DOCUMENT NO. 2025R-008045

Land situated in the Township of Howell, County of Livingston and State of Michigan, described as follows:
A port of the East 1/2 of Section 29, Town 3 North, Range 4 East, Howell Township, Livingston County, Michigan, described as: Beginning at the East 1/4 corner of Section 29; thence South 00 degrees 54 minutes 50 seconds East 653.68 feet along the East line of said Section 29 and centerline of Burkhart Road (variable right of way); thence South 89 degrees 05 minutes 10 seconds West 194.57 feet; thence South 50 degrees 40 minutes 10 seconds West 421.19 feet; thence South 40 degrees 51 minutes 34 seconds East 224.20 feet; thence South 57 degrees 18 minutes 12 seconds East 391.44 feet; thence North 32 degrees 41 minutes 48 seconds East 55.32 feet; thence North 89 degrees 05 minutes 10 seconds East 24.00 feet to the East line of Section 29; thence South 00 degrees 54 minutes 50 seconds East 70.00 feet along the East line of said Section 29 to the Northerly right of way line of Interstate 96 (variable right of way); thence along the Northerly right of way of said Interstate 96 the following four (4) courses: (1) South 89 degrees 25 minutes 29 seconds West 20.61 feet, (2) North 57 degrees 18 minutes 12 seconds West 433.09 feet, (3) North 40 degrees 51 minutes 34 seconds West 262.37 feet and (4) North 39 degrees 19 minutes 50 seconds West 2253.11 feet; thence North 38 degrees 32 minutes 00 seconds East 517.50 feet; thence North 33 degrees 04 minutes 00 seconds East 224.58 feet to the Southerly right of way a 66.00 foot wide private road easement as recorded in Liber 1993, page 490, Livingston County Records; thence along the Southerly right of way of a said private road easement the following two (2) courses: (1) South 39 degrees 19 minutes 50 seconds East 1230.59 feet, and (2) along a curve to the left 253.68 feet, said curve having a radius of a 281.61 feet, a central angle of 51 degrees 36 minutes 52 seconds and a chord bearing South 65 degrees 08 minutes 16 seconds East 245.20 feet; thence South 00 degrees 54 minutes 50 seconds East 390.23 feet to the East-West 1/4 line; thence North 89 degrees 27 minutes 10 seconds East 510.01 feet along the East-West 1/4 line to the point of beginning.
TOGETHER WITH AND SUBJECT TO CROSS ACCESS EASEMENT (LAMBERT DRIVE): An Easement and Private Road Maintenance Agreement for Lambert Drive, as recorded in Liber 1993, page 490, Livingston County Records, said Easement being for ingress egress over and upon the following described land: Commencing at the East 1/4 corner of Section 29, Town 3 North, Range 4 East, Howell Township, Livingston County, Michigan; thence North 00 degrees 54 minutes 50 seconds West 393.77 feet along the East line of Section 29 and the centerline of Burkhart Road; thence South 89 degrees 03 minutes 18 seconds West 33.00 feet to the West right of way of Burkhart Road and to the Southerly right of way of a 66.00 foot wide private road easement as recorded in Liber 1315, pages 716- 719, Livingston County Records, and for a point of beginning; thence continuing along the Southerly right of way of a 66.00 foot wide private road and extension thereof the following three (3) courses; South 89 degrees 03 minutes 18 seconds West 477.00 feet; thence 253.69 feet along the arc of a 281.61 foot radius curve to the right, a central angle of 51 degrees 36 minutes 52 seconds and a chord bearing North 65 degrees 08 minutes 16 seconds West 245.19 feet; thence North 39 degrees 19 minutes 50 seconds West 1230.59 feet to the gas line easement as recorded in Liber 528, page 386, Livingston County Records; thence North 33 degrees 04 minutes 00 seconds East 69.24 feet along the gas line easement to the extension of the Northerly right of way of a 66.00 foot wide private road easement as recorded in Liber 1315, pages 716 through 719, Livingston County Records; thence continuing along the Northerly right of way of a 66.00 foot wide private road the following three (3) courses: South 39 degrees 19 minutes 50 seconds East 1251.53 feet; thence 194.23 feet along the arc of a 215.61 foot radius curve to the left, a central angle of 51 degrees 36 minutes 52 seconds and a chord bearing South 65 degrees 08 minutes 16 seconds East 187.73 feet; thence North 89 degrees 03 minutes 18 seconds East 477.04 feet to the West right of way of Burkhart Road; thence South 00 degrees 54 minutes 50 seconds East 66.00 feet along the West right of way of Burkhart Road to the point of beginning.

SEARCH REPORT ITEMS

PER PRO TITLE USA ORDER NO. 1310861

1. *Memorandum of Co-Tenancy Agreement Recorded on 04/28/2025 in Instrument Number: 2025R-008048.* ***(BLANKET IN NATURE)***
2. *Memorandum of Option Agreement Recorded on 09/13/1995 at Book/Page: 1959/155.* ***(BLANKET IN NATURE)***
3. *Memorandum of Lease Recorded on 07/13/1999 at Book/Page: 2617/756.* ***(BLANKET IN NATURE)***
4. *Memorandum of Lease Recorded on 07/13/1999 at Book/Page: 2617/761.* ***(BLANKET IN NATURE)***
5. *Memorandum of Assignment and Assumption of Lease Recorded on 09/10/2002 at Book/Page: 3514/736.* ***(BLANKET IN NATURE)***
6. *Memorandum of Assignment and Assumption of Lease Recorded on 04/28/2025 in Instrument Number: 2025R-008046.* ***(BLANKET IN NATURE)***
7. *Right of Way and Easement Grant Recorded on 07/14/1969 at Book/Page: 528/384.* ***(NOT WITHIN EXHIBIT)***
8. *Amendment to Right of Way and Easement Grant Recorded on 05/07/2012 in Instrument Number: 2012R-015772.* ***(UNABLE TO ACCURATELY PLACE, BASED ON PIPELINE INSTALLED IN 1969)***
9. *Grant of Highway Easement Grant Recorded on 12/28/1995 at Book/Page: 1993/514.* ***(NOT WITHIN EXHIBIT)***
10. *Right of Way and Easement Grant Recorded on 12/28/1995 at Book/Page: 1993/516.* ***(BLANKET IN NATURE)***
11. *Easement and Private Road Maintenance Agreement for Lambert Drive Recorded 12/28/1995 at Book/Page: 1993/490.* ***(BLANKET IN NATURE)***
12. *Overhead and Underground Easement Recorded on 08/22/1996 at Book/Page: 2079/29.* ***(SHOWN ON EXHIBIT)***
13. *Easement for Underground Pipeline Easement Recorded on 01/13/1997 at Book/Page: 2129/72.* ***(EASEMENT LOCATION BASED UPON INSTALLED FACILITIES, NOT GRAPHICALLY SHOWN)***
14. *Amentech Easements Recorded on 02/20/1997 at Book/Page: 2142/380.* ***(SHOWN ON EXHIBIT)***
15. *Grant of Highway Easement Recorded on 06/18/1997 at Book/Page: 2186/611.* ***(NOT WITHIN EXHIBIT AREA)***
16. *Easement Recorded on 03/27/2002 at Book/Page: 3345/238.* ***(SHOWN ON EXHIBIT)***
17. *Permanent Public Utility Easement Recorded on 04/26/2006 in Instrument Number: 2006R-000186.* ***(NOT WITHIN EXHIBIT AREA)***
18. *Restriction Recorded on 10/04/1988 at Book/Page: 1306/471.* ***(NOT WITHIN EXHIBIT)***
19. *Declaration of Easements and License and Restriction Recorded on 09/10/2002 at Book/Page: 3514/718.* ***(BLANKET IN NATURE)***
20. *Assignment and Assumption Restriction Recorded on 12/19/2002 at Book/Page: 3667/986.* ***(BLANKET IN NATURE)***
21. *Assignment and Assumption Restriction Recorded on 03/20/2003 at Book/Page: 3815/696.* ***(BLANKET IN NATURE)***
22. *Assignment and Assumption Restriction Recorded on 01/07/2004 at Book/Page: 4297/216.* ***(NOT WITHIN EXHIBIT)***
23. *Assignment and Assumption Restriction Recorded on 01/29/2008 in Instrument Number: 2008R-002789.* ***(BLANKET IN NATURE)***

GENERAL NOTES

1. *This exhibit was prepared using: Pro Title USA: Order No: 1310861, having an Index date of 08/06/2025.*
2. *Address of subject property: 1475 North Burkhart Road, Howell, MI*
3. *Subject property appears to be classified as Zone X (area of minimal flood hazard), when scaled from Flood Insurance Rate Map Community - Panel Number 26093C0301D - Dated 09/17/2008.*
4. *Elevations are based on NAVD88 Datum. Benchmark: Top nut of hydrant, shown hereon. Elevation=931.14 feet.*
5. *Coordinate System is based upon NAD83 Michigan State Plane Coordinate System, South Zone, US International Foot.*
6. *The underground utilities shown have been located from field survey information provided by BLVD on 12/12/2025. The surveyor makes no guarantees that the underground utilities shown comprise all such utilities in the area, either in service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated although he does certify that they are located as accurately as possible from information available. The surveyor has not physically located the underground utilities.*
7. *This is a topographic survey only. All boundary and title exception lines displayed are approximate and shown for graphical reference. The approximate boundary line was placed using found monumentation, but a full boundary survey was not performed on the subject property and this survey does not meet Michigan Minimum Standards for Boundary Surveys. This survey is only intended to depict observed features and improvements shown.*
8. *At the time of survey there was snow and ice covering all or parts of the subject property, features obscured by snow or ice may not be shown.*

SURVEYOR'S STATEMENT

I HEREBY CERTIFY THAT THIS TOPOGRAPHIC SURVEY WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A PROFESSIONAL SURVEYOR UNDER THE LAWS FOR THE STATE OF MICHIGAN. THE FIELDWORK WAS COMPLETED ON 12/9/2025.

STATE OF MICHIGAN
CHRISTOPHER R. FOLEY
PROFESSIONAL SURVEYOR
4001071349
LICENSED PROFESSIONAL SURVEYOR

CHRISTOPHER R. FOLEY, PS
MI LICENSE NO. 4001071349, EXPIRATION 01/31/2027
CHRIS.FOLEY@WESTWOODPS.COM
DATE 12/12/2025

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EV INFRASTRUCTURE PLAN
1475 N BURKHART ROAD - EV
HOWELL, MI 48855

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DESIGNED AND PROVIDED BY OTHERS

ISSUE BLOCK	DATE	BY
CD30	01/13/26	GHH
CD90	02/04/26	GHH

No.	
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DESIGNED BY:	N/A
DRAWN BY:	N/A
CHECKED BY:	N/A
KHA PROJECT No.	017777049
DOCUMENT DATE:	JANUARY 13, 2026

SHEET TITLE
EXISTING CONDITIONS

SHEET NUMBER
C1.0

DESIGNED: -
CHECKED: TWB
DRAWN: PMP
HORIZONTAL SCALE: 1" = 30'

REVISIONS:

PREPARED FOR:
EVgo Services LLC
Los Angeles, CA

Kensington Valley Outlets
P117489
Howell, MI

Westwood
Phone (952) 937-5150 12701 Whitewater Drive, Suite #300
Fax (952) 937-5822 Minnetonka, MN 55343
Toll Free (888) 937-5150 westwoodps.com
Westwood Professional Services Michigan, LLC

Topographic Exhibit
A portion of the East 1/2 of Section 29, Township 3 South, Range 3 East, Howell Township, Livingston County, MI
PROJECT NUMBER: 0071330.00

SHEET NUMBER: 1 OF 1
DATE: 12/12/2025

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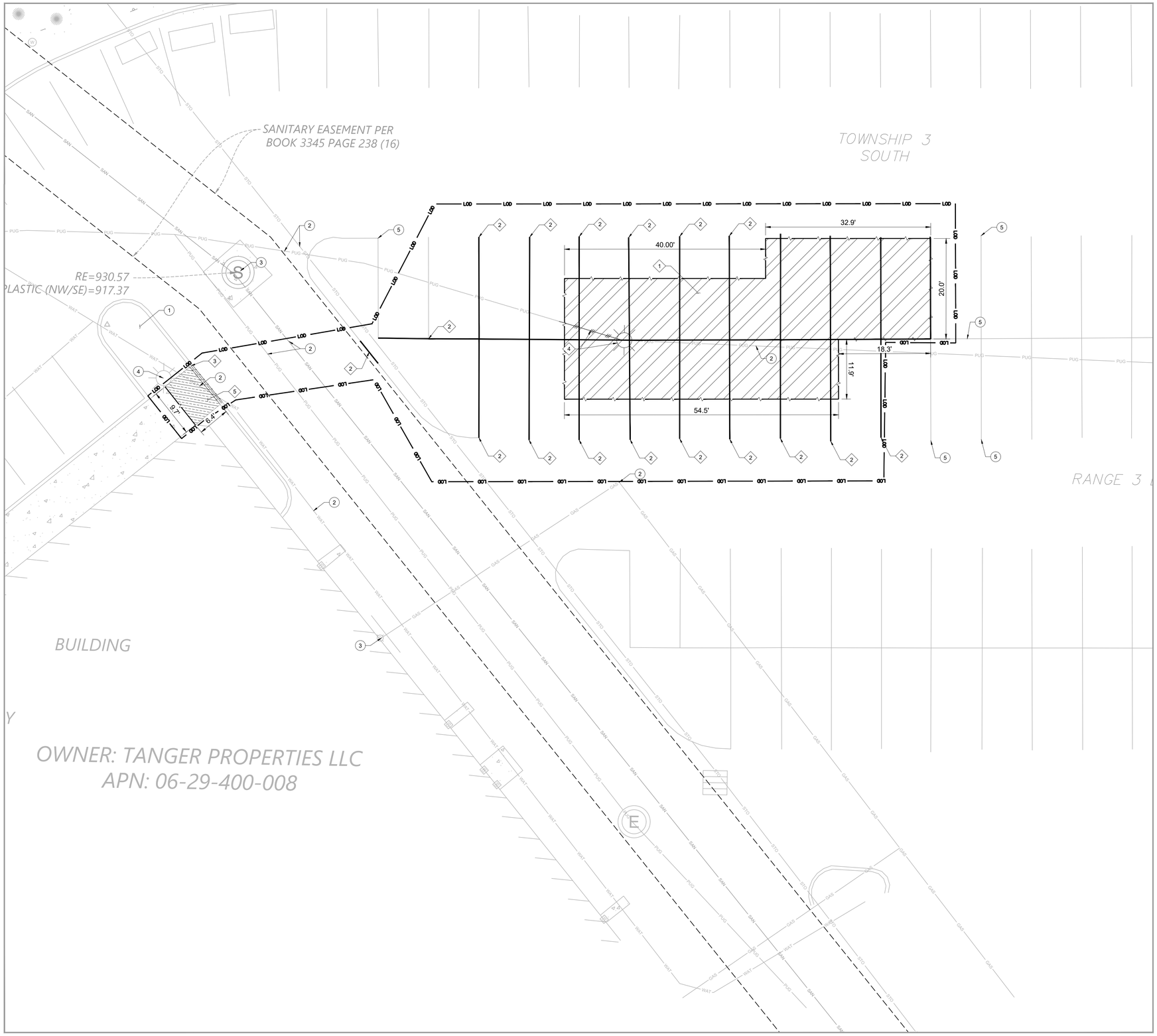

DEMOLITION PLAN LEGEND

ITEM	DESCRIPTION	QTY.
LOD	LIMITS OF DISTURBANCE	±6230 SF
	SAW CUT LINE	±205 LF
	EX. ELECTRIC LINE REMOVAL	±13 LF
	REMOVE EX. CURBING TO LIMITS SHOWN	±20 LF
	EX. FULL-DEPTH ASPHALT PAVEMENT REMOVAL	±1795 SF
	EX. CONCRETE SIDEWALK REMOVAL	±70 SF

DEMOLITION NOTES

1. SEE ADDITIONAL DEMOLITION NOTES ON SHEET G1.0 - GENERAL NOTES.
2. THE CONTRACTOR SHALL CLEAR THE PROJECT SITE AREA WITHIN THE CONFINES OF THE DEMOLITION LIMIT LINE. THE CONTRACTOR SHALL DEMOLISH AND REMOVE FROM THE SITE ALL EXISTING UTILITY STRUCTURES, PLANTERS, TREES, AND ALL OTHER SITE FEATURES, UNLESS OTHERWISE NOTED ON THE PLAN.
3. DEMOLITION AND REMOVAL OF PAVEMENT INCLUDES PAVEMENT THICKNESS AS WELL AS BASE COURSE THICKNESS.
4. REMOVAL OF LANDSCAPING SHALL INCLUDE ROOTS AND ORGANIC MATERIAL.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY AND ALL PERMITS AND SHALL PAY ALL FEES NECESSARY FOR ENCROACHMENT, GRADING, DEMOLITION, AND DISPOSAL OF SAID MATERIALS AS REQUIRED BY PRIVATE, LOCAL AND STATE JURISDICTIONS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR A SITE INSPECTION TO FULLY ACKNOWLEDGE THE EXTENT OF DEMOLITION WORK.
7. THE CONTRACTOR SHALL VERIFY AND LOCATE ALL EXISTING ABOVE AND UNDERGROUND UTILITIES. LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND ARE SHOWN FOR GENERAL INFORMATION ONLY.
8. DAMAGE TO ANY EXISTING UTILITIES AND SERVICES TO REMAIN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL REPAIR AND/OR REPLACE IN KIND.
9. EROSION CONTROL MEASURES SHALL BE IMPLEMENTED TO PREVENT DEBRIS AND UNSUITABLE MATERIALS FROM ENTERING STORM DRAINS, SANITARY SEWERS AND STREETS.
10. DUST CONTROL MEASURES SHALL BE IMPLEMENTED DURING DEMOLITION.
11. CONTRACTOR SHALL REMOVE DEMOLISHED MATERIALS FROM THE SITE AS WORK PROGRESSES.
13. ALL DEMOLITION SHALL COMPLY WITH CHAPTER 24 OF THE INTERNATIONAL FIRE CODE.
14. CONTRACTOR TO USE CARE IN HANDLING DEBRIS FROM SITE TO ENSURE THE SAFETY OF THE PUBLIC. HAUL ROUTE TO BE CLOSELY MONITORED FOR DEBRIS OR MATERIALS TRACKED ONTO ADJOINING ROADWAYS. SIDEWALKS, ETC. ROADWAYS AND WALKWAYS TO BE CLEARED DAILY OR AS NECESSARY TO MAINTAIN PUBLIC SAFETY.
15. CONTINUOUS ACCESS SHALL BE MAINTAINED FOR SURROUNDING PROPERTIES AT ALL TIMES DURING DEMOLITION OF EXISTING FACILITIES.
16. ALL MATERIAL REMOVED FROM THIS SITE BY THE CONTRACTOR SHALL BE DISPOSED OF BY THE CONTRACTOR IN A LEGAL MANNER.
17. REFER TO THE TOPOGRAPHIC SURVEY FOR ADDITIONAL DETAILS OF EXISTING STRUCTURES, ETC., LOCATED WITHIN THE PROJECT SITE. UNLESS OTHERWISE NOTED, ALL EXISTING BUILDINGS, STRUCTURES, SLABS, CONCRETE, ASPHALT, DEBRIS PILES, SIGNS, AND ALL APPURTENANCES ARE TO BE REMOVED FROM THE SITE BY THE CONTRACTOR AND PROPERLY DISPOSED OF IN A LEGAL MANNER AS PART OF THIS CONTRACT. SOME ITEMS TO BE REMOVED MAY NOT BE DEPICTED ON THE TOPOGRAPHIC SURVEY. REFER TO THIS PLAN FOR THE LIMITS OF ASPHALT REMOVAL. IF ANY ITEMS ARE IN QUESTION, THE CONTRACTOR SHALL CONTACT THE OWNER PRIOR TO REMOVAL OF SAID ITEMS.
18. THE CONTRACTOR SHALL REFER TO THIS PLAN FOR DEMOLITION/PRESERVATION OF EXISTING TREES. ALL TREES NOT SPECIFICALLY SHOWN TO BE PRESERVED OR RELOCATED SHALL BE REMOVED AS A PART OF THIS CONTRACT. TREE PROTECTION FENCING SHALL BE INSTALLED AS NECESSARY PRIOR TO ANY DEMOLITION.
19. THE CONTRACTOR SHALL RETURN SIDEWALKS, LANDSCAPING, PLANTERS, IRRIGATION SYSTEMS, AND ANY OTHER FACILITIES DISTURBED BY THE WORK TO THE SAME OR BETTER CONDITION THAN EXISTED PRIOR TO THE COMMENCEMENT OF THE WORK.
20. ALL QUANTITIES LISTED IN DEMOLITION PLAN SHEET ARE ONLY APPROXIMATIONS. THE CONTRACTOR SHALL VERIFY ALL QUANTITIES BEFORE BIDDING.
21. TRENCHING IS TO BE USED EXCEPT IN HEAVY TRAFFIC AREAS, MAIN DRIVE AISLES AND ACROSS STORE ENTRANCE.
22. THE CONTRACTOR SHALL PROTECT EXISTING INFRASTRUCTURE IN PLACE WITHIN THE AREA OF IMPROVEMENTS.
23. ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS NOTED OTHERWISE.

DEMOLITION KEYNOTES

TAG	DESCRIPTION
1	SAWCUT AND REMOVE EXISTING ASPHALT PAVEMENT.
2	REMOVE EXISTING STRIPING VIA SANDBLAST AND SEAL COAT ALL AREAS WHERE STRIPING IS REMOVED PRIOR TO APPLICATION OF NEW STRIPING. REFER TO SHEET C3.0 FOR PROPOSED STRIPING RELOCATION.
3	REMOVE EXISTING CURB & GUTTER.
4	REMOVE & RELOCATE EXISTING LIGHT POLE AND CONDUIT.
5	REMOVE EXISTING CONCRETE SIDEWALK.

PROTECTION KEYNOTES

TAG	DESCRIPTION
1	PROTECT-IN-PLACE EXISTING LANDSCAPING AND ASSOCIATED IRRIGATION.
2	PROTECT-IN-PLACE EXISTING UNDERGROUND UTILITIES.
3	PROTECT-IN-PLACE EXISTING ABOVE GROUND UTILITY STRUCTURE.
4	PROTECT-IN-PLACE EXISTING LIGHT POLE.
5	PROTECT-IN-PLACE EXISTING STRIPING. ALL STRIPING DAMAGED / FADED DURING CONSTRUCTION ACTIVITIES SHALL BE REPLACED IN KIND.

GRAPHIC SCALE IN FEET
0 5 10 20
SCALE: 1" = 10'
WHEN PRINTED AT FULL SIZE
(22"x34")

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DESIGNED BY:	EGB
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DOCUMENT DATE:	JANUARY 13, 2026

SHEET TITLE
DEMOLITION PLAN

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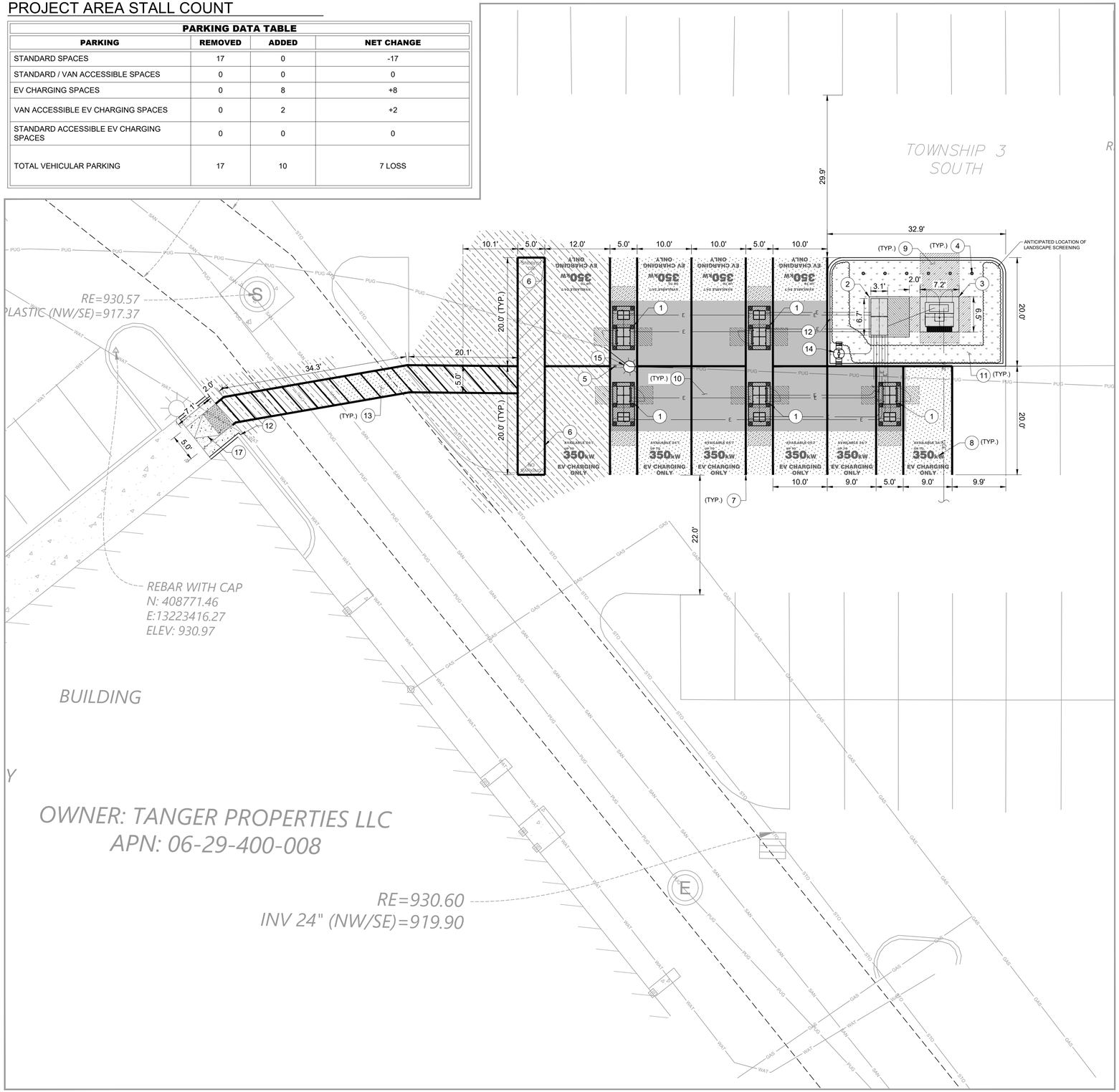
PROJECT AREA STALL COUNT

PARKING DATA TABLE

PARKING	REMOVED	ADDED	NET CHANGE
STANDARD SPACES	17	0	-17
STANDARD / VAN ACCESSIBLE SPACES	0	0	0
EV CHARGING SPACES	0	8	+8
VAN ACCESSIBLE EV CHARGING SPACES	0	2	+2
STANDARD ACCESSIBLE EV CHARGING SPACES	0	0	0
TOTAL VEHICULAR PARKING	17	10	7 LOSS



LEGEND

	CENTER LINE
	PROPERTY LINE
	PROPOSED EMULSIFIED TOP COAT OVERLAY.
	PROPOSED LANDSCAPE.
	PROPOSED ASPHALT OVERLAY. ELEVATIONS PER PLAN.
	PROPOSED FULL-DEPTH ASPHALT PAVEMENT.
	PROPOSED CONCRETE SIDEWALK.

CONSTRUCTION NOTES

1	PROPOSED 350KW HP DELTA EV CHARGER & DELTA POWER CABINET ON PREFABRICATED EQUIPMENT SKID PER DETAIL 1, SHEET C5.2	5 EA
2	PROPOSED SWBD-EV. EQUIPMENT PAD PER DETAIL 3, SHEET C5.2	1 EA
3	PROPOSED UTILITY TRANSFORMER PAD. REFER TO UTILITY DRAWING	1 EA
4	PROPOSED UTILITY BOLLARD. SEE DETAIL 6, SHEET C5.0	6 EA
5	PROPOSED VAN ACCESSIBLE EV SIGN AND SIGN POST. SEE DETAILS 3 & 6, SHEET C5.1	2 SIGNS 1 SIGN POST
6	PROPOSED ACCESSIBLE EVCS PARKING STRIPING. SEE DETAIL 4, SHEET C5.1	2 EA
7	PROPOSED EVCS PARKING STRIPING. SEE DETAIL 2, SHEET C5.1	8 EA
8	PROPOSED EVCS PAVEMENT MARKING. SEE DETAIL 1, SHEET C5.1	10 EA
9	EQUIPMENT CLEARANCE AREA.	250 SQ FT
10	PROPOSED EMULSIFIED TOP COAT OVERLAY. ELEVATIONS PER GRADING PLAN.	990 SQ FT
11	PROPOSED LANDSCAPE	765 SQ FT
12	PROPOSED CONCRETE CURB. CURB HEIGHT PER SHEET C4.0. SEE DETAIL 4, SHEET C5.0	85 LF
13	PROPOSED ACCESSIBLE PATH PAVEMENT MARKING. SEE DETAIL 5, SHEET C5.1	115 LF
14	PROPOSED LIGHT POLE. SEE DETAIL 5, SHEET C5.2 & DETAIL 1, SHEET C5.3	1 POLE 2 LED FIXTURES
15	RELOCATED LIGHT POLE. CONTRACTOR TO PROVIDE FOUNDATION DESIGN.	1 EA
16	PROPOSED POWER POLE TO BE COORDINATED WITH UTILITY.	1 EA
17	PROPOSED ADA RAMP WITH TRUNCATED DOMES. SEE DETAIL 10, SHEET C5.0.	1 EA

GRAPHIC SCALE IN FEET
0 5 10 20
SCALE: 1" = 10'
WHEN PRINTED AT FULL SIZE (22"x34")

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DESIGNED BY:	EGB
DRAWN BY:	GHH
CHECKED BY:	RS
KHA PROJECT No.	017777049
DOCUMENT DATE:	JANUARY 13, 2026

SHEET TITLE
SITE PLAN

SHEET NUMBER
C3.0

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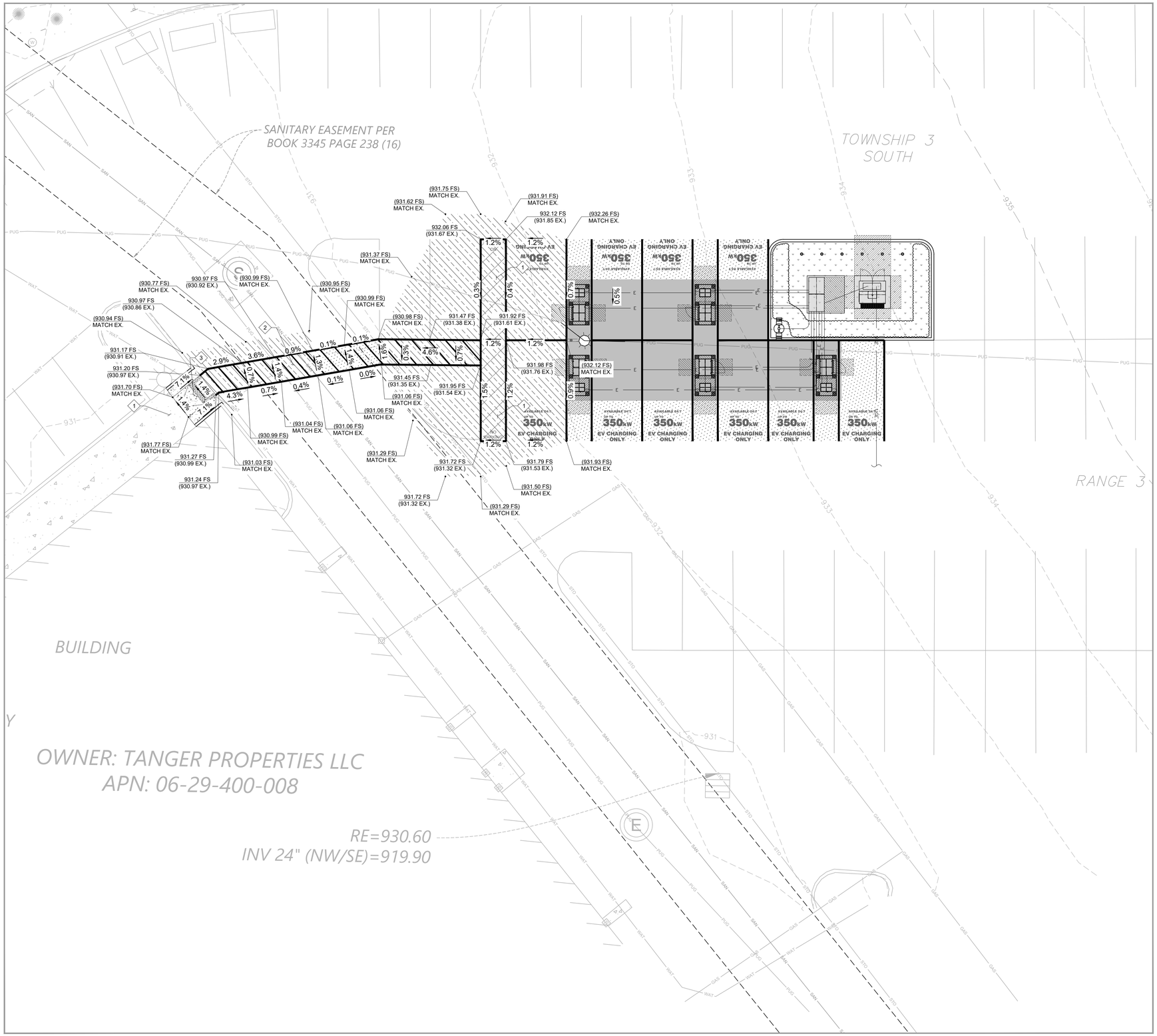
SANITARY EASEMENT PER BOOK 3345 PAGE 238 (16)
TOWNSHIP 3 SOUTH
RANGE 3
BUILDING
OWNER: TANGER PROPERTIES LLC
APN: 06-29-400-008
RE=930.60
INV 24" (NW/SE)=919.90
350kW EV CHARGING ONLY
AVAILABLE 24/7
(931.75 FS) MATCH EX.
(931.62 FS) MATCH EX.
(931.91 FS) MATCH EX.
932.12 FS (931.85 EX.)
(932.26 FS) MATCH EX.
932.06 FS (931.67 EX.)
(931.37 FS) MATCH EX.
(930.77 FS) MATCH EX.
930.97 FS (930.92 EX.)
(930.99 FS) MATCH EX.
(930.95 FS) MATCH EX.
930.97 FS (930.86 EX.)
(930.99 FS) MATCH EX.
(930.94 FS) MATCH EX.
(930.98 FS) MATCH EX.
931.47 FS (931.38 EX.)
931.92 FS (931.61 EX.)
931.17 FS (930.91 EX.)
931.20 FS (930.97 EX.)
(931.70 FS) MATCH EX.
931.98 FS (931.76 EX.)
(932.12 FS) MATCH EX.
(931.45 FS) MATCH EX.
931.35 EX.)
(931.06 FS) MATCH EX.
931.95 FS (931.54 EX.)
(931.06 FS) MATCH EX.
(931.04 FS) MATCH EX.
(931.06 FS) MATCH EX.
(930.99 FS) MATCH EX.
(931.77 FS) MATCH EX.
(931.29 FS) MATCH EX.
931.27 FS (930.99 EX.)
(931.03 FS) MATCH EX.
931.72 FS (931.32 EX.)
931.79 FS (931.53 EX.)
(931.93 FS) MATCH EX.
931.24 FS (930.97 EX.)
(931.50 FS) MATCH EX.
931.72 FS (931.32 EX.)
(931.29 FS) MATCH EX.
2.9%
3.6%
0.9%
1.3%
1.4%
1.8%
0.3%
4.6%
0.7%
0.1%
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0.9%
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1.2

GENERAL NOTES — SCALE N.T.S. — 1

UNLESS NOTED OTHERWISE, THE FOLLOWING NOTES RELATING TO THE "CIVIL DETAILS" SHEETS SHALL GOVERN.

1. COMPRESSIVE STRENGTH OF CONCRETE FOUNDATION SHALL BE A MINIMUM OF 2,500 PSI AT 28 DAYS WITH MAXIMUM W/CM RATIO OF 0.45 AND AIR-CONTENT OF 5% +/- 1.5%.
2. MINIMUM YIELD STRENGTH OF REINFORCEMENT TO BE 60,000 PSI (ASTM-A615).
3. REFERENCE CIVIL AND ELEC. DRAWING FOR EQUIPMENT LAYOUT, LOCATION OF CONDUIT, ETC.
4. FINAL ANCHOR BOLT AND POLE DESIGN INCLUDING SIZE AND CONFIGURATION ARE BY MFR.
5. BEFORE STARTING ANY WORK, THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS ON THE SITE AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER.
6. NO GEOTECHNICAL ENGINEERING REPORT WAS PROVIDED BY THE OWNER. FOUNDATION DESIGN IS BASED ON A MINIMUM OF 1,500 PSF NET ALLOWABLE BEARING PRESSURE ON UNDISTURBED NATURAL SOIL OR COMPACTED FILL UNLESS OTHERWISE NOTED.
7. UNLESS OTHERWISE DIRECTED BY THE OWNER, ALL FOUNDATION WORK RELATED TO INSTALLATION OF REBAR SHALL BE INSPECTED BY OTHERS.
8. KIMLEY-HORN AND ASSOCIATES, INC. IS NOT RESPONSIBLE FOR THE DESIGN OF THE EQUIPMENT OR ANCHORAGE TO THE FOUNDATION. MANUFACTURER SHALL SUBMIT LOADS TO ENGINEER FOR RECORD KEEPING PURPOSES ONLY.
9. DESIGN IS BASED ON THE SPECIFIC EQUIPMENT SHOWN IN THESE DRAWINGS AND ILLUSTRATED ON THE EVGO CUT SHEETS.
10. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LOCAL DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.
11. ALL FOUNDATIONS ARE TO INCLUDE COMPACTED SUBGRADE AND MINIMUM 6" COMPACTED STONE BASE UNLESS OTHERWISE SPECIFIED.
12. BUILDING CODE: 2024 IBC

DESIGN PARAMETERS (PER ASCE 7-22):

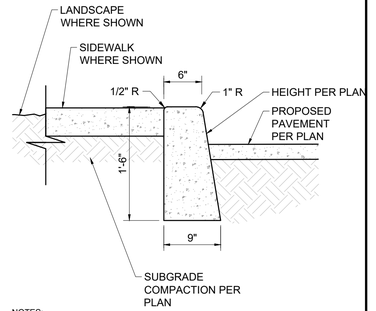
WIND SPEED:	96 MPH
EXPOSURE CATEGORY:	C
TOPOGRAPHY CATEGORY:	1
RISK CATEGORY:	II
SEISMIC PARAMETERS:	Ss = 1.5g S1 = 0.55g
SITE CLASS:	D
FROST DEPTH:	6"
FEMA FLOOD ZONE:	X

NOTE: BOLLARDS ARE NOT DESIGNED FOR FULL 6 KIP IMPACT LOADS UNLESS OTHERWISE NOTED AS "VEHICULAR RATED".

NOT USED — SCALE N.T.S. — 2

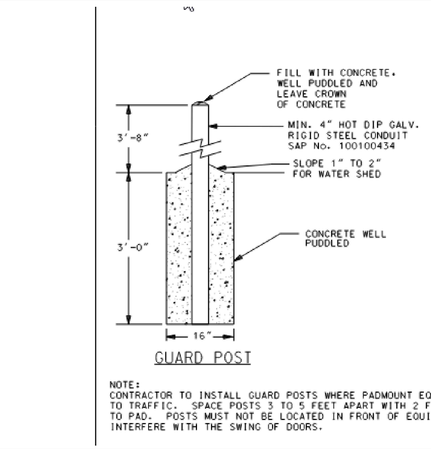
NOT USED — SCALE N.T.S. — 3

CONCRETE CURB — SCALE N.T.S. — 4



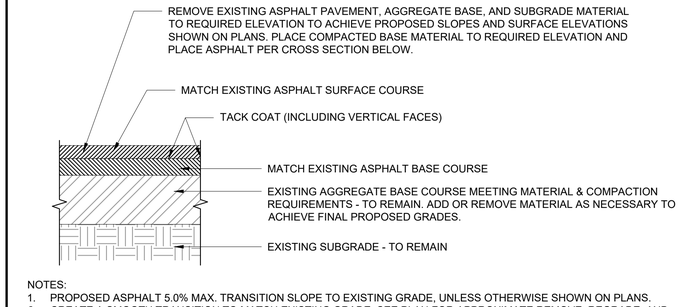
NOTES:
1. CONCRETE SHALL BE 2500 PSI.
2. ISOLATION JOINTS SHALL BE PLACED ONLY AS SPECIFIED
3. CONTRACTION JOINTS CONSISTING OF 1" DEEP SCORES SHALL BE PLACED AT 15' INTERVALS O.C.
4. WHERE A WALK IS ADJACENT TO THE CURB THE JOINTS SHALL ALIGN WITH JOINTS IN THE WALK.

NOT USED — SCALE N.T.S. — 5



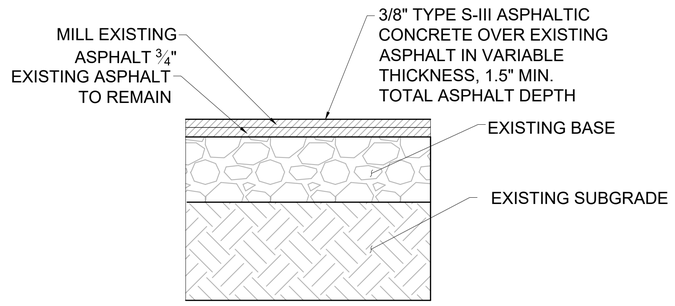
NOTE:
CONTRACTOR TO INSTALL GUARD POSTS WHERE PADMOUNT EQUIPMENT IS EXPOSED TO TRAFFIC. SPACE POSTS 3 TO 5 FEET APART WITH 2 FEET MINIMUM CLEARANCE TO PAD. POSTS MUST NOT BE LOCATED IN FRONT OF EQUIPMENT DOORS NOR INTERFERE WITH THE SWING OF DOORS.

UTILITY BOLLARD DETAIL — SCALE N.T.S. — 6

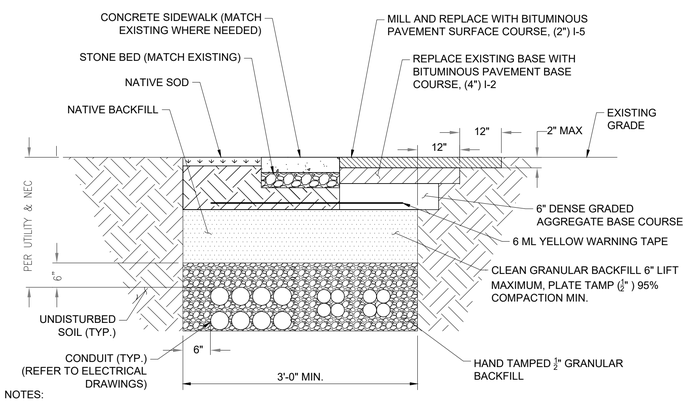


NOTES:
1. PROPOSED ASPHALT 5.0% MAX. TRANSITION SLOPE TO EXISTING GRADE, UNLESS OTHERWISE SHOWN ON PLANS.
2. CREATE A SMOOTH TRANSITION TO MATCH EXISTING GRADE. SEE PLAN FOR APPROXIMATE REMOVE, REGRADE, AND REPLACE LIMITS.
3. SURFACE COURSE SHALL BE INSTALLED AT THE SAME TIME AS ADJACENT PAVEMENT REPAIR SURFACE COURSES.
4. IF AGGREGATE BASE COURSE IS NOT PRESENT CONTRACTOR TO NOTIFY ENGINEER OF RECORD IMMEDIATELY.
5. THE AGGREGATE BASE COURSE SHALL BE INSPECTED BY THE TESTING AGENCY, OWNER OR DESIGN CONSULTANT AFTER ASPHALT REMOVAL AND BASE PREPARATION, PRIOR TO ASPHALT REPLACEMENT.

FULL DEPTH ASPHALT PAVEMENT DETAIL — SCALE N.T.S. — 8



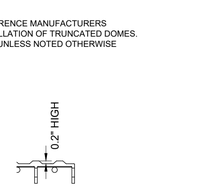
MILL AND OVERLAY DETAIL — SCALE N.T.S. — 7



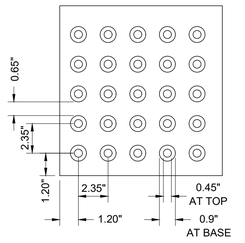
NOTES:
1. IF FREE OF ORGANIC OR OTHER DELETERIOUS MATERIAL, EXCAVATED MATERIAL MAY BE USED FOR BACKFILL.
2. IF NOT, PROVIDE CLEAN, COMPACTIBLE MATERIAL. COMPACT IN 8" LIFTS, REMOVAL ANY LARGE ROCKS PRIOR TO BACKFILLING. CONTRACTOR TO VERIFY LOCATION OF EXISTING U/G UTILITIES PRIOR TO DIGGING.
3. CONCRETE ENCASE CONDUIT WHEN TRENCHING UNDER SITE ACCESS ROAD.
4. ANY PAVEMENT DAMAGE DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED B Y THE CONTRACTOR TO PRE CONSTRUCTION CONDITIONS OR BETTER.
5. MAINTAIN 12" SEPARATION MIN. BETWEEN AC OR DC CONDUCTOR AND COMMUNICATION CABLES.
6. CONFIRM ALL DEPTHS W/UTILITY & NEC PRIOR TO CONSTRUCTION.

TRENCH SURFACE RESTORATION DETAIL — SCALE N.T.S. — 9

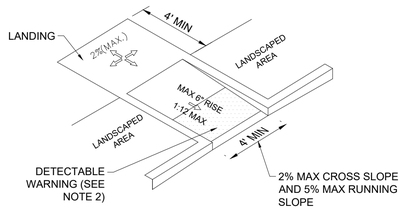
NOTES:
1. ALL ACCESSIBLE COMPONENTS CONSTRUCTED AS PART OF THESE PLANS SHALL COMPLY WITH THE LOCAL, STATE, AND FEDERAL REGULATIONS WHICHEVER ARE MORE STRINGENT.
2. CURB RAMPS SHALL HAVE A DETECTABLE WARNING EXTENDING THE FULL WIDTH OF THE CURB RAMP AND 3' DEEP. GROOVED SURFACES ON OUTDOOR CURB RAMPS ARE NOT PERMITTED. VERIFY LOCAL REQUIREMENTS WITH THE BUILDING DEPARTMENT. REFER TO TRUNCATED DOMES DETAIL AND REQUIREMENTS IN THE CALIFORNIA BUILDING CODE.
3. PARALLEL CURB RAMPS SHALL HAVE A DETECTABLE WARNING EXTENDING 36" DEEP ALONG THE FLUSH TRANSITION BETWEEN STREET AND SIDEWALK. REFER TO TRUNCATED DOMES DETAIL.
4. PUBLIC SIDEWALK CURB RAMPS CONSTRUCTED WITHIN A PUBLIC RIGHT- OF -WAY, IN ABSENCE OF LOCAL ROADWAY GUIDELINES, SHALL MEET OR EXCEED LOCAL REGULATIONS.
5. CURB RAMP SURFACES (FLARES AND RAMP) SHALL HAVE A DIFFERENT TEXTURE FROM THE SURROUNDING PAVEMENT.
6. CURB RAMPS SHALL BE CONCRETE WITH STRENGTH OF 2,500 PSI.
7. INSTALL 1/4" EXPANSION JOINT FILLER MATERIAL BETWEEN A NEW CURB RAMP AND THE EXISTING SIDEWALKS.
8. WATER PONDING WITHIN THE CURB RAMP LIMITS IS NOT ALLOWED.
9. NO GRADE BREAK IS ALLOWED ALONG THE RAMP SURFACE.
10. CROSS SLOPE OF THE CURB RAMP SURFACE SHALL BE LESS THAN 2%.
11. TRANSITION CHANGE IN ELEVATION IS NOT TO EXCEED 1/2" WITHIN AN ACCESSIBLE ROUTE.



DETECTIBLE WARNING TRUNCATED DOME SECTION VIEW



DETECTIBLE WARNING TRUNCATED DOME PLAN VIEW



ACCESSIBLE CURB RAMP — SCALE N.T.S. — 10

EVgo
FAST CHARGING
EVGO
1661 E FRANKLIN AVE
EL SEGUNDO, CA 90245

Kimley»Horn of Michigan, Inc.
3000 TOWN CENTER SUITE 2600,
SOUTHFIELD, MI 48075
Main: (313) 572-1560 | www.kimley-horn.com

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DESIGNED BY:	EGB
DRAWN BY:	GHH
CHECKED BY:	RS
KHA PROJECT No.	017777049
DOCUMENT DATE:	JANUARY 13, 2026

SHEET TITLE
CIVIL DETAILS

SHEET NUMBER
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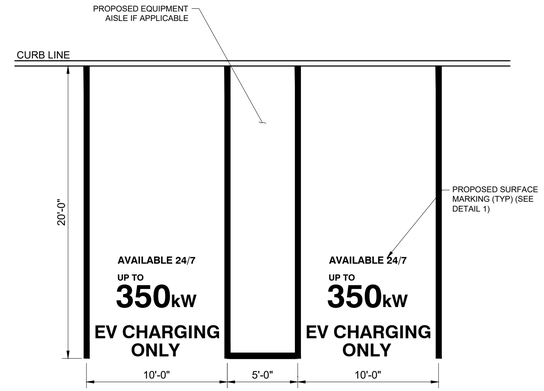
NOTES:

1. USE ON ALL STANDARD AND VAC ACCESSIBLE STALLS WHERE APPLICABLE.
2. EVCS SPACES SHALL PROVIDED SURFACE MARKING STATION "EV CHARGING ONLY" 12" MINIMUM. THE CENTERLINE OF THE TEXT SHALL BE A MAXIMUM OF 6" INCHES FROM THE CENTERLINE OF THE VEHICLE SPACE AND ITS LOWER CORNER AT, OR LOWER SIDE ALIGNED WITH, THE END OF THE PARKING STALL SPACE LENGTH.
3. LINE SPACING BETWEEN STENCILS SHALL NOT EXCEED 4.5"
4. FONT SHALL BE STANDARD GOTHIC.
5. COLOR: WHITE ON EXISTING SURFACE (NO FILL INSIDE STENCIL).

PARKING STALL STENCIL DETAIL

SCALE N.T.S. | 1



NOTES:

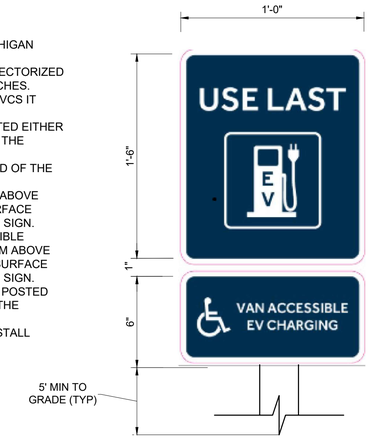
1. PROPOSED PARKING LINES TO BE PAINTED 4" WIDE WHITE.
2. REFER TO SHEET C3.0 FOR STALL AND EQUIPMENT AISLE ORIENTATION.

STANDARD STALL MARKING DETAIL

SCALE N.T.S. | 2

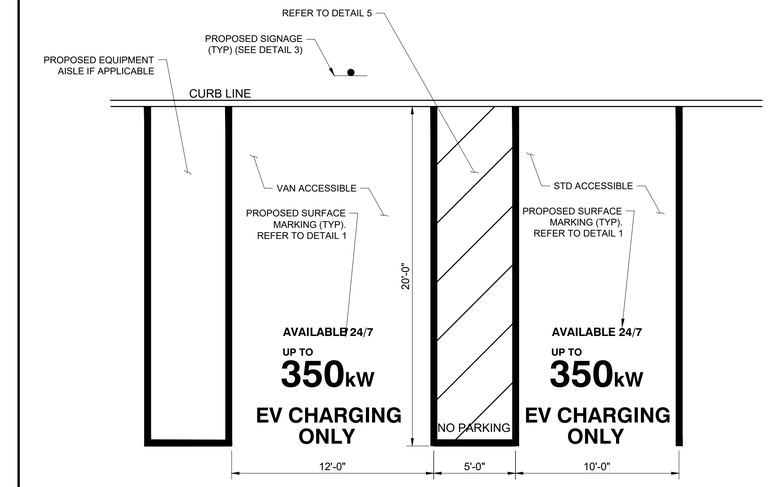
NOTES:

1. SIGN SHALL COMPLY WITH 2021 MICHIGAN BUILDING CODE.
2. STALL SIGNAGE SHALL BE RETROFLECTORIZED WITH A MINIMUM AREA OF 70 SQ. INCHES.
3. SIGN SHALL BE VISIBLE FROM THE EVCS IT SERVES.
4. SIGN SHALL BE PERMANENTLY POSTED EITHER IMMEDIATELY ADJACENT OR WITHIN THE PROJECTED VEHICLE SPACE.
5. SIGN SHALL BE LOCATED AT THE END OF THE VEHICLE SPACE.
6. SIGN SHALL BE 60 INCHES MINIMUM ABOVE THE FINISH FLOOR OR GROUND SURFACE MEASURED TO THE BOTTOM OF THE SIGN.
7. SIGNS LOCATED WITHIN AN ACCESSIBLE ROUTE SHALL BE 80 INCHES MINIMUM ABOVE THE FINISHED FLOOR OR GROUND SURFACE MEASURED TO THE BOTTOM OF THE SIGN.
8. SIGNS MAY ALSO BE PERMANENTLY POSTED ON WALL AT THE INTERIOR END OF THE VEHICLE SPACE.
9. EVGO SHALL SUPPLY THE VEHICLE STALL SIGNAGE.



VAN ACCESSIBLE STALL SIGNAGE DETAIL

SCALE N.T.S. | 3

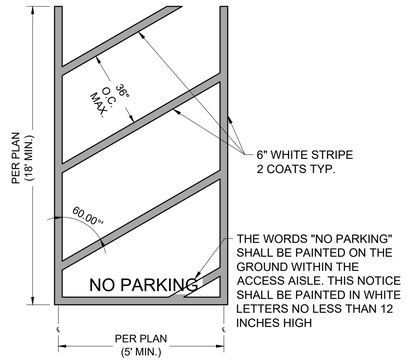


NOTES:

1. PROPOSED ACCESSIBLE STALL AND ACCESS AISLE SHALL BE 2% MAX SLOPE IN ALL DIRECTIONS.
2. REFER TO SHEET C3.0 FOR PROPOSED SITE PLAN
3. LOWER SIDE OF MARKING SHOULD BE ALIGNED WITH THE END OF THE PARKING SPACE.
4. THE CENTER OF THE TEXT SHALL BE A MAXIMUM OF 6 INCHES FROM THE CENTERLINE OF THE VEHICLE SPACE.
5. PROPOSED PARKING LINES TO BE PAINTED 4" WIDE WHITE.

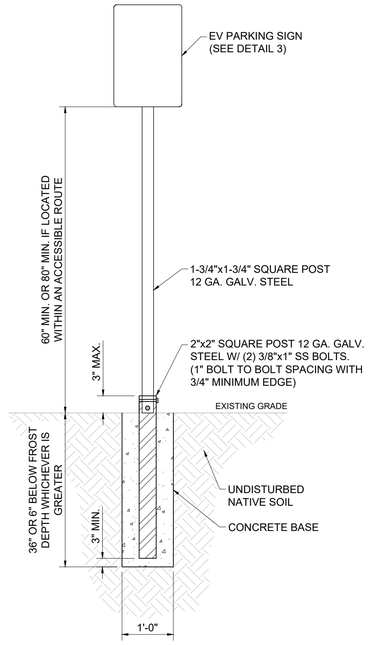
ACCESSIBLE STALL MARKING DETAIL

SCALE N.T.S. | 4



ACCESS AISLE STRIPING

SCALE N.T.S. | 5



NOTES:
1. TO BE PLACED AT HEAD OF PARKING STALL.
2. POST MOUNTED OBJECTS PER ADA CODE SECTION 11B-307.3.
3. THIS DETAIL SHALL ONLY BE USED WHEN SIGN POST IS LOCATED OUTSIDE OF PARKING LOT PAVEMENT AND 2' MIN. CAR OVERHANG ZONE.

SIGN POST

SCALE N.T.S. | 6

NOT USED

SCALE N.T.S. | 7

EVgo
FAST CHARGING
EVGO
1661 E FRANKLIN AVE
EL SEGUNDO, CA 90245

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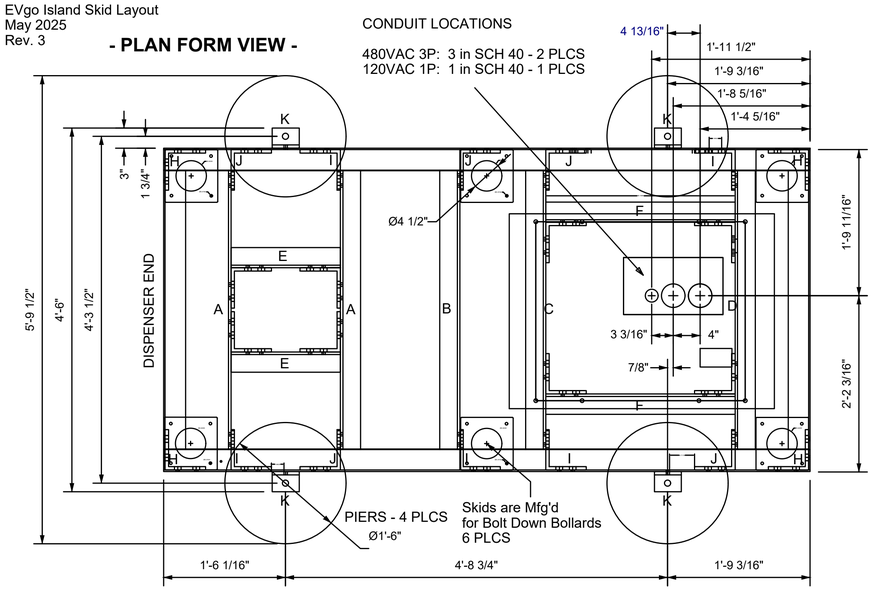
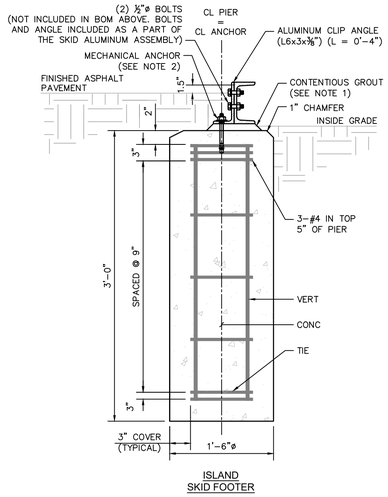
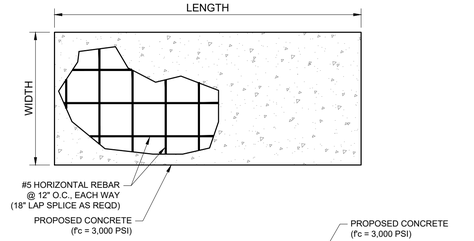


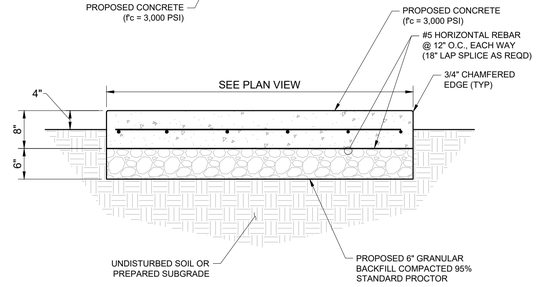
BILL OF MATERIALS – DRILLED SHAFT			
MARK ID	DESCRIPTION	MATERIAL AND SIZE	QUANTITY
CONC	3,000 PSI MIX	0.196 C.Y.	1 PER PIER, 4 PER SKID
VERT	VERTICAL REBAR	ASTM A615–60 #5 x 2'–7"	4 PER PIER, 16 PER SKID
TIE	TIE REBAR	ASTM A615–60 #4 x 4'–8"	8 PER PIER, 28 PER SKID
ANCHORAGE	MECHANICAL ANCHOR	¾"ø HILTI TZ2 SS304 x 4½"	1 PER PIER, 4 PER SKID



NOTES:
1. SHOULD SKID NEED TO BE LEVELED (MORE THAN 2% SLOPE IN ANY DIRECTION) CONTRACTOR SHALL INSTALL NON-SHRINK GROUT BETWEEN SKID FRAME AND CONCRETE FOOTING (1" MAX. THICKNESS). GROUT NOT REQUIRED IF SKID IS LEVEL WITHIN 2% SLOPE IN ALL DIRECTIONS
2. CONTRACTOR TO INSTALL ¾"Ø HILTI TZ2 MECHANICAL ANCHORS. DRILL ¾"Ø HOLES AND EMBED ANCHORS A MINIMUM OF 4½". INSTALL ANCHORS PER MANUFACTURER SPECIFICATION.
3. DRAWINGS DENOTE A GENERIC FOUNDATION CONFIGURATION AND ARE NOT TO SCALE. REFER TO DIMENSIONS AND BILL OF MATERIALS FOR MATERIAL SIZES AND QUANTITIES.
4. FOR LOCATIONS WHERE GROUNDWATER LEVEL IS HIGHER THAN THE PROPOSED EMBEDMENT DEPTH, CONTRACTOR SHALL PERFORM THE FOLLOWING:
   4.1. CONTACT EOR IMMEDIATELY. FOUNDATION DESIGN DOES CONSIDER GROUNDWATER IN ANALYSIS.
   4.2. A TEMPORARY CASING SHALL BE USED DURING INSTALLATION. THE CASING SHALL BE EXTRACTED AS THE CONCRETE IS PLACED. A HEAD OF CONCRETE SHALL BE MAINTAINED ABOVE THE BOTTOM OF THE CASING TO PREVENT WATER INTRUSION INTO THE CONCRETE BELOW THE CASING.

CONCRETE PAD DIMENSIONS				
PAD TYPE	L	W	t (THICKNESS)	AREA
SWITCHGEAR	6'-9"	3'-1"	8"	20.95 S.F.





NOTES:
1. SEE FLOOR PLAN IN REFERENCED SWITCHBOARD ASSEMBLY DRAWINGS AND ELECTRICAL SHEETS FOR MOUNTING HOLE LOCATION AND SWITCHBOARD BAY DIMENSIONS.
2. SEE ELEVATION IN REFERENCED SWITCHBOARD ASSEMBLY DRAWINGS ON ELECTRICAL SHEETS FOR BASE CHANNEL DIMENSION.
3. CONTRACTOR TO MOUNT THE KEYSAFE BOX ON THE SWITCHGEAR.
4. CONTRACTOR SHALL COORDINATE REQUIRED UTILITY STUB OPENING / CONDUIT INSTALLATION WITH LOCAL UTILITY PROVIDER TO ENSURE PROPERTY READY FOR CONSTRUCTION RELEASE IS PROVIDED.

EVgo
FAST CHARGING
EVGO
1661 E FRANKLIN AVE
EL SEGUNDO, CA 90245

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3000 TOWN CENTER SUITE 2600,
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8' ISLAND EQUIPMENT SKID - LAYOUT PLAN

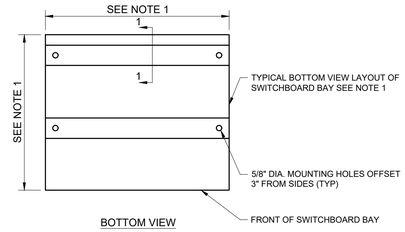
SCALE N.T.S. | 1

REINFORCED CONCRETE FOOTING DETAIL

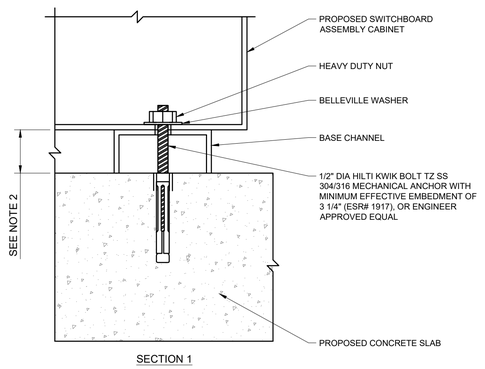
SCALE N.T.S. | 2

EQUIPMENT PAD

SCALE N.T.S. | 3



BOTTOM VIEW



SECTION 1

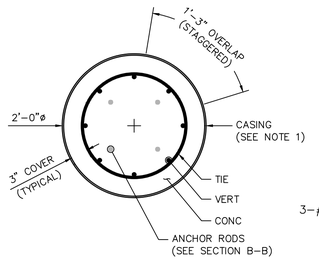
NOTES:
1. SEE FLOOR PLAN IN REFERENCED SWITCHBOARD ASSEMBLY DRAWINGS ON SHEET C3.0 AND ELECTRICAL SHEETS FOR MOUNTING HOLE LOCATION AND SWITCHBOARD BAY DIMENSIONS.
2. MINIMUM 10 1/2" CONCRETE EDGE DISTANCE REQUIRED FOR PROPOSED ANCHORAGE.
3. CONTRACTOR TO MOUNT THE KEYSAFE BOX ON THE SWITCHGEAR.
4. CONTRACTOR SHALL COORDINATE REQUIRED UTILITY STUB OPENING / CONDUIT INSTALLATION WITH LOCAL UTILITY PROVIDER TO ENSURE PROPERTY READY FOR CONSTRUCTION RELEASE IS PROVIDED.

SWITCHBOARD MOUNTING

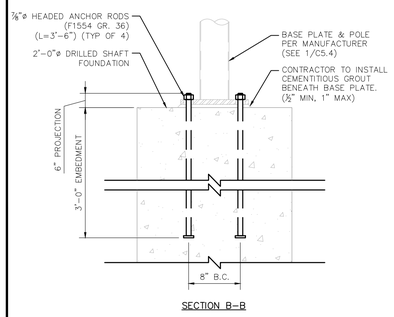
SCALE N.T.S. | 4

BILL OF MATERIALS – DRILLED SHAFT			
MARK ID	DESCRIPTION	MATERIAL AND SIZE	QUANTITY
CONC	3,000 PSI MIX	0.814 C.Y.	1
VERT	VERTICAL REBAR	ASTM A615–60 #5 x 6'–6"	8
TIE	TIE REBAR	ASTM A615–60 #4 x 6'–3"	15
CASING	TEMPORARY CASING	4'–6"ø x ¼"	1

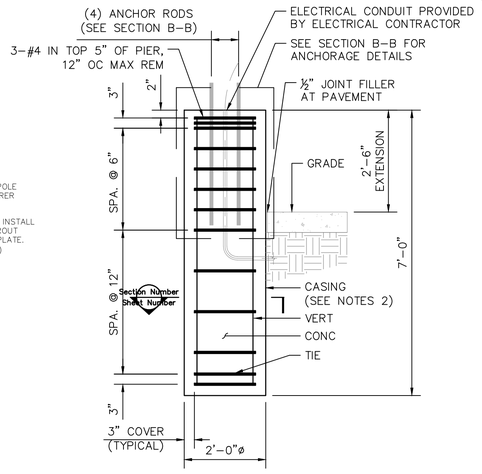
NOTES:
1. DRAWINGS DENOTE A GENERIC FOUNDATION CONFIGURATION AND ARE NOT TO SCALE. REFER TO DIMENSIONS AND BILL OF MATERIALS FOR MATERIAL SIZES AND QUANTITIES.
2. FOR LOCATIONS WHERE GROUNDWATER LEVEL IS HIGHER THAN THE PROPOSED EMBEDMENT DEPTH, A TEMPORARY CASING SHALL BE USED DURING INSTALLATION. THE CASING SHALL BE EXTRACTED AS THE CONCRETE IS PLACED. A HEAD OF CONCRETE SHALL BE MAINTAINED ABOVE THE BOTTOM OF THE CASING TO PREVENT WATER INTRUSION INTO THE CONCRETE BELOW THE CASING.



SECTION A–A



SECTION B–B



LIGHT POST FOUNDATION AND ANCHORAGE

SCALE N.T.S. | 5

NOT USED

SCALE N.T.S. | 6

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DESIGNED BY:	EGB
DRAWN BY:	GHH
CHECKED BY:	RS
KHA PROJECT No.	017777049
DOCUMENT DATE:	JANUARY 13, 2026

SHEET TITLE
CIVIL DETAILS

SHEET NUMBER
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JDA JACK DUFFY & ASSOCIATES	Project 24-41453-0 CHESAPEAKE BAY POLE Submitted By JACK H DUFFY	Catalog Number: RSX1 LED P2 40K R3 MVOLT RPA PE DBLXD Note: Matching lumens will not make time for arrival on site changed to P2 to reduce lead time Est Ship date 3 weeks	Type

RSX1 LED
Area Luminaire

Catalog Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

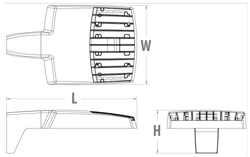
Introduction

The new RSX LED Area family delivers maximum value by providing significant energy savings, long life and outstanding photometric performance at an affordable price. The RSX1 delivers 7,000 to 17,000 lumens allowing it to replace 70W to 400W HID luminaires.

The RSX features an integral universal mounting mechanism that allows the luminaire to be mounted on most existing drill hole patterns. This "no-drill" solution provides significant labor savings. An easy-access door on the bottom of mounting arm allows for wiring without opening the electrical compartment. A mast arm adaptor, adjustable integral slipfitter and other mounting configurations are available.

Specifications

EPA (ft²@0°):	0.57 ft² (0.05 m²)
Length:	21.8" (55.4 cm) (SPA mount)
Width:	13.3" (33.8 cm)
Height:	3.0" (7.6 cm) Main Body 7.2" (18.4 cm) Arm
Weight: (SPA mount):	22.0 lbs (10.0 kg)



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Design Select options indicated by this color background.

Ordering Information

EXAMPLE: RSX1 LED P4 40K R3 MVOLT SPA DDBXD

RSX1 LED

Series	Performance Package	Color Temperature	Distribution	Voltage	Mounting
RSX1 LED	P1 P2 P3 P4	30K 3000K 40K 4000K 50K 5000K	R2 Type 2 Wide R3 Type 3 Wide R3S Type 3 Short R4 Type 4 Wide R4S Type 4 Short R5 Type 5 Wide [1] R5S Type 5 Short [1] AFR Automotive Front Row AFRR90 Automotive Front Row Right Rotated AFRL90 Automotive Front Row Left Rotated	MVOLT (120V-277V) [2] HVOLT (347V-480V) [3] XVOLT (277V-480V) [4] **(use specific voltage for options as noted)** 120 [3] 277 [5] 208 [3] 347 [5] 240 [3] 480 [5]	SPA Square pole mounting (3.0" min. SQ pole for 1 at 90°, 3.5" min. SQ pole for 2, 3, 4 at 90°) RPA Round pole mounting (3.2" min. dia. RND pole for 2, 3, 4 at 90°, 3.0" min. dia. RND pole for 1 at 90°, 2 at 180°, 3 at 120°) MA Mast arm adaptor (fits 2-3/8" OD horizontal tenon) IS Adjustable slipfitter (fits 2-3/8" OD tenon) [6] WBA Wall bracket [1] WBASC Wall bracket with surface conduit box AASP Adjustable tilt arm square pole mounting [6] AARP Adjustable tilt arm round pole mounting [6] AAWB Adjustable tilt arm with wall bracket [6] AAWSC Adjustable tilt arm wall bracket and surface conduit box [6]

Options		Finish	
Shipped Installed		DDBXD	Dark Bronze
HS	House-side shield [7]	DBLXD	Black
PE	Photocontrol, button style [8,9]	DNAXD	Natural Aluminum
PER7	Seven-wire twist-lock receptacle only (no controls) [9,10,11]	DWHXD	White
SF	Single fuse (120, 277, 347) [5]	DDBTXD	Textured Dark Bronze
DF	Double fuse (208, 240, 480) [5]	DBLBXD	Textured Black
SPD20KV	20KV Surge pack (10KV standard)	DNATXD	Textured Natural Aluminum
FAO	Field adjustable output [9]	DWHGXD	Textured White
DMG	0-10V dimming extend out back of housing for external control (control ordered separate) [9]		
Shipped Installed			
***Standalone and Networked Sensors/Controls (factory default settings, see table page 9)**			
NLTAIR2 PIRHN	nLight AIR generation 2, with Networked, Bi-Level motion/ambient sensor [9,12,13,14]		
BAA	Buy America(n) Act Compliant		
CCE	Coastal Construction [15]		
***Note: NLTAIR2 PIRHN with nLight Air can be used as a standalone or networked solution. Sensor coverage pattern is affected when luminaire is tilted.**			
Shipped Separately (requires some field assembly)			
EGS	External glare shield [7]		
EGFV	External glare full visor (360° around light aperture) [7]		
BS	Bird spikes [16]		

LITHONIA LIGHTING
COMMERCIAL OUTDOOR

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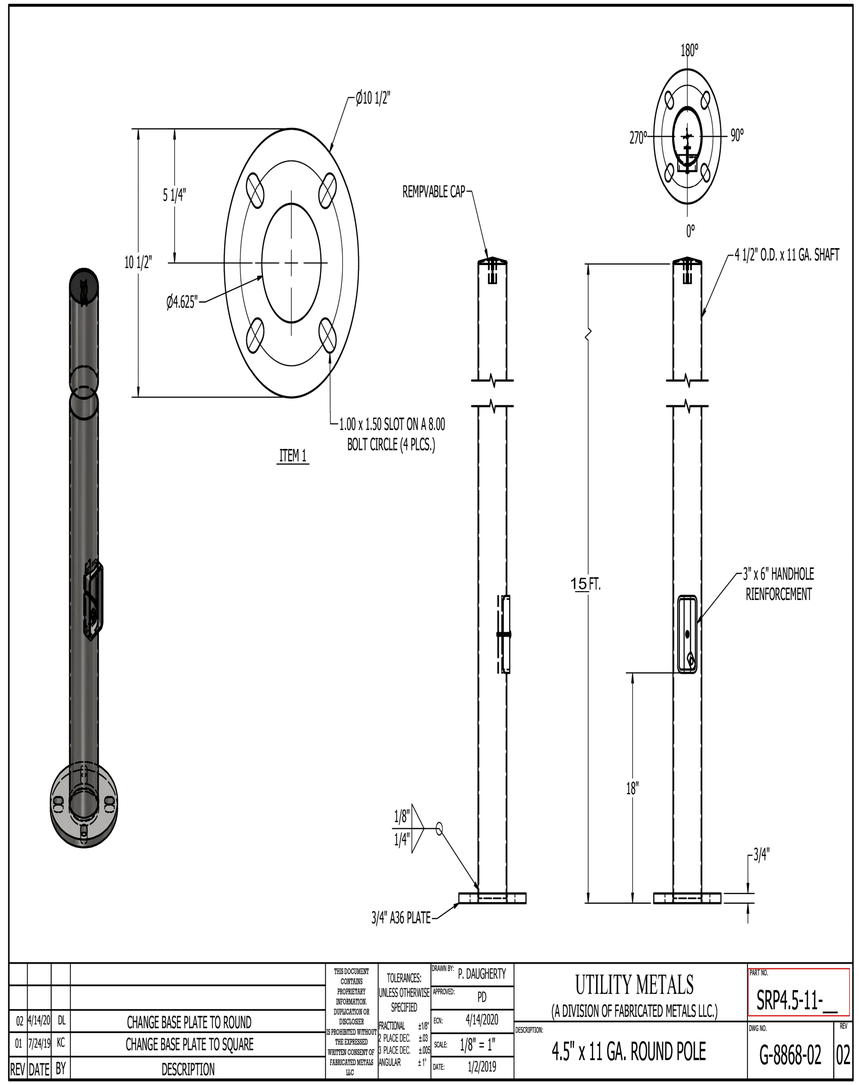
Lithonia RSX1 Area LED
Rev. 06/27/23
Page 1 of 9

JDA JACK DUFFY & ASSOCIATES	Project 24-41453-0 CHESAPEAKE BAY POLE Submitted By JACK H DUFFY	Catalog Number: SRP4.5-11-15 Note: Acuity Pole spec'ed will not meet lead time, 2 week lead time (1 @ 90 Drill pattern 8 DRILLING)	Type



REV	DATE	BY	DESCRIPTION
02	4/14/20	DL	CHANGE BASE PLATE TO ROUND
01	7/24/19	KC	CHANGE BASE PLATE TO SQUARE

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TOLERANCES: UNLESS OTHERWISE SPECIFIED
FRACTIONAL ±1/8"
2 PLACE DEC. ±.03
3 PLACE DEC. ±.005
ANGULAR ±1°

DRAWN BY: P. DAUGHERTY
APPROVED: PD
ECN: 4/14/2020
SCALE: 1/8" = 1"
DATE: 1/2/2019

DESCRIPTION: UTILITY METALS
(A DIVISION OF FABRICATED METALS LLC.)

4.5" x 11 GA. ROUND POLE

PART NO. SRP4.5-11-_
DWG NO. G-8868-02
REV 02

LIGHT POLE DETAIL

SCALE N.T.S.

4

EVgo
FAST CHARGING
EVGO
1661 E FRANKLIN AVE
EL SEGUNDO, CA 90245

Kimley»Horn of Michigan, Inc.
3000 TOWN CENTER SUITE 2600,
SOUTHFIELD, MI 48075
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DRAWN BY:	GHH
CHECKED BY:	RS
KHA PROJECT No.	017777049
DOCUMENT DATE:	JANUARY 13, 2026

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GENERAL NOTES

1. AT ALL TIMES THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITION OF JOB SITE, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY AND FOR ALL NECESSARY INDEPENDENT ENGINEERING REVIEWS OF THESE CONDITIONS. THE ENGINEERS JOB SITE REVIEW IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTORS SAFETY MEASURES.
2. THE CONTRACTOR SHALL MAKE AN EXAMINATION OF THE SITE AND COMPARE THE SITE WITH THE DRAWINGS AND SPECIFICATIONS AND SATISFY HIMSELF AS TO CONDITIONS UNDER WHICH WORK IS TO BE PERFORMED. THE CONTRACTOR SHALL ASCERTAIN AND CHECK THE LOCATIONS OF ANY EXISTING STRUCTURES OR EQUIPMENT WHICH MAY AFFECT WORK THAT HAS TO BE PERFORMED, NO ALLOWANCE SHALL SUBSEQUENTLY BE MADE IN CONTRACTOR'S BEHALF FOR ANY EXPENSE TO WHICH THE CONTRACTOR MAY BE PUT DUE TO FAILURE OR NEGLECT BY CONTRACTOR TO MAKE SUCH EXAMINATION.
3. ALL WORK SHALL BE COORDINATED WITH THE OWNER TO MAINTAIN CONTINUITY OF SERVICE AND MAXIMUM UTILIZATION OF THE OWNERS FACILITY.
4. ELECTRICAL WORK SHALL CONFORM TO THE 2023 NEC AND CURRENT ISSUES OF ALL NFPA, IBC, IFC, ANSI, OSHA, ASTM, NEMA, AND OTHER NATIONALLY PUBLISHED CODES OR STANDARDS SHALL APPLY TO THIS WORK UNLESS LOCAL JURISDICTION SUPERCEDES. THE MOST STRINGENT CODES SHALL APPLY.
5. NOTHING IN THE DRAWINGS OR SPECIFICATIONS IS INTENDED TO ALLOW A VIOLATION OF ELECTRICAL WORKING SPACE AROUND ELECTRICAL EQUIPMENT REQUIREMENT. ANY DEVIATION FROM THIS REQUIREMENT SHALL BE APPROVED IN WRITING, BY THE ENGINEER. THE CONTRACTOR SHALL RELOCATE ANY EQUIPMENT IN VIOLATION OF THE ELECTRICAL CODE AT HIS OWN COST.
6. PROVIDE PHENOLIC NAMEPLATE WITH WHITE LETTERING ON BLACK BACKGROUND FOR EACH ELECTRICAL EQUIPMENT. PROVIDE PERMANENT MEANS OF ATTACHMENT THAT WILL NOT VIOLATE NEMA RATING OR EQUIPMENT WARRANTY.
7. REFER TO THE DRAWINGS FOR LOCATIONS AND SPACE REQUIREMENTS OF ELECTRICAL EQUIPMENT. COORDINATE THE INSTALLATION OF ELECTRICAL EQUIPMENT WITH OTHER TRADES.
8. THE CONTRACTOR SHALL VERIFY THE ELEVATION OF ALL UTILITY CROSSINGS IN ADVANCE OF THE INSTALLATION OF ANY CONDUIT IN ORDER TO ALLOW FOR ADEQUATE TIME FOR REQUIRED RELOCATIONS FOR ADJUSTMENTS. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY DELAYS RESULTING FROM HIS FAILURE TO IDENTIFY CONFLICTS.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SITE TRENCH SAFETY REQUIREMENTS IN ACCORDANCE WITH OWNER'S STANDARDS, STATE LAW, AND O.S.H.A. STANDARDS FOR ALL EXCAVATION.
10. CONTRACTOR SHALL SECURE AND PAY FOR ELECTRICAL TRADE SPECIFIC CONSTRUCTION PERMITS, LICENSES, GOVERNMENTAL AND INSPECTION FEES NECESSARY FOR THE EXECUTION OF THE WORK, UNLESS OTHERWISE DIRECTED.
11. ELECTRICAL CONTRACTOR SHALL PROVIDE COMPLETE ELECTRICAL INSTALLATION IN ACCORDANCE WITH ESTABLISHED TECHNIQUES AND ACCEPTED PRACTICES AND ALL LOCAL, STATE, AND NATIONAL CODES HAVING JURISDICTION.
12. ELECTRICAL REQUIREMENTS SUCH AS CONDUIT ROUTING AND LOCATIONS OF ELECTRICAL DEVICES (RECEPTACLES, SWITCHES, FLOOR OUTLETS, CONDUIT STUBS, ETC.) SHOWN ON THESE PLANS ARE DIAGRAMMATIC AND SUBJECT TO VERIFICATION BY ELECTRICAL CONTRACTOR FOR THE INTERFACING OF THE ELECTRICAL WORK WITH THE INSTALLATION. CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS TO CLEAR THE OTHER FACILITIES.
13. ELECTRICAL EQUIPMENT SHOWN OR SPECIFIED FOR THIS PROJECT HAS BEEN GENERALLY SELECTED BASED ON DIMENSIONS TO FIT THE SPACE. THE CONTRACTOR SHALL VERIFY EQUIPMENT DIMENSIONS AND/OR ANY INTERFERENCES PRIOR TO ORDERING THE EQUIPMENT.
14. ALL EMPTY OR SPARE CONDUIT NOTED SHALL HAVE PULL ROPES OR WIRES INSTALLED, TENSILE STRENGTH MINIMUM OF 200 FT/LBS.
15. CONTRACTOR SHALL PROVIDE PULL BOX(S) AS REQUIRED TO COMPLY WITH NEC 352.24(B) & NEC 356.26(B).
16. ALL ELECTRICAL MATERIALS AND EQUIPMENT PROVIDED BY THE CONTRACTOR SHALL BE LISTED BY UNDERWRITER'S LABORATORIES OR OTHER APPROVED NRTL, AND SHALL BEAR THEIR LABEL. ALL CONTROL PANELS PROVIDED BY THE CONTRACTOR SHALL BE SO LISTED AS AN ASSEMBLY.
17. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, FEES AND EQUIPMENT SPECIFIED, INDICATED OR IMPLIED IN THESE DOCUMENTS TO ACCOMPLISH THE CONSTRUCTION IN A PROFESSIONAL, WORKMANLIKE MANNER. ANY DISCREPANCIES BETWEEN THE CONSTRUCTION TASKS INDICATED AND LOCAL CODES AND/OR ORDINANCES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE OWNER AND/OR ENGINEER FOR RESOLUTION BEFORE PROCEEDING WITH THE WORK AT ISSUE.
18. ANY WORK INSTALLED INCORRECTLY SHALL BE CORRECTED BY THE CONTRACTOR AT NO CHARGE TO OWNER.
19. ALL MATERIALS AND EQUIPMENT FURNISHED BY THE CONTRACTOR SHALL BE NEW AND COMPLETELY SERVICEABLE UNLESS OTHERWISE SPECIFIED.
20. FINAL ACCEPTANCE OF WORK IN PLACE SHALL BE SUBJECT TO APPROVAL BY OWNER'S REPRESENTATIVE AND ENGINEER. INSTALLATION APPROVAL SHALL BE BASED ON APPROVED SUBMITTALS, SHOP DRAWINGS AND LOCAL INSPECTION.
21. CONTRACTOR SHALL SUBMIT "FOR RECORD" MARKUP DRAWINGS WITHIN TWO (2) WEEKS AFTER DATE OF NOTIFICATION OF FINAL APPROVAL OF WORK-IN-PLACE. CONTRACTOR'S FINAL INVOICE WILL NOT BE PAID WITHOUT COMPLETE DOCUMENTATION.
22. CONTRACTOR SHALL WARRANT ALL WORKS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE OF WORK-IN-PLACE. CONTRACTOR SHALL REPAIR OR REPLACE ANY DEFECTIVE WORK INCLUDING MATERIALS AND EQUIPMENT AT NO ADDITIONAL COST TO THE OWNER WITHIN WARRANTY PERIOD.
23. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO ALL PAVING. IF DAMAGE OCCURS DURING CONSTRUCTION, ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OWNER TO PATCH, PAINT AND REPAIR TO MATCH EXISTING CONDITIONS.
24. THE CONTRACTOR SHALL REFER TO MANUFACTURER AND SUPPLIER OF ELECTRICAL CONTROL EQUIPMENT FOR EXACT WIRING INTERCONNECTION.
25. ALL CONDUCTORS SHALL BE ALUMINUM OR COPPER STRANDED, AND HAVE INSULATION TEMPERATURE RATING 75°C, UNLESS OTHERWISE NOTED.
26. IDENTIFICATION OF GROUNDED CONDUCTORS SHALL BE IN ACCORDANCE WITH NEC 200.6. IDENTIFICATION OF EQUIPMENT GROUNDING CONDUCTORS SHALL BE IN ACCORDANCE WITH NEC 250.119. IDENTIFICATION OF UNGROUNDED CONDUCTORS IS REQUIRED FOR MULTIWIRE CIRCUITS AND SHALL BE AS FOLLOWS:

AC SYSTEM	480Y/277V	208Y/120V	120/240V 1-PHASE
PHASE A	BROWN	BLACK	BLACK (LINE 1)
PHASE B	ORANGE	RED	RED (LINE 2)
PHASE C	YELLOW	BLUE	
NEUTRAL	GRAY	WHITE	
DC SYSTEM			
POSITIVE +	RED		
NEGATIVE -	BLACK		
GROUND	WHITE/GRAY		

27. USE WIRE IDENTIFICATION COLOR CODE PER SPECIFICATIONS BELOW.

COLOR	DESCRIPTION
LT. BLUE	INTRINSICALLY SAFE CIRCUITS
GREEN	EQUIPMENT GROUNDING CONDUCTOR
YELLOW	CONTROL CIRCUITS SUPPLIED FROM EXTERNAL POWER SOURCE, INTERLOCKS

28. THE ELECTRICAL DESIGN AND EQUIPMENT RATINGS ARE BASED ON ELECTRICAL SYSTEM STUDIES WHICH MAY INCLUDE: LOAD FLOW, SHORT CIRCUIT, ARC FLASH, RELAY COORDINATION, GROUNDING, AND CABLE SIZING.

ACCEPTANCE TESTING

THE FOLLOWING TESTS SHALL BE PERFORMED PRIOR TO ENERGIZATION OF THE SYSTEM WHEN APPLICABLE:
TEST RESULTS SHALL BE MADE AVAILABLE TO THE OWNER, ENGINEER OF RECORD, OR BUILDING OFFICIAL UPON REQUEST.

1. GROUND-FAULT PROTECTION EQUIPMENT
   - 1.1. VERIFY PICKUP AND TIME DELAY SETTINGS ARE IN ACCORDANCE WITH SETTINGS PROVIDED BY THE ENGINEER OR EQUIPMENT MANUFACTURER.
2. ELECTRICAL TESTS SWITCHBOARDS, PANELBOARDS, MOTOR CONTROL CENTERS AND OTHER EQUIPMENT RATED 1000 AMPERES OR MORE, OR OVER 1000 VOLTS.
   - 2.1. RELAY PICKUP CURRENT BY CURRENT INJECTION AT THE SENSOR AND OPERATION OF THE CIRCUIT INTERRUPTING DEVICE
   - 2.2. TEST RELAY TIMING.
   - 2.3. TEST PRIMARY CONTROL VOLTAGE AT NOT MORE THAN 57 PERCENT OF ITS RATED VOLTGROUNDED CONDUCTOR INSULATION RESISTANCE
   - 2.4. VERIFICATION OF CONTINUITY OF EQUIPMENT GROUNDING SYSTEM.
   - 2.5. INSULATION RESISTANCE TEST ON EACH BUS AND PROTECTIVE DEVICE, PHASE-TO-PHASE AND PHASE-TO-GROUND.
   - 2.6. DIELECTRIC VOLTAGE-WITHSTAND TEST ON EACH BUS AND PROTECTIVE DEVICE, PHASE-TO-PHASE AND PHASE-TO-GROUND.
   - 2.7. CONTROL POWER TRANSFORMER, CONTROL POWER CIRCUITS AND POTENTIAL CIRCUITS.
   - 2.8. CONTROL AND PROTECTIVE DEVICES FOR PROPER OPERATION.
3. ELECTRICAL TESTS ON TRANSFORMERS RATED 100 KVA OR MORE SINGLE PHASE AND 300 KVA OR MORE THREE PHASE.
   - 3.1. INSULATION RESISTANCE TEST ON EACH WINDING. TEST WINDING-TO-WINDING AND WINDINGS-TO-GROUND.
   - 3.2. TURNS-RATIO TEST FOR EACH WINDING AT ALL TAP SETTINGS.
   - 3.3. CONTROL POWER TRANSFORMER, CONTROL POWER CIRCUITS AND POTENTIAL CIRCUITS.
   - 3.4. CONTROL AND PROTECTIVE DEVICES FOR PROPER OPERATION.
4. CONDUCTORS THAT SUPPLY EQUIPMENT RATED AT 1000 AMPERES OR MORE, OR OVER 1000 VOLTS
   - 4.1. INSULATION RESISTANCE TEST ON EACH CONDUCTOR, PHASE-TO-PHASE AND PHASE-TO-GROUND.
   - 4.2. DC HIGH-POTENTIAL TEST ON EACH CONDUCTOR, PHASE-TO-PHASE AND PHASE-TO-GROUND.
   - 4.3. ELECTRICAL TESTS ON EMERGENCY AND STANDBY POWER SYSTEMS: SWITCHBOARDS, PANELBOARDS, DISTRIBUTION BOARDS, POWER SOURCE, CONDUCTORS, CONTROL AND PROTECTIVE DEVICES FOR PROPER OPERATION.
   - 4.4. PHASE ROTATION TEST
   - 4.5. INSULATION RESISTANCE TEST ON FEEDER CONDUCTORS AND EQUIPMENT, PHASE-TO-PHASE AND PHASE-TO-GROUND
   - 4.6. CONDUCT OPERATIONAL TEST ON SYSTEM UNDER LOAD CONDITIONS.

QUALITY ASSURANCE NOTES

1. FOLLOW AND ADHERE TO ALL MANUFACTURERS INSTALLATION INSTRUCTIONS.
2. ALL BACKFILL AND COMPACTION SHALL COMPLY WITH GEOTECH REPORT (IF APPLICABLE).
3. ALL ELECTRICAL TERMINATIONS SHALL BE TORQUED TO MANUFACTURERS' SPECIFICATIONS. WHERE THEY ARE NOT SPECIFIED, REFER TO UL STANDARDS 486A AND 486B. FINAL TORQUE TEST DOCUMENTATION SHALL BE PROVIDED TO OWNER OR HIS REPRESENTATIVE, WITH ONE OR THE OTHER IN WITNESS AT RANDOM TIMES.
4. LINE AND LOAD CONDUCTORS SHALL BE BRACED AND SUPPORTED (LASHED, HELD FIRMLY IN PLACE) IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S SPECIFICATIONS AND NECA/IBEW APPROVED INSTALLATION PRACTICES.

EQUIPMENT SPECIFICATIONS

THE FOLLOWING EQUIPMENT SPECIFICATION AND SUBMITTALS SHALL BE PROVIDED TO AND APPROVED BY THE ENGINEER OF RECORD PRIOR TO INSTALLATION:

- ELECTRICAL EQUIPMENT INCLUDING: SWITCHBOARD AND PANELBOARDS.
- CONDUCTORS AND CABLES INCLUDING: LOW VOLTAGE CABLES, AND CONTROL CABLES
- PROTECTIVE DEVICES INCLUDING: CIRCUIT BREAKERS, FUSES, RELAYS, AND PROTECTION SETTINGS.
- ELECTRIC VEHICLE CHARGING STATIONS
- LIGHTING (IF APPLICABLE)

SYMBOLS

(M)	METER
⏚	GROUND
	TRANSFORMER
	LOW VOLTAGE CIRCUIT BREAKER
	LOW VOLTAGE DRAW OUT CIRCUIT BREAKER
	CURRENT TRANSFORMER (CT)
	POTENTIAL TRANSFORMER (PT)
	FUSE
	SWITCH

ABBREVIATIONS

A, AMPS	AMPERES	(F)	FUTURE		LABORATORY
AB	ANCHOR BOLT	GEC	GROUNDING ELECTRODE CONDUCTOR	NTS	NOT TO SCALE
A/C	AIR CONDITIONER	GND	GROUND	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
AC	ALTERNATING CURRENT	GALV	GALVANIZED		
AF	AMPERE FRAME	GRS	GALVANIZED RIGID STEEL	OH	OVERHEAD
AFF	ABOVE FINISHED FLOOR	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	PH, Ø	PHASE
AFG	ABOVE FINISHED GRADE	HH	HANDHOLE	PB	PUSHBUTTON
AIC	AMPERE INTERRUPTING CURRENT	HOA	HAND-OFF-AUTO	PDU	POWER DISTRIBUTION UNIT
AL	ALUMINUM	HP	HORSEPOWER	PNL	PANEL
AS	AMPERE SWITCH	HV	HIGH VOLTAGE	POCC	POINT OF COMMON CONNECTION
AT	AMPERES TRIP	HVAC	HEATING, VENTILATION, AIR CONDITIONING	PV	PHOTOVOLTAIC
ATS	AUTOMATIC TRANSFER SWITCH	HZ	HERTZ	PVC	POLYVINYL CHLORIDE
AWG	AMERICAN WIRE GAUGE	IMC	INTERMEDIATE METAL CONDUIT	(R)	EXISTING TO BE REMOVED
BC	BARE COPPER	ISC	INTERRUPTING SHORT CIRCUIT	(RE)	NEW LOCATION OF RELOCATED DEVICE
BLDG	BUILDING	IG	ISOLATED GROUND	(RL)	EXISTING TO BE RELOCATED
BMS	BUILDING MANAGEMENT SYSTEM	INST	INSTANTANEOUS	SCA	SHORT CIRCUIT AVAILABLE
C	CONDUIT	JB	JUNCTION BOX	SEC	SECONDARY
CB	CIRCUIT BREAKER	KAIC	KILO AMPERES INTERRUPTION CAPACITY	SPECS	SPECIFICATIONS
CC	CENTER TO CENTER	KCMIL	KILO CIRCULAR MILS	STD	STANDARD
CCS1/CCS2	COMBINED CHARGING SYSTEM TYPE 1/2	KV	KILOVOLTS	STP	SHIELDED TWISTED PAIR
CEC	CALIFORNIA ELECTRICAL CODE	KVA	KILOVOLT-AMPERES KW KILO WATTS	SWBD	SWITCHBOARD
CHAdeMO	CHArge de MOve (EV CHARGING STANDARD)	KWH	KILO WATT-HOURS	SYM	SYMMETRICAL
CKT	CIRCUIT	LCP	LIGHTING CONTROL PANEL	TBD	TO BE DETERMINED
℄	CENTER LINE	LTG	LIGHTING	TD	TIME DELAY
CLG	CEILING	MAX	MAXIMUM	TEL	TELEPHONE
CLR	CLEAR	MCC	MOTOR CONTROL CENTER	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
CO	CONDUIT ONLY WITH PULL ROPE	MCB	MAIN CIRCUIT BREAKER		
CONC	CONCRETE	MCP	MOTOR CIRCUIT PROTECTOR	TYP	TYPICAL
CU	COPPER	MFR	MANUFACTURER	UG	UNDERGROUND
DB	DIRECT BURIAL	MH	MANHOLE	UL	UNDERWRITERS LABORATORIES
DC	DIRECT CURRENT	MIN	MINIMUM	UON	UNLESS OTHERWISE NOTED
DIA	DIAMETER	MISC	MISCELLANEOUS	UPB	UNDERGROUND PULLBOX
DN	DOWN	MLO	MAIN LUGS ONLY	UTP	UNSHIELDED TWISTED PAIR
DP	DISTRIBUTION PANEL	MTD	MOUNTED	V	VOLTS
DWG	DRAWING	MSB	MAIN SWITCHBOARD	VA	VOLT-AMPERES
EM	EMERGENCY	MSG	MAIN SWITCHGEAR	VFD	VARIABLE FREQUENCY DRIVE
EGC	EQUIPMENT GROUNDING CONDUCTOR	MV	MEDIUM VOLTAGE	VFI	VACUUM FUSED INTERRUPTER
EMT	ELECTRICAL METALLIC TUBING	MVA	MEGA VOLT AMPERES	VP	VAPORPROOF
EPO	EMERGENCY POWER OFF	(N)	NEW	W	WATTS, WIRE
EQ	EQUAL	N	NEUTRAL	WH	WATER HEATER
EQUIP	EQUIPMENT	NC	NORMALLY CLOSED	WP	WEATHERPROOF
EV	ELECTRIC VEHICLE	NEC	NATIONAL ELECTRICAL CODE	WT	WATERTIGHT
(E)	EXISTING	NIC	NOT IN CONTRACT	XFMR	TRANSFORMER
FA	FIRE ALARM	NL	NIGHT LIGHT	XLPE	CROSS-LINKED POLYETHYLENE
FACP	FIRE ALARM CONTROL PANEL	NO	NORMALLY OPEN	XP	EXPLOSION PROOF
FLA	FULL LOAD AMPERES	NRTL	NATIONAL RECOGNIZED TESTING		

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SHEET TITLE
ELECTRICAL NOTES

SHEET NUMBER
E1.0

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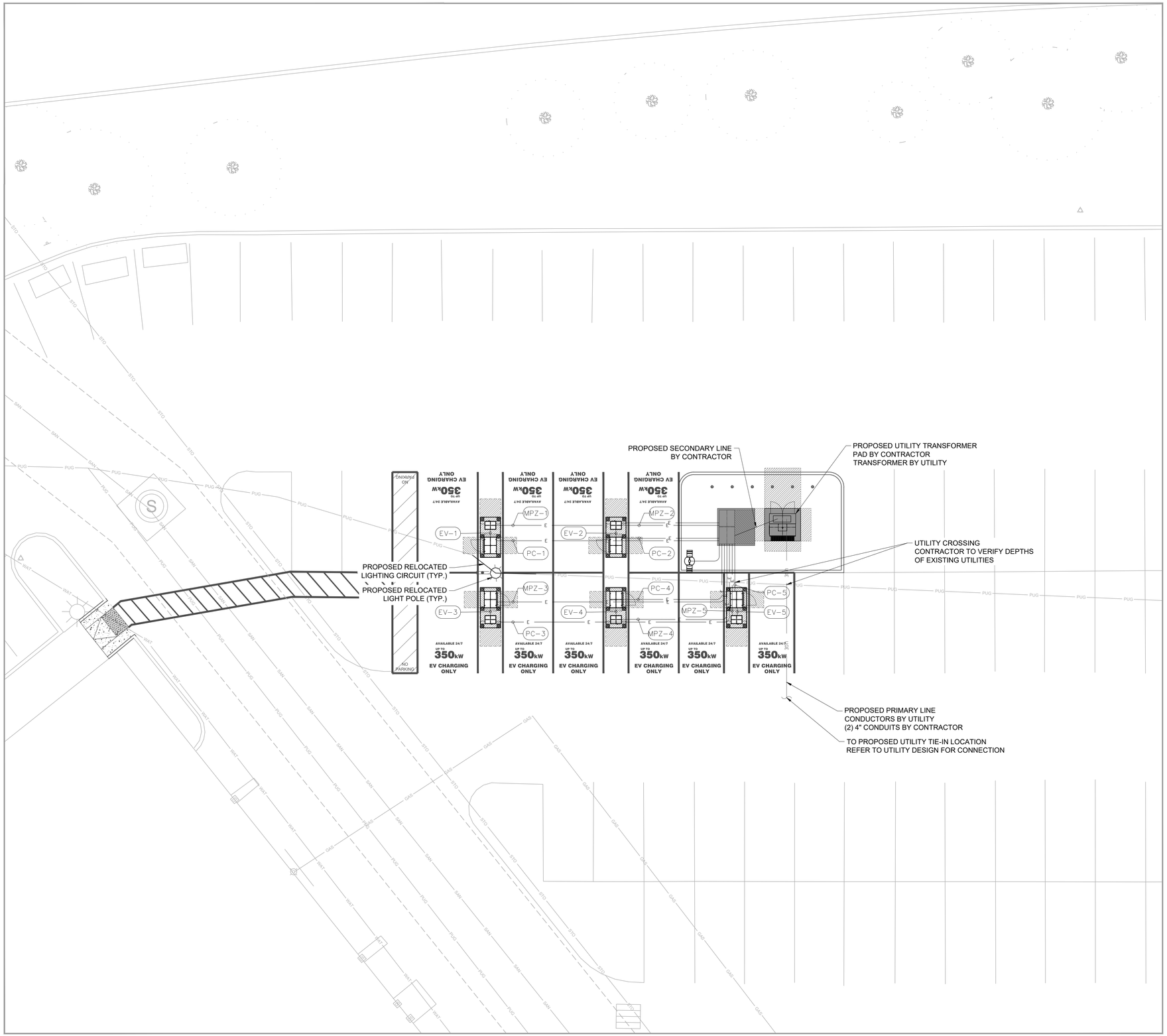

ELECTRICAL SITE PLAN LEGEND

ITEM	DESCRIPTION
	UTILITY TRANSFORMER - PAD MOUNTED
	480V LV SWITCHBOARD - PAD MOUNTED
	L3 DC FAST CHARGER AND POWER CABINET - PAD MOUNTED
	ELECTRICAL EQUIPMENT MIN. REQUIRED CLEAR SPACE
E	UNDERGROUND EV POWER CONDUIT
UGE	UNDERGROUND UTILITY POWER CONDUIT

SETBACK NOTE

CONTRACTOR TO VERIFY THAT LOCATIONS OF ALL PROPOSED ELECTRICAL EQUIPMENT AND EV INFRASTRUCTURE ARE IN COMPLIANCE WITH ALL LOCAL CODES, SETBACKS, & BUFFERS.

ELECTRICAL SITE PLAN NOTES

1. UTILITY CONNECTION TO BE MADE UNDER UTILITY PROVIDER STANDARDS. CONFIRM FINAL UTILITY DESIGN PRIOR TO CONSTRUCTION. ALL WORK PERFORMED REGARDING THE ELECTRICAL SERVICE SHALL MEET ALL UTILITY PROVIDER STANDARDS AND SPECIFICATIONS.
2. ALL ELECTRICAL WORK AND RELATED ACTIVITIES PERFORMED ONSITE SHALL BE DONE IN ACCORDANCE WITH NEC 2023 AND ALL STANDARDS BEING ENFORCED BY ALL APPLICABLE JURISDICTIONAL REQUIREMENTS AT TIME OF CONSTRUCTION.
3. NO PART OF THIS DRAWING OR SPECIFICATION IS INTENDED TO ALLOW A VIOLATION OF PHYSICAL WORKING SPACE REQUIREMENTS AROUND ELECTRICAL EQUIPMENT AS REQUIRED PER NEC 110.26.
4. CONDUIT ROUTING IS ONLY DIAGRAMMATICAL. INSTALLATION OF CONDUIT SHALL BE COORDINATED TO AVOID INTERFERING WITH UNDERGROUND INFRASTRUCTURE. CONDUIT ROUTING AND CABLE TRENCH DETAILS TO BE APPROVED BY ENGINEER. HAND DIG AROUND ALL EXISTING UTILITIES. CONDUIT SHALL BE HAND DUG TRENCH IN AREAS WITH EXISTING UNDERGROUND UTILITIES.
5. CONTRACTOR TO LOCATE JUNCTION BOX OR APPROVED ALTERNATIVE FOR SITE SPECIFIC RUN LENGTHS AND BENDS PER NEC 314.26, 352.26, AND 356.26. JUNCTION BOXES SHALL BE TRAFFIC RATED WHERE SUBJECT TO VEHICULAR TRAFFIC. MINIMUM OF 1 FOOT OF CONCRETE REQUIRED AROUND ALL JUNCTION BOXES.
6. SEE SHEET E3.0 FOR CONDUIT AND CONDUCTOR SIZES AND QUANTITIES.

CONSTRUCTION NOTES

1. SEE ADDITIONAL ELECTRICAL NOTES AND SPECIFICATIONS ON SHEET E1.0.
2. CONTRACTOR TO BORE OR HAND TRENCH CONDUIT AS REQUIRED PER NEC.
3. ALL EQUIPMENT SHALL BE INSTALLED PER CLIENT DESIGN STANDARDS. SEE APPLICABLE STANDARDS ON SHEET E1.0.
4. LOW VOLTAGE SWITCHBOARD (277/480V-3PH). CONDUITS STUBBED TO THIS LOCATION SHALL BE GROUPED TOGETHER TO SUPPORT SWITCHBOARD CONFIGURATION (SECONDARY ENTRANCE WINDOW AND DISTRIBUTION WINDOWS). REFER TO ELECTRICAL SHEETS FOR PROPOSED AMPACITY RATINGS OF SWITCHBOARD EQUIPMENT.
5. PAD MOUNTED TRANSFORMER (277/480V-3PH SECONDARY). CONDUITS STUBBED TO THIS LOCATION SHALL BE GROUPED TOGETHER TO SUPPORT TRANSFORMER CONFIGURATION (SECONDARY ENTRANCE WINDOW AND PRIMARY WINDOW). REFER TO ELECTRICAL SHEETS FOR PROPOSED RATINGS OF TRANSFORMER EQUIPMENT.

GRAPHIC SCALE IN FEET
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SHEET TITLE
ELECTRICAL SITE PLAN

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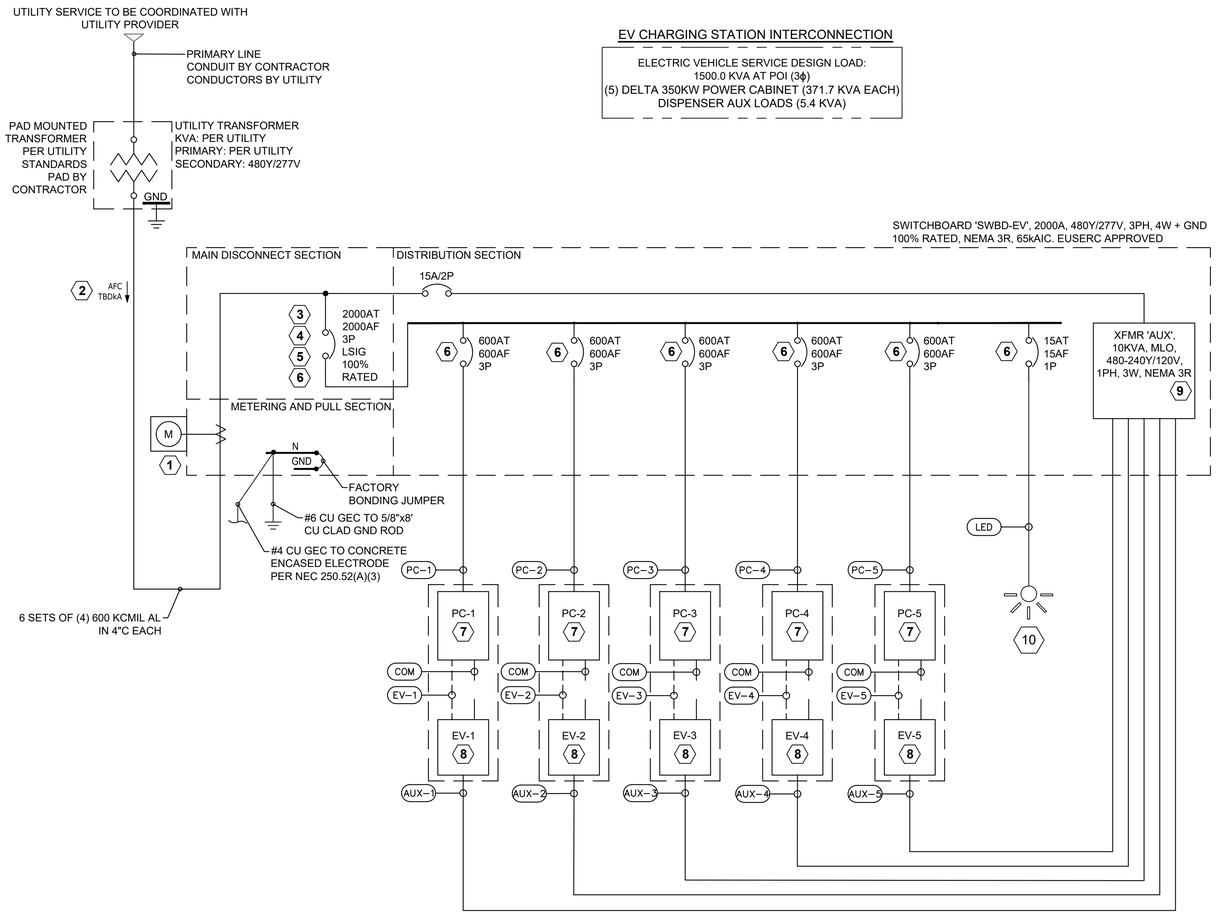

1 PROPOSED ELECTRICAL SINGLE LINE DIAGRAM

KEYED NOTES

1. UTILITY COMPLIANT SWITCHBOARD MOUNTED REMOTE METERING COMPARTMENT. CTs IN UTILITY COMPLIANT CT SECTION OF SWITCHBOARD. SWITCHBOARD PROVIDED BY EVGO.
2. AFC (AVAILABLE FAULT CURRENT) IS PENDING FROM UTILITY.
3. LONG, SHORT, INSTANTANEOUS, GROUND FAULT EQUIPPED BREAKER PER NEC 230.95.
4. REFER TO COORDINATION STUDY FOR OCPD TRIP SETTINGS.
5. MAIN BREAKER IS REQUIRED TO INCLUDE MAINTENANCE MODE FOR ARC ENERGY REDUCTION IN ACCORDANCE WITH NEC 240.87.
6. ALL OVERCURRENT PROTECTION DEVICES WILL HAVE THE SAME FAULT CURRENT RATING AS THE RATING OF THE PANEL, DISCONNECT, OR SWITCHGEAR LOCATED WITHIN.
7. DELTA 350 KW POWER CABINET, 369 KVA, NEMA 3R
   INPUT: 447A, 480VAC, 3P/3W
   OUTPUT: 150-950VDC, 540A MAX
   INSTALLED ON PRE-FABRICATED AND MANUFACTURER WIRED SKID
8. DELTA 350KW DISPENSER NEMA 3R
   950VDC MAX
   INSTALLED ON PRE-FABRICATED AND MANUFACTURER WIRED SKID
9. AUXILIARY TRANSFORMER 'AUX' NEMA 3R ENCLOSURE OR APPROVED EQUAL. INTERNAL TO SWTICHBOARD, PRE-WIRED BY MANUFACTURER. SEE SWITCHBOARD DRAWINGS FOR MORE DETAILS.
10. (1) BACK-TO-BACK RSX1 POLE MOUNTED LIGHT FIXTURE
    SEE SITE PLAN FOR LOCATION
    SEE DETAIL FOR MORE INFORMATION

EQUIPMENT PROCUREMENT NOTES

EQUIPMENT PROVIDED BY EVGO:	EQUIPMENT PROVIDED BY CONTRACTOR:
DELTA POWER CABINETS	CABLES
DELTA POWER DISPENSERS	CABLE TERMINATIONS
SWITCHBOARD	CONDUITS AND FITTINGS
DELTA COMMUNICATIONS CABLE	UTILITY UNDERGROUND STRUCTURES AND PADS
	ADDITIONAL EQUIPMENT AS SPECIFIED ON THESE PLANS

GENERAL NOTES

1. ALL EQUIPMENT SHALL BE INSTALLED BY CONTRACTOR UNLESS OTHERWISE NOTED. ALL MATERIAL SHALL BE IN NEW CONDITION AND APPROVED BY THE ENGINEER.
2. ALL EQUIPMENT SHALL BE NRTL LISTED.
3. ALL EQUIPMENT WIRING AND GROUNDING METHODS SHALL CONFORM TO THE MANUFACTURER'S RECOMMENDED PRACTICES AND INSTALLATION INSTRUCTIONS.
4. ALL SWITCHBOARDS AND PANELBOARDS SHALL HAVE ARC FLASH WARNING LABELS WITH APPLICABLE INCIDENT ENERGY LEVELS, WORKING DISTANCES, AND REQUIRED PPE IN ACCORDANCE WITH NFPA 70E.
5. EXPOSED NON-CURRENT CARRYING METAL PARTS OF EQUIPMENT AND ENCLOSURES SHALL BE GROUNDED IN ACCORDANCE WITH NEC 250.134 AND 250.136(A).
6. COORDINATE DATE, TIME, AND LENGTH OF ANY REQUIRED FACILITY SHUTDOWNS WITH OWNER PRIOR TO CONSTRUCTIONS.
7. CONDUITS UNDERGROUND SHALL BE SCHEDULE 40 PVC, UNLESS OTHERWISE NOTED. CONDUIT ELBOWS SHALL HAVE LONG RADIUS SWEEPS.
8. ALL EQUIPMENT SHALL BE FURNISHED WITH TERMINALS RATED FOR 75°C OR GREATER, LUGS SHALL BE DUAL-RATED FOR COPPER/ALUMINUM CONDUCTORS. ALL ALUMINUM CONDUCTOR TERMINATIONS MUST BE COATED PER MANUFACTURERS INSTRUCTIONS.
9. CONDUIT ROUTING AND EQUIPMENT LOCATIONS ARE DIAGRAMMATIC ONLY, AND SHALL BE COORDINATED TO AVOID INTERFERENCES WITH OTHER UTILITIES/UNDERGROUND INSTALLATIONS. CONTRACTOR IS RESPONSIBLE FOR FIELD CHECKING AND MAKING ALL NECESSARY OFFSETS AS REQUIRED.
10. NO PART OF THIS DRAWING OR SPECIFICATIONS IS INTENDED TO ALLOW A VIOLATION OF PHYSICAL WORKING SPACE REQUIREMENTS AROUND ELECTRICAL EQUIPMENT AS REQUIRED PER NEC 110.26.
11. INSTALL PULL-BOXES AS REQUIRED PER NEC 314.28. ALL BOXES SHALL BE TRAFFIC RATED WHERE SUBJECT TO VEHICULAR TRAFFIC. MIN ONE (1) FEET OF CONCRETE IS REQUIRED AROUND ALL BOXES. PROVIDE ADDITIONAL PULL-BOXES AS REQUIRED TO COMPLY WITH NEC 352.26 & 356.26
12. CONTRACTOR SHALL HAND DIG AROUND ALL EXISTING UTILITIES UNLESS OTHERWISE NOTED.
13. CONTRACTOR TO PROVIDE ULINE WALL-MOUNT KEY LOCK BOX MODEL #H-9880 MOUNTED TO THE INSIDE OF SWBD-EV .
14. COMMUNICATIONS CABLE PROVIDED BY EVGO. CABLE LENGTHS MANUFACTURED IN INCREMENTS OF 25FT.

AC WIRE AND CONDUIT SCHEDULE

TO	FROM	CIRCUIT ID	VOLTAGE (V)	CURRENT (A)	NUMBER OF PARALLEL SETS	CONDUIT MATERIAL	CONDUIT SIZE (IN)	INSULATION TYPE	PHASE CONDUCTORS PER SET	NEUTRAL CONDUCTOR PER SET	EGC PER CONDUIT	DISTANCE (FT)	% VOLTAGE DROP
PC-1	SWBD-EV	PC-1	480	447	2	PVC SCH 40	3	THWN-2	(3) 500 KCMIL AL	N/A	#2/0 AWG AL	45	0.27%
PC-2	SWBD-EV	PC-2	480	447	2	PVC SCH 40	3	THWN-2	(3) 500 KCMIL AL	N/A	#2/0 AWG AL	20	0.15%
PC-3	SWBD-EV	PC-3	480	447	2	PVC SCH 40	3	THWN-2	(3) 500 KCMIL AL	N/A	#2/0 AWG AL	55	0.32%
PC-4	SWBD-EV	PC-4	480	447	2	PVC SCH 40	3	THWN-2	(3) 500 KCMIL AL	N/A	#2/0 AWG AL	30	0.20%
PC-5	SWBD-EV	PC-5	480	447	2	PVC SCH 40	3	THWN-2	(3) 500 KCMIL AL	N/A	#2/0 AWG AL	10	0.10%
EV-1	AUX	AUX-1	120	8.9	1	PVC SCH 40	1	THWN-2	(1) #8 AWG CU	(1) #8 AWG CU	#8 AWG CU	45	0.51%
EV-2	AUX	AUX-2	120	8.9	1	PVC SCH 40	1	THWN-2	(1) #8 AWG CU	(1) #8 AWG CU	#8 AWG CU	20	0.26%
EV-3	AUX	AUX-3	120	8.9	1	PVC SCH 40	1	THWN-2	(1) #8 AWG CU	(1) #8 AWG CU	#8 AWG CU	60	0.67%
EV-4	AUX	AUX-4	120	8.9	1	PVC SCH 40	1	THWN-2	(1) #8 AWG CU	(1) #8 AWG CU	#8 AWG CU	35	0.41%
EV-5	AUX	AUX-5	120	8.9	1	PVC SCH 40	1	THWN-2	(1) #8 AWG CU	(1) #8 AWG CU	#8 AWG CU	15	0.20%
RSX1	SWBD-EV	LED	277	0.91	1	PVC SCH 40	1	THWN-2	(1) #12 AWG CU	(1) #12 AWG CU	#12 AWG CU	10	0.06%

DC WIRE SCHEDULE

TO	FROM	CIRCUIT ID	VOLTAGE (V)	CURRENT (A)	CONDUCTORS	DISTANCE (FT)	% VOLTAGE DROP
EV-1	PC-1	EV-1	950	540	(8) 500 KCMIL AL CONDUCTORS PRE-WIRED IN SKID BY MANUFACTURER	8	0.020%
EV-2	PC-2	EV-2	950	540	(8) 500 KCMIL AL CONDUCTORS PRE-WIRED IN SKID BY MANUFACTURER	8	0.020%
EV-3	PC-3	EV-3	950	540	(8) 500 KCMIL AL CONDUCTORS PRE-WIRED IN SKID BY MANUFACTURER	8	0.020%
EV-4	PC-4	EV-4	950	540	(8) 500 KCMIL AL CONDUCTORS PRE-WIRED IN SKID BY MANUFACTURER	8	0.020%
EV-5	PC-5	EV-5	950	540	(8) 500 KCMIL AL CONDUCTORS PRE-WIRED IN SKID BY MANUFACTURER	8	0.020%

COMMUNICATIONS CABLE AND CONDUIT SCHEDULE

TO	FROM	CIRCUIT ID	CABLE	DISTANCE (FT)
EV-1	PC-1	COM	APCV+CU PRE-WIRED IN SKID BY MANUFACTURER	< 25
EV-2	PC-2	COM	APCV+CU PRE-WIRED IN SKID BY MANUFACTURER	< 25
EV-3	PC-3	COM	APCV+CU PRE-WIRED IN SKID BY MANUFACTURER	< 25
EV-4	PC-4	COM	APCV+CU PRE-WIRED IN SKID BY MANUFACTURER	< 25
EV-5	PC-5	COM	APCV+CU PRE-WIRED IN SKID BY MANUFACTURER	< 25

2 WIRE AND CONDUIT SCHEDULES

SWITCHBOARD SWBD-EV SCHEDULE

Volts: 480Y/277V Phase: 3 Wire: 4 Hertz: 60
2000A MCB Main AIC: 65K Branch AIC: 65K ENCL. (NEMA): 3R MTG: Pad
2000 Amp Frame , Ground Bar, Panel Card.

Description of Load Served	Breaker Amp	Breaker Pole	Wire	KVA/Phase A	KVA/Phase B	KVA/Phase C	CKT No.	CKT No.	KVA/Phase A	KVA/Phase B	KVA/Phase C	Wire	Breaker Amp	Breaker Pole	Description of Load Served
EV-1	600	3	500 KCMIL (AL)	123.90			1	2	123.90			500 KCMIL (AL)	600	3	EV-2
					123.90		3	4		123.90					
						123.90	5	6			123.90				
EV-3	600	3	500 KCMIL (AL)	123.90			7	8	123.90			500 KCMIL (AL)	600	3	EV-4
					123.90		9	10		123.90					
						123.90	11	12			123.90				
EV-5	600	3	500 KCMIL (AL)	123.90			13	14	-			-	-	-	SPACE
					123.90		15	16		-					
						123.90	17	18			-				
SPACE	-	-	-	-			19	20	0.15			#12 AWG (CU)	15	1	LIGHTING
					-		21	22		2.68		BY MFR	15	2	AUX
						-	23	24			2.68				
	Total KVA/Phase			371.70	371.70	371.70			247.95	250.48	250.48		Total KVA/Phase		

Notes:
1. Connected KVA: 1864.00
2. Demand KVA: **1500.00**
3. Demand Amps: **1804.00**

LOAD SUMMARY NOTE:

1. ELECTRIC VEHICLE CHARGING LOADS ARE PART OF AUTOMATIC LOAD MANAGEMENT SYSTEM PER NEC 625.42. TOTAL SWTICHBOARD 'SWBD-EV' LOADS SHALL BE LIMITED TO THE DEMAND VALUES SHOWN IN THE LOAD SCHEDULE AND THE TOTAL LOAD SHALL NOT EXCEED 1804A. THIS SETTING SHALL BE DONE PRIOR TO ENERGIZATION BY A QUALIFIED PROFESSIONAL AND SHALL NOT BE MODIFIED AFTER SYSTEM IS ENERGIZED UNLESS COORDINATED WITH UTILITY PROVIDER.

LOAD CENTER 'AUX' SCHEDULE

Volts: 120/240V Phase: 1 Wire: 3 Hertz: 60
Branch AIC: 22K ENCL. (NEMA): 3R MTG: Unistrut
115 Amp Frame, Ground Bar, Locking Cover, Panel Card.

Description of Load Served	Breaker Amp	Breaker Pole	KVA/Phase A	KVA/Phase B	CKT No.	CKT No.	KVA/Phase A	KVA/Phase B	Breaker Pole	Breaker Amp	Description of Load Served
EV-1	20	1	1.07		1	2	-		-	-	SPACE
EV-2	20	1		1.07	3	4		-	-	-	SPACE
EV-3	20	1	1.07		5	6	-		-	-	SPACE
EV-4	20	1		1.07	7	8		-	-	-	SPACE
EV-5	20	1	1.07		9	10	-		-	-	SPACE
SPACE	20	1		-	11	12		-	-	-	SPACE
	Total KVA/Phase		3.21	2.14			0.00	0.00	Total KVA/Phase		

Notes:
1. **Connected KVA: 5.35 Connected Amps: 22.29**
2. **Demand KVA: 6.69 Demand Amps: 27.86**

3 PANEL SCHEDULES

EVgo
FAST CHARGING
EVGO
1661 E FRANKLIN AVE
EL SEGUNDO, CA 90245

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3000 TOWN CENTER SUITE 2600,
SOUTHFIELD, MI 48075
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DRAWN BY:	#901
CHECKED BY:	#902
KHA PROJECT No.	017777049
DOCUMENT DATE:	JANUARY 13, 2026

SHEET TITLE
SINGLE LINE DIAGRAM & PANEL SCHEDULES

SHEET NUMBER
E3.0

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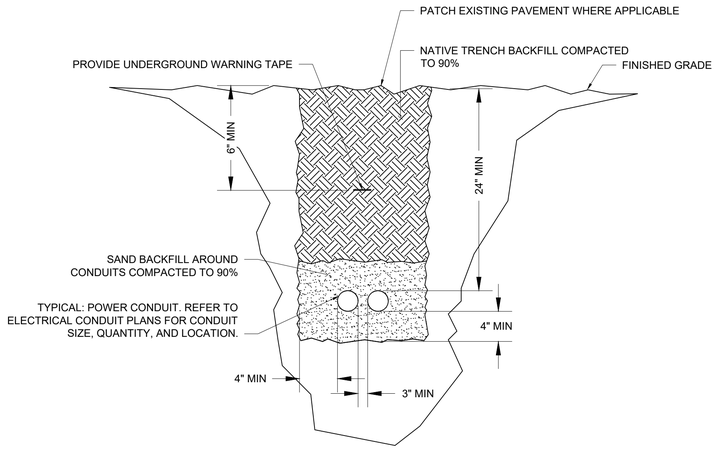
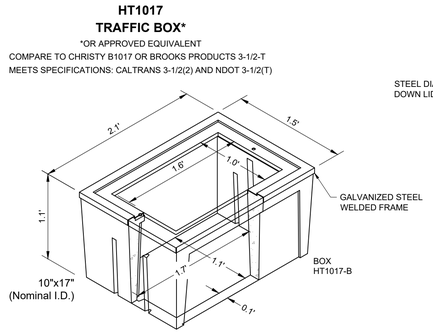


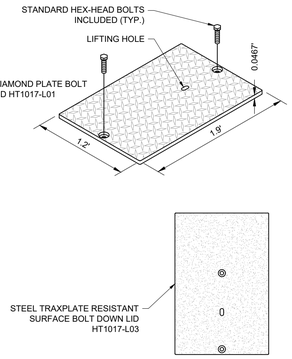
CONDUIT TRENCH

SCALE N.T.S. | 1

HT1017
TRAFFIC BOX*

*OR APPROVED EQUIVALENT
COMPARE TO CHRISTY B1017 OR BROOKS PRODUCTS 3-1/2-T
MEETS SPECIFICATIONS: CALTRANS 3-1/2(2) AND NDOT 3-1/2(T)



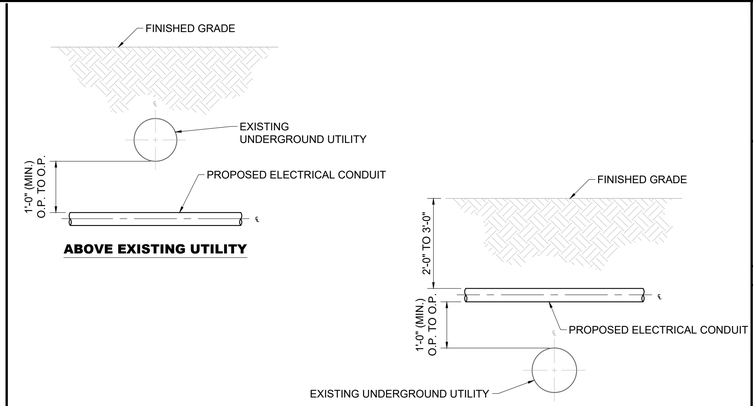


NOTE:
COMMUNICATIONS JUNCTION BOX COVER SHALL READ "COMM".

PART NO.	PRODUCT	DESCRIPTION	APPROX. WEIGHT	QTY. PER PALLET
HT1017-B	BOX	10"x17"x12" Concrete Traffic Rated Box (Comes Standard With Hex Bolts)	125	20
HT1017-E	EXTENSION	10"x17"x12" Concrete Extension	126	20
HT1017-L01	LID	Steel Diamond Plate Bolt Down Lid	38	
HT1017-L03	LID	Steel Traxplate Bolt Down Slip Resistant Cover	38	

TRAFFIC-RATED JUNCTION BOX

SCALE N.T.S. | 2



ABOVE EXISTING UTILITY

BELOW EXISTING UTILITY

O.P. = OUTSIDE OF PIPE

NOTE:
A MINIMUM HORIZONTAL AND VERTICAL CLEARANCE OF 12" IS REQUIRED FOR ALL CROSSINGS. ANY DEVIATIONS WILL REQUIRE WRITTEN APPROVAL FROM PROJECT ENGINEER OR OWNER'S REPRESENTATIVE.

EXISTING UTILITY ABOVE/BELOW PROPOSED CONDUIT

SCALE N.T.S. | 3

NOTE:
EXACT CONDUIT DIAMETERS MAY VARY UPON INSTALLATION. REFERENCE ONE LINE DIAGRAM FOR CONDUIT SIZES.

BORE SECTION

SCALE N.T.S. | 4

NOTE:
EXACT CONDUIT DIAMETERS MAY VARY UPON INSTALLATION. REFERENCE ONE LINE DIAGRAM FOR CONDUIT SIZES.

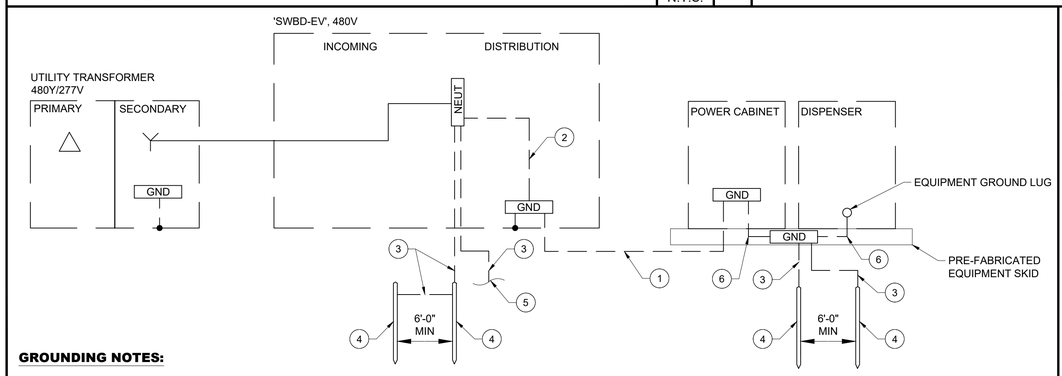
BORE PIT

SCALE N.T.S. | 5

NOTE:
REBAR BONDED TOGETHER WITH STEEL TIE WIRES OR EXOTHERMIC WELDING.

CONCRETE ENCASED ELECTRODE

SCALE N.T.S. | 6

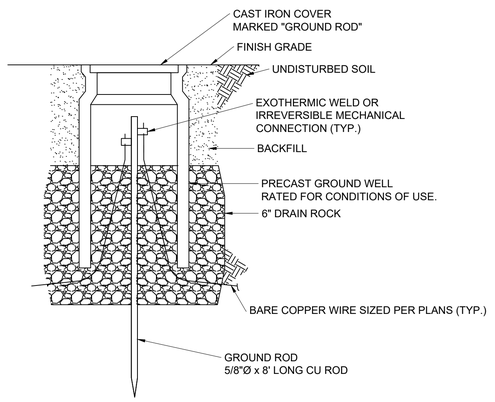


GROUNDING NOTES:

1. SEE ONE-LINE DIAGRAM ON SHEET E3.0 FOR EQUIPMENT GROUNDING CONDUCTOR SIZING.
2. MANUFACTURER WIRED MAIN BONDING JUMPER PER NEC 250.24(1)(4), 250.28(C), AND 250.8(7).
3. SEE ONE-LINE DIAGRAM ON SHEET E3.0 FOR GROUNDING ELECTRODE CONDUCTOR SIZING.
4. GROUNDING ELECTRODE CONDUCTOR TO BE BONDED TO 5/8" X 8'-0" COPPER CLAD GROUND ROD PER NEC 250.52(A)(5), 250.53(A), AND 250.68.
5. GROUNDING ELECTRODE CONDUCTOR TO BE BONDED TO CONCRETE ENCASED ELECTRODE PER NEC 250.52(A)(3) AND 250.68.
6. PRE-WIRED BY MANUFACTURER.

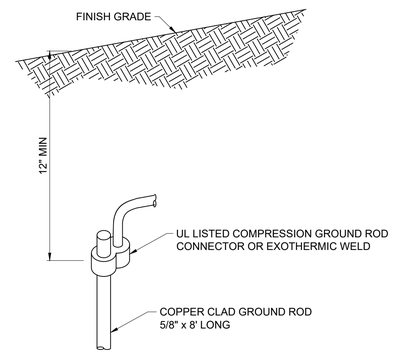
EQUIPMENT GROUNDING DIAGRAM

SCALE N.T.S. | 7



GROUND ROD WELL DETAIL

SCALE N.T.S. | 8



GROUND ROD DETAIL

SCALE N.T.S. | 9

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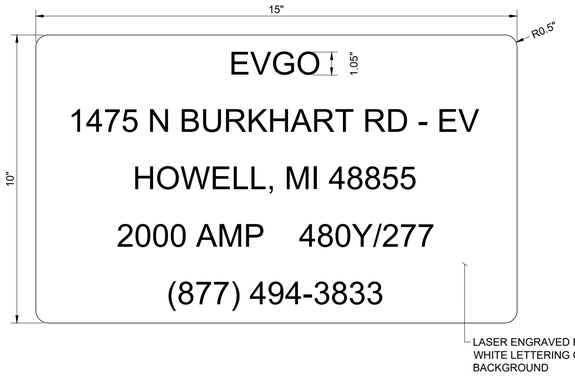
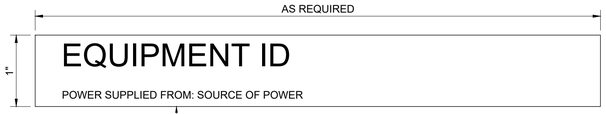


NOTE:
PLACE LABEL IN A VISIBLE LOCATION: SWITCHBOARD (METER COMPARTMENT) OR SERVICE DISCONNECT

METER LABEL | SCALE N.T.S. | 1

NOTES:
1. PLACE LABEL IN A VISIBLE LOCATION: SWITCHGEAR
2. RED BACKGROUND, WHITE LETTERING
3. TEXT: MIN. 3/8" AND 1/8" HEIGHT, ALL CAPITAL LETTERS ARIAL OR SIMILAR FONT, NON-BOLD
4. MATERIAL NOTE: ENGRAVED ON OUTDOOR-RATED PLASTIC LAMINATE WITH ADHESIVE BACKING SUITABLE FOR THE ENVIRONMENT
5. APPLICABLE NEC SECTIONS: NEC 110.22

MAIN CIRCUIT BREAKER LABEL | SCALE N.T.S. | 2



ALL SWITCHBOARDS AND PANELBOARDS SUPPLIED BY A FEEDER SHALL BE MARKED TO INDICATE THE NAME OF THE EQUIPMENT AND SOURCE OF SUPPLY.

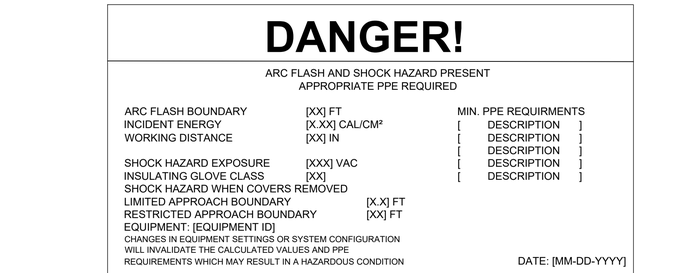
REFER TO SINGLE LINE DIAGRAM FOR IDENTIFICATION OF ALL EQUIPMENT AND ASSOCIATED SOURCE OF SUPPLY.

NOTES:
1. PLACE LABEL ON FRONT OF EQUIPMENT IN VISIBLE LOCATION: EV CHARGER CABINETS, SWITCHBOARDS, PANELS, AND METERING ENCLOSURES
2. BLACK BACKGROUND, WHITE LETTERING
3. TEXT: MIN. 1/2" HEIGHT, ALL CAPITAL LETTERS ARIAL OR SIMILAR FONT, NON-BOLD
4. MATERIAL NOTE: ENGRAVED ON OUTDOOR-RATED PLASTIC LAMINATE WITH ADHESIVE BACKING SUITABLE FOR THE ENVIRONMENT
5. APPLICABLE NEC SECTIONS: NEC 408.4(B)

EQUIPMENT IDENTIFICATION LABEL | SCALE N.T.S. | 3

NOTES:
1. PLACE LABEL IN A VISIBLE LOCATION: SWITCHGEAR
2. RED BACKGROUND, WHITE LETTERING
3. TEXT: ALL CAPITAL LETTERS ARIAL OR SIMILAR FONT, NON-BOLD
4. MATERIAL NOTE: ENGRAVED ON OUTDOOR-RATED PLASTIC LAMINATE WITH ADHESIVE BACKING SUITABLE FOR THE ENVIRONMENT
5. APPLICABLE NEC SECTIONS: NEC 110.19

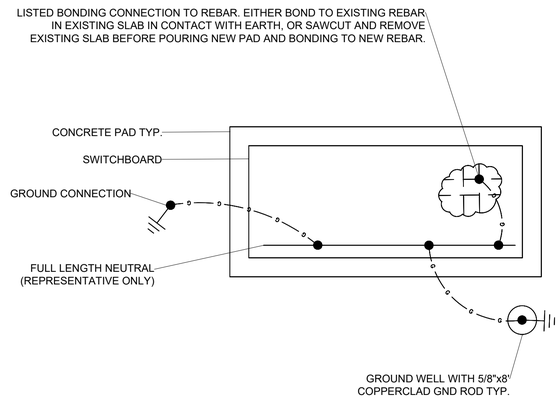
AVAILABLE FAULT CURRENT LABEL | SCALE N.T.S. | 4



NOTES:
1. TYPICAL LABEL SHOWN, ARC FLASH LABELS TO BE PROVIDED FOR ALL ELECTRICAL EQUIPMENT INCLUDING, SWITCHGEAR, PANELBOARDS, AND CHARGING CABINETS.
2. 4"X4" LABEL MAY BE USED AS AN ALTERNATE.
3. "WARNING" HEADING FOR INCIDENT ENERGY < 40 CAL/CM²
"DANGER" HEADING FOR INCIDENT ENERGY > 40CAL/CM²
4. VALUES IN BRACKETS WILL BE UPDATED ACCORDING TO THE RESULTS OF THE ARC FLASH HAZARD ANALYSIS.
5. PLACE LABEL ON EQUIPMENT DESIGNATED IN THE ARC FLASH HAZARD ANALYSIS.
6. LABELS SHALL BE PROVIDED IN PDF FORMAT TO CONTRACTOR.
7. MATERIAL: WEATHER AND UV RESISTANT VINYL WITH DURABLE ADHESIVE SUITABLE FOR THE ENVIRONMENT.
8. APPLICABLE NEC SECTIONS: NEC 110.16.
9. LABELS TO BE APPLIED IN ACCORDANCE WITH EVGO ARC FLASH LABEL PLACEMENT STANDARD.

ARC FLASH HAZARD LABEL | SCALE N.T.S. | 5

NOT USED | SCALE N.T.S. | 6



NOTES:
1. SWITCHBOARD GROUNDING DIAGRAM IS REPRESENTATIVE ONLY TO SHOW GROUNDING CONNECTION POINTS.
2. SEE SWITCHBOARD DRAWINGS FOR SWITCHBOARD DIMENSIONS, SPECIFICATIONS, AND SCHEDULES.

SWITCHBOARD GROUNDING DIAGRAM | SCALE N.T.S. | 7

NOT USED | SCALE N.T.S. | 8

NOT USED | SCALE N.T.S. | 9

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Specifications - Power Cabinet

Part Number	Delta 350kW Power Cabinet: EIDN-U350KTA01
Power Input	
Input Rating	480 Vac Three phase (L1,L2,L3) , 60Hz
Input Current	447A
Input Power	369kW
Power Factor	> 0.99
Current THD	< 5%
SCCR	65kA
Power Output	
Output Voltage	150~950Vdc
DC Output Current	Each set of terminal: 540 max, Total 2 sets: 1080A max
Max Power	350kW
Efficiency	≥ 95% @400Vdc, full load; (Peak 95.5%)
Protection	
Protection	Over current, Under voltage, Over voltage, Surge protection, Short circuit, Over temperature, Ground fault
Input / Output	Input AC Breaker: 600A-3P / Output DC Relay: 750A x2
Environmental	
Operating Temperature	22°F to +122°F (-30°C to +50°C)
Storage Temperature	-40°F to -176°F (-40°C to +80°C)
Humidity	< 95% relative humidity, non-condensing
Altitude	6,500 ft. (2,000 m)
EMC	FCC Part 15-b Class A
Mechanical	
Ingress Protection	IP55 / NEMA 3R
Enclosure Protection	IK10
Cooling	Force Air
Dimension (W x H x D)	39.3 × 78.7 × 31.4 inch (1000 × 2000 × 800 mm)
Equipment Weight	1433lb (650 kg)
Regulation	
Certification	UL 2202, CSA C22.2 No. 107.1-16

Specification - System

	Dispenser and 350kW Power Cabinet
System Configuration	1 Cabinet, 1 Dispenser
System Description	480V input voltage 350kW DC EVSE unit with dynamic power sharing capability between two liquid cooled CCS1 or NACS connectors with maxium 540A.
Standby Power	185W
Certifying Agency	cCSAus certified
Applicable Standards	UL 2202, UL 2231-1, UL 2231-2
Applicable Standards - more	IEC 61851-1, IEC 61851-23, IEC 62196-3, IEC-62196-3-1, IEC 61000-6-3 EMC, Class B, FCC Part 15 , (ISO 15118), DIN 70121, DIN 70122, SAE J1772, SAE J2953/2, CCS-1, SAE J3400, CharIN compliance (upon availability), EV Cable: UL 2251, UL50E, CSA C22.2 No 182.2

More information

Delta Electronics (Americas) Ltd.
46101 Fremont Boulevard Fremont, CA94538, U.S.A
TEL：+1 510 668 5100
E-mail：evcs@deltaww.com

www.deltaww.com

Delta Electronics Inc.
16 Tungyuan Road, Chungli Industrial Zone, Taoyuan City 32063, Taiwan
TEL：+886 3 4526107

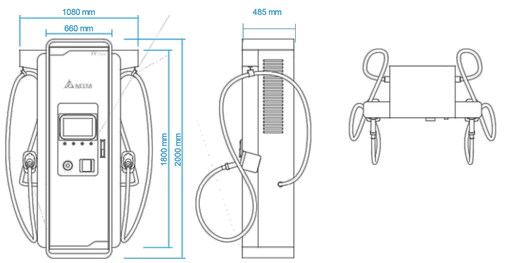
2026/01

Specifications - Dispenser

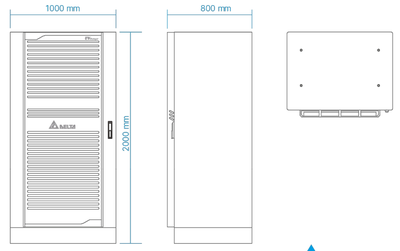
Part Number	Delta Dispenser: EIDD-U350SSUUAEG
Power Input	
Input Rating	120Vac, 1-Phase, 60Hz
Input current	8.9A
Input breaker	20A breaker
Power Output	
Max Voltage rating	150-950 Vdc
Output Interface	CCS1 or NACS
DC Output Current	max. 500A
Protection	
Protection	Over current, Under voltage, Over voltage, Surge protection, Short circuit, Over temperature, Ground fault
User Interface & Control	
Display	15 inch LCD Panel
Support Language	English (Other languages available upon request)
Push Buttons	4 Buttons for HMI
User Authentication	Payment: Integrated credit card reader
Charge option	Simultaneous charging with equal distribution charging
Communication	
Network Interface	Ethernet, Cellular (Option)
Protocol	OCPP v1.6J, upgradable to OCPP v2.0
Environmental	
Operating Temperature	Operating at 22°F to +122°F (-30°C to +50°C); De-rating: 540A@30°C/432A@50°C (1 of guns)
Storage Temperature	-40°F to +176°F (-40°C to +80°C)
Humidity	< 95% relative humidity, non-condensing
Altitude	6,500 ft. (2,000 m)
Mechanical	
Ingress Protection	IP55 / NEMA 3R
Enclosure Protection	IK10
Cooling	Forced air
Charging Cable Length	14.76 ft. (4.5m)
Dimension (W x H x D)	42.5× 78.7× 19.1inch (1080 × 2000× 485 mm)
Weight	706 lb (320 kg)
Regulation	
Certification	UL 2202, UL 2231
Installation	
Cable Management	Weight based retractor

Dimension and weight excluding plug and connector. Specifications are subject to change without notice.

Dispenser



Power Cabinet



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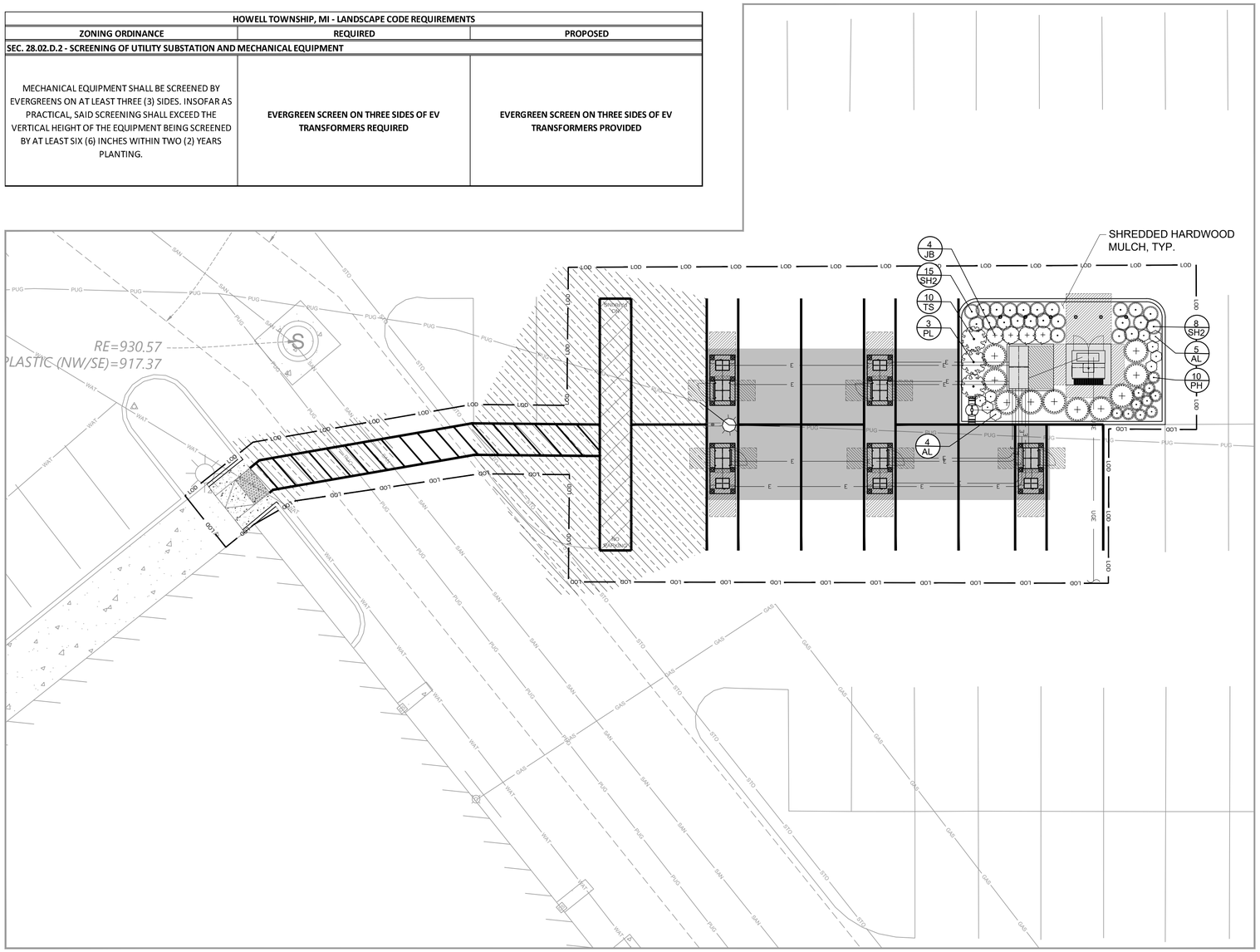
HOWELL TOWNSHIP, MI - LANDSCAPE CODE REQUIREMENTS		
ZONING ORDINANCE	**REQUIRED**	**PROPOSED**
SEC. 28.02.D.2 - SCREENING OF UTILITY SUBSTATION AND MECHANICAL EQUIPMENT		
MECHANICAL EQUIPMENT SHALL BE SCREENED BY EVERGREENS ON AT LEAST THREE (3) SIDES. INSOFAR AS PRACTICAL, SAID SCREENING SHALL EXCEED THE VERTICAL HEIGHT OF THE EQUIPMENT BEING SCREENED BY AT LEAST SIX (6) INCHES WITHIN TWO (2) YEARS PLANTING.	**EVERGREEN SCREEN ON THREE SIDES OF EV TRANSFORMERS REQUIRED**	**EVERGREEN SCREEN ON THREE SIDES OF EV TRANSFORMERS PROVIDED**



PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	CONT	SPACING	SIZE
SHRUBS						
	AL	9	ARONIA MELANOCARPA 'UCONNAM165' LOW SCAPE MOUND® BLACK CHOKEBERRY	-	SEE PLAN	6" HT. MIN.
	PL	3	PHYSOCARPUS OPULIFOLIUS 'LITTLE DEVIL' LITTLE DEVIL™ DWARF NINEBARK	-	SEE PLAN	24" HT. MIN.
EVERGREEN SHRUBS						
	JB	4	JUNIPERUS SCOPULORUM 'BLUE ARROW' BLUE ARROW JUNIPER	B & B	SEE PLAN	6` HT. MIN.
	TS	10	THUJA OCCIDENTALIS 'SMARAGD' EMERALD GREEN ARBORVITAE	B & B	SEE PLAN	6` HT. MIN.
ORNAMENTAL GRASSES						
	PH	10	PANICUM VIRGATUM 'HEAVY METAL' HEAVY METAL SWITCH GRASS	2 GAL.	SEE PLAN	
	SH2	23	SPOROBOLUS HETEROLEPIS PRAIRIE DROPSEED	2 GAL.	SEE PLAN	

SYMBOL	BOTANICAL / COMMON NAME
GROUND COVERS	
	TURF SEED

NOTE: CONTRACTOR TO INSTALL A FULLY AUTOMATIC IRRIGATION SYSTEM FOR ALL NEW LANDSCAPE AREAS. NEW IRRIGATION SYSTEM WILL BE COORDINATED WITH THE EXISTING IRRIGATION SYSTEM. ANYTHING NOT COVERED BY PERMANENT IRRIGATION, CONTRACTOR SHALL PROVIDE TEMPORARY WATERING TO ENSURE ESTABLISHMENT.

GRAPHIC SCALE IN FEET
0 5 10 20
SCALE: 1" = 10'
WHEN PRINTED AT FULL SIZE
(22"x34")

NORTH

EVgo
FAST CHARGING
EVGO
1661 E FRANKLIN AVE
EL SEGUNDO, CA 90245

Kimley»Horn
of Michigan, Inc.
3000 TOWN CENTER SUITE 2600,
SOUTHFIELD, MI 48075
Main: (313) 572-1560 | www.kimley-horn.com

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EV INFRASTRUCTURE PLAN
1475 N BURKHART ROAD - EV
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STATE OF MICHIGAN
AMANDA M. McABEE
LANDSCAPE ARCHITECT
REGISTERED LANDSCAPE ARCHITECT

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CHECKED BY:	RS
KHA PROJECT No.	017777049
DOCUMENT DATE:	JANUARY 13, 2026

SHEET TITLE
LANDSCAPE PLAN

SHEET NUMBER
L1.0

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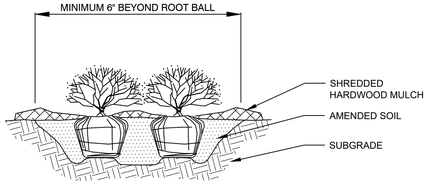
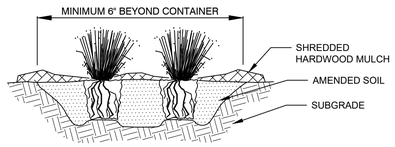


NOTES:

1. APPLY CORRECTIVE PRUNING.
2. SET ROOT BALL OR CONTAINER ON UNEXCAVATED OR TAMPED SOIL. TOP OF ROOTBALL (CONTAINER) SHALL BE ONE INCH ABOVE SURROUNDING GRADE. FOR LARGER SHRUBS WITHIN PLANTING BED DIG A DEEPER PIT ONLY FOR THOSE SHRUBS.
3. REMOVE BURLAP FROM TOP HALF THE LENGTH OF ROOTBALL. TWINE AND (IF USED) SYNTHETIC MATERIAL SHALL BE REMOVED FROM PLANTING BED. FOR CONTAINER GROWN SHRUBS, REMOVE CONTAINER AND LOOSEN ROOTS PRIOR TO INSTALLATION.
4. REMOVE OR CORRECT GIRDLING ROOTS.
5. PLUMB AND BACKFILL WITH AMENDED SOIL PER LANDSCAPE NOTES. WATER THOROUGHLY WITHIN TWO HOURS.
6. APPLY MULCH IN EVEN LAYER, KEEPING AWAY FROM ROOT FLARE. MULCH LIMITS FOR SHRUBS EXTEND TO ALL LIMITS OF PLANTING BED, SEE PLANS FOR BED LAYOUTS.

1 SHRUB PLANTING

NTS



NOTES:

1. APPLY CORRECTIVE PRUNING.
2. SET ROOT BALL OR CONTAINER ON UNEXCAVATED OR TAMPED SOIL. TOP OF CONTAINER SHALL BE ONE INCH ABOVE SURROUNDING GRADE.
3. SYNTHETIC MATERIAL SHALL BE REMOVED FROM PLANTING BED. FOR CONTAINER GROWN GRASSES, REMOVE CONTAINER AND LOOSEN ROOTS PRIOR TO INSTALLATION.
4. REMOVE OR CORRECT GIRDLING ROOTS.
5. PLUMB AND BACKFILL WITH AMENDED SOIL PER LANDSCAPE NOTES. WATER THOROUGHLY WITHIN TWO HOURS.
6. APPLY MULCH IN EVEN LAYER, KEEPING AWAY FROM ROOT FLARE. MULCH LIMITS FOR GRASS EXTEND TO ALL LIMITS OF PLANTING BED, SEE PLANS FOR BED LAYOUTS.

2 ORNAMENTAL GRASS PLANTING

NTS

1. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING MATERIALS AND PLANTS SHOWN ON THE LANDSCAPE PLAN. THE CONTRACTOR IS RESPONSIBLE FOR THE COST TO REPAIR UTILITIES, ADJACENT LANDSCAPE, PUBLIC AND PRIVATE PROPERTY THAT IS DAMAGED BY THE CONTRACTOR OR THEIR SUBCONTRACTOR'S OPERATIONS DURING INSTALLATION OR DURING THE SPECIFIED MAINTENANCE PERIOD. CALL FOR UTILITY LOCATIONS PRIOR TO ANY EXCAVATION.
2. THE CONTRACTOR SHALL REPORT ANY DISCREPANCY IN PLAN VS. FIELD CONDITIONS IMMEDIATELY TO THE LANDSCAPE ARCHITECT, PRIOR TO CONTINUING WITH THAT PORTION OF WORK.
3. NO PLANTING WILL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY OF THEIR TRENCHES OR EXCAVATIONS THAT SETTLE.
5. ALL PLANTS TO BE SPECIMEN GRADE, WELL BRANCHED, HEALTHY, FULL, PRE-INOCULATED AND FERTILIZED. PLANTS SHALL BE FREE FROM DISEASE, PESTS, WOUNDS, AND SCARS. PLANTS SHALL BE FREE FROM NOTICEABLE GAPS, HOLES, OR DEFORMITIES. PLANTS SHALL BE FREE FROM BROKEN OR DEAD BRANCHES. TRUNKS WILL BE WRAPPED IF NECESSARY TO PREVENT SUN SCALD AND INSECT DAMAGE. THE LANDSCAPE CONTRACTOR SHALL REMOVE THE WRAP AT THE PROPER TIME AS PART OF THIS CONTRACT.
6. THE OWNER'S REPRESENTATIVE MAY REJECT ANY PLANT MATERIALS THAT ARE DISEASED, DEFORMED, OR OTHERWISE NOT EXHIBITING SUPERIOR QUALITY.
7. ALL NURSERY STOCK SHALL BE GUARANTEED, BY THE CONTRACTOR, FOR ONE YEAR FROM DATE OF FINAL INSPECTION. THE GUARANTEE BEGINS ON THE DATE OF THE LANDSCAPE ARCHITECT'S OR OWNERS WRITTEN ACCEPTANCE OF THE INITIAL PLANTING. REPLACEMENT PLANT MATERIAL SHALL HAVE A ONE YEAR GUARANTEE COMMENCING UPON PLANTING.
8. PLANTS TO MEET AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1-2014 OR MOST CURRENT VERSION) REQUIREMENTS FOR SIZE AND TYPE SPECIFIED.
9. PRUNE PLANTS AS NECESSARY- PER STANDARD NURSERY PRACTICE AND TO CORRECT POOR BRANCHING OF EXISTING AND PROPOSED TREES.
10. TOPSOIL SHALL BE PROVIDED AND GRADED BY THE GENERAL CONTRACTOR UP TO 6 INCHES BELOW FINISHED GRADE IN TURF AREAS AND 18 INCHES IN PLANTING AREAS.
11. PLANTING AREA TOPSOIL SHALL BE AMENDED WITH 25% SPHAGNUM PEATMOSS, 5% HUMUS AND 70% PULVERIZED SOIL FOR ALL NON TURF SEED MIX AREAS, SHRUB, ORNAMENTAL GRASS, PERENNIAL AND ANNUAL BEDS.
12. SEED/SOD LIMIT LINES ARE APPROXIMATE. CONTRACTOR SHALL SEED/SOD ALL AREAS WHICH ARE DISTURBED BY GRADING WITH THE SPECIFIED SEED/SOD MIXES.
13. EDGING TO BE A SPADED EDGE UNLESS INDICATED OTHERWISE ON THE PLANS. SPADED EDGE TO PROVIDE V-SHAPED DEPTH AND WIDTH TO CREATE SEPARATION BETWEEN MULCH AND GRASS. A SPADED BED EDGE SHALL SEPARATE MULCH BEDS FROM TURF OR SEEDED AREAS. A SPADED EDGE IS NOT REQUIRED ALONG CURBED EDGES.
14. CONTRACTOR SHALL INSTALL SHREDDED HARDWOOD MULCH AT A 6" DEPTH TO ALL TREES, SHRUB, PERENNIAL, AND GROUNDCOVER AREAS. TREES PLACED IN AREA COVERED BY TURF SHALL RECEIVE A 4 FT WIDE MAXIMUM TREE RING WITH 6" DEPTH SHREDDED HARDWOOD MULCH.
15. INSTALLATION OF TREES WITHIN PARKWAYS SHALL BE COORDINATED IN THE FIELD WITH LOCATIONS OF UNDERGROUND UTILITIES. TREES SHALL NOT BE LOCATED CLOSER THAN 5' FROM UNDERGROUND UTILITY LINES AND NO CLOSER THAN 10' FROM UTILITY STRUCTURES.
16. DO NOT DISTURB THE EXISTING PAVING, LIGHTING, OR LANDSCAPING THAT EXISTS ADJACENT TO THE SITE UNLESS OTHERWISE NOTED ON PLAN.
17. ALL DISTURBED AREAS TO BE SODDED OR SEEDED, UNLESS OTHERWISE NOTED. SOD/SEED SHALL BE LOCAL HARDY TURF GRASS MIX UNLESS, OTHERWISE NOTED.
18. PLANT QUANTITIES SHOWN ARE FOR THE CONVENIENCE OF THE OWNER AND JURISDICTIONAL REVIEW AGENCIES. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL PLANT QUANTITIES AS DRAWN.
19. THE CONTINUED MAINTENANCE OF ALL REQUIRED LANDSCAPING SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY ON WHICH SAID MATERIALS ARE REQUIRED. ALL PLANT MATERIALS REQUIRED BY THIS SECTION SHALL BE MAINTAINED AS LIVING VEGETATION AND SHALL BE PROMPTLY REPLACED IF THE PLANT MATERIAL HAS DIED PRIOR TO FINAL ACCEPTANCE. PLANTING AREAS SHALL BE KEPT FREE OF TRASH, LITTER, AND WEEDS AT ALL TIMES.

3 LANDSCAPE NOTES

NTS

EVgo
FAST CHARGING
EVGO
1661 E FRANKLIN AVE
EL SEGUNDO, CA 90245

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EV INFRASTRUCTURE PLAN
1475 N BURKHART ROAD - EV
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STATE OF MICHIGAN
AMANDA M. McABEE
LANDSCAPE ARCHITECT
No. 3901047957
REGISTERED LANDSCAPE ARCHITECT

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DRAWN BY:	GHH
CHECKED BY:	RS
KHA PROJECT No.	017777049
DOCUMENT DATE:	JANUARY 13, 2026

SHEET TITLE

LANDSCAPE NOTES & DETAILS

SHEET NUMBER

L1.1

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Carlisle | Wortman
ASSOCIATES, INC.
117 NORTH FIRST STREET SUITE 70 ANN ARBOR, MI 48104 734.662.2200 734.662.1935 FAX

Date: March 10, 2026

Site Plan Amendment
For
Howell Township, Michigan

Applicant: Chris Locke

Project Name: EV GO – Kensington Valley Outlets

Plan Date: February 24, 2026

Location: 1475 N Burkhart Road
(Parcel #406-29-400-008)

Zoning: Regional Service Commercial (RSC)

Action Requested: Approval of Site Plan Amendment

PROJECT AND SITE DESCRIPTION

The applicant has submitted a request to amend the previously approved site plan for *Kensington Valley Outlets*, a 304,000 square foot shopping mall, built in 1996 in the RSC – Regional Service Commercial Zoning District off of I-96 and North Burkhart Road.

At the December 16, 2025, Planning Commission meeting, the Planning Commission approved the applicant's requests to redesign 16 standard parking stalls into 10 standard electric vehicle charging stalls of which 2 will be ADA accessible that would create a total loss of 6 parking spaces. Additional information on the layout of the parking stalls can be found on Sheet C3.0.

The applicant would like to change the location of the EV charging stations to the west of the building at the corner of North Burkhart and Parsons Roads shown on the following page in red:

Benjamin R. Carlisle, *President* John L. Enos, *Vice President* Douglas J. Lewan, *Principal*
David Scurto, *Principal* Sally M. Elmiger, *Principal* R. Donald Wortman, *Principal* Craig Strong, *Principal*
Paul Montagno, *Principal* Megan Masson-Minock, *Principal* Laura Kreps, *Principal*
Richard K. Carlisle, *Past President/Senior Principal*

Figure 1. Aerial Image of Subject Site and Vicinity

Source: Near Map, September 2025

Changes and relocation of parking areas are considered to be a major change for an amended site plan according to Section 20.10. The Planning Commission shall review the amendment to the site plan and determine if it will have an impact on the amount of parking at Kensington Valley Outlets.

Items to be Addressed: *None.*

NATURAL FEATURES

The area of the proposed site plan amendment is already developed. There are no significant natural features.

Items to be Addressed: *None.*

AREA, WIDTH, HEIGHT, SETBACKS

There are no proposed changes that would affect the area, width, height, and setbacks.

Items to be Addressed: *None.*

SITE ACCESS AND CIRCULATION

The EV Go charging spaces will be accessed by the first curb cut on the left from Parsons Road. There are no proposed changes to the aisles to get to the charging stations or other parking

spaces within the area of the site. The current drive aisles are 22.9 feet wide. The parking lot is paved with asphalt and appears to be in good condition.

There will be a crosswalk that connects the charging stations to the existing sidewalk north of the building as shown on Sheet C3.0.

Items to be Addressed: *None.*

PARKING, LOADING

It is unclear if the applicant will redesign seventeen (17) spaces as shown on Sheet C3.0 or sixteen (16) spaces as written in the application into ten (10) electric vehicle charging stations. Two (2) of the EV charging spaces are proposed to be barrier free. The size of the proposed parking spaces meets the requirements of the Zoning Ordinance.

Items to be Addressed: *The applicant shall specify if seventeen (17) spaces will be redesigned, or sixteen (16) spaces.*

MECHANICAL EQUIPMENT

The applicant is proposing a 20 feet by 32.9 feet raised area to the northeast of the parking spaces that will contain an equipment pad, utility transformer pad, utility bollards, an equipment clearance area, landscaping, and concrete curb that will be of standard height. Additional details on the components can be found on Sheet C5.0, C5.1, C5.2, and C5.3.

Items to be Addressed: *None.*

LANDSCAPING

Landscape Plans are provided on Sheets L1.0 and L1.1. The site has a considerable amount of landscaping that already exists. There is mechanical equipment that needs to be screened in accordance with Section 28.02.D.2 which requires evergreens on three (3) sides.

The applicant proposes screening the mechanical equipment with the following: nine (9) Black Chokeberries, three (3) Little Devil Dwarf Ninebarks, four (4) Blue Arrow Junipers, ten (10) Emerald Green Arborvitaes, ten (10) Heavy Metal Switch Grasses, and twenty-three (23) Prairie Dropseeds.

The Planning Commission shall determine if this is a sufficient amount of screening for the mechanical equipment.

Items to be Addressed: *The Planning Commission shall determine if the proposed landscaping is sufficient enough to screen the mechanical equipment.*

LIGHTING

The applicant proposes relocating an existing light pole closer to the barrier free parking spaces as shown on Sheet C3.0. The applicant proposes an additional light post in the southwest corner of the raised concrete area. Additional information on the new light pole can be found on Sheet C5.3. There are no concerns with the existing and new light pole.

Items to be Addressed: *None.*

SIGNS

The applicant is proposing a van accessible EV sign and signpost. More information on the sign can be found in Drawings 3 and 6 on Sheet C5.1. The applicant did not provide the height of the signpost.

Any sign will require approval and permit from the zoning Administrator. The applicant can provide these details when a sign permit is applied for on a later date.

Items to be Addressed: *None.*

TRASH ENCLOSURE

There are no proposed changes to the trash enclosure.

Items to be Addressed: *None.*

FLOOR PLAN & BUILDING ELEVATIONS

There are no proposed changes to the building elevations or floor plans.

Items to be Addressed: *None.*

RECOMMENDATIONS

We recommend the Planning Commission consider the following prior to making a determination.

1. The applicant shall specify if seventeen (17) spaces will be redesigned, or sixteen (16) spaces.
2. The Planning Commission shall determine if the proposed landscaping is sufficient enough to screen the mechanical equipment.

From a zoning compliance perspective, the amendment will not have a major impact on the amount of parking spaces, however the size of the parking spaces and the landscaping shall meet the standards of the Zoning Ordinance.

We look forward to discussing this at your upcoming Planning Commission meeting.

CARLISLE/WORTMAN ASSOC., INC.
Paul Montagno, AICP
Principal

Brady Heath

CARLISLE/WORTMAN ASSOC., INC.
Brady Heath
Community Planner

#PC-2025-23
cc: Joanathan Hohenstein, Township Zoning Administrator

HOWELL TOWNSHIP

Application for Site Plan Review

3525 Byron Road Howell, MI 48855
Phone: 517-546-2817 ext. 108
Email: inspector@howelltownshipmi.org

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Date 3.5.26

File #_____

Applicant Name Kaitlyn Showich Happiness Crystals Co

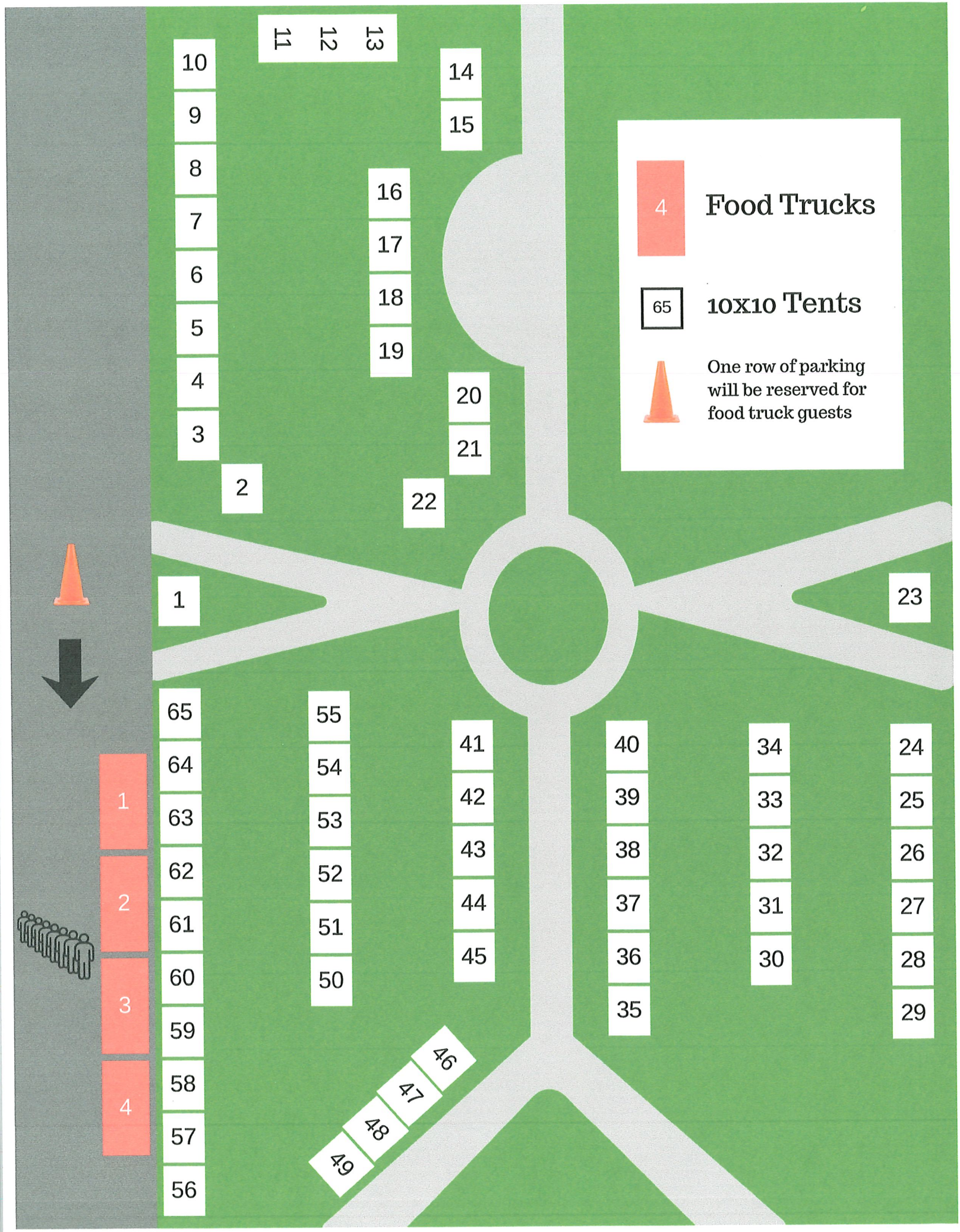
Parcel ID # 4706-29-400-008

Location of Property 1475 N. Burkhart Rd Howell MI 48855 Current Zoning Classification 201 Commercial

Existing Use Shopping Mall Proposed Use Craft Shows

Check One:

- [ ] Preliminary Site Plan Review (20.06)
- [ ] Final Site Plan Review (20.07)
- [x] Temporary Use (14.25)
- [ ] Commercial/Industrial Development
- [ ] Subdivision/Site Plan Condo
- [ ] Multi-Family/Condo
- [ ] Planned Unit Development (PUD) Type: 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]


4 Food Trucks
65 10x10 Tents
One row of parking will be reserved for food truck guests
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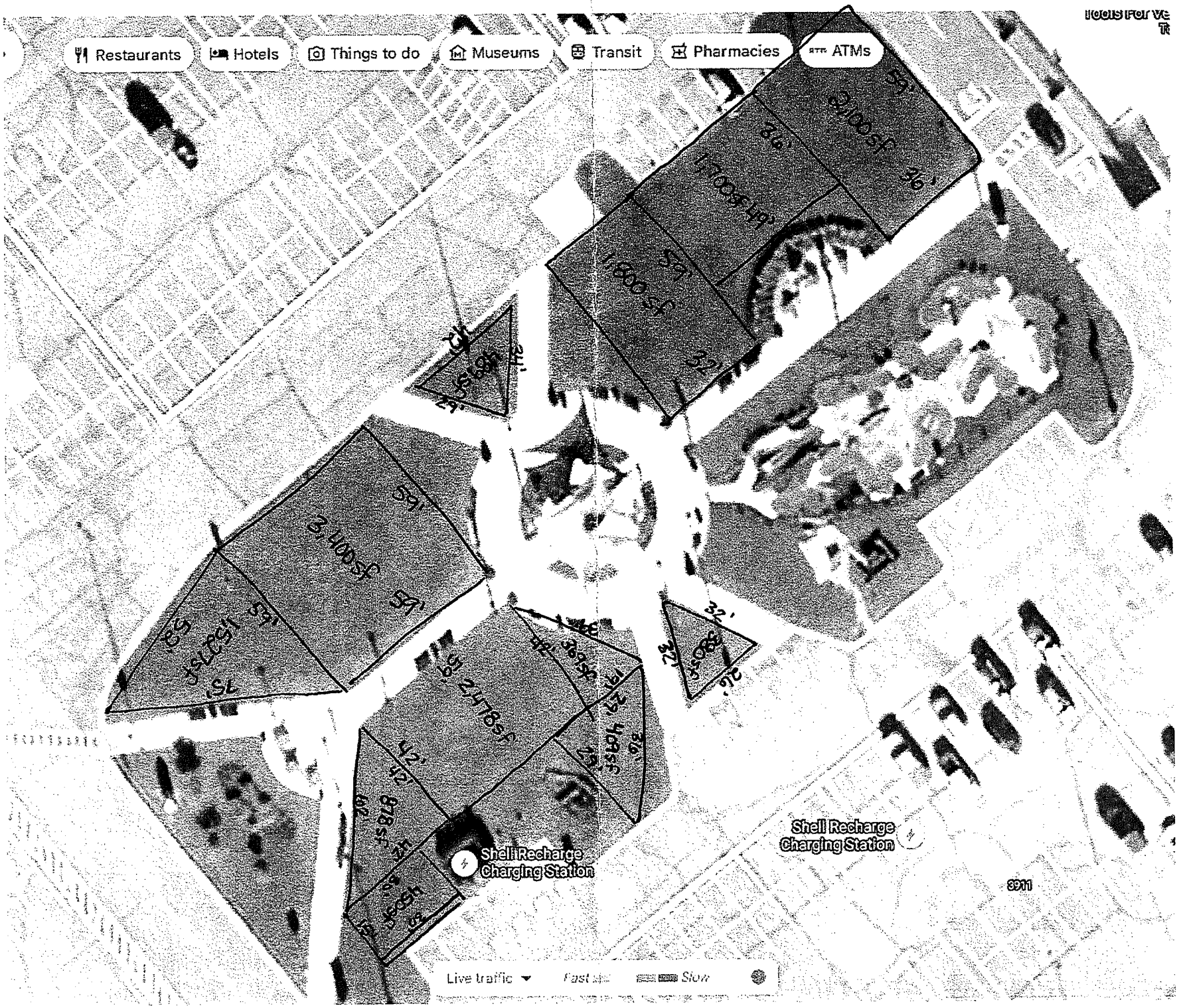
Restaurants
Hotels
Things to do
Museums
Transit
Pharmacies
ATMs
Shell Recharge Charging Station
Shell Recharge Charging Station
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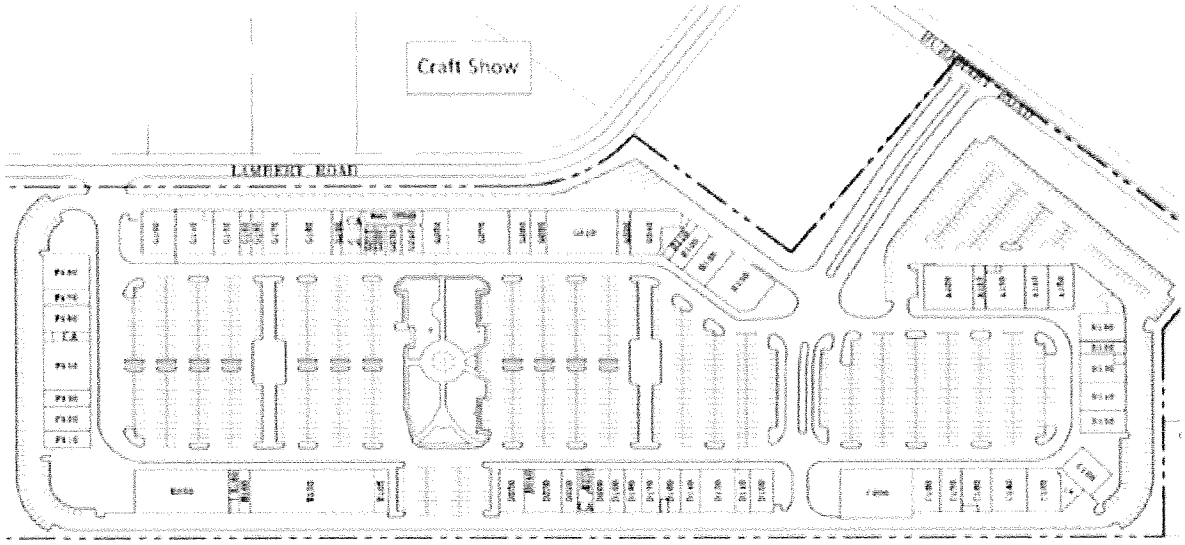
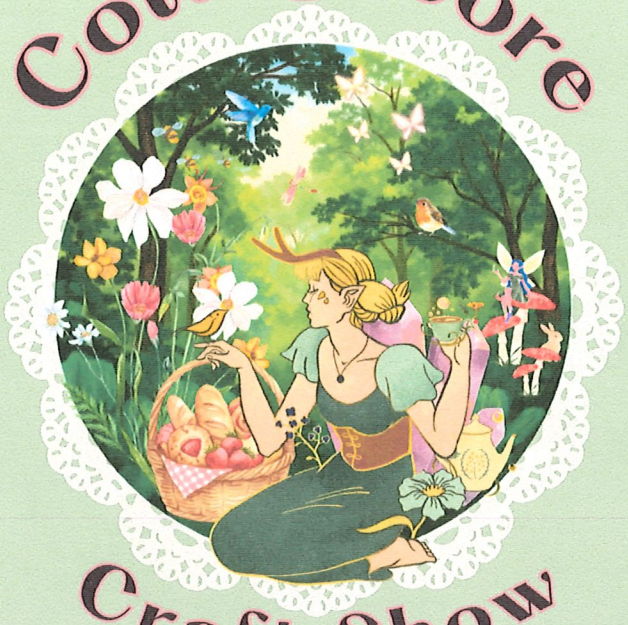
Live traffic
Slow



- Location: Kensington Valley Outlet | 1475 N Burkhard Rd., Howell, MI 48189
    - Center Court Area
- Vendors
    - Up to 65 10x10 tents
    - Up to 4 food trucks
- Craft Show Dates
    - May 30 & 31
    - August 29 & 30
    - September 26 & 27
    - October 24 & 25
- Set Up
    - 1 day before event
- Take Down
    - Last day of event

Cottagecore Craft Show



Vintage ❁ Whimsical ❁ Cozy

May 30 | 11–5PM
May 31 | 11–4PM

Color Pop Craft Show

Playful * Nostalgic * Happy * Colorful

August 29 | 11-5 PM
August 30 | 11-4 PM

MAKE SURE YOU DON'T MISS OUT ON THE FUN!
Scan to save these craft shows on your Facebook & be a part of supporting local artists!

Kensington Valley Outlet Mall
1475 N Burkhart Rd, Howell, MI 48855
Free Entry
ORGANIZED BY HAPPINESS CRYSTALS CO

Boho Craft Show

September 26 | 11-5PM
September 27 | 11-4PM

Witchy Craft Show

October 24 | 11-5PM
October 25 | 11-4PM

Want to be a vendor? Email Kaitlyn at Happinesscrystalsco@gmail.com for details.

Carlisle | Wortman
ASSOCIATES, INC.
117 NORTH FIRST STREET SUITE 70 ANN ARBOR, MI 48104 734.662.2200 734.662.1935 FAX

Date: March 17, 2026

Temporary Site Plan Review
For
Howell Township, Michigan

GENERAL INFORMATION

Applicant:	Kaitlyn Showich Happiness Crystals Company
Application Date:	March 17, 2026
Location:	1475 N Burkhart Road
Zoning:	RSC – Regional Service Commercial
Action Requested:	Temporary Site Plan approval
Required Information:	Deficiencies are noted in the following sections of this review.

PROJECT AND SITE DESCRIPTION

The applicant is seeking a temporary use permit to install exterior tents for a craft show in the Center Court area in the Kensington Valley Outlets Mall, which is located on North Burkhart Road north of W I-96.

The applicant proposes four (4) craft show dates that include the following:

- May 30th and 31st
- August 29th and 30th
- September 26th and 27th
- October 24th and 25th

The applicant did not provide the time that the events will be open. Each event will have up to sixty-five (65) ten (10) by ten (10) foot tents, and up to four (4) food trucks. The set up for the event will happen one (1) day before the event and clean up will occur on the last day of the

Benjamin R. Carlisle, *President* John L. Enos, *Vice President* Douglas J. Lewan, *Principal*
David Scurto, *Principal* Sally M. Elmiger, *Principal* R. Donald Wortman, *Principal* Craig Strong, *Principal*
Paul Montagno, *Principal* Megan Masson-Minock, *Principal* Laura Kreps, *Principal*
Richard K. Carlisle, *Past President/Senior Principal*

event. An aerial of the site is provided in Figure 1 below. The site is outlined in yellow and the area where the proposed event will take place is blue.

Figure 1. Aerial Image of Subject Site and Vicinity

Items to be Addressed: *None.*

PARKING AND CIRCULATION

A site plan has been provided on Page 5 of the application. The applicant proposes using a row of parking spaces in the northwest corner for the food trucks. The proposed food truck location appears to be located in the drive isle along the north side of the center court area. A note indicates that "one row of parking will be reserved for food truck guests. If the entire drive aisle is to be blocked off for food trucks, it would be appropriate to block off the parking stalls that are accessed from that drive aisle, however it is hard to tell from the drawing the exact plan. The applicant should provide a clearer plan demonstrating which areas are to be blocked off and what barriers will be used to secure the perimeter of the area.

It doesn't appear that the reduction in parking for this activity will detrimentally reduce the parking in the area based on the currently demonstrated needs for the shopping center. The barrier free parking spaces at the end of the parking bays should be maintained.
We would recommend blocking off the area as depicted in the aerial photo below:

Items to be Addressed:
1) The applicant should provide a clearer plan demonstrating which areas are to be blocked off.
2) The applicant must indicate what barriers will be used to secure the perimeter of the food truck area..

SIGNS

It appears there will be a sign or flyer indicated on Page 8 of the application. The applicant needs to specify if this will be a sign at the event, a flyer to advertise the event, or both. If there is a sign, then the applicant shall comply with Article 19 in the Zoning Ordinance, and a separate sign permit shall be obtained from the Township.

Items to be Addressed:

1) *The applicant shall specify if Page 8 will be a sign at the event, a flyer to advertise the event, or both.*
2) *A separate sign permit shall be obtained from the Township Zoning Administrator, if signs are proposed.*

TEMPORARY USE

The applicant is seeking a temporary use permit as outlined in Section 14.25 of the Ordinance. Temporary uses are permitted in any district, provided that the Planning Commission determines the following to be true:

- *The location of such uses and their related activities will not adversely affect public health, safety, morals, and general welfare in the district in which it is to be temporarily located.*

  The applicant must provide a plan for the location of waste receptacles and any temporary bathroom facilities proposed for the event. Approval for the proposed food truck court should be provided by the County Health Department.

- *All temporary uses shall have a reasonable time limit placed upon their use based upon the normal periods of time such uses need to exist for their expressed purpose. The time limit shall be expressed in calendar dates for the number of days authorized by the Planning Commission.*

  The applicant has provided the weekends that each event will be operating but has not provided the hours of operation.

- *Temporary uses may be granted on the basis of compliance with the criteria stated in Section 20.08 (Criteria for Site Plan Review).*

Items to Be Addressed:

1) *The applicant must provide a plan for the location of waste receptacles and any temporary bathroom facilities proposed for the event.*
2) *Approval for the proposed food truck court should be provided by the County Health Department.*
3) *The applicant shall provide the hours of operation for the Planning Commission to consider.*
4) *Planning Commission should review the above criteria with the applicant and determine if there will be adverse impacts with this facility.*

RECOMMENDATIONS

The following items should be addressed prior to the planning commission taking action on the proposed temporary use:

1. The applicant should provide a clearer plan demonstrating which areas are to be blocked off.
2. The applicant must indicate what barriers will be used to secure the perimeter of the food truck area

3. The applicant shall specify if Page 8 will be a sign at the event, a flyer to advertise the event, or both.
4. A separate sign permit shall be obtained from the Township Zoning Administrator, if signs are proposed.
5. The applicant must provide a plan for the location of waste receptacles and any temporary bathroom facilities proposed for the event.
6. Approval for the proposed food truck court should be provided by the County Health Department.
7. The applicant shall provide the hours of operation for the Planning Commission to consider.

We look forward to discussing this with you at the next Planning Commission meeting.

CARLISLE/WORTMAN ASSOC., INC.
Paul Montagno, AICP
Principal

Brady Heath
CARLISLE/WORTMAN ASSOC., INC.
Brady Heath
Community Planner

#308-2606

CC: Joanathan Hohenstein, Township Zoning Administrator
Marnie Hebert, Administrator

March 15, 2026

Howell Township Planning Commission
3525 Byron Road
Howell, MI 48855

To the members of the Howell Township Planning Commission,

The following information on decibel limits and noise is being provided for consideration from the Howell Township Resident Research Committee (RRC).

DECIBEL LIMITS & NOISE RESEARCH

The following information on decibel limits is being provided by the RRC so that the planning commission has information and research available for reference on sound/noise related to high impact land uses including data centers, cryptocurrency mining and the impact they have on surrounding areas.

Suggested Limits and Requirements are as Follows:

- All sound studies shall include a full, unweighted ⅓ Octave Band analysis.
- A maximum of 70dB(Z), 55dB(C), and 55dB(A) shall be required of all high impact land uses. All octave bands 125Hz and below shall not exceed 60dB(Z).

Analysis of Infrasound Impacts, Regulations, & Recommendations:

One of the most frequent complaints from communities with hyperscale data centers, multiple data centers, or cryptocurrency mining facilities, is that of noise. Yet, at quick glance, one passing by may not think much of the low, steady hum of the cooling equipment utilized by these facilities. It is frequently mentioned how 60 decibels is approximately the level of a normal conversation… There are clearly other, louder sources of noise in industrial areas, so what could possibly be the issue? It seems easy to brush this off as nothing more than an excuse to complain from a bunch of NIMBYs.

Aside from the fact that constant, tonal noises are much more of a nuisance than transient sounds, such as a passing train or an airplane lifting off, the sounds emitted by data centers are loaded with low-frequency sound waves. Low frequencies are generally considered to be in the 20Hz-200Hz range, and Infrasound being the frequencies that fall below 20Hz. Although some individuals report being able to hear infrasound as low as 12Hz, 20Hz is generally considered to be the lower threshold of human perception. Low frequencies are also not perceived at the same level of loudness, which is why most sound measurements are done in A-weighted decibel units, which adjusts the measurement to primarily reflect the more perceptible frequencies in the range of human hearing by filtering out low frequencies. This results in a wildly inadequate measure of potential physical harm to anything other than hearing loss. As one study explains, “The A-weighted acoustic measuring method is specifically designed to diminish the inaudible part of the acoustic spectrum. As a result, an exposure to a

high-level 100dBz infrasound signal with a frequency of 16Hz would measure merely 45dBA, deeming it acceptable according to many of the present-day noise regulations" (6). There are other weighting scales used to better reflect the perceptible impacts—both auditory and physical—of low-frequencies and infrasound. As an example, C-weighted decibels, dB(C), is a weighting scale used to adjust for the audible sensations and physical perceptions of low frequencies.

Noise generated by newer high impact land uses such as data centers and cryptocurrency mining facilities comes from generators, cooling equipment, and in some cases, on-site power generation such as gas turbines. These are all significant sources of Low Frequency and Infrasound; generators often operate around 75Hz, cooling equipment between 48 and 98Hz, and gas turbines around 25Hz (9). Another study concludes high decibels (110-132dB(Z)) of infrasound frequencies ranging from 1-12Hz can be found near diesel engines, turbines, piston pumps, compressors, fans, and other large air-blowing machines (6).

Just because we can't necessarily hear many of the lowest frequencies, and don't perceive those that we do as being particularly loud, does not mean they aren't problematic. This can be clearly understood with an analogy to light and vision used in a paper by Alves-Pereira & Branco: "Within electromagnetic spectrum, the human eye perceives light in a certain range of frequencies, just as within the acoustical spectrum, the human ear perceives sound in a specific range of frequencies. There exist electromagnetic phenomena that are not perceived by any of the human senses during actual exposure (e.g. X-rays), and yet, excessive exposure to X-rays can cause severe biological damage" (3). They also say it is a "…scientifically unsubstantiated, but prevalent, notion that noise only affects hearing". Low frequencies emitted at a high sound pressure level (flat, or unweighted, decibels), are still being received by our bodies, and those vibrations do produce physiological effects.

So, let's take a look at what sort of effects low frequencies and infrasound can have on the human body (there is also research about the effects on animals as well as plant life, which we have not yet fully explored, but for which there is existing information). There are seemingly countless studies documenting the connection between low frequency noise and various ailments in humans, stretching back decades. Complaints from those affected include reports of sleep disturbances, fatigue, annoyance, stress, hypertension, concentration deficits, mood swings, digestive issues, psychiatric disturbances, headaches, severe joint pain, neurological disturbances including late-onset epilepsy, balance disturbances such as dizziness and vertigo, progressive neurological deterioration, endocrine disorders, changes in cardiac rhythm, cardiac arrhythmias, reduction in the force of contraction of the heart muscle, malignant tumors, autoimmune disease…all of this, at statistically-significant levels above the general population's incidences (1, 2, 3, 6).

This is clearly a wide-ranging collection of problems, so we would like to break it down by summarizing a few of the studies:

1. A 2023 article in the peer-reviewed International Journal of Environmental Research and Public Health found that all participants exposed to low-frequencies felt a number of wide-ranging complaints of hearing humming, droning, and buzzing, feeling sensations such as ear pressure, and perceiving vibrations in their torso and limbs. The average rating, on a scale from 1 to 10, on the impact on their daily living was quite high at 7.1 out of 10. These disturbances impacted sleep, caused them to spend less time in their homes, impacted their ability to work, and resulted in overall less full-time work, and even impacted

relationships. Another notable finding was that the perception was impossible to escape; participants used earplugs, noise-cancelling headphones, tried to mask it with white noise, TV, or radio, closing windows, insulating walls, changing sleeping location or relocating their bed, placing their mattress on dampening materials, and even medicating. And yet, the perceptions persisted.

2. A 2010 paper in the journal “Neuroscience” notes that being in the presence of infrasound has been shown to spike cortisol levels. Cortisol is the “stress hormone”, and elevations in cortisol result in occurrences of stress and hypertension, as well as contributing to vestibular issues like vertigo, nausea, and loss of balance. They measured cortisol and rated their subjects’ stress and annoyance before, during, and after being exposed to two hours of low or flat frequency spectrum noises, both at a level of just 40dBA, on two different occasions. This confirmed physiological evidence of increased stress and neuroendocrine activity. Note that *the A-weighted decibels were just 40dB(A)...*

3. A 2007 study published in Hearing Research noted that high levels of infrasound produces large movements of cochlear fluid, and when combined with a 4kHz (4,000Hz) octave band of noise, it can cause high-frequency hearing loss. This is notable, because especially in the context of high impact land uses such as data centers and cryptocurrency mining facilities, low-frequencies do not often exist alone. While high levels of 4kHz octave band frequencies alone can cause hearing damage, that damage is exacerbated when combined with low frequencies.

4. A 2021 study in Noise & Health looked into the effects of infrasound on human myocardial contractility—the force of heart contractions. They found that the higher the dBZ, the weaker the cardiac contraction force. Exposure to high levels of infrasound (over 100dB(Z), which—as mentioned above—may measure as low as 45dB(A), depending on the exact frequency), affects cardiac muscle in as little as one hour. The authors also note that because lower frequencies have longer wavelengths, they reflect, refract, diffract, and resonate more than higher frequencies of more audibly-perceptible sound frequencies. This means infrasound and low-frequency sounds move through and around obstacles like buildings and terrain, while maintaining energy even after traveling very long distances. As such, common noise barriers utilized are often ineffective against them. Also, the decibels of infrasound can actually increase inside residential rooms, especially through open windows or ventilation ducts, because enclosed spaces condense the waves’ energy by means of resonance. It can reach up to 25dB(Z) higher than the measured level outside, and explains why people may complain about the effects despite not being in direct vicinity of the source. The authors also cited a study by Karpova et. al., who tested the effects of infrasound on healthy, young men and found that mental stress, vegetative reactions, and unpleasant auditory sensations occurred within 1 minute of exposure. Within 15 minutes, additional symptoms including fatigue, dizziness, depression were noted. They, too, observed changes in cardiac rhythm, arrhythmias, and a reduction in the force of contraction of the heart muscle.

5. One of the most thorough articles we reviewed is a 2007 study in the journal Progress in Biophysics and Molecular Biology, titled “Vibroacoustic disease: Biological effects of infrasound and low-frequency noise explained by mechanotransduction cellular signalling”. Vibroacoustic disease (VAD) is a “whole-body pathology that develops in individuals excessively exposed to infrasound and low-frequency noise”. It was seemingly originally diagnosed within the aeronautical and other heavy industrial uses, but is increasingly being diagnosed in the general population as new sources of infrasound begin to grow in our communities (such as wind turbines, data centers, cryptocurrency mining facilities, and the like). The findings of this study involve abnormal growth in cells that thickens blood vessels, affects cardiac structures, as well as in the cells of the trachea, lungs, and kidneys of VAD patients and animals. They studied a group of 306 aircraft technicians, and found all of them had abnormal pericardial and/or cardiac valve thickening. In this group, 10% of them presented with late-onset epilepsy, when the general population was just 0.2%. It was determined back in the early ‘90’s that infrasound and low frequency noise (ILFN) was the agent for disease for aircraft technicians. In the mid-‘90’s, animal studies showed the respiratory tract could be a primary target for ILFN, with studies finding abnormal amounts of fibrosis in the trachea and lungs, damaged tracheal and bronchial cilia, among other abnormalities. At this same time, in addition to epilepsy, other neurological disorders were identified in ILFN-exposed populations as well: palmo-mental reflex (usually only seen in newborns and the elderly), balance disturbances, and facial dyskinesia. They tracked the development of VAD symptoms over the course of many years and charted them into stages. The symptoms in these stages were identified in over 50% of the aircraft technicians. Stage 1, which is 1-4 years of exposure, typically results in slight mood swings, indigestion, heart burn. Stage 2, from 4-10 years, brings chest pain, definitive mood swings, back pain, fatigue, fungal, viral, and parasitic skin infections, inflammation of the stomach lining, pain and blood in urine, conjunctivitis, and allergies. Stage 3, over 10 years, involved psychiatric disturbances, hemorrhages of nasal, digestive, and conjunctive mucosa, varicose veins and hemorrhoids, duodenal ulcers, spastic colitis, decrease in visual acuity, headaches, severe joint pain, intense muscular pain, and neurological disturbances. There were additional, statistically significant symptoms occurring well above the general population incidences, experienced by fewer than 50% of the aircraft technicians, including: respiratory problems, late-onset epilepsy (whose seizures subsided when away from work), progressive neurological deterioration and early aging, endocrine disorders, malignant tumors (often multiple different types at once), among other problems. It might be tempting to brush off this data, as the levels of low-frequencies must surely be higher than that of high impact land uses such as data center or cryptocurrency mining facilities, but as you’ll see in the conversion decibel weighting conversions chart below on page 7—even seemingly-reasonable dB(A) levels can result in astonishingly high dB(Z) levels of low-frequencies…on par with, if not exceeding, that which the airline technicians were exposed to.

To address the question – what to do about this – we are lucky to have the opportunity to not only address, but hopefully prevent this problem proactively, before the community is subjected to unsafe levels of sound that lead to any number of the ailments outlined above. Some of the studies referenced have also provided recommendations for prevention of harm.

Additional Recommendations for Prevention of Harm:

- Conduct noise assessments, before any development is permitted. Specifically, for existing dB(C) and dB(Z) levels in the township, particularly in the industrial area and in the residential areas in the closest vicinity to the proposed High Impact Land Use Overlay District. The current, pre-development low-frequency and infrasound levels must be documented before any data centers come to town.
- The assessment should include a 1/3 Octave Band analysis, with no weighting (ie, in Linear Decibels/dB(Z)), down to the lowest frequency the equipment is able to detect, ideally including the lowest ⅓ octave bands.
- If a spectral analysis is not possible, the dB(C) and/or dB(Lin/Z) Leq measurements should be performed, under real-world conditions.
- An absolute maximum of 80dB(Z) should be the limit on infrasound in the ordinance, as that is the threshold for significant symptoms to begin with chronic exposure.

Given the nature of low frequency sounds, especially with regard to resonance and traveling long distances, we were inclined to suggest even lower than that. But, we wanted to see what other ordinances have already set as their limits.

Examples from Ordinances:

6. Fort Lauderdale, FL, includes some context in their ordinance:

"Unlike standard dBA measurements, which primarily detect mid-range sounds like speech and traffic, dBC measurements capture deeper, low-frequency noises such as bass from music or heavy machinery. These sounds can travel farther and penetrate walls, making them more disruptive in residential areas. Adding dBC limits ensures that noise enforcement addresses all types of sound, improving fairness and effectiveness".

They include both dBA and dBC, and for Commercial and Industrial uses, differentiate between indoor and outdoor limits. They also note that measurements are to be taken 5 feet from the building or structure, to ensure a clear, consistent standard. However, their Industrial limit is 85dB(C) during the day and 75dB(C) at night, both of which exceed the evidence-based recommendation of no more than 80dB(Z), mentioned above. (Residential outdoor limits are 70dB(C) day, and 60 dB(C) night; indoor is lower, at 55/45dB(C).

7. Fort Pierce, FL limits sounds by use-occupancy of receiving properties. For residential properties, that limit is 55 dBA, C, and Z; Commercial properties are 60 dBA, C, and Z; and Industrial properties are 65 dBA, C, and Z. They go further, and specifically regulate low-frequency and infrasound octave bands (31.5, 63, and 125 Hz), all which must not exceed 65dB. This approach appears to be the most evidence-based and comprehensive attempt we have seen to account for frequency variations of perceived loudness, and ensure residential properties are adequately protected from low-frequency noise. It is important to note the difference in regulating from a sending property versus a receiving property.

8. The Wisconsin Citizens Safe Wind Siting Guidelines recommend that the dBC from wind turbines shall not exceed 50dBC at residences, or 55 near highways, or a

difference between dBC and dBA over 20dB, whichever is lower. Wind Turbines are a significant source of infrasound, with an increasing amount of data and research.

9. The Wind Energy Conversion Systems Zoning Ordinance says not to exceed 45dBA or 55dBC Lmax.

As you can see, there are a variety of approaches to consider and to put into context of the research. To recap the research: an absolute maximum of 80dB(Z) for infrasound (frequencies less than 20Hz) is recommended, as that is the point at which *perceptible* symptoms begin. Many places include dB(C) and dB(A), and even dB(Z). Some locations limit sound from the sending property, others set limits at the receiving properties.

To help visualize what limits will accomplish the desired outcome without being mutually exclusive or impossible to achieve, we have constructed a chart, based on the standard A and C weighting curves (10), to illustrate how different limits affect unweighted low frequency and overall community impact. The numbers in red indicate an unsafe (unweighted) noise level. The darkest gray boxes are the ⅓ octave bands in the infrasound range, while the lighter gray boxes are low-frequency octave bands.

Decibel Weighting Conversions by Frequency

Octave Band (Hz)	70dB(C)—>Z	60dB(C)—>Z	55dB(C)—>Z	55dB(C)—>dB(A)	70dB(A)—>Z	55dB(A)—>Z
1	122.5	112.5	107.5	-41.1	218.6	203.6
6.3	91.3	81.3	71.3	-14.1	155.4	140.4
8	87.6	77.6	72.6	-5	147.6	132.6
10	84.3	74.3	69.3	-1.1	140.4	125.4
12.5	81.3	71.3	66.3	2.7	133.6	118.6
16	78.4	68.4	63.4	7	126.4	111.4
31.5	73	63	58	18.5	109.5	94.5
63	70.8	60.8	55.8	29.6	96.2	81.2
125	70.2	60.2	55.2	39	86.2	71.2
250	70	60	55	46.3	78.7	63.7
500	70	60	55	51.8	73.2	58.2
1000	70	60	55	55	70	55
2000	70.2	60.2	55.2	56.4	68.8	53.8
4000	70.8	60.8	55.8	56.8	69	54
8000	73	63	58	56.9	71.1	56.1
16000	78.6	68.6	63.6	56.9	76.7	61.7
20000	81.3	71.3	71.3	62	79.3	64.3

The octave band frequency spectrum includes all the infrasonic and low-frequency ⅓ octave bands (125Hz and below), and 1/1 octave bands for everything above. We converted levels of 70dB(C), 60dB(C), and 55dB(C) to flat, zero-weighted decibels. The unweighted decibels that exceed the maximum safe level of 80dB(Z) are noted in red. The C-weighted decibels clearly do a much better job of reflecting the impact of low-frequency and infrasound. A limit of 55dB(C) ensures virtually all but the absolute lowest frequencies will remain at safe levels. The incredible inadequacy of A-weighting is illustrated here in the two columns to the furthest right; at the current Industrial zoning limit of 70dB(A), infrasound and low frequencies

may still be astonishingly, and dangerously strong. It is especially interesting to notice how lowering dB(A) all the way to 55dB(A) will not make a significant change to the overall low-frequency impact on the community if the sound is primarily composed of low frequencies and infrasound; virtually *all* low frequencies could potentially be dangerously high. Combine this data with the fact that low frequency wavelengths are not easily buffered or mitigated by barriers or atmosphere, it is clear to see why residents, even those several miles away from sources of low-frequency noise (like that from high impact land uses such as data centers, crypto currency mining facilities, and the like), report problems despite the facilities meeting the seemingly-reasonable dB(A) limits in applicable ordinances.

Based on this chart, a limit of 55dB(C) appears to be the highest threshold where most of the low frequencies and infrasound will not pose a threat to the community. For further comparison, we also converted it to dB(A), as seen in the column labeled “dB(C)—>dB(A)”. You can see that you would need impossibly-low dB(A) limits to adequately address low frequencies and infrasound. Additionally, you can see the frequencies that are the most audibly-perceptible to humans (500-8,000Hz) are comparable between the two weightings: they are both in the 55dB(A) range, which is in line with the original intent of a 55dB(A) limit. In other words, 55dB(C) will ensure *both* the low-frequency physical impacts and the mid-range frequency (audible) impacts are compatible with the community. While dB(C) is clearly the primary metric to regulate, including a dB(A) limit will ensure the tonal and continuous, audible noises emitted from a data center and other high-impact land uses do not pose an audible nuisance to the community, either.

To further ensure that there are not a significant amount of low-frequency sounds impacting the community, establishing a dB(Z) limit will help cover those <10Hz frequencies. An overall limit of 70dB(Z) is compatible with the ideal 55dB(C) limit, and will provide an additional layer of protection for the community from nuisances related to data center and high-impact land uses. However, as one of the studies above noted (and it is widely acknowledged in the scientific community), low frequencies have a tendency to resonate and therefore amplify their sound levels in enclosed spaces. To understand this, think of two guitars: one electric guitar (that is not plugged in or amplified), and one acoustic guitar. The body of the electric guitar is flat and solid. When you pluck a string on an electric guitar that is not plugged in, the sound is relatively soft. Now, picture an acoustic guitar: its body is hollow, and there are holes near the strings. These holes are not merely decorative, they are strategically placed to allow the sound from the string to enter into the hollow body of the guitar. The sound waves enter the body of the guitar, where they resonate… and amplify. This is why an acoustic guitar is magnitudes louder than an unamplified electric guitar. This means, if a 70dB(Z) low-frequency sound wave travels the relatively short distance to a nearby residence and enter through windows or ventilation ducts, that low frequency or infrasound wave may amplify by up to an additional 20+dB(Z)— *a 100-times greater intensity*—suddenly subjecting them to unsafe levels *in their own home,* even if the decibels outside are reasonable. This likely explains why noise complaints are one of the most common reasons for resident lawsuits against their cities for data centers; most noise ordinances do not adequately account for low frequency, and certainly not for the potential for resonance. To prevent this and protect the community from the far-reaching impacts of low-frequency sound waves, given that 80dB(Z) is the absolute maximum the current research shows as being safe, setting a lower limit of 60dB(Z) for low-frequency octave bands, a strategy Fort Pierce, FL employs, would ensure residents will remain safe and comfortable in their homes.

Therefore, we feel the best approach to ensuring the community is adequately protected from high levels of continuous, tonal, low-frequencies, is to set the following limits which must *all* be (and as the chart illustrates, can be) met:

- 70dB(Z) maximum for octave bands >125Hz; 60dB(Z) maximum for all octave bands <125Hz
- 55dB(C) maximum
- 55dB(A) maximum

Given how far infrasound and low frequencies travel without being attenuated by atmosphere or environment (potentially, hundreds of miles (11)), if the intent is to ensure levels do not exceed safe limits at the relatively-nearby residential properties, the limits at the high impact land use property lines should be set at these levels. Fort Pierce, FL appears to do almost exactly this, and is among one of the only ordinances which appear to take a genuinely evidence-based approach. Their ordinance sets limits at receiving property lines, but we feel that would add a lot of complexity to enforcement. It is important to keep in mind that when far-reaching, low frequencies get trapped indoors, they resonate and may become amplified by 10-20dB(Z), which represents a ten to one-hundredfold increase in intensity. For that reason, the township may wish to consider setting dB(Z) for low-frequency octave bands even lower, to 60dB(Z), which would bring Howell Township's ordinances closer in line with the limits that Fort Pierce, FL has established, and our research supports, to be acceptable for receiving residential properties to be exposed to.

Examples in Other Ordinances & Guidelines:

6. Fort Lauderdale, Florida:

"Unlike standard dBA measurements, which primarily detect mid-range sounds like speech and traffic, dBC measurements capture deeper, low-frequency noises such as bass from music or heavy machinery. These sounds can travel farther and penetrate walls, making them more disruptive in residential areas. Adding dBC limits ensures that noise enforcement addresses all types of sound, improving fairness and effectiveness".

	Day	Night
Residential outdoor:	70dBC	60dBC
Residential indoor:	55dBC	45dBC
	Outdoor	Indoor
Commercial:	75dBC	65dBC
Industrial:	85dBC	75dBC

-Noise measurements to be taken 5ft from building/structure/establishment-clear, consistent standard

-Noise complaints are assessed from property line of complainant, and at the noise source

7. <u>Fort Pierce, Florida:</u>

-Low-frequency octave band limits: 31.5Hz, 63Hz, 125Hz- must not exceed 65dB

-Sound limits by use-occupancy of receiving property:

	dBA	dBC	dBZ
Residential	**55**	**55**	**55**
Commercial	**60**	**60**	**60**
Industrial	**65**	**65**	**65**

8. <u>Wisconsin Citizens Safe Wind Siting Guidelines:</u>

1. dBC from Wind Turbines anywhere on non-participating properties shall not exceed the lower of either:

   - -maximum 50dBC at residences,Maximum 55dBC near highways
   - -dBC-dBA L90A > 20dB

2. If modeling or testing at any time shows dBC-dBA > 10 dB, a frequency analysis shall be performed to determine the source and nature of the low frequency sound.

   - L90 is noise level exceeded for 90% of the time of the measurement duration (used to determine ambient/background noise level)

9. <u>Wind energy Conversion Systems Zoning Ordinance:</u>

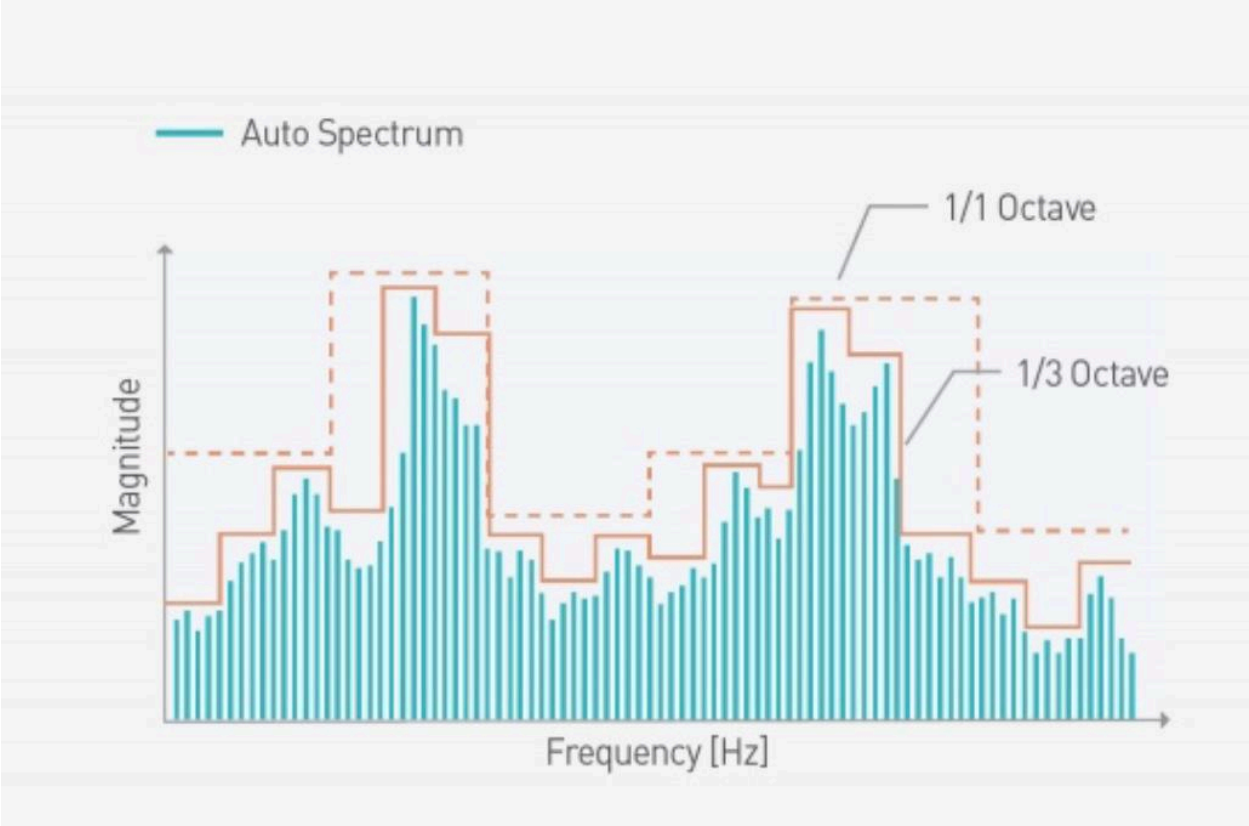
1. 45dBA, or 55dBC Lmax- exceeding either is considered a nuisance

Additional Notes on Octave Bands:

Most people are probably familiar with an “octave” in music—from one note to another of the same sound, but with an exact doubling of pitch, or frequency. The acoustical frequency spectrum is often similarly broken up into octaves, where the upper frequency is double that of the lower frequency. Most noises have a variety of frequencies within them; performing an octave band analysis helps illustrate which frequencies are being projected the loudest. Octave bands can be further broken into thirds, and the ⅓ Octave Band analysis provides a more detailed breakdown of the types of frequencies emitted from a noise source.

This is useful to understand, because while the chart above contains conversions of various A and C-weighted decibels into flat decibels, it is important to remember that, for example, a noise which measures 60dB (of any weighting) does not mean it contains all of the frequencies in the spectrum, nor are all of the frequencies which are emitted being projected at the same force or volume.

The image below from Daeil Systems (10) illustrates this concept:



The blue bars show the various frequencies emitted from a noise sample. You can see how there is a great deal of variability in magnitude (or "volume") of each frequency in the spectrum. The 1/1 Octave Bands are outlined in the orange, dashed lines. The ⅓ Octave Bands are outlined in the solid, orange lines. You can see how the ⅓ octaves more closely resemble what is actually being emitted by the noise as compared to the 1/1 octaves, which are much more generalized.

By requiring sound studies and monitoring to include a full ⅓ Octave Band analysis of unweighted sound levels, the township will be able to see the actual impact of infrasound and low-frequencies, and how they are contributing to the overall decibel levels being emitted. If, despite the township's noise ordinances, residents are still reporting disturbances (especially related to low-frequencies), this type of analysis will be able to confirm the nature of the nuisance, and will help inform the township in revising their ordinances to adequately address any ongoing complaints.

Sources:

1. Low-Frequency Noise: Experiences from a Low-Frequency Noise Perceiving Population (Kristina H. Erdelyi, Koerts, et al) https://www.mdpi.com/1660-4601/20/5/3916
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