



PLANNING COMMISSION AGENDA

September 13, 2023
Regular Meeting - 7:00 PM

- 1) **CALL TO ORDER**
- 2) **ROLL CALL**
- 3) **APPROVAL OF AGENDA** - Items can be added or deleted from the Agenda by Board action.
 - A. **APPROVAL OF SEPTEMBER 13, 2023 PLANNING COMMISSION MEETING**
- 4) **APPROVAL OF MINUTES**
 - A. **MINUTES OF JULY 12, 2023 PLANNING COMMISSION MEETING.**
- 5) **PUBLIC COMMENT ON AGENDA ITEMS** Persons addressing the board are required to give their name and address for the record when called upon by the Chair. Members of the public shall be limited to speaking for a maximum of five (5) minutes. Comments should address AGENDA ITEM topics. Public Hearing items should be addressed during the PUBLIC HEARING portion of the meeting agenda. Non-Agenda items should be addressed during the PUBLIC COMMENT-NON-AGENDA ITEMS portion of the meeting agenda.
- 6) **PUBLIC HEARINGS & SUBSEQUENT BOARD ACTION**
 - A. **RZ# 23-02 913 INDUSTRIAL ROAD REZONING**
 - B. **RZ #23-03 - 14555 18 1/2 MILE ROAD REZONING**
- 7) **OLD BUSINESS**
- 8) **REPORTS AND RECOMMENDATIONS/NEW BUSINESS**
 - A. **SP #23-06 14555 18 1/2 MILE ROAD SITE PLANS- EXPANSION**
 - B. **SP #23-07 14555 18 1/2 MILE ROAD SITE PLAN- SOLAR**
 - C. **SP #23-08 343 SOUTH MULBERRY AMENDED SITE PLAN**
- 9) **PUBLIC COMMENT ON NON-AGENDA ITEMS** Persons addressing the board are required to give their name and address for the record when called upon by the Chair. Members of the public shall be limited to speaking for a maximum of five (5) minutes. Comments should address NON-AGENDA ITEM topics. Public Hearing items should be addressed during the PUBLIC HEARING portion of the meeting agenda. Agenda items should be addressed during the PUBLIC COMMENT-AGENDA ITEMS portion of the meeting agenda.
- 10) **BOARD REPORTS**
- 11) **ADJOURNMENT**

PLANNING COMMISSION MINUTES

July 12, 2023

Regular Meeting - 7:00 PM

1) CALL TO ORDER

IN A REGULAR SESSIONS held on Wednesday, July 12, 2023 at 7:00 PM in the Council Chambers of Town Hall, 323 West Michigan Ave, Marshall, MI 49068, the Marshall Planning Commission was called to order by Chair Banfield.

2) ROLL CALL

Roll was called: by J. Pickford

Present: T. Banfield, T. Fitzgerald, L. McNiff, K. Reed, J. Zuck, S. Hall (Late; arrival 7:06pm)

Also Present: Council Liason Wolfersberger, Manager Perry, Deputy Treasurer Pickford

Absent: J. Burke-Smtih, C. Longyear, C. Zuzga,

3) APPROVAL OF AGENDA - Items can be added or deleted from the Agenda by City Council action.

Moved Zuck , supported McNiff to approve the agenda as presented. On a voice vote: **Motion carried**

4) APPROVAL OF MINUTES

Moved McNiff, supported Reed to approve the minutes with stipulations to add Member Reed as absent at previous meeting held on June 14th . On a roll call vote:

Ayes: J. Zuck, T. Banfield, T. Fitzgerald, L. McNiff, K. Reed

Nays: None

Abstain: None

Motion carried

A. Minutes of June 14, 2023 Meeting

5) PUBLIC COMMENT ON AGENDA ITEMS Persons addressing the board are required to give their name and address for the record when called upon by the Mayor. Members of the public shall be limited to speaking for a maximum of five (5) minutes. Comments should address AGENDA ITEM topics. Public Hearing items should be addressed during the PUBLIC HEARING portion of the meeting agenda. Non-Agenda items should be addressed during the PUBLIC COMMENT-NON-AGENDA ITEMS portion of the meeting agenda.

Barry Wayne Adams of 622 W Green St- Mr. Adams questioned how public can comment on agenda items when he has seen no agenda published. He questioned if the authority of the board was constitutional. Mr. Adams expressed concern that municipals process of governing land is the use of military authority and that it is outside government authority to tell land owners how to use their property. Mr Adams stated that the practice of the government zoning land is discriminatory, and that the public financed for the BOBPM.

6) PUBLIC HEARINGS & SUBSEQUENT BOARD ACTION

7) OLD BUSINESS

8) REPORTS AND RECOMMENDATIONS/NEW BUSINESS

A. SP#23.05- MARSHALL TIRE- 1111 ARMS STREET

Nick Collier of Olivet was introduced as the owner of Marshall Tire. Nick spoke on their 2004 establishment, 3 current locations, and requested approval to open new proposed location.

Tyler from Mitten State Engineering was introduced as the Professional Engineer on the project.

Chair Banfield noted that the Fire Department changes of letters on the buildings and North Orientation of plans are not reflected in the plans provided to the Board. Chair Banfield also questioned the storage of tires and necessary screening if applicable. Chair Banfield noted that 6ft fence screening is also not reflected on current plan provided and will be a contingency to issuing permit. Lastly, Banfield noted that the 30" shrubs for headlight pollution that were mentioned would not be suitable for screening as the proposed shrubbery is deciduous and would only provide screening for 4 months of the year. Member Zuck clarified that the screening of the dumpster would also be a condition that would be added for permit issuance.

Moved L. McNiff, supported T. Fitzgerald to Approve SP#23.05 with the following conditions: Screening to East of property, show existing trees on landscaping plans, screening for dumpster in SE corner, and stormwater approval from Public Services is required prior to a building permit being issued.. On a voice vote: **Motion carried**

9) **PUBLIC COMMENT ON NON-AGENDA ITEMS** Persons addressing the board are required to give their name and address for the record when called upon by the Mayor. Members of the public shall be limited to speaking for a maximum of five (5) minutes. Comments should address NON-AGENDA ITEM topics. Public Hearing items should be addressed during the PUBLIC HEARING portion of the meeting agenda. Agenda items should be addressed during the PUBLIC COMMENT-AGENDA ITEMS portion of the meeting agenda.

Barry Wayne Adams of 622 W Green Street spoke on the unravelling of the Megasite in court and that the court denied intervention of MAEDA and other organizations stating they had no right at the current time. Mr. Adams stated that the property owner cannot participate in the zoning of properties and that the City has to follow the law. He spoke on the only defense is the balance between the interest of money versus constitutional rights of the citizens. Mr. Adams spoke on the disease of authoritative government in the City Council and gave details on public's time to talk at each meeting and that limiting that time is against constitutional rights. Mr. Adams concluded by declaring a future lawsuit for limiting time to talk at meetings he advised the board not to limit time at Planning Commission meetings or they would also be named in the lawsuit.

Autumn Smith of Battle Creek spoke on a variation of the quote made famous by Winston Churchill. She stated that Ford once did business with Nazi's and that should be a large area of concern to the community. She expressed her trust in facts and law not statements made by those overseeing the development of BOBPM. Ms. Smith spoke on the concern that the Megasite has ties to the CCP despite the assurances by the City. Ms. Smith voiced upset over City of Battle Creek supplying back up water to the BOBPM. Lastly, Ms. Smith expressed frustration of disregard of the constitution and oath of office

by City employees and pleads with board and community to do research of CCP and affiliates and how it ties into BOBPM.

10) BOARD REPORTS

11) ADJOURNMENT

The meeting was adjourned at 7:34pm

Respectfully submitted by,

Jennifer Pickford
Deputy Clerk



ITEM 6.A

TO: Planning Commission
FROM: Eric Zuzga, Director of Community Services
DATE: September 13, 2023
SUBJECT: **RZ# 23-02 913 INDUSTRIAL ROAD REZONING**

Summary

Subsequent to approval of a 425 Conditional Land Transfer by the Marshall Township Board and Marshall City Council, GCC 550 Hughes, LLC, owner of three parcels on West Hughes Street (Parcels 16-260-006-00, 16-350-006-00, 16-260-003-00), submitted a Rezoning Application for said parcels to Multiple Family Residential (MFRD) Zoning District, pursuant to M.C.L. 125.3401. In addition to this request, a parcel within the City (53-002-562-00) was also requested to be rezoned to Multiple Family Residential. It is this request that you will consider at the meeting.

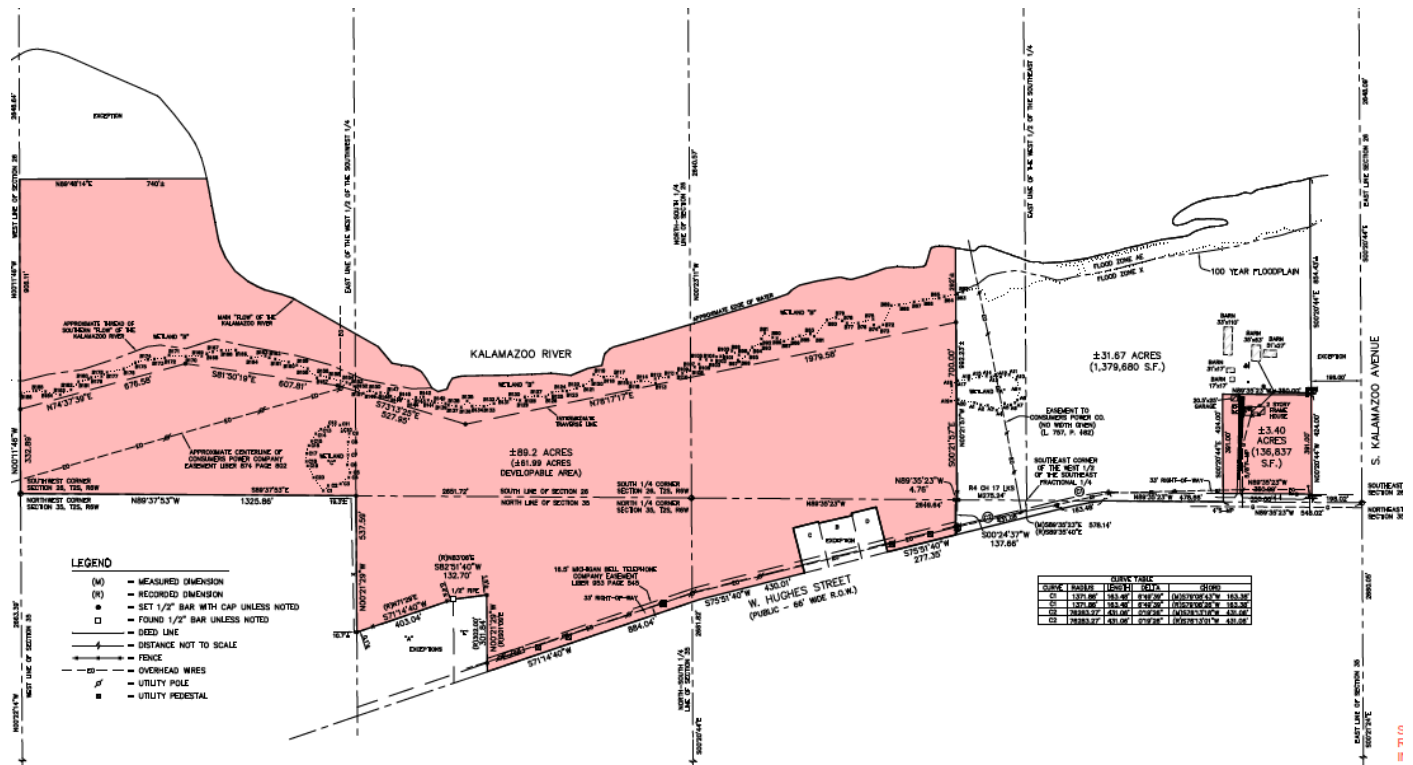
Please note, the only issue that the Planning Commission is considering at this time is the rezoning request. If the rezoning request is approved, the applicant would then file a site plan application and building/trades permits to construct a new facility, parking lots, driveways, and associated on-site utility improvements; site development review and determinations would be addressed through their own processes at a later date. The Site Plan would be reviewed and approved by the Planning Commission at a future meeting.

Background

GCC 550 Hughes LLC has a purchase agreement to purchase four parcels on the south side of the city with the intention of developing a large housing project. Three of these parcels were recently transferred to the City of Marshall ("City") under PA 425 Conditional Land Transfer from Marshall Township ("Township"). The owners have requested rezoning of these parcels to MultiFamily Residential as that district provides the ability to provide the various types of housing that they intend to build on the site. Rezoning of these parcels would add to the parcel rezoned MFRD by the Joint Planning Commission in 2022, approx. 32 acres (former Kelly Farm), and allow for a unified development on the parcels. The Joint Planning Commission will consider the rezoning of the parcels on the application (in red on the vicinity map) that were transferred under the 425 agreement.

Property/Neighborhood Description

The subject site is located on the north side of West Hughes Street/ A Drive North, just west of South Kalamazoo Avenue. The parcels subject to this rezoning application are identified on the map below:



The parcel proposed for rezoning are comprised of relatively flat farmland, with one pond on site, and a portion of an island in the Kalamazoo River. The site abuts another parcel of land, owned by the petitioner, which will be included in a future site plan. The Kalamazoo River comprises the northern boundary of the parcels. The south side of the parcel you are reviewing are single family homes that are off of Hughes Street. The west side is also a single family home.

Development in the surrounding area could be characterized as semi-rural, with a majority of the parcels housing single family residences or a large parcel owned by Consumers Energy. There are small neighborhoods to the northwest and east of the site with a commercial area to the north and east.

Neighborhood Zoning

The site is currently zoned Residential Estate (R-1) Zoning District. Parcels to the immediate south and north of the parcel are located in the City of Marshall and are zoned R-1. The parcels to the west and south are in Marshall Township and are zoned Agricultural (east) and Open (west), with the parcel to the east transferred via 425 and rezoned to Multiple Family Residential. The parcel to the west in the City is zoned Residential Estate District (R-1). The parcels to the south are zoned Agricultural and are single family homes and the Consumers Energy Training Center.

City of Marshall Master Plan

As required by the Michigan Planning Enabling Act, the City of Marshall has adopted and maintained a Master Plan to govern land use decisions in the city. The current Master Plan was adopted on June 10, 2015, and reviewed in 2020 with confirmation by the Planning Commission that it was still relevant. As in the Township's Master Plan, there are goals that support the type

of development that is being proposed. The following goals support the type of development that is proposed at this site:

- *Goal 3: Ensure the long term stability of Marshall's neighborhoods- Objective: Provide for a variety of housing choices to meet the needs of existing and future residents of all ages, needs and abilities.*
- *Goal 6: Strengthen cooperation and coordination with neighboring townships and community partners to ensure the long term success of the City, its neighbors, and institutions.- Objective: Encourage dialogue and collaboration with neighboring townships regarding land use and development issues. Consider the appropriateness of additional 425 Agreements.*

These goals encourage collaboration with Marshall Township to encourage economic development in areas targeted for development through the use of PA 425 agreements. Specific language encourages the use of the Joint Planning Commission to make land use decisions.

With both entities adopting language surrounding collaboration in land use decisions and economic development activities, it is evident that both communities have jointly strategized and planned for this type of development.

Applicable Ordinance Provisions

City of Marshall Zoning Ordinance

Pursuant to Section 3.6 of the City Zoning Ordinance, properties transferred from another governmental unit are assigned a zoning classification to whatever district most closely conforms with the previous zoning designation; this ordinance also allows for City Council to adopt a new zoning map by holding a public hearing and upon receiving a recommendation from the Planning Commission.

The Michigan Planning and Zoning Enabling Acts, case law, and local ordinance outline the criteria by which a rezoning request is reviewed, and a determination made. In making a recommendation to City Council on the zoning classification(s) for such land areas, the Planning Commission shall consider any previous township or county zoning classifications that existed for the land prior to the extension of City boundaries, the pattern of land uses in the area, adopted City Master Plan recommendations, and planned future land use designations for the land area or adjacent areas within the City.

The site under consideration for rezoning meets these standards as it is greater than 200 acres, it is served by a state trunkline with direct access to two expressways, and will be served by public water and sewer.

Rezoning Process, Standards

The following criteria are to be used as a guide in determining whether the rezoning should be approved:

- A. The proposed zoning district is more appropriate than any other zoning district, or more appropriate than adding the desired use as a special land use in the existing zoning district.
- B. The property cannot be reasonably used as zoned.

C. The proposed zone change is supported by and consistent with the goals, policies, and future land use map of the adopted City Master Plan. If conditions have changed since the plan was adopted, as determined by the Planning Commission, the consistency with recent development trends in the area shall be considered.

D. The proposed zone change is compatible with the established land use pattern, surrounding uses, and surrounding zoning in terms of land suitability, impacts on the environment, density, nature of use, traffic impacts, aesthetics, infrastructure, and potential influence on property values, and is consistent with the needs of the community.

E. All the potential uses allowed in the proposed zoning district are compatible with the site's physical, geological, hydrological, and other environmental features.

F. The change would not severely impact traffic, public facilities, utilities, and the natural characteristics of the area, or significantly change population density, and would not compromise the health, safety, and welfare of the city.

G. The rezoning would constitute and create an isolated and unplanned district contrary to the City Master Plan which may grant a special privilege to one landowner not available to others.

H. The change of present district boundaries is consistent in relation to existing uses, and construction on the site will be able to meet the dimensional regulations for the proposed zoning district listed in the schedule of regulations.

I. There was a mistake in the original zoning classification, or a change of conditions in the area supporting the proposed rezoning.

J. Adequate sites are neither properly zoned nor available elsewhere to accommodate the proposed uses permitted in the requested zoning district.

Public Hearing and Notice Requirements

As required by the Zoning Enabling Act of 2006, as amended, a public hearing notice was published in the Marshall Advisor and Chronicle on Saturday, August 26, 2023. Notices of the public hearing were also sent by regular mail to the owners/ occupants of properties located within 300' of the subject parcel. To date, the city has not received any comments from individuals in this area, but have received several questions from one resident. The majority of the comments were issues that would be addressed in site plan. Any written comments received before the close of business on September 12, 2023, will be presented at the meeting that night.

Recommendation

Staff recommends in support of the requested rezoning/zoning designation of Multiple Family Residential District (MFRD) and makes the findings listed below, as a result of the review and analysis of the rezoning application; analysis of the neighboring land uses and existing conditions; and also finds the project consistent with the objectives of City and Township Master Plans and intent of the City and Township Zoning Ordinances.

Findings

A. The proposed zoning district is more appropriate than any other zoning district, or more appropriate than adding the desired use as a special land use in the existing zoning

district.

This area has been targeted for increased density in the Township Master Plan. This property is within the urban growth boundary established by the Township Master Plan/Future Land Use map and in an area targeted for PA 425 agreements. In fact, the Joint Planning Commission approved the rezoning of an adjacent parcel that is owned by the same group. Approving this rezoning is consistent with the decision that was made by the JPC in that decision.

B. The property cannot be reasonably used as zoned.

The property was zoned under the township zoning ordinance, so there is no existing city zoning. With a rezoning, the City Zoning Ordinance allows property to transfer to the city with the underlying township zoning district intact, which in this case is agricultural. The ordinance also provides an opportunity for the City Council to adopt a new map which requires a public hearing before the Joint Planning Commission and City Council.

C. The proposed zone change is supported by and consistent with the goals, policies, and future land use map of the adopted City Master Plan. If conditions have changed since the plan was adopted, as determined by the Planning Commission, the consistency with recent development trends in the area shall be considered.

As identified earlier, the City Master Plan encourages collaboration with the Township (Goal #6) in encouraging development through the use of PA 425 agreements and in collaboration through the Joint Planning Commission. In addition, another goal (Goal #3) seeks to provide for a variety of housing choices to meet the needs of existing and future residents of all ages, needs and abilities.

The proposed zoning is consistent with the goals, policies, and future land use map adopted in the Township Master Plan. As identified earlier in this report, the following goals support the proposed rezoning:

- 1. Housing and Neighborhoods- reasonable and incremental housing density expansion must be considered to support the significant economic development efforts addressed in Chapter Four. Additionally, a variety of housing types in 425 Agreement areas is recommended to accommodate the anticipated regional workforce expansion.*
- 2. Public Utilities- Cooperatively plan areas for 425 Agreements with the City of Marshall and coordinate development areas with the Future Land Use Plan.*
- 3. Land Use-Future Land Use Plan will direct higher-density and intensity uses to areas planned for utility and infrastructure expansion or established urban areas.*

These goals listed in both the Township's and City's Master Plan clearly support the rezoning.

D. The proposed zone change is compatible with the established land use pattern, surrounding uses, and surrounding zoning in terms of land suitability, impacts on the environment, density, nature of use, traffic impacts, aesthetics, infrastructure, and potential influence on property values, and is consistent with the needs of the community.

The proposed zoning is consistent with the current Township Zoning Ordinance and the Future Land Use map. The property is used as agriculture and one residential property. The project

will also maintain the land near the Kalamazoo River as is, leaving a highly attractive natural area.

Engineering controls for soil erosion and sedimentation and stormwater management are required to protect the natural environment.

The site is located directly off a County major road and a state trunkline. A Traffic Study has been commissioned and the city is working to finalize the study with its consultant so that necessary improvements can be identified. This study is a joint effort with MDOT and the County so that impact can be modeled for all area roads.

The site is near city infrastructure and within the Township's Urban Growth Boundary.

The proposed project is consistent with the community's needs as identified in the respective Township and City Master Plans. Both plans identify housing as a priority to address, especially different housing types.

E. All the potential uses allowed in the proposed zoning district are compatible with the site's physical, geological, hydrological, and other environmental features.

The site is able to be developed for all potential uses in the zoning district. The developer would need to work with state, county, and city agencies to address any impacts to the environment. Permits in relation to temporary stormwater management and soil erosion would need to be approved by the City and County.

F. The change would not severely impact traffic, public facilities, utilities, and the natural characteristics of the area, or significantly change population density, and would not compromise the health, safety, and welfare of the city.

While the proposed rezoning could impact the level of traffic around the site and in the community, its proximate location on a County Major road and near a state trunkline provides an increased level of capacity and access. A traffic study has been commissioned to address the potential growth on this site and in nearby areas in the city. Results of this study are expected in the near future.

The city does not anticipate major impact to its public facilities to serve the proposed development. The city is working with MDOT, County Road Department, and developers on potential road improvements on Hughes and Kalamazoo.

The proposed development will require the extension of public utilities to serve the site. The City of Marshall will be providing FiberNet service, sanitary sewer, electric, and potable water.

There will be a change to the natural characteristics of the site as a major housing project will be built on the site of former farmland. The developers have committed to maintaining the riverfront and having minimal impact on the river.

As described in each of the subject areas above, the City does not believe that the proposed development will threaten the health, safety, and welfare of the community.

G. The rezoning would constitute and create an isolated and unplanned district contrary to the City Master Plan which may grant a special privilege to one landowner not

available to others.

The rezoning would add to the Kelly Farm rezoning already completed by the Joint Planning Commission. Changes in local conditions supports the rezoning of the parcel to MFRD.

H. The change of present district boundaries is consistent in relation to existing uses, and construction on the site will be able to meet the dimensional regulations for the proposed zoning district listed in the schedule of regulations.

The redeveloped site would be required to meet all zoning requirements for this parcel in this zoning district. Site development standards take into consideration issues such as setbacks, buffering, landscaping, stormwater management, and lighting. Developments complete an independent review by a multi-disciplinary development review team to ensure all regulations will be met prior to their approval, and inspections will be completed during construction to ensure compliance with state and local codes and ordinances.

I. There was a mistake in the original zoning classification, or a change of conditions in the area supporting the proposed rezoning.

There is no mistake in the original zoning classification, but a new zoning designation is necessary due to the recently approved 425 agreement. The addition of 2500 jobs through the development of the Ford site has changed conditions since the Master Plan was approved. Additional housing units are necessary to serve the expected increase in residents and the existing parcels with MFRD zoning are not sufficient in number to serve this increase.

J. Adequate sites are neither properly zoned nor available elsewhere to accommodate the proposed uses permitted in the requested zoning district.

Existing sites zoned MFRD are not sufficient to meet the expected demand.

Attachments

The following information is attached and made part of this Staff report:

- Rezoning Application Form and Material (Application #RZ23-04)
- Vicinity Map

BUDGET IMPACT:

No impact directly from this decision. The site will eventually provide increased taxes and user fees for the community.

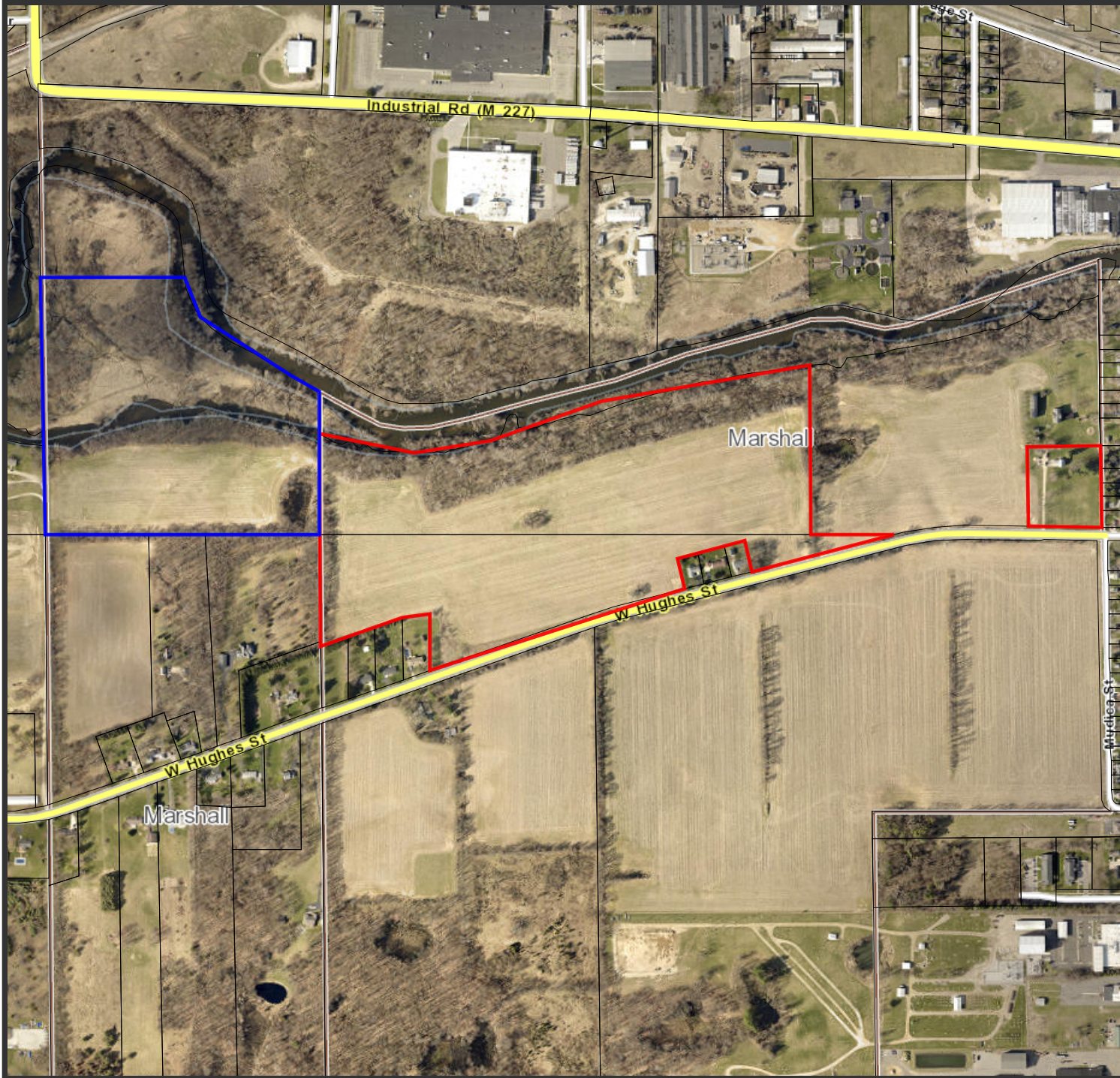
RECOMMENDATION:

Therefore, based on the above findings and pursuant to Section 7.1-Amendments and MCL 125.3101 et seq., staff recommends that the Planning Commission recommend to the City Council adoption of the Rezoning Application #RZ23-02 from Township Zoning to City Zoning District- Multiple Family Residential (MFRD). If the Planning Commission agrees with the findings presented by staff, the following motion could be used.”

The Planning Commission recommends approval of the proposed rezoning request of 913 Industrial Road (Parcel #53-002-562-00) to Multiple Family Residential (MFRD) based on the

findings included in the staff report on this matter.

If the Planning Commission finds that the criteria above are not met, and chooses to deny the rezoning, statements related to the above criteria justifying how this request does not meet the rezoning standards must be made.



GCC 550 Hughes LLC Rezoning



Map Publication:
09/06/2023 2:45 PM

0.2km
1000ft



ITEM 6.B

TO: Planning Commission
FROM: Eric Zuzga, Director of Community Services
DATE: September 13, 2023
SUBJECT: RZ #23-03 - 14555 18 1/2 MILE ROAD REZONING

Summary

Calhoun County, the owner of the Calhoun County Youth Center which is located at 14555 18 1/2 Mile Road (Parcel #53-003-306-00), has submitted a site plan for expansion of the facility. During a review of the property, staff determined that the use is not permitted under the current zoning of (R-2). Staff are proposing to update the zoning to Public/Semi-Public (PSP) Zoning District, pursuant to M.C.L. 125.3401. The rezoning is proposed by the City, not by the owner.

Background

The Calhoun County Youth Center has been located on this parcel for several decades. The County has been planning an expansion of the facility which will improve the appearance of the facility, increase capacity, and improve safety for employees and residents. The current zoning is R-2, which does not have the use of the property as a permitted or special land use. The property would then fall into the non-conforming category, which means the expansion would not be allowed under our current ordinance.

Calhoun County Corporation Counsel, James Dyer, submitted an email contending that the County does not need to comply with City zoning and is concerned that the delay from the potential rezoning process is detrimental to their project. We have informed the County that they can proceed with their project, pending site plan approval, but that the city wants to rezone the property to clean up and eliminate a nonconforming use (even if it is in appearance only).

Property/Neighborhood Description

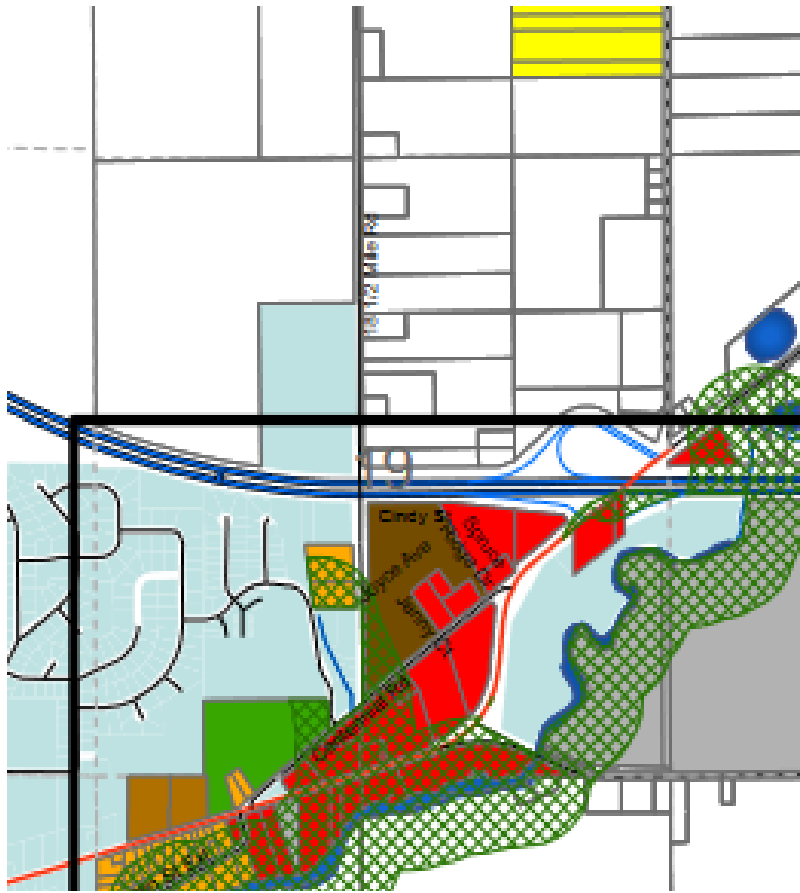
The subject site, 14555 18 1/2 Mile Road, is located just north of I-94 and is the only city parcel north of I-94. The property is surrounded by farmland and sits across from four single family homes. The site subject to this rezoning application is identified on the map below:



The parcel is approximately 26 acres and is split between developed property and forest/grassland. Development in the surrounding area could be characterized as semi-rural, with a majority of the parcels housing single family residences or farm property. South of the site is I-94. 18 1/2 Mile is one of four crossings of I-94 in the community.

Neighborhood Zoning

The parcel is the only city parcel north of I-94. Surrounding parcels in Marengo Township are zoned agricultural.



AG - Agricultural	MH - Manufactured Housing Community
CM - Commercial	RE - Residential Estates
LI - Light Industrial	MO - Marijuana Overlay
LD - Low Density Residential	OP - Open Space Preservation
MD - Medium Density Residential	OC - Open Space & Waterbody Conservation
MF - Multiple Family Residential	City of Marshall

he 2022 Township Zoning Map (above), shows that the parcels to the immediate east, west, and north of the parcel were zoned Agricultural (AR). The southern boundary of the site is bordered by I-94 and City zoned property.

Applicable Ordinance Provisions

The use of the site in the past, present, and future will be as the Calhoun County Youth Center. This type of use is a permitted use in the PSP Zoning District. While the County may not need to comply with city zoning in locating facilities, I am recommending that we update the zoning for this parcel to meet the use.

Rezoning Process, Standards

The following criteria are to be used as a guide in determining whether the rezoning should be

approved:

- A. The proposed zoning district is more appropriate than any other zoning district, or more appropriate than adding the desired use as a special land use in the existing zoning district.
- B. The property cannot be reasonably used as zoned.
- C. The proposed zone change is supported by and consistent with the goals, policies, and future land use map of the adopted City Master Plan. If conditions have changed since the plan was adopted, as determined by the Planning Commission, the consistency with recent development trends in the area shall be considered.
- D. The proposed zone change is compatible with the established land use pattern, surrounding uses, and surrounding zoning in terms of land suitability, impacts on the environment, density, nature of use, traffic impacts, aesthetics, infrastructure, and potential influence on property values, and is consistent with the needs of the community.
- E. All the potential uses allowed in the proposed zoning district are compatible with the site's physical, geological, hydrological, and other environmental features.
- F. The change would not severely impact traffic, public facilities, utilities, and the natural characteristics of the area, or significantly change population density, and would not compromise the health, safety, and welfare of the city.
- G. The rezoning would constitute and create an isolated and unplanned district contrary to the City Master Plan which may grant a special privilege to one landowner not available to others.
- H. The change of present district boundaries is consistent in relation to existing uses, and construction on the site will be able to meet the dimensional regulations for the proposed zoning district listed in the schedule of regulations.
- I. There was a mistake in the original zoning classification, or a change of conditions in the area supporting the proposed rezoning.
- J. Adequate sites are neither properly zoned nor available elsewhere to accommodate the proposed uses permitted in the requested zoning district.

Public Hearing and Notice Requirements

As required by the Zoning Enabling Act of 2006, as amended, a public hearing notice was published in the Marshall Advisor and Chronicle on Saturday, August 12, 2023. Notices of the public hearing were also sent by regular mail to the owners/ occupants of properties located within 300' of the subject parcel. To date, the city has not received any comments from individuals in this area. Any written comments received before the end of the day on Wednesday, September 13, will be presented at the meeting that night.

Recommendation

Staff recommends in support of the requested rezoning/zoning designation of Industrial and Manufacturing Complex (I-3) and makes the findings listed below, as a result of the review and analysis of the rezoning application; analysis of the neighboring land uses and existing conditions; and also finds the project consistent with the objectives of City and Township Master Plans and intent of the City and Township Zoning Ordinances.

Findings

A. The proposed zoning district is more appropriate than any other zoning district, or more appropriate than adding the desired use as a special land use in the existing zoning district.

The rezoning to PSP would be consistent with the intent of that district to serve as a location for municipal buildings. Updating the R-2 district to allow municipal buildings as a special land use could potentially change the character of neighborhoods through the expansion of municipal buildings further into neighborhoods.

B. The property cannot be reasonably used as zoned.

There is a contention that the county does not need to comply with local zoning in locating their facilities.

C. The proposed zone change is supported by and consistent with the goals, policies, and future land use map of the adopted City Master Plan. If conditions have changed since the plan was adopted, as determined by the Planning Commission, the consistency with recent development trends in the area shall be considered.

The Future Land Use map shows the site as residential, which at some level it is (there are rooms in the facility). Staff believe that this should be updated in the upcoming Master Plan update.

D. The proposed zone change is compatible with the established land use pattern, surrounding uses, and surrounding zoning in terms of land suitability, impacts on the environment, density, nature of use, traffic impacts, aesthetics, infrastructure, and potential influence on property values, and is consistent with the needs of the community.

The use of the property will not change and should not have any impact on any of the above features.

E. All the potential uses allowed in the proposed zoning district are compatible with the site's physical, geological, hydrological, and other environmental features.

Staff do not believe that any of the uses in the PSP District would have a negative impact on the site's various features. The use will not change from what is currently on the site.

F. The change would not severely impact traffic, public facilities, utilities, and the natural characteristics of the area, or significantly change population density, and would not compromise the health, safety, and welfare of the city.

There are no expected changes to the use that would compromise the health, safety, and welfare of the city.

G. The rezoning would constitute and create an isolated and unplanned district contrary to the City Master Plan which may grant a special privilege to one landowner not available to others.

The site is already isolated from the city and is already developed with a county facility.

H. The change of present district boundaries is consistent in relation to existing uses, and construction on the site will be able to meet the dimensional regulations for the proposed zoning district listed in the schedule of regulations.

The redeveloped site would be required to meet all zoning requirements for this parcel in this zoning district. Site development standards take into consideration issues such as setbacks, buffering, landscaping, stormwater management, and lighting. Developments complete an independent review by a multi-disciplinary development review team to ensure all regulations will be met prior to their approval, and inspections will be completed during construction to ensure compliance with state and local codes and ordinances.

I. There was a mistake in the original zoning classification, or a change of conditions in the area supporting the proposed rezoning.

I believe that the current zoning classification should have been updated during the last master plan/zoning ordinance update. The site is County owned and serves a role that will not likely change for the foreseeable future. Infrastructure was extended across I-94 to maintain and allow for expansion of the current use. Updating the zoning classification to meet the current reality seems to be the right decision.

J. Adequate sites are neither properly zoned nor available elsewhere to accommodate the proposed uses permitted in the requested zoning district.

There is no change in use and the requested rezoning would bring the property in to compliance with the zoning ordinance.

Therefore, based on the above findings and pursuant to Section 7.1-Amendments and MCL 125.3101 et seq., staff recommends that the Planning Commission recommend to the City Council adoption of the Rezoning Application #RZ23-03 from Suburban Residential District (R-2) to Public/Semi-Public (PSP) Zoning District. If the Planning Commission agrees with the findings presented by staff, the following motion could be used.”

The Planning Commission recommends approval of the proposed rezoning request of 14555 18 1/2 Mile Road (Parcel #53-003-306-00) to Public/Semi-Public (PSP) based on the findings included in the staff report on this matter.

If the Planning Commission finds that the criteria above are not met, and chooses to deny the rezoning, statements related to the above criteria justifying how this request does not meet the rezoning standards must be made.

BUDGET IMPACT:

No impact due to the property being tax exempt.

RECOMMENDATION:

Therefore, based on the above findings and pursuant to Section 7.1-Amendments and MCL

125.3101 et seq., staff recommends that the Planning Commission recommend to the City Council adoption of the Rezoning Application #RZ23-03 from Public/Semi-Public (PSP). If the Planning Commission agrees with the findings presented by staff, the following motion could be used.”

The Planning Commission recommends approval of the proposed rezoning request of 14555 18 1/2 Mile Road (Parcel #53-003-306-00) to Public/Semi-Public (PSP) based on the findings included in the staff report on this matter.

If the Planning Commission finds that the criteria above are not met, and chooses to deny the rezoning, statements related to the above criteria justifying how this request does not meet the rezoning standards must be made.



ITEM 8.A

TO: Planning Commission
FROM: Eric Zuzga, Director of Community Services
DATE: September 13, 2023
SUBJECT: **SP #23-06 14555 18 1/2 MILE ROAD SITE PLANS- EXPANSION**

Case #: SP #23.06
Address: 14555 18 1/2 Mile Road
Parcel #: 53-003-306-00
Zoning District: Suburban Residential (R-2), Rezoning Request to PSP on agenda
Surrounding Zoning: Marengo Township -Agricultural to west, north, and east; City- R-2 to the south
Surrounding Uses: Farmalnd to west and north, single family residential to the east, and I-94/Marshall High School to the south
Previous Action: N/A

City staff have been working with Calhoun County and their consultant, THA Architect Engineers, on an expansion of the Calhoun County Your Center located at 14555 18 1/2 Mile Road. The existing building is just over 23,000 square feet, with this addition planned for 14,090 for a total square footage of 37,668. A proposed rezoning is also on the agenda for Planning Commission's consideration.

Dimensional Requirements (Setback, lot coverage, etc)

The site meets all of the dimensional requirements of the zoning ordinance.

Parking Requirements

Parking requirements have been met for employees, but they are short for visitors. They have provided a letter from the center indicating that they have never had an issue with the Visitor lot being full. Pursuant to sEction 5.14.3.A, they are requesting a deferment of the required parking spaces. Staff has requested that they add the location of the deferred spaces on the site plan and suggest that this be added as a condition of approval.

Landscape Plan

Sidewalks

Staff recommend that sidewalks be deferred as the site is not in a high pedestrian area and the City has no plan to add a pedestrian crossing over I-94.

Exterior Lighting

The required photometric plan was included with the submitted plans showing compliance across the site.

Development Review Team

On August 28, 2023, the City Development Review Team met to consider the proposed site plan. The comments received are as follows:

1. Knox box is required for Fire Department access.
2. Water alternate #1 is the preferred option of the water and fire department.
3. FDC location outside of the fence is requested.
4. FiberNet is not available at this location. The system would need to be extended if desired (not anticipated).
5. New hydrant will need to meet current standards.
6. If the existing hydrant remains, the parking lot will need one spot blocked off for fire access.
7. If the existing hydrant is moving, then a utility easement will have to be extended to that point from the existing easement.
8. Provide calculations for storm water compliance. Staff has no doubt that the site can handle the additional storm water, but want the calculations to ensure compliance.

PLANNING COMMISSION CONSIDERATIONS

Staff have reviewed the site plan based on the requirements of the PSP Zoning District and related sections of the zoning ordinance. As part of our review, we evaluated the proposed facility through the following standards that the Planning Commission will use in the process of reviewing any site plan for approval:

1. Adequacy of information. The site plan information is complete, accurate, and in an understandable form that accurately depicts and describes the proposed development.

The site plan submitted was complete and accurate.

2. Site appearance and preservation. The site layout promotes the normal and orderly development of surrounding lots, and the development layout preserves, to the extent feasible, the site's natural, cultural, and historical features, such as but not limited to significant buildings, wetlands, topography, and woodlands.

The proposed project is a permitted use in the PSP Zoning District. The expanded facility will be improved aesthetically, which will add to the neighborhood. Very little impact on the balance of the site.

3. Pedestrian access. Existing and proposed sidewalks or pedestrian pathways connect to existing and planned public sidewalks and pathways in the area, and comply with applicable barrier-free access standards.

The site is outside of any planned area for sidewalks, so staff is requesting a sidewalk deferment. Interior pedestrian access meets the requirements.

4. Vehicular circulation. Drives, streets, parking, site access and other vehicle-related elements are designed to minimize traffic conflicts on adjacent streets, and to promote safe and efficient traffic circulation.

The plans have been reviewed and approved by the Department of Public Services. The site

plan maintains the current circulation pattern with the expansion to have minimal impact on the current circulation pattern.

5. Parking and loading. Off-street parking lots and loading areas are arranged and located to accommodate the intensity of proposed uses, minimize conflicts with adjacent uses, and promote shared-use of common facilities where feasible.

As mentioned above, staff is recommending that the parking proposed be accepted and the Planning Commission approve a deferment of the remaining parking.

6. Building composition. Building design and architecture are harmonious with the surrounding neighborhood with regard to scale, mass, proportion, and materials.

The design and architecture of the building have been submitted and are attached. The proposed design improves the aesthetics of the site and would be an improvement over the current design.

7. Screening. Adequate screening elements have been provided to buffer or separate unlike or conflicting land uses, and to screen off-street parking, mechanical appurtenances, loading and unloading areas and storage areas from abutting residential districts and street rights-of-way.

Required green belts, street tree planting, and parking lot screening meet the requirements in the ordinance.

8. Exterior lighting. All exterior lighting fixtures are designed and arranged to minimize glare and light trespass, prevent vision impairments, and maximize security.

The site meets the standards of the zoning ordinance per the submitted photometric plan. There are no light trespass issues on the site.

9. Impact upon public services. The impact upon public services (including utilities, streets, police and fire protection, emergency access, and public sidewalks and pathways) will not exceed the existing or planned capacity of such services.

We expect no impact on public services. All departments have reviewed the site plan and have no concerns with the design proposed.

BUDGET IMPACT:

None anticipated at this time.

RECOMMENDATION:

Approve SP #23-06 with the condition that the City Council approves the rezoning of the parcel to Public/Semi-Public Zoning District (PSP), the Planning Commission accept the proposed parking plan and that the area of deferred parking be added to the site plan, and that the Planning Commission waive the sidewalk requirement.



CITY OF MARSHALL

SITE PLAN APPLICATION

SITE PLAN REVIEW PROCESS

THE CITY NOW REQUIRES ALL SITE SUBMISSIONS IN ELECTRONIC .PDF FORMAT, ACCOMPANIED BY TWO (2) LARGE SIZE PAPER COPIES.

Plans can be emailed to: TNelson@cityofmarshall.com

1. Site plan application and fee are submitted to the Department of Community Services at City Hall, 323 W. Michigan Ave., Marshall, MI from the hours of 8:00 a.m.-5:00 p.m. Applications and fees may be submitted by mail or in person. Site plan submissions are **required electronically with 2 large size paper copies**.
2. The initial site plan submission is dedicated to internal City staff review. The developer is welcome to attend this meeting. If the developer does not attend, revisions will be suggested in a letter.
4. A deadline is given to the developer to prepare revisions and re-submit by the corresponding Planning Commission "Submission Date" (dates attached).
5. At their next regular meeting, Planning Commission accepts the site plan. If the plan is complete, upon request, the Planning Commission may also move to approve. If the plan is not complete or there is no request, the Planning Commission will move to approve at their next regularly scheduled meeting.

Site Plan Submission Requirements (Review Zoning Ordinance for all requirements)

1. Complete the Application.
2. Review and follow the Site Plan Review checklist.
3. Go to www.cityofmarshall.com - Planning and Zoning and click on "Zoning Ordinance" under Helpful Link.
4. Submit a certified survey of the property with the site plan.
5. Submit a copy of the deed showing ownership

City Departments

Web site: www.cityofmarshall.com

City Manager Tom Tarkiewicz	269.558.0315 TTarkiewicz@cityofmarshall.com
Planning and Zoning Trisha Nelson	269.558.0304 TNelson@cityofmarshall.com
Director of Public Safety Jim Schwartz	269.781.9810 JSchwartz@cityofmarshall.com
Director of Public Utilities Kristin Bauer	269.558.0323 KBauer@cityofmarshall.com
Director of Electric Utilities Ed Rice	269.558.0329 ERice@cityofmarshall.com
Environmental Coordinator Cheryl Vosburg	269.558.0328 CVosburg@cityofmarshall.com
Building Official Tim Musser	269.781.3985 x1507 TMusser@cityofmarshall.com
Water Dept. Supervisor Aaron Ambler	269.558.0338 AAmbler@cityofmarshall.com
Wastewater Dept. Supervisor Alec Egnatuk	269.558.0337 AEgnatuk@cityofmarshall.com

County Department

www.calhouncountymi.gov

Health Department – Food Services- Battle Creek	269-969-6373
Road Department – Soil and Erosion Permits - Marshall	269-781-9841

Michigan Department of Transportation

www.michigan.gov

269-789-0560 or toll free 1-877-324-6368

City of Marshall
Application for Site Plan Review

Attn: Planning and Zoning Administrator
323 W Michigan Ave.
Marshall, Michigan, 49068

The following application is made to the City of Marshall Planning Commission in accordance with the provisions of the Planning and Zoning Department.

1. Applicant Information

Address of property being developed:

14555 18 ½ Mile Road	Marshall, Michigan	49068

Owner of property being developed:

Calhoun County

Owner's Address: 315 West Green Street

Marshall	Michigan	49068
City	State	Zip

Owner's Phone Number:

269-781-0966

2. Owner's Agent if working for property owner.

Name and Title:

David Bennett, Architect

Address: 817 East Kearsley Street

Flint	Michigan	48503
City	State	Zip

Phone Number:

810-767-5600

City of Marshall
Application for Site Plan Review

3. Brief description of proposed project

The additions and renovations to the Calhoun County Youth Center include a new secure entry with administrative offices, a new classroom wing, additions to the three sleeping room wings that include a large dayroom with natural light, and a new ramp addition to provide better access to the existing gymnasium. The existing parking areas are being reused as much as possible to save costs. The staff parking is enclosed with fencing for security purposes, however, there is an alternate to delete the parking lot fence if funds are unavailable. The exterior styling is designed to be more residential and less institutional from the street view. The landscaping proposed for the project is requested based on the need of the detention facility to reduce opportunities for anything a person could hide behind. The owner is requesting to not provide landscape islands in the parking lot that someone could hide behind. In lieu of those parking islands we are calling for new trees further away from the building with lower height vegetation planted along the front perimeter.

4. Property Information

Is this property located in a floodplain?	<u>No</u>
Is this property located in a wetland?	<u>No</u>
Land area in square feet?	<u>1,146,935</u>
Proposed building area in square feet?	<u>37,668</u>
Proposed paved area in square feet?	<u>25,863</u>
Existing paved area in square feet?	<u>23,738</u>
Lake or stream within 500 feet?	<u>No</u>
Any other agencies contacted for approvals?	<u>Yes</u>

If so, please list:

State of Michigan, Bureau of Fire Services

Calhoun County, Waste and Water Departments

Calhoun County, Soil Erosion and Sedimentation Control

City of Marshall

Application for Site Plan Review

5. Authorization (Must be signed by the owner of the property)

I am the owner of record for this property for which this application is being filed and as such, I am familiar with the development being proposed to be carried out on my property.

I hereby, give permission for this application to be filed with the full understanding that certain restriction may be placed on the property relative to the approval of the proposed work.

I further certify that under penalties of perjury, I am to sign this application.

Name (Please Print)_____

Title: _____ Date: _____

Signature:_____

Note: If there are multiple owners of the property or you are representing a group, corporation, or other organization attach a copy of a certified letter authorizing you to sign this application for the proposed development.

LAND USE AND DEVELOPMENT FEES	
PLATS	
Up to 30 Lots	\$450.00
Over 30 Lots	\$650.00
SITE CONDOMINIUMS	
Up to 30 Lots	\$350.00
Over 30 Lots	\$550.00
SITE PLANS	
Commercial and	\$250.00 < 30 acres
Institutional	\$250.00
Special Land Use	\$250.00
Planned Unit Development	\$350.00
Amend a PUD	\$150.00
Multiple Family Developments (Apartment & Additions to existing Site Plans if Planning Commission Review is required	\$50 plus \$5.00 per unit or lot
	\$100.00
Extending Site Plan with Planning Commission	\$150.00

CITY OF MARSHALL

City of Marshall Grease Discharge Control Policy

All non-residential establishments that prepare, cook, or dispense food and discharge wastewater to the City of Marshall sanitary sewer system, are required to install and maintain an appropriately sized grease trap/grease interceptor. These establishments include but are not limited to restaurants, school kitchens, hotel kitchens, hospitals, church kitchens, bars, clubs, grocery stores, etc.

The City of Marshall Sewer Use Ordinance prohibits the discharge of grease in amounts that could cause interference or obstruction of wastewater flow. The Sewer Use Ordinance establishes the City's authority to enforce this policy and to impose fines and penalties for non-compliance, and to recover costs associated with enforcement & non-compliance.

Owners are required to contract a licensed plumber to install a properly sized grease trap/interceptor in accordance with the State of Michigan Plumbing Code. The grease trap or interceptor shall be certified by and/or designed according to the Plumbing and Drainage Institute standards. Prior to final connection to the City's sanitary sewer, the owner must notify the City Plumbing Inspector for inspection. The City of Marshall Wastewater Treatment Department must also be notified. Grease trap/interceptor location and specifications must be provided along with a written employee grease handling policy and an appropriate grease trap/interceptor maintenance schedule. Failure to meet code requirements, or provide required information will result in a denial to connect.

City personnel will inspect grease trap/interceptors and maintenance records on a regular basis. Failure to appropriately maintain a grease trap/interceptor may result in fines and/or disruption of service.

Cross Connections

In an effort to eliminate cross connections, the applicant needs to install backflow prevention devices in accordance with the Michigan Plumbing Code. For non-residential water users, backflow prevention devices for facility containment are preferred. Prior to connecting to water services, a cross connection inspection must be scheduled with the Environmental Coordinator.

Environmental Coordinator:

Cheryl Vosburg 269.558.0328

Building Official: Tim Musser 269.781.3985

CITY OF MARSHALL

Site Plan Review Checklist for General Development

Date: August 18, 2023

Zoning District R-2 Suburban Residential District

Proposed Use: I-3 Detention Facility

Is this a Permitted Use? ☐ Yes ☐ No

If yes list section number: _____

Is the property in the Well Head Protection Area? ☒ Yes ☐ No ☐ NA

Property Address: 14555 18 1/2 Mile Road, Marshall, Michigan 49068

Information of Responsible Party that prepared plans

Name: David Bennett

Company Name: THA Architects Engineers

Company Address: 817 East Kearsley Street

Flint, MI 48503

CITY OF MARSHALL

Zoning Ordinance, Article 6: Development Procedures: Section 6:3 - Site Plan Review is needed when:

☐

(A) - Any use or development stipulated elsewhere in the ordinance.

☐

(B) - All uses subject to land approval.

☐

(C) - Any areas for which off-street parking is required except for single- and two-family dwellings on a single lot.

☐

(D) - All permitted use, new construction, or any change of use lying contiguous to or across the street from a residential district.

☐

(E) - All residentially related uses permitted in a one-family district such as, but not limited to, institutional uses, churches, or public facilities.

☐

(F) - Any new use, addition or accessory structure that requires additional off-street parking to that already provided.

☐

(G) - Site plans for subdivisions and site condo developments.

☐

(H) - All uses not otherwise included within a specific use district.

☐

(I) - Any use for which the zoning administrator determines that PC review is necessary to determine compliance with the zoning ordinance.

☐

(J) - Amendments to approve site plans, except that the City Manager may approve minor modifications.

Note: Staff will review all plans prior to submitting them to Planning Commission.

Development Procedures: 6.3 – Site Plan Review: The following information should be included in your site plan:

☐

Plans submitted for site plan review shall be stamped by a design professional licensed by the State of Michigan such as a landscape architect, architect, or civil engineer.

☐

Site plans shall be drawn to an engineer's scale appropriate for a sheet size of at least 24 by 36 inches, not to exceed one (1) inch equals 50 feet. If a large development must be depicted in sections on multiple sheets, then an overall composite sheet shall be provided.

☐

Date, north arrow scale, existing zoning, zoning of adjacent properties, legal description of the property, easements, and the names and addresses of the

CITY OF MARSHALL

architect, planner, designer, or civil engineer responsible for the preparation of the site plan.

☐

The dimensions of all lot and property lines, showing the relationship of the subject property to abutting properties and a boundary survey of the parcel.

☐

The location, height and dimensions of all existing and proposed structures on the subject property and all existing structures within 100 feet of the subject property.

☐

A finished floor elevation and exterior building elevation drawing shall be submitted with the site plan.

☐

The location of all existing and proposed drives, walks and parking areas.

☐

The location and right-of-way widths of all abutting streets and alleys.

☐

The location and size of all existing and proposed sanitary sewer lines, water lines, and storm drainage facilities must be shown.

☐

The location and size of all existing and proposed electric, natural gas, telephone, cable TV and solid waste disposal facilities must be shown.

☐

The location, height area of illumination and fixture details of all existing and proposed lighting shall be provided. All lighting shall be located and oriented to have a minimal impact on adjacent properties.

☐

The size, height, location and illumination of all existing and proposed signs shall be provided to insure ordinance compliance.

☐

The location of existing natural features such as wooded areas, floodplains, wetlands, drainage courses, and a topographic survey of spot elevations of the site.

☐

Other information as requested by the Zoning Administrator or Planning Commission to verify that the site and use follow the Ordinance.

☐

The Planning Commission may waive any of the foregoing requirements determined unnecessary for site plan review purposes.

CITY OF MARSHALL

PLANNING COMMISSION CONSIDERATIONS

The Planning Commission shall consider the following standards in the process of reviewing any site plan for approval:

1. **Adequacy of information.** The site plan information is complete, accurate, and in an understandable form that accurately depicts and describes the proposed development.
2. **Site appearance and preservation.** The site layout promotes the normal and orderly development of surrounding lots, and the development layout preserves, to the extent feasible, the site's natural, cultural, and historical features, such as but not limited to significant buildings, wetlands, topography, and woodlands.
3. **Pedestrian access.** Existing and proposed sidewalks or pedestrian pathways connect to existing and planned public sidewalks and pathways in the area, and comply with applicable barrier-free access standards.
4. **Vehicular circulation.** Drives, streets, parking, site access and other vehicle-related elements are designed to minimize traffic conflicts on adjacent streets, and to promote safe and efficient traffic circulation.
5. **Parking and loading.** Off-street parking lots and loading areas are arranged and located to accommodate the intensity of proposed uses, minimize conflicts with adjacent uses, and promote shared-use of common facilities where feasible.
6. **Building composition.** Building design and architecture are harmonious with the surrounding neighborhood with regard to scale, mass, proportion, and materials.
7. **Screening.** Adequate screening elements have been provided to buffer or separate unlike or conflicting land uses, and to screen off-street parking, mechanical appurtenances, loading and unloading areas and storage areas from abutting residential districts and street rights-of-way.
8. **Exterior lighting.** All exterior lighting fixtures are designed and arranged to minimize glare and light trespass, prevent vision impairments, and maximize security.
9. **Impact upon public services.** The impact upon public services (including utilities, streets, police and fire protection, emergency access, and public sidewalks and pathways) will not exceed the existing or planned capacity of such services.

2019 Planning Commission Submission Deadlines

The Marshall City Planning Commission shall meet on the 2nd Wednesday of the month at 7:00 pm in City Hall Council Chambers at 323 W. Michigan Avenue, Marshall, MI 49068. In the event of no business, the Planning Commission will move to their next regularly scheduled meeting.

Submission Deadline	Meeting Date
December 17, 2018	January 9, 2019
January 21, 2019	February 13, 2019
February 18, 2019	March 13, 2019
March 18, 2019	April 10, 2019
April 15, 2019	May 8, 2019
May 20, 2019	June 12, 2019
June 17, 2019	July 10, 2019
July 22, 2019	August 14, 2019
August 19, 2019	September 11, 2019
September 16, 2019	October 9, 2019
October 21, 2019	November 13, 2019
November 18, 2019	December 11, 2019

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PROJECT:

ADDITIONS AND RENOVATIONS FOR CALHOUN COUNTY YOUTH CENTER

14555 18 1/2 MILE ROAD
MARSHALL, MI 49068



SITE PLAN REVIEW

ISSUE DATE: 8/18/2023

ARCHITECTURE /
MECHANICAL ENGINEERING:



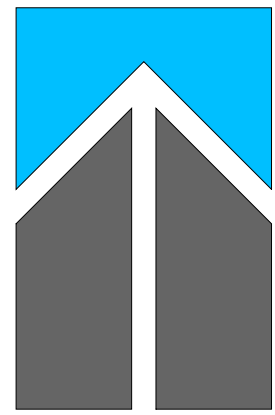
THA
Architects Engineers

817 E. Kearsley St. | Flint, MI 48503
Ph: 810-767-5600 | THA-Flint.com

THA ARCHITECTS ENGINEERS

817 E. KEARSLEY ST. FLINT, MICHIGAN
(810) 767-5600

DETENTION SPECIALIST:



ELEVATUS
ARCHITECTURE

ELEVATUS ARCHITECTURE

111 E WAYNE ST. STE. 555 FT. WAYNE, INDIANA
(260) 424-9080

ELECTRICAL ENGINEERING:



FSA ENGINEERING LLC

3449 BREEZE POINTE CT. LINDEN, MICHIGAN
(810) 394-1379

STRUCTURAL SPECIALIST:



WAK
WILLIAM A. KIBBE & ASSOCIATES, INC.
ENGINEERS | ARCHITECTS | SURVEYORS

WILLIAM A. KIBBE &
ASSOCIATES, INC.

1475 S. WASHINGTON AVE. SAGINAW, MICHIGAN
(989) 752-5000

CONSTRUCTION MANAGER:



THE E&L
CONSTRUCTION
GROUP

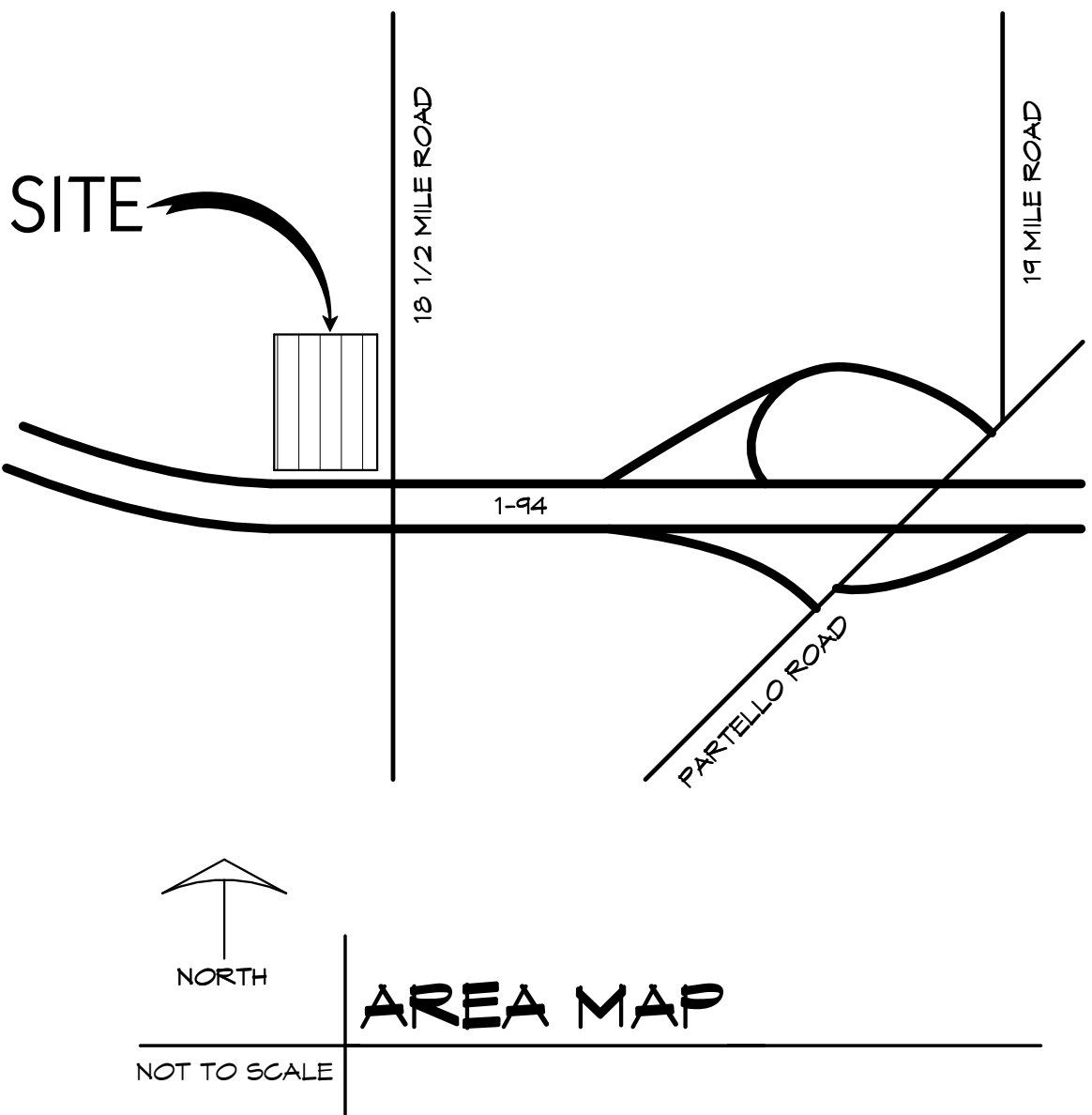
E&L CONSTRUCTION GROUP

3040 AIRPARK DR. S. FLINT, MICHIGAN
(810) 744-4300

INDEX OF DRAWINGS

6001	TITLE SHEET
6002	CODE COMPLIANCE
6003	CODE COMPLIANCE
SITE DESIGN	
C100	PROPERTY BOUNDARIES
C101	SITE SURVEY
C102	SITE DEMOLITION PLAN
C103	SITE PLAN
C104	SITE GRADING & UTILITIES PLAN
C105	LANDSCAPING PLAN
C301	SECTIONS AND DETAILS
ARCHITECTURAL DESIGN	
A104	COMPOSITE FLOOR PLAN
A105	BASEMENT FLOOR PLAN
A113	ROOF PLAN
A202	EXTERIOR ELEVATIONS
A203	EXTERIOR ELEVATIONS
ELECTRICAL DESIGN	
E001	ELECTRICAL SITE PLAN

SITE PLAN REVIEW REQUIREMENTS:		
CURRENT ZONING:	R-2	
PROPOSED ZONING:	PSP- PUBLIC/SEMI PUBLIC	
LOT SIZE:	REQUIRED N/A	PROVIDED 114683 S.F. PROVIDED
MAX LOT COVERAGE:	60% ALLOWABLE	4.95% PROVIDED
SETBACKS:	FRONT YARD: 30' REAR YARD: 15' SIDE YARD: 20'	OBSERVED OBSERVED OBSERVED
BUILDING HEIGHT:	60' ALLOWABLE	25' MAXIMUM
FLOOR AREA:	N/A	31,668 S.F. PROVIDED (SEE SHEET 6002 FOR DETAILS)
PARKING REQUIREMENTS:	REQUIRED	PROVIDED
STAFF PARKING (PER TABLE 5.14.5.D - B iv)	20 SPACES	21 SPACES
VISITOR PARKING	(SEE STATEMENT BELOW)	12 SPACES
TOTAL PARKING		33 SPACES (2 P.H.)
A LISTING FOR DETENTION FACILITIES IS NOT PROVIDED IN THE CITY OF MARSHAL ZONING ORDINANCE. PLEASE SEE THE ATTACHED OWNER LETTER FOR A STATEMENT ON VISITOR PARKING SPACES.		
STORM WATER RUNOFF CALCULATIONS: REFER TO SHEET C103		





THA
Architects Engineers

817 E. Kearsley St. | Flint, MI 48503
Ph: 810-767-5600 | THA-Flint.com

CALHOUN COUNTY
315 WEST GREEN STREET, MARSHALL, MI 49068
SITE PLAN REVIEW
ADDITIONS AND RENOVATIONS FOR:
CALHOUN COUNTY YOUTH CENTER
14555 18 1/2 MILE ROAD, MARSHALL, MI 49068

REVISIONS / SUBMISSIONS		DATE
NO.	REVISIONS / SUBMISSIONS	DATE
1	SEAL	
2	DRAWN KPS	PROJECT NO. 22-220
3	CHECKED JESS	DRAWING NO.
4	REVIEWED DJB	GOO1
5	DATE AUG 18, 2023	
6	SCALE As Indicated	SHEET NO. 1 OF 16

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COMMERCIAL CODE COMPLIANCE	
JURISDICTION	MARSHALL, MI
BUILDING CODE	MICHIGAN BUILDING CODE 2015 MICHIGAN REHABILITATION CODE FOR EXISTING BUILDINGS 2015 - LEVEL 3 ALTERATIONS
BARRIER FREE CODE	ICC/ANSI A117.1.2003 & MICHIGAN BARRIER FREE DESIGN 2010 AND AMERICANS WITH DISABILITIES ACT ACCESSIBLE GUIDELINES (ADAAG)
ENERGY CODE	MICHIGAN UNIFORM ENERGY CODE RULES PART 10 WITH ANSI / ASHRAE / IEQNA STANDARD 90.0-2009
PLUMBING CODE	2015 MICHIGAN PLUMBING CODE
MECHANICAL CODE	2015 MICHIGAN MECHANICAL CODE
ELECTRICAL CODE	2017 MICHIGAN ELECTRICAL CODE
ORIGINAL CONSTRUCTION	BUILT 1951 - ADDITION 1967
ORIGINAL BUILDING USE GROUP	I-3

CODE COMPLIANCE DATA: MEC 2015 / MRC 2015	
USE GROUP CLASSIFICATION	I-3 CONDITION 5 (LEVEL 1), S-1 (BASEMENT)
MIXED USE GROUP CLASSIFICATION	NON-SEPARATED
HAZARD CLASSIFICATION	LIGHT
MINIMUM CONSTRUCTION REQUIREMENTS	TYPE 2B
CODE ALLOWABLE FLOOR AREA:	40,000 S.F.
EXISTING GROSS FLOOR AREAS:	
- LOWER LEVEL (EXISTING)	8,461 S.F.
- LEVEL 1 (EXISTING)	15,117 S.F.
- LEVEL 1 (NEW)	14,090 S.F.
TOTAL CODE GROSS AREA:	37,668 S.F.
ACTUAL BUILDING HEIGHT	25 FT / 1 FLOOR + BASEMENT
ALLOWABLE HEIGHT	
- ASSUME TYPE 2B CONSTRUCTION, I-3-USE	75 FT ABOVE GRADE
INCIDENTAL USE AREAS:	
ROOM OR SPACE	B, S-1, U
SPECIAL USE & OCCUPANCY REQUIREMENTS:	
- AUTOMATIC FIRE SUPPRESSION SYSTEM, PROVIDED	
- MANUAL FIRE ALARM SYSTEM WITH ADDRESSABLE VOICE COMMUNICATION IS PROVIDED	
- THROUGHOUT THE BUILDING PER NFPA 13 AND NFPA 72	
- SPECIAL DETAILED REQUIREMENTS: SECTION 409, BASED ON I-3 CONDITION 5	

CODE COMPLIANCE DATA CONTINUED: MEC 2015 / MRC 2015		
FIRE RESISTANCE RATINGS / TYPE II B CONSTRUCTION	ALL USES	
	REQUIRED	PROVIDED
EXTERIOR WALLS:		
A. LOAD BEARING	0 HOUR	0 HOUR
FIRE SEPARATION ASSEMBLIES:		
A. EXIT ENCLOSURES - STAIRS	1 HOUR	1 HOUR
B. SHAFTS - ELEVATORS & MECHANICAL	2 HOUR	2 HOUR
C. MIXED USE SEPARATION	1 HOUR	N/A
D. FIRE AREA SEPARATION	N/A	N/A
E. OTHER SEPARATION ASSEMBLIES	N/A	N/A
F. CORRIDORS (PER TABLE 1020.1)	1 HOUR	0 HOUR
G. HORIZONTAL ASSEMBLIES - SEPARATING MIXED OCCUPANCIES	1 HOUR	1 HOUR
H. CORRIDOR IN SLEEPING AREA (PER 409.8.2)	SMOKE PARTITIONS	YES
FIRE PARTITIONS:		
EXIT ACCESS CORRIDORS	0 HOUR	0 HOUR
FIRE WALLS:		
BUILDING SEPARATION	N/A	N/A
SMOKE PARTITIONS:		
A. 409.8.2 OCCUPANCY CONDITION 5	YES	YES
OTHER NON-LOAD BEARING PARTITIONS:	N/A	N/A
STRUCTURAL MEMBERS SUPPORTING RATED WALLS:	N/A	N/A
FLOOR CONSTRUCTION:	1 HOUR	1 HOUR
ROOF CONSTRUCTION:		
ALL ROOF CONSTRUCTION LESS THAN 20' AFF	0 HOUR	0 HOUR
PRIMARY ROOF CONSTRUCTION GREATER THAN 20' AFF	0 HOUR	0 HOUR
SECONDARY ROOF CONSTRUCTION & DECK GREATER THAN 20' AFF	0 HOUR	0 HOUR
INTERIOR FINISHES:		
WALLS & CEILINGS	N/A	
VERTICAL EXITS AND EXIT PASSAGEWAYS	CLASS A	
EXIT ACCESS CORR. AND OTHER EXITWAYS	CLASS A	
ROOMS AND ENCLOSED SPACES	CLASS C	
INTERIOR FINISHES TESTING CRITERIA:		
WALLS & CEILINGS	ASTM E84	
FLOOR FINISHES	NFPA 253	
DECORATIONS AND TRIM	NFPA 101	

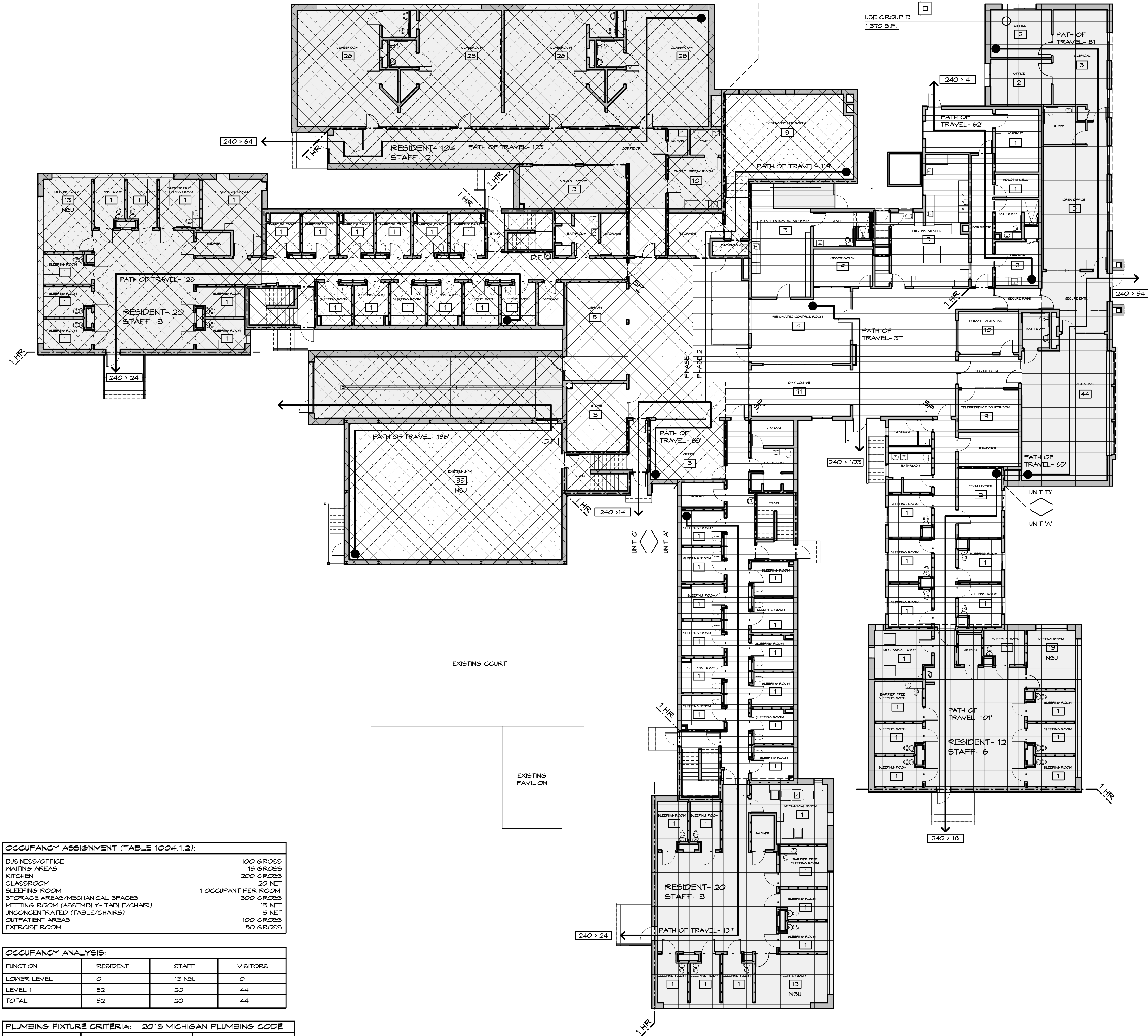
CODE COMPLIANCE DATA CONTINUED: MEC 2015 / MRC 2015	
MEANS OF EGRESS REQUIREMENTS	
MINIMUM CEILING HEIGHT:	7'-6" MIN. HT.
MAXIMUM TRAVEL DISTANCE:	B: 200'
COMMON PATH OF EGRESS TRAVEL:	B: 15'
DEAD END LIMIT:	B: 20'
EGRESS CAPACITIES:	MINIMUM WIDTH 36" SERVING AN OCCUPANT LOAD LESS THAN 50
COMMON PATH OF TRAVEL:	
CAPACITIES PER UNIT WIDTH:	
UNIT WIDTH:	BASED ON WIDTHS IN INCHES / PERSON
STAIRS:	2 INCHES / PERSON (EXP #1 - 1009.3.1)
DOORS:	.15 INCHES / PERSON (EXP #1 - 1009.3.2)
RAMP:	.15 INCHES / PERSON (EXP #1 - 1009.3.2)
CORRIDORS:	.15 INCHES / PERSON (EXP #1 - 1009.3.2)
DOORS:	
DOOR MINIMUM HEIGHT:	80" MINIMUM / 49" MAXIMUM
DOOR CLEAR WIDTH:	7" MAX. INTO REQUIRED CORRIDOR WIDTH
DOOR PROJECTION:	ACTIVATED BY SMOKE DETECTION
AUTOMATIC SELF CLOSING DEVICES:	
FIRE DOOR TESTING:	IN ACCORDANCE WITH NFPA 80 AND 252
STAIRS:	
EXISTING TREAD LENGTH	10", 11"
EXISTING RISER HEIGHTS	7 1/4", 7 1/8"
GUARD HEIGHT REQUIRED	42" MIN
RAILING HEIGHT REQUIRED	34" MIN TO 38" MAX

OCCUPANCY ASSIGNMENT (TABLE 1004.1.2):	
BUSINESS/OFFICE	100 GROSS
PARKING AREAS	15 GROSS
KITCHEN	200 GROSS
CLASSROOM	20 NET
SLEEPING ROOM	1 OCCUPANT PER ROOM
STORAGE AREAS/MECHANICAL SPACES	500 GROSS
MEETING ROOM (ASSEMBLY- TABLE/CHAIR)	15 NET
UNCONCENTRATED (TABLE/CHAIRS)	15 NET
OUTPATIENT AREAS	100 GROSS
EXERCISE ROOM	50 GROSS

OCCUPANCY ANALYSIS:			
FUNCTION	RESIDENT	STAFF	VISITORS
LOWER LEVEL	0	15 NSU	0
LEVEL 1	52	20	44
TOTAL	52	20	44

PLUMBING FIXTURE CRITERIA: 2015 MICHIGAN PLUMBING CODE		
OCCUPANCY	WATER CLOSETS	LAVATORIES
INSTITUTIONAL (DETENTION CENTER)	1 PER 15	1 PER 15
INSTITUTIONAL (EMPLOYEES)	1 PER 25	1 PER 35

PLUMBING FIXTURE COUNTS:			
OCCUPANCY		TOILET FIXTURES	
MALE	FEMALE	REQUIRED	PROVIDED
561 OCCUPANTS	284	36 P.L.C.	81 P.L.C.
284		34 LAV	58 LAV
DRINKING FOUNTAINS REQUIRED: 0		SERVICE SINKS REQUIRED: 1	
DRINKING FOUNTAINS PROVIDED: 2- EXISTING		SERVICE SINKS PROVIDED: 2	
1- NEW			



CODE COMPLIANCE FIRST FLOOR PLAN

BUILDING ANALYSIS

- ☐ EXISTING BUILDING FOOTPRINT: 15,117 S.F.
- ☐ PROPOSED ADDITIONS FOOTPRINT: 14,090 S.F.

FIRE RATED CONSTRUCTION

- SMOKE PARTITION
- 1 HOUR RATED FIRE BARRIER

OCCUPANCY

- 111 INDICATES OCCUPANCY FOR EACH ROOM
- 111 x 11 INDICATES EGRESS LIMIT AND ACTUAL THROUGH DOOR

PHASE AREAS

- ☒ PHASE 1
- ☐ PHASE 2
- ☐ PHASE 3
- NSU: NON-SIMULTANEOUS USE

NO.	REVISIONS / SUBMISSIONS	DATE

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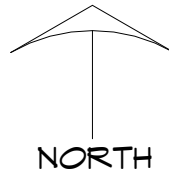
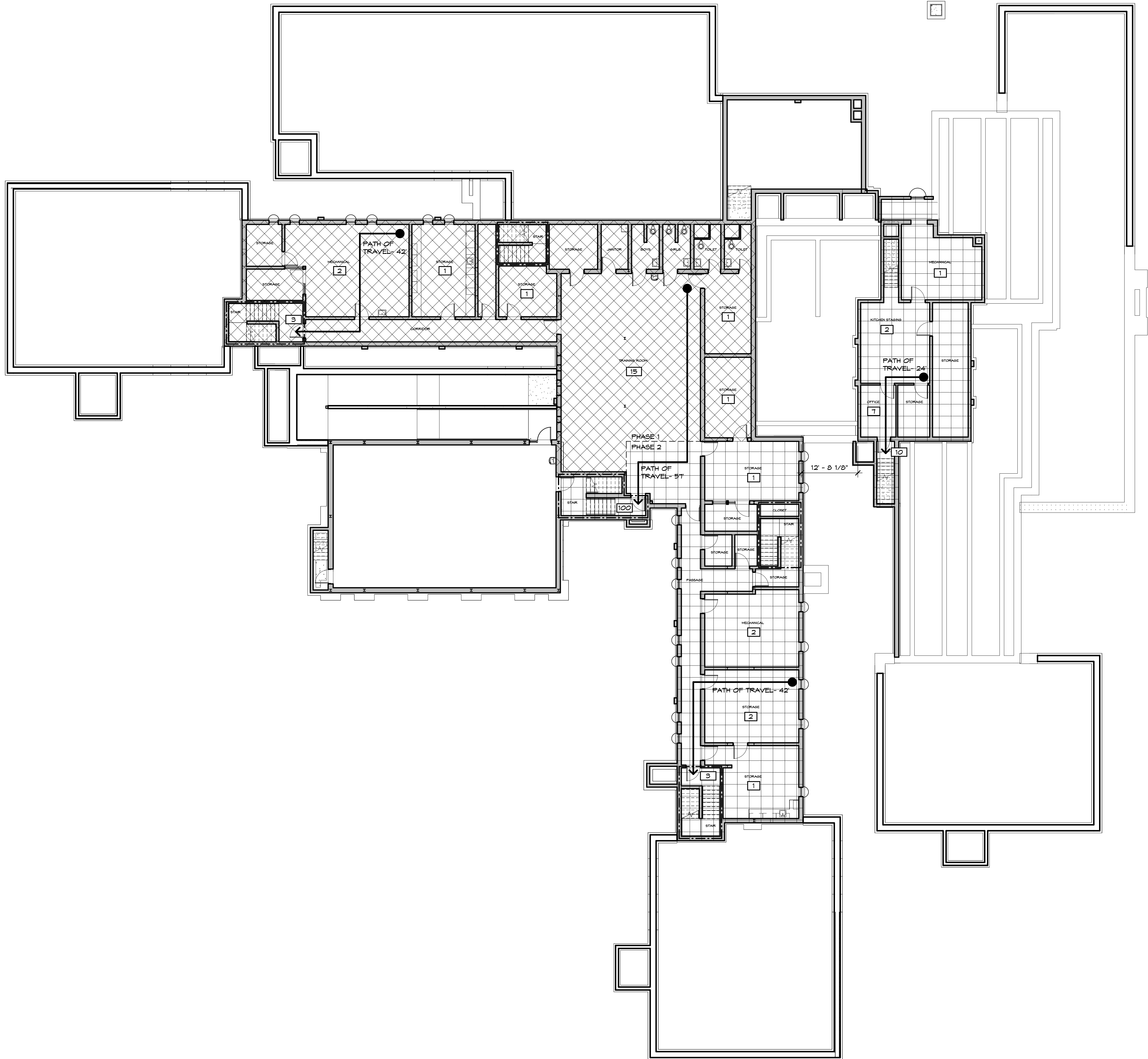
CALHOUN COUNTY
CALHOUN COUNTY YOUTH CENTER
14555 18 1/2 MILE ROAD, MARSHALL, MI 49068

DRAWING TITLE
CODE COMPLIANCE

SEAL	DRAWN KRS	PROJECT NO. 22-220
	CHECKED JES	DRAWING NO.
	REVIEWED DJB	GOO2
	DATE AUG 18, 2023	SHEET NO. 2 OF 16
	SCALE AS INDICATED	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17



CODE COMPLIANCE
BASEMENT PLAN

BUILDING ANALYSIS

EXISTING BUILDING FOOTPRINT: 8,500 S.F.

FIRE RATED CONSTRUCTION

SMOKE PARTITION
1 HOUR RATED FIRE BARRIER

OCCUPANCY

INDICATES OCCUPANCY FOR EACH ROOM
INDICATES EGRESS LIMIT AND ACTUAL THROUGH DOOR

PHASE AREAS

PHASE 1
PHASE 2
PHASE 3

NO.	REVISIONS / SUBMISSIONS	DATE

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**CALHOUN COUNTY
YOUTH CENTER**
14555 18 1/2 MILE ROAD, MARSHALL, MI 49068

DRAWING TITLE
CODE COMPLIANCE

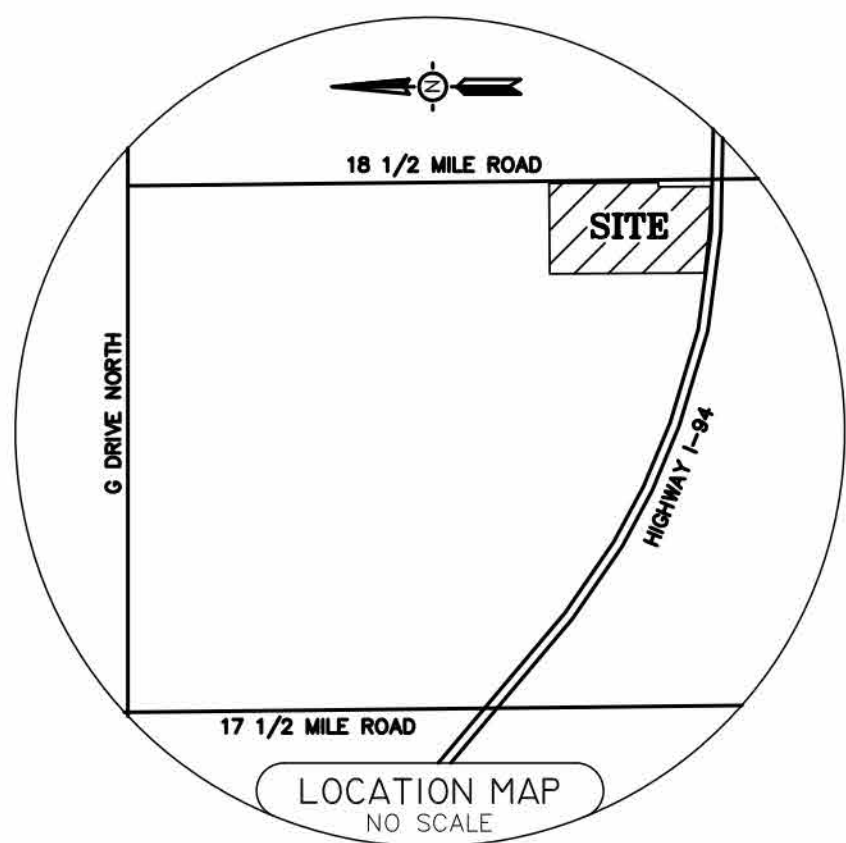
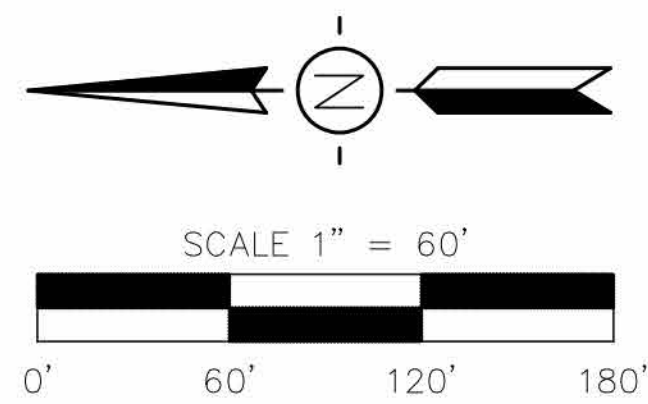
SEAL	DRAWN KRS	PROJECT NO. 22-220
	CHECKED JESS	DRAWING NO.
	REVIEWED DJB	GO03
	DATE AUG 18, 2023	
	SCALE As Indicated	
		SHEET NO. 3 OF 16

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CERTIFIED BOUNDARY & TOPOGRAPHICAL SURVEY

FOR: THE E & L CONSTRUCTION GROUP

"14555 18 1/2 MILE ROAD, MARSHALL, MI 49068"



CERTIFICATE OF SURVEY:

I hereby certify only to the parties named hereon that we have surveyed at the direction of said parties, a parcel of land previously described as:

(As provided in Tax ID# 53-003-306-00): Beginning at the Center post, North 1399.22 feet, West 33 feet to the point of beginning, West 814.4 feet, South 1388.7 feet to the North line of I-94 Highway, Easterly along I-94 781.04 feet, North 473 feet, East 37 feet, North 982.15 feet to beginning, Section 19, T2S, R5W, City of Marshall, Calhoun County, Michigan.

and that we have found or set, as noted hereon, permanent markers to all corners and angle points of the boundary of said parcel and that the more particular legal description of said parcel is as follows:

A parcel of land in the Northwest 1/4 and the Southwest 1/4 of Section 19, T2S, R5W, City of Marshall, Calhoun County, Michigan, the surveyed boundary of said parcel described as: Commencing at the North 1/4 corner of said Section 19; thence S00°19'04"E along the North-South 1/4 line of said Section 19 a distance of 1248.00 feet; thence S89°33'16"W 33.00 feet to the point of beginning of this description; thence S00°19'04"E parallel with said North-South 1/4 line 982.15 feet; thence S89°40'56"W perpendicular to said North-South 1/4 line 471.66 feet to the Northerly right of way line of Highway I-94; thence Northwesterly 780.44 feet along said Northerly line on a curve to the right, said curve having a radius of 6486.12 feet, a delta angle of 6°53'39" and a chord length of 779.97 feet bearing N85°39'47"W; thence N00°19'04"W parallel with said North-South 1/4 line 1388.70 feet; thence N89°33'16"E 814.40 feet to the point of beginning; said parcel containing 26.33 acres, more or less; said parcel subject to all easements and restrictions, if any.

WITNESSES TO SECTION CORNERS:

North 1/4 corner Section 19, T2S, R5W, Liber 3162, Page 842
Found Remon bar & cap #20704 in monument box 3'± West of C/L of 18 1/2 Mile Road
Found nail & tag Northeast side 14" Cherry, N21°W, 62.90'
Found nail & tag Southeast side 20" Hickory, N42°E, 52.59'
Found nail & tag Southwest side 28" Oak, S41°E, 37.22'
Found nail & tag Northeast side 30" Oak, N63°W, 20.58'

Center of Section 19, T2S, R5W
Found 1/2" iron 2' West of the centerline of 18-1/2 Mile Road.
Steel Post, N30°W, 26.20'
Steel Post, S80°W, 19.00'
Steel Post, S70°E, 20.50'
Steel Post, N45°E, 21.40'

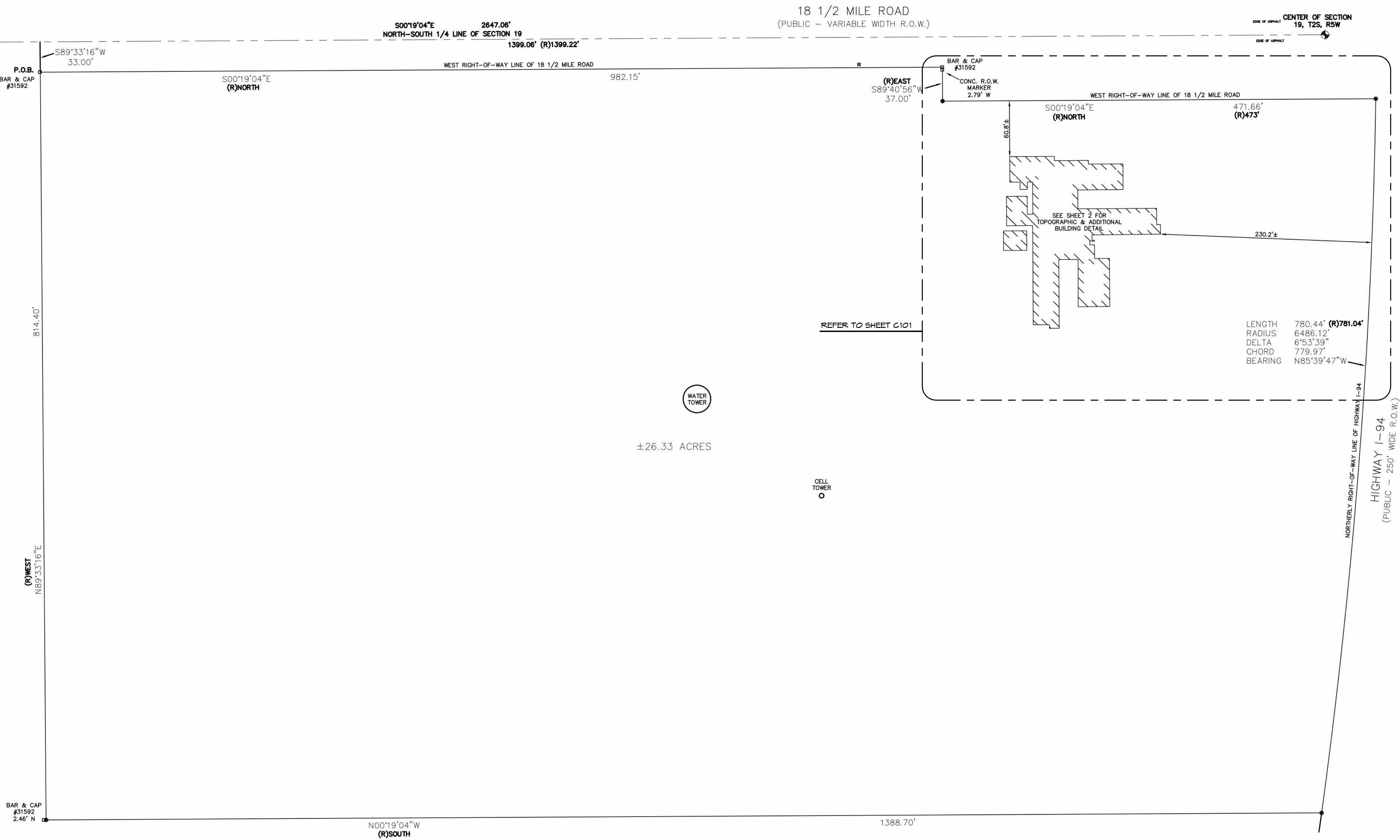
This survey was performed with an error of closure no greater than a ratio of 1 in 5000.

All bearings are Michigan State Plane South Zone grid bearings obtained from GPS observations using corrections obtained from the Lansing C.O.R.S.

LEGEND

- = Set 1/2" Bar with Cap
- = Found Iron as Noted
- = Survey Boundary Line
- = Distance Not to Scale
- x— = Fence
- 0.0'± = Denotes Distance to the Survey Line

All Dimensions are in Feet and Decimals Thereof.
All Improvements Not Shown.



REVISIONS	COMMENTS		KEBS, INC.		ENGINEERING AND LAND SURVEYING	
07/07/23	ORIGINAL		2116 HASLETT ROAD, HASLETT, MI 48840 PH. 517-339-1014 FAX 517-339-8047 WWW.KEBS.COM			
			Marshall Office — Ph. 269-781-9800			
			DRAWN BY	KDB	SECTION	19, T2S, R5W
		FIELD WORK BY	MJG	JOB NUMBER:		
		SHEET	1 OF 2	101441.BND		

MICHAEL A. GROAT
PROFESSIONAL SURVEYOR
DATE NO. 39079

THA

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**CALHOUN COUNTY
YOUTH CENTER**
14555 18 1/2 MILE ROAD, MARSHALL, MI 49068

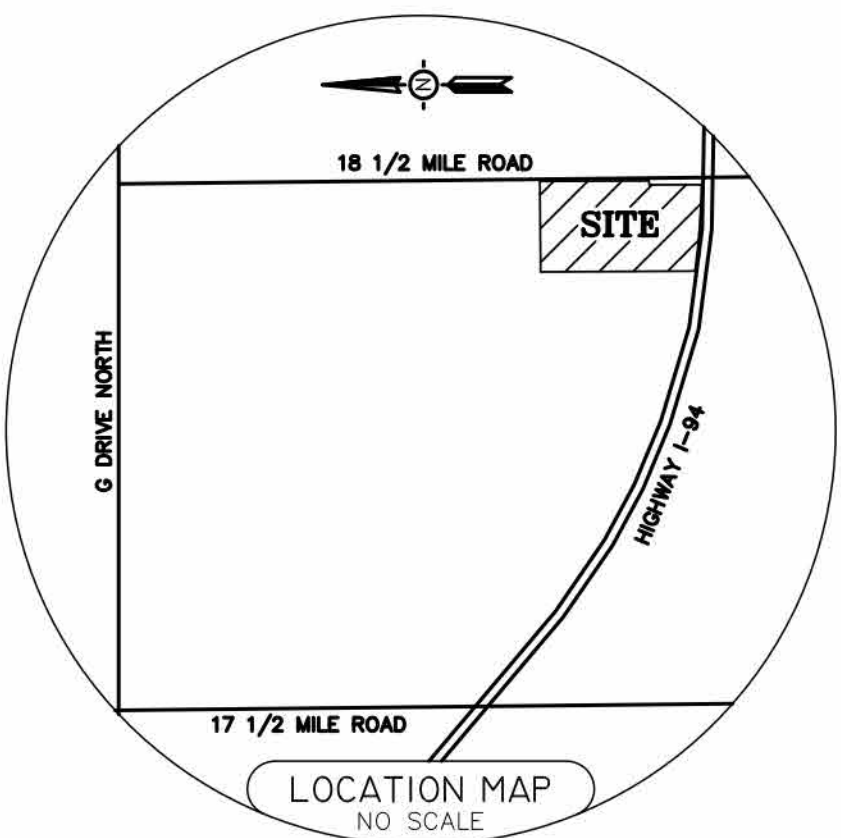
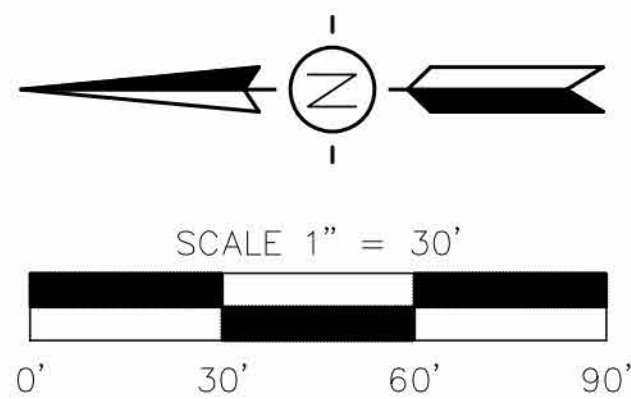
DRAWING TITLE
PROPERTY BOUNDARIES

SEAL	DRAWN KDB	PROJECT NO. 22-220
	CHECKED JESS	DRAWING NO.
	REVIEWED DJB	C100
	DATE AUG 18, 2023	
	SCALE AS NOTED	
		SHEET NO. 4 OF 16

CERTIFIED BOUNDARY & TOPOGRAPHICAL SURVEY

FOR: THE E & L CONSTRUCTION GROUP

"14555 18 1/2 MILE ROAD, MARSHALL, MI 49068"



BENCHMARKS

BM#1 - ELEVATION 959.41 N.A.V.D.88
PK NAIL IN EAST SIDE OF UTILITY POLE ON WEST SIDE OF 18 1/2
MILE ROAD ON NORTH LINE OF BUILDING EXTENSION
BM#2 - ELEVATION 957.43 N.A.V.D.88
PK NAIL IN SOUTH SIDE OF UTILITY POLE ON WEST SIDE OF 18 1/2
MILE ROAD ON 160'± NORTH OF NORTH BUILDING LINE EXTENSION

SURVEYOR'S NOTES:

1. This plan was made at the direction of the parties named hereon and is intended solely for their immediate use. Survey prepared from fieldwork performed in June 2023.
2. All bearings are Michigan State Plane South Zone grid bearings obtained from GPS observations using corrections obtained from the nearest National Geodetic Survey C.O.R.S. station.
3. All dimensions shown are as-measured unless otherwise noted.
4. All elevations are North American Vertical Datum of 1988 (NAVD88).
5. All dimensions are in feet and decimals thereof.
6. No building tie dimensions are to be used for establishing the property lines.
7. Easements, if any, not shown hereon.
8. By scaled map location and graphic plotting only, this property lies entirely within Flood Zone "X", areas outside the 0.2% annual chance floodplain, according to the National Flood Insurance Program, Flood Insurance Rate Map for the City of Marshall, Calhoun County, Michigan, Community Panel No. 260053 0239 C, dated April 4, 2011.
9. Utilities are shown based on visible field evidence only and all underground utilities on site are subject to verification in the field by the appropriate authorities prior to use for construction. No asbuilt plans were obtained, and no MISS DIG ticket was submitted for the site.
10. Wetlands, if any, not shown hereon.

LEGEND

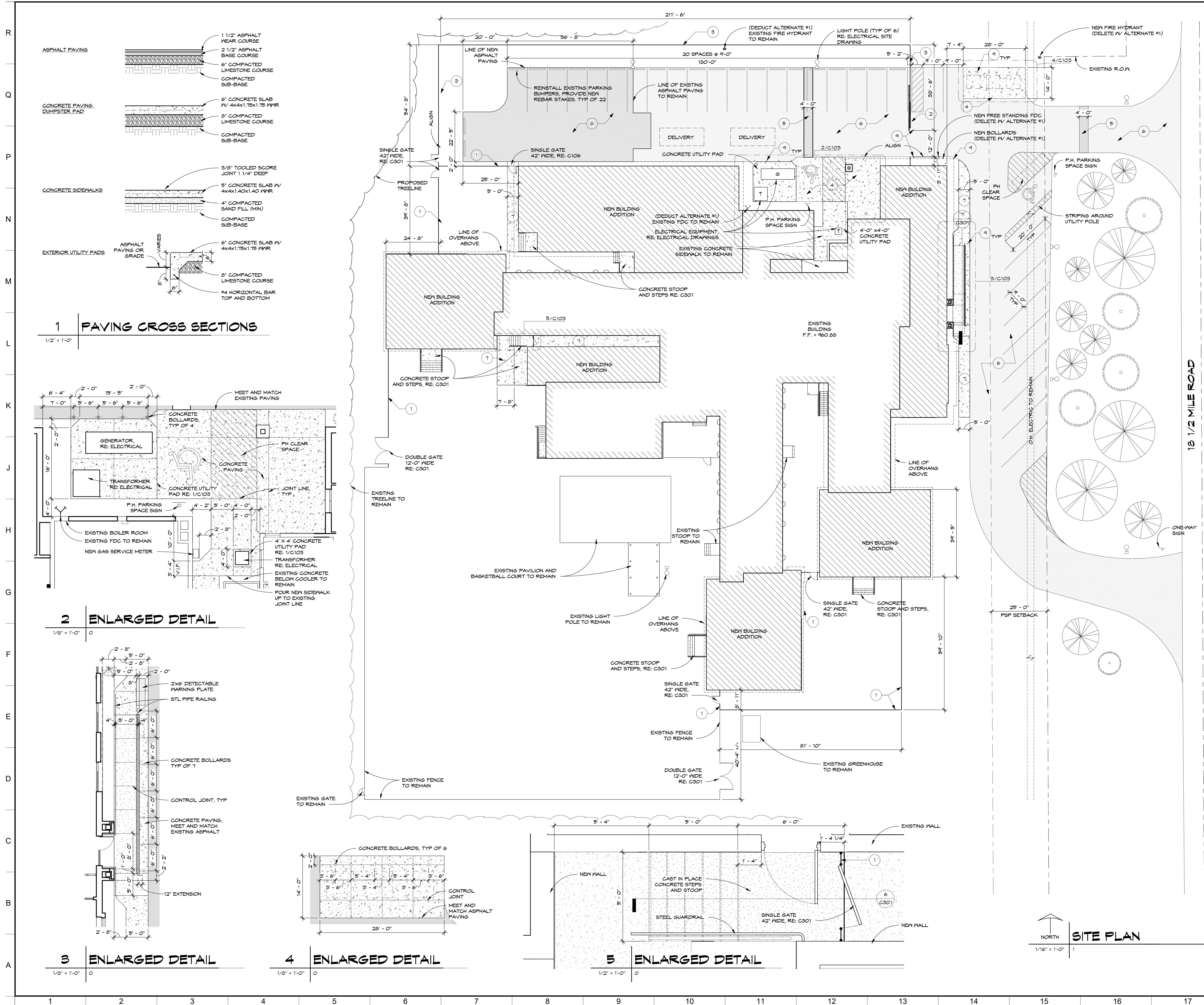
- (M) = MEASURED DIMENSION
- (R) = RECORDED DIMENSION
- = SET 1/2" BAR WITH CAP UNLESS NOTED
- = FOUND IRON AS NOTED
- = DEED LINE
- = DISTANCE NOT TO SCALE
- = FENCE
- = ASPHALT
- = CONCRETE
- = DECK
- = GRAVEL
- = EXISTING SPOT ELEVATION
- = EXISTING CONTOUR ELEVATION
- = BUILDING OVERHANG
- = SANITARY SEWER
- = STORM SEWER
- = WATER LINE
- = GAS LINE
- = OVERHEAD WIRES
- = EDGE OF WOODS
- = DECIDUOUS TREE
- = CONIFEROUS TREE
- = CLEANOUT
- = FIRE HYDRANT
- = SIGN
- = UTILITY POLE
- = LIGHT POLE
- = FLAG POLE
- = GUY WIRE
- = UTILITY PEDESTAL
- = TRANSFORMER
- = HANDHOLE

REVISIONS	COMMENTS	KEBS, INC.	ENGINEERING AND LAND SURVEYING
07/07/23	ORIGINAL	2116 HASLETT ROAD, HASLETT, MI 48840 PH. 517-339-1014 FAX 517-339-8047 WWW.KEBS.COM	
		Marshall Office - Ph. 269-781-9800	
		DRAWN BY KDB	SECTION 19, T2S, R5W
		FIELD WORK BY MJG	JOB NUMBER:
		SHEET 2 OF 2	101441.BND

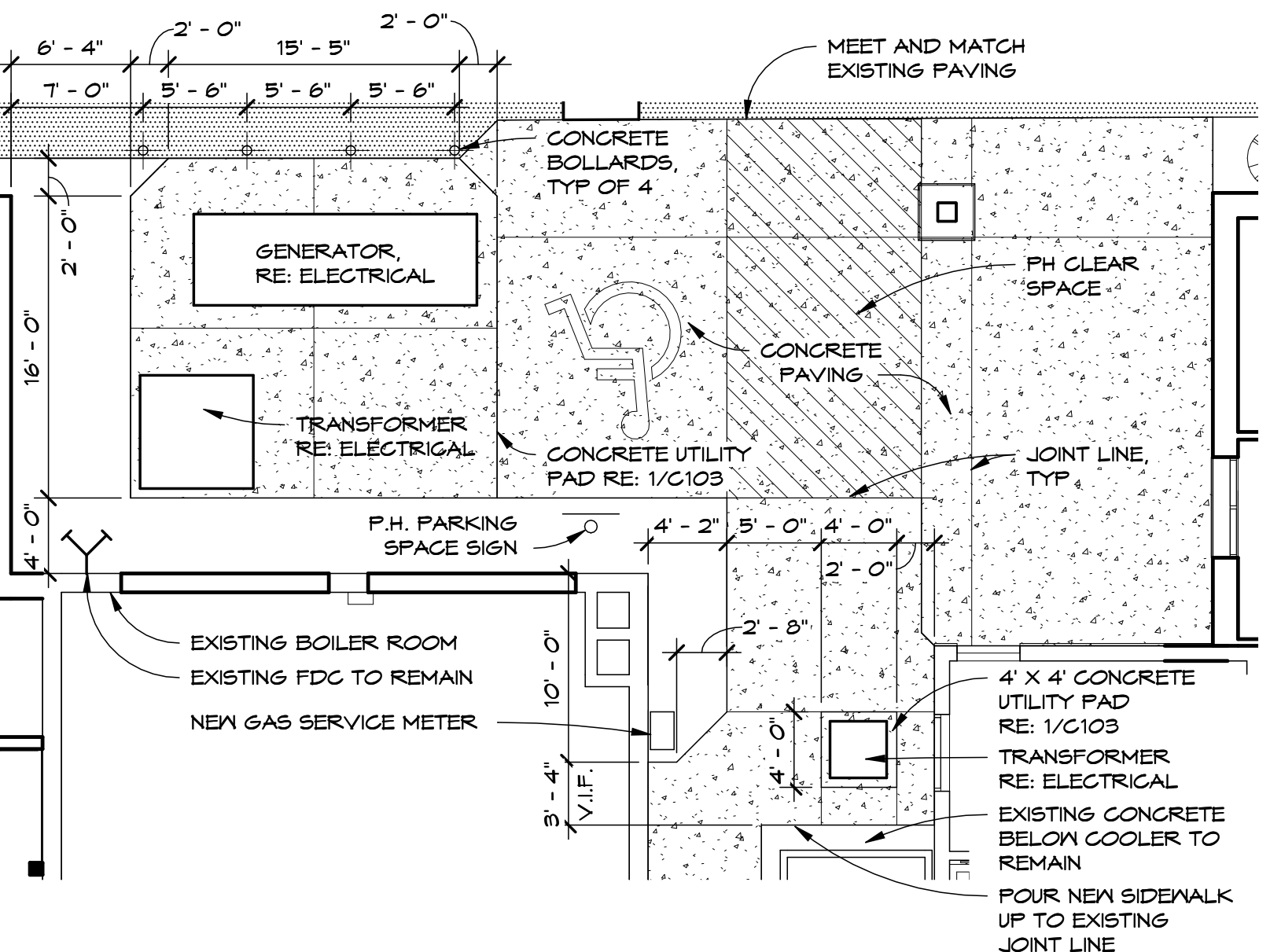
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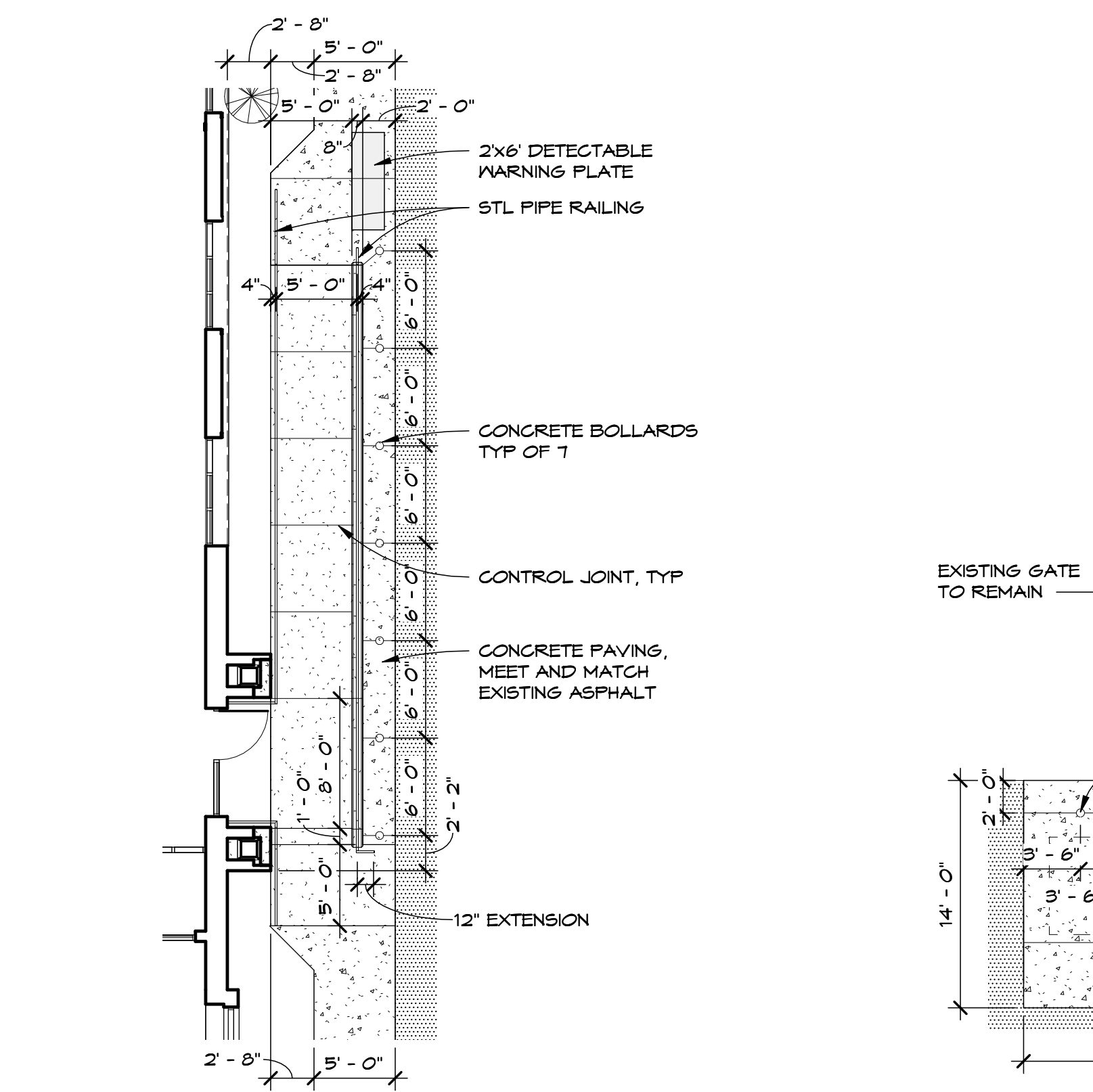
DRAWING TITLE		
SITE SURVEY		
SEAL	DRAWN KDB CHECKED JESS REVIEWED DJB DATE AUG 18, 2023 SCALE AS NOTED	PROJECT NO. 22-220 DRAWING NO. C101 SHEET NO. 5 OF 16



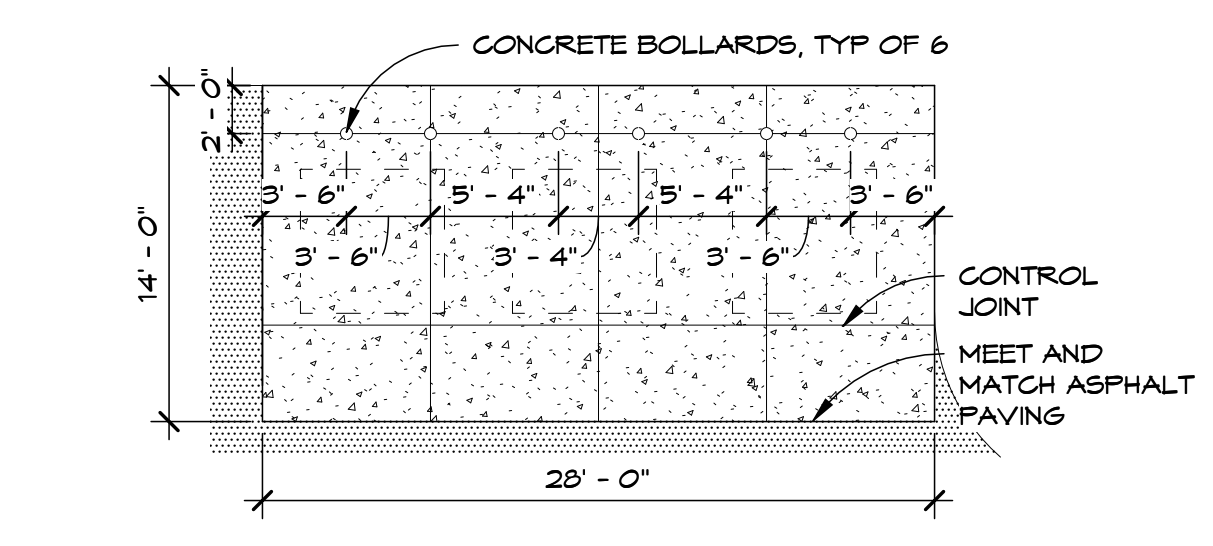
1 PAVING CROSS SECTIONS
1/2" = 1'-0"



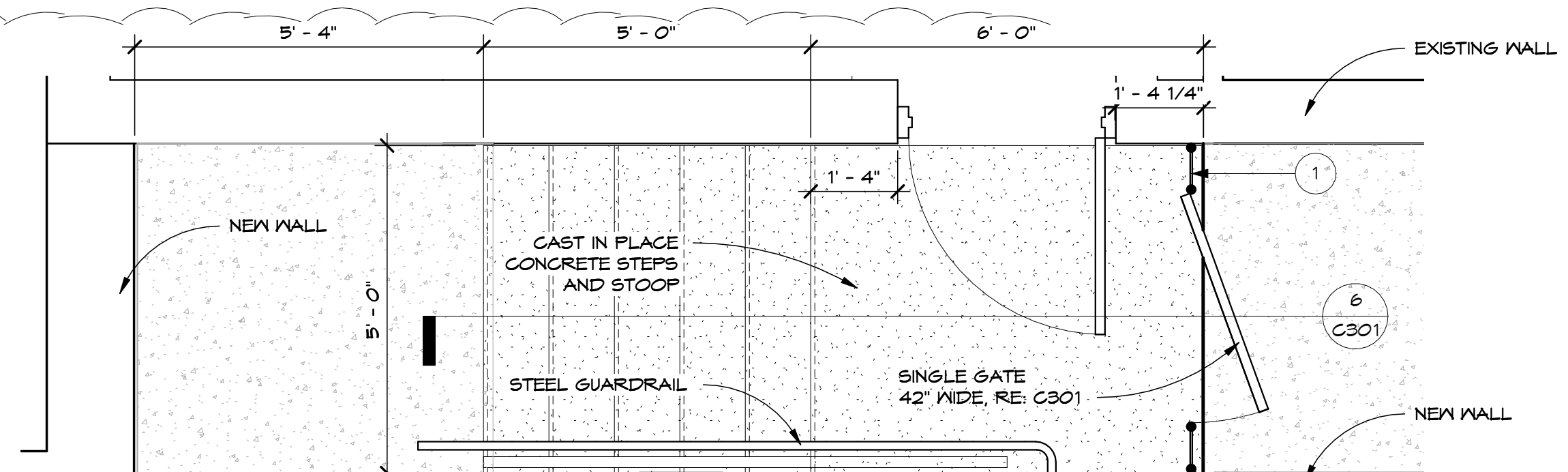
2 ENLARGED DETAIL
1/8" = 1'-0"



3 ENLARGED DETAIL
1/8" = 1'-0"



4 ENLARGED DETAIL
1/8" = 1'-0"



5 ENLARGED DETAIL
1/2" = 1'-0"

GENERAL NOTES

1. MAINTAIN EXISTING GRADES UNLESS OTHERWISE NOTED. SLOPE NEW PAVEMENT IN DIRECTION OF RETENTION PONDS, CATCH BASIN OR EXISTING DRAINAGE AREA FOR POSITIVE WATER FLOW ACROSS LOT. SLOPE GRADING AWAY FROM BUILDING. LOW AND PONDING AREAS WILL NOT BE ACCEPTED.
2. SITE PLANS ARE SUBJECT TO ANY FACTS AND/OR EASEMENTS THAT MAY BE DISCLOSED BY A FULL AND ACCURATE TITLE SEARCH.
3. UTILITY INFORMATION WAS OBTAINED FROM AVAILABLE RECORDS. NO GUARANTEE IS MADE AS TO ACCURACY. FIELD VERIFY.
4. CONTACT "MISS DIS" AT 1-800-482-1111, PRIOR TO ANY EXCAVATION OR DEMOLITION.
5. FIELD VERIFY EXACT CONDITIONS AND LOCATIONS. NOTIFY DESIGN PROFESSIONAL OF ANY DISCREPANCIES.
6. OWNER HAS FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED.
7. NOTATIONS ARE MADE IN VARIOUS PLACES ON THE DRAWINGS TO CALL ATTENTION TO DEMOLITION WHICH IS REQUIRED; HOWEVER, THESE DRAWINGS ARE NOT INTENDED TO SHOW EACH AND EVERY ITEM TO BE REMOVED. THE CONTRACTOR AND SUBCONTRACTORS FOR THE VARIOUS TRADES SHALL REMOVE THE MATERIALS RELATED TO THEIR RESPECTIVE TRADES AS REQUIRED TO PERMIT THE CONSTRUCTION OF THE NEW WORK AS SHOWN.
8. COORDINATE NEW WORK WITH EXISTING CONDITIONS. NOTIFY DESIGN PROFESSIONAL OF ANY VARIATION.
9. ALL DAMAGED OR DISTURBED LAWN AREAS ARE TO BE PREPARED WITH NEW TOPSOIL AND HYDROSEED.
10. ALL EXISTING TREES WITHIN THE AREA OF WORK LIMITS NOT SCHEDULED TO BE REMOVED OR RELOCATED SHALL BE PROTECTED ACCORDING TO GUIDELINES OUTLINED IN THE SPECIFICATION.

SITE NOTES

1. 12' HIGH SECURITY FENCE, RE: SPEC AND FENCING DETAILS ON SHEET C301
2. ELECTRIC ROLLING GATE
3. 8' HIGH CHAIN LINK FENCE, RE: SPEC AND FENCING DETAILS ON SHEET C301 (DELETE IV, ADD ALTERNATE #1)
4. 6" CONCRETE PAVING WITH 6x6 1.4x1.4 W/W ON 8" COMPACTED LIMESTONE BASE
5. NEW ASPHALT PAVEMENT ON STONE BASE. MEET AND MATCH EXISTING PAVEMENT THICKNESS.
6. SEAL COAT EXISTING ASPHALT.
7. CONCRETE SIDEWALK.
8. NEW 4" ASPHALT PAVEMENT ON 6" STONE BASE.
9. BOLLARD RE: C301

STORM WATER RUNOFF CALCULATION

EXISTING IMPERVIOUS AREA = 39,222 S.F.
IMPERVIOUS AREA BEING REMOVED = 4,502 S.F.
IMPERVIOUS AREA BEING ADDED = 21,835 S.F.
TOTAL SITE IMPERVIOUS AREA = 56,521 S.F.
NET % INCREASE/DECREASE = 69.02%
TOTAL SITE AREA = 114,635 S.F.
% IMPERVIOUS OF TOTAL SITE = 4.95%

NO.	REVISIONS / SUBMISSIONS	DATE

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CALHOUN COUNTY YOUTH CENTER
14555 18 1/2 MILE ROAD, MARSHALL, MI 49068

DRAWING TITLE SITE PLAN		
SEAL	DRAWN JESS, EA CHECKED JESS REVIEWED DJB DATE AUG 18, 2023 SCALE As Indicated	PROJECT NO. 22-220 DRAWING NO. C103 SHEET NO. 7 OF 16

[illegible]

CONCRETE WALLS (TYPICAL)

PLAN

30°

3'-0"

6"

NON-FERROUS RODENT SCREEN AND CLAMPING RING

5'-0"x6'-0" STONE RIP RAP OR BROKEN CONCRETE 4" DIA MIN

ON-FERROUS RODENT SCREEN AND CLAMPING RING

CONCRETE WALLS (TYPICAL)

ELEVATION

HARD TAMP ALL BACKFILL AT HEADWALL

6" CONCRETE HEADWALL WITH #4 BARS AT 12" OC EACH WAY IN ALL WALLS AND FLOOR

4'-0"

54"

GRADE

SEE SPEC

SURFACE PAVING

MORTARED BRICK AS REQUIRED

4'-0"

PRECAST REIN' CONG MANHOLE W/ CAST IRON STEPS

COMPACTED SAND FILL

SEE PLAN FOR SIZE AND INVERT

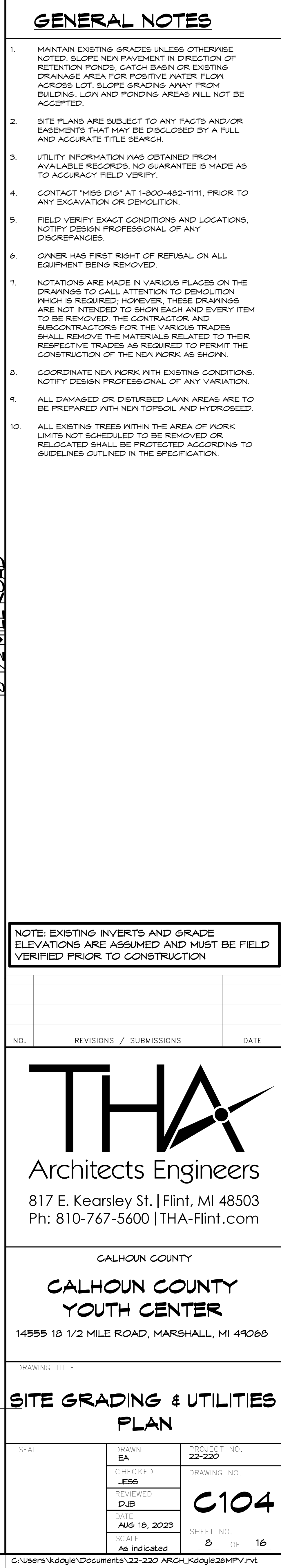
2'-0" MIN.

1'-0" MIN.

6"

8" REIN' CONG BASE W/ #4 BARS 12" OC EA WAY TO 16" DEPTH INCREASE BASE TO 12" FOR DEPTH OVER 16"

1	2	3	4	5
---	---	---	---	---



GENERAL NOTES		
1.	MAINTAIN EXISTING GRADES UNLESS OTHERWISE NOTED. SLOPE NEW PAVEMENT IN DIRECTION OF RETENTION PONDS. CATCH BASIN OR EXISTING DRAINAGE AREA FOR POSITIVE WATER FLOW ACROSS LOT. SLOPE GRADING AWAY FROM BUILDING. LOW AND PONDING AREAS WILL NOT BE ACCEPTED.	
2.	SITE PLANS ARE SUBJECT TO ANY FACTS AND/OR EASEMENTS THAT MAY BE DISCLOSED BY A FULL AND ACCURATE TITLE SEARCH.	
3.	UTILITY INFORMATION WAS OBTAINED FROM AVAILABLE RECORDS. NO GUARANTEE IS MADE AS TO ACCURACY FIELD VERIFY.	
4.	CONTACT "MISS DIS" AT 1-800-482-7111, PRIOR TO ANY EXCAVATION OR DEMOLITION.	
5.	FIELD VERIFY EXACT CONDITIONS AND LOCATIONS, NOTIFY DESIGN PROFESSIONAL OF ANY DISCREPANCIES.	
6.	OWNER HAS FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED.	
7.	NOTATIONS ARE MADE IN VARIOUS PLACES ON THE DRAWINGS TO CALL ATTENTION TO DEMOLITION WHICH IS REQUIRED; HOWEVER, THESE DRAWINGS ARE NOT INTENDED TO SHOW EACH AND EVERY ITEM TO BE REMOVED. THE CONTRACTOR AND SUBCONTRACTORS FOR THE VARIOUS TRADES SHALL REMOVE THE MATERIALS RELATED TO THEIR RESPECTIVE TRADES AS REQUIRED TO PERMIT THE CONSTRUCTION OF THE NEW WORK AS SHOWN.	
8.	COORDINATE NEW WORK WITH EXISTING CONDITIONS. NOTIFY DESIGN PROFESSIONAL OF ANY VARIATION.	
9.	ALL DAMAGED OR DISTURBED LAWN AREAS ARE TO BE PREPARED WITH NEW TOPSOIL AND HYDROSEED.	
10.	ALL EXISTING TREES WITHIN THE AREA OF WORK LIMITS NOT SCHEDULED TO BE REMOVED OR RELOCATED SHALL BE PROTECTED ACCORDING TO GUIDELINES OUTLINED IN THE SPECIFICATION.	
NOTE: EXISTING INVERTS AND GRADE ELEVATIONS ARE ASSUMED AND MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION		
NO.	REVISIONS / SUBMISSIONS	DATE
THA Architects Engineers 817 E. Kearsley St. Flint, MI 48503 Ph: 810-767-5600 THA-Flint.com		
CALHOUN COUNTY CALHOUN COUNTY YOUTH CENTER 14555 10 1/2 MILE ROAD, MARSHALL, MI 49068		
DRAWING TITLE		
SITE GRADING & UTILITIES PLAN		
SEAL	DRAWN EA CHECKED JES6 REVIEWED DJB DATE AUG 10, 2023 SCALE As Indicated	PROJECT NO. 22-220 DRAWING NO. C104 SHEET NO. 8 OF 16
C:\Users\kdojle\Documents\22-220 ARCH_Kdojle26MPV.rvt		

LANDSCAPE NOTES:

1. SURVEY OF EXISTING CONDITIONS PROVIDED BY THA ARCHITECTS.
2. CALL "MISS DIG" AND VERIFY ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING WORK. 72 HOURS BEFORE YOU DIG CALL "MISS DIG" AT 1-800-482-7171. ANY UTILITIES DISTURBED BY CONSTRUCTION SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE.
3. ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHOULD BE REPORTED TO THE CONSTRUCTION MANAGER IMMEDIATELY FOR RESOLUTION.
4. IN AREAS OF NEW TURF PLACE 4" MINIMUM TOPSOIL, FINE GRADE & ESTABLISH TURF WITHIN SEED LIMIT LINES.
5. PLACE SHREDDED HARDWOOD MULCH TO A 3" DEPTH IN ALL TREE & SHRUB BEDS & TO A 2" DEPTH IN ALL GROUND COVER BEDS.
6. UNLESS OTHERWISE NOTED, TOPSOIL, FINE GRADE AND SEED ALL DISTURBED AREAS WITHIN THE SEEDING LIMIT SHOWN AND AREAS DISTURBED BY CONSTRUCTION.
7. REPAIR AND RESTORE ANY DAMAGE OUTSIDE OF LIMIT OF WORK LINE TO ORIGINAL CONDITION.
8. SEE SHEET C105 FOR PLANT LISTS.
9. PROTECT ALL TREES AND EXISTING FEATURES TO REMAIN AS SPECIFIED.
10. ALL TOPSOIL AND EXCESS FILL MATERIAL SHALL BE STOCKPILED ON SITE SEPARATELY FOR LATER RE-USE. LOCATE STOCKPILES IN AREAS AS DIRECTED BY CONSTRUCTION MANAGER AND PROTECT FROM EFFECTS OF EROSION.
11. ALL NURSERY STOCK SHALL BE TRUE TO TYPE AND NAME. ALL STOCK SHALL BE FIRST CLASS QUALITY WITH WELL DEVELOPED BRANCH SYSTEMS AND VIGOROUS HEALTHY ROOT SYSTEMS. ALL STOCK SHALL BE WELL FORMED AND THE TRUNKS OF TREES SHALL BE UNIFORM AND STRAIGHT.
12. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR IRRIGATION SCHEDULING FOR THE ENTIRE MAINTENANCE PERIOD UNLESS OTHERWISE NOTED.
13. CONTRACTOR RESPONSIBLE TO LOCATE SITE LIGHTING SERVICES. CONTRACTOR RESPONSIBLE TO NOTIFY CONSTRUCTION MANAGER IF DAMAGE TO LIGHTING ELECTRICAL DISTRIBUTION OCCURS.
14. ALL AREAS OF TREE CLEARING SHALL BE STAKED FOR ARCHITECTS APPROVAL PRIOR TO CLEARING.
15. UNLESS OTHERWISE SPECIFIED, ALL PERENNIALS, GRASSES AND GROUNDCOVERS SHALL BE GROWN IN THEIR CONTAINER FOR ONE YEAR PRIOR TO INSTALLATION.

PROPOSED FEATURES LEGEND:

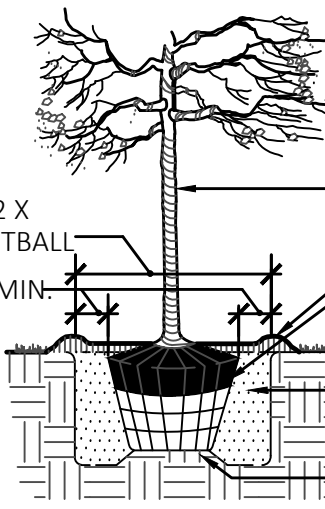
SYMBOL	DESCRIPTION	DETAIL
	PROPOSED DECIDUOUS TREE	1 / C105
	PROPOSED EVERGREEN TREE	5 / C105
	PROPOSED SHRUB	2 / C105
	PROPOSED GRASSES	3 / C105
	PROPOSED GROUNDCOVER AND/OR PERENNIALS	2 / C105
	PROPOSED BED LINE/ METAL EDGING	4 / C105
	PLANT TAG- REFERS TO TYPE AND NUMBER OF PLANTINGS TO BE PROVIDED AND MAINTAINED BY CONTRACTOR.	
	TEMPORARY TREE PROTECTION FENCE	

TREE PROTECTION NOTES:

- PROVIDE AND MAINTAIN TEMPORARY TREE PROTECTION FENCING IN ALL LOCATIONS MARKED BY TREE FENCING SHALL BE PROVIDED AND IN PLACE PRIOR TO ANY WORK ON SITE (INCLUDING TOPSOIL STRIPPING OPERATIONS). REFER TO THE FOLLOWING NOTES AND THE SPECIFICATIONS FOR TREE PROTECTION REQUIREMENTS.
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 3. VEHICULAR TRAFFIC, PARKING, EQUIPMENT OR MATERIAL STORAGE MAY NOT OCCUR WITHIN THE TREE PROTECTION AREAS AT ANY TIME.
 4. NO EXCAVATION SHALL BE MADE WITHIN THE TREE PROTECTION AREAS EXCEPT AS NOTED OTHERWISE.

PLANT LIST:

	SYM.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	SPACING	NOTES	QTY'S.
TREES	AF	Acer x freemantii 'Marmo'	Marmo Freeman Maple	2.5" CAL.	B&B	PER PLANS		4
	AG	Amelanchier x grandiflora 'Robin Hill'	Robin Hill Serviceberry	2" CAL.	B&B	PER PLANS		6
	CC	Carpinus caroliniana	Hornbeam	2" CAL.	B&B	PER PLANS		2
EVERGREENS	JS	Juniperus chinensis 'Spartan'	Spartan Juniper	6" HT.	B&B	PER PLANS		13
SHRUBS	CAH	Clethra alnifolia 'Hummingbird'	Sweet Pepperbush	#3	CONT.	3' O.C.	30" HT. MIN.	31
	CSF	Cornus sericea 'Artic Fire'	'Artic Fire' Dogwood	#3	CONT.	3' O.C.	30" HT. MIN.	20
GRASSES	SSL	Schizachyrium scoparium 'Little Arrow 'Nemarrar'	Little Arrow Little Bluestem	#1	CONT.	24" O.C.		76
PERENNIALS	AM	Allium 'Millenium'	Millenium Ornamental Onion	#1	CONT.	18" O.C.		58
	EPH	Echinacea purpurea	Purple Coneflower	#1	CONT.	18" O.C.		49
	RFG	Rudbeckia fulgida 'Goldsturm'	Black-eyed Susan	#1	CONT.	24" O.C.		120



IMPORTANT NOTE: SET TOP OF ROOTBALL OR ROOT FLARE AT OR SLIGHTLY ABOVE FINISHED GRADE

TREE WRAP TO FIRST BRANCH

4" MULCH - FORM SAUCER AROUND TREE

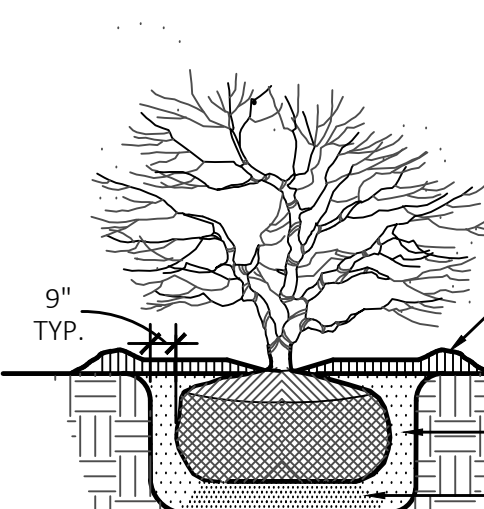
REMOVE BURLAP, WIRE BASKET, AND ALL TWINE OR ROPE FROM TOP 1/3 OF ROOT BALL

PLANTING SOIL MIX, TREAT WITH MYCORRHIZAL INOCULANT DURING BACKFILLING

SET TREE BALL ON 6" HIGH COMPACTED MOUND WITH ROOT FLARE AT OR SLIGHTLY ABOVE FINISH GRADE.

1 Deciduous Tree Planting Detail

Not To Scale



9" TYP.

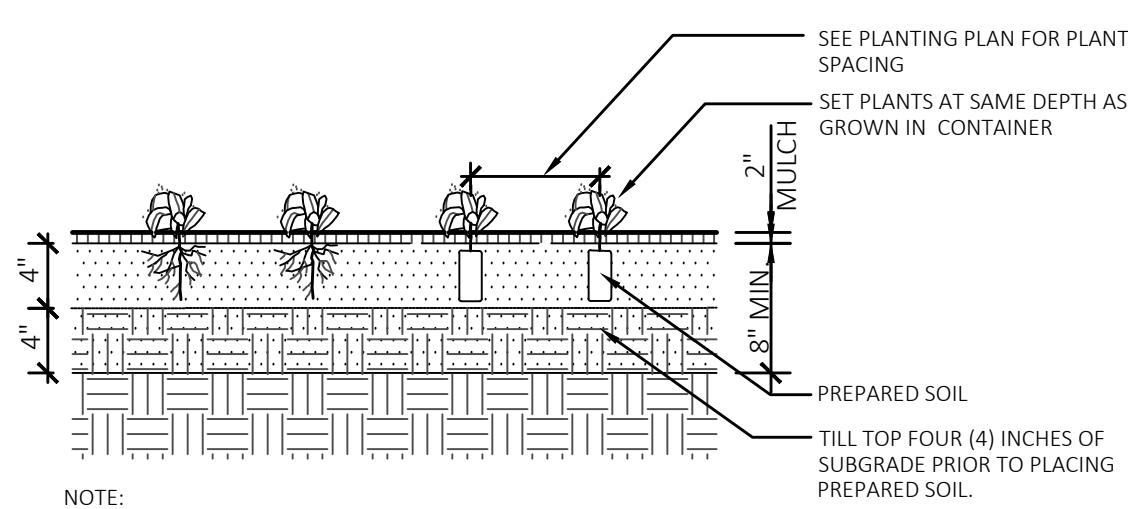
4" MULCH - FORM SAUCER AROUND SHRUB

PLANTING MIXTURE

9" DEPTH SETTING LAYER OF 50% PLANTING MIXTURE TILLED INTO EXISTING SOIL AND COMPACTED

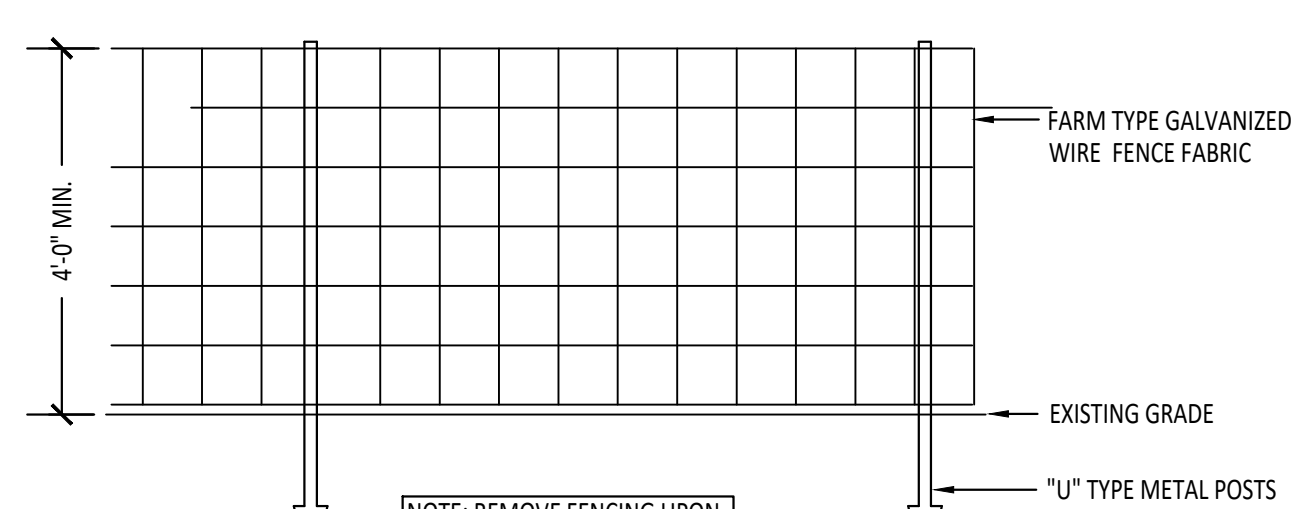
2 Shrub Planting Detail

Not To Scale



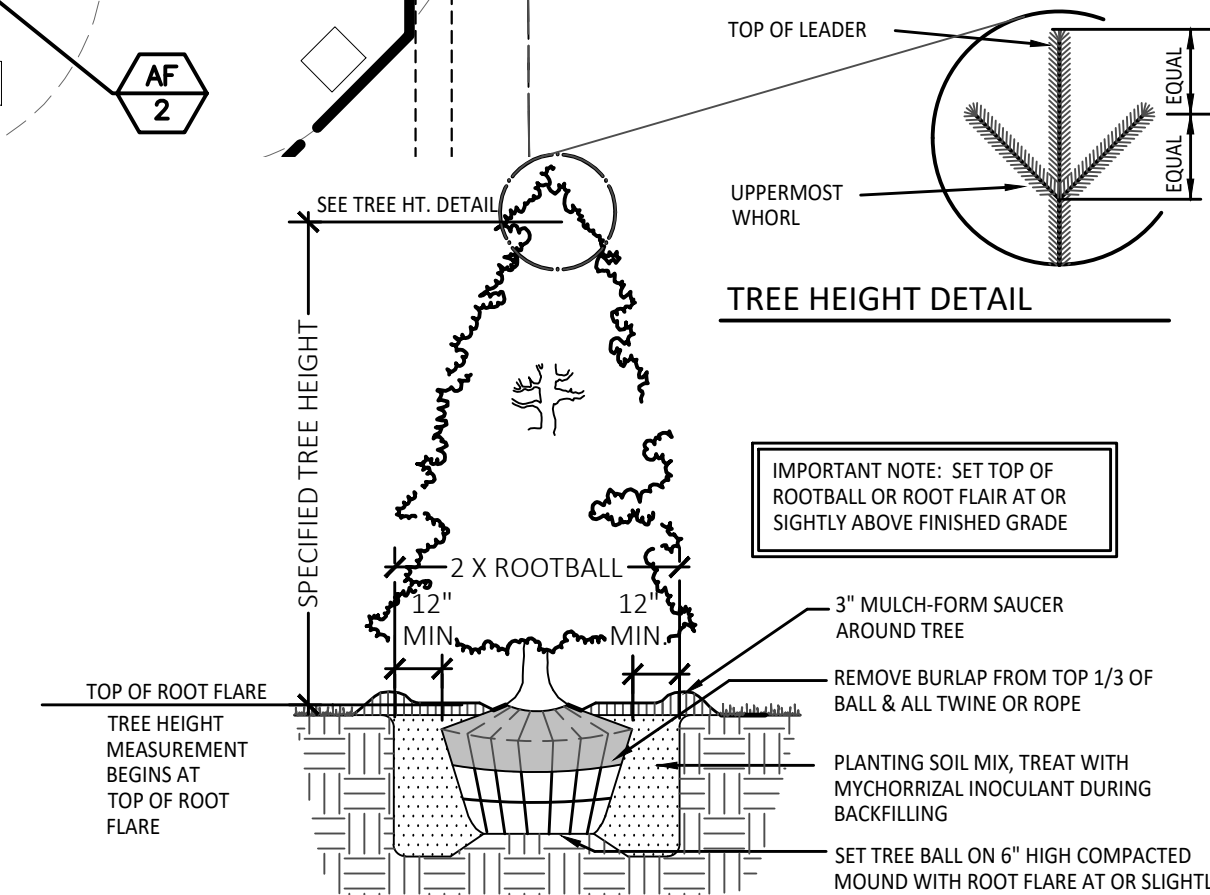
3 Perennial Planting Detail

Not To Scale



4 Tree Protection Fencing Detail

Not To Scale



5 Conifer Planting Detail

Not To Scale



2	ADDENDUM 3	9-1-23
1	ADDENDUM 1	8-18-23
NO.	REVISIONS / SUBMISSIONS	DATE

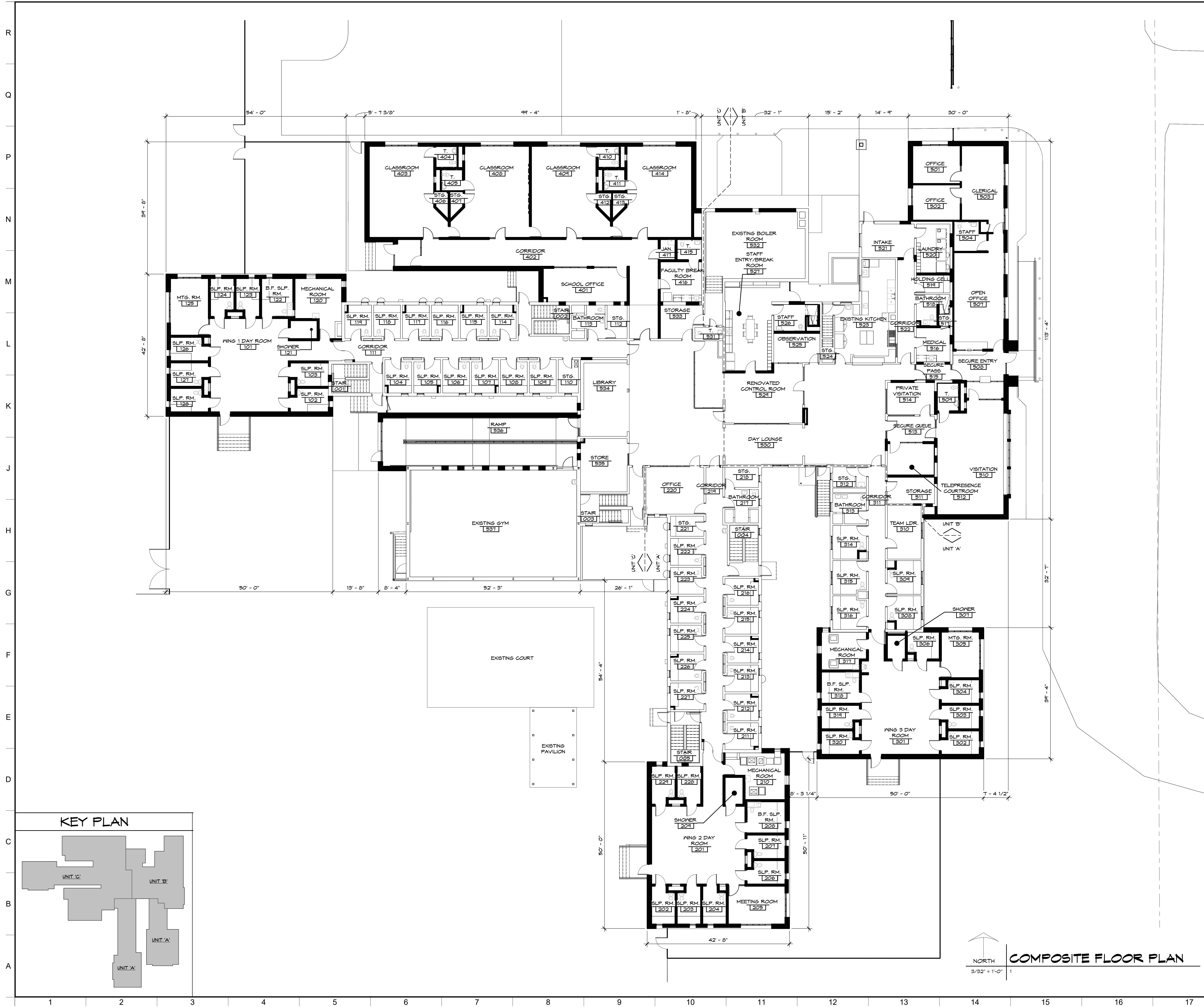
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CALHOUN COUNTY
CALHOUN COUNTY
YOUTH CENTER
14555 18 1/2 MILE ROAD, MARSHALL, MI 49068

DRAWING TITLE
LANDSCAPING PLAN

DESIGNED BY JESS, EA	DATE 22-220
REVIEWED BY JESS	DRAWING NO. C105
DATE AUG 18, 2023	SHEET NO. 9 OF 16
SCALE As Indicated	

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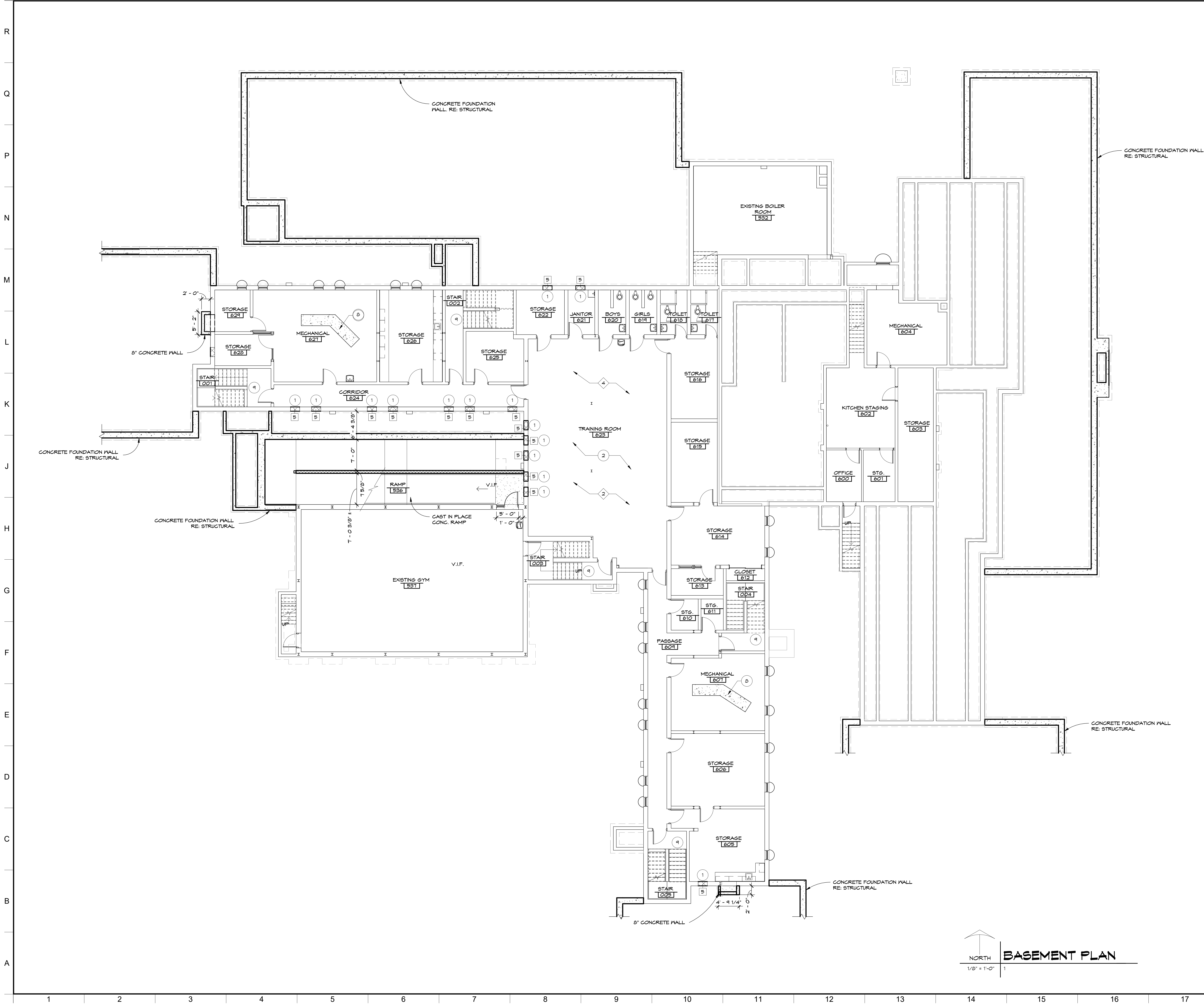
REVISIONS / SUBMISSIONS		
NO.	REVISIONS / SUBMISSIONS	DATE

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CALHOUN COUNTY
**CALHOUN COUNTY
YOUTH CENTER**
14555 18 1/2 MILE ROAD, MARSHALL, MI 49068

DRAWING TITLE
**COMPOSITE FLOOR
PLAN**

SEAL	DRAWN JES99 CHECKED JES99 REVIEWED DJB DATE AUG 18, 2023 SCALE 3/32" = 1'-0"	PROJECT NO. 22-220 DRAWING NO. A104 SHEET NO. 11 OF 16
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CONSTRUCTION NOTES

- 1 INFILL WALL OPENING IV CMU, APPLY WATER PROOFING WHERE BELOW GRADE
- 2 POLISH EXISTING CONCRETE FLOOR TO REMAIN
- 3 POLISH EXISTING TERRAZZO FLOOR TO REMAIN
- 4 ACCESS PANEL, RE: SPEC
- 5 SLEEPING PLATFORM, RE: ASOI
- 6 LOUVER, RE: MECHANICAL
- 7 LOCKERS, RE: SPEC
- 8 PATCH EXISTING CONCRETE FLOOR
- 9 REMOVE AND REINSTALL EXISTING HANDRAILINGS AT 36" ABOVE TREAD SURFACE

WALL TYPE KEY

- 1 4" CMU WALL
- 2 6" CMU WALL
- 2.1 6" CMU WALL IV 2" RIGID INSULATION, 4" SALVAGED BRICK VENEER, TOOTH AND KEY INTO EXISTING BRICK VENEER
- 2.2 6" CMU WALL, 4" SALVAGED BRICK VENEER, TOOTH AND KEY INTO EXISTING BRICK VENEER
- 3 8" CMU WALL IV CORES GROUTED SOLID WHERE INDICATED
- 3.1 8" CMU WALL IV 4" BURNISHED BLOCK VENEER OVER 3" RIGID INSULATION
- 3.2 8" CMU WALL IV FIBER CEMENT SIDING OVER 1/8" HAT CHANNEL ON 3" RIGID INSULATION
- 3.3 8" CMU WALL IV 2" RIGID INSULATION, 4" SALVAGED BRICK VENEER, TOOTH AND KEY INTO EXISTING BRICK VENEER
- 4 10" CMU WALL IV CORES GROUTED SOLID WHERE INDICATED
- 5 12" CMU WALL
- 15 3 5/8" METAL STUD AT 16" O.C. IV 5/8" GYPSUM WALL BOARD EACH SIDE, EXTEND TO DECK ABOVE AND INSULATE FOR SOUND
- 16 3 5/8" METAL STUD AT 16" O.C. IV 5/8" GYPSUM WALL BOARD ONE SIDE
- 17 6" METAL STUD AT 16" O.C. IV 5/8" GYPSUM WALL BOARD ON EACH SIDE
- 18 6" METAL STUD AT 16" O.C. IV 5/8" GYPSUM WALL BOARD EACH SIDE, FIBER CEMENT SIDING ON 1/8" HAT CHANNEL OVER 2" RIGID INSULATION
- 20 6" METAL STUD AT 16" O.C. IV 5/8" GYPSUM WALL BOARD EACH SIDE, PVC ROOF MEMBRANE ADHERED TO 3" RIGID INSULATION
- 21 12 X 24 TILE FINISH OVER WALL ASSEMBLY BELOW

NO.	REVISIONS / SUBMISSIONS	DATE

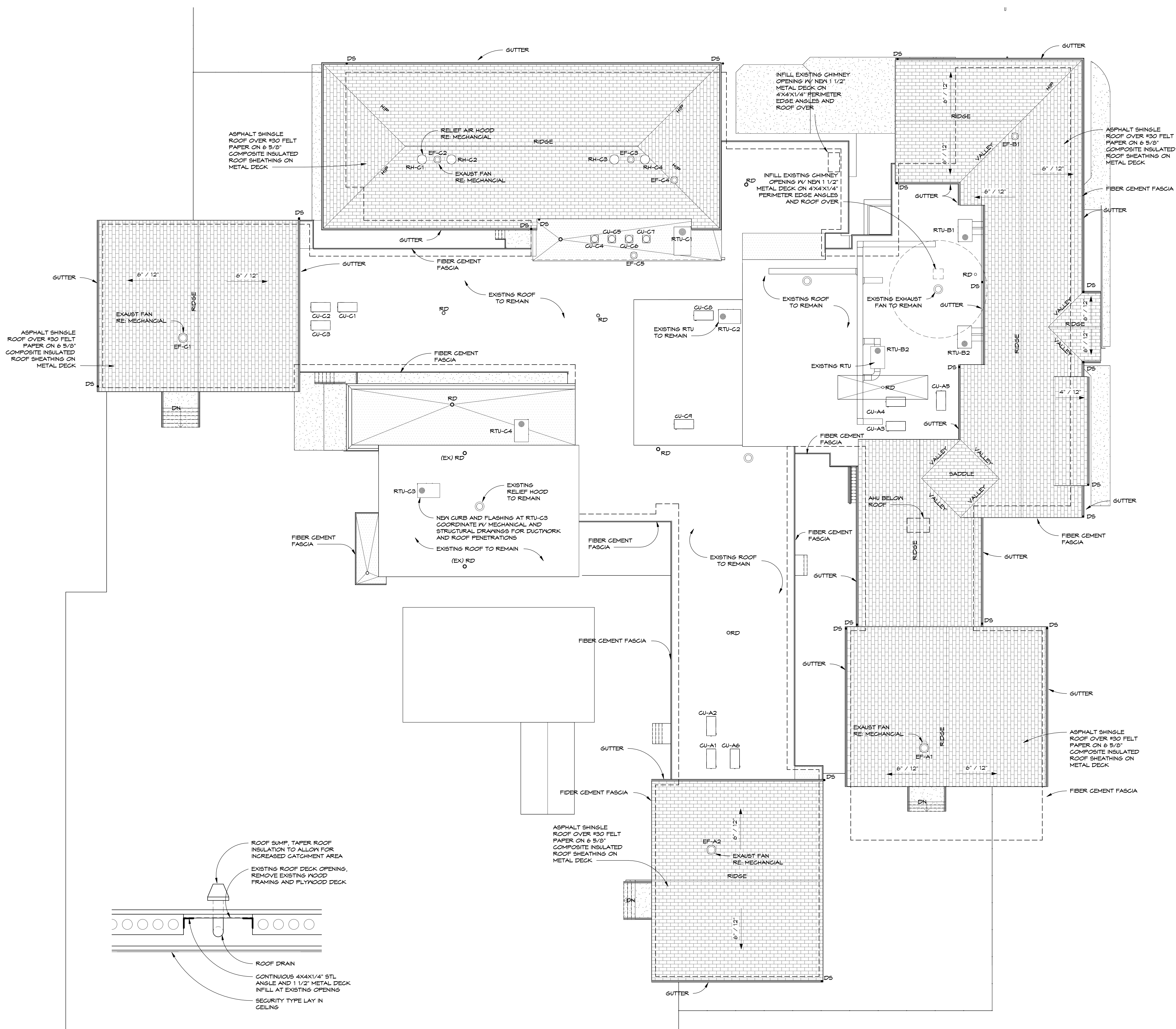
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14555 18 1/2 MILE ROAD, MARSHALL, MI 49068

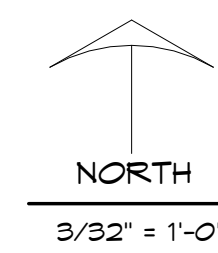
DRAWING TITLE
BASEMENT FLOOR PLAN

SEAL	DRAWN JES56	PROJECT NO. 22-220
	CHECKED DJB	DRAWING NO.
	REVIEWED DJB	A105
	DATE AUG 18, 2023	SHEET NO.
	SCALE 1/8" = 1'-0"	12 OF 16

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1 ROOF OPENING INFILL
3/4" = 1'-0"



COMPOSITE ROOF PLAN

NO.	REVISIONS / SUBMISSIONS	DATE

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DRAWING TITLE
ROOF PLAN

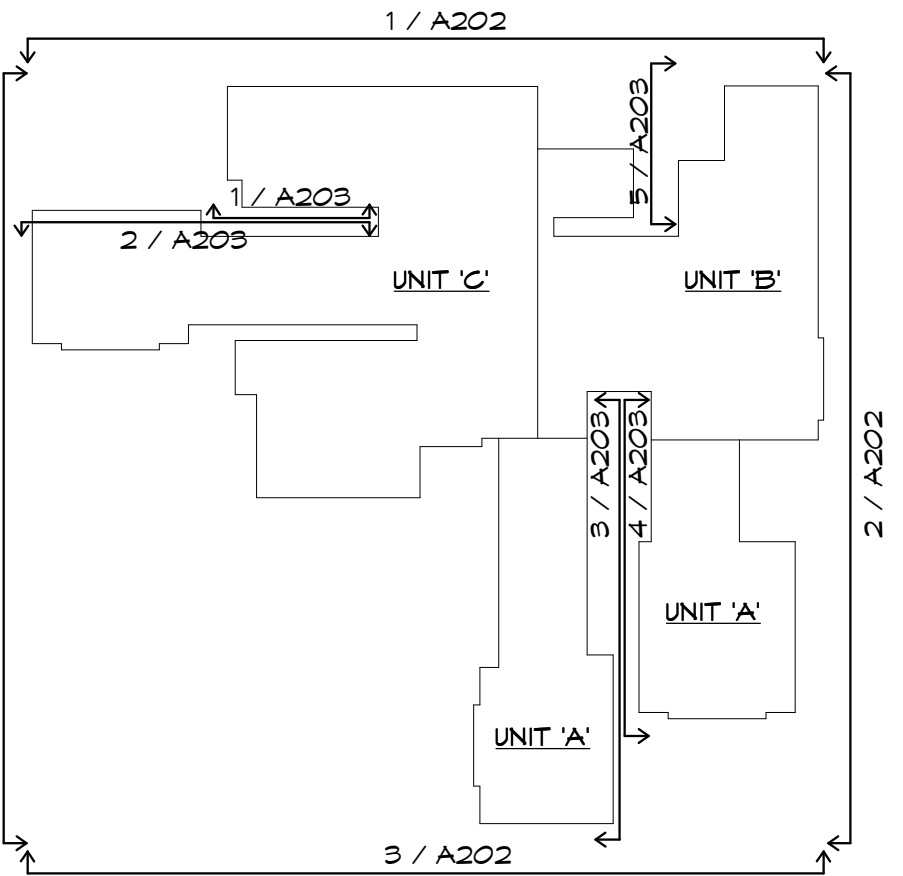
SEAL	DRAWN JESS	PROJECT NO. 22-220
	CHECKED JESS	DRAWING NO.
	REVIEWED DJB	A113
	DATE AUG 18, 2023	SHEET NO. 13 OF 16
	SCALE As Indicated	



ELEVATION NOTES

- 1 ASPHALT SHINGLES, RE: ALTERNATE #2
- 2 FIBER CEMENT FASCIA
- 3 BURNISHED BLOCK VENEER ON CMU WALL
- 4 HORIZONTAL FIBER CEMENT SIDING ON MASONRY
- 5 HORIZONTAL FIBER CEMENT SIDING ON STUD FRAMING
- 6 INFILL EXISTING WALL OPENING TO MATCH EXISTING - TOOTH & KEY MASONRY
- 7 BURNISHED BLOCK PIER IV LIMESTONE CAP
- 8 STONE SILL
- 9 STEEL CANOPY FRAMING - PAINT, RE: STRUCTURAL DRAWINGS
- 10 FIBER CEMENT ACCENT TRIM
- 11 GUTTER
- 12 CONCRETE STOOP, RE: STRUCTURAL AND CIVIL DRAWINGS

ELEVATION KEY PLAN



NO.	REVISIONS / SUBMISSIONS	DATE

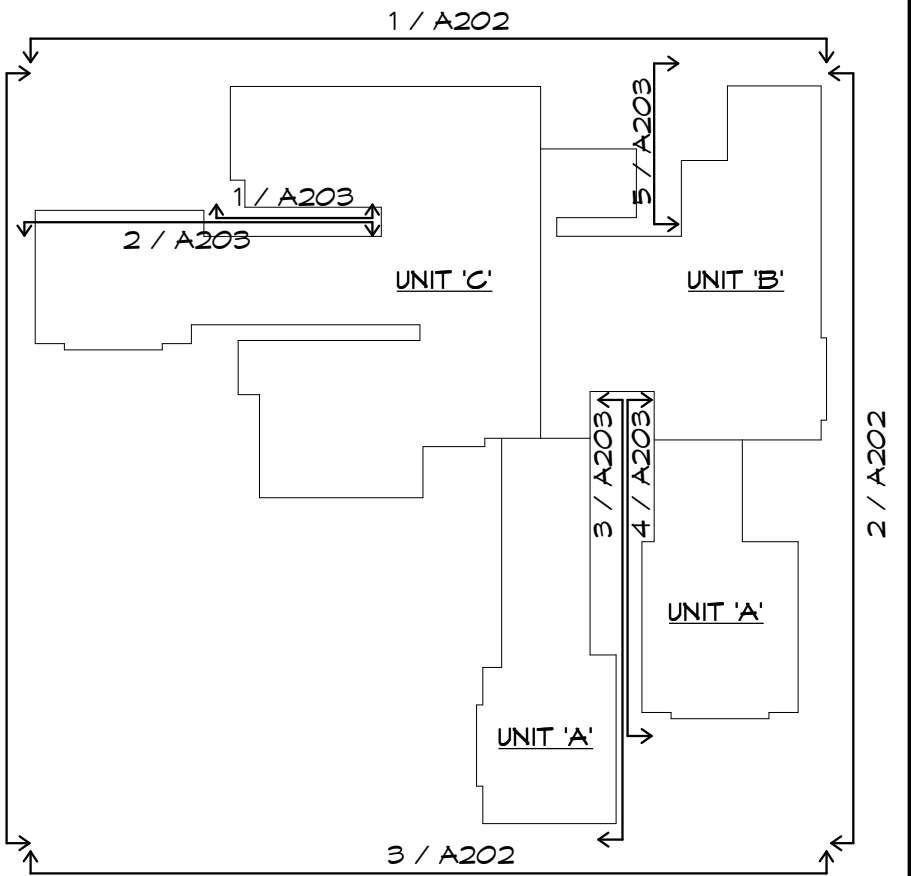
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CALHOUN COUNTY
**CALHOUN COUNTY
YOUTH CENTER**
14555 18 1/2 MILE ROAD, MARSHALL, MI 49068

DRAWING TITLE
EXTERIOR ELEVATIONS

SEAL	DRAWN JES6, EA	PROJECT NO. 22-220
	CHECKED DJB	DRAWING NO.
	REVIEWED DJB	A202
	DATE AUG 18, 2023	SHEET NO. 14 OF 16
	SCALE As Indicated	

- 1 ASPHALT SHINGLES, RE: ALTERNATE #2
- 2 FIBER CEMENT FASCIA
- 3 BURNISHED BLOCK VENEER ON CMU WALL
- 4 HORIZONTAL FIBER CEMENT SIDING ON MASONRY
- 5 HORIZONTAL FIBER CEMENT SIDING ON STUD FRAMING
- 6 INFILL EXISTING WALL OPENINGS TO MATCH EXISTING -
TOOTH & KEY MASONRY
- 7 BURNISHED BLOCK PIER IV LIMESTONE CAP
- 8 STONE SILL
- 9 STEEL CANOPY FRAMING - PAINT, RE: STRUCTURAL
DRAWINGS
- 10 FIBER CEMENT ACCENT TRIM
- 11 GUTTER
- 12 CONCRETE STOOP, RE: STRUCTURAL AND CIVIL DRAWINGS



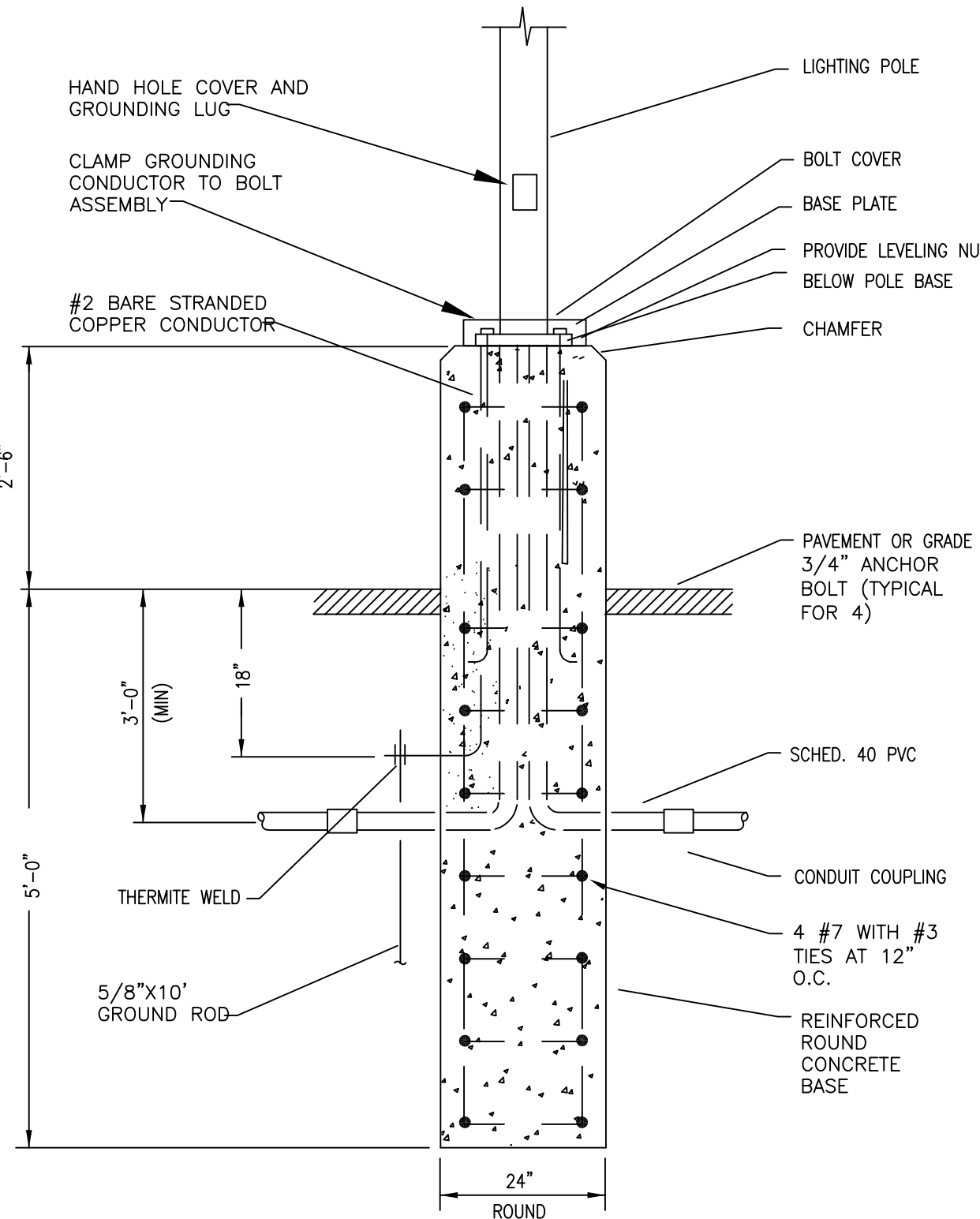
O.	REVISIONS / SUBMISSIONS	DATE
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CALHOUN COUNTY
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YOUTH CENTER
4555 18 1/2 MILE ROAD, MARSHALL, MI 49068

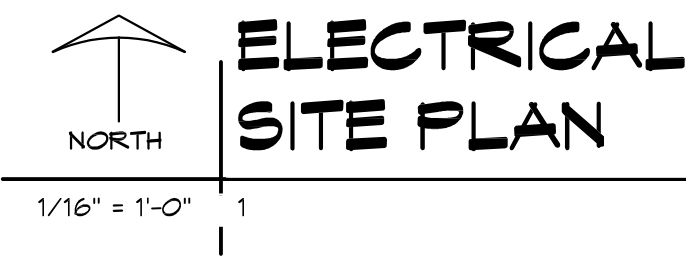
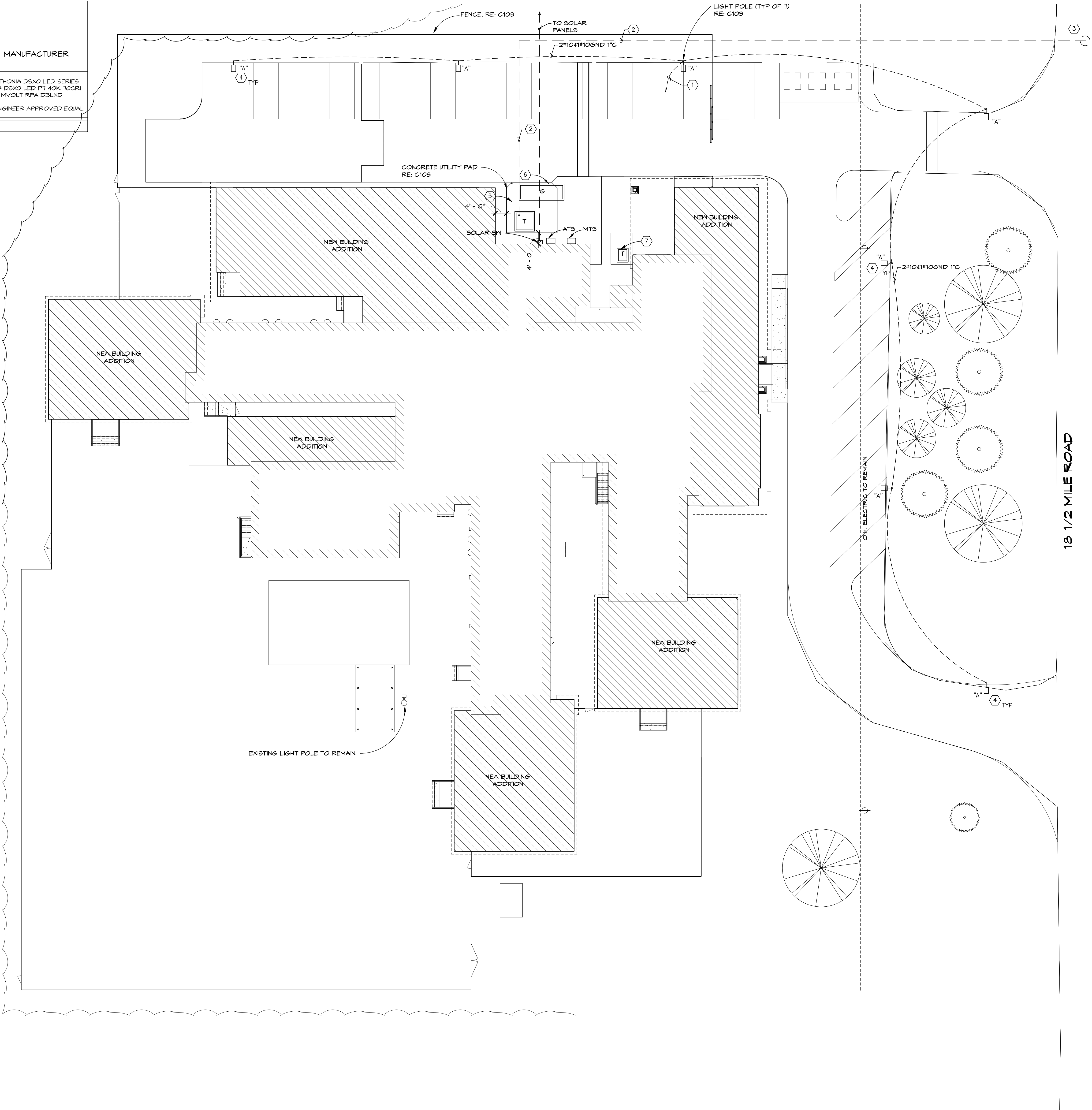
SEAL	DRAWN JESS, EA	PROJECT NO. <u>22-220</u>
	CHECKED DJB	DRAWING NO. A203
	REVIEWED DJB	
	DATE AUG 18, 2023	
	SCALE As indicated	

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FIXTURE SCHEDULE					
SYMBOL	TYPE	LAMP		MOUNTING HEIGHT	DESCRIPTION
		NO.	TYPE		
	A		LED 20.514LM 4000K TO CRI 171W	POLE MOUNTED 35FT ABV GROUND	26.2'X14.06'XV2.26'D POLE MOUNTED LED PARKING LOT/ROADWAY FIXTURE. DYE CAST ALUMINUM HOUSING, POWDER COAT FINISH, CORROSION RESISTANT, ROBUST SURGE PROTECTION, IP66 RATED, 4000K WITH 10 CRI, 20,514 LUMENS, MVOLT, TYPE III PHOTOMETRIC DISTRIBUTION, MOUNTED ON ROUND ALUMINUM TAPERED POLE.
		1. LITHONIA DSXO LED SERIES CAT# DSXO LED FT 40K 10CRI TSM MVOLT RPA DBLXD 2. ENGINEER APPROVED EQUAL			



LIGHTING HIGH POLE BASE DETAIL
NO SCALE



ELECTRICAL
SITE PLAN

GENERAL NOTES

1. MAINTAIN EXISTING GRADES. SLOPE NEW PAVEMENT IN DIRECTION OF RETENTION PONDS, CATCH BASIN OR EXISTING DRAINAGE AREA FOR POSITIVE WATER FLOW ACROSS ST. LOW AND FLOODING AREAS WILL NOT BE ACCEPTED.
2. SITE PLANS ARE SUBJECT TO ANY FACTS AND/OR EASEMENTS THAT MAY BE DISCLOSED BY A FULL AND ACCURATE TITLE SEARCH.
3. UTILITY INFORMATION WAS OBTAINED FROM AVAILABLE RECORDS. NO GUARANTEE IS MADE AS TO ACCURACY FIELD VERIFY.
4. CONTACT "MISS DIS" AT 1-800-482-7111, PRIOR TO ANY EXCAVATION OR DEMOLITION.
5. FIELD VERIFY EXACT CONDITIONS AND LOCATIONS. NOTIFY DESIGN PROFESSIONAL OF ANY DISCREPANCIES.
6. OWNER HAS FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED.
7. NOTATIONS ARE MADE IN VARIOUS PLACES ON THE DRAWINGS TO CALL ATTENTION TO DEMOLITION WHICH IS REQUIRED; HOWEVER, THESE DRAWINGS ARE NOT INTENDED TO SHOW EACH AND EVERY ITEM TO BE REMOVED. THE CONTRACTOR AND SUBCONTRACTORS FOR THE VARIOUS TRADES SHALL REMOVE THE MATERIALS RELATED TO THEIR RESPECTIVE TRADES AS REQUIRED TO PERMIT THE CONSTRUCTION OF THE NEW WORK AS SHOWN.

KEYED ELECTRICAL NOTES

1. SITE LIGHTING HOME RUN TO PANEL LP-B AND TIMER CLOCK IN BOILER ROOM, SEE PANEL SCHEDULE, RUN 2#1011#10GND TC, CONTROL WITH TIME CLOCK AND PHOTOCELL. VERIFY TIMING SCHEDULE WITH OWNER.
2. NEW SECONDARY SERVICE FEEDER FROM POWER COMPANY PROVIDE (1) 4" CONDUIT WITH PULL STRING TO POWER COMPANY POLE. COORDINATE ALL WORK WITH POWER COMPANY. CONDUIT TO BE INSTALLED MIN OF 3FT BELOW GRADE, PROVIDE YELLOW MARKER AT 1FT BELOW GRADE ALONG PATH.
3. NEW POWER COMPANY SERVICE POLE TO BE PROVIDED BY POWER COMPANY. VERIFY EXACT LOCATION IN THE FIELD.
4. PROVIDE FIXTURE TYPE "A" AS DESCRIBED. POLE TO BE MOUNTED ON 2'-6" ABOVE GROUND POLE BASE, REFER TO BASE DETAIL THIS SHEET.
5. NEW PAD MOUNTED SECONDARY SERVICE TRANSFORMER TO BE PROVIDED BY POWER COMPANY. REFER TO DETAIL SHEETS FOR ADDITIONAL MOUNTING INFORMATION.
6. NEW NATURAL GAS TYPE PAD MOUNTED GENERATOR SET. REFER TO DETAIL SHEETS FOR ADDITIONAL INFORMATION.
7. NEW NEMA 3R DRY TYPE PAD MOUNTED TRANSFORMER TO BACK FEED EXISTING SERVICE. REFER TO ONE-LINE DIAGRAM FOR SIZES AND ADDITIONAL INFORMATION.

NO.	REVISIONS / SUBMISSIONS	DATE

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ADDITIONS AND RENOVATIONS FOR:

**CALHOUN COUNTY
YOUTH CENTER**

14555 18 1/2 MILE ROAD, MARSHALL, MI 49068

DRAWING TITLE

**ELECTRICAL
SITE PLAN**

SEAL	DRAWN FAA	PROJECT NO. 22-220
	CHECKED JES9	DRAWING NO.
	REVIEWED DJB	EOO1
	DATE AUG 18, 2023	SHEET NO.
	SCALE As Indicated	16 OF 16

LANDSCAPE NOTES:

1. SURVEY OF EXISTING CONDITIONS PROVIDED BY THA ARCHITECTS.
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PROPOSED FEATURES LEGEND:

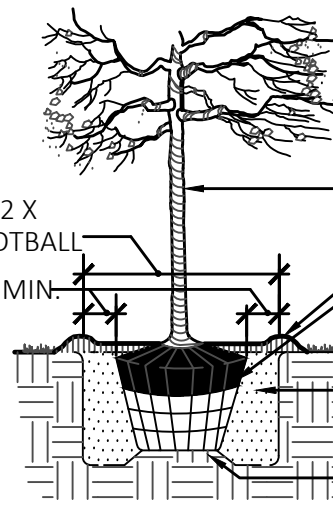
SYMBOL	DESCRIPTION	DETAIL
	PROPOSED DECIDUOUS TREE	1 / C105
	PROPOSED EVERGREEN TREE	5 / C105
	PROPOSED SHRUB	2 / C105
	PROPOSED GRASSES	3 / C105
	PROPOSED GROUNDCOVER AND/OR PERENNIALS	2 / C105
	PROPOSED BED LINE/ METAL EDGING	4 / C105
	PLANT TAG- REFERS TO TYPE AND NUMBER OF PLANTINGS TO BE PROVIDED AND MAINTAINED BY CONTRACTOR.	
	TEMPORARY TREE PROTECTION FENCE	

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PLANT LIST:

	SYM.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	SPACING	NOTES	QTY'S.
TREES	AF	Acer x freemanii 'Marmo'	Marmo Freeman Maple	2.5" CAL.	B&B	PER PLANS		4
	AG	Amelanchier x grandiflora 'Robin Hill'	Robin Hill Serviceberry	2" CAL.	B&B	PER PLANS		6
	CC	Carpinus caroliniana	Hornbeam	2" CAL.	B&B	PER PLANS		2
EVERGREENS	JS	Juniperus chinensis 'Spartan'	Spartan Juniper	6" HT.	B&B	PER PLANS		13
SHRUBS	CAH	Clethra alnifolia 'Hummingbird'	Sweet Pepperbush	#3	CONT.	3' O.C.	30" HT. MIN.	31
	CSF	Cornus sericea 'Artic Fire'	'Artic Fire' Dogwood	#3	CONT.	3' O.C.	30" HT. MIN.	20
GRASSES	SSL	Schizachyrium scoparium 'Little Arrow 'Nemarrar'	Little Arrow Little Bluestem	#1	CONT.	24" O.C.		76
PERENNIALS	AM	Allium 'Millenium'	Millenium Ornamental Onion	#1	CONT.	18" O.C.		58
	EPH	Echinacea purpurea	Purple Coneflower	#1	CONT.	18" O.C.		49
	RFG	Rudbeckia fulgida 'Goldsturm'	Black-eyed Susan	#1	CONT.	24" O.C.		120



IMPORTANT NOTE: SET TOP OF ROOTBALL OR ROOT FLARE AT OR SLIGHTLY ABOVE FINISHED GRADE

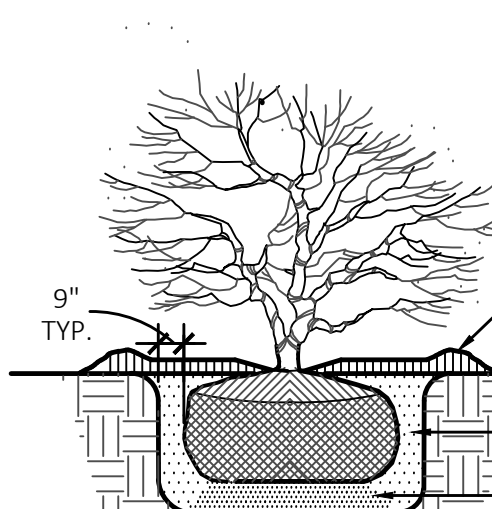
TREE WRAP TO FIRST BRANCH

4" MULCH - FORM SAUCER AROUND TREE

REMOVE BURLAP, WIRE BASKET, AND ALL TWINE OR ROPE FROM TOP 1/3 OF ROOT BALL

PLANTING SOIL MIX, TREAT WITH MYCORRHIZAL INOCULANT DURING BACKFILLING

SET TREE BALL ON 6" HIGH COMPACTED MOUND WITH ROOT FLARE AT OR SLIGHTLY ABOVE FINISH GRADE.

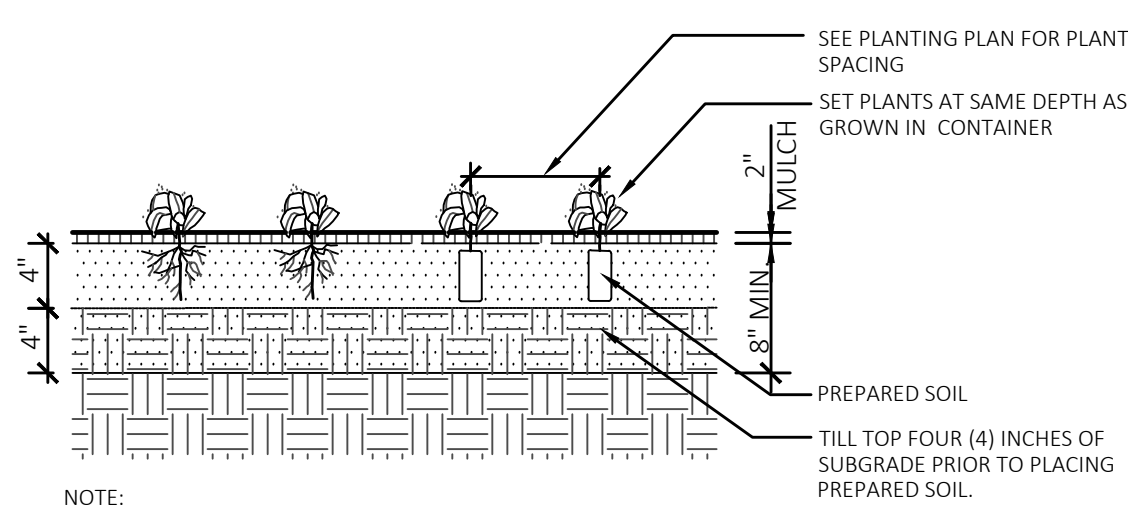


9" TYP.

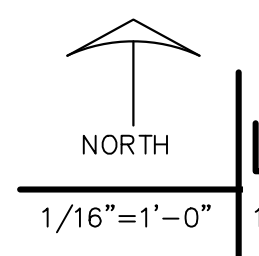
4" MULCH - FORM SAUCER AROUND SHRUB

PLANTING MIXTURE

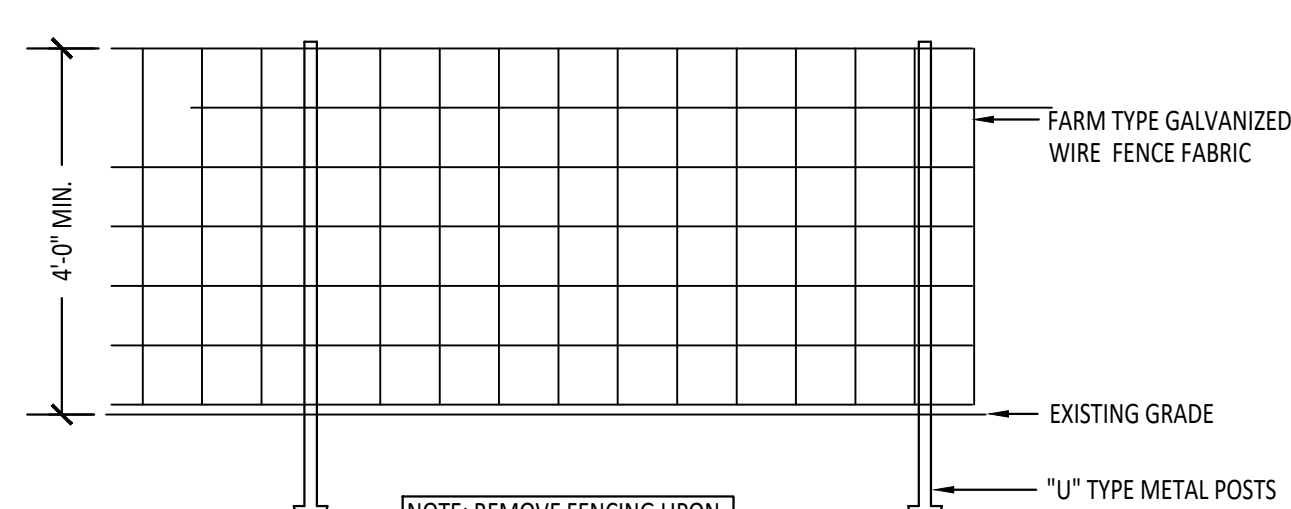
9" DEPTH SETTING LAYER OF 50% PLANTING MIXTURE TILLED INTO EXISTING SOIL AND COMPACTED



NOTE: ALL PLANTS SHOULD BE INSTALLED WITH TRIANGULAR SPACING

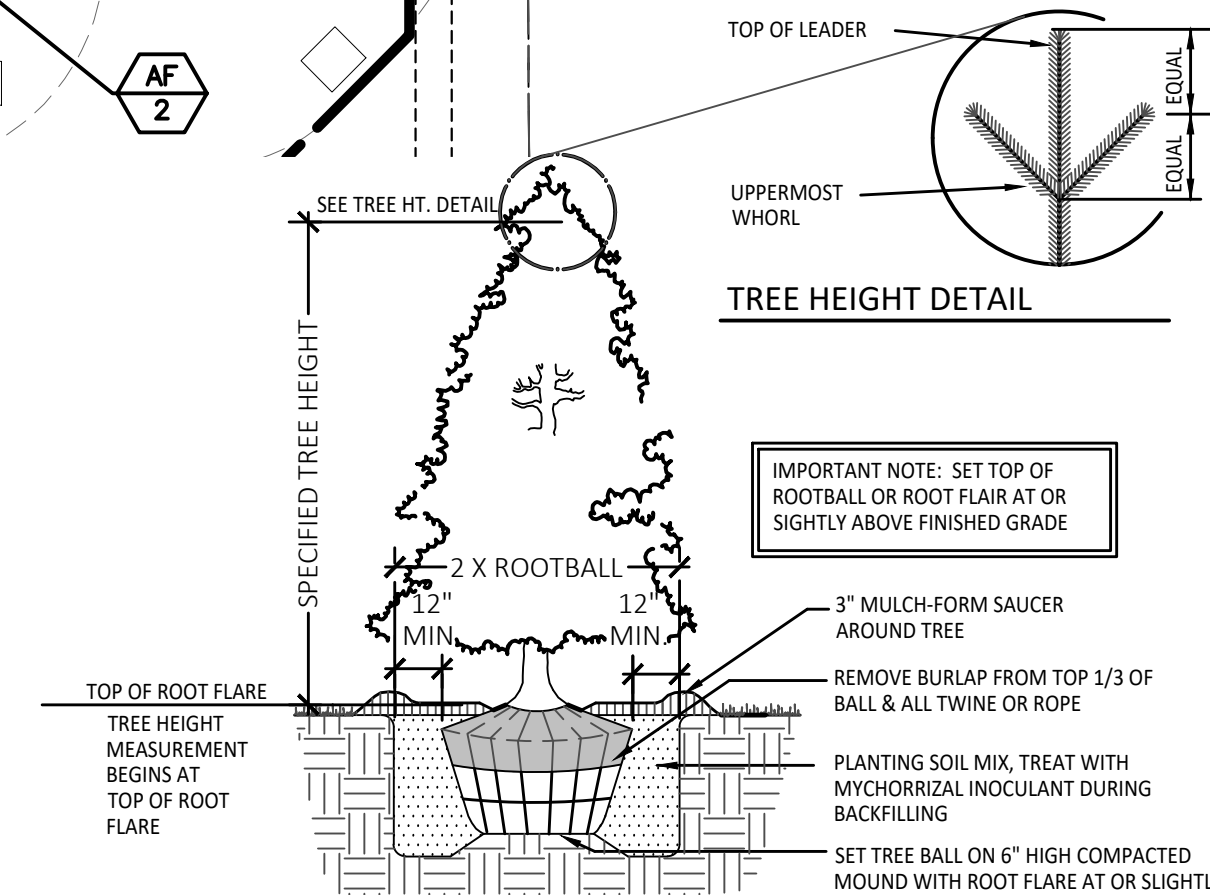


LANDSCAPING PLAN



Tree Protection Fencing Detail

Not To Scale



Conifer Planting Detail

Not To Scale



NO.	REVISIONS / SUBMISSIONS	DATE
2	ADDENDUM 3	9-1-23
1	ADDENDUM 1	8-18-23

THA
Architects Engineers
817 E. Kearsley St., Flint, MI 48503
Ph: 810-767-5600 | THA-Flint.com

CALHOUN COUNTY
**CALHOUN COUNTY
YOUTH CENTER**
14555 18 1/2 MILE ROAD, MARSHALL, MI 49068

DRAWING TITLE
LANDSCAPING PLAN

DESIGNED BY JESS, EA	DATE 22-220
REVIEWED BY JESS	DRAWING NO. C105
DATE AUG 18, 2023	SHEET NO. 9 OF 16
SCALE As Indicated	

© Users\jess\OneDrive - THA Architects\Desktop\22-220 ARCH_Landscape-Flint.com.rvt
8/23/2023 8:42:12 AM



14555 18 1/2 Mile Rd.
Marshall, MI 49068
269-781-0920
calhouncountymi.gov

City of Marshall
Site Plan Review Board
323 West Michigan Avenue
Marshall, MI 49068

Dear Site Plan Review Board,

I am the current director for the Calhoun County Youth Center (juvenile detention facility). Our current visitor parking lot has historically always provided more than adequate parking for our visitors and guests. Based on my experience as the director for the past 5 years I can attest that the re-use of our existing visitor parking will be more than sufficient to meet the visitor parking load that we will experience once our facility renovations are complete.

Sincerely,

A handwritten signature in black ink that reads "Tori Benden". The signature is written in a cursive, flowing style.

Tori Benden
Director, Calhoun County Youth Center



ITEM 8.B

TO: Planning Commission
FROM: Eric Zuzga, Director of Community Services
DATE: September 13, 2023
SUBJECT: **SP #23-07 14555 18 1/2 MILE ROAD SITE PLAN- SOLAR**

Case #: SP #23.07
Address: 14555 18 1/2 Mile Road
Parcel #: 53-003-306-00
Zoning District: Suburban Residential (R-2), Rezoning Request to PSP on agenda
Surrounding Zoning: Marengo Township -Agricultural to west, north, and east; City- R-2 to the south
Surrounding Uses: Farmland to west and north, single family residential to the east, and I-94/Marshall High School to the south
Previous Action: N/A

City staff have been working with Calhoun County and Harvest Solar on the addition of solar panels to the Calhoun County Youth Center. The Marshall Electric Department is in the middle of their application process as well as our review of the site plan. Our Electrical Inspector will work with the Electric Department to ensure that all code related issues are met on this project.

Harvest Solar is proposing to locate 120 solar panels which will cover approximately 2900 square feet of property. Per the Marshall Zoning Ordinance, this classifies this installation as a Small Solar Facility as it covers less than 3500 sq feet.

Dimensional Requirements (Setback, lot coverage, etc)

The site meets all of the dimensional requirements of the zoning ordinance.

Landscape Plan

Due to the project being less than 1 acre, a landscape plan stamped by a landscape architect is not needed. While there is existing vegetation between the site of the panels and the ROW, additional plantings are necessary. I have notified Harvest Solar of the need for a buffer strip to shield the mechanical equipment. They are proposing a chainlink fence which does not meet the decorative fence options, so a buffer trip would be the other options.



Sidewalks

Addressed in expansion site plan.

Exterior Lighting

No lights indicated in this area.

Drainage Plan

A drainage plan is not required as the ground beneath the panels will be gravel and thus the site will not have more than 2000 sq ft of impervious services.

Development Review Team

On August 28, 2023, the City Development Review Team met to consider the proposed site plan. No comments were made to the site plan. The Electric Department and Inspection Department will coordinate compliance with code issues.

PLANNING COMMISSION CONSIDERATIONS

Staff have reviewed the site plan based on the requirements of the PSP Zoning District and related sections of the zoning ordinance. As part of our review, we evaluated the proposed facility through the following standards that the Planning Commission will use in the process of reviewing any site plan for approval:

1. Adequacy of information. The site plan information is complete, accurate, and in an understandable form that accurately depicts and describes the proposed development.

The site plan submitted was complete and accurate.

2. Site appearance and preservation. The site layout promotes the normal and orderly development of surrounding lots, and the development layout preserves, to the extent feasible, the site's natural, cultural, and historical features, such as but not limited to significant buildings, wetlands, topography, and woodlands.

The proposed project is a permitted use in the PSP Zoning District.

3. Pedestrian access. Existing and proposed sidewalks or pedestrian pathways connect to existing and planned public sidewalks and pathways in the area, and comply with applicable barrier-free access standards.

N/A

4. Vehicular circulation. Drives, streets, parking, site access and other vehicle-related elements are designed to minimize traffic conflicts on adjacent streets, and to promote safe and efficient traffic circulation.

The plans have been reviewed and approved by the Department of Public Services. The site plan maintains the current circulation pattern with the expansion to have minimal impact on the current circulation pattern.

5. Parking and loading. Off-street parking lots and loading areas are arranged and located to accommodate the intensity of proposed uses, minimize conflicts with adjacent uses, and promote shared-use of common facilities where feasible.

No parking requirements in the ordinance for solar facilities.

6. Building composition. Building design and architecture are harmonious with the surrounding neighborhood with regard to scale, mass, proportion, and materials.

N/A.

7. Screening. Adequate screening elements have been provided to buffer or separate unlike or conflicting land uses, and to screen off-street parking, mechanical appurtenances, loading and unloading areas and storage areas from abutting residential districts and street rights-of-way.

Staff recommends the addition of a condition that a buffering strip be installed between the panels and the right of way.

8. Exterior lighting. All exterior lighting fixtures are designed and arranged to minimize glare and light trespass, prevent vision impairments, and maximize security.

No lighting proposed.

9. Impact upon public services. The impact upon public services (including utilities, streets, police and fire protection, emergency access, and public sidewalks and pathways) will not exceed the existing or planned capacity of such services.

The Development Review Team reviewed the site plan and do not believe that this site will have any impact on public services.

BUDGET IMPACT:

No impact as the site is tax exempt.

RECOMMENDATION:

Approve SP #23-07 with the condition that a buffering strip be installed and the City Council approves the rezoning of the parcel to Public/Semi-Public Zoning District (PSP).

City of Marshall
Application for Site Plan Review

Attn: Planning and Zoning Administrator
323 W Michigan Ave.
Marshall, Michigan, 49068

The following application is made to the City of Marshall Planning Commission in accordance with the provisions of the Planning and Zoning Department.

1. Applicant Information

Address of property being developed:

14555 18 1/2 Mile Rd, Marshall, MI 49068

Owner of property being developed:

Calhoun County, Brad Wilcox

Owner's Address:

315 W Green St, Marshall, MI 49068

City

State

Zip

Owner's Phone Number:

(269) 781-0981

2. Owner's Agent if working for property owner.

Name and Title:

Stephen Patterson, Project Manager, Harvest Solar

Address:

2218 E High St, Jackson, MI 49203

City

State

Zip

Phone Number:

(517) 788-8800

City of Marshall
Application for Site Plan Review

3. Brief description of proposed project

Install a 50.00kWAC solar generation system at
ground level, on driven piles. Consists of: (120) 540W
modules, (2) 25kW inverters feeding into a new
transformer for an existing 208V 3phase service.

4. Property Information

Is this property located in a floodplain?	<u>No</u>
Is this property located in a wetland?	<u>No</u>
Land area in square feet?	<u>1,141,272</u>
Proposed building area in square feet?	<u>1,300</u>
Proposed paved area in square feet?	<u>—</u>
Existing paved area in square feet?	<u>18,000</u>
Lake or stream within 500 feet?	<u>No</u>
Any other agencies contacted for approvals?	<u>No</u>
If so, please list:	

CITY OF MARSHALL

Site Plan Review Checklist for General Development

Date: 8/21/2023

Zoning District R-2

Proposed Use: Solar Array; ground mount

Is this a Permitted Use?

If yes list section number: 4.53 ☒ Yes ☐ No

Is the property in the Well Head Protection Area? ☐ Yes ☒ No ☐ NA

Property Address: 14555 18 1/2 Mile Rd, Marshall, MI 49068

Information of Responsible Party that prepared plans

Name: Stephen Patterson

Company Name: Harvest Solar

Company Address: 2218 East High St.

Jackson, MI 49203

Property Address: 14555 18 ½ Mile Road

Parcel Number: 53-003-306-00

Property Class: 201

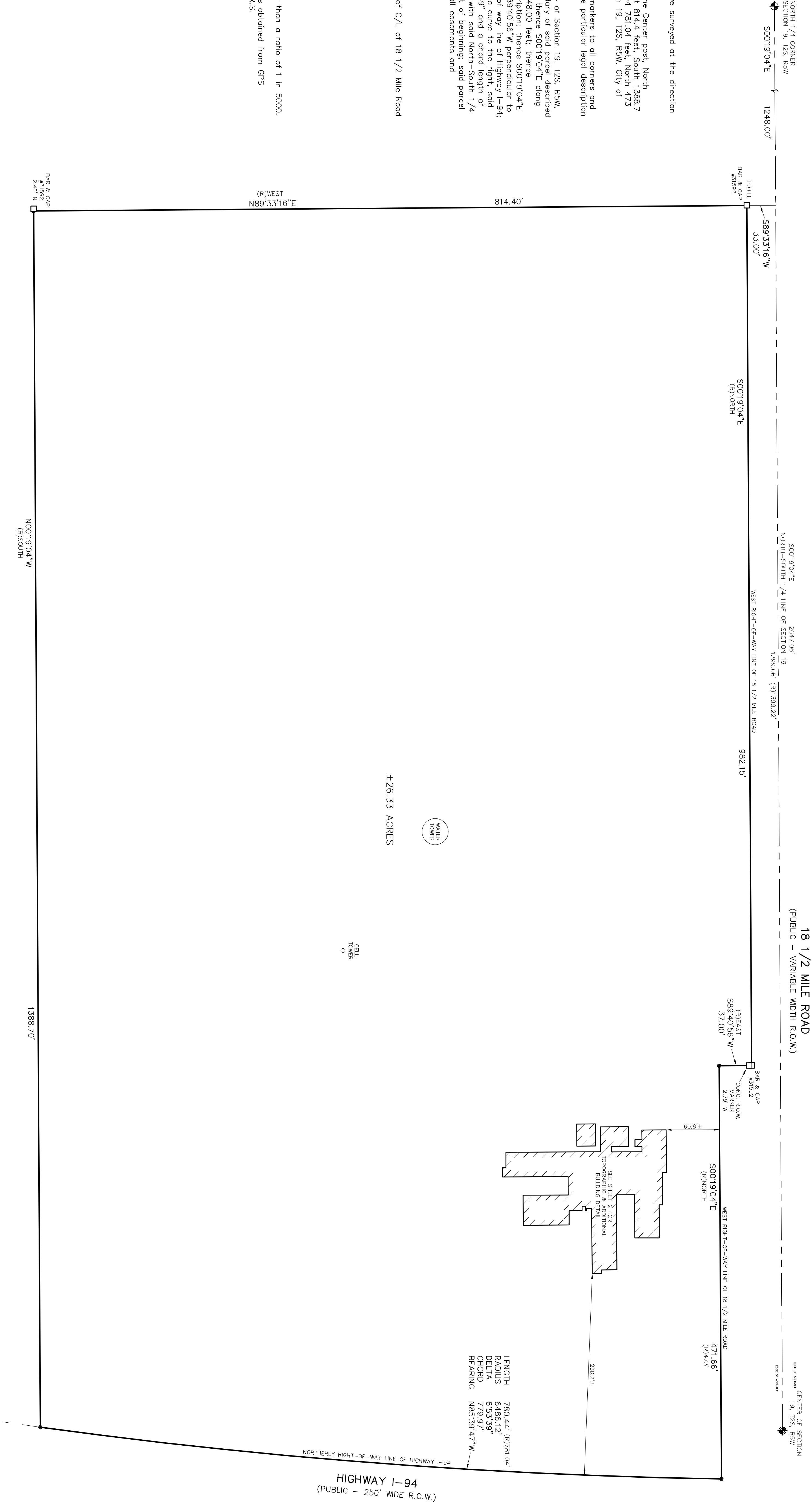
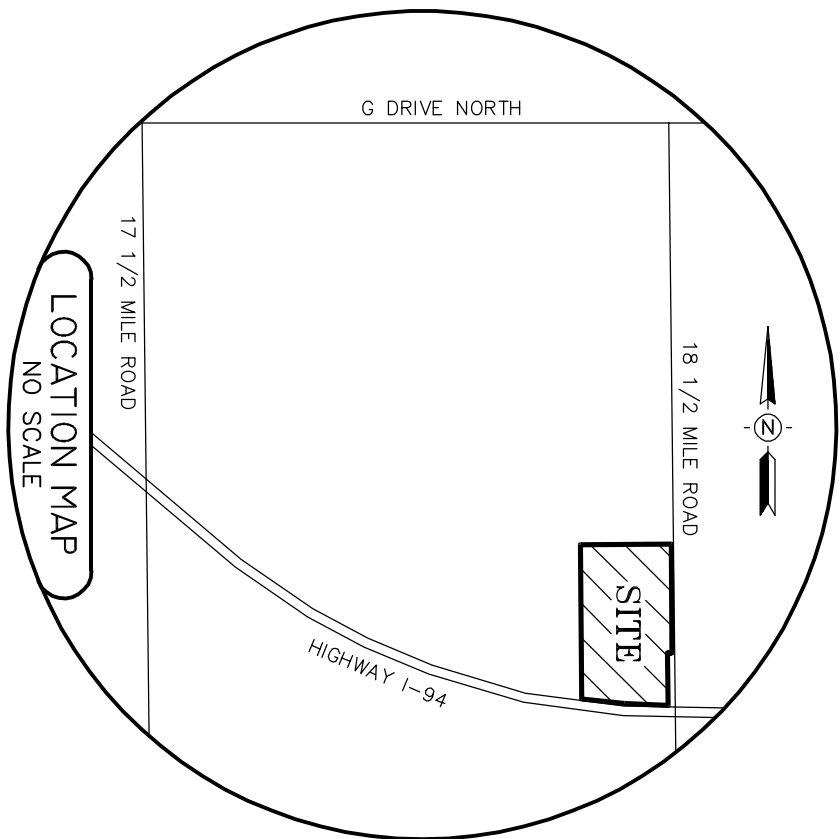
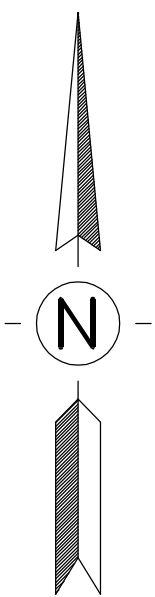
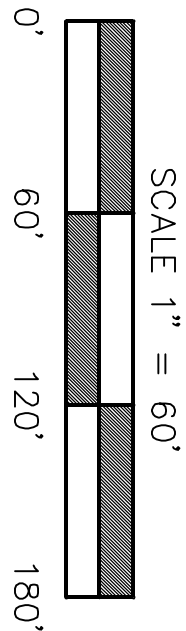
Zoning: R-2

Legal Description: MARSHALL CITY SEC 19, T2S-R5W BEG CENTER POST- N 1399.22 FT- W 33 FT TO POB-
W 814.4 FT- S 1388.7 FT TO N LI I-94 HWY- ELY ALG I-94 781.04 FT- N 473 FT- E 37 FT- N 982.15 FT TO
BEG 26.2 ACRES

CERTTRIFIED BOUNDARY & TOPOGRAPHICAL SURVEY

FOR: THE E & L CONSTRUCTION GROUP

“14555 18 1/2 MILE ROAD, MARSHALL, MI 49068”



CERTIFICATE OF SURVEY:

I hereby certify only to the parties named hereon that we have surveyed at the direction of said parties, a parcel of land previously described as:

(As provided in Tax ID# 53-003-306-00): Beginning of the Center post, North 1399.22 feet, West 33 feet to the point of beginning, West 814.4 feet, South 1388.7 feet, East 37 feet, North 982.15 feet to beginning, Section 19, T2S, R5W, City of Marshall, Calhoun County, Michigan.

and that we have found or set, as noted hereon, permanent markers to all corners and angle points of the boundary of said parcel and that the more particular legal description of said parcel is as follows:

A parcel of land in the Northwest 1/4 and the Southwest 1/4 of Section 19, T2S, R5W, City of Marshall, Calhoun County, Michigan, the surveyed boundary of said parcel described as: Commencing at the North 1/4 corner of said Section 19; thence S001904°E along the North-South 1/4 line of said Section 19 a distance of 1248.00 feet; thence S8933'16\"/>

WITNESSES TO SECTION CORNERS:

North 1/4 corner Section 19, T2S, R5W, Liber 3162, Page 842
Found Remon bar & cap #20704 in monument hole 3'-4\"/>

This survey was performed with an error of closure no greater than a ratio of 1 in 5000. All bearings are Michigan State Plane South Zone grid bearings obtained from GPS observations using corrections obtained from the Lansing C.O.R.S.

LEGEND

- = Set 1/2\"/>

MICHAEL A. GROAT
PROFESSIONAL SURVEYOR NO. 39079

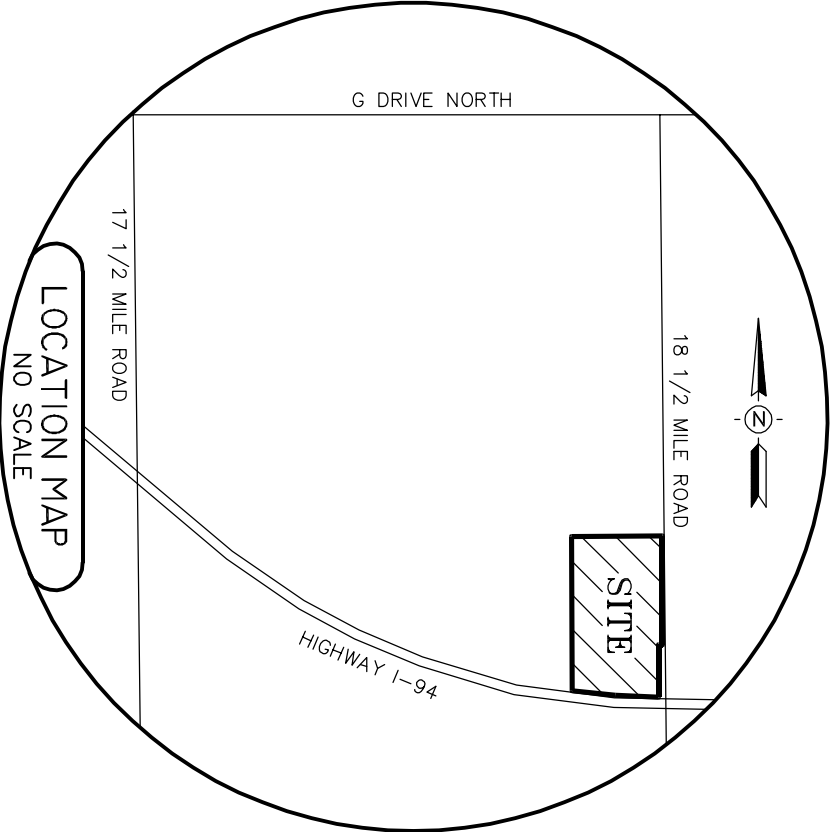
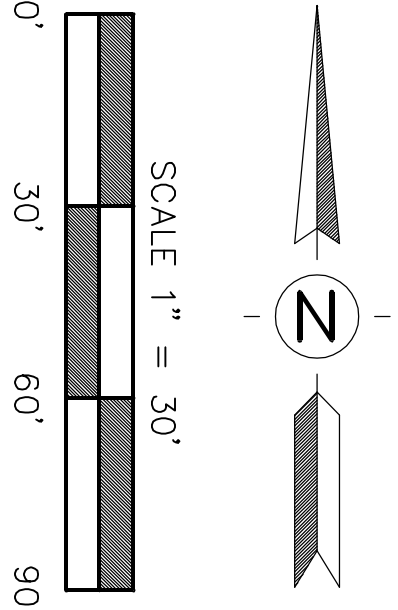
DATE

REVISIONS	COMMENTS	ENGINEERING AND LAND SURVEYING
07/07/23	ORIGINAL	
 KEBS, INC. 2116 HASELETT ROAD, HASELETT, MI 48840 PH. 517-339-1014 FAX 517-339-8047 WWW.KEBS.COM		
Marshall Office - Ph. 269-781-9800		
	DRAWN BY KOB	SECTION 19, T2S, R5W
	FIELD WORK BY MJG	
	SHEET 1 OF 2	JOB NUMBER: 101441.BND

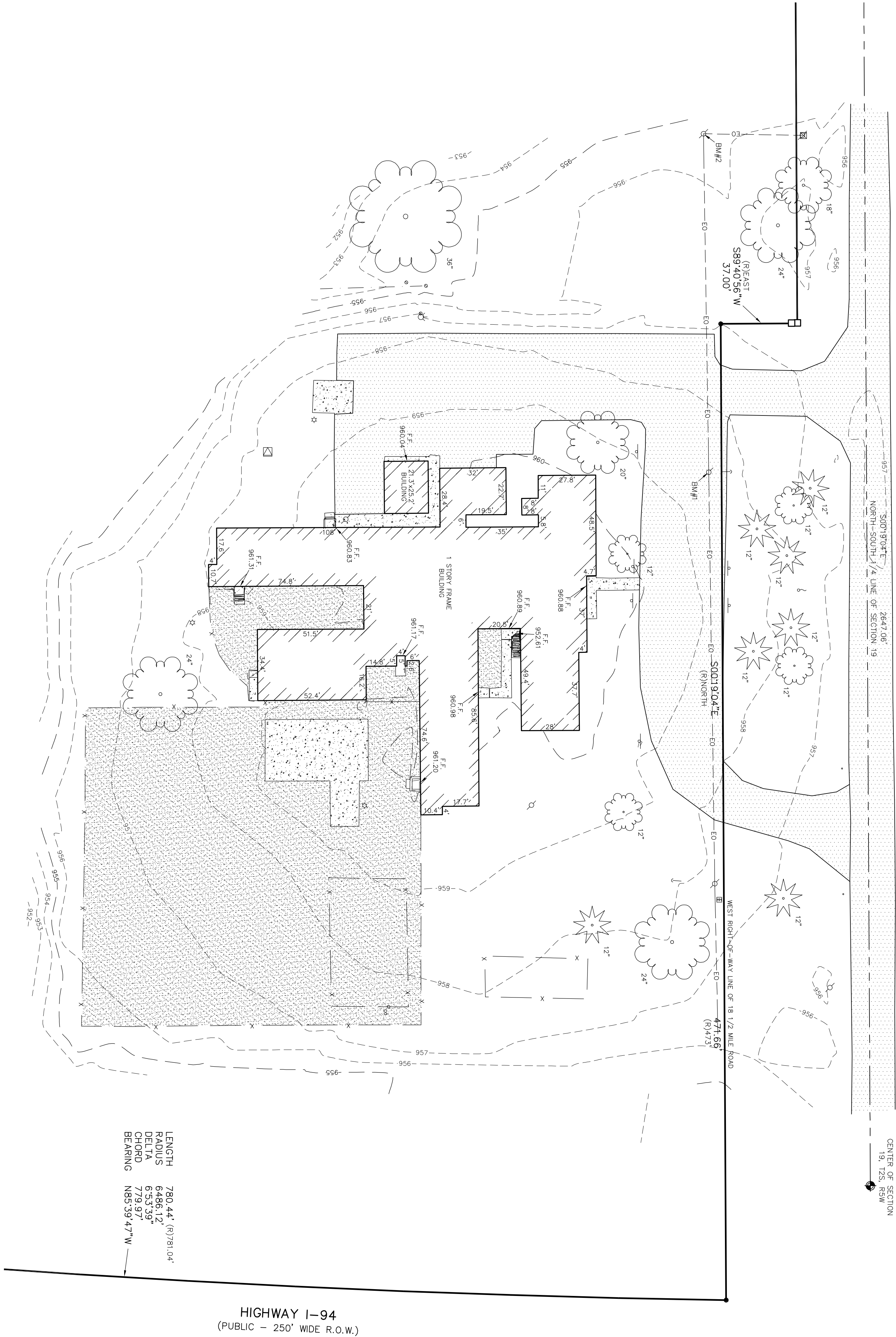
CERTIFIED BOUNDARY & TOPOGRAPHICAL SURVEY

FOR: THE E & L CONSTRUCTION GROUP

“14555 18 1/2 MILE ROAD, MARSHALL, MI 49068”



18 1/2 MILE ROAD
(PUBLIC - VARIABLE WIDTH R.O.W.)



SURVEYOR'S NOTES:

1. This plan was made at the direction of the parties named hereon and is intended solely for their immediate use. Survey prepared from fieldwork performed in June 2023.
2. All bearings are Michigan State Plane South Zone grid bearings obtained from GPS observations using corrections obtained from the nearest National Geodetic Survey C.O.R.S. station.
3. All dimensions shown are as-measured unless otherwise noted.
4. All elevations are North American Vertical Datum of 1988 (NAVD88).
5. All dimensions are in feet and decimals thereof.
6. No building dimensions are to be used for establishing the property lines.
7. Easements, if any, not shown hereon.
8. By scaled map location and graphic plotting only, this property lies entirely within Flood Zone "X", areas outside the 0.2% annual chance floodplain, according to the National Flood Insurance Program, Flood Insurance Rate Map for the City of Marshall, Calhoun County, Michigan, Community Panel No. 260035 0239 C, dated April 4, 2011.
9. Utilities are shown based on visible field evidence only and all underground utilities on site are subject to verification in the field by the appropriate authorities prior to use for construction. No as-built plans were obtained, and no MISS DIG ticket was submitted for the site.
10. Wetlands, if any, not shown hereon.

LEGEND

(M)	= MEASURED DIMENSION
(R)	= RECORDED DIMENSION
•	= SET 1/2" BAR WITH CAP UNLESS NOTED
□	= FOUND IRON AS NOTED
—	= DEED LINE
—	= DISTANCE NOT TO SCALE
+	= FENCE
■	= ASPHALT
■	= CONCRETE
■	= DECK
■	= GRAVEL
—	= EXISTING SPOT ELEVATION
—	= EXISTING CONTOUR ELEVATION
—	= BUILDING OVERHANG
—	= SANITARY SEWER
—	= STORM SEWER
—	= WATER LINE
—	= GAS LINE
—	= OVERHEAD WIRES
—	= EDGE OF WOODS
—	= DECIDUOUS TREE
—	= CONIFEROUS TREE
—	= CLEANDUT
—	= FIRE HYDRANT
—	= SIGN
—	= UTILITY POLE
—	= LIGHT POLE
—	= FLAG POLE
—	= GUY WIRE
—	= UTILITY PEDESTAL
—	= TRANSFORMER
—	= HANDHOLE

BENCHMARKS:

BM#1 - ELEVATION 959.41 N.A.V.D.88
PK NAIL IN EAST SIDE OF UTILITY POLE ON WEST SIDE OF 18 1/2 MILE ROAD ON NORTH LINE OF BUILDING EXTENDED
BM#2 - ELEVATION 957.43 N.A.V.D.88
PK NAIL IN SOUTH SIDE OF UTILITY POLE ON WEST SIDE OF 18 1/2 MILE ROAD ON 160'± NORTH OF NORTH BUILDING LINE EXTENSION

REVISIONS	COMMENTS	ENGINEERING AND LAND SURVEYING
07/07/23	ORIGINAL	KEBS, INC. 2116 HASELT ROAD, HASELT, MI 48840 PH. 517-339-1014, FAX 517-339-8047 WWW.KEBS.COM
	DRAWN BY KOB	SECTION 19, T2S, R5W
	FIELD WORK BY MJG	JOB NUMBER: 101441.BND
	SHEET 2 OF 2	



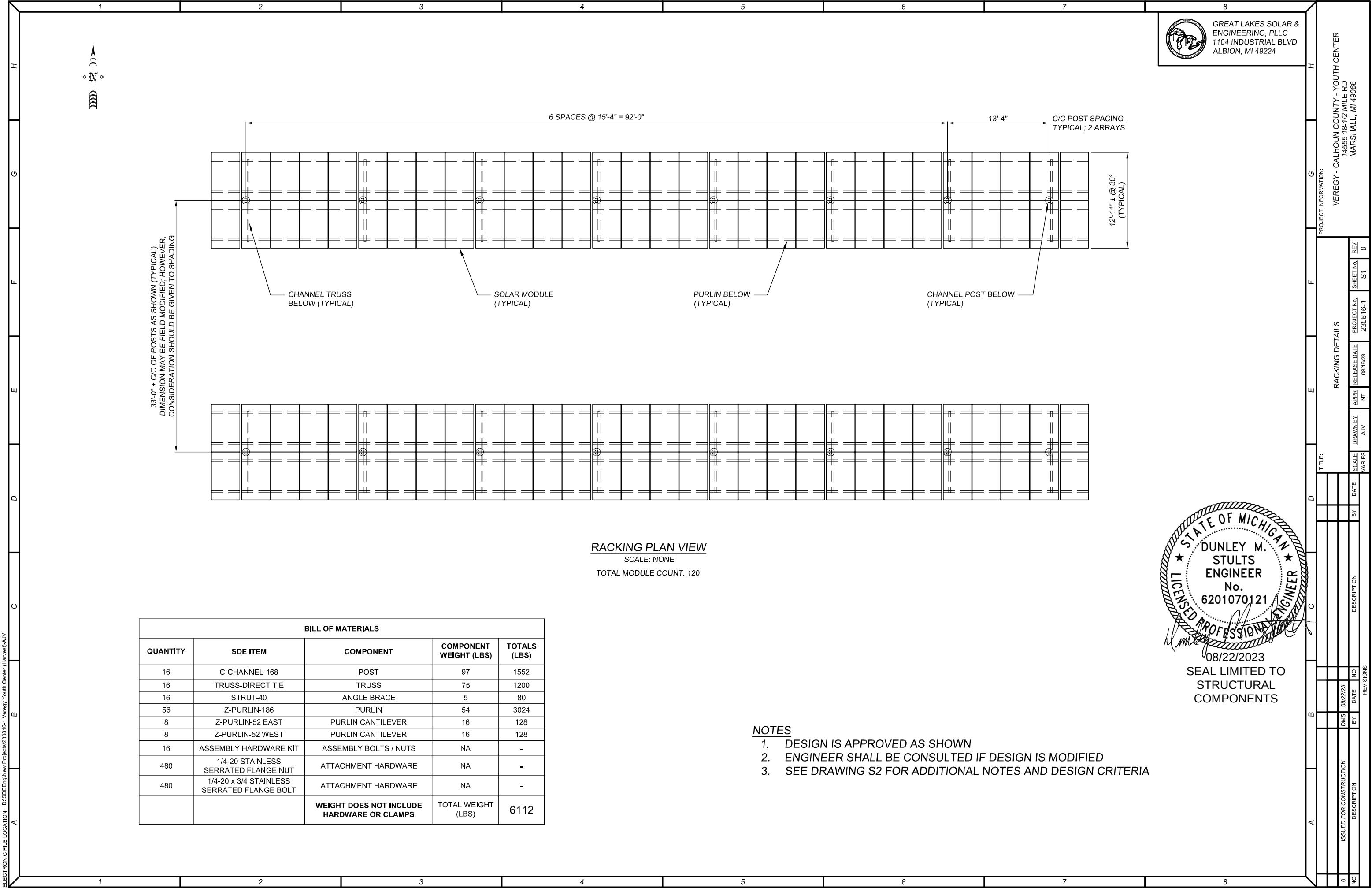
PV Solar Array – Decommissioning Plan

Anticipated Life

The primary component of a solar generating facility is the photovoltaic modules. Thus, the operational life of a solar farm is typically associated with the operating life of the modules. The project is planned with Tier 1 crystalline solar modules, which has an operational life of 25 years or more. Most module manufacturers advertise even longer operational lives for their products and financing parties have been willing to accept 35 or 40-year project lifetimes. This plan estimates this project's operational life at 30 years. If the operational life is over 20 years, this decommissioning plan will be updated with additional information.

Decommissioning Process

Decommissioning this site will involve the removal of all solar and ancillary equipment. Solar modules, racking, posts, concrete pads, inverters, and wiring make up most of that equipment. In keeping with industry best practices, the applicant plans to recycle or salvage these materials wherever possible. One possible exception to removal is subsurface improvements, including roads, which may remain if requested by the landowner. Once the equipment is removed, the land will be reseeded, stabilized and returned to its pre-development state. All materials will be removed from the site and recycled where possible.



GREAT LAKES SOLAR & ENGINEERING, PLLC
1104 INDUSTRIAL BLVD
ALBION, MI 49224

PROJECT INFORMATION:
VEREGY - CALHOUN COUNTY - YOUTH CENTER
14555 18-1/2 MILE RD
MARSHALL, MI 49068

RACKING DETAILS				PROJECT No.		SHEET No.		REV	
TITLE:				230816-1		S1		0	
SCALE:				VARIES		A/JV		INT	
DATE:				08/18/23		APP		REV	
BY:				DATE		NO		DESCRIPTION	
REVISIONS				DATE		NO		DESCRIPTION	
ISSUED FOR CONSTRUCTION				DATE		NO		DESCRIPTION	
0				08/22/23		DMS		BY	
NO				DATE		NO		DESCRIPTION	

BILL OF MATERIALS				
QUANTITY	SDE ITEM	COMPONENT	COMPONENT WEIGHT (LBS)	TOTALS (LBS)
16	C-CHANNEL-168	POST	97	1552
16	TRUSS-DIRECT TIE	TRUSS	75	1200
16	STRUT-40	ANGLE BRACE	5	80
56	Z-PURLIN-186	PURLIN	54	3024
8	Z-PURLIN-52 EAST	PURLIN CANTILEVER	16	128
8	Z-PURLIN-52 WEST	PURLIN CANTILEVER	16	128
16	ASSEMBLY HARDWARE KIT	ASSEMBLY BOLTS / NUTS	NA	-
480	1/4-20 STAINLESS SERRATED FLANGE NUT	ATTACHMENT HARDWARE	NA	-
480	1/4-20 x 3/4 STAINLESS SERRATED FLANGE BOLT	ATTACHMENT HARDWARE	NA	-
WEIGHT DOES NOT INCLUDE HARDWARE OR CLAMPS			TOTAL WEIGHT (LBS)	6112

RACKING PLAN VIEW
SCALE: NONE
TOTAL MODULE COUNT: 120

- NOTES
- DESIGN IS APPROVED AS SHOWN
 - ENGINEER SHALL BE CONSULTED IF DESIGN IS MODIFIED
 - SEE DRAWING S2 FOR ADDITIONAL NOTES AND DESIGN CRITERIA

STATE OF MICHIGAN
DUNLEY M. STULTS
ENGINEER
No. 6201070121
08/22/2023
SEAL LIMITED TO STRUCTURAL COMPONENTS

S1 RACKING DETAILS
S2 RACKING DETAILS / SPECIFICATIONS
& NOTES

PANELS: CS6W 540MB-AG
540 W MODULES; 64.8 kW DC
TILT ANGLE: 30 DEGREES
GROUND CLEARANCE: 24 IN. ±

THIS CERTIFICATION IS FOR DESIGN OF
SDE SOLAR PANEL RACKING @ 30 DEGREE
TILT WITH EMBEDDED POSTS

GREAT LAKES SOLAR & ENGINEERING IS
NOT RESPONSIBLE FOR SOLAR PANEL
DESIGN OR INSTALLATION

CONTACT GREAT LAKES SOLAR &
ENGINEERING IF ROCK IS ENCOUNTERED
DURING POST INSTALLATION

SYSTEM SHALL BE INSTALLED PER
MANUFACTURER'S INSTALLATION GUIDE
AND SPECIFICATIONS

POSTS SHALL BE INSTALLED WITH FLAT FACE TO THE EAST FOR EVEN ANGLES (20° & 30°) AND WITH FLAT FACE TO THE WEST FOR ODD ANGLES (25° & 35°) AND SEASON ADJUSTABLE SYSTEMS

TRIM POSTS FROM BOTTOM TO AVOID
EXCESS EMBEDMENT

TOTAL AREA BETWEEN POSTS = $44.65' \times 89.21' \times 8$
PANELS = 221.29 SQ.FT.
APPLICABLE CODES AND STANDARDS: IBC 2015,
ASCE 7-10
RISK CATEGORY: I
FLOOR LIVE LOAD (1603.1.1): NA
ROOF LIVE LOAD (1603.1.2): 20 PSF (REDUCIBLE)
ROOF SNOW LOAD (1603.1.3):

$P_g = 25.0 \text{ PSF}$
 $P_f = 15.12 \text{ PSF}$
 $C_e = 0.9$

$I_s = 0.8$
 $C_t = 1.2$

WIND LOAD (1603.1.4):
V = 105 MPH

lw = 1.0
EXPOS

EARTHQUAKE DESIGN
 $S_{ds} = 0.096$

SITE CLASS

le = 1.0
SDC = F

SDC = B
BASE SHEAR V = 42.51 LBS

SOIL IS ASSUMED TO BE STIFF

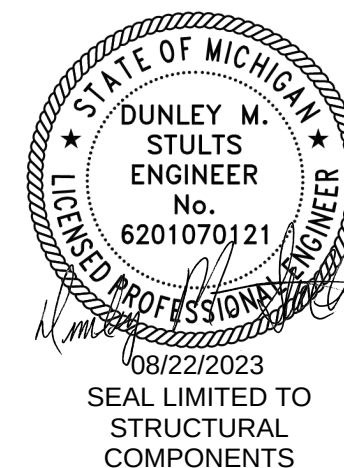
POSTS SHALL BE EMBEDDED INTO UNDISTURBED
SOIL

2 PANEL HIGH (PORTRAIT), 8 PANELS BETWEEN
POSTS

GROSS UPLIFT = 2990 LBS (PER POST)
HORIZONTAL = 2850 LBS (PER POST)

STRUCTURAL MEMBERS COLD FORMED ASTM
A653 STEEL
50 KSI MINIMUM YIELD STRENGTH
STRUCTURAL BOLTS GRADE 5 / GRADE 8
STRUCTURAL MEMBERS FABRICATED AND
GALVANIZED PER ASTM A123
HOLES SHALL BE 1/16" LARGER THAN BOLTS

1. DESIGN IS APPROVED AS SHOWN
2. GREAT LAKES SOLAR & ENGINEERING SHALL BE CONSULTED IF DESIGN IS MODIFIED
3. DRAINAGE SHALL BE DIVERTED AWAY FROM POSTS. POSTS SHALL NOT BE INSTALLED IN SWALES, DRAINAGE AREAS, OR WHERE WATER MAY BE ALLOWED TO FLOW OR STAND
4. ADJUSTMENT HOLES IN POSTS SHALL BE USED TO LEVEL TRUSSES AND PURLINS PRIOR TO PANEL INSTALLATION
5. CANTILEVER MEMBERS SHALL BE ATTACHED WITH NO LESS THAN 3 - 1/2" Ø SERRATED FLANGE BOLTS. CANTILEVERS SHALL OVERLAP PURLINS BY 6"
6. EXISTING GRADE SHALL BE NOMINALLY FLAT WITH NO MORE THAN 5% SLOPE. ENGINEER SHALL BE CONSULTED IF SLOPE IS GREATER THAN 5%
7. DAMAGED COMPONENTS SHALL BE REJECTED AND REPI ACFD

[illegible]

PROJECT DESCRIPTION

OWNER: VEREGY - CALHOUN COUNTY - YC 248-780-2133
SALESPERSON: KEN ZEBARAH 734-790-0673
COORDINATOR: EVANN ROHLOFF 734-883-3309
ARRAY TYPE: STANDARD GROUND MOUNT
DC SYSTEM SIZE: 64.80 kW
AC SYSTEM SIZE: 50.00 kW
RACKING USED: SINCLAIR RACKING
RACKING DESCRIPTION: 2' LOW EDGE FIXED TILT

EQUIPMENT SUMMARY:

120 CANADIAN SOLAR CS6W-540MB-AG
2 CPS CPS SCA25KTL-DO/US-208
WIRELESS CHINT MONITORING UNIT

APPLICABLE CODES & STANDARDS:

BUILDING: IBC 2015
ELECTRICAL: NEC 2017

AUTHORITIES HAVING JURISDICTION:

BUILDING: MARSHALL TOWNSHIP
ELECTRICAL: MARSHALL TOWNSHIP
UTILITY: CONSUMERS ENERGY

DESIGN CRITERIA:

OCCUPANCY: I
ZONING: R-2
MIN AMBIENT TEMP: -22°C
MAX AMBIENT TEMP: 31°C
SNOW LOAD: 25 LBS.
WIND EXPOSURE CATEGORY: C (ASCE 7)
WIND SPEED: 120 MPH (ASCE 7-10 FIGURE 26.5-1B)
UTILITY CONFIGURATION: 208V 3 PHASE
ARRAY ORIENTATION: PORTRAIT

PROJECT NOTES

- THIS PHOTOVOLTAIC (PV) SYSTEM SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE (NEC) ARTICLE 690, ALL MANUFACTURER'S LISTING AND INSTALLATION INSTRUCTIONS, AND THE RELEVANT CODES AS SPECIFIED BY THE AUTHORITY HAVING JURISDICTIONS (AHJ) APPLICABLE CODES
- GROUND FAULT DETECTION AND INTERRUPTION (GFDI) DEVICE IS INTEGRATED WITH THE INVERTER IN ACCORDANCE WITH [NEC 690.5(A)]
- THE UTILITY INTERCONNECTION APPLICATION MUST BE APPROVED AND PV SYSTEM INSPECTED PRIOR TO PARALLEL OPERATION
- LINE-SIDE INTERCONNECTION SHALL BE IN ACCORDANCE WITH [NEC 705.12(A)]
- LOAD-SIDE INTERCONNECTION SHALL BE IN ACCORDANCE WITH [NEC 705.12(B)]
- ALL PV SYSTEM COMPONENTS: MODULES, UTILITY-INTERACTIVE INVERTERS, AND SOURCE CIRCUIT COMBINER BOXES ARE IDENTIFIED AND LISTED FOR USE IN PHOTOVOLTAIC SYSTEM AS REQUIRED BY [NEC 690.4] & [NEC 690.60]
- PV MODULES: UL 1703 CERTIFIED, NFPA 70 CLASS C FIRE
- INVERTER(S): UL 1741 CERTIFIED, IEEE 1547, 929, 519
- COMBINER BOX(S): UL 1703 OR UL 1741 NECESSARY

SHEET INDEX TABLE

PV-01	COVER SHEET
PV-02	MODULE LAYOUT/SITE PLAN
PV-03	INSTALLATION SPECS
PV-04	LINE DIAGRAM/WIRE SCHEDULE
PV-05	BOM
PV-06	STRING LAYOUT
PV-07	LABEL INDEX
PV-08	PROJECT NOTES
R-01 TO -03	RESOURCE DOCUMENTS

STANDARD GROUND MOUNT: 64.80 kW
VEREGY - CALHOUN COUNTY - YC - SOLAR PROJECT
42°17'1" -84°56'14"



2218 East High Street
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REVISIONS		
Description	Date	Rev
Initial Binder Created	07.03.23	0.1
Location Update	07.06.23	0.2
Tilt Update	07.07.23	0.3
Approval Binder Created	08.21.23	1.0
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ENGINEERING STAMP

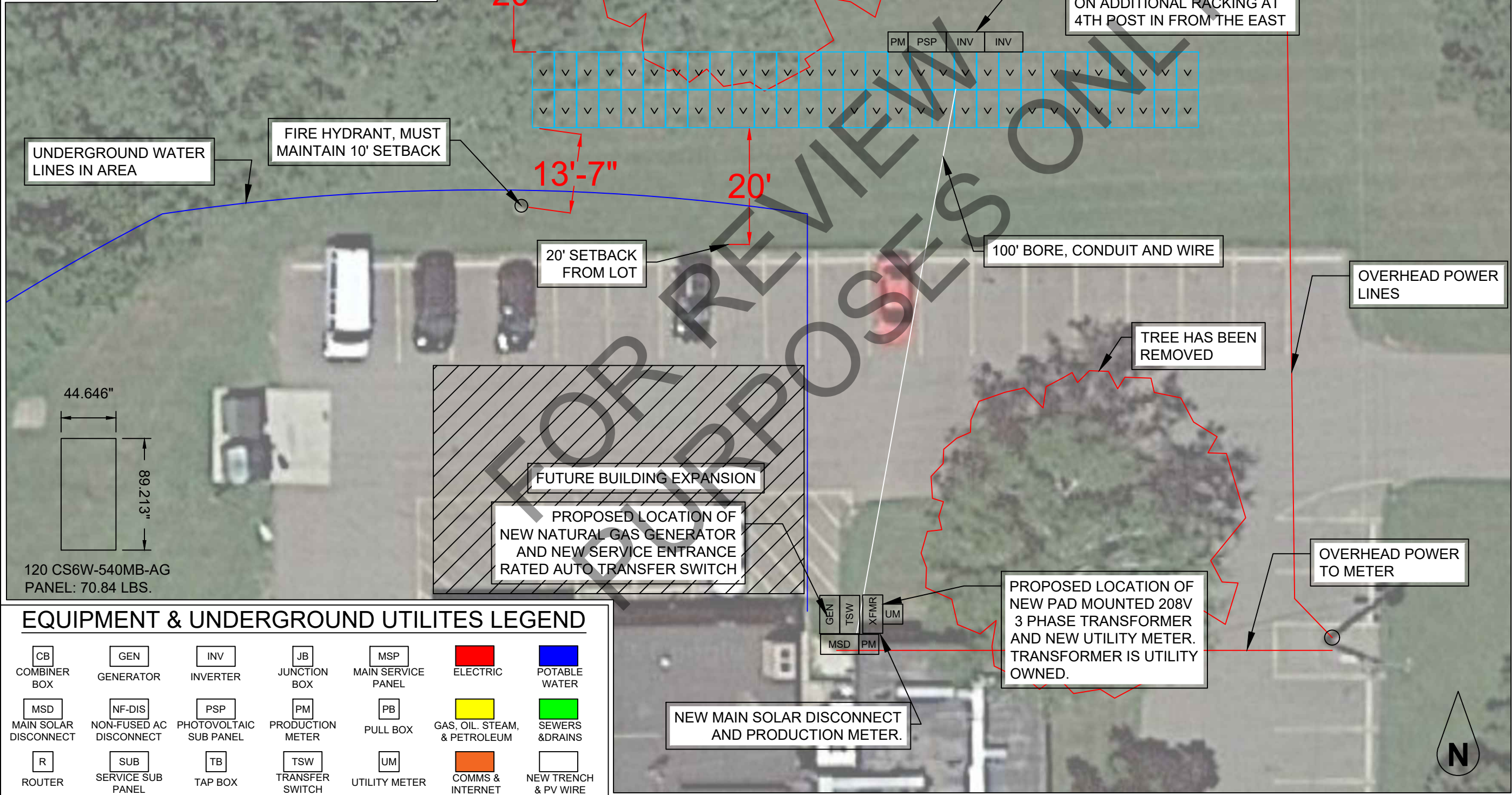
VEREGY - CALHOUN COUNTY - YC

23024

14555 18-1/2 MILE ROAD
MARSHALL, MI 49068

DESIGNED BY: JG	REVIEWED BY: NMC
SHEET NAME: COVER SHEET	
SHEET SIZE: ANSI (11" x 17")	
SHEET NUMBER: PV-01	

RACKING CHARACTERISTICS	
MANUFACTURER	SINCLAIR RACKING
DESCRIPTION	2' LOW EDGE FIXED TILT
GROUND MOUNT 1 SPECIFICS	
ARRAY TILT	30°
ARRAY AZIMUTH	180°
MAGNETIC DECLINATION	6° WEST
MODULE COUNT	120
ARRAY WATTAGE (KW)	64.80
ARRAY AREA (SQ. FT.)	2874.49



EQUIPMENT & UNDERGROUND UTILITES LEGEND											
CB	GEN	INV	JB	MSP	ELECTRIC	POTABLE WATER	MSD	NF-DIS	PSP	PM	PB
COMBINER BOX	GENERATOR	INVERTER	JUNCTION BOX	MAIN SERVICE PANEL			MAIN SOLAR DISCONNECT	NON-FUSED AC DISCONNECT	PHOTOVOLTAIC SUB PANEL	PRODUCTION METER	PULL BOX
R	SUB	TB	TSW	UM	GAS, OIL, STEAM, & PETROLEUM	SEWERS & DRAINS					
ROUTER	SERVICE SUB PANEL	TAP BOX	TRANSFER SWITCH	UTILITY METER	COMMS & INTERNET	NEW TRENCH & PV WIRE					

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14555 18-1/2 MILE ROAD
MARSHALL, MI 49068

DESIGNED BY: JG

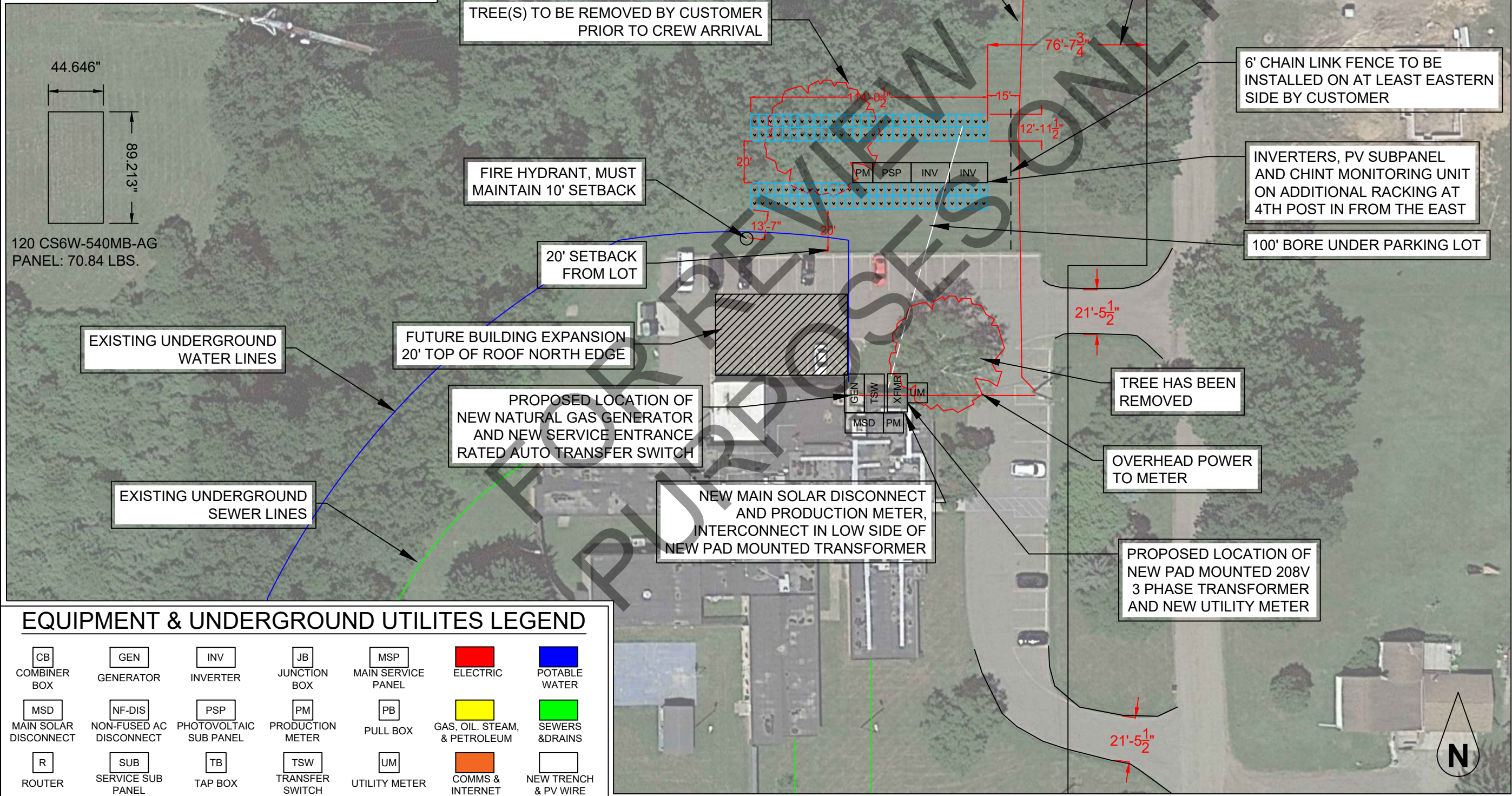
REVIEWED BY: NMC

SHEET NAME: MODULE LAYOUT/SITE PLAN

SHEET SIZE: ANSI (11" x 17")

SHEET NUMBER: PV-024 67 of 107

RACKING CHARACTERISTICS	
MANUFACTURER	SINCLAIR RACKING
DESCRIPTION	2' LOW EDGE FIXED TILT
GROUND MOUNT 1 SPECIFICS	
ARRAY TILT	30°
ARRAY AZIMUTH	180°
MAGNETIC DECLINATION	6° WEST
MODULE COUNT	120
ARRAY WATTAGE (KW)	64.80
ARRAY AREA (SQ. FT.)	2874.49



EQUIPMENT & UNDERGROUND UTILITES LEGEND											
CB	GEN	INV	JB	MSP	ELECTRIC	POTABLE WATER	MSD	NF-DIS	PSP	PM	PB
COMBINER BOX	GENERATOR	INVERTER	JUNCTION BOX	MAIN SERVICE PANEL			MAIN SOLAR DISCONNECT	NON-FUSED AC DISCONNECT	PHOTOVOLTAIC SUB PANEL	PRODUCTION METER	PULL BOX
R	SUB	TB	TSW	UM	GAS, OIL, STEAM, & PETROLEUM	SEWERS & DRAINS					
ROUTER	SERVICE SUB PANEL	TAP BOX	TRANSFER SWITCH	UTILITY METER	COMMS & INTERNET	NEW TRENCH & PV WIRE					

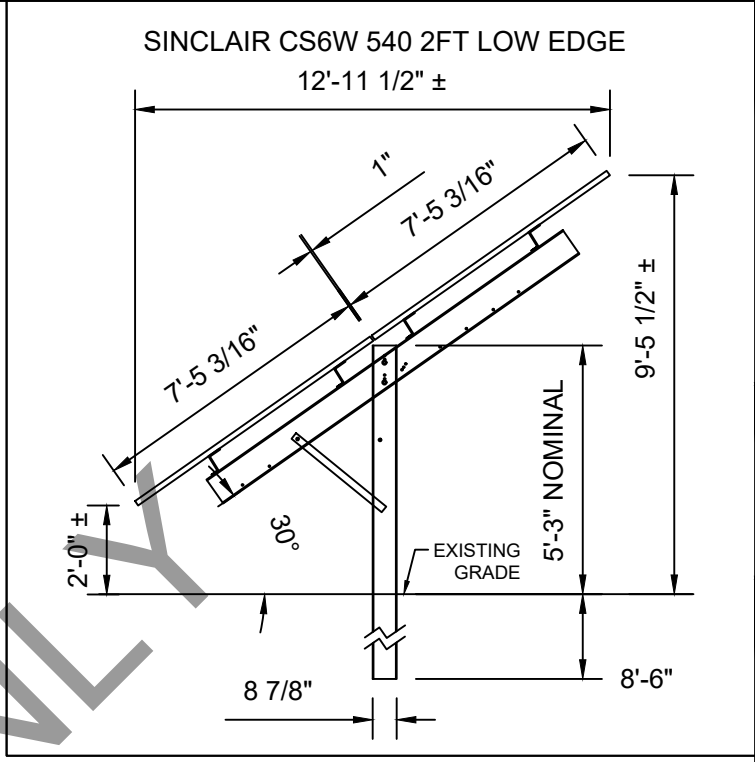
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14555 18-1/2 MILE ROAD MARSHALL, MI 49068				
DESIGNED BY: JG	REVIEWED BY: NMC			
SHEET NAME: MODULE LAYOUT/SITE PLAN				
SHEET SIZE: ANSI (11" x 17")				
SHEET NUMBER: PV-026 68 of 107				

GROUND MOUNT 1 SPECIFICS	
ARRAY TILT (FIXED)	30°
FLAT SIDE OF POSTS FACES	EAST
ARRAY AZIMUTH	180°
MAGNETIC DECLINATION	6° WEST
POST HEIGHTS (MIN - MAX)	63" - 75"

ARRAY TILT (FIXED)	30°
FLAT SIDE OF POSTS FACES	EAST
ARRAY AZIMUTH	180°
MAGNETIC DECLINATION	6° WEST
POST HEIGHTS (MIN - MAX)	63" - 75"

OVERALL MEASURED GRADE
VARIANCE (TO BE MEASURED
BEFORE POST INSTALLATION)

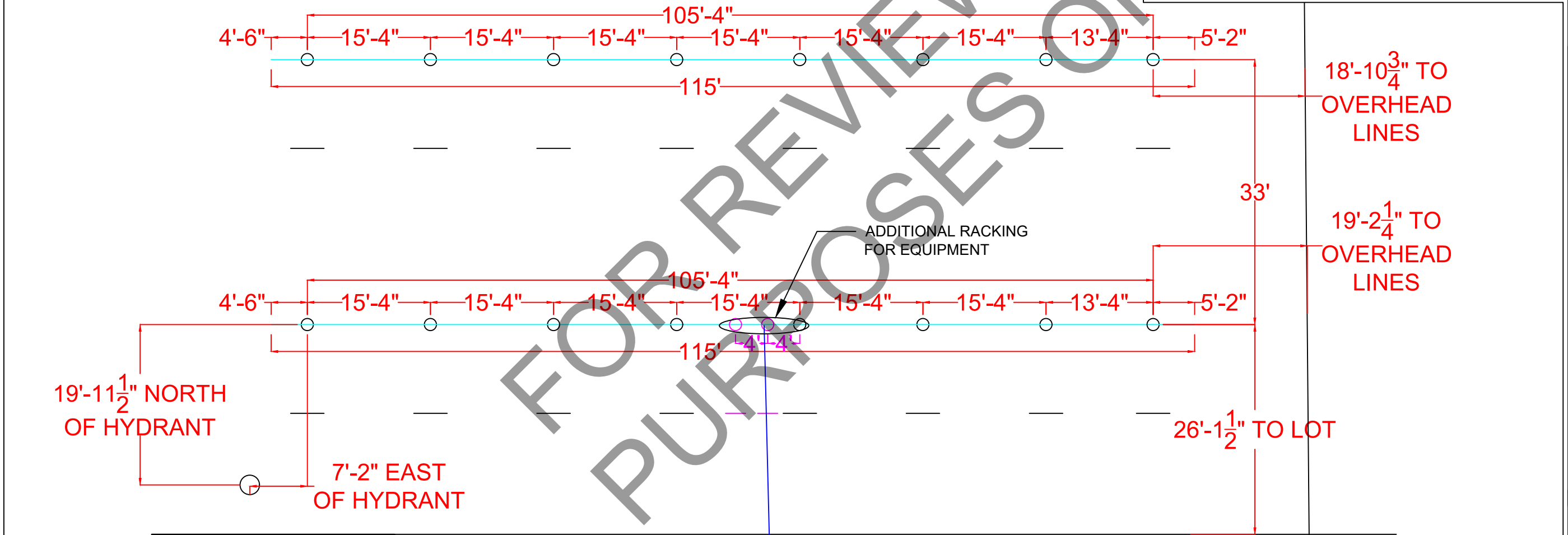


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MEASURED POST HEIGHT FROM GRADE (AFTER INSTALLATION)	
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WAS SITE FLAGGED?	Y / N
WHEELED DISTANCE (METER TO CLOSEST ARRAY POST)	
WHEELED DISTANCE BY SALES (OUTSIDE STRUCTURES/TRENCH)	100'
WHEELED DISTANCE BY SALES (INSIDE STRUCTURES)	0'

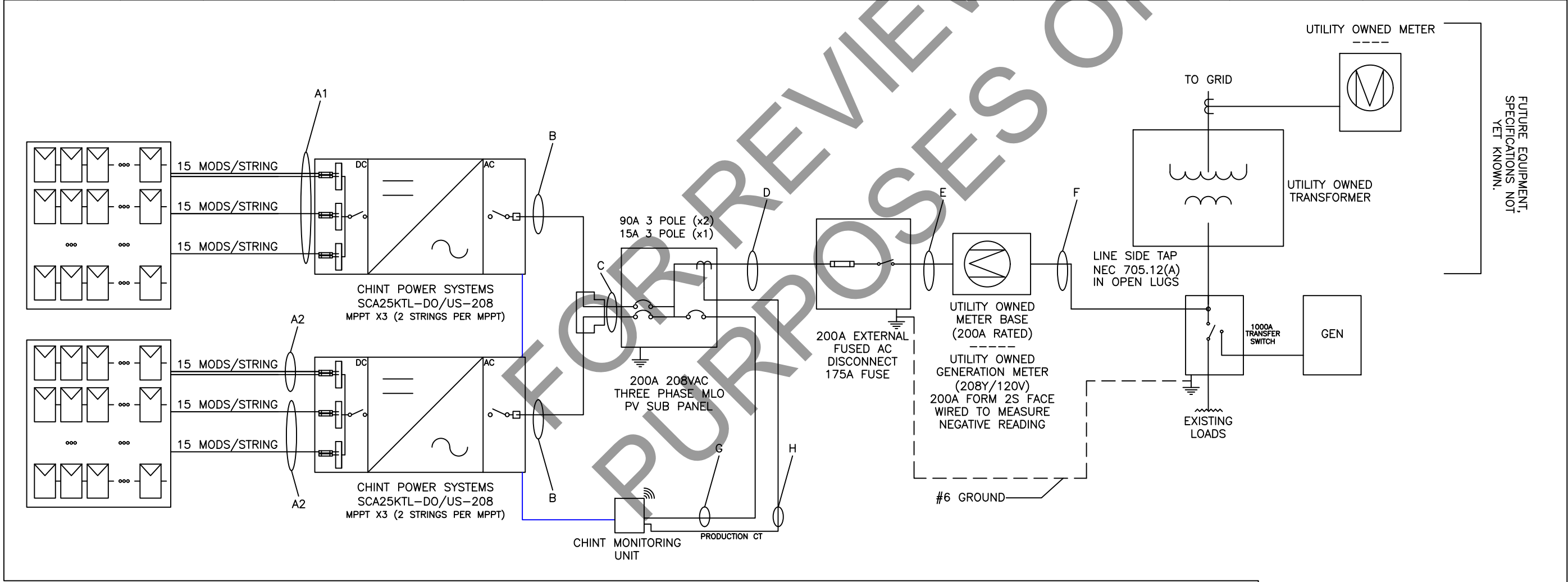
DESIGNED BY: JG	REVIEWED BY: NMC
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SHEET NAME: INSTALLATION SPECS

SHEET SIZE:
ANSI (11" x 17")

SHEET NUMBER:

	DC SYSTEM WIRE SCHEDULE													
ID	DESCRIPTION		Voc	Vmp	Isc	Imp	POWER (W)	FUSE SIZE	MIN DC WIRE SIZE (TYPE)	MIN GROUND WIRE	MIN CONDUIT SIZE (TYPE)	ONE WAY DISTANCE	VOLTAGE DROP	CONDUIT FILL
	PV MODULE	CANADIAN SOLAR CS6W-540MB-AG	49.2	41.3	13.9	13.08	540	NA	NA	NA	NA	NA	NA	NA
A1	SOURCE CIRCUIT	15 MODS PER STRING	828.2	619.5	13.9	13.08	8100	NA	#10 AWG (RPVU)	#10 AWG (CU)	1-1/2" PVC SCH 40/80	145'	0.76%	27.96%
A2	SOURCE CIRCUIT	15 MODS PER STRING	828.2	619.5	13.9	13.08	8100	NA	#10 AWG (RPVU)	#10 AWG (CU)	<5' OF 1-1/2" SEAL TIGHT	60'	0.31%	13.42%
	AC SYSTEM WIRE SCHEDULE													
ID	FROM	TO	NOMINAL CURRENT	NOMINAL VOLTAGE	OCPD SIZE	NO. OF PARALLELS	MIN AC WIRE SIZE (TYPE)	MIN NEUTRAL SIZE (TYPE)	MIN GROUND SIZE (TYPE)	MIN CONDUIT SIZE (TYPE)		ONE WAY DISTANCE	VOLTAGE DROP	CONDUIT FILL
B	INV	T BODY	69.5	208	90	1	#3 AWG (CU)	#8 AWG (CU)	#8 AWG (CU)	1-1/2" (PVC SCH 40)		10'	0.14%	17.80%
B	INV		69.5	208	90	1	#3 AWG (CU)	#8 AWG (CU)	#8 AWG (CU)	#8 AWG (CU)	1-1/2" (PVC SCH 40)		10'	0.14%
C	T BODY	SUB PANEL	69.5	208	90	1	#3 AWG (CU)	#8 AWG (CU)	#8 AWG (CU)	1-1/2" (PVC SCH 40)		2'	0.03%	35.59%
C			69.5	208	90	1	#3 AWG (CU)	#8 AWG (CU)	#8 AWG (CU)				0.03%	
D	SUBPANEL	AC DISCO	139	208	175	1	#2/0 AWG (CU)	#4 AWG (CU)	#4 AWG (CU)	2" (UL LISTED HDPE/PVC SCH 80)		150'	1.84%	27.52%
E	AC DISCO	GEN METER	139	208	175	1	#2/0 AWG (CU)	#4 AWG (CU)	---	2" (PVC SCH 40)		5'	0.06%	22.62%
F	GEN METER	INT	139	208	175	1	#4/0 AWG (CU)	#2 AWG (CU)	---	2" (PVC SCH 40)		5'	0.04%	31.29%
G	SUBPANEL	CHINT	12	208	15	1	#12 AWG (CU)	#12 AWG (CU)	#12 AWG (CU)	3/4" (PVC SCH 40)		10'	0.18%	12.67%
H	CHINT	SUBPANEL	---	208	---	1	#16 AWG (CU)	#16 AWG (CU)	#16 AWG (CU)	3/4" (PVC SCH 40)		10'	---	5.00%



SYSTEM SUMMARY	UTILITY CONFIG:	208V 3 PHASE	EQUIPMENT SUMMARY	120 2	CANADIAN SOLAR CS6W-540MB-AG MODULE CPS CPS SCA25KTL-DO/US-208 INVERTER
	SYSTEM kW DC:	64.80 kW			
	SYSTEM kW AC:	50.00 kW			
	CONT. CURRENT (100%/125%):	139/173.75 AMPS			
	MONITORING:	WIRELESS CHINT MONITORING UNIT			

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VEREGY - CALHOUN COUNTY - YC

23024

14555 18-1/2 MILE ROAD
MARSHALL, MI 49068

DESIGNED BY:

JG

REVIEWED BY:

NMC

SHEET NAME:

LINE DIAGRAM/
WIRE SCHEDULE

SHEET SIZE:

ANSI (11" x 17")

SHEET NUMBER:

PV-04

Page 70 of 107

MECHANICAL MATERIALS					ELECTRICAL MATERIALS				
PV EQUIPMENT					WIRING				
CATEGORY	DESCRIPTION	QUANTITY	PART NUMBER	QUANTITY PICKED	CATEGORY	DESCRIPTION	QUANTITY	PART NUMBER	QUANTITY PICKED
Module	Canadian Solar CS6W-540MB-AG	120	Long Leads		Positive (A)	#10 AWG RPVU (Rated for 2kV - Red)	820'		
Inverter	CPS (Chint) 25 208V	2	CPS SCA25KTL-DO/US-208		Negative	#10 AWG RPVU (Rated for 2kV - Black)	820'		
Monitoring	Chint Power Systems Monitoring Unit	1	FlexOM-4G Meter V2		Ground	#10 AWG RPVU	75'		
Monitoring	200A 20mm Split Core CTs	3	200A 20mm CCS		Conduit	1-1/2" Seal Tight	10'		
Monitoring	RS485 Cable (Daisy Chain Inverters)	10'			Conduit	1-1/2" Sch 80 PVC	20'		
Monitoring	3/4" Sch 40 PVC	10'			Conduit	1-1/2" Sch 40 PVC	30'		
Monitoring	Form 2s Meter Face	1	Provided by Utility		Hot Lines (B)	#3 AWG THWN CU	60'		
Monitoring	200A Meter Base (for utility gen meter)	1			Neutral	#8 AWG THWN CU	20'		
RACKING					Ground	#8 AWG THWN CU	20'		
CATEGORY	DESCRIPTION	QUANTITY	PART NUMBER	QUANTITY PICKED	Conduit	1-1/2" Sch 40 PVC	20'		
SLR - Z-Purlin	Z-Purlin 186"	56			Conduit Body	1-1/2" Sch 40 Type T	1		
SLR - Z-Purlin	Z-Purlin 52" (West End)	8			Hot Lines (C)	#3 AWG THWN CU	12'		
SLR - Z-Purlin	Z-Purlin 52" (East End)	8			Neutral	#8 AWG THWN CU	4'		
SLR - Upright Post	Post - 4x9x174" (For Inverter Rack)	2			Ground	#8 AWG THWN CU	4'		
SLR - Upright Post	Post - 4x9x174"	16			Conduit	1-1/2" Sch 40 PVC	2'		
SLR - Truss	Truss - 140"	16			Hot Lines (D)	#2/0 AWG THWN CU	450'		
SLR - Strut	Strut - 40"	16			Neutral	#4 AWG THWN CU	150'		
SLR - Hardware Kits	Assembly Hardware Kits	16			Ground	#4 AWG THWN CU	150'		
SLR - Bolt	1/4-20x3/4 Serrated Flange Bolt	480			Conduit	2" HDPE - UL LISTED	130'		
SLR - Nut	1/4-20 Serrated Flange Nut	480			Conduit	2" HDPE - PVC COUPLINGS	2		
OCPD + AC EQUIPMENT					Conduit	2" Sch 80 PVC	20'		
CATEGORY	DESCRIPTION	QUANTITY	PART NUMBER	QUANTITY PICKED	Hot Lines (E)	#2/0 AWG THWN CU	15'		
Disconnect	200A 240V (Three Phase, Fusible)	1			Neutral	#4 AWG THWN CU	5'		
Fuses	175A	3	TR175R		Ground	#6 AWG THWN CU	5'		
PV Sub Panel	200A 208V MLO (Three Phase)	1			Conduit	2" Sch 40 PVC	5'		
Breakers	90A 3 Pole	2	QO390		Hot Lines (F)	#4/0 AWG THWN CU	15'		
Breakers	15A 3 Pole	1	QO315		Neutral	#2 AWG THWN CU	5'		
Grounding	Integrated in Racking	---			Ground	#6 AWG THWN CU	5'		
					Conduit	2" Sch 40 PVC	5'		
					Hot Lines (G)	#12 AWG THWN CU	30'		
					Neutral	#12 AWG THWN CU	10'		
					Ground	#12 AWG THWN CU	10'		
					Conduit	3/4" Sch 40 PVC	10'		
					Conduit (H)	3/4" Sch 40 PVC	10'		

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ENGINEERING STAMP

VEREGY - CALHOUN COUNTY - YC

23024

14555 18-1/2 MILE ROAD
MARSHALL, MI 49068

DESIGNED BY:

JG

REVIEWED BY:

NMC

SHEET NAME:

BOM

SHEET SIZE:

ANSI (11" x 17")

SHEET NUMBER:

PV-05

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STRING LAYOUT



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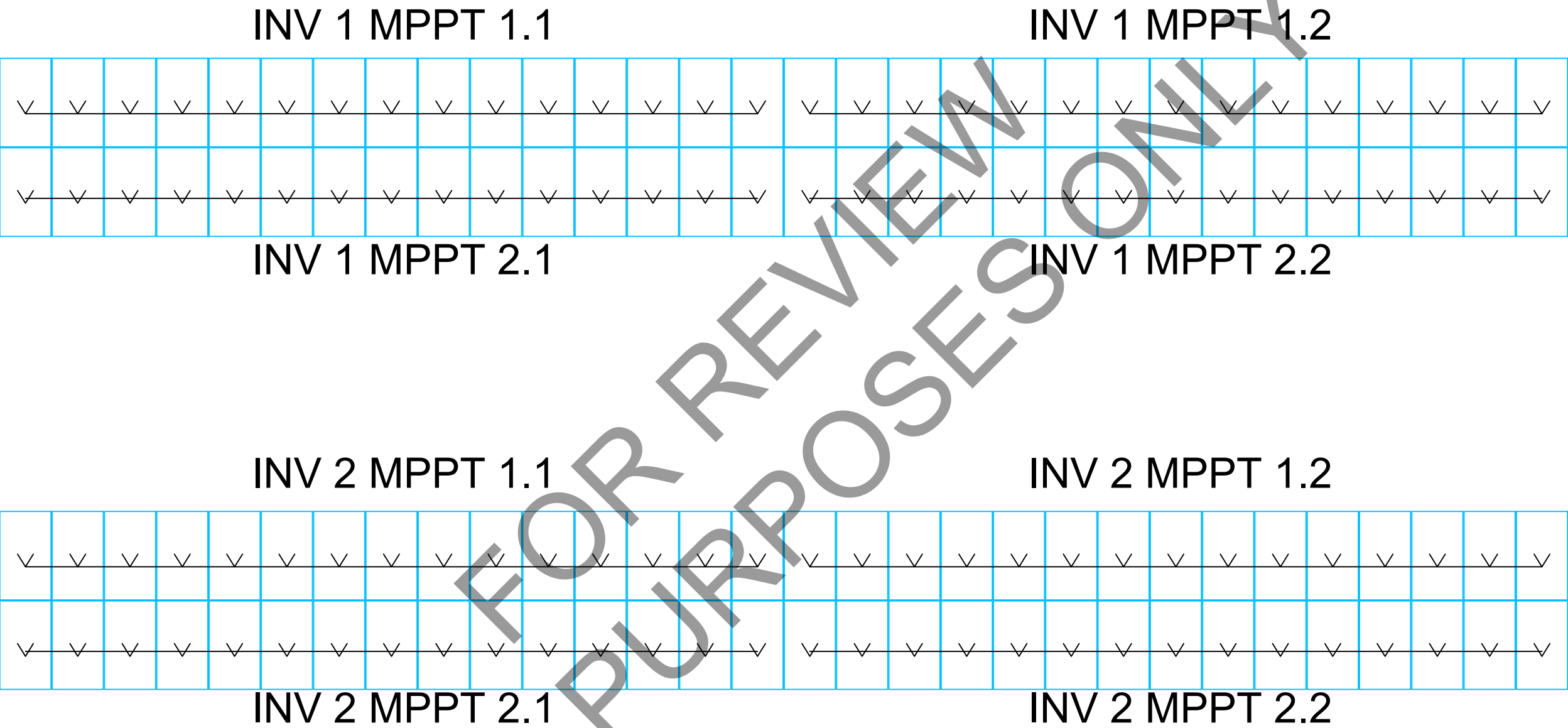
14555 18-1/2 MILE ROAD
MARSHALL, MI 49068

DESIGNED BY: JG	REVIEWED BY: NMC
--------------------	---------------------

SHEET NAME: STRING LAYOUT

SHEET SIZE: ANSI (11" x 17")

SHEET NUMBER: PV-06



PHOTOVOLTAIC LABELS AND WARNINGS

INSTALLATION SECTION	LABELS/ WARNINGS NEEDED
COMBINER BOX	3 (if DC disco), 6 (if DC disco), 9 (if DC disco), & 15 (w/ finger safe fuse holders)
DC CONDUIT/ CONDUIT RACEWAY/ PULL BOX/ JUNCTION BOX	14 (every 10' minimum)
INVERTER	2 (if AC disco), 3 (if DC disco), 6 (if DC disco), 9 (if DC disco), & 10 (if AC disco)
PV SUB PANEL	1 (if MB), 4, 5, & 10 (if MB)
PRODUCTION METER	16
AC DISCONNECT (IF NOT THE MAIN SOLAR DISCONNECT)	1 & 10
MAIN SERVICE PANEL (ONLY IF USING BACKFED BREAKER)	4, 5, 7, 16, & 17
MAIN SOLAR DISCONNECT (PV AC DISCONNECT)	1, 4, 12 (only if Rapid Shutdown), 16, & 18
UTILITY METER	13 (if Ameren-IL), 16, & 19 (only if Rapid Shutdown)
ENERGY STORAGE SYSTEM (ONLY IF BATTERIES INSTALLED)	8 (on battery disco), 11 (on utility meter), & 21 (on battery disco)

4

WARNING

ELECTRICAL SHOCK HAZARD

TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

NEC 690.13(B) / Roll: 596-00878
10-Pk: 596-00893 / Metal 5-Pk: 596-00921

5

WARNING

TURN OFF PHOTOVOLTAIC AC DISCONNECT PRIOR TO WORKING INSIDE PANEL

NEC 690.13(B) & OSHA 1910.145(f)(7)
Roll: 596-00499 / 10-Pk: 596-00664
5-Pk: 596-00832

6

WARNING

ELECTRICAL SHOCK HAZARD

TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

DC VOLTAGE IS ALWAYS PRESENT WHEN SOLAR MODULES ARE EXPOSED TO SUNLIGHT

NEC 690.13(B) / Roll: 596-00879
10-Pk: 596-00894 / 5-Pk: 596-00920

7

WARNING

POWER SOURCE OUTPUT CONNECTION. DO NOT RELOCATE THIS OVERCURRENT DEVICE

NEC 705.12(B)(2)(c) / Roll: 596-00243
10-Pk: 596-00675 / Metal 5-Pk: 596-00917

8

ENERGY STORAGE SYSTEM DISCONNECT

NEC 706.15(C) / Roll: 596-00997
10-Pk: 596-01005

9

PHOTOVOLTAIC

DC DISCONNECT

NEC 690.13(B)
Roll: 596-00238 / 10-Pk: 596-00854

10

PHOTOVOLTAIC

AC DISCONNECT

NEC 690.13(B)
Roll: 596-00237 / 10-Pk: 596-00853

11

WARNING

THREE POWER SOURCES
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM
THIRD SOURCE IS ENERGY STORAGE SYSTEM

12

RAPID SHUTDOWN FOR SOLAR PV SYSTEM

NEC 690.56(C)(2) / Roll: 596-01003 / 10-Pk: 596-01040

13

CAUTION:
MULTIPLE SOURCES OF POWER
LOCKABLE AC GENERATION SOURCE DISCONNECT AVAILABLE FOR ISOLATION FROM UTILITY

14

WARNING: PHOTOVOLTAIC POWER SOURCE

NEC 690.31(G)(3)(4) / Roll: 596-00206 / 10-Pk: 596-00678

1	Photovoltaic AC Disconnect			QTY	
	Maximum AC Operating Current	139	A	1	
	Nominal Operating AC Voltage	208	V		
2	Photovoltaic AC Disconnect			QTY	ON INVERTER...
	Maximum AC Operating Current	69.5	A	2	CPS SCA25KTL-DO/US-208
	Nominal Operating AC Voltage	208	V		
	ONLY PLACED ON INVERTER WITH INTEGRATED AC DISCO				
3	Photovoltaic DC Disconnect			QTY	ON INVERTER...
	Rated Mppt Current	26.16	A	2	CPS SCA25KTL-DO/US-208
	Rated Mppt Voltage	619.50	V		
	Maximum System Voltage	828.20	V		
	Maximum Circuit Current	27.80	A		
	Max Rated Output Current of the Charge Controller if Installed	NA	A		

15

DO NOT DISCONNECT UNDER LOAD

NEC 690.15(C) & NEC 690.33(E)(2)
Roll: 596-00244 / 10-Pk: 596-00671

16

WARNING DUAL POWER SOURCE
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

NEC 705.12(D)(3) / Roll: 596-00495
10-Pk: 596-09665 / Metal 5-Pk: 596-00833

17

CAUTION
PHOTOVOLTAIC SYSTEM CIRCUIT IS BACKFED

NEC 690.13(F), NEC 705.12(B)(3-4) & NEC 690.59
Roll: 596-00587 / 10-Pk: 596-00666 / Metal 5-Pk: 596-00834

18

MAIN PHOTOVOLTAIC SYSTEM DISCONNECT

NEC 690.13(B) / Roll: 596-00243
10-Pk: 596-00675 / Metal 5-Pk: 596-00860

19

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN THE ARRAY

NEC 690.56(C)

20

This Solar PV Installation was Provided by

harvest solar

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1/JOB - TO BE INSTALLED IN BEST AVAILABLE LOCATION

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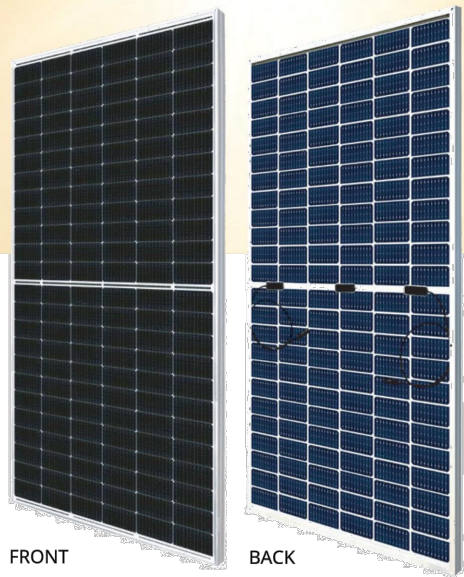
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MARSHALL, MI 49068

DESIGNED BY: JG	REVIEWED BY: NMC
SHEET NAME: LABEL INDEX	
SHEET SIZE: ANSI (11" x 17")	
SHEET NUMBER: PV-73	

HARVEST SOLAR - PROJECT SPECIFIC NOTES		harvest solar 2218 East High Street Jackson, Michigan 49203 (517) 788-8800 harvestsolar.com																			
* GRADE - ~2' VARIANCE IN GRADE, BUILD ARRAY WITH GRADE.		REVISIONS <table><thead><tr><th>Description</th><th>Date</th><th>Rev</th></tr></thead><tbody><tr><td>Initial Binder Created</td><td>07.03.23</td><td>0.1</td></tr><tr><td>Location Update</td><td>07.06.23</td><td>0.2</td></tr><tr><td>Tilt Update</td><td>07.07.23</td><td>0.3</td></tr><tr><td>Approval Binder Created</td><td>08.21.23</td><td>1.0</td></tr><tr><td>----</td><td>----</td><td>----</td></tr></tbody></table>		Description	Date	Rev	Initial Binder Created	07.03.23	0.1	Location Update	07.06.23	0.2	Tilt Update	07.07.23	0.3	Approval Binder Created	08.21.23	1.0	----	----	----
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* UNDERGROUND OBSTRUCTIONS - NONE REPORTED BY SALES.																					
MONITORING - WIRELESS VIA CHINT MONITORING UNIT WITH 5 YEAR T MOBILE, AT&T OR VERIZON PLAN.																					
CELL COVERAGE - 4G/LTE COVERAGE ON SITE VIA T MOBILE, AT&T AND VERIZON.		ENGINEERING STAMP																			
INTERCONNECTION METHOD - LAND SOLAR WIRES WITHIN LINE SIDE OPEN LUGS IN NEW 1000A TRANSFER SWITCH.		VEREGY - CALHOUN COUNTY - YC 23024 14555 18-1/2 MILE ROAD MARSHALL, MI 49068																			
MISC - MUST MAINTAIN 15' OFF OVERHEAD POWER LINES AND 10' OFF FIRE HYDRANT.																					
MISC - PER UTILITY REQUIREMENTS, MAIN SOLAR DISCONNECT MUST BE WITHIN 5' OF UTILITY METER.																					
MISC - UTILITY OUTAGE REQUIRED.																					
MISC - METER NUMBER/TYPE UNKNOWN, WILL BE UPDATED AT TIME OF INSTALL.																					
MISC - PANEL MUST HAVE AIC RATING OF 15 KA.																					
		DESIGNED BY: JG																			
		REVIEWED BY: NMC																			
		SHEET NAME: PROJECT NOTES																			
		SHEET SIZE: ANSI (11" x 17")																			
		SHEET NUMBER: PV-08																			

FOR REVIEW PURPOSES ONLY



BiHiKu6

520 W ~ 545 W

BIFACIAL MONO PERC

CS6W-520 | 525 | 530 | 535 | **540** | 545MB-AG

MORE POWER

- 545 W** Module power up to 545 W
Module efficiency up to 21.2 %
- \$** Up to 12.3 % lower LCOE
Up to 5.2 % lower system cost
- Bar chart** Comprehensive LID / LeTID mitigation technology, up to 50% lower degradation
- Calculator** Compatible with mainstream trackers, cost effective product for utility power plant
- Shield** Better shading tolerance

MORE RELIABLE

- Shield** Minimizes micro-crack impacts
- ***** Heavy snow load up to 5400 Pa, wind load up to 2400 Pa*

* For detailed information, please refer to Installation Manual.

CSI SOLAR (USA) CO., LTD.

1350 Treat Blvd. Suite 500, Walnut Creek, CA 94598, USA | www.csisolar.com/na | service.ca@csisolar.com

- 12 Years** Enhanced Product Warranty on Materials and Workmanship*
- 30 Years** Linear Power Performance Warranty*

1st year power degradation no more than 2%
Subsequent annual power degradation no more than 0.45%

*According to the applicable Canadian Solar Limited Warranty Statement.

MANAGEMENT SYSTEM CERTIFICATES*

ISO 9001:2015 / Quality management system
ISO 14001:2015 / Standards for environmental management system
ISO 45001: 2018 / International standards for occupational health & safety

PRODUCT CERTIFICATES*

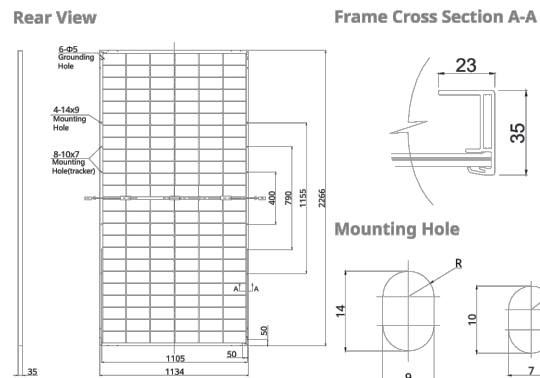
IEC 61215 / IEC 61730 / CE / INMETRO / MCS / UKCA
CEC listed (US California)
UL 61730 / IEC 61701 / IEC 62716 / IEC 60068-2-68
Take-e-way



* The specific certificates applicable to different module types and markets will vary, and therefore not all of the certifications listed herein will simultaneously apply to the products you order or use. Please contact your local Canadian Solar sales representative to confirm the specific certificates available for your Product and applicable in the regions in which the products will be used.

CSI SOLAR (USA) CO., LTD. is committed to providing high quality solar photovoltaic modules, solar energy and battery storage solutions to customers. The company was recognized as the No. 1 module supplier for quality and performance/price ratio in the IHS Module Customer Insight Survey. Over the past 20 years, it has successfully delivered over 63 GW of premium-quality solar modules across the world.

ENGINEERING DRAWING (mm)



ELECTRICAL DATA | STC*

	Nominal Max. Power (Pmax)	Opt. Operating Voltage (Vmp)	Opt. Operating Current (Imp)	Open Circuit Voltage (Voc)	Short Circuit Current (Isc)	Module Efficiency
CS6W-520MB-AG	520 W	40.5 V	12.84 A	48.4 V	13.70 A	20.2%
Bifacial Gain**	5%	546 W	40.5 V	13.48 A	48.4 V	21.2%
10%	572 W	40.5 V	14.12 A	48.4 V	15.07 A	22.3%
20%	624 W	40.5 V	15.41 A	48.4 V	16.44 A	24.3%
CS6W-525MB-AG	525 W	40.7 V	12.90 A	48.6 V	13.75 A	20.4%
Bifacial Gain**	5%	551 W	40.7 V	13.55 A	48.6 V	21.4%
10%	578 W	40.7 V	14.21 A	48.6 V	15.13 A	22.5%
20%	630 W	40.7 V	15.48 A	48.6 V	16.50 A	24.5%
CS6W-530MB-AG	530 W	40.9 V	12.96 A	48.8 V	13.80 A	20.6%
Bifacial Gain**	5%	557 W	40.9 V	13.62 A	48.8 V	21.7%
10%	583 W	40.9 V	14.26 A	48.8 V	15.18 A	22.7%
20%	636 W	40.9 V	15.55 A	48.8 V	16.56 A	24.8%
CS6W-535MB-AG	535 W	41.1 V	13.02 A	49.0 V	13.85 A	20.8%
Bifacial Gain**	5%	562 W	41.1 V	13.68 A	49.0 V	21.9%
10%	589 W	41.1 V	14.34 A	49.0 V	15.24 A	22.9%
20%	642 W	41.1 V	15.62 A	49.0 V	16.62 A	25.0%
CS6W-540MB-AG	540 W	41.3 V	13.08 A	49.2 V	13.90 A	21.0%
Bifacial Gain**	5%	567 W	41.3 V	13.73 A	49.2 V	22.1%
10%	594 W	41.3 V	14.39 A	49.2 V	15.29 A	23.1%
20%	648 W	41.3 V	15.70 A	49.2 V	16.68 A	25.2%
CS6W-545MB-AG	545 W	41.5 V	13.14 A	49.4 V	13.95 A	21.2%
Bifacial Gain**	5%	572 W	41.5 V	13.80 A	49.4 V	22.3%
10%	600 W	41.5 V	14.46 A	49.4 V	15.35 A	23.3%
20%	654 W	41.5 V	15.77 A	49.4 V	16.74 A	25.5%

* Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature of 25°C.

** Bifacial Gain: The additional gain from the back side compared to the power of the front side at the standard test condition. It depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

ELECTRICAL DATA

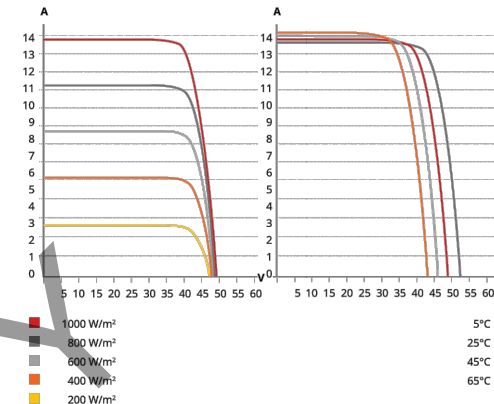
Operating Temperature	-40°C ~ +85°C
Max. System Voltage	1500 V (IEC/UL) or 1000 V (IEC/UL)
Module Fire Performance	TYPE 29 (UL 61730) or CLASS C (IEC61730)
Max. Series Fuse Rating	30 A
Application Classification	Class A
Power Tolerance	0 ~ + 10 W
Power Bifaciality*	70 %

* Power Bifaciality = $\frac{P_{max_rear}}{P_{max_front}}$, both P_{max_rear} and P_{max_front} are tested under STC, Bifaciality Tolerance: $\pm 5\%$

* The specifications and key features contained in this datasheet may deviate slightly from our actual products due to the on-going innovation and product enhancement. CSI Solar Co., Ltd. reserves the right to make necessary adjustment to the information described herein at any time without further notice.
Please be kindly advised that PV modules should be handled and installed by qualified people who have professional skills and please carefully read the safety and installation instructions before using our PV modules.

CSI SOLAR (USA) CO., LTD.

CS6W-530MB-AG / I-V CURVES



ELECTRICAL DATA | NMOT*

	Nominal Max. Power (Pmax)	Opt. Operating Voltage (Vmp)	Opt. Operating Current (Imp)	Open Circuit Voltage (Voc)	Short Circuit Current (Isc)
CS6W-520MB-AG	390 W	38.0 V	10.27 A	45.7 V	11.05 A
CS6W-525MB-AG	394 W	38.2 V	10.32 A	45.9 V	11.09 A
CS6W-530MB-AG	397 W	38.3 V	10.38 A	46.1 V	11.13 A
CS6W-535MB-AG	401 W	38.5 V	10.42 A	46.3 V	11.17 A
CS6W-540MB-AG	405 W	38.7 V	10.47 A	46.5 V	11.21 A
CS6W-545MB-AG	409 W	38.9 V	10.52 A	46.7 V	11.25 A

* Under Nominal Module Operating Temperature (NMOT), irradiance of 800 W/m², spectrum AM 1.5, ambient temperature 20°C, wind speed 1 m/s.

MECHANICAL DATA

Specification	Data
Cell Type	Mono-crystalline
Cell Arrangement	144 [2 x (12 x 6)]
Dimensions	2266 x 1134 x 35 mm (89.2 x 44.6 x 1.38 in)
Weight	32.2 kg (71.0 lbs)
Front Glass	2.0 mm heat strengthened glass with anti-reflective coating
Back Glass	2.0 mm heat strengthened glass
Frame	Anodized aluminium alloy
J-Box	IP68, 3 bypass diodes
Cable	4.0 mm ² (IEC), 12 AWG (UL)
Cable Length (Including Connector)	410 mm (16.1 in) (+) / 290 mm (11.4 in) (-) or customized length*
Connector	T4 or MC4 series
Per Pallet	30 pieces
Per Container (40' HQ)	600 pieces or 540 pieces (only for US)

* For detailed information, please contact your local Canadian Solar sales and technical representatives.

TEMPERATURE CHARACTERISTICS

Specification	Data
Temperature Coefficient (Pmax)	-0.34 % / °C
Temperature Coefficient (Voc)	-0.26 % / °C
Temperature Coefficient (Isc)	0.05 % / °C
Nominal Module Operating Temperature	41 ± 3°C

PARTNER SECTION



Feb. 2022 | All rights reserved | PV Module Product Datasheet v2.0_F42_J2_NA



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Jackson, Michigan 49203
(517) 788-8800
harvestsolar.com

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ENGINEERING STAMP

VEREGY - CALHOUN COUNTY - YC

23024

14555 18-1/2 MILE ROAD
MARSHALL, MI 49068

DESIGNED BY:

JG

REVIEWED BY:

NMC

SHEET NAME:

RESOURCE
DOCUMENT

SHEET SIZE:

ANSI (11" x 17")

SHEET NUMBER:

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25kW 208V, 1000Vdc String Inverters for North America

The 25kW (25kVA) CPS three phase string inverters are designed for rooftop and carport applications. The units are high performance, advanced and reliable inverters designed specifically for the North American environment and grid. High efficiency at 97.0% peak and 96.5% CEC, wide operating voltages, broad temperature ranges and a NEMA Type 4X enclosure enable this inverter platform to operate at high performance across many applications. The CPS 25KTL product ships with the Rapid Shutdown wire-box, fully integrated and separable with touch safe fusing, monitoring, and AC and DC disconnect switches. The integrated PLC transmitter in the Rapid Shutdown wire-box enables PVRSS certified module-level rapid shutdown when used with the APS RSD-S-PLC-A products. The CPS Flex Gateway enables monitoring, controls and remote product upgrades.

Key Features

- NEC 2017/2020 PVRSS Certified Rapid Shutdown
- NEC 2017 compliant & UL listed Arc-Fault circuit protection
- 15-90° Mounting orientation for low profile roof installs
- Optional Flex Gateway enables remote FW upgrades
- Integrated AC & DC disconnect switches
- 3 MPPT's with 2 inputs each for maximum flexibility
- Copper and Aluminum compatible AC connections
- NEMA Type 4X outdoor rated, tough tested enclosure
- UL1741 SA Certified to CA Rule 21, including SA14 FW and SA15 VW
- Separable wire-box design for fast service
- Standard 10 year warranty with extensions to 20 years
- Generous 1.8 DC/AC Inverter Load Ratio



CPS SCA25KTL-DO/US-208



25KTL Rapid Shutdown Wire-box



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Chint Power Systems America
6800 Koll Center Parkway, Suite 235 Pleasanton, CA 94566
Tel: 855-584-7168 Mail: AmericaSales@chintpower.com Web: www.chintpowersystems.com



Technical Data

Model Name	CPS SCA25KTL-DO/US-208
DC Input	
Max. PV Power	45kW (17kW per MPPT)
Max. DC Input Voltage	1000Vdc
Operating DC Input Voltage Range	200-950Vdc
Start-up DC Input Voltage / Power	330V / 80W
Number of MPP Trackers	3
MPPT Voltage Range @ PF>0.99	480-850Vdc
Max. PV Short-Circuit Current (Isc x 1.25)	135A (45A per MPPT)
Number of DC Inputs	6 inputs, 2 per MPPT
DC Disconnection Type	Load-rated DC switch
DC Surge Protection	Type II MOV, 2800V _C , 20kA I _{TM} (8/20...S)
AC Output	
Rated AC Output Power @ PF>0.99	25kW
Max. AC Apparent Power (Selectable)	25kVA
Rated Output Voltage	208Vac
Output Voltage Range ¹	183 - 228Vac
Grid Connection Type	3Φ / PE / N (Neutral optional)
Max. AC Output Current @208Vac	69.5A
Rated Output Frequency	60Hz
Output Frequency Range ¹	57 - 63Hz
Power Factor	>0.99 (±0.8 adjustable)
Current THD @ Rated Load	<3%
Max. Fault Current Contribution (1 Cycle RMS)	64.1A (0.92 PU)
Max. OCPD Rating	125A
AC Disconnection Type	Load-break rated AC switch
AC Surge Protection	Type II MOV, 1240V _C , 15kA I _{TM} (8/20...S)
System and Performance	
Topology	Transformerless
Max. Efficiency	97.0%
CEC Efficiency	96.5%
Stand-by / Night Consumption	<3W
Environment	
Enclosure Protection Degree	NEMA Type 4X
Cooling Method	Variable speed cooling fans
Operating Temperature Range ²	-22°F to +140°F / - 30°C to +60°C
Non-Operating Temperature Range ³	No low temp minimum to +158°F / +70°C maximum
Operating Humidity	0 to 100%
Operating Altitude	13,123.4ft / 4000m (derating from 9842.5ft / 3000m)
Audible Noise	<60dBA @ 1m and 25°C
Display and Communication	
User Interface and Display	LCD+LED
Inverter Monitoring	SunSpec, Modbus RS485
Site Level Monitoring	CPS Flex Gateway (1 per 32 inverters)
Modbus Data Mapping	CPS
Remote Diagnostics / FW Upgrade Functions	Standard / (with Flex Gateway)
Mechanical	
Dimensions (HxWxD)	39.4 x 23.6 x 10.24in. (1000 x 600 x 260mm)
Weight	Inverter: 123.5lbs/56kg; Wire-box: 33lbs/15kg
Mounting / Installation Angle ⁴	15 to 90 degrees from horizontal (vertical or angled)
AC Termination	M8 Stud Type Terminal Block (Wire range: #6 - 3/0AWG CU/AL, Lugs not supplied)
DC Termination ⁵	Screw Clamp, Neg. Busbar ⁶ Wire range: #14 - #6AWG CU
Fused String Inputs (2 per MPPT) ⁶	20A fuses provided (Fuse values up to 30A acceptable)
Safety	
Certifications and Standards	UL1741SA-2016, UL1699B, UL1998, CSA-C22.2 NO.107.1-01, IEEE1547a-2014, FCC PART15
Selectable Grid Standard	IEEE 1547, CA Rule 21, ISO-NE, HECO
Smart-Grid Features	Volt-RideThru, Freq-RideThru, Ramp-Rate, Specified-PF, Volt-VAr, Freq-Watt, Volt-Watt
Warranty	
Standard	10 years
Extended Terms	15 and 20 years

1) The "Output Voltage Range" and "Output Frequency Range" may differ according to the specific grid standard.
2) Active Power Derating begins; at 45°C when PF=1 and MPPT≥V_{min}, and at 50°C when PF=1 and MPPT V ≥ 700Vdc.
3) See user manual for further requirements regarding non-operating conditions.
4) Shade Cover accessory required for installation angles of 75 degrees or less.
5) RSD wire-box only includes fuses/fuseholders on the positive polarity, compliant with NEC 2017, 690.9 (C).
6) Fuse values above 20A have additional spacing requirements or require the use of the Y-Comb Terminal Block. See user manual for details.



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ENGINEERING STAMP

VEREGY - CALHOUN COUNTY - YC

23024

14555 18-1/2 MILE ROAD
MARSHALL, MI 49068

DESIGNED BY:

JG

REVIEWED BY:

NMC

SHEET NAME:

RESOURCE
DOCUMENT

SHEET SIZE:

ANSI (11" x 17")

SHEET NUMBER:

R-02 Page 76 of 107



FlexOM Meter V2

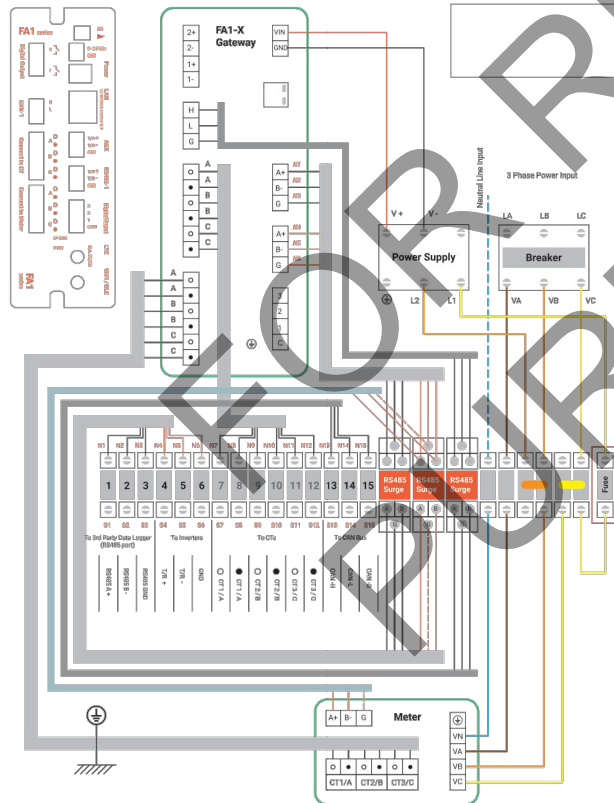
Datasheet



The CPS Commercial Monitoring Package is a complete data acquisition, monitoring and control package aimed for small to medium commercial applications. This turnkey solution includes a customer-facing monitoring Portal, Flex Gateway data logger, site activation mobile app, and revenue-grade site meter.

Key Features

- Low-cost, complete hardware and software package
- Includes revenue-grade site-level meter (CTs not supplied, and must have output voltage of 0.333Vac at full scale)
- Full access to inverter data (15+ parameters per inverter)
- 1- to 20-minute interval data (download up to 5 years of site data)
- 5 years of monitoring included (extensions available)
- Automated site commissioning report
- Up to 32 devices per Flex Gateway (no additional fees for each inverter connection)
- Site activation with "CPS Connect Pro" app (iOS and Android)
- Inverter on/off, remote arc-fault reset, PF and active power curtailment controls capability
- Remote CT reversal capability



Model Name	FlexOM Meter V2	FlexOM-4G Meter V2
BOM List		
NEMA 4 Type Enclosure	×	×
Wall & pole mounting accessories		
Breaker	×	×
3P, 5A, 690Vac, 2.5kAIC		
AC-DC Power Supply	×	×
150-900Vac input, 12V output, 18W		
RS485 Surge	×	×
12Vdc, 20kA, ≤1 ns		
Flex Gateway V2 Card	Flex Gateway V2 Card	Flex Gateway V2 Card
FA1-X		
Pre-Installed 4G SIM Card		×
Data Plan (compatible with AT&T, T-Mobile, or Verizon)		×
5 years for 32 devices in a daisy chain		
Revenue Meter	×	×
WattNode® revenue-grade wide-range Modbus® meter		
CPS Flex Gateway		
Inverters to Gateway	Modbus®RS485	
Gateway to Portal	Ethernet	
Inverter Connections Per Card	1 - 32	
Protocols	SunSpec XML HTTPS, CPS Modbus® RTU	
Local Programming	Wi-Fi to CPS Connect Pro app (iOS and Android)	
Data Sampling Rate	Programmable data sampling (1- to 20-minute sample rate)	
Local Data Storage	30 days based on 20-minute intervals	
Data Parameters	Modbus®ID, Inverter S/N's, Model, Tyield/Dyiel(d(kWh), Eff(%), PF, Pmax(kW), Pac(kW), Sac(kVA), Uabc(V), Iabc(A), Upv(V), Ipv(A), Freq(Hz), Mode, Time, Event	
Revenue-Grade Meter		
Meter Type	WattNode® revenue-grade wide-range Modbus® meter	
Input Voltage	Line powered from 3Phs, 208/480/600 Vac, 60Hz	
Communication Protocol	Modbus® RTU RS485	
Measurement Accuracy	ANSI C12.20 class 0.5 and ANSI C12.1	
Update Rate	Approximately 0.1 second	
Startup Time	≤ 1 second after the supply voltage is applied	
Monitoring		
Interface	CPS web-based customer-facing portal	
Inverter Controls	On/Off, PF control, active power curtailment, remote arc-fault reset	
Inverter Data Parameters	Pac(kW), Uabc(V), Iabc(A), Upv(V), Ipv(A), Temp(C), THDv, THDi	
Site-Level Production	Energy(kWh) Day, Month, Year	
Real-Time or Daily Notification	Status, Warning, Protect, Fault	
Commissioning Reports	System info: Site address, installation date, rated kWAC/DC Inverter info: Model, S/N, firmware, V/F relay settings, performance	
Production Reports	Modbus ID, Inverter S/N's, Model, Tyield/Dyiel(d(kWh), Eff(%), PF, Pmax(kW), Pac(kW), Sac(kVA), Uabc(V), Iabc(A), Upv(V), Ipv(A), Freq(Hz), Mode, Time, Event	
Environment		
Operating Temperature Range	-40°C to +60°C (-40°F to +140°F)	
Relative Humidity	4% to 100%	
Max. Operating Altitude	4,000 m (13,123 ft.)	
Mechanical Parameters (Meter Enclosure)		
Dimensions (H x W x D)	13.7" x 21.6" x 7.5" (350mm x 550mm x 190mm)	
Weight	26.5lb (12 kg)	
Protection Degree	NEMA 4 / IP65	
Installation Options	Wall mounting; pole mounting	

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ENGINEERING STAMP

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ITEM 8.C

TO: Planning Commission
FROM: Eric Zuzga, Director of Community Services
DATE: September 13, 2023
SUBJECT: **SP #23-08 343 SOUTH MULBERRY AMENDED SITE PLAN**

Case #: SP#23.08
Address: 343 South Mulberry
Parcel #: 53-000-689-01 and 53-002-568-00
Zoning District: Research and Technical District (I-1)
Surrounding Zoning: Traditional Residential (R-3) to the west and north, I-1 to the east and south
Surrounding Uses: Single family residential to the north, south, and west; industrial to the east; and vacant land to the south.
Previous Action: Site Plan approved January 2021

Delta One is requesting a change in their site plan to allow use of the gate off of Mulberry Street. The remaining portions of the site plan will remain in compliance. The original site plan approval added a condition that the Mulberry Street entrance only be used for emergency purposes. Delta One is requesting that this condition be removed to allow 2-4 deliveries per month to utilize the Mulberry Street entrance (see attached application and site plan). Also attached is the original staff application and minutes from the January 2021 Planning Commission meeting.

Development Review Team

On August 28, 2023, the City Development Review Team met to consider the proposed site plan. The entire site plan was not reviewed as the only issue under discussion is the use of the gate. Comments related to this request are contained in the considerations below.

PLANNING COMMISSION CONSIDERATIONS

Staff have reviewed the site plan based on the requirements of the B-4 Zoning District and related sections of the zoning ordinance. As part of our review, we evaluated the proposed facility through the following standards that the Planning Commission will use in the process of reviewing any site plan for approval:

1. Adequacy of information. The site plan information is complete, accurate, and in an understandable form that accurately depicts and describes the proposed development.

The site plan submitted was complete and accurate.

2. Site appearance and preservation. The site layout promotes the normal and orderly development of surrounding lots, and the development layout preserves, to the extent feasible, the site's natural, cultural, and historical features, such as but not limited to significant buildings, wetlands, topography, and woodlands.

N/A

3. Pedestrian access. Existing and proposed sidewalks or pedestrian pathways connect to existing and planned public sidewalks and pathways in the area, and comply with applicable barrier-free access standards.

N/A

4. Vehicular circulation. Drives, streets, parking, site access and other vehicle-related elements are designed to minimize traffic conflicts on adjacent streets, and to promote safe and efficient traffic circulation.

Staff continues to be concerned with the use of the gate for deliveries. The Zoning ordinance requires truck traffic to be coordinated with nearby uses, which is the rationale for the original condition placed on the site plan on use of the gate.

5. Parking and loading. Off-street parking lots and loading areas are arranged and located to accommodate the intensity of proposed uses, minimize conflicts with adjacent uses, and promote shared-use of common facilities where feasible.

N/A

6. Building composition. Building design and architecture are harmonious with the surrounding neighborhood with regard to scale, mass, proportion, and materials.

The design and architecture of the building have been submitted and are attached. The building is actually a major improvement over the former building's condition.

7. Screening. Adequate screening elements have been provided to buffer or separate unlike or conflicting land uses, and to screen off-street parking, mechanical appurtenances, loading and unloading areas and storage areas from abutting residential districts and street rights-of-way.

N/A

8. Exterior lighting. All exterior lighting fixtures are designed and arranged to minimize glare and light trespass, prevent vision impairments, and maximize security.

N/A

9. Impact upon public services. The impact upon public services (including utilities, streets, police and fire protection, emergency access, and public sidewalks and pathways) will not exceed the existing or planned capacity of such services.

Mulberry Street is a local street and not designed for heavy truck traffic.

BUDGET IMPACT:

None anticipated.

RECOMMENDATION:

Approve the use of the Mulberry Street gates for maintenance of the facility only. Truck traffic/deliveries would still need to use the Kalamazoo/Spruce Street entrance as required by the zoning ordinance and original site plan approval.

City of Marshall
Application for Site Plan Review

Attn: Planning and Zoning Administrator
323 W Michigan Ave.
Marshall, Michigan, 49068

The following application is made to the City of Marshall Planning Commission in accordance with the provisions of the Planning and Zoning Department.

1. Applicant Information

Address of property being developed:

343 S. MULBERRY, MARSHALL, MI 49068

Owner of property being developed:

CLC94, LLC

Owner's Address:

343 S. MULBERRY MARSHALL, MI 49068

City

State

Zip

Owner's Phone Number:

248 736-9866

2. Owner's Agent if working for property owner.

Name and Title:

DOUG STEWART DIRC OF OPERATRIONS AND COMPLIANCE

Address:

250 2ND STREET, SUITE 250 ROYAL OAK , MI 48067

City

State

Zip

Phone Number:

248 736-9866

City of Marshall
Application for Site Plan Review

3. Brief description of proposed project

Requesting a reasonable variance to the local Zoning Ordinance. In reference to the
use of the MULBERRY ENTRANCE, for the delivery of supplies necessary to operate
the business at CLC94, LLC, 343 S. Mulberry. CLC94, receives 2-4 shipments per month
contained on pallets and delivered in a box truck of supplies, ie. nutrients and grow blocks.

In addition we request any needed equipment, such as a scissor lift, to service the roof,
HVAC and the ODOR MEDIATION systems be allowed. NOTE: This is the only entrance
that can be used for such tasks. The Mulberry gate will remain locked and no semi trucks allowed.

4. Property Information

Is this property located in a floodplain? _____

Is this property located in a wetland? _____

Land area in square feet? _____

Proposed building area in square feet? _____

Proposed paved area in square feet? _____

Existing paved area in square feet? _____

Lake or stream within 500 feet? _____

Any other agencies contacted for
approvals? _____

If so, please list:

City of Marshall **Application for Site Plan Review**

5. Authorization (Must be signed by the owner of the property)

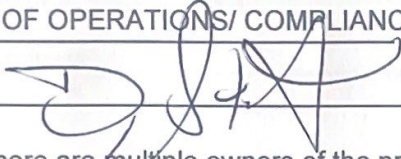
I am the owner of record for this property for which this application is being filed and as such, I am familiar with the development being proposed to be carried out on my property.

I hereby, give permission for this application to be filed with the full understanding that certain restriction may be placed on the property relative to the approval of the proposed work.

I further certify that under penalties of perjury, I am to sign this application.

Name (Please Print) DOUGLAS STEWART

Title: DIR. OF OPERATIONS/ COMPLIANCE Date: 07-19-2023

Signature: 

Note: If there are multiple owners of the property or you are representing a group, corporation, or other organization attach a copy of a certified letter authorizing you to sign this application for the proposed development.

LAND USE AND DEVELOPMENT FEES		
PLATS		
	Up to 30 Lots	\$550.00
	Over 30 Lots	\$750.00
SITE CONDOMINIUMS		
	Up to 30 Lots	\$450.00
	Over 30 Lots	\$650.00
SITE PLANS		
	Commercial and	\$350.00 < 30 acres
	Special Land Use	\$400.00
	Planned Unit Development	\$500.00
	Amend a PUD	\$150.00
	Multiple Family Developments (Apartment &	\$50 plus \$5.00 per unit or lot
	Additions to existing Site Plans if Planning Commission Review is required	\$100.00
	Extending Site Plan with Planning Commission	\$150.00

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Zoning Ordinance, Article 6: Development Procedures: Section 6:3 - Site Plan Review is needed when:

- ☐ (A) - Any use or development stipulated elsewhere in the ordinance.
- ☐ (B) - All uses subject to land approval.
- ☐ (C) - Any areas for which off-street parking is required except for single- and two-family dwellings on a single lot.
- ☐ (D) - All permitted use, new construction, or any change of use lying contiguous to or across the street from a residential district.
- ☐ (E) - All residentially related uses permitted in a one-family district such as, but not limited to, institutional uses, churches, or public facilities.
- ☐ (F) - Any new use, addition or accessory structure that requires additional off-street parking to that already provided.
- ☐ (G) - Site plans for subdivisions and site condo developments.
- ☐ (H) - All uses not otherwise included within a specific use district.
- ☒ (I) - Any use for which the zoning administrator determines that PC review is necessary to determine compliance with the zoning ordinance.
- ☒ (J) - Amendments to approve site plans, except that the City Manager may approve minor modifications.

Note: Staff will review all plans prior to submitting them to Planning Commission.

Development Procedures: 6.3 – Site Plan Review: The following information should be included in your site plan:

- ☐ Plans submitted for site plan review shall be stamped by a design professional licensed by the State of Michigan such as a landscape architect, architect, or civil engineer.
- ☐ Site plans shall be drawn to an engineer's scale appropriate for a sheet size of at least 24 by 36 inches, not to exceed one (1) inch equals 50 feet. If a large development must be depicted in sections on multiple sheets, then an overall composite sheet shall be provided.
- ☐ Date, north arrow scale, existing zoning, zoning of adjacent properties, legal description of the property, easements, and the names and addresses of the

CITY OF MARSHALL

architect, planner, designer, or civil engineer responsible for the preparation of the site plan.

☐

The dimensions of all lot and property lines, showing the relationship of the subject property to abutting properties and a boundary survey of the parcel.

☐

The location, height and dimensions of all existing and proposed structures on the subject property and all existing structures within 100 feet of the subject property.

☐

A finished floor elevation and exterior building elevation drawing shall be submitted with the site plan.

☐

The location of all existing and proposed drives, walks and parking areas.

☐

The location and right-of-way widths of all abutting streets and alleys.

☐

The location and size of all existing and proposed sanitary sewer lines, water lines, and storm drainage facilities must be shown.

☐

The location and size of all existing and proposed electric, natural gas, telephone, cable TV and solid waste disposal facilities must be shown.

☐

The location, height area of illumination and fixture details of all existing and proposed lighting shall be provided. All lighting shall be located and oriented to have a minimal impact on adjacent properties.

☐

The size, height, location and illumination of all existing and proposed signs shall be provided to insure ordinance compliance.

☐

The location of existing natural features such as wooded areas, floodplains, wetlands, drainage courses, and a topographic survey of spot elevations of the site.

☐

Other information as requested by the Zoning Administrator or Planning Commission to verify that the site and use follow the Ordinance.

☐

The Planning Commission may waive any of the foregoing requirements determined unnecessary for site plan review purposes.



MARSHALL PLANNING COMMISSION

Staff report for January 13, 2021

To: Planning Commissioners
From: Trisha Nelson, Planning and Zoning Administrator
Subject: Delta-One, 343 S. Mulberry

Case #: Site Plan #SP21.02
Zoning District: I-1 Research and Technical District
Proposed Use: Marihuana Grow Facility

Staff received an initial site plan for the Delta-One site at 343 S. Mulberry in June 2020 and the new updated site plan December 21, 2020. With many delays in the project, Delta-One is ready to continue with the development of the site as previously discussed. With COVID restrictions, the plans were emailed out to city staff and responses were received for review. There were not many changes from the original submitted plans, but comments were received and answers obtained. A few of the suggested revisions included:

- The parking area to the west side of the building requires pavement
- Odor control needs to be seriously addressed. City Staff will address the odor control with abatement measures as part of the Marihuana licensing requirements.
- Screening for the residential district directly to the north of the property, according to section 5.15.9 (A). An 8' high wooden screen fence has been added to the plans. The remainder of the property will have 8' chain link fencing.
- Is there a new water service being installed to the building? Existing water and sewer services will be reused. There are no new services being proposed.
- Clarification needed on gated entrance on Mulberry Street. Explanation needed on access. All gates except for the Spruce Street entrance will be closed 24 hours, 7 days a week except when they must be used for a delivery or emergency access. Also, a knock box will be provided at every gate for emergency access. The Spruce gate will be closed and locked only after business hours and accessed via Old 27 through the 420 Spruce Street property.

The entrance point from Mulberry Street has been a concern from staff to minimize impact to the neighboring residential properties and any impact to the local street. It has been stated there may be use of the Mulberry Street entrance for occasional deliveries. Planner Nelson suggested a representative from Delta-One provide explanation to the Planning Commission regarding their intent. Concerns have been received from surrounding property owners regarding truck traffic.

Below Section 3.19 of the Zoning Ordinance addresses I-1 Development Requirements:

3.19 I-1 DEVELOPMENT REQUIREMENTS

To ensure compatibility with the intent and purpose of the I-1 (Research and Manufacturing) district, all uses and principal and accessory buildings and structures in the district shall be subject to the following development requirements:

1. Screening. The Planning Commission may require use areas or facilities permitted in the I-1 district to be screened from street rights-of-way or abutting residential districts or uses in accordance with Section 5.15.8.

2. Parking and loading. All parking, loading and maneuvering space shall be contained within the site. Special consideration shall be given to any potential loading and unloading nuisances on surrounding uses.

3. Access. Vehicular access for employees, delivery vehicles, and trucks shall be coordinated or shared with adjoining uses where feasible and shall be designed to minimize impacts on public streets and surrounding uses.

The current building is being utilized on the site and will be renovated to required standards with no changes to the building setbacks. The size of the building footprint is 15,091 sq. ft. The property is zoned I-1, which permits the proposed use of a Marihuana grow facility in the City.

The applicant has worked with the City and incorporated and/or clarified comments and concerns by staff. The site shall meet all the requirements from the Department of Public Safety as they work through the security plan process and the site shall be provided with security cameras and 8' perimeter fencing.

According to Section 6.3.12, Standards for Site Plan Approval, the Planning Commission shall consider the following standards during review:

- A. Adequacy of Information.
- B. Site Appearance and Preservation.
- C. Pedestrian Access.
- D. Vehicular Circulation.
- E. Parking and Loading.
- F. Building Composition.
- G. Screening.
- H. Exterior Lighting.
- I. Impact upon Public Services.

RECOMMENDATION

The Planning Commission is being asked to receive and consider approving site plan #SP21.02 for 343 Mulberry Street.

**MINUTES
MARSHALL CITY PLANNING COMMISSION
WEDNESDAY, JANUARY 13, 2021**

In a regular session, Wednesday, January 13, 2021 at 7:00 p.m. via Zoom the Marshall Planning Commission was called to order by Chair Banfield.

ROLL CALL

Members Present: Chair Banfield, Commissioners Burke Smith, Davis, Hall, McNiff, Reed, Schwartz, and C. Zuzga and Council Liaison Wolfersberger

Members Absent: Commissioner Zuck

Staff Present: Trisha Nelson, City Clerk & Planner
Eric Zuzga, Director of Special Projects

AGENDA

MOTION by McNiff, supported by Reed, to accept the agenda for the Wednesday, January 13, 2021 as submitted. On a roll call vote; ayes- Burke Smith, Banfield, Davis, Hall, McNiff, Reed, C Zuzga; nays- none; **MOTION CARRIED.**

MINUTES

MOTION by Davis, supported by McNiff, to accept the minutes from the December 9, 2020 regular meeting. On a roll call vote; ayes- Burke Smith, Banfield, Davis, Hall, McNiff, Reed, C Zuzga; nays- none; **MOTION CARRIED.**

PUBLIC COMMENTS ON AGENDA ITEMS

None

PUBLIC HEARINGS

Chair Banfield opened the Public Hearing on Planning Commission Draft Capital Improvements Plan 2021-2027. Hearing none, Chair Banfield closed the public hearing on Planning Commission Draft Capital Improvement Plan 2021-2027.

NEW BUSINESS

MOTION by Burke-Smith, supported by McNiff to recommend the Planning Commission Draft Capital Improvements Plan 2021-2027 to City Council.

Banfield stated that there was a comment after the last meeting about wanting to see the entire plan, which has now been presented. He further stated that the Planning Commission only looks at projects with a priority ranking of 2 or above. Nelson stated that Directors meet with staff to come up with projects that are needed within departments that are then ranked 1-4 with 1 being the highest ranking. Once budget allows, projects can then move forward based on the plan.

MOTION by Burke-Smith, supported by McNiff to recommend the Planning Commission Draft Capital Improvements Plan 2021-2027 to City Council. On a roll call vote; ayes- Burke Smith, Banfield, Davis, Hall, McNiff, Reed, C Zuzga; nays- none; **MOTION CARRIED.**

MOTION by Davis, supported by McNiff to receive Zoning Amendment Request #RZ21.01 from the Calhoun County Land Bank Authority to rezone 410 East Drive from POSD (Professional Office Service District) to R-2 (Suburban Residential District).

Nelson stated that this is the first step in getting the property moving forward. She further stated that once it is rezoned, they intend to seek a Planned Urban Development. Krista Trout-Edwards of the Calhoun County Land Bank stated that this is a project that has been in the works since 2017 when the former State Farm building was demolished. She further stated that in 2019 they worked with the MEDC to put together a plan and a showcase was held right before COVID hit in 202 with many interested developers, but after the shutdown many didn't want to go through the whole process, just the building portion. The current concept places 6 homes on East Dr this year. E Zuzga stated that part of the reason that the City and Land Bank are taking this step is to help jump start the project. East Drive is scheduled for a road project this year and the City would like to take advantage of the opportunity to install services while the road is already under construction.

Banfield questioned if the Land Bank was acting as the developer. Trout-Edwards stated that the Land Bank is acting as the developer of the subdivision, but not of the actual construction of the homes. Banfield questioned the narrowness of the lots. Trout-Edwards stated that this will increase the density of the area while still keeping them single family homes. Banfield questioned if the homes would face East Drive or the new alley that will be installed. Trout-Edwards stated that the alley will be used to access to the homes, and the front facing East Drive will be all green space. They are looking at sidewalk to connect to the school and surrounding area and a long-term plan to increase the walkability for the area.

MOTION by Davis, supported by McNiff to receive Zoning Amendment Request #RZ21.01 from the Calhoun County Land Bank Authority to rezone 410 East Drive from POSD (Professional Office Service District) to R-2 (Suburban Residential District). On a roll call vote; ayes- Burke Smith, Banfield, Davis, Hall, McNiff, Reed, C Zuzga; nays- none; **MOTION CARRIED.**

MOTION by Davis, supported by McNiff to Schedule a Public Hearing for February 10, 2021 for Zoning Amendment Request #RZ21.01 from the Calhoun County Land Bank Authority to rezone 410 East Drive from POSD (Professional Office Service District) to R-2 (Suburban Residential District). On a roll call vote; ayes- Burke Smith, Banfield, Davis, Hall, McNiff, Reed, C Zuzga; nays- none; **MOTION CARRIED.**

MOTION by McNiff, supported by Reed to receive Special Land Use Request #SLU21.01 for 1717 Pratt Avenue from MPM-C Marshall LLC.

Nelson stated that the city recently adopted the ordinance change that adds hoop houses as a Special Land Use in areas zoned I1 and I2. This is just for receiving the application, and the actual decision will be made at the February 10 meeting. She further stated that City Attorney Revore is working with staff to come up with an agreement that will be presented at that meeting. C Zuzga stated that she had a few concerns with items on the site plan that don't comply with the zoning ordinance and questioned whether they should be discussed at this meeting or at the February meeting. Nelson stated that staff is working with the petitioner on issues with the site plan to have them addressed. Davis stated that receiving the site plan starts a timeline for the petition and that he feels it is helpful to let the petitioner know of any potential concerns now. Banfield stated that in the past the commission has offered their concerns upon receiving the site plan to allow the petitioner to address those concerns before the next meeting.

Banfield stated that when they were developing the ordinance it only allowed the hoop houses to be 8 feet tall with an 8-foot fence, which would have screened it entirely, but it was changed to allow 18-foot hoop houses with 8 foot fences. He further stated that the ordinance goes on to say that the hoop houses must be entirely screened and the site plan states that since it is in the woods it would meet this screening requirement. He stated that while this would be true during the summer, that area is mainly deciduous, so for the majority of the year it would not be screened unless some evergreen trees were planted. He questioned where the run off from the structure would go. He further questioned how lighting would work for the structure. Nelson stated that they do not have plans for lighting and will use natural light for growing. She further stated that staff has addressed the need for some lighting for security.

C Zuzga questioned if fire suppression would be needed given the size of the structure and that they are hoop houses. She stated that the minimum setback requirements are not being met and that only the area around the buildings is set to be paved, but the ordinance requires parking to be paved as well. She further stated that one of the six factors that must be considered for a Special Land Use pertains to smell and that she would like to know what their plan is to mitigate any odors. C Zuzga further questioned if the building code would require the hoop houses to be attached to the ground and that if there were concrete slabs involved that it would change the run off. E Zuzga stated that he would check with the City Building Inspector. Banfield stated that traditionally hoop houses are put straight into the ground without a foundation. C Zuzga stated that with the number of structures and them being right next to each other they may need to be attached somehow. Davis questioned if the building code applies as they are only temporary structures.

Hall questioned what would happen after the three years of the Special Land Use is up. Revore stated that the intent is to not renew any hoop houses and that removing them is part of the Special Land Use process. He further stated that the intent is to not have any blighted structures after the useful life is up. Banfield stated that he would be interested to hear what would be done with the plastic after the 3 years is up. He further stated that the intent is to allow a company to grow and make money for a permanent structure. McNiff questioned if the commission can require a bond to ensure removal after the 3 years. Davis stated that he believes that is in the ordinance and that it is something that has been done in other situations in the past. Revore stated that he doesn't believe it is in the ordinance, but that it was discussed and he doesn't believe it is unreasonable to include. He further stated that this is a more complicated Special Land Use and having a performance bond is not a bad idea.

MOTION by McNiff, supported by Reed to receive Special Land Use Request #SLU21.01 for 1717 Pratt Avenue from MPM-C Marshall LLC. On a roll call vote; ayes- Burke Smith, Banfield, Davis, Hall, McNiff, Reed, C Zuzga; nays- none; **MOTION CARRIED.**

MOTION by McNiff, supported by Burke-Smith to set a Public Hearing for February 10, 2021 for Special Land Use Request #SLU21.01 for 1717 Pratt Avenue from MPM-C Marshall, LLC for the construction of Hoop Houses. On a roll call vote; ayes- Burke Smith, Banfield, Davis, Hall, McNiff, Reed, C Zuzga; nays- none; **MOTION CARRIED.**

MOTION by McNiff, supported by Burke Smith to receive Site Plan application #SP21.01 for 1717 Pratt Avenue for MPM-C Marshall, LLC. On a roll call vote; ayes- Burke Smith, Banfield, Davis, Hall, McNiff, Reed, C Zuzga; nays- none; **MOTION CARRIED.**

MOTION by Davis, supported by McNiff to receive and approve Site Plan application #SP21.02 for 343 Mulberry Street, Delta One.

Mike Johnson of Delta one stated that this is for the 343 S Mulberry St and that with the vacating of the road on Sycamore, the plan is to make a campus between this site and 420 Sprue. The plan is to eventually divert all traffic to come in from the east. He further stated that there will be screening and minimal traffic on the Mulberry side of the project. He stated that they have changed construction method to include sealing the building and adding metal panels to create a better vapor barrier and revitalize the building. Banfield questioned if the roof would need to be replaced. Johnson stated that the flat roof portion that had been leaking was replaced but the rest of the roof is still in decent shape. Banfield questioned what would be coming out of the double gate on Mulberry Street and how often it would be used. Johnson stated that it would be used for deliveries in small van style vehicles approximately twice a month. He further stated that the plan is to have all deliveries going to the 420 Spruce site once construction is completed and that they are looking at changing the address of the campus to have trafficked directed in from the east. Banfield questioned if there were two different types of fencing in the plan. Johnson state that there is a screening fence on the Mulberry side of the campus and a traditional chain link fence. Banfield questioned if the fence would look uniform when the fence was closed. Johnson replied that it would.

Ron Goodwin of 330 S Mulberry stated that the neighbors and he have several concerns. His first concern is why there needs to be 2 gates. He is fine with the gate in the cul-de-sac as it isn't even big enough for a car to turn around in, but is concerned with the second gate as he doesn't want trucks to be coming out of that drive and having to drive on neighbors' grass to get out of the gate. He further stated that he would like to see where there is gravel for a parking lot to be planted with grass opposed to having it be for deliveries. He stated that the site plan shows a door off of Sycamore that is currently a garage style door that they are converting into a double door, but that he believes it would make more sense for the trucks to be on the Sycamore side opposed to the Mulberry side. He is concerned with the property values for the area and the look of the business in the residential neighborhood. He stated that his biggest concern is the smell as it is a residential neighborhood. He stated on the south side of the building there is a large pile of dirt near the fire hydrant that he believes poses an issue for future emergencies. He reiterated that his biggest concerns are the smell, the traffic and having two gates on the Mulberry side. He believes all traffic could be diverted to the Sycamore side with the Mulberry side being strictly for emergencies. He would also like for the gravel to be removed as it gets brought out with the run off and creating a gravel road.

Banfield questioned if the fence on the Mulberry side would be 8 feet tall. Johnson replied that it would be. C Zuzga questioned if there only being 2 trucks a month being brought in on the Mulberry side if it was possible for them to be brought in on the Sycamore side. Johnson stated that is the long-term goal, but for the short term to get the site operational during construction of the campus it is needed access. It would not be a long term of heavily used entrance. C Zuzga questioned if there is an ordinance in the city that only allows trucks on certain roads or at certain times. E Zuzga stated that there is a City Ordinance but there is a coordination clause that was being used to allow the trucks on other roads. Goodwin stated that there is a sign on the road that states no truck traffic.

Johnson stated that the area where there is currently gravel, will be paved with asphalt. Goodwin questioned where the storm water will go. He stated that the storm water will go into a detention pond on the east side of the property. Banfield questioned how the water from the west side of the building will get to the detention pond. C Zuzga stated that there appears to be a drywell on the west side of the property. Davis stated that the approval of the site plan should be subject to the review of the City Engineer that the storm water will be detained on site and not overflow on to Mulberry Street.

Banfield questioned the need for 2 gates on the Mulberry side. Johnson stated that the curb is currently cut to allow 2 access points, so they kept both for emergency vehicles. Banfield questioned if they would be able to maneuver without the second gate. Johnson stated that he believes they would. Banfield questioned if there was a condition to eliminate one of the gates and what Johnson felt was an acceptable timeframe in

which they could divert traffic off of Mulberry completely. Johnson stated that he believes all the traffic could be converted within 18 months, and that they could eliminate one of the gates.

C Zuzga questioned if there will be any outdoor storage or operations on the property. Johnson stated that construction material may be stored outside, but nothing operational or storage beyond construction materials.

Goodwin stated that his main concern is still the smell. Johnson stated that there will be a 4-inch-thick metal panel and foam sprayed on the interior of the building. Banfield stated that the ordinance addresses odor issues. Nelson stated that if there is an odor complaint it will be handled as a code violation.

Banfield stated that the commission should add conditions to the approval of the site plan. The first condition should be that the South Mulberry gate will only be used until July 30, 2022 at which point it will be used for emergency vehicles only. The second condition being that they eliminate the second northerly gate on the Mulberry side. C Zuzga added the third condition being that there is a storm water management plan that maintains all storm water on site approved by the city engineer. Banfield questioned Johnson if he felt that these are conditions that could be met by Delta 1. Johnson replied that his main concern falls with the Mulberry side becoming emergency only as there is mechanical equipment on that side of the building that may need to be serviced. Banfield questioned if that was the only way to access the equipment. Johnson replied they could walk through the building or property. McNiff questioned if fire access would be an issue with the gate. Banfield replied that there would be a Knox box for the fire department to gain access.

MOTION by Davis, supported by McNiff to receive and approve Site Plan application #SP21.02 for 343 Mulberry Street, Delta One with the following conditions

- 1) The Northerly gate on South Mulberry will be eliminated from the plans.
- 2) The remaining gate on South Mulberry will only be used until July 30, 2022 at which point it will be for emergency vehicle access only.
- 3) The City Engineer approves a storm water management plan that maintains all storm water on site.

On a roll call vote; ayes- Burke Smith, Banfield, Davis, Hall, McNiff, Reed, C Zuzga; nays- none;
MOTION CARRIED.

OLD BUSINESS

None

PUBLIC COMMENTS NOT ON AGENDA

None

REPORTS

Chair Banfield welcomed Council Liaison Wolfersberger to the Commission. Wolfersberger stated that he is also on the Northeast Neighborhood Improvement Authority Board and the zoning board of appeals he is looking forward to seeing more of the planning process. He further stated that the information from the meetings will be great to bring back to council.

Davis stated that the South Neighborhood Improvement authority approved the development agreement for phase one of Alwyn Downs, which will include 19 duplexes, for a total of 28 residences off of Circle Drive. He further stated that Marshall will be the first municipality to take advantage of the tax capture opportunity

offered by the state. The first phase is already zoned and plated and they will be within all the setback limitations. E Zuzga stated that there will be a phased PUD for the rest of the development.

Nelson stated that the February meeting will have another full agenda. She further stated that Love's Truck Stop is looking at a couple small additions to their building, but there haven't been any plans submitted yet.

ADJOURN

Planning Commission adjourned at 8:43 p.m.

Submitted by,

Michelle Eubank

SITE CONSTRUCTION DRAWINGS

DELTA ONE - 343 MULBERRY - MARSHALL

LEGAL DESCRIPTIONS (AS PROVIDED)

SUBJECT PARCEL 1
ADDRESS: 322 S. SYCAMORE STREET
TAX ID: 53-000-690-01
(PER TAX DESCRIPTION)
MARSHALL CITY, LOWER VILL BLK 32 S 16.5' OF LOT 8 N 49.5' OF LOT 10.

(WARRANTY DEED, L.1194, P.130, DATED 11/08/1979 PROVIDES DESCRIPTIONS THAT COVER THIS PARCEL AND PORTIONS OF OTHER PARCELS)

SUBJECT PARCEL 2
ADDRESS: 324 S. SYCAMORE STREET
TAX ID: 53-000-690-00
(PER TAX DESCRIPTION)
MARSHALL CITY, LOWER VILL BLK 32 S 82.5' LOT 10.

(WARRANTY DEED, L.1194, P.130, DATED 11/08/1979 PROVIDES DESCRIPTIONS THAT COVER THIS PARCEL AND PORTIONS OF OTHER PARCELS)

SUBJECT PARCEL 3
ADDRESS: 601 W. SPRUCE STREET
TAX ID: 53-002-568-00
(PER QUIT-CLAIM DEED, L.939, P.653, DATED 01/05/1970.)

Parcel II
Commencing at a point where the East line of Sycamore Street intersects the South line of the Plat of the old or first Village of Marshall aforesaid, thence South to the North line of the Michigan Central Railroad, thence Westerly along the North line of said railroad until it intersects the South line of said old Village Plat, thence East along the South line of said old Village Plat to place of beginning containing one acre, more or less, of land.

SUBJECT PARCEL 4
ADDRESS: 343 S. MULBERRY STREET
TAX ID: 53-000-689-01
(PER QUIT-CLAIM DEED, L.1133, P.775, DATED 11/10/1977.)
(PER QUIT-CLAIM DEED, L.1413, P.789, DATED 04/07/1987.)
(PER QUIT-CLAIM DEED, L.2106, P.600, DATED 03/02/1999.)
(PER QUIT-CLAIM DEED, L.2196, P.766, DATED 02/04/2000.)
(PER QUIT-CLAIM DEED, L.2454, P.264, DATED 05/03/2002.)

Parcel I
The Northerly 115.5 feet of Lot 9, Block 32 of the City of Marshall, Calhoun County, Michigan more particularly described as follows: Commencing at the Northwestern corner of said Lot 9, Block 32, running thence Southerly along the Westerly line of said lot, 115.5 feet, thence East at right angles and parallel with the North line of said lot, to the Easterly line of said lot, thence Northerly along the Easterly line of said lot to the Northeasterly corner of said lot; thence Westerly along the Northerly line of said lot, to the place of beginning.

Parcel II
Commencing at the Southeast corner of Lot 9 of Block 32 of the City of Marshall, running thence South, on the continuation of the East line of said lot to the Northerly line of the righ of way of the Michigan Central Railway Company; thence in a Westerly and Northerly direction, along the Northerly line of said right of way, and along the land owned by said Michigan Central Railway Company, to the East line of Mulberry Street; thence North on the East line of Mulberry Street to the Southwesterly corner of said Lot 9, Blok 32 to the place of beginning.

Also Lot 9 of Block 32 of the City of Marshall, Michigan, excepting the Northerly 115.5 feet thereof, said excepted parcel being more particularly described as follows: Commencing at the Northwestern corner of said Lot 9, Block 32, running thence Southerly along the Westerly line of said lot, 115.5 feet, thence East at right angles and parallel with the North line of said lot, to the Easterly line of said lot, thence Northerly along the Easterly line of said lot to the Northeasterly corner of said lot; thence Westerly along the Northerly line of said lot, to the place of beginning. All in the City of Marshall, Calhoun County, Michigan.

Also beginning at the intersection of the Easterly line of Mulberry Street with the East and West one quarter line of Section 26, Town 2 South, Range 6 West, thence Easterly along said quarter section line 97 feet; thence Southerly at an angle to the right of 89 degrees 22 minutes 37.38 feet to a point on the Northerly right of way line of Michigan Central Railroad Company, said point being 75 feet Northerly measured at right angles from the centerline of the Michigan Central Railroad Company's Westbound Main Track; thence Westerly parallel to and 75 feet distant from said centerline, 103 feet to the easterly line of Mulberry Street; thence Northerly along said Easterly street line 4 feet, to the point of beginning, and containing and area of 2007 square feet of land more or less.

Parcel III
Beginning at a point on the Easterly line of Mulberry Street, 4 feet Southerly, measured along said Easterly line, from its intersection with the East and West 1/4 line of Section 26, Town 2 South, Range 6 West; thence Easterly along a line parallel to and 75 feet Northerly of the centerline of the Michigan Central Railroad Company's Westbound Mainline track, a distance of 165 feet; thence Southerly, parallel to the Easterly line of Mulberry Street, a distance of 30 feet to a point 6 feet, from the near rail of the Michigan Central Railroad Company's most Northerly side track, thence Westerly a distance of 165 feet to the Easterly line of Mulberry Street, a distance of 30 feet to the place of beginning, and containing 4,620 square feet more or less. City of Marshall, Calhoun County, Michigan.

LEGAL DESCRIPTIONS (AS SURVEYED)

SUBJECT PARCEL 1
Part of the Northeast 1/4 of Section 26, T2S-R6W, City of Marshall, Calhoun County, Michigan being more particularly described as follows: the South 16.50' feet of Lot 8 and the North 49.50' feet of Lot 10 of Block 32, Plat of the Village of Marshall, as recorded in Liber 2 of Plats, Page 23, Containing 0.250 acres.

SUBJECT PARCEL 2
Part of the Northeast 1/4 of Section 26, T2S-R6W, City of Marshall, Calhoun County, Michigan being more particularly described as follows: the South 82.50' feet of Lot 10 of Block 32, Plat of the Village of Marshall, as recorded in Liber 2 of Plats, Page 23, Containing 0.312 acres.

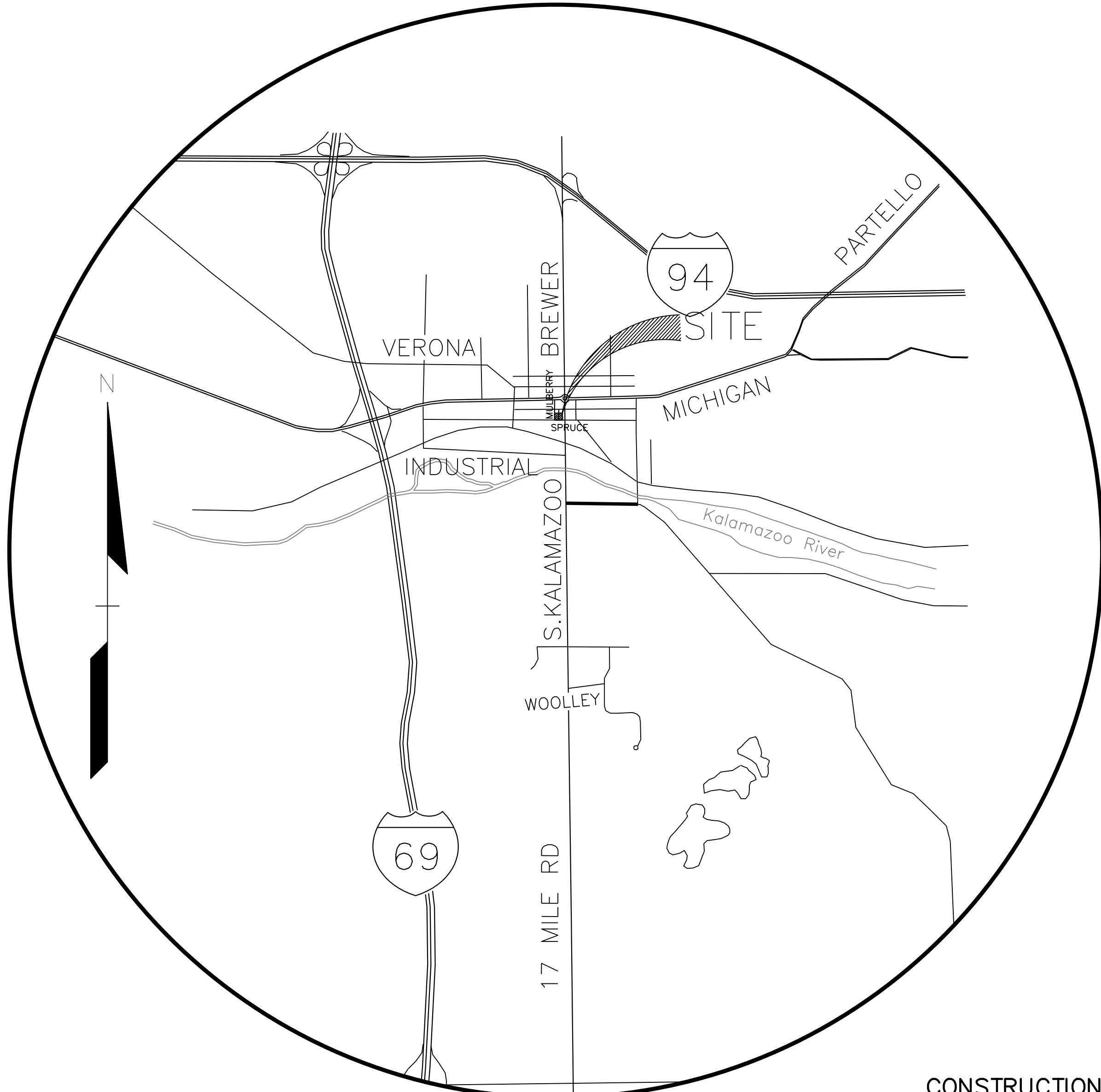
SUBJECT PARCEL 3
Part of the Southeast 1/4 of Section 26, T2S-R6W, City of Marshall, Calhoun County, Michigan being more particularly described as follows: Commencing at a point where the East line of Sycamore Street (82.5 foot wide Right of Way) intersects the South line of the Plat of Village of Marshall, said point also being on the East-West 1/4 line (as monumented) of said Section 26, being distant N89°45'15"W, 344.36 feet from the East 1/4 corner of Section 26; thence along the extension of said East line of Sycamore Street, S00°36'21"E, 144.89 feet to a point on the Northerly right of way line of Michigan Department of Transportation Railroad, said point being 75 feet Northerly as measured at right angles from the former centerline of the Michigan Central Railroad Company's Westbound Main Track; thence Westerly parallel to and 75 feet distant from said centerline along said North line of the railroad, N70°50'45"W, 442.07 feet to a point where the North line of said railroad intersects the South line of Plat of Village of Marshall and the East-West 1/4 line, thence along said South line and 1/4 line, S89°45'15"E, 420.79 feet to the Point of Beginning, Containing 0.700 acres.

SUBJECT PARCEL 4
Part of the East 1/2 of Section 26, T2S-R6W, City of Marshall, Calhoun County, Michigan being more particularly described as follows: Lot 9 of Block 32, Plat of the Village of Marshall, as recorded in Liber 2 of Plats, Page 23; also beginning at the Southeast corner of said Lot 9, thence S00°36'21"E, 59.66 feet to a point on the Northerly right of way line of Michigan Department of Transportation Railroad, said point being 75 feet Northerly as measured at right angles from the former centerline of the Michigan Central Railroad Company's Westbound Main Track; thence Westerly parallel to and 75 feet distant from said centerline, N70°50'45"W, 10.31 feet; thence leaving said Right of Way line, S00°36'21"E, 30.81 feet to the extension of the South building face of an existing building; thence along said South building face, N70°41'58"W, 165.15 feet to the East line of Mulberry Street extended (66 foot wide Right of Way); thence along said extension of the East line of Mulberry N00°36'21"W, 33.21 feet to the Southwest corner of Lot 9 and East-West 1/4 line (as monumented) of Section 26; thence along said South line and 1/4 line, S89°45'15"E, 165.00 feet to the Point of Beginning, Containing 0.725 acres.

BEARING REFERENCE

BEARINGS ARE BASED ON PROJECT COORDINATE SYSTEM:
MICHIGAN STATE PLANE COORDINATE SYSTEM, MAD83 (CONUS)
(MOL) (GRS80), SOUTH ZONE 2113,
INTERNATIONAL FEET, GRID.

343 MULBERRY STREET MARSHALL, MICHIGAN



LOCATION MAP
SCALE: 1"=5000'

LANDSCAPE ARCHITECT:

FELINO A. PASCUAL + ASSOCIATES, RLA
24333 ORCHARD LAKE ROAD, STE G
FARMINGTON HILLS, MI 48336
PHONE: (248) 557-5588
CONTACT: FELINO PASCUAL (JOEL), RLA

ARCHITECTURAL DESIGNER:

ZACK OSTROFF & ASSOCIATES
2640 WATER OAKS DRIVE
WEST BLOOMFIELD, MI 48324
PHONE: (248) 425-4190
CONTACT: ZACK OSTROFF

STRUCTURAL ENGINEER:

FAIRWAY ENGINEERING
28525 BECK ROAD, STE 124
WIXOM, MI 48393
PHONE: (248) 214-5913
CONTACT: MARK MAHAJAN, PE

CIVIL ENGINEER:

STOREY ENGINEERING GROUP, LLC
48264 MANCHESTER
MACOMB, MI 48044
PHONE: (586) 216-1043
CONTACT: TIM S. STOREY, PE

DEVELOPER:

DELTA ONE
150 W 2ND STREET, SUITE 250
ROYAL OAK, MI 48067
PHONE: (248) 793-9866
CONTACT: DOUG STEWART

INDEX OF DRAWINGS:

PROPOSED SITE PLAN

- C-0.0 COVER SHEET
- C-1.0 TOPOGRAPHIC + BOUNDARY SURVEY
- C-2.0 SITE DIMENSION + PAVING PLAN
- C-3.0 GRADING PLAN
- C-4.0 UTILITY PLAN
- C-5.0 DRAINAGE PLAN
- C-6.1 NOTES + DETAILS
- C-6.2 DETAILS-2
- C-7.0 SESC PLAN

1 OF 1 PHOTOMETRIC SITE PLAN

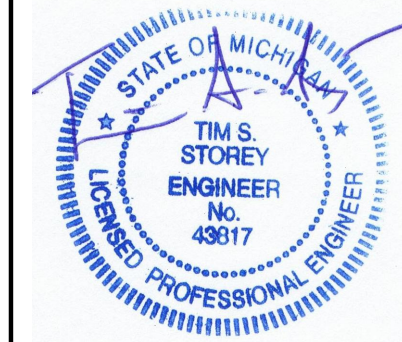
LS-1 LANDSCAPE PLAN

STANDARD DETAILS

ST-1 CITY OF MARSHALL STORM SEWER DETAILS

CONSTRUCTION PERMITS REQUIRED:

CITY OF MARSHALL - ENGINEERING/PLANNING APPROVAL
CALHOUN COUNTY ROAD COMMISSION - SESC PERMIT



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CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION, AND PROPERTY THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTRACTOR'S AND NOT BE LIMITED TO NORMAL WORKING HOURS AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONAL PARTIES FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT EXCEPT LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE DESIGN PROFESSIONAL.

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(586) 216-1043
www.storeyengineering.com

DELTA ONE 150 W 2ND STREET, SUITE 250 ROYAL OAK, MI 48067		COVER SHEET - DELTA ONE		TSS	
343 MULBERRY - DELTA ONE		343 MULBERRY - DELTA ONE		P.M.	
T2S, R6W, EAST 1/2 SECTION 26, CITY OF MARSHALL, CALHOUN COUNTY, MI		DES.		TSS	
8, SEC 26, T2S, R6W, EAST 1/2 SECTION 26, CITY OF MARSHALL, CALHOUN COUNTY, MI		DN.		TSS	
		SUR.		AMP	

ORIGINAL ISSUE DATE:
5/24/2021

Project No. 2020-003

DRAWING NUMBER:
C-0.0

DATUM: NAVD88

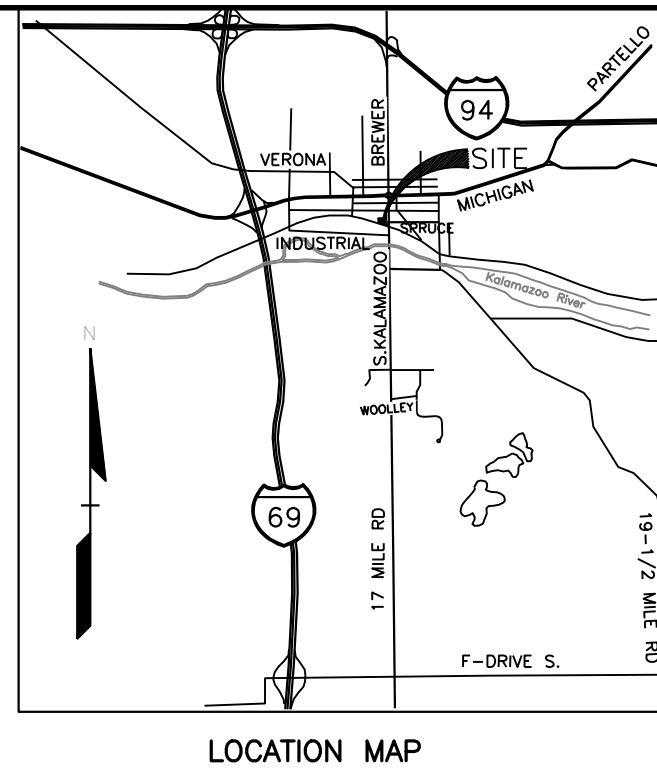
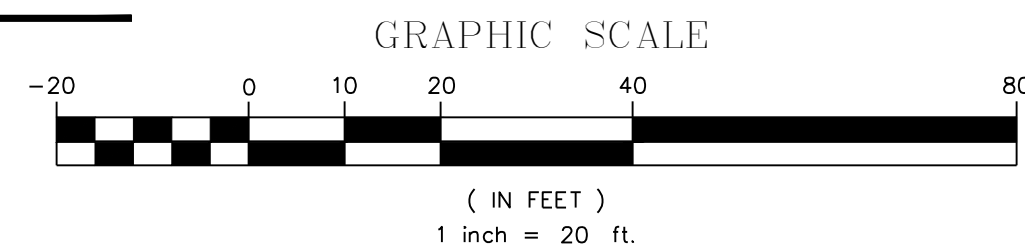
BM A:
TOP RAILROAD SPIKE IN S/SIDE UTILITY POLE, 79± NORTH OF CENTERLINE W.
SPRUCE STREET & 24± WEST OF CENTERLINE S. SYCAMORE STREET.
ELEV = 907.43

BM B:
ARROW ON HYDRANT, 30'± SOUTHEAST FROM CENTER OF CUL' DE SAC OF S.
MULBERRY STREET.
ELEV = 910.33

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

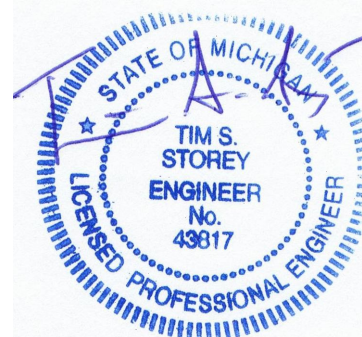
BY SCALED MAP LOCATION AND GRAPHIC PLOTTING ONLY, THE SUBJECT PROPERTY APPEARS TO LIE ENTIRELY IN ZONE (X) AREA DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN ACCORDING TO THE FLOOD INSURANCE RATE MAP FOR THE COUNTY OF CALHOUN, COMMUNITY PANEL NO. (26025C0239C), EFFECTIVE DATE APRIL 4, 2011.

WM:	MARSHALL CITY
RECEIVED:	1/14/20
SAN:	MARSHALL CITY
RECEIVED:	1/14/20
STORM:	MARSHALL CITY
RECEIVED:	1/14/20
GAS:	CONSUMERS ENERGY
RECEIVED:	1/10/20
ELEC:	CONSUMERS ENERGY
RECEIVED:	1/10/20
PHONE/CABLE:	AT&T ~ CENTURY LINK
RECEIVED:	1/13/20 ~ 1/10/20



REVISIONS

No.	DATE	BY	DESC
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CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO ANY WORK STOPPAGE; AND THAT CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONAL HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT EXCEPTING LIABILITY

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DELTA ONE

150 W 2ND STREET, SUITE 250
ROYAL OAK, MI 48067

BOUNDARY + TOPOGRAPHIC SURVEY

343 MULBERRY - DELTA ONE

343 MULBERRY
T2S R6W EAST 1/2 SECTION 26, CITY OF MARSHALL, CALHOUN COUNTY, MI

DEES. TSS DN. TSS SUR. AWP P.M. TSS

SEEK YOUR BIRTH RECORDS FOR THE YEAR 1933-1934. A PERSON WHOSE NAME WAS RECORDED IN THE YEAR 1933-1934.

ORIGINAL ISSUE DATE:
5/24/2021

Project No. 2020-003

SCALE: 1" = 20'

DRAWING NUMBER:

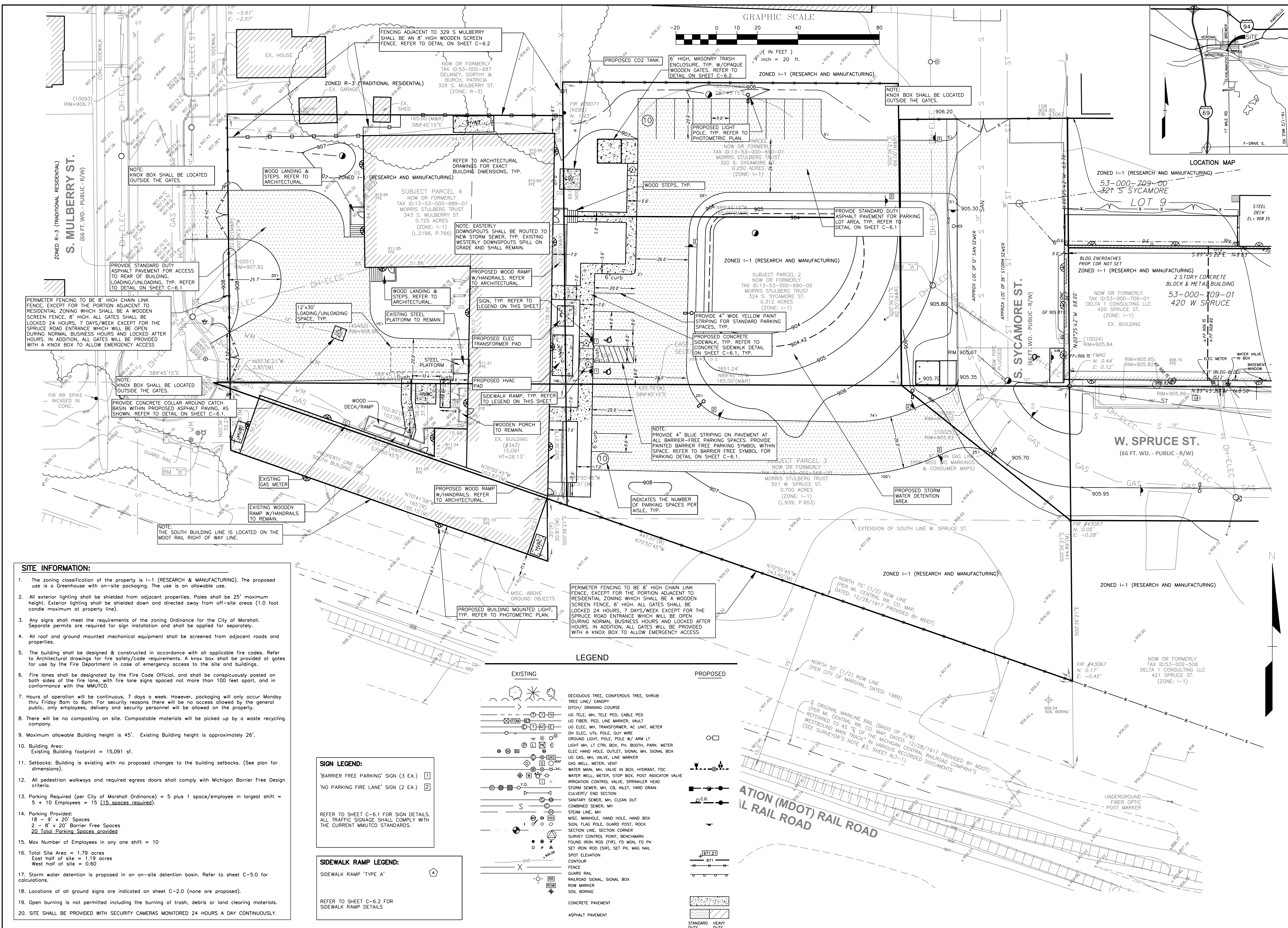
C-1.0

UTILITY NOTES

1. ALL FRANCHISE UTILITIES (GAS, FIBER, CABLE, UG ELEC., TELE.) SHOW ARE BASED ON MISS DIG MARKINGS LOCATED AT TIME OF SURVEY UNLESS NOTED OTHERWISE.
2. 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.

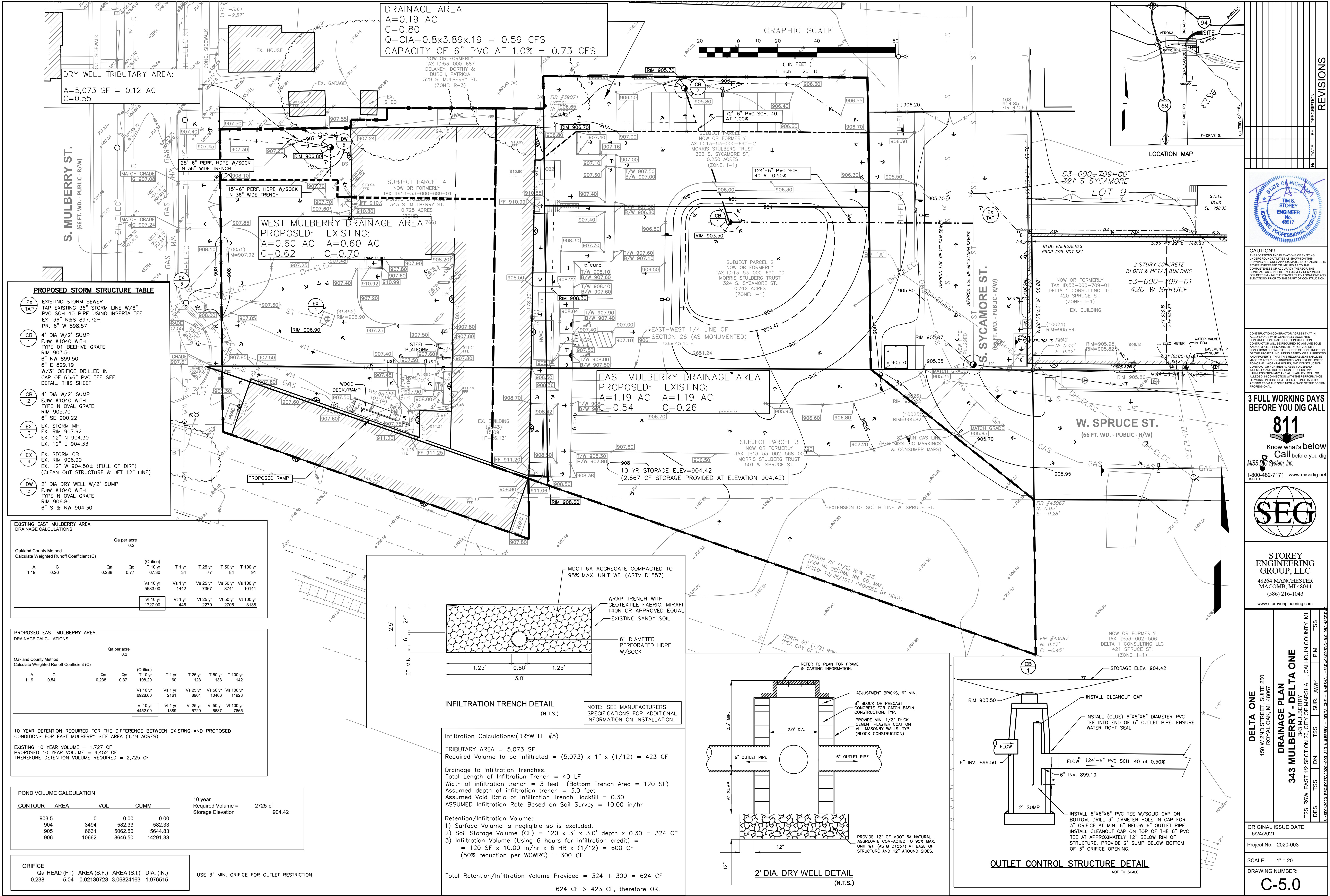
ORIGINAL MAINLINE RAIL CO. REFERRED TO AS "E" OF THE WESTBOUND MAIN TRACK" IN V (SEE SURVEYOR'S NOTE #3, SH)

900.00 900.10 900.20 900.30 900.40 900.50 900.60 900.70 900.80 900.90 901.00 901.10 901.20 901.30 901.40 901.50 901.60 901.70 901.80 901.90 902.00 902.10 902.20 902.30 902.40 902.50 902.60 902.70 902.80 902.90 903.00 903.10 903.20 903.30 903.40 903.50 903.60 903.70 903.80 903.90 904.00 904.10 904.20 904.30 904.40 904.50 904.60 904.70 904.80 904.90 905.00 905.10 905.20 905.30 905.40 905.50 905.60 905.70 905.80 905.90 906.00 906.10 906.20 906.30 906.40 906.50 906.60 906.70 906.80 906.90 907.00 907.10 907.20 907.30 907.40 907.50 907.60 907.70 907.80 907.90 908.00 908.10 908.20 908.30 908.40 908.50 908.60 908.70 908.80 908.90 909.00 909.10 909.20 909.30 909.40 909.50 909.60 909.70 909.80 909.90 910.00 910.10 910.20 910.30 910.40 910.50 910.60 910.70 910.80 910.90 911.00 911.10 911.20 911.30 911.40 911.50 911.60 911.70 911.80 911.90 912.00 912.10 912.20 912.30 912.40 912.50 912.60 912.70 912.80 912.90 913.00 913.10 913.20 913.30 913.40 913.50 913.60 913.70 913.80 913.90 914.00 914.10 914.20 914.30 914.40 914.50 914.60 914.70 914.80 914.90 915.00 915.10 915.20 915.30 915.40 915.50 915.60 915.70 915.80 915.90 916.00 916.10 916.20 916.30 916.40 916.50 916.60 916.70 916.80 916.90 917.00 917.10 917.20 917.30 917.40 917.50 917.60 917.70 917.80 917.90 918.00 918.10 918.20 918.30 918.40 918.50 918.60 918.70 918.80 918.90 919.00 919.10 919.20 919.30 919.40 919.50 919.60 919.70 919.80 919.90 920.00 920.10 920.20 920.30 920.40 920.50 920.60 920.70 920.80 920.90 921.00 921.10 921.20 921.30 921.40 921.50 921.60 921.70 921.80 921.90 922.00 922.10 922.20 922.30 922.40 922.50 922.60 922.70 922.80 922.90 923.00 923.10 923.20 923.30 923.40 923.50 923.60 923.70 923.80 923.90 924.00 924.10 924.20 924.30 924.40 924.50 924.60 924.70 924.80 924.90 925.00 925.10 925.20 925.30 925.40 925.50 925.60 925.70 925.80 925.90 926.00 926.10 926.20 926.30 926.40 926.50 926.60 926.70 926.80 926.90 927.00 927.10 927.20 927.30 927.40 927.50 927.60 927.70 927.80 927.90 928.00 928.10 928.20 928.30 928.40 928.50 928.60 928.70 928.80 928.90 929.00 929.10 929.20 929.30 929.40 929.50 929.60 929.70 929.80 929.90 930.00 930.10 930.20 930.30 930.40 930.50 930.60 930.70 930.80 930.90 931.00 931.10 931.20 931.30 931.40 931.50 931.60 931.70 931.80 931.90 932.00 932.10 932.20 932.30 932.40 932.50 932.60 932.70 932.80 932.90 933.00 933.10 933.20 933.30 933.40 933.50 933.60 933.70 933.80 933.90 934.00 934.10 934.20 934.30 934.40 934.50 934.60 934.70 934.80 934.90 935.00 935.10 935.20 935.30 935.40 935.50 935.60 935.70 935.80 935.90 936.00 936.10 936.20 936.30 936.40 936.50 936.60 936.70 936.80 936.90 937.00 937.10 937.20 937.30 937.40 937.50 937.60 937.70 937.80 937.90 938.00 938.10 938.20 938.30 938.40 938.50 938.60 938.70 938.80 938.90 939.00 939.10 939.20 939.30 939.40 939.50 939.60 939.70 939.80 939.90 940.00 940.10 940.20 940.30 940.40 940.50 940.60 940.70 940.80 940.90 941.00 941.10 941.20 941.30 941.40 941.50 941.60 941.70 941.80 941.90 942.00 942.10 942.20 942.30 942.40 942.50 942.60 942.70 942.80 942.90 943.00 943.10 943.20 943.30 943.40 943.50 943.60 943.70 943.80 943.90 944.00 944.10 944.20 944.30 944.40 944.50 944.60 944.70 944.80 944.90 945.00 945.10 945.20 945.30 945.40 945.50 945.60 945.70 945.80 945.90 946.00 946.10 946.20 946.30 946.40 946.50 946.60 946.70 946.80 946.90 947.00 947.10 947.20 947.30 947.40 947.50 947.60 947.70 947.80 947.90 948.00 948.10 948.20 948.30 948.40 948.50 948.60 948.70 948.80 948.90 949.00 949.10 949.20 949.30 949.40 949.50 949.60 949.70 949.80 949.90 950.00 950.10 950.20 950.30 950.40 950.50 950.60 950.70 950.80 950.90 951.00 951.10 951.20 951.30 951.40 951.50 951.60 951.70 951.80 951.90 952.00 952.10 952.20 952.30 952.40 952.50 952.60 952.70 952.80 952.90 953.00 953.10 953.20 953.30 953.40 953.50 953.60 953.70 953.80 953.90 954.00 954.10 954.20 954.30 954.40 954.50 954.60 954.70 954.80 954.90 955.00 955.10 955.20 955.30 955.40 955.50 955.60 955.70 955.80 955.90 956.00 956.10 956



		REVISIONS																									
No.	DATE	BY	DESCRIPTION																								
 CAUTION!! THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION. CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT. INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THAT THIS REQUIREMENT SHALL BE MADE TO APPLY TO CONTRACTORS AND NOT BE LIMITED TO WORKMAN. CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD HARMLESS THE DESIGNER FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE DESIGN PROFESSIONAL. 3 FULL WORKING DAYS BEFORE YOU DIG CALL 811 Know what's below Call before you dig MISS DIG System, Inc. 1-800-482-7171 www.missdig.net (TOLL FREE)  STOREY ENGINEERING GROUP, LLC 48264 MANCHESTER MACOMB, MI 48844 (586) 216-1043 www.storeyengineering.com <table><tr><th colspan="2">DELTA ONE</th><th colspan="2">SITE DIMENSION + PAVING</th><th colspan="2">343 MULBERRY - DELTA ONE</th><th colspan="2">TSS</th></tr><tr><th>DES.</th><th>TSS</th><th>DN.</th><th>SUR.</th><th>AWP</th><th>P.M.</th><th colspan="2">TSS</th></tr><tr><td colspan="2">150 W 2ND STREET, SUITE 250 ROYAL OAK, MI 48067</td><td colspan="2">343 MULBERRY</td><td colspan="2">T2S, R6W, EAST 1/2 SECTION 26, CITY OF MARSHALL, CALHOUN COUNTY, MI</td><td colspan="2">S: 343.0000 PROJECTS/2024-0001 343 MULBERRY - DELTA ONE - MARSHALL - CALHOUN CO - 2.0 SITE ONE</td></tr></table> ORIGINAL ISSUE DATE: 5/24/2021 Project No: 2020-003 SCALE: 1" = 20' DRAWING NUMBER: C-20				DELTA ONE		SITE DIMENSION + PAVING		343 MULBERRY - DELTA ONE		TSS		DES.	TSS	DN.	SUR.	AWP	P.M.	TSS		150 W 2ND STREET, SUITE 250 ROYAL OAK, MI 48067		343 MULBERRY		T2S, R6W, EAST 1/2 SECTION 26, CITY OF MARSHALL, CALHOUN COUNTY, MI		S: 343.0000 PROJECTS/2024-0001 343 MULBERRY - DELTA ONE - MARSHALL - CALHOUN CO - 2.0 SITE ONE	
DELTA ONE		SITE DIMENSION + PAVING		343 MULBERRY - DELTA ONE		TSS																					
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REVISIONS

NO.	DATE	BY	DESCRIPTION

STATE OF MICHIGAN

TIM S. STOREY

ENGINEER

No. 43917

PROFESSIONAL

CAUTION!
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CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR SHALL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT INCLUDING SAFETY OF ALL PERSONS AND PROPERTY THAT THIS REQUIREMENT SHALL BE MADE FOR ANY CONTINUOUS AND NOT BE LIMITED TO NORMAL WORKING HOURS AND CONSTRUCTION CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

3 FULL WORKING DAYS BEFORE YOU DIG CALL

811

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DELTA ONE

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ROYAL OAK, MI 48067

DRAINAGE PLAN

343 MULBERRY - DELTA ONE

725 R6W, EAST 1/2 SECTION 26, CITY OF MARSHALL, CALHOUN COUNTY, MI

DES. TSS DN. TSS SUR. AWP P.M.

DES. TSS DN. TSS SUR. AWP P.M.

ORIGINAL ISSUE DATE:
5/24/2021

Project No. 2020-003

SCALE: 1" = 20'

DRAWING NUMBER:
C-5.0

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF MARSHALL AND CALHOUN COUNTY.
2. ALL NECESSARY PERMITS, BONDS AND INSURANCES ETC., SHALL BE PAID FOR BY THE CONTRACTOR. THE OWNER SHALL PAY FOR ALL MUNICIPAL INSPECTION FEES.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL DURING THE PERIODS OF CONSTRUCTION. THIS SHALL BE CONSIDERED INCIDENTAL TO THE JOB.
4. 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 OTHER REPRESENTATIVES OF OTHER UTILITIES IN THE VICINITY OF THE WORK.
5. ALL PROPERTIES OR FACILITIES IN THE SURROUNDING AREAS, PUBLIC OR PRIVATE, DESTROYED OR OTHERWISE DISTURBED DUE TO CONSTRUCTION, SHALL BE REPLACED AND/OR RESTORED TO THE ORIGINAL CONDITION BY THE CONTRACTOR.
6. MANHOLE, CATCH BASIN, GATE VALVES AND HYDRANT FINISH GRADES MUST BE CLOSELY CHECKED AND APPROVED BY THE ENGINEER BEFORE THE CONTRACTOR'S WORK IS CONSIDERED COMPLETED.
7. CONTRACTOR SHALL REMOVE AND DISPOSE OF OFF-SITE ANY TREES, BRUSH, STUMPS, TRASH OR OTHER UNWANTED DEBRIS AT THE OWNER'S DIRECTION, INCLUDING OLD BUILDING FOUNDATIONS AND FLOORS, BURNING OF TRASH, STUMPS OR OTHER DEBRIS SHALL NOT BE PERMITTED.
8. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BARRICADING, LIGHTS AND TRAFFIC CONTROL DEVICES TO PROTECT THE WORK AND SAFELY CONTROL TRAFFIC IN ACCORDANCE WITH "MMUTC".
9. ALL EXCAVATIONS SHALL BE SLOPED, SHORED OR BRACED IN ACCORDANCE WITH MI-OSHA REQUIREMENTS. THE CONTRACTOR SHALL PROVIDE AN ADEQUATELY CONSTRUCTED AND BRACED SHOULDERMENT FOR EMPLOYEES WORKING IN AN EXCAVATION THAT MAY EXPOSE EMPLOYEES TO THE DANGER OF MOVING GROUND.
10. ALL REFERENCES TO M.D.Q.T. SPECIFICATIONS ARE TO BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

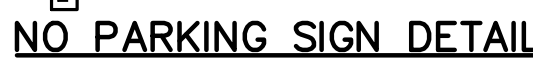
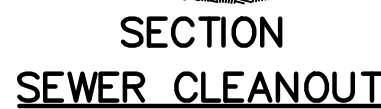
1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF MARSHALL, CALHOUN COUNTY AND MOOT, WHERE APPLICABLE.
2. IN AREAS WHERE NEW PAVEMENTS ARE BEING CONSTRUCTED, THE TOPSOIL AND SOIL CONTAINING ORGANIC MATTER SHALL BE REMOVED PRIOR TO PAVEMENT CONSTRUCTION.
3. SUBGRADE UNDERCUTTING, INCLUDING BACKFILLING SHALL BE PERFORMED TO REPLACE MATERIALS SUSCEPTIBLE TO FROST HEAVING AND UNSTABLE SOIL CONDITIONS. ANY EXCAVATIONS THAT MAY BE REQUIRED BELOW THE TOPSOIL IN FILL SECTIONS OR BELOW SUBGRADE IN CUT SECTIONS, WILL BE CLASSIFIED AS SUBGRADE UNDERCUTTING.
4. SUBGRADE UNDERCUTTING SHALL BE PERFORMED WHERE NECESSARY AND THE EXCAVATED MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR, ANY SUBGRADE UNDERCUTTING SHALL BE BACKFILLED WITH SAND OR OTHER SIMILAR APPROVED MATERIAL. BACKFILL SHALL BE COMPACTED TO 95% OF THE MAXIMUM UNIT WEIGHT (PER ASTM D-1557) UNLESS OTHERWISE SPECIFIED.
5. BACKFILL UNDER PAVED AREAS SHALL BE AS SPECIFIED ON DETAILS.
6. ANY SUB-GRADE WATERING REQUIRED TO ACHIEVE REQUIRED DENSITY SHALL BE CONSIDERED INCIDENTAL TO THE JOB.

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE CITY OF MARSHALL, CALHOUN COUNTY AND M.D.O.T.
2. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY AND/OR OBTAIN ANY INFORMATION NECESSARY REGARDING THE PRESENCE OF UNDERGROUND UTILITIES, WHICH MIGHT AFFECT THIS JOB.
3. ALL TRENCHES UNDER OR WITHIN THREE (3) FEET OR THE FORTY-FIVE (45) DEGREE ZONE OF INFLUENCE LINE OF EXISTING AND/OR PROPOSED PAVEMENT, BUILDING PAD OR DRIVE APPROACH SHALL BE BACKFILLED WITH SAND COMPACTED TO AT LEAST NINETY-FIVE (95) PERCENT OF MAXIMUM UNIT WEIGHT (ASTM D-1557). ALL OTHER TRENCHES TO BE COMPACTED TO 90% OR BETTER.
4. WHENEVER EXISTING MANHOLES OR SEWER PIPE ARE TO BE TAPPED, DRILL A CLEAN HOLE WITH A HOLE SAW AND USE AN INSERTER TIE TO MAKE THE CONNECTION.
5. EXACT GRADES AND DEPTHS OF UTILITIES ARE TO BE CHECKED CLOSELY WITH THE FIELD ENGINEER PRIOR TO INSTALLATION.

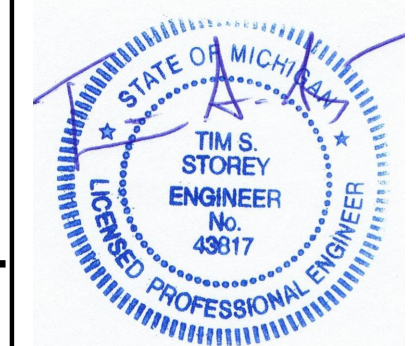
1. ALL STORM SEWER SHALL BE INSTALLED ON STANDARD BEDDING OR BETTER.
2. JOINTS FOR ALL STORM SEWER 12" AND LARGER SHALL BE PREMIUM JOINT TONGUE AND GROOVE WITH RUBBER GASKETS, UNLESS SPECIFIED OTHERWISE.
3. ALL STORM SEWER 12" AND LARGER SHALL BE RCP CLASS IV OR HDPE ADS N-12 OR APPROVED EQUAL, UNLESS OTHERWISE NOTED.
4. CULVERTS SHALL BE ALUMINIZED TYPE II CSP (OR HDPE ADS N-12) WITH BANDED JOINTS MEETING MANUFACTURERS SPECS
5. STORM LEADS 6" AND SMALLER SHALL BE PVC SCH 40 WITH GLUED JOINTS BEDDED ON SAND OR STONE AGGREGATE.
6. STORM LINES 8" TO 10" SHALL BE PVC SDR-26 WITH PREMIUM GASKET JOINTS BEDDED ON SAND OR STONE AGGREGATE.

1. ALL WATER MAIN SHALL BE INSTALLED WITH A MINIMUM COVER OF 6.0' BELOW FINISH GRADE. WHEN WATER MAINS MUST DIP TO PASS UNDER A STORM SEWER OR SANITARY SEWER SECTION, THE DIP SHALL BE DEEPER THAN NORMAL. SHALL BE KEPT TO A MINIMUM LENGTH BY THE USE OF VERTICAL TWENTY TWO AND A HALF (22.5') DEGREE BENDS, PROPERLY ANCHORED. MAINTAIN MIN. 18" VERTICAL SEPARATION BETWEEN WATER AND SEWER LINES.
2. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STD. BOARDS AND SPECIFICATIONS OF THE CITY OF MARSHALL, CALHOUN COUNTY AND MOEG.
3. ALL TRENCHES UNDER OR WITHIN THREE (3) FEET OR THE FORTY-FIVE (45) DEGREE ZONE OF INFLUENCE LINE OF EXISTING AND/OR PROPOSED PAVEMENT, BUILDING PAD OR DRIVE APPROACH SHALL BE BACKFILLED WITH SAND COMPACTED TO AT LEAST NINETY-FIVE (95) PERCENT OF MAXIMUM UNIT WEIGHT (ASTM D-1557). ALL OTHER TRENCHES TO BE COMPACTED TO 90% OR BETTER.
4. ALL TEES, BENDS, CONNECTIONS, ETC. ARE CONSIDERED INCIDENTAL TO THE JOB.
5. PHYSICAL CONNECTIONS SHALL NOT BE MADE BETWEEN EXISTING AND NEW WATER MAINS UNIL TESTING IS SATISFACTORILY COMPLETED.
6. MAINTAIN 10' HORIZONTAL CLEARANCE BETWEEN OUTER EDGE OF WATER MAIN AND ANY SANITARY SEWER OR STRUCTURE.
7. ALL WATER MAIN SHALL BE DUCTILE IRON CLASS 52 OR PVC C-900.
8. REFER TO CITY OF MARSHALL STANDARD SPECIFICATIONS AND DETAILS FOR WATER MAIN CONSTRUCTION FOR ADDITIONAL INFORMATION.

1. ALL WORKSHIPMAN AND MATERIALS SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE CITY OF MARSHALL, CALHOUN COUNTY AND MDEQ.
2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY AND/OR OBTAIN ANY INFORMATION NECESSARY REGARDING THE PRESENCE OF UNDERGROUND UTILITIES WHICH MIGHT AFFECT THIS JOB.
3. ALL TRENCHES UNDER OR WITHIN THE 45' ZONE OF INFLUENCE LINE OR 5 FEET OF EXISTING AND/OR PROPOSED PAVEMENT SHALL BE BACKFILLED WITH SAND AND COMPACTED TO 95% OF MAXIMUM DENSITY PER ASTM D-1557.
4. ALL SEWERS SHALL BE PLACED ON MIN. 4" SAND OR GRAVEL BEDDING WHICH SHALL EXTEND TO MIN. 12" OVER TOP OF THE PIPE AND SHALL BE COMPACTED IN MIN. 6" LAYERS.
5. A MINIMUM OF 18" OF CLEARANCE MUST BE MAINTAINED AT ALL CROSSINGS BETWEEN SANITARY, WATER MAIN AND STORM SEWER, UNLESS PROVIDED WITH A CONCRETE CRADLE.
6. NO SANITARY SEWER INSTALLATION OR PORTION THEREOF SHALL HAVE INFILTRATION EXCEEDING 200 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOUR PERIOD. JOINTS FOR P.V.C. SOLID WOOD OR TRUSS PIPE SHALL BE ELASTOMETRIC (RUBBER GASKET) MEETING A.S.T.M. D-3212.
7. SANITARY SEWER MAIN AND LEADS 8" DIAMETER & SMALLER SHALL BE CONSTRUCTED OF P.V.C. SOLID WOOD PIPE CONFORMING TO ASTM D-3034, SDR 35.
8. SEE CITY OF MARSHALL STANDARD SPECIFICATIONS & DETAILS FOR ADDITIONAL INFORMATION.



1. TREE PROTECTION WILL BE ERRECTED PRIOR TO START OF CONSTRUCTION ACTIVITIES, AND SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE.
2. NO PERSON MAY CONDUCT ANY ACTIVITY WITHIN THE DRIP LINE OF ANY TREE DESIGNATED TO REMAIN; INCLUDING, BUT NOT LIMITED TO PLACING SOLVENTS, BUILDING MATERIAL, CONSTRUCTION EQUIPMENT, OR SOIL DEPOSITS WITHIN DRIP LINES.
3. GRADE CHANGES MAY NOT OCCUR WITHIN THE DRIP LINE OF PROTECTED TREES.
4. DURING CONSTRUCTION, NO PERSON SHALL ATTACH ANY DEVICE OR WIRE TO ANY REMAINING TREE.
5. ALL UTILITY SERVICE REQUEST MUST INCLUDE NOTIFICATION TO THE INSTALLER THAT PROTECTED TREES MUST BE AVOIDED, ALL TRENCHING SHALL OCCUR OUTSIDE OF THE PROTECTIVE FENCING.
6. IF TREE PROTECTION CANNOT BE MAINTAINED FOR A TREE THROUGHOUT THE CONSTRUCTION PERIOD, REPLACEMENT OF THAT TREE MAY BE REQUIRED PRIOR TO THE ISSUANCE OF THE "CERTIFICATE OF OCCUPANCY."
7. REGULATED TREES LOCATED ON ADJACENT PROPERTY THAT MAY BE AFFECTED BY CONSTRUCTION ACTIVITIES MUST BE PROTECTED.

[illegible]

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NOTES + DETAILS									
343 MULBERRY - DELTA ONE									
T2S, R6W, EAST 1/2 SECTION 26, CITY OF MARSHALL, CALHOUN COUNTY, MI									
DES	TSS	DN	TSS	SUR	AMP	P.M	TSS		
VELOC2020	PROJECTS2020-003	343	MULBERRY -	DELTA ONE -	MARSHALL-XNUMX	C25VC-61	NOTES + DE		

ORIGINAL ISSUE DATE: 5/24/2021
Project No. 2020-003
SCALE: 1" = 30'
DRAWING NUMBER: C-6.1



- ## TEMPORARY CONSTRUCTION ACCESS DETAIL

C-6.2

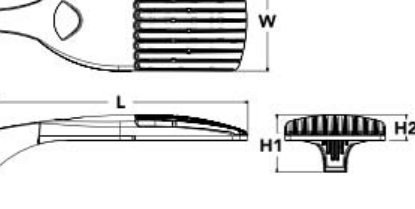




D-Series Size 1
LED Area Luminaire

Specifications

EPH: 120 lm/ft²
Length: 12' 0" (3.05m)
Width: 12' 0" (3.05m)
Height H1: 7-1/2" (190mm)
Height H2: 3-1/2" (90mm)
Weight (each): 27 lbs (12kg)



Introduction

The modern styling of the D-Series is striking yet unobtrusive - making a bold, progressive statement even as it blends seamlessly with its environment. The D-Series distills the benefits of the latest in LED technology into a high performance, high efficiency, long-life luminaire. The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. It is ideal for replacing up to 750W metal halide in pedestrian and area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

Ordering Information

EXAMPLE: DSX1 LED P7 40K T3M MVOLT SPA NLTAR2 PIRIN DBBXX

Series	LEDs	Color Temperature	Distribution	Package	Mounting
DSX1 LED	Forward optics P1 P4 P7 P2 P5 P8 P3 P6 P9	30K 5000K 40K 4000K 50K 5000K	T15 Type I short T25 Type I short T35 Type I short T45 Type I short T55 Type I short T65 Type I short T75 Type I short T85 Type I short T95 Type I short T105 Type I short T115 Type I short T125 Type I short T135 Type I short T145 Type I short T155 Type I short T165 Type I short T175 Type I short T185 Type I short T195 Type I short T205 Type I short T215 Type I short T225 Type I short T235 Type I short T245 Type I short T255 Type I short T265 Type I short T275 Type I short T285 Type I short T295 Type I short T305 Type I short T315 Type I short T325 Type I short T335 Type I short T345 Type I short T355 Type I short T365 Type I short T375 Type I short T385 Type I short T395 Type I short T405 Type I short T415 Type I short T425 Type I short T435 Type I short T445 Type I short T455 Type I short T465 Type I short T475 Type I short T485 Type I short T495 Type I short T505 Type I short T515 Type I short T525 Type I short T535 Type I short T545 Type I short T555 Type I short T565 Type I short T575 Type I short T585 Type I short T595 Type I short T605 Type I short T615 Type I short T625 Type I short T635 Type I short T645 Type I short T655 Type I short T665 Type I short T675 Type I short T685 Type I short T695 Type I short T705 Type I short T715 Type I short T725 Type I short T735 Type I short T745 Type I short T755 Type I short T765 Type I short T775 Type I short T785 Type I short T795 Type I short T805 Type I short T815 Type I short T825 Type I short T835 Type I short T845 Type I short T855 Type I short T865 Type I short T875 Type I short T885 Type I short T895 Type I short T905 Type I short T915 Type I short T925 Type I short T935 Type I short T945 Type I short T955 Type I short T965 Type I short T975 Type I short T985 Type I short T995 Type I short	WOL1 WOL2 WOL3 WOL4 WOL5 WOL6 WOL7 WOL8 WOL9 WOL10 WOL11 WOL12 WOL13 WOL14 WOL15 WOL16 WOL17 WOL18 WOL19 WOL20 WOL21 WOL22 WOL23 WOL24 WOL25 WOL26 WOL27 WOL28 WOL29 WOL30 WOL31 WOL32 WOL33 WOL34 WOL35 WOL36 WOL37 WOL38 WOL39 WOL40 WOL41 WOL42 WOL43 WOL44 WOL45 WOL46 WOL47 WOL48 WOL49 WOL50 WOL51 WOL52 WOL53 WOL54 WOL55 WOL56 WOL57 WOL58 WOL59 WOL60 WOL61 WOL62 WOL63 WOL64 WOL65 WOL66 WOL67 WOL68 WOL69 WOL70 WOL71 WOL72 WOL73 WOL74 WOL75 WOL76 WOL77 WOL78 WOL79 WOL80 WOL81 WOL82 WOL83 WOL84 WOL85 WOL86 WOL87 WOL88 WOL89 WOL90 WOL91 WOL92 WOL93 WOL94 WOL95 WOL96 WOL97 WOL98 WOL99 WOL100	

Control options

Shipped installed

SH1 SH2 SH3 SH4 SH5 SH6 SH7 SH8 SH9 SH10 SH11 SH12 SH13 SH14 SH15 SH16 SH17 SH18 SH19 SH20 SH21 SH22 SH23 SH24 SH25 SH26 SH27 SH28 SH29 SH30 SH31 SH32 SH33 SH34 SH35 SH36 SH37 SH38 SH39 SH40 SH41 SH42 SH43 SH44 SH45 SH46 SH47 SH48 SH49 SH50 SH51 SH52 SH53 SH54 SH55 SH56 SH57 SH58 SH59 SH60 SH61 SH62 SH63 SH64 SH65 SH66 SH67 SH68 SH69 SH70 SH71 SH72 SH73 SH74 SH75 SH76 SH77 SH78 SH79 SH80 SH81 SH82 SH83 SH84 SH85 SH86 SH87 SH88 SH89 SH90 SH91 SH92 SH93 SH94 SH95 SH96 SH97 SH98 SH99 SH100

Other options

OS1 OS2 OS3 OS4 OS5 OS6 OS7 OS8 OS9 OS10 OS11 OS12 OS13 OS14 OS15 OS16 OS17 OS18 OS19 OS20 OS21 OS22 OS23 OS24 OS25 OS26 OS27 OS28 OS29 OS30 OS31 OS32 OS33 OS34 OS35 OS36 OS37 OS38 OS39 OS40 OS41 OS42 OS43 OS44 OS45 OS46 OS47 OS48 OS49 OS50 OS51 OS52 OS53 OS54 OS55 OS56 OS57 OS58 OS59 OS60 OS61 OS62 OS63 OS64 OS65 OS66 OS67 OS68 OS69 OS70 OS71 OS72 OS73 OS74 OS75 OS76 OS77 OS78 OS79 OS80 OS81 OS82 OS83 OS84 OS85 OS86 OS87 OS88 OS89 OS90 OS91 OS92 OS93 OS94 OS95 OS96 OS97 OS98 OS99 OS100

Shipped separately

SS1 SS2 SS3 SS4 SS5 SS6 SS7 SS8 SS9 SS10 SS11 SS12 SS13 SS14 SS15 SS16 SS17 SS18 SS19 SS20 SS21 SS22 SS23 SS24 SS25 SS26 SS27 SS28 SS29 SS30 SS31 SS32 SS33 SS34 SS35 SS36 SS37 SS38 SS39 SS40 SS41 SS42 SS43 SS44 SS45 SS46 SS47 SS48 SS49 SS50 SS51 SS52 SS53 SS54 SS55 SS56 SS57 SS58 SS59 SS60 SS61 SS62 SS63 SS64 SS65 SS66 SS67 SS68 SS69 SS70 SS71 SS72 SS73 SS74 SS75 SS76 SS77 SS78 SS79 SS80 SS81 SS82 SS83 SS84 SS85 SS86 SS87 SS88 SS89 SS90 SS91 SS92 SS93 SS94 SS95 SS96 SS97 SS98 SS99 SS100

Ordering Information

EXAMPLE: DSX1 LED P7 40K T3M MVOLT SPA NLTAR2 PIRIN DBBXX

Series	LEDs	Color Temperature	Distribution	Package	Mounting
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Control options

Shipped installed

SH1 SH2 SH3 SH4 SH5 SH6 SH7 SH8 SH9 SH10 SH11 SH12 SH13 SH14 SH15 SH16 SH17 SH18 SH19 SH20 SH21 SH22 SH23 SH24 SH25 SH26 SH27 SH28 SH29 SH30 SH31 SH32 SH33 SH34 SH35 SH36 SH37 SH38 SH39 SH40 SH41 SH42 SH43 SH44 SH45 SH46 SH47 SH48 SH49 SH50 SH51 SH52 SH53 SH54 SH55 SH56 SH57 SH58 SH59 SH60 SH61 SH62 SH63 SH64 SH65 SH66 SH67 SH68 SH69 SH70 SH71 SH72 SH73 SH74 SH75 SH76 SH77 SH78 SH79 SH80 SH81 SH82 SH83 SH84 SH85 SH86 SH87 SH88 SH89 SH90 SH91 SH92 SH93 SH94 SH95 SH96 SH97 SH98 SH99 SH100

Other options

OS1 OS2 OS3 OS4 OS5 OS6 OS7 OS8 OS9 OS10 OS11 OS12 OS13 OS14 OS15 OS16 OS17 OS18 OS19 OS20 OS21 OS22 OS23 OS24 OS25 OS26 OS27 OS28 OS29 OS30 OS31 OS32 OS33 OS34 OS35 OS36 OS37 OS38 OS39 OS40 OS41 OS42 OS43 OS44 OS45 OS46 OS47 OS48 OS49 OS50 OS51 OS52 OS53 OS54 OS55 OS56 OS57 OS58 OS59 OS60 OS61 OS62 OS63 OS64 OS65 OS66 OS67 OS68 OS69 OS70 OS71 OS72 OS73 OS74 OS75 OS76 OS77 OS78 OS79 OS80 OS81 OS82 OS83 OS84 OS85 OS86 OS87 OS88 OS89 OS90 OS91 OS92 OS93 OS94 OS95 OS96 OS97 OS98 OS99 OS100

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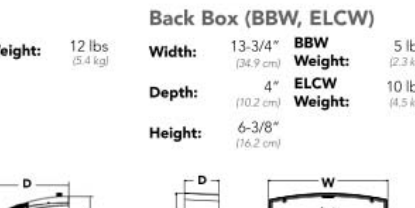
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D-Series Size 1
LED Wall Luminaire

Specifications

EPH: 120 lm/ft²
Length: 12' 0" (3.05m)
Width: 12' 0" (3.05m)
Height H1: 7-1/2" (190mm)
Height H2: 3-1/2" (90mm)
Weight (each): 27 lbs (12kg)



Introduction

The D-Series Wall Luminaire is a stylish, fully integrated LED solution for building-mount applications. It features a sleek, modern design and is carefully engineered to provide long-lasting, energy-efficient lighting with a variety of optical and control options for customized performance. With an expected service life of over 20 years of nighttime use and up to 74% in energy savings over comparable 250W metal halide luminaires, the D-Series Wall is a reliable, low-maintenance lighting solution that produces sites that are exceptionally illuminated.

Ordering Information

EXAMPLE: DSX1 LED P7 40K T3M MVOLT DBBXX

Series	LEDs	Color Temperature	Distribution	Package	Mounting
DSX1 LED	Forward optics P1 P4 P7 P2 P5 P8 P3 P6 P9	30K 5000K 40K 4000K 50K 5000K	T15 Type I short T25 Type I short T35 Type I short T45 Type I short T55 Type I short T65 Type I short T75 Type I short T85 Type I short T95 Type I short T105 Type I short T115 Type I short T125 Type I short T135 Type I short T145 Type I short T155 Type I short T165 Type I short T175 Type I short T185 Type I short T195 Type I short T205 Type I short T215 Type I short T225 Type I short T235 Type I short T245 Type I short T255 Type I short T265 Type I short T275 Type I short T285 Type I short T295 Type I short T305 Type I short T315 Type I short T325 Type I short T335 Type I short T345 Type I short T355 Type I short T365 Type I short T375 Type I short T385 Type I short T395 Type I short T405 Type I short T415 Type I short T425 Type I short T435 Type I short T445 Type I short T455 Type I short T465 Type I short T475 Type I short T485 Type I short T495 Type I short T505 Type I short T515 Type I short T525 Type I short T535 Type I short T545 Type I short T555 Type I short T565 Type I short T575 Type I short T585 Type I short T595 Type I short T605 Type I short T615 Type I short T625 Type I short T635 Type I short T645 Type I short T655 Type I short T665 Type I short T675 Type I short T685 Type I short T695 Type I short T705 Type I short T715 Type I short T725 Type I short T735 Type I short T745 Type I short T755 Type I short T765 Type I short T775 Type I short T785 Type I short T795 Type I short T805 Type I short T815 Type I short T825 Type I short T835 Type I short T845 Type I short T855 Type I short T865 Type I short T875 Type I short T885 Type I short T895 Type I short T905 Type I short T915 Type I short T925 Type I short T935 Type I short T945 Type I short T955 Type I short T965 Type I short T975 Type I short T985 Type I short T995 Type I short	WOL1 WOL2 WOL3 WOL4 WOL5 WOL6 WOL7 WOL8 WOL9 WOL10 WOL11 WOL12 WOL13 WOL14 WOL15 WOL16 WOL17 WOL18 WOL19 WOL20 WOL21 WOL22 WOL23 WOL24 WOL25 WOL26 WOL27 WOL28 WOL29 WOL30 WOL31 WOL32 WOL33 WOL34 WOL35 WOL36 WOL37 WOL38 WOL39 WOL40 WOL41 WOL42 WOL43 WOL44 WOL45 WOL46 WOL47 WOL48 WOL49 WOL50 WOL51 WOL52 WOL53 WOL54 WOL55 WOL56 WOL57 WOL58 WOL59 WOL60 WOL61 WOL62 WOL63 WOL64 WOL65 WOL66 WOL67 WOL68 WOL69 WOL70 WOL71 WOL72 WOL73 WOL74 WOL75 WOL76 WOL77 WOL78 WOL79 WOL80 WOL81 WOL82 WOL83 WOL84 WOL85 WOL86 WOL87 WOL88 WOL89 WOL90 WOL91 WOL92 WOL93 WOL94 WOL95 WOL96 WOL97 WOL98 WOL99 WOL100	

Control options

Shipped installed

SH1 SH2 SH3 SH4 SH5 SH6 SH7 SH8 SH9 SH10 SH11 SH12 SH13 SH14 SH15 SH16 SH17 SH18 SH19 SH20 SH21 SH22 SH23 SH24 SH25 SH26 SH27 SH28 SH29 SH30 SH31 SH32 SH33 SH34 SH35 SH36 SH37 SH38 SH39 SH40 SH41 SH42 SH43 SH44 SH45 SH46 SH47 SH48 SH49 SH50 SH51 SH52 SH53 SH54 SH55 SH56 SH57 SH58 SH59 SH60 SH61 SH62 SH63 SH64 SH65 SH66 SH67 SH68 SH69 SH70 SH71 SH72 SH73 SH74 SH75 SH76 SH77 SH78 SH79 SH80 SH81 SH82 SH83 SH84 SH85 SH86 SH87 SH88 SH89 SH90 SH91 SH92 SH93 SH94 SH95 SH96 SH97 SH98 SH99 SH100

Other options

OS1 OS2 OS3 OS4 OS5 OS6 OS7 OS8 OS9 OS10 OS11 OS12 OS13 OS14 OS15 OS16 OS17 OS18 OS19 OS20 OS21 OS22 OS23 OS24 OS25 OS26 OS27 OS28 OS29 OS30 OS31 OS32 OS33 OS34 OS35 OS36 OS37 OS38 OS39 OS40 OS41 OS42 OS43 OS44 OS45 OS46 OS47 OS48 OS49 OS50 OS51 OS52 OS53 OS54 OS55 OS56 OS57 OS58 OS59 OS60 OS61 OS62 OS63 OS64 OS65 OS66 OS67 OS68 OS69 OS70 OS71 OS72 OS73 OS74 OS75 OS76 OS77 OS78 OS79 OS80 OS81 OS82 OS83 OS84 OS85 OS86 OS87 OS88 OS89 OS90 OS91 OS92 OS93 OS94 OS95 OS96 OS97 OS98 OS99 OS100

Shipped separately

SS1 SS2 SS3 SS4 SS5 SS6 SS7 SS8 SS9 SS10 SS11 SS12 SS13 SS14 SS15 SS16 SS17 SS18 SS19 SS20 SS21 SS22 SS23 SS24 SS25 SS26 SS27 SS28 SS29 SS30 SS31 SS32 SS33 SS34 SS35 SS36 SS37 SS38 SS39 SS40 SS41 SS42 SS43 SS44 SS45 SS46 SS47 SS48 SS49 SS50 SS51 SS52 SS53 SS54 SS55 SS56 SS57 SS58 SS59 SS60 SS61 SS62 SS63 SS64 SS65 SS66 SS67 SS68 SS69 SS70 SS71 SS72 SS73 SS74 SS75 SS76 SS77 SS78 SS79 SS80 SS81 SS82 SS83 SS84 SS85 SS86 SS87 SS88 SS89 SS90 SS91 SS92 SS93 SS94 SS95 SS96 SS97 SS98 SS99 SS100

Statistics							
Description	Symbol	Avg	Max	Min	Max / Min	Avg / Min	Avg / Max
PARKING AND DRIVES	✕	1.2 fc	2.7 fc	0.4 fc	6.8:1	3.0:1	0.4:1
SITE	+	0.2 fc	2.8 fc	0.0 fc	N/A	N/A	0.1:1

General Note

- SEE SCHEDULE FOR LUMINAIRE MOUNTING HEIGHT.
- CALCULATIONS ARE SHOWN IN FOOTCANDLES AT: 0' - 0"
- LIGHTING ALTERNATES REQUIRE NEW PHOTOMETRIC CALCULATION AND RESUBMISSION TO CITY FOR APPROVAL.

THE ENGINEER AND/OR ARCHITECT MUST DETERMINE APPLICABILITY OF THE LAYOUT TO EXISTING / FUTURE FIELD CONDITIONS. THIS LIGHTING LAYOUT REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, AND OTHER VARIABLE FIELD CONDITIONS. MOUNTING HEIGHTS INDICATED ARE FROM GRADE AND/OR FLOOR UP.

THESE LIGHTING CALCULATIONS ARE NOT A SUBSTITUTE FOR INDEPENDENT ENGINEERING ANALYSIS OF LIGHTING SYSTEM SUITABILITY AND SAFETY. THE ENGINEER AND/OR ARCHITECT IS RESPONSIBLE TO REVIEW FOR MICHIGAN ENERGY CODE AND LIGHTING QUALITY COMPLIANCE.

UNLESS EXEMPT, PROJECT MUST COMPLY WITH LIGHTING CONTROLS REQUIRMENTS DEFINED IN ASHRAE 90.1 2013. FOR SPECIFIC INFORMATION CONTACT GBA CONTROLS GROUP AT ASG@GASSERBUSH.COM OR 734-266-6705.

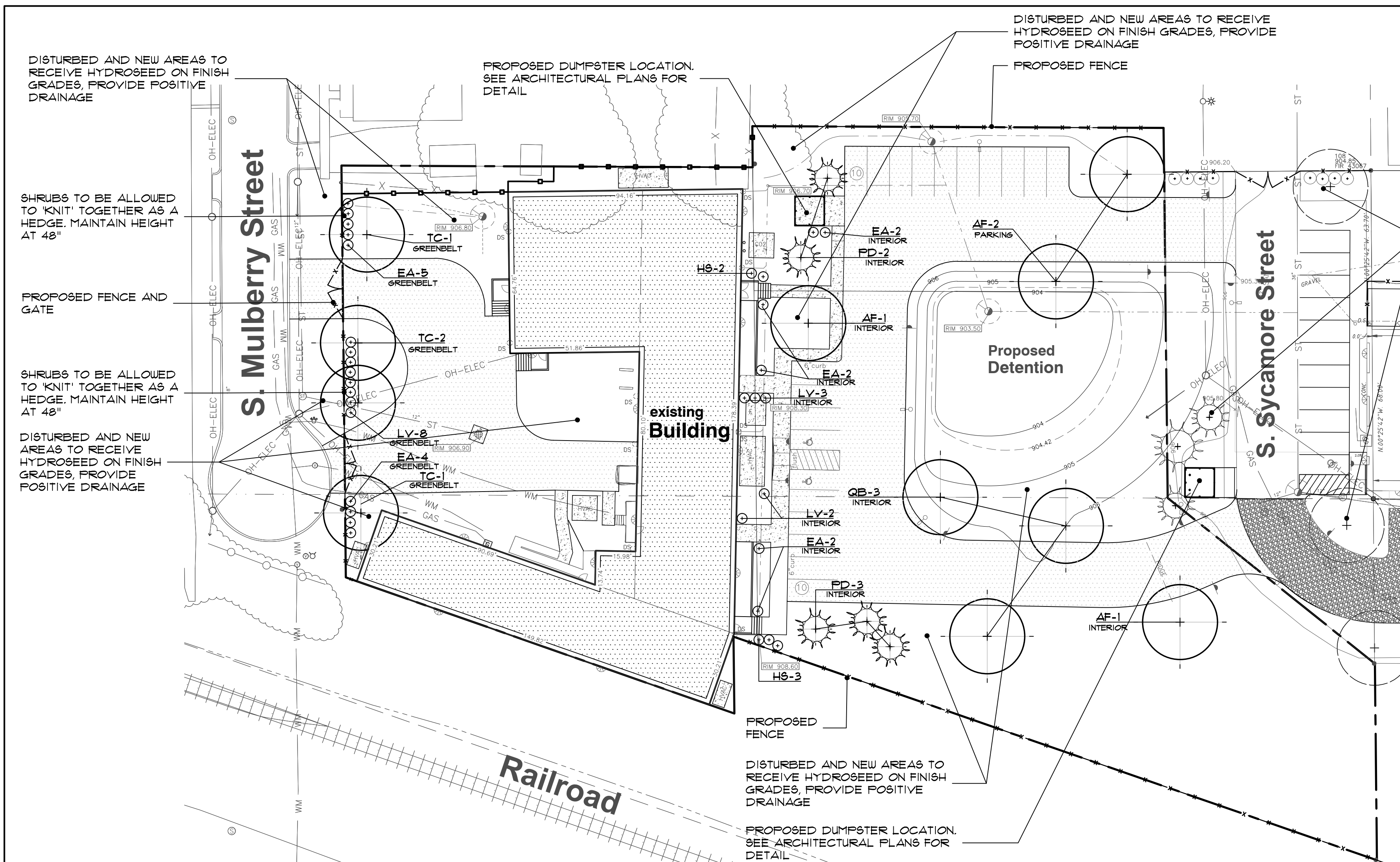
FOR ORDERING INQUIRIES CONTACT GASSER BUSH AT QUOTES@GASSERBUSH.COM OR 734-266-6705.

THIS DRAWING WAS GENERATED FROM AN ELECTRONIC IMAGE FOR ESTIMATION PURPOSE ONLY. LAYOUT TO BE VERIFIED IN FIELD BY OTHERS.

MOUNTING HEIGHT IS MEASURED FROM GRADE TO FACE OF FIXTURE. POLE HEIGHT SHOULD BE CALCULATED AS THE MOUNTING HEIGHT LESS BASE HEIGHT.

Schedule							
Symbol	Label	QTY	Manufacturer	Description	Lamp	Wattage	MH
✕	ASIN G	4	Lithonia Lighting	DSX1 LED	LED	70	18" ON 2' BASE
+	B	13	Lithonia Lighting	WDGE1	LED	10.0002	15'

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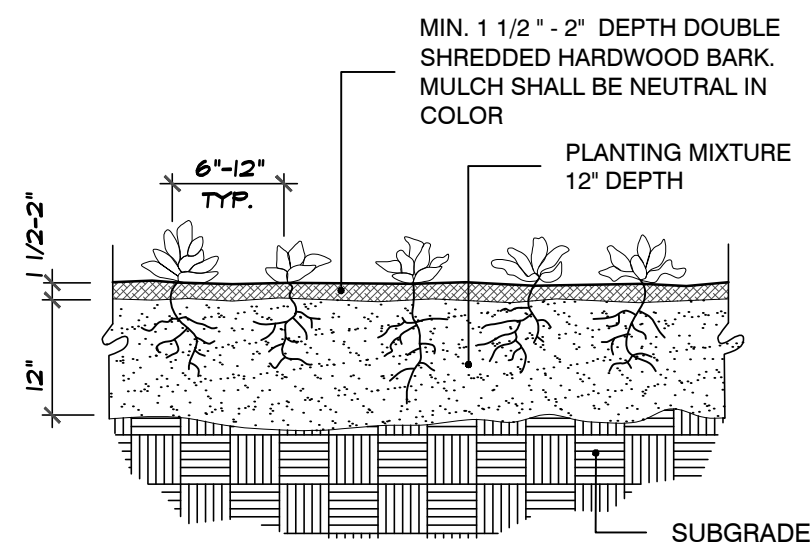


landscape planting detail

SCALE: 1"=30'-0"

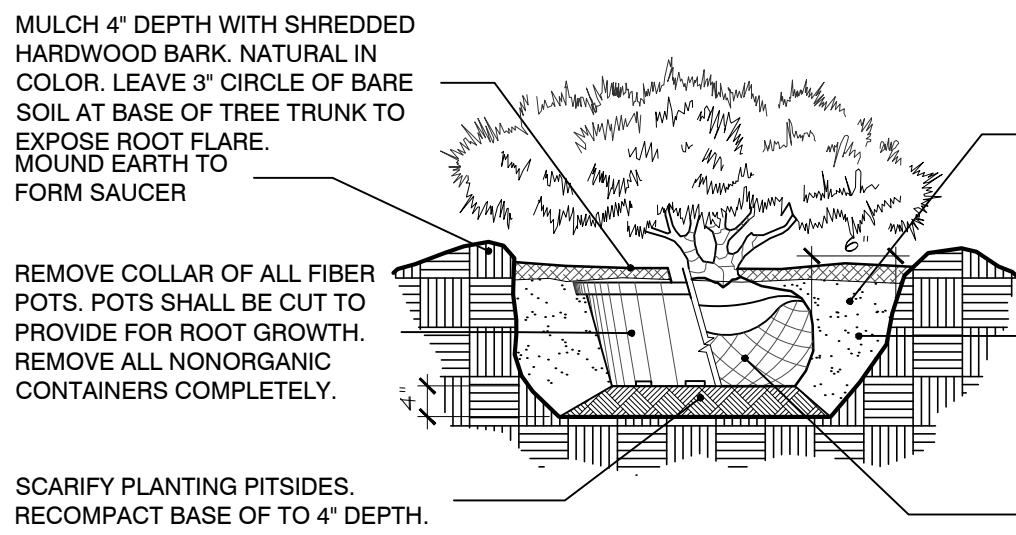
plant material list

key	quant. LS-1	botanical name	common name	size	comments
		TREES			
TC	4	TILIA CORDATA 'GREENSPIRE'	GREENSPIRE LINDEN	2 1/2" BB	GREENBELT
AF	3	ACER X FREEMANII 'JEFFERS RED'	AUTUMN BLAZE RED MAPLE	2 1/2" BB	INTERIOR/PARKING
QB	3	QUERUS BI-COLOR	WHITE SWAMP OAK	2 1/2" BB	INTERIOR
PD	5	PICEA GLAUCO 'DENSATA'	BLACKHILLS SPRUCE	8' BB	INTERIOR
		SHRUBS			
EA	15	EVONYMUS ALATA COMPACTA	DWARF WINGED BURNING BUSH	5' CONT.	GREENBELT
LV	13	LIGUSTRUM X VICARYI	GOLDEN VICARY PRIVET	5' CONT.	INTERIOR
H9	5	HIBISCUS SYRIACUS 'APHRODITE'	APHRODITE ROSE OF SHARON	5' CONT.	INTERIOR



perennial planting detail

no scale



shrub planting detail

no scale

NOTE:
1. SHRUB SHALL BEAR SAME RELATION TO FINISH GRADE AS IT BORE ORIGINALLY OR SLIGHTLY HIGHER THAN FINISH GRADE UP TO 4" ABOVE GRADE. IF DIRECTED BY LANDSCAPE ARCHITECT FOR HEAVY CLAY SOIL AREAS.
2. PRUNE ONLY DEAD OR BROKEN BRANCHES.
3. REMOVE ALL TAGS, STRING, PLASTICS AND OTHER MATERIALS

PLANTING MIXTURE:
AMEND SOILS PER SITE CONDITIONS AND REQUIREMENTS OF THE PLANT MATERIAL.

REMOVE ALL NON-BIODEGRADABLE MATERIALS COMPLETELY FROM THE ROOTBALL. CUT AND REMOVE WIRE BASKET AND BURLAP FROM TOP HALF OF THE ROOTBALL.

STAKE TREES AT FIRST BRANCH USING 2'-3" WIDE BELT-LIKE NYLON OR PLASTIC STRAPS. ALLOW FOR SOME MINIMAL FLEXING OF THE TREE. REMOVE AFTER ONE YEAR.

2" X 2" HARDWOOD STAKES, MIN. 36" ABOVE GROUND FOR UPRIGHT, 18" IF ANGLED. DRIVE STAKES A MIN. 18" INTO UNDISTURBED GROUND OUTSIDE ROOTBALL. REMOVE AFTER ONE YEAR.

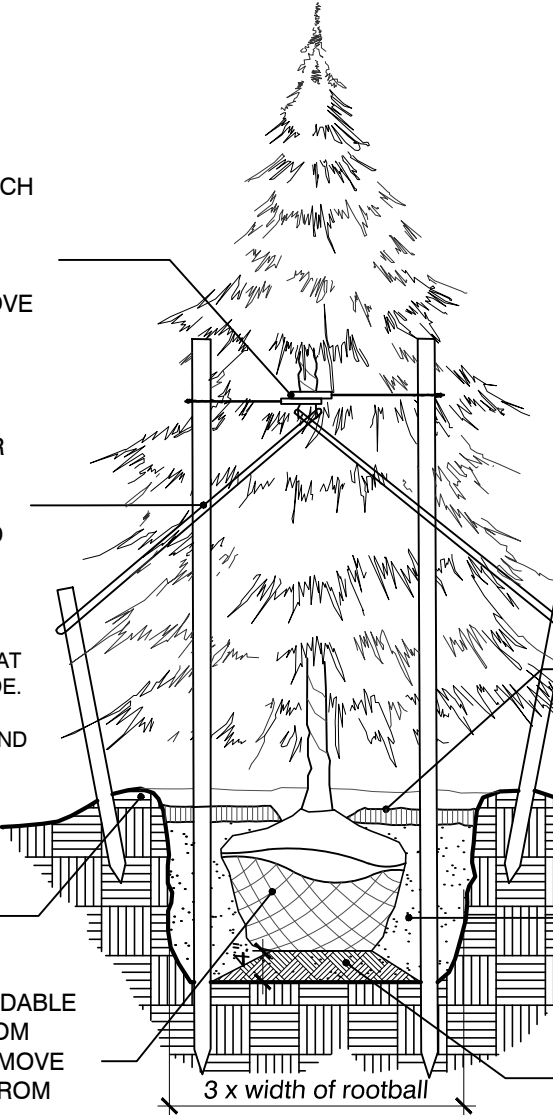
PLANT TREE SO ROOT FLARE IS AT OR ABOVE SURROUNDING GRADE. REMOVE ROOT BALL DIRT TO EXPOSE FLARE IF NECESSARY AND CUT ANY GIRDLING ROOTS.

MOUND EARTH TO FORM SAUCER

REMOVE ALL NON-BIODEGRADABLE MATERIALS COMPLETELY FROM THE ROOTBALL. CUT AND REMOVE WIRE BASKET AND BURLAP FROM TOP HALF OF THE ROOTBALL.

evergreen planting detail

no scale



NOTE:
1. EVERGREEN TREE SHALL BEAR SAME RELATION TO FINISH GRADE AS IT BORE ORIGINALLY OR SLIGHTLY HIGHER THAN FINISH GRADE UP TO 6" ABOVE GRADE. IF DIRECTED BY LANDSCAPE ARCHITECT FOR HEAVY CLAY SOIL AREAS.
2. DO NOT PRUNE TERMINAL LEADER. PRUNE ONLY DEAD OR BROKEN BRANCHES.
3. REMOVE ALL TAGS, STRING, PLASTICS ETC.
4. GUY EVERGREEN TREES ABOVE 12' HEIGHT. STAKE EVERGREEN TREE BELOW 12' HEIGHT.

MULCH 4" DEPTH WITH SHREDDED HARDWOOD BARK. NATURAL IN COLOR. LEAVE 3" CIRCLE OF BARE SOIL AT BASE OF TREE TRUNK TO EXPOSE ROOT FLARE.

PLANTING MIXTURE:
AMEND SOILS PER SITE CONDITIONS AND REQUIREMENTS OF THE PLANT MATERIAL.

SCARIFY PLANTING PIT SIDES. RECOMPACT BASE OF TO 4" DEPTH.

interior landscape

TOTAL SQFT. OF PROPERTY 81661±

INTERIOR LANDSCAPE (5% OF PROPERTY)
(81661 x 5% = 4,083 SQFT.)

	REQUIRED	PROVIDED
ONE (1) DECIDUOUS/ORNAMENTAL/EVERGREEN TREE PER 400 SQFT. (4,083 SQFT. / 400 SQFT. = 10 TREES)	10	10

	REQUIRED	PROVIDED
ONE (1) SHRUB PER 250 SQFT. (4,083 SQFT. / 250 SQFT.) = 16 SHRUBS	16	16

STAKE TREES AT FIRST BRANCH USING 2'-3" WIDE BELT-LIKE NYLON OR PLASTIC STRAPS. ALLOW FOR SOME MINIMAL FLEXING OF THE TREE. REMOVE AFTER ONE YEAR.

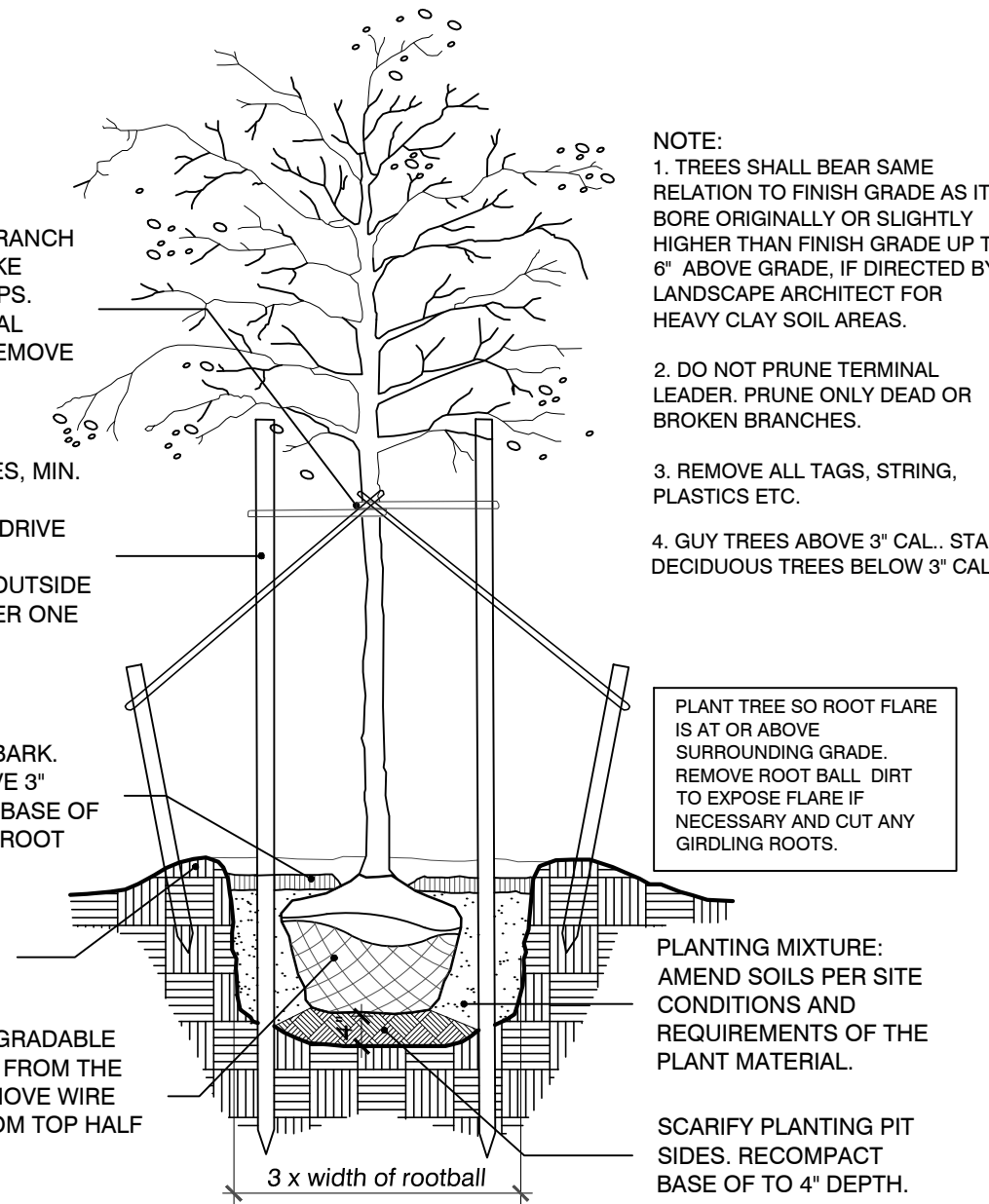
2" X 2" HARDWOOD STAKES, MIN. 36" ABOVE GROUND FOR UPRIGHT, 18" IF ANGLED. DRIVE STAKES A MIN. 18" INTO UNDISTURBED GROUND OUTSIDE ROOTBALL. REMOVE AFTER ONE YEAR.

MULCH 4" DEPTH WITH SHREDDED HARDWOOD BARK. NATURAL IN COLOR. LEAVE 3" CIRCLE OF BARE SOIL AT BASE OF TREE TRUNK TO EXPOSE ROOT FLARE.

MOUND EARTH TO FORM SAUCER
REMOVE ALL NON-BIODEGRADABLE MATERIALS COMPLETELY FROM THE ROOTBALL. CUT AND REMOVE WIRE BASKET AND BURLAP FROM TOP HALF OF THE ROOTBALL.

tree planting detail

no scale



NOTE:
1. TREES SHALL BEAR SAME RELATION TO FINISH GRADE AS IT BORE ORIGINALLY OR SLIGHTLY HIGHER THAN FINISH GRADE UP TO 6" ABOVE GRADE. IF DIRECTED BY LANDSCAPE ARCHITECT FOR HEAVY CLAY SOIL AREAS.
2. DO NOT PRUNE TERMINAL LEADER. PRUNE ONLY DEAD OR BROKEN BRANCHES.
3. REMOVE ALL TAGS, STRING, PLASTICS ETC.
4. GUY TREES ABOVE 3' CAL. STAKE DECIDUOUS TREES BELOW 3' CAL.

PLANT TREE SO ROOT FLARE IS AT OR ABOVE SURROUNDING GRADE. REMOVE ROOT BALL DIRT TO EXPOSE FLARE IF NECESSARY AND CUT ANY GIRDLING ROOTS.

PLANTING MIXTURE:
AMEND SOILS PER SITE CONDITIONS AND REQUIREMENTS OF THE PLANT MATERIAL.

SCARIFY PLANTING PIT SIDES. RECOMPACT BASE OF TO 4" DEPTH.

landscape plan for:

Delta-One Mulberry St. City of Marshall, Michigan

LANDSCAPE PLANTINGS FROM ADJACENT PROPERTY

general landscape notes:

- LANDSCAPE CONTRACTOR SHALL VISIT THE SITE, INSPECT EXISTING CONDITIONS, REVIEW PROPOSED PLANTINGS AND RELATED WORK. CONTACT THE OWNER AND/OR LANDSCAPE ARCHITECT WITH ANY CONCERNS OR DISCREPANCY BETWEEN THE PLAN, PLANT MATERIAL LIST, AND/OR SITE CONDITIONS.
- PRIOR TO BEGINNING OF CONSTRUCTION ON ANY WORK, CONTRACTORS SHALL VERIFY LOCATIONS OF ALL ON SITE UTILITIES, GAS, ELECTRIC, TELEPHONE, CABLE TO BE LOCATED BY CONTACTING MISS DIG 1-800-482-7171. ANY DAMAGE OR INTERRUPTION OF SERVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. COORDINATE ALL RELATED WORK ACTIVITIES WITH OTHER TRADES AND REPORT ANY UNACCEPTABLE JOB CONDITIONS TO OWNER PRIOR TO COMMENCING.
- NUMERICAL VALUE ON THE LANDSCAPE QUANTITIES SPECIFIED ON THE PLAN TAKE PRECEDENCE OVER GRAPHIC REPRESENTATION. VERIFY ANY CONCERN-DISCREPANCY WITH LANDSCAPE ARCHITECT.
- ALL CONSTRUCTION AND PLANT MATERIAL LOCATION TO BE ADJUSTED ON SITE IF NECESSARY.
- ALL SUBSTITUTIONS OR DEVIATIONS FROM THE LANDSCAPE PLAN MUST BE APPROVED BY CITY OF MARSHALL, AND LANDSCAPE ARCHITECT.
- ALL LARGE TREES AND EVERGREENS TO BE STAKED, GUYED AND WRAPPED AS DETAILED, SHOWN ON PLAN.
- PLANT BEDS TO BE DRESSED WITH MIN. 4" OF FINELY DOUBLE SHREDDED HARD BARK MULCH.
- DIG SHRUB FITS 1' LARGER THAN SHRUB ROOT BALLS AND TREE FITS 2' LARGER THAN ROOT BALL. BACK FILL WITH ONE PART TOP SOIL AND ONE PART SOIL FROM EXCAVATED PLANTING HOLE.
- NATURAL COLOR, FINELY SHREDDED HARDWOOD BARK MULCH REQUIRED FOR ALL PLANTINGS.
- REMOVE ALL TWINE, WIRE AND BURLAP FROM TREE AND SHRUB. EARTH BALLS, AND FROM TREE TRUNKS, 4" THICK BARK MULCH FOR TREES IN 4" DIA. CIRCLE WITH 3" PULLED AWAY FROM TRUNK. 4" THICK BARK MULCH FOR SHRUBS AND 4" THICK BARK MULCH FOR PERENNIALS.
- PLANT MATERIAL QUALITY & INSTALLATION SHALL BE IN ACCORDANCE WITH THE CURRENT AMERICAN ASSOCIATION OF NURSERYMEN LANDSCAPE STANDARDS.
- PROVIDE PEAT SOD FOR ALL NEW AND DISTURBED LAWN AREAS UNLESS NOTED OTHERWISE.
- ALL PLANTING AREAS TO BE PREPARED WITH APPROPRIATE SOIL MIXTURES AND FERTILIZER BEFORE PLANT INSTALLATION.
- PLANT TREES AND SHRUBS GENERALLY NO CLOSER THAN THE FOLLOWING DISTANCES FROM SIDEWALKS, CURBS AND PARKING STALLS:
 - SHADE TREES 5 FT.
 - ORNAMENTAL AND EVERGREEN TREES 10 FT.
 - SHRUBS THAT ARE LESS THAN 1 FOOT TALL AND WIDE AT MATURITY 2 FT.

landscape requirements:

greenbelt landscape

TOTAL LF. OF S. MULBERRY ST. FRONTAGE 168'

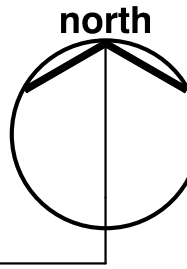
	REQUIRED	PROVIDED
ONE (1) DECIDUOUS OR EVERGREEN TREE PER 40 LF. (168 LF. / 40 LF. = 4.2 TREES)	4	4
FOUR (4) SHRUBS PER 40 LF. (168 LF. / 40 LF. = 4.2 X 4 = 16.8 SHRUBS)	17	17

parking

TOTAL NO. OF PARKING SPACES PROVIDED 20

	REQUIRED	PROVIDED
ONE (1) DECIDUOUS TREE PER 10-SPACES (20 SPACES / 10-SPACES = 2 TREES)	2	2

scale: 0' 10' 20' 40' 60'
1" = 20'-0"



FP A
FELINO A. PASCUAL
and ASSOCIATES
Community Land Planner and
registered Landscape Architect
24333 Orchard Lake Rd, Suite G
Farmington Hills, MI 48336
ph. (248) 557-5588
fax. (248) 557-5416

seal:



client:

DELTA ONE

150 W. 2nd Street
Suite 250
Royal Oak, Michigan
48067

project:

DELTA ONE

343 MULBERRY

project location:

343 Mulberry
City of Marshall,
Michigan

sheet title:

LANDSCAPE

PLAN

job no./issue/revision date:

LS20.095.11 SPA 11/24/2020

LS20.095.12 CITY 1/5/2021

COMMENTS

drawn by:

JP, PH

checked by:

FP

date:

11-27-2020

notice:

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Do Not scale drawings. Use figured dimensions only



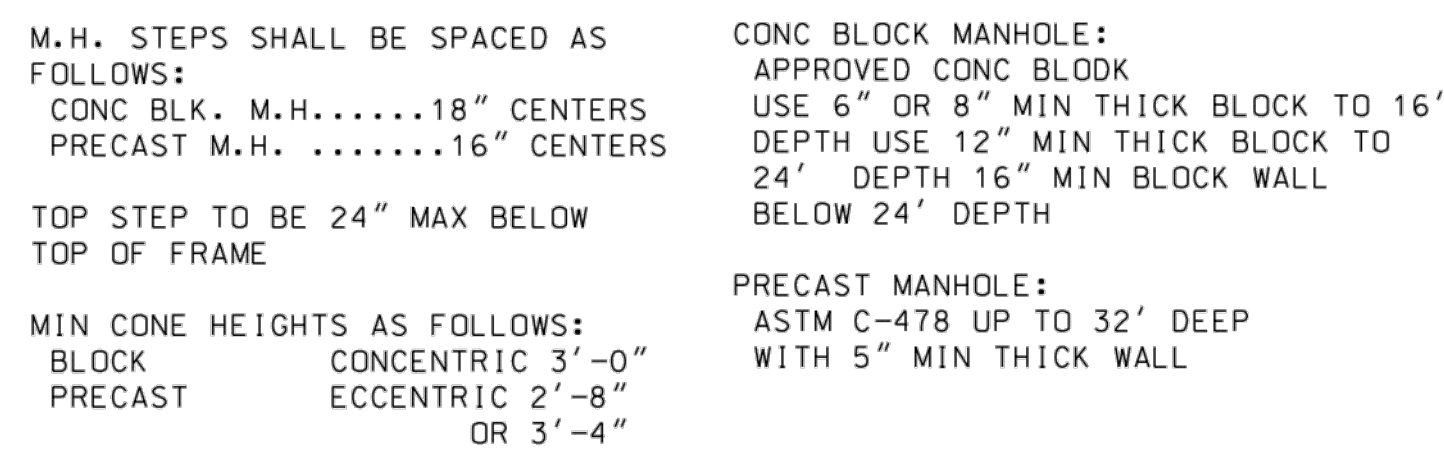
The location and elevations of existing underground utilities as shown on this drawing are only approximate. no guarantee is either expressed or implied as to the completeness of accuracy. contractor shall be exclusively responsible for determining the exact location and elevation prior to the start of construction

project no:

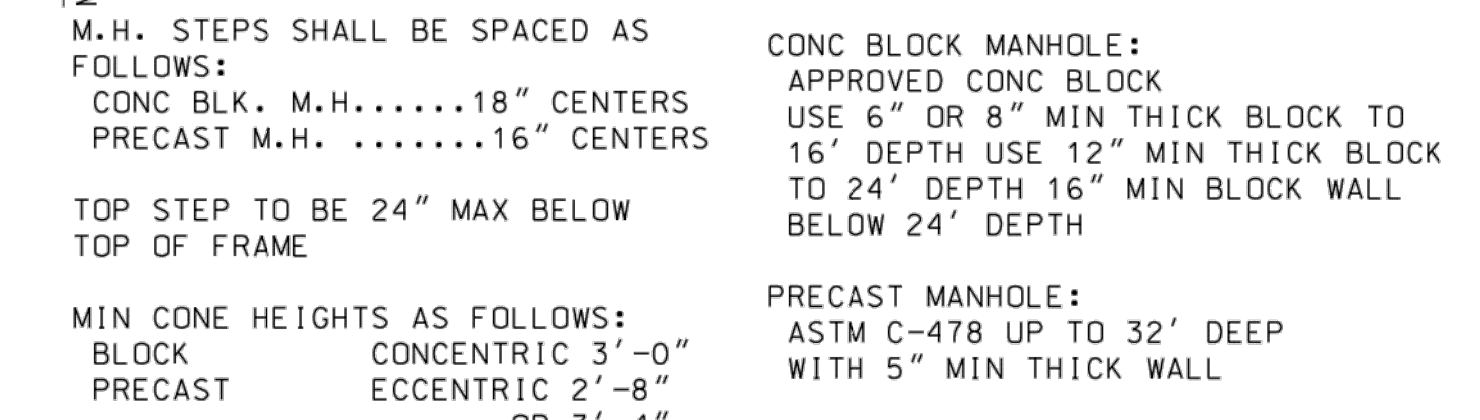
LS20.095.11

sheet no:

LS-1



NOT TO SCALE



NOT TO SCALE

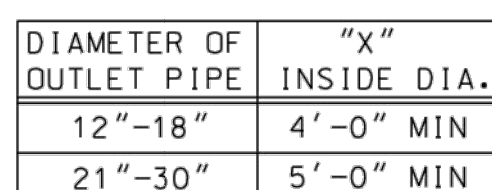


-
- Diagram illustrating the cross-section of a storm sewer installation, showing the structure and bedding details. The diagram includes the following components and dimensions:
- SEE STORM SEWER NOTES** (Pointing to the top of the structure)
 - 1-3 BRICK COURSES FOR FUTURE ADJUSTMENT** (Pointing to the top brick courses)
 - PLASTER COAT ENTIRE BLOCK STRUCTURE WITH 1/2" CEMENT MORTAR** (Pointing to the plaster coat on the block structure)
 - 6" CONCRETE BLOCK OR PRECAST CONCRETE** (Pointing to the main block structure)
 - 12" DIA. MAXIMUM SIZE** (Pointing to the bedding layer)
 - PRECAST 3500 P.S.I. CONC. BASE WITH 4X4-W4XW4 WELDED WIRE FABRIC** (Pointing to the base layer)
 - BEDDING UNDER STRUCTURE SHALL BE CRUSHED STONE.** (Pointing to the bedding layer)
- Dimensions:**
- 3'-6" MAX DEPTH** (Overall depth)
 - 2'-0" MIN** (Minimum width of the block structure)
 - 2" MAX** (Maximum thickness of the plaster coat)
 - 4" MIN** (Minimum thickness of the bedding layer)
 - 8" MIN** (Minimum thickness of the base layer)
 - 3" MIN** (Minimum thickness of the bedding layer)

NOT TO SCALE



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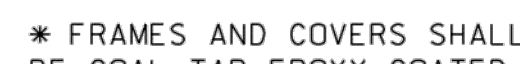


NOTE:
MINIMUM OF TWO-10' LONG 6"DIA.
PERFORATED UNDERDRAIN PIPE WITH
GEOTEXTILE MATERIAL WRAP TO BE
INSTALLED WITH EACH CATCH BASIN
SEE UNDERDRAIN DETAIL FOR
INSTALLATION AND MATERIAL
REQUIREMENTS.

NOT TO SCALE



NOT TO SCALE



NOT TO SCALE

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

CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD HARMLESS ALL OTHERS FROM AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE DESIGN

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BEFORE YOU DIG CALL**

811
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www.storeyengineering.com			

DELTA ONE
 150 W 2ND STREET, SUITE 250
 ROYAL OAK, MI 48067

STORM SEWER DETAILS
420 W SPRUCE - DELTA ONE

T25, RBW, EAST 1/2 SECTION 26, CITY OF MARSHALL, CALHOUN COUNTY, MI

DES	TSS	DN	TSS	DN	TSS	CARR	P.M.	TSS
420 W SPRUCE								
420 W SPRUCE STREET - MARSHALL, ON GOV'S ST - 1/2 STORM DETAILS.DWG								
DES 2019 PROJECTS 2018-013 420 SPRUCE STREET -								

ORIGINAL ISSUE DATE:

3/26/2019

Project No. 2019-013

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SCALE: NA

DRAWING NUMBER:

ST-1

51-1
