

**GENOA CHARTER TOWNSHIP
PLANNING COMMISSION PUBLIC HEARING
NOVEMBER 9th, 2020
6:30 P.M.
AGENDA**

CALL TO ORDER:

PLEDGE OF ALLEGIANCE:

APPROVAL OF AGENDA:

DECLARATION OF CONFLICT OF INTEREST:

CALL TO THE PUBLIC: (*Note: The Board reserves the right to not begin new business after 10:00 p.m.*)

OPEN PUBLIC HEARING # 1...Review of a special use application, environmental impact assessment and site plan for a proposed 28,851 sq. ft. addition for a retreat center which will include overnight stays located at 1391 Kellogg, southwest corner of Kellogg and McClements Roads. The request is petitioned by the Chaldean Catholic Church of the U.S.A.

- A. Recommendation of Special Use Application
- B. Recommendation of Environmental Impact Assessment (10-19-2020)
- C. Recommendation of Site Plan (10-19-2020)

OPEN PUBLIC HEARING # 2...Review of a site plan and environmental impact assessment for a proposed parking lot at 1183 Fendt Drive to be used in conjunction with the existing UPS Facility on the west side of Fendt Drive. The request is petitioned by Hugo Ceron, SME.

- A. Recommendation of Environmental Impact Assessment (9-2-2020)
- B. Disposition of Site Plan (9-24-2020)

OPEN PUBLIC HEARING # 3...Review of a final PUD site plan and environmental impact assessment for the "Premier Genoa Planned Unit Development" phase 1 involving a 37,275 sq. ft. climate controlled indoor storage building and related site improvements. The site is located at 4525 and 4433 E. Grand River at the northwest corner of Grand River Ave. and Lawson Drive. The request is petitioned by BMH Realty, LLC.

- A. Recommendation of Impact Assessment (9-28-2020)
- B. Recommendation of Final PUD Site Plan (9-28-2020)

ADMINISTRATIVE BUSINESS:

- *Staff Report*
- *Approval of October 13, 2020 Planning Commission meeting minutes*
- *Member discussion*
- *Adjournment*



GENOA CHARTER TOWNSHIP
Application for Site Plan Review

TO THE GENOA TOWNSHIP PLANNING COMMISSION AND TOWNSHIP BOARD:

APPLICANT NAME & ADDRESS: THE CHALDEAN CATHOLIC CHURCH OF THE U.S.A.; 25603 BERG RD., SOUTHFIELD, MI 48033
If applicant is not the owner, a letter of Authorization from Property Owner is needed.

OWNER'S NAME & ADDRESS: VINCENT JARBOW, FINANCE OFFICER; 25603 BERG RD., SOUTHFIELD, MI 48033

SITE ADDRESS: 1391 KELLOGG ROAD, BRIGHTON, MI 48114 PARCEL #(s): 11-12-100-002, 11-11-200-001

APPLICANT PHONE: 248-351-0440 OWNER PHONE: 248-351-0440

OWNER EMAIL: VINCENT@CHALDEANCHURCH.ORG

LOCATION AND BRIEF DESCRIPTION OF SITE: THE LOCATION IS "OUR LADY OF THE FIELDS CAMP"

AT 1391 KELLOGG ROAD; WITH THE PROPOSED BUILDING SOUTHWEST OF EULER LAKE, AND ADJACENT TO THE EXISTING CHURCH.

THE OVERALL PROPERTY CONSISTS OF 2 PARCELS THAT BORDER KELLOGG ROAD TO THE WEST, EULER ROAD TO THE EAST, MC CLEMENTS ROAD TO THE NORTH, AND FILICE DRIVE & KEMPER ROAD TO THE SOUTH.

BRIEF STATEMENT OF PROPOSED USE: THE PROPOSED BUILDING WILL BE USED AS A RETREAT CENTER.

THE RETREAT CENTER WILL CONSIST OF A ONE-STORY SEGMENT WITH CONNECTING CORRIDOR TO THE EXISTING CHURCH, ALONG WITH A PARTIAL BASEMENT DUE TO THE TOPOGRAPHY. THIS CONTAINS ALL THE PUBLIC AREAS FOR THE RETREAT CENTER (I.E. DINING AND MEETING ROOMS, ETC.), WHILE THE REMAINDER OF THE BUILDING CONSISTS OF A TWO-STORY DORMITORY FOR OVERNIGHT RETREATS.

THE FOLLOWING BUILDINGS ARE PROPOSED: ONE (1) RETREAT CENTER BUILDING WITH ONE-STORY AND TWO-STORY SEGMENTS, ALONG WITH A PARTIAL BASMENT IS BEING PROPOSED.

I HEREBY CERTIFY THAT ALL INFORMATION AND DATA ATTACHED TO AND MADE PART OF THIS APPLICATION IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

BY: VINCENT JARBOW, FINANCE OFFICER 

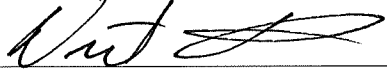
ADDRESS: 25603 BERG ROAD, SOUTHFIELD, MI 48033

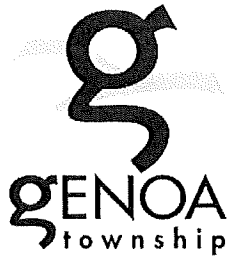
Contact Information - Review Letters and Correspondence shall be forwarded to the following:

1.) VINCENT JARBOW, FINANCE OFFICER of THE CHALDEAN CATHOLIC CHURCH OF THE U.S.A. at VINCENT@CHALDEANCHURCH.ORG
Name Business Affiliation E-mail Address

FEE EXCEEDANCE AGREEMENT

As stated on the site plan review fee schedule, all site plans are allocated two (2) consultant reviews and one (1) Planning Commission meeting. If additional reviews or meetings are necessary, the applicant will be required to pay the actual incurred costs for the additional reviews. If applicable, additional review fee payment will be required concurrent with submittal to the Township Board. By signing below, applicant indicates agreement and full understanding of this policy.

SIGNATURE:  DATE: 7/29/20
PRINT NAME: VINCENT JARBOW, FINANCE OFFICER PHONE: 248-351-0440
ADDRESS: 25603 BERG ROAD, SOUTHFIELD, MI 48033



GENOA CHARTER TOWNSHIP Special Land Use Application

This application **must** be accompanied by a site plan review application and the associated submittal requirements. (The Zoning Official may allow a less detailed sketch plan for a change in use.)

APPLICANT NAME & ADDRESS: THE CHALDEAN CATHOLIC CHURCH OF THE U.S.A.; 25603 BERG RD., SOUTHFIELD, MI 48033
Submit a letter of Authorization from Property Owner if application is signed by Acting Agent.

APPLICANT PHONE: (248) 351-0440 EMAIL: VINCENT@CHALDEANCHURCH.ORG

OWNER NAME & ADDRESS: THE CHALDEAN CATHOLIC CHURCH OF THE U.S.A.; 25603 BERG RD., SOUTHFIELD, MI 48033

SITE ADDRESS: 1391 KELLOGG ROAD, BRIGHTON, MI 48114 PARCEL #(s): 11-12-100-002, 11-11-200-001

OWNER PHONE: (248) 351-0440 EMAIL: VINCENT@CHALDEANCHURCH.ORG

Location and brief description of site and surroundings:

THE LOCATION IS "OUR LADY OF THE FIELDS CAMP" AT 1391 KELLOGG ROAD; WITH THE PROPOSED BUILDING SOUTHWEST OF EULER LAKE, AND ADJACENT TO THE EXISTING CHURCH. THE OVERALL PROPERTY CONSISTS OF 2 PARCELS THAT BORDER KELLOGG ROAD TO THE WEST, EULER ROAD TO THE EAST, MC CLEMENTS ROAD TO THE NORTH, AND FILICE DRIVE & KEMPER ROAD TO THE SOUTH.

Proposed Use:

THE PROPOSED BUILDING WILL BE USED AS A RETREAT CENTER. IT WILL CONSIST OF A ONE-STORY SEGMENT WITH CONNECTING CORRIDOR TO THE EXISTING CHURCH, ALONG WITH A PARTIAL BASEMENT DUE TO THE TOPOGRAPHY. THE REMAINDER OF THE BUILDING CONSISTS OF A TWO-STORY DORMITORY FOR OVERNIGHT RETREATS.

Describe how your request meets the Zoning Ordinance General Review Standards (section 19.03):

- a. Describe how the use will be compatible and in accordance with the goals, objectives, and policies of the Genoa Township Comprehensive Plan and subarea plans, and will promote the Statement of Purpose of the zoning district in which the use is proposed.

THE ZONING IS PRF, AND THE USE WILL BE COMPATIBLE, AS IT IS SIMILAR TO OTHER EXISTING USES ON THE SITE. THE PROPERTY IS LARGE AND HEAVILY SCREENED BY TREES, AND THE PROPOSED BUILDING IS NOT IN DIRECT VIEW FROM THE PUBLIC WAY. IT IS NOT DETRIMENTAL TO THE ENVIRONMENT OR THE PUBLIC, AND WILL PROVIDE BETTER USE AND UNIFICATION OF A SITE THAT IS UNDERUTILIZED, WHILE PRESERVING THE VIEWS AND NATURAL FEATURES THAT MAKE THE PROPERTY SO DESIRABLE.

- b. Describe how the use will be designed, constructed, operated, and maintained to be compatible with, and not significantly alter, the existing or intended character of the general vicinity.

THE PROPOSED BUILDING IS DESIGNED TO FIT IN WITH AND COMPLIMENT EXISTING USES (I.E. EXISTING CHURCH AND PARKING LOT). THE PROPERTY IS LARGE AND THE BUILDING WILL NOT BE IN VIEW FROM THE ROAD. THERE IS SIGNIFICANT TOPOGRAPHY IN THIS AREA, WHICH WE ARE WORKING WITH TO MAINTAIN SITE CHARACTERISTICS. MAINTAINING THE FACILITY WILL BE CONSISTANT WITH THE MAINTAINANCE OF THE OTHER FACILITIES ON THE PROPERTY OVER THE YEARS.

- c. How will the use be served adequately by essential public facilities and services such as highways, streets, police and fire protection, drainage structures, water and sewage facilities, refuse disposal and schools?

THE SITE CAN BE EASILY ACCESSED BY ROADS FROM THE WEST, NORTH AND EAST. WE ARE PROVIDING AN ACCESS DRIVE AROUND THE PROPOSED BUILDING FOR EMERGENCY VEHICLE ACCESS AND WORKED CLOSELY WITH THE FIRE MARSHAL IN DOING SO. WATER AND SEWER ARE CURRENTLY PRIVATE / ON SITE AND WILL CONTINUE TO BE, WITH IMPROVEMENTS TO THE SEPTIC INFRASTRUCTURE. A NEW TRASH ENCLOSURE IS PROPOSED FOR THE NEW BUILDING.

d. Will the use involve any uses, activities, processes, or materials potentially detrimental to the natural environment, public health, safety, or welfare by reason of excessive production of traffic, noise, vibration, smoke, fumes, odors, glare, or other such nuisance? If so, how will the impacts be mitigated?

WE DO NOT ANTICIPATE ANY DETRIMENTAL ACTIVITIES OR ENVIRONMENTAL NUISANCES WITH THIS PROPOSED USE.

e. Does the use have specific criteria as listed in the Zoning Ordinance (sections 3.03.02, 7.02.02, & 8.02.02)? If so, describe how the criteria are met.

NO, THE PROPOSED USE IS NOT LISTED IN THE ZONING SECTIONS CITED ABOVE. AFTER DISCUSSION WITH THE ASSISTANT TOWNSHIP MANAGER/COMMUNITY DEVELOPMENT DIRECTOR, IT WAS DETERMINED THE PROPOSED USE SHOULD BE CLASSIFIED AS "EXISTING CAMPGROUND", PER HISTORIC RECORDS FOR THE PROPERTY.

I HEREBY CERTIFY THAT ALL INFORMATION AND DATA ATTACHED TO AND MADE PART OF THIS APPLICATION ARE TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF. I AGREE TO DESIGN, CONSTRUCT AND OPERATE, AND MAINTAIN THESE PREMISES AND THE BUILDINGS, STRUCTURES, AND FACILITIES WHICH ARE GOVERNED BY THIS PERMIT IN ACCORDANCE WITH THE STATED REQUIREMENTS OF THE GENOA TOWNSHIP ZONING ORDINANCE, AND SUCH ADDITIONAL LIMITS AND SAFEGUARDS AS MAY BE MADE A PART OF THIS PERMIT.

THE UNDERSIGNED VINCENT JARBOW STATES THAT THEY ARE THE FREE OWNER OF THE PROPERTY OF PROPERTIES DESCRIBED ABOVE AND MAKES APPLICATION FOR THIS SPECIAL LAND USE PERMIT.

BY: VINCENT JARBOW, FINANCE OFFICER




ADDRESS: 25603 BERG ROAD, SOUTHFIELD, MI 48033

Contact Information - Review Letters and Correspondence shall be forwarded to the following:

VINCENT JARBOW of THE CHALDEAN CATHOLIC CHURCH OF THE U.S.A. at VINCENT@CHALDEANCHURCH.ORG
Name Business Affiliation Email

FEE EXCEEDANCE AGREEMENT

As stated on the site plan review fee schedule, all site plans are allocated two (2) consultant reviews and one (1) Planning Commission meeting. If additional reviews or meetings are necessary, the applicant will be required to pay the actual incurred costs for the additional reviews. If applicable, additional review fee payment will be required concurrent with submittal to the Township Board. By signing below, applicant indicates agreement and full understanding of this policy.

SIGNATURE:  DATE: 7/29/20

PRINT NAME: VINCENT JARBOW PHONE: 248-351-0440

**GENOA CHARTER TOWNSHIP
PLANNING COMMISSION
PUBLIC HEARING
SEPTEMBER 14, 2020
6:30 P.M.
MINUTES**

CALL TO ORDER: Vice-Chairman Rauch called the meeting of the Genoa Charter Township Planning Commission to order at 6:32 p.m. Present were Marianne McCreary, Eric Rauch, Jim Mortensen, Jeff, Dhaenens, and Glynis McBain, Absent were Chris Grajek and Jill Rickard. Also present were Kelly VanMarter, Community Development Director/Assistant Township Manager, Gary Markstrom of Tetra Tech and Brian Borden of Safebuilt Studio. There were 15 audience members present.

PLEDGE OF ALLEGIANCE: The pledge of allegiance was recited.

APPROVAL OF AGENDA:

Moved by Commissioner Mortensen, seconded by Commissioner Dhaenens, to approve the agenda as presented. **The motion carried unanimously.**

CALL TO THE PUBLIC: The call to the public was made at 6:33 pm with no response.

OPEN PUBLIC HEARING # 1...Review of a special use application, environmental impact assessment and site plan for a proposed 28,851 sq. ft. addition for a retreat center which will include overnight stays located at 1391 Kellogg, southeast corner of Kellogg and McClements Roads. The request is petitioned by the Chaldean Catholic Church of the U.S.A.

- A. Recommendation of Special Use Application
- B. Recommendation of Environmental Impact Assessment (7-31-2020)
- C. Recommendation of Site Plan (8-26-2020)

Ms. Eavan Yaldo of Saroki Architecture was present representing the applicant. Father Andrew Seba, Father Manuel Boji, and Vincent Jarbow, CFO for the applicant, were present.

Ms. Yaldo stated the property is 160 acres and includes Euler Lake. They would like to construct a 28,851 square foot retreat center to be used for religious retreats, youth retreats, as well as to foster community gatherings. These retreats will occur mainly on the weekends. It will be located on the southeast portion of the property and adjacent to the existing church. Over the last 10 years, when the church was first built, it has been underutilized. One portion of the proposed building is one story, a portion is two story and there is a walkout basement.

There are 20 each two-bedroom units; however, it can sleep a total of 80 people. She noted there will be an enclosed walkway connecting the retreat center to the existing church.

She showed the proposed site plan and building elevations. They do have their proposed building materials and can supply them if the Planning Commission would like.

Commissioner Mortensen asked if it will be available to the public. Ms. Yaldo stated it will be open to other faiths; however, they must abide by the rules and standards that will be put in place by the Caldean Catholic Church. He asked if alcohol will be served anywhere on the property. Ms. Yaldo stated this retreat center will not have alcohol; however, she is not sure about other locations on the campus.

Commissioner Dhaenens questioned where the retreats are currently held. Father Seba stated their retreats are held in different locations in Detroit or Lansing.

Mr. Borden reviewed his letter dated September 2, 2020.

- Provided comments from the Township Engineer and Brighton Area Fire Authority are addressed, his opinion is that the special land use standards of Section 19.03 are generally met.
- The Commission may wish to request building material calculations as it is mostly a brick building.
- The Commission may wish to consider whether the existing gravel parking lot should be improved as part of this project.
- The Commission may wish to require landscaping around the proposed detention pond. He calculated that 7 trees and 70 shrubs should be planted, although this property is heavily wooded.
- The Planning Commission must approve the use of rough sawn cedar for the waste receptacle enclosure. His opinion is that the proposed material is appropriate for this site.
- The Planning Commission may require submission of a photometric plan per Section 12.03.07 of the Ordinance due to the addition of light fixtures. Based on the type and numbers of fixtures, he believes they will meet the Ordinance.
- If approval is granted, the applicant must obtain a sign permit from the Township prior to its installation.

Mr. Borden noted that if this project is approved, it may be appropriate to have the Township evaluate the Future Land Use classification for the property during its next Master Plan review period.

Mr. Markstrom reviewed his letter dated September 10, 2020.

- The Petitioner will need approval from the Livingston County Health Department for the proposed well and septic updates. This should be obtained and provided to the Township for their records.
- The Petitioner shows parking calculations on the plans. Currently the plans show seven new spaces, while the parking calculations show 74 spaces required for the proposed use. The Petitioner is proposing to share parking with the church, which has 102 parking spaces currently. Due to the church and retreat center being used mostly by the same group of people, he finds this co-use of parking to be reasonable.
- The Genoa Township Zoning Ordinance requires that the parking lot be hard surface with concrete curb and gutter. However, an aggregate parking lot may be considered as a Low Impact Development alternative to the zoning requirements. The Petitioner should provide more information on the intended use of this parking lot. If the Petitioner is intending to use the lot during the winter and to clear snow, the parking lot should be paved with curb and gutter as the Zoning Ordinance describes. As the Petitioner is proposing a paved access drive through the existing gravel parking lot, the petitioner should at least consider paving the parking spaces adjacent to the drive.
- The tributary area shown on Sheet 6 does not encompass all of the proposed site improvements, but it does collect some of the existing drive and church that was not previously captured by on site storm sewer. The development is proposed on a small portion of the entire site. The parcel contains ponds and basins that collect all the runoff from the developed portion of the property. Since the tributary area to the new basins is essentially the same size as the proposed impervious area addition we feel the proposed detention meets the intent of the storm water management guidelines and is acceptable as presented. He noted that they are making improvements to the storm water management on the site.

Ms. Yaldo acknowledged receipt of the Brighton Area Fire Authority's letter. She has been working with the Fire Marshal and she will address their concerns. She is also working with the Livingston County Health Department.

She stated that many of the retreats are youth retreats and the kids are bussed in. With regard to the adult retreats, most people carpool or are also bussed in so the amount of vehicular traffic and parking will be low; therefore she does not feel it is necessary to pave the parking lot. The applicant would like to keep the natural look of the area as well as reduce the amount of runoff from the site.

Commissioner Mortensen noted that the Township Engineer recommended at least paving the parking spaces adjacent to the drive. Vice-Chairman Rauch agrees, especially since Ms. Yaldo stated that there will be buses coming in. Chairman Dhaenens agrees.

The call to the public was made at 7:10 pm.

Mr. Mike Berean of 1273 Euler Road has concerns with the addition of a 30,000 square foot building and the capacity being 80 people every weekend, the potential for a decrease in their

property values, and the increased drainage, which already drains onto his property. He does not believe this is the appropriate site for this type of use. This will affect all of the residents in the area. He has lived in his home for two years and has heard the music from the camp in his home with the windows closed.

Mr. James Drouillard of 6781 Filice stated that 300 feet of his property borders this property. He questioned what type of people will be at the retreats and where will they be coming from. If the building will accommodate 80 people then he believes there will always be 80 people there. He wants to know how the drainage and the septic system will affect him. Will there be more garbage trucks coming to the site? Will there be a backup generator? He is concerned about the traffic and speed of drivers on Kellogg Road as there are many walkers and bicycle riders on this road, and how this use will affect the condition of the road. He asked why he didn't know about this until the end of August. He is concerned about the condition of the existing fence; it has not been maintained.

Ms. Patricia Kopicko of 6843 Filice Drive has complained numerous times about the noise from the camp. She cannot be in the yard most times due to the noise. She is concerned about a 30,000 square foot building in their residential neighborhood.

Ms. Dori Berean of 1273 Euler Road stated trees have fallen on the fence and it has not been repaired, they have taken down trees that were protected, she finds alcohol bottles on both sides of the road, and the parties and concerts on the property are loud. This will negatively affect the neighbors and the property values.

Father Andrew Seba agrees with many of the comments made this evening, specifically regarding the maintenance. It costs a lot of money to maintain the property so they need income. The intention of the use of the proposed building is for people to come to escape noise; they are coming to a religious Catholic retreat. He appreciates the neighbors' concerns. He wants to work with them and have a better relationship.

Father Manuel Boji reiterated what Father Seba stated regarding the events that will be taking place at the new facility.

Mr. Berean asked if the Township knew that the church needed income when it approved their plan. Will they have the money to maintain the new facility or will they need to hold more events for their income.

Commissioner Mortensen noted that when the church was first built, there were many noise complaints within the first few years and the Township acted upon those complaints. He is not aware that there have been more complaints. Ms. VanMarter stated she receives approximately one complaint per year regarding the noise.

Mr. Robert Kopicko of 6843 Filice Drive has taken measurements of the noise and has presented them to the Township. They are in the 95 range from 150 feet away. Currently the lights in the parking lot shine into his home in the winter when the trees have no leaves.

The call to the public was closed at 7:59 pm.

Commissioner McCreary is a supporter of people being allowed to use their property according to their rights and that the applicant is trying to bring people together for retreats. The question she asks herself is will this alter the character of the area. She does not feel that this is the appropriate place for this. It is a rural area surrounded by five-acre parcels.

Commissioner Dhaenens is familiar with this site as he used to camp there as a child. Because of the current use of the property and the noise concerns and parties, the neighbors do not believe that this place will change and that it will be more quiet. He thinks it will be a great place for a retreat and the noise issue does need to be addressed.

Commissioner McBain noted that the current zoning of the property allows for this type of use.

Mr. Jarbow stated that if this property starts to be used for the retreats as what is being proposed this evening, there would no longer be wedding receptions, family reunions, concerts, etc. The income generated from having these events was not used to maintain the property. They are a very minor source of income. It is not intended to be a profit making facility.

Ms. Yaldo reiterated that they are here this evening proposing a retreat center to have a quiet, meditative place to pray in a church and in a peaceful setting, and to remove people from the noise of the world.

Commissioner Mortensen is not in favor of the Township approving the expansion of a use that currently has violations of the sound ordinance. He needs the applicant to absolutely guarantee that they will comply with the sound ordinance.

Moved by Commissioner Mortensen, seconded by Commissioner McCreary, to table the request for a Special Land Use, Site Plan, and Environmental Impact Assessment for the Prophet Elijah Retreat Center to allow the applicant to come back with information regarding how they will address the noise concerns of the neighborhood. **The motion carried unanimously.**

OPEN PUBLIC HEARING #2... Review of a site plan and environmental impact assessment for re-approval of an expired project for a 4,661 sq. ft. addition for enclosed storage, located at 1275 Grand Oaks Drive, Brighton. The request is petitioned by Tadbad, LLC.

- A. Recommendation of Environmental Impact Assessment (7-28-2020)
- B. Disposition of Site Plan (7-27-2020)

Mr. Tom Dewitt, the owner of the building, and Mike Long from Dewitt's radiator, who is the tenant, were present. Mr. Dewitt stated he applied for and was granted approval in 2015 for an addition to his building. He would like to begin the construction of the plan that was approved by the Township at that time..

History of Noise Complaints from Twp. Code Enforcement Officer

Kelly,

Here are all the records I can find on complaints I have received from the Chaldean Catholic Church property. No complaints as of 2020.

EMAIL CORRESPONDENCE

Good Morning, Sam 7/16/18

I just wanted to let you know that last weekend (6/8) and this weekend (6/15) we received noise complaints about the camp. If you could please make sure that the music is turned down a little bit it would be greatly appreciated.

Hi Sammy 7/15/19

We have been getting repeated complaints about the music level on Sundays. Could you please make sure that they are keeping the noise level in the acceptable range.

LOG ENTERIES

Neighbor (Kopicko) came in with proof of noise violation on video from party on 7/21/2019 wrote ticket as requested by neighbor to camp 7/24/2019 ticket due 8/21, 2019.

Wrote ticket 7/24/19 for noise relating to party. Called Sami 8/6 told to keep volume down. They came in and paid ticket

October 19, 2020

Kelly VanMarter
Assistant Township Manager / Community Development Director
Genoa Charter Township
2911 Dorr Road
Brighton, MI 48116

Re: The Prophet Elijah Retreat Center

The purpose of this letter is to provide a response to the feedback from the Planning Commission meeting on September 14th, 2020; and identify updates to the plans suggested by the Planning Commission.

The diocese has internally discussed past, current, and future operations at Our Lady of the Fields Camp & The Prophet Elijah Retreat Center. We have included a letter from the Chaldean Catholic Diocese of St. Thomas the Apostle USA regarding current and proposed uses, and measures that will be taken to reduce disturbances to neighboring properties. It also outlines how contact information will be provided for people to address any concerns moving forward.

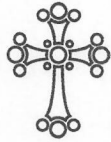
Regarding the drawings, the recommendation was made to consider paving the gravel parking spaces adjacent to the access drive, resulting in 50% of the existing gravel lot to be paved. We have revised the drawings to comply with this request.

Should you require additional information or clarification, please contact us.

Sincerely,

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

Eavan Yaldo
Saroki Architecture



October 19, 2020

GENOA CHARTER TOWNSHIP
PLANNING COMMISSION
2911 DORR RD
BRIGHTON, MI 48116

RE: Special use application, Environmental impact and Site plan for the proposed 28,851SF addition of a retreat center at 1391 Kellogg Rd

Dear Planning Commission,

Our Lady of the Fields Camp & the Prophet Elijah Retreat Center is committed to providing our guests with a high-quality faith experience that strengthens their relationship with God and their relationships with others.

With a new focus on running a summer camp for children and a year-round retreat center for all ages, OLF seeks to be a place of happiness and joy. We believe that outdoor recreation and building faith go hand-in-hand.

We will accomplish our goals by using the bountiful gifts that exist on our current property at 1391 Kellogg Road to their maximum potential.

This includes activities such as swimming, canoeing, hiking, field sports, nature studies, arts & crafts, a high and low ropes course, and lessons on religious education and development. In other words, we will be offering activities that are totally consistent with summer camps and retreat centers across the United States.

In addition to these clear objectives, we are committed to being a good neighbor within our community. We understand that there are families living all around the camp property, and we strongly desire to build a good relationship with each one of them. Given the nature of our target audiences, we will either be working with children who have a sensible "lights-out" time at night or a group of adults who will be engaged in prayerful reflection at the retreat center that includes periods in silence. We truly believe that the concerns of noise are a thing of the past due to the redefined uses and purpose and the current operation of the Camp. The Diocese has hired a new Executive Director for the Camp, Mr. Mike Hickey, who comes with 25 years of camp and recreation experience.

Nonetheless, we will have a policy of carefully monitoring the noise levels of all our activities and events to strictly comply with the Genoa Township noise ordinance. Additionally, contact information will be available on the website (www.olf.camp) and at signs near the entrances should the neighbors have any questions or concerns. We will also provide contact information (with names, telephone numbers and email addresses) to all of our neighbors so they can reach our staff directly to address any concerns. Our goal is to have an open line of communication with our neighbors and proactively address any issues or concerns directly with our neighbors. We will also provide the same contact information to the Township (and its applicable Departments) so that they can reach representatives of the OLF camp as needed. Additionally, we will repair any currently damaged fence area, and periodically survey the perimeter around the Camp property and address any required repairs to the fence and any other portion of the perimeter. A new day is dawning at Our Lady of the Fields Camp & Prophet Elijah Retreat Center. With experienced camp professionals and staff, who are now in the process of gaining state licensure and national accreditation from the American Camp Association, OLF and Prophet Elijah Retreat Center will present a professional face to the community. We look forward to building a sterling reputation in Livingston County.

Sincerely,

A handwritten signature in black ink, appearing to read "F. Kalabat". The signature is fluid and cursive, with a large initial "F" and a long, sweeping underline.

Bishop Francis Kalabat
Chaldean Catholic Diocese of St. Thomas the Apostle USA

November 4, 2020

Planning Commission
 Genoa Township
 2911 Dorr Road
 Brighton, Michigan 48116

Attention:	Kelly Van Marter, AICP Planning Director and Assistant Township Manager
Subject:	The Prophet Elijah Retreat Center – Special Land Use and Site Plan Review #3
Location:	1391 Kellogg Road – southwest corner of the Kellogg Road/McClements Road intersection
Zoning:	PRF Public and Recreational Facilities District

Dear Commissioners:

At the Township’s request, we have reviewed the revised submittal from the Chaldean Catholic Church of the U.S.A. requesting special land use and site plan review/approval for a new retreat center at the existing Our Lady of the Fields Camp.

A. Summary

1. Provided comments from the Township Engineer and Brighton Area Fire Authority are addressed, we are of the opinion that the special land use standards of Section 19.03 are generally met.
2. If the project is approved, the Township may wish to evaluate the Future Land Use classification for the property during its next Master Plan review period.
3. The Commission may require detention pond landscaping (7 trees and 70 shrubs).
4. The Planning Commission may allow the use of rough sawn cedar for the waste receptacle enclosure.
5. The Planning Commission may require submittal of a photometric plan per Section 12.03.07.
6. If approval is granted, the applicant must obtain a sign permit from the Township prior to installation.

B. Proposal/Process

The project entails a 28,851 square foot (gross) addition to house a retreat center, including space for overnight stay. The proposed building addition will connect to the existing church, which is southwest of Euler Lake, via a corridor.

Though churches are by right uses in the PRF District, the camp component of the property has historically been treated as a private campground, which is a special land use (Table 6.02).

Given its size, the project constitutes a major expansion of an existing special land use (Section 19.06). As such, a new special land use approval is necessary, along with site plan review/approval.

Procedurally, the Planning Commission is to review the special land use, site plan, and impact assessment, and provide a recommendation on each to the Township Board following a public hearing.

The proposal was presented to the Commission at their September 14, 2020 meeting, and the revised submittal was provided to address comments raised during that meeting/public hearing.



Aerial view of site and surroundings (looking north)

C. Special Land Use Review

Section 19.03 of the Zoning Ordinance identifies the review criteria for Special Land Use applications as follows:

- 1. Master Plan.** The Township Master Plan identifies the subject site, as well as the adjacent properties to the east and west, as Large Lot Rural Residential.

This category is intended for “single family residential on large lots.” While the established use is not single family residential in nature, the property does possess the features described in this category.

More specifically, the Plan states that “many of the areas have significant natural limitations such wetlands or severe soil limitations and are not planned for sanitary sewer.”

The existing and proposed use are more consistent with the Private Recreational category, which is compatible with PRF zoning.

Given the history of the established use and the planned investment into the property, the Township may wish to evaluate the Future Land Use classification during its next Master Plan review period (provided favorable action on this request is taken).

- 2. Compatibility.** The site includes a variety of related buildings and uses that are relatively unique. The surrounding area is developed with single-family residences on large lots, and a significant amount of natural features.

Trees will be removed to accommodate the project, though they are generally internal to the site and the mature vegetation around the perimeter of the property, as well as the submerged areas, will be protected and preserved.

In our opinion, the substantial size of the property (160 acres) and the mature vegetation around the perimeter help to mitigate potential issues of compatibility with the surrounding area.

With that being said, during the public hearing several neighbors voiced concerns about noise generation. In response, the applicant has included a letter with the revised submittal noting that they “will have a policy of carefully monitoring noise levels... to strictly comply with the Genoa Township noise ordinance.”

Furthermore, they have offered contact information to neighbors and the Township to help mitigate any issues.

3. **Public Facilities and Services.** Based on the submittal materials, the site is served by well and septic systems. We defer to the Township Engineer and Brighton Area Fire Authority for any technical comments under this criterion.
4. **Impacts.** As noted above, several residents voiced concerns over noise currently generated by the use. Provided the applicant monitors use and condition of the property, we do not foresee significant impacts on the surrounding area due to the nature of the existing use, the size of the property, and the significant natural features being protected and preserved.
5. **Mitigation.** If any additional concerns arise as part of the review process, the Township may require additional efforts/improvements to mitigate potential adverse impacts.

D. Site Plan Review

1. **Dimensional Requirements.** The proposed building exceeds the minimum setback requirements for the PRF District – 75 feet is required, while the smallest setback provided is 359 feet to the south lot line. The building is also within the maximum height allowed in the PRF District (27’-2” proposed; 35’ allowed).
2. **Building Materials and Design.** The primary building materials include 2 types of brick and fiber cement siding.

As discussed at the previous meeting, the proposed building elevations comply with the requirements of Section 12.01, and the color renderings indicate the use of earth-toned colors, including brown, beige, and tan.

3. **Pedestrian Circulation.** Public sidewalks/pathways are not required by Section 12.05 for the subject site, nor are they called for in the Master Plan.

The project does include internal pedestrian areas connecting parking to buildings.

4. **Vehicular Circulation.** Vehicular access to/from the site is provided by an existing driveway on Kellogg Road.

The project includes a new 26-foot wide asphalt drive that loops around the existing church and proposed building addition. The purpose of the loop road is to provide a fire lane for emergency access/fire protection.

5. **Parking.** The existing site provides 102 parking spaces, while 7 new spaces are proposed: bringing the total to 109. This includes 7 barrier-free spaces, which exceeds the minimum requirement.

The proposed parking spaces are intended for drop-off/short term parking, and a loading zone is also provided.

Based on our review of the church building (2009), 95 parking spaces were required. Given the fact that use of the church and retreat buildings will overlap, the total amount of parking provided is expected to be sufficient.

As discussed at the previous meeting, the majority of the existing parking lot is surfaced with gravel (84 out of 102 spaces). Per the input received, the applicant proposes to pave the easterly portion of the gravel lot. This will result in a majority of the site providing paved parking and drive aisles.

- 6. Landscaping.** The site contains a significant number of mature trees. Though some will be removed to accommodate the project, the vast majority will be preserved. The landscape plan depicts tree protection fencing within the project area to ensure protection of these trees. Additionally, the plan proposes 7 canopy trees and 38 shrubs around the new parking area.

Per Section 12.02.05, we estimate that 7 trees (deciduous or evergreen) and 70 shrubs are required around the detention pond. The Commission may wish to require these plantings, or may waive them in accordance with Section 12.02.13.

- 7. Waste Receptacle.** The proposed waste receptacle has been reviewed for compliance with the standards of Section 12.04, as follows:

	Requirement	Proposed	Comments
Location	Rear yard or non-required side yard	Rear yard	Requirement met
Access	Clear access w/ out damaging buildings/vehicles	Sufficient maneuvering area for refuse removal vehicles	Requirement met
Base design	9' x 15' concrete pad	13' x 16' concrete pad	Requirement met
Enclosure	Must have lid 3-sided enclosure w/ gate Constructed of brick or decorative concrete; 6' height	Lid provided 3 sides w/ gate across 4 th Treated rough sawn cedar 6' height	Requirement met Requirement met PC may allow Requirement met

- 8. Exterior Lighting.** The site plan depicts 2 new light poles on either side of the proposed parking area. Details note the use of downward directed LED fixtures mounted at a height of 20 feet.

The project also includes 2 LED landscape fixtures directed at the proposed sign south of the new parking area.

Though a photometric plan is not included, based on the type, quantity, and location of proposed lighting, we do not foresee any issues in terms of compliance with the intensity standards of Section 12.03. However, the Commission may require a photometric plan per Section 12.03.07.

- 9. Signs.** The plan includes a new monument sign internal to the site (south of the proposed parking area). Details on Sheet A011 depict a masonry structure (brick and stone) with metal channel-cut lettering.

The proposed sign height (3'-10") and area (31.8 SF) are well within that allowed by Table 16.01.

If special land use and site plan approvals are granted, the applicant must obtain a sign permit from the Township prior to installation.

- 10. Impact Assessment.** The submittal includes a revised Impact Assessment dated October 19, 2020.

In summary, the revised Assessment states that the proposed project is not expected to have an adverse impact upon natural features, stormwater, surrounding land, public services/utilities, or traffic and pedestrians.

Should you have any questions concerning this matter, please do not hesitate to contact our office.

Respectfully,
SAFEBUILT STUDIO

A handwritten signature in black ink, appearing to read "B.V. Borden". The signature is stylized and fluid, with the first letters of each name being prominent.

Brian V. Borden, AICP
Planning Manager

October 30, 2020

Ms. Kelly Van Marter
Genoa Township
2911 Dorr Road
Brighton, MI 48116

**Re: The Prophet Elijah Retreat Center
Site Plan Review No. 3**

Dear Ms. Van Marter:

Tetra Tech has conducted a third review of the proposed The Prophet Elijah Retreat Center site plan last dated October 19, 2020. The plans and impact assessment were submitted by Vincent Jarbow on behalf of The Chaldean Catholic Church of the U.S.A. The site plan was prepared by Alpine Engineering, Inc. The site is on a 160-acre parcel located southeast of the Kellogg Road and McClements Road intersection. The petitioner is proposing a 29,000 square foot building addition attached to the existing church on the southwest quadrant of the property with associated parking lot, access drive, storm sewer, and septic system improvements.

After reviewing the site and impact assessment we offer the following:

GENERAL NOTES

1. The Petitioner will need approval from the Livingston County Health Department for the proposed well and septic updates. This should be obtained and provided to the Township for their records.
2. The proposed site and fire lane will need to be approved by the Brighton Area Fire Authority. This approval should be provided to the Township prior to site plan approval.

SITE PLAN

1. The Petitioner shows parking calculations on the plans. Currently the plans show seven new spaces, while the parking calculations show 74 spaces required for the proposed use. The Petitioner is proposing to share parking with the church, which has 102 parking spaces currently. Due to the church and retreat center being used mostly by the same group of people we find this co-use of parking to be reasonable.
2. The Genoa Township Zoning Ordinance requires that the parking lot be hard surface with concrete curb and gutter. However, an aggregate parking lot may be considered as a Low Impact Development alternative to the zoning requirements. Through the discussions with the Planning Commission, the Petitioner has agreed to pave the parking spaces that are immediately adjacent to the proposed access drive/fire lane. This reduced paving is acceptable from an engineering point of view.

DRAINAGE AND GRADING

1. The tributary area shown on sheet 6 does not encompass all of the proposed site improvements, but it does collect some of the existing drive and church that was not previously captured by on-site storm sewer. The development is proposed on a small portion of the entire site. The parcel contains ponds and basins that collect all the runoff from the developed portion of the property. Since the tributary area to the new basins is essentially the same size as the proposed impervious area addition, we feel the proposed detention meets the intent of the stormwater management guidelines and is acceptable as presented.

The comments above should be discussed with the Planning Commission prior to site plan approval. Please call or email if you have any questions.

Sincerely,



Gary J. Markstrom, P.E.
Vice President



Shelby Scherdt
Project Engineer



BRIGHTON AREA FIRE AUTHORITY

615 W. Grand River Ave.
Brighton, MI 48116
o: 810-229-6640 f: 810-229-1619

November 2, 2020

Kelly VanMarter
Genoa Township
2911 Dorr Road
Brighton, MI 48116

RE: The Prophet Elijah Retreat Center
1391 Kellogg Road
Genoa Twp., MI

Dear Kelly:

The Brighton Area Fire Department has reviewed the above mentioned site plan. The plans were received for review on October 23, 2020 and the drawings are dated July 31, 2020 with latest revisions dated October 19, 2020. The project is based on a 159.6 acre camp known as Our Lady of the Fields Camp. The existing portion of the parcel includes an existing A-3 church. The plan calls for construction of a new single-story retreat center (B, A-3) and two-story dormitory (R-1). The overall square-footage of the project is proposed at 28,851 square feet. The plan review is based on the requirements of the International Fire Code (IFC) 2018 edition.

All conditions provided by BAFA have been addressed in the submittal or through conversations with the engineer.

Additional comments will be given during the building plan review process (specific to the building plans and occupancy). The applicant is reminded that the fire authority must review the fire protection systems submittals (sprinkler & alarm) prior to permit issuance by the Building Department and that the authority will also review the building plans for life safety requirements in conjunction with the Building Department. If you have any questions about the comments on this plan review please contact me at 810-229-6640.

Cordially,

A handwritten signature in black ink, appearing to read "R. Boisvert".

Rick Boisvert, CFPS
Fire Marshal

cc: Amy Ruthig amy@genoa.org



October 23, 2020

Page 2

The Prophet Elijah Retreat Center

1391 Kellogg Rd.

Site Plan Review

October 19, 2020

IMPACT ASSESSMENT

Re: The Prophet Elijah Retreat Center

- a. **Name(s) and address(es) of person(s) responsible for preparation** of the impact assessment and a brief statement of their qualifications.

*Eavan Yaldo (Project Architect)
Saroki Architecture
430 N. Old Woodward Avenue, Suite 300
Birmingham, MI 48009
I am a Senior Associate and Project Architect at Saroki Architecture.*

- b. **Map(s) and written description/analysis of the project site** including all existing structures, manmade facilities, and natural features. The analysis shall also include information for areas within 10 feet of the property. An aerial photograph or drawing may be used to delineate these areas.

The project site (Our Lady of the Fields Camp) is an existing campground comprised of approximately 160 acres of wooded area, clearings, and buildings, with approximately 1/3 of the area occupied by Euler Lake in the center of the site, splitting it into north and south regions. The north side of the camp mainly contains cabins and a dining hall, along with some outdoor amenities. The south side of the camp contains a couple of residential buildings (including the property manager's residence), the church built in 2011, and some outdoor amenities, including a small outdoor chapel. The site is bordered by roads to the north, east, and west, and properties zoned CE (Country Estates District) to the south. Please refer to the Civil drawings, sheets 1-7 for additional information.

- c. **Impact on natural features:** A written description of the environmental characteristics of the site prior to development and following development, i.e., topography, soils, wildlife, woodlands, mature trees (eight-inch caliper or greater), wetlands, drainage, lakes, streams, creeks or ponds. Documentation by a qualified wetland specialist shall be required wherever the Township determines that there is a potential regulated wetland. Reduced copies of the Existing Conditions Map(s) or aerial photographs may accompany written material.

*Most of the site is covered by natural features: woods, lake, and natural variations in topography. A detention basin has been proposed for storm water. There is an existing wetland northwest of the lake and southeast of the lake, which is approximately 500 feet away from the proposed building (see Civil sheet 4). We do not anticipate any impact to the wetlands. Should further information be required, we will comply.
Please refer to the Civil drawings, sheets 1-7 for information. A geotechnical report has also been included with this application.*

- d. **Impact on stormwater management:** Description of measures to control soil erosion and sedimentation during grading and construction operations and until a permanent ground cover is established. Recommendations for such measures may be obtained from the Livingston County Drain Commission at (517) 546-0040.

To control soil erosion and sedimentation, the "Grading and Soil Erosion & Sedimentation Control Plan" shows silt fence surrounding the anticipated disturbance area. Also, inlet filters are shown for the catch basins. Notes describing the soil erosion sequence of construction, maintenance requirements, and general soil erosion control notes will be provided on the plan set when the final engineering plan set is prepared.

- e. **Impact on surrounding land used:** Description of the types of proposed uses and other man-made facilities, including any project phasing, and an indication of how the proposed use conforms or conflicts with existing and potential development patterns. A description shall be provided of any increases of light, noise or air pollution which could negatively impact adjacent properties.

The proposed Retreat Center and all existing camp buildings/amenities are well screened by mature vegetation and remote from other properties, thus having little to no impact. The site is currently underutilized, and even with the proposed Retreat Center, is not expected to be fully occupied. Any illumination from the proposed development would not likely be visible beyond the site. More information regarding specific uses can be found in the OLF letter (Our Lady of the Fields) from the diocese.

- f. **Impact on public facilities and services:** Describe the number of expected residents, employees, visitors, or patrons, and the anticipated impact on public schools, police protection and fire protection. Letters from the appropriate agencies may be provided, as appropriate.

Most days, the only people in the facility will be a few office administrators and maintenance personnel. When retreats occur (mostly weekends) there may be additional staff for housekeeping and food preparation. At maximum capacity, the Retreat Center can sleep 80. This is an unlikely circumstance based on current projections from the owner, but the building was planned for potential growth in projections. Many of the public facilities/services are not applicable to this use, and likely only police & fire protection would be applicable.

- g. **Impact on public utilities:** Describe the method to be used to service the development with water and sanitary sewer facilities, the method to be used to control drainage on the site and from the site, including runoff control during periods of construction. For sites serviced with sanitary sewer, calculations for pre- and post-development flows shall be provided in comparison with sewer line capacity. Expected sewage rates shall be provided in equivalents to a single-family home.

Where septic systems are proposed, documentation or permits from the Livingston County Health Department shall be provided.

*The site is proposed to be serviced with well and septic. To accommodate storm detention, bioswales and an infiltration basin have been sized to meet requirements of the Livingston County Drain Commissioner's Office. During construction, runoff will be controlled by the temporary soil erosion and sedimentation control methods described above under letter "d".
Septic systems will be submitted to the Livingston County Health Department for review and approval.*

- h. Storage and handling of any hazardous materials:** A description of any hazardous substances expected to be used, stored or disposed of on the site. The information shall describe the type of materials, location within the site and method of containment. Documentation of compliance with federal and state requirements, and a Pollution Incident Prevention Plan (PIPP) shall be submitted, as appropriate.

No hazardous materials are expected to be used/stored outside of typical household cleaners, detergents, etc. in small amounts in relation to typical use in cleaning/disinfecting. These items would be stored in the laundry and storage rooms.

- i. Impact on Traffic and Pedestrians:** A description of the traffic volumes to be generated based on national reference documents, such as the most recent edition of the *Institute of Transportation Engineers Trip Generation Manual*, other published studies or actual counts of similar uses in Michigan. A detailed traffic impact study shall be submitted for any site over ten (10) acres in size which would be expected to generate 100 directional vehicle trips (i.e. 100 inbound or 100 outbound trips) during the peak hour of traffic of the generator or on the adjacent streets. The contents of the detailed study shall include:

- Description of existing daily and peak hour traffic on adjacent street(s) and a description of any sight distance limitations along the right-of-way frontage of the site.
- Forecasted trip generation of the proposed use for the a.m. and p.m. peak hour and average daily traffic generated.
- For any project with a completion date beyond one year at the time of site plan approval, the analysis shall also include a scenario analyzing forecasted traffic at date of completion along the adjacent street network using a forecast based either on historic annual percentage increases and/or on expected development in the area.
- Projected traffic generated shall be distributed (inbound v. outbound, left turn v. right turn) onto the existing street network to project turning movements at site driveways and nearby intersections. Rationale for the distribution shall be provided.

- Capacity analysis at the proposed driveway(s) using the procedures outlined in the most recent edition of the *Highway Capacity Manual* published by the Transportation Research Board. Capacity analyses shall be provided for all street intersections where the expected traffic will comprise at least five percent (5%) of the existing intersection capacity.
- Accident data for the previous three (3) years for roadway sections and intersections experiencing congestion or a relatively high accident rate, as determined by the township or staff from the Livingston County Road Commission or Michigan Department of Transportation.
- Analysis of any mitigation measures warranted by the anticipated traffic impacts. Where appropriate, documentation shall be provided from the appropriate road agency regarding time schedule for improvements and method of funding.
- A map illustrating the location and design of proposed access, including any sight distance limitations, dimensions from adjacent driveways and intersections within 250 feet of the edge of the property frontage, and other data to demonstrate that the driveway(s) will provide safe and efficient traffic operation and be in accordance with Article 15.

This item is not applicable, as there will not be measurable impact on traffic and pedestrians. The Retreat Center is not expected to generate anywhere near the number of trips listed above or to impact existing traffic volume. For many retreats, people typically carpool, or busses bring people to the center, thus reducing the number of vehicles inbound and outbound.

- j. **Special Provisions:** General description of any deed restrictions, protective covenants, master deed or association bylaws.

No special provisions are known to exist at this time.

- k. **A list of all sources shall be provided.**

The following resources were used in documenting this Impact Assessment:

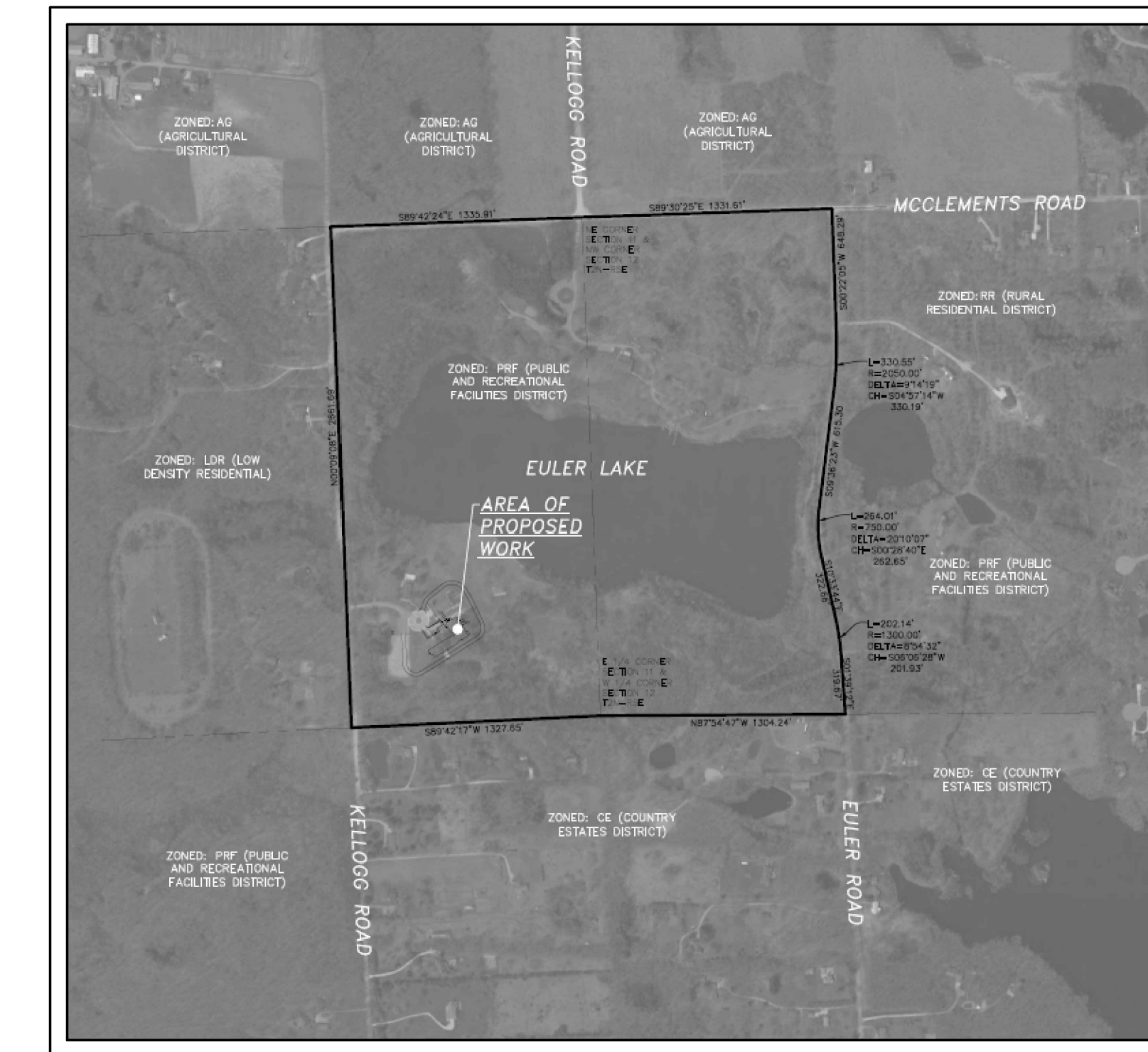
- *Architectural drawings prepared by Saroki Architecture*
- *Civil Engineering drawings prepared by Alpine Engineering*
- *Geotechnical Investigation prepared by G2 Consulting Group*
- *OLF letter (Our Lady of the Fields) prepared by the Chaldean Catholic Diocese of St. Thomas the Apostle USA*

OUR LADY OF THE FIELDS CAMP

THE PROPHET ELIJAH

RETREAT CENTER

1391 Kellogg Road
Brighton, Michigan 48114



Location Map
Not to Scale

Owner:
The Chaldean Catholic Church of the United States of America
25603 Berg Road
Southfield, Michigan 48033
T: 248.351.0440
Contact: Vincent Jarbow, Finance Officer & Owner's Agent

Construction Manager:
K4 Contractors
31333 Southfield Road, Suite 250
Beverly Hills, Michigan 48025
T: 877.386.8214
Contact: Jamal Kalabat

Architect:
Saroki Architecture
430 N. Old Woodward Avenue, Suite 300
Birmingham, Michigan 48009
T: 248.258.5707
Contact: Eavan Yaldo, LEED AP

Surveyor / Civil Engineer:
Alpine Engineering, Inc.
46892 West Road, Suite 109
Novi, Michigan 48377
T: 248.926.3701
Contact: Shiloh Dahlin, PE

Landscape Architect:
Allen Design
557 Carpenter
Northville, Michigan 48167
T: 248.467.4668
Contact: Jim Allen

Septic Engineer:
Boss Engineering
3121 E. Grand River
Howell, Michigan 48843
T: 517.546.4836
Contact: Sean Nalepka, RS

Scope of Work:
The following drawings refer to the construction of a retreat center at Our Lady of the Fields Camp. This will be adjacent to the existing church on the property. An enclosed walkway would be constructed to access the church from the retreat center for protection from inclement weather, and 24 hour access for retreatants. The retreat center would be just under 29,000 SF, consist of a 1 and 2 story building, along with a small basement. The common areas will be part of the 1-story portion of the building, while the sleeping areas will be in the 2-story portion of the building. All exterior finishes have been thoughtfully selected to compliment the adjacent church, while providing the differentiation and originality of a new design.

Zoning Information:
Zoning District: PRF (Public and Recreational Facilities District)
Zoning of Adjacent Properties: See Location Map

Site Area: 159.60 Acres (6,952,357 S.F.)

Proposed Building Setbacks:
Front Yard Setback (West): 425 Feet
Front Yard Setback (North): 2,064 Feet
Front Yard Setback (East): 1,928 Feet
Side Yard Setback (South): 359 Feet

Building Height:
Maximum Allowed: 35'-0" Feet to Roof Midpoint (2 Stories)
Proposed: 27'-2" to Roof Midpoint (2 Stories)

Building Area:
Lower Level: 3,950 G.S.F.
First Level: 16,095 G.S.F.
Second Level: 8,806 G.S.F.
Total Building Area: 28,851 G.S.F.

Parking (Prescriptive per Zoning Ordinance Section 14.04):
Required: 1 per 3 seats (285 seats) = 95 Spaces
Provided: 102 Spaces (Including 5 Barrier-Free)
Existing Church: 1 Space per guest room plus 1 space per 100 SF of lounge, restaurant, conference, or banquet rooms or exhibit space
Proposed Retreat Center: 1 Space per guest room plus 1 space per 100 SF of lounge, restaurant, conference, or banquet rooms or exhibit space
Total: 40 + 34 = 74 Spaces
7 Spaces (Including 2 Barrier-Free)
Total: 169 Spaces (Including 5 Barrier-Free) 109 Spaces (Including 7 Barrier-Free)
*It is proposed that the Church and Retreat Center will share parking. If this is approved by the Planning Commission, the required number of parking spaces may be reduced by up to 30% (Section 14.02.04)

Loading: 35 Feet x 24 Feet Loading Area Provided (Small Trucks & Vans)
Landscape: Refer to Civil & Landscape Drawings

SHEET INDEX:		07-31-2020 SITE PLAN REVIEW	08-26-2020 SITE PLAN REVIEW RESUBMITTAL	10-19-2020 SITE PLAN REVIEW REVISION
●	ISSUED / REVISED			
○	ISSUED / NOT REVISED			
GENERAL				
G000	COVER SHEET	●	●	●
CIVIL				
1	COVER SHEET	●	●	●
2	SITE PLAN	●	●	●
3	TOPOGRAPHIC SURVEY AND DEMOLITION PLAN	●	●	●
4	GRADING AND SOIL EROSION & SEDIMENTATION CONTROL PLAN	●	●	●
5	UTILITY PLAN	●	●	●
6	STORM WATER MANAGEMENT PLAN	●	●	●
7	SITE DETAILS	●	●	●
LANDSCAPE				
L-1	LANDSCAPE PLAN	●	●	●
L-2	LANDSCAPE DETAILS	●	●	●
ARCHITECTURAL				
A010	ARCHITECTURAL SITE PLAN	●	●	●
A011	SITE DETAILS	●	○	○
A012	TRASH ENCLOSURE	●	●	○
A100	LOWER LEVEL FLOOR PLAN	●	○	○
A110	FIRST LEVEL FLOOR PLAN	●	○	○
A120	SECOND LEVEL FLOOR PLAN	●	○	○
A130	ROOF PLAN	●	○	○
A200	EXTERIOR ELEVATIONS	●	○	○
A201	EXTERIOR ELEVATIONS	●	○	○



SAROKI
ARCHITECTURE
430 N. OLD WOODWARD
BIRMINGHAM, MI 48009
P. 248.258.5707
F. 248.258.5515
SarokiArchitecture.com

Project:
The Prophet Elijah
Retreat Center
1391 Kellogg Road
Brighton, Michigan 48114

Date: Issued For:
07-31-2020 SITE PLAN REVIEW
08-26-2020 SITE PLAN REVIEW RESUBMITTAL
10-19-2020 SITE PLAN REVIEW REVISION

THE PROPHET ELIJAH RETREAT CENTER

1391 KELLOGG ROAD, GENOA TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN

SITE PLAN

LEGEND:

- EX. CATCH BASIN
- EX. MANHOLE
- △ EX. END SECTION
- ⊕ EX. OVERFLOW STRUCTURE
- ⊖ EX. DOWNSPOUT/ROOF DRAIN
- ⊙ EX. CLEANOUT
- ⊗ EX. WATER GATE VALVE
- ⊘ EX. HYDRANT
- ⊙ EX. WATER VALVE
- ⊙ EX. WATER SHUTOFF
- ⊙ EX. FIRE DEPT. CONNECTION
- ⊙ EX. GAS SHUTOFF
- ⊙ EX. GAS VENT
- ⊙ EX. ELECTRIC/GAS METER
- ⊙ EX. HANDHOLE
- ⊙ EX. PEDESTAL
- ⊙ EX. TRANSFORMER
- ⊙ EX. LIGHTPOLE
- ⊙ EX. UTILITY POLE
- ⊙ EX. GUY ANCHOR
- ⊙ EX. TREE
- ⊙ EX. TREE TAG & NUMBER
- ⊙ EX. TREE LINE
- ⊙ EX. SANITARY SEWER
- ⊙ EX. STORM SEWER
- ⊙ EX. WATER MAIN
- ⊙ EX. ELECTRIC CABLE
- ⊙ EX. COMMUNICATION
- ⊙ EX. GAS LINE
- ⊙ EX. OVERHEAD LINE
- ⊙ EX. SIGN
- ⊙ EX. POST/BOLLARD
- ⊙ EX. FLAGPOLE
- ⊙ EX. WATER WELL
- ⊙ EX. SATELLITE DISH
- ⊙ EX. BOULDER
- ⊙ EX. TREE STUMP
- ⊙ EX. PARKING METER
- ⊙ EX. UTILITY MARKER
- ⊙ EX. SOIL BORING
- ⊙ EX. MAILBOX
- ⊙ EX. GENERATOR
- ⊙ EX. MONITOR WELL
- ⊙ EX. AIR CONDITIONER
- ⊙ EX. PUMP
- ⊙ EX. FENCE
- F.F. PROP. FINISH FLOOR ELEVATION
- PROP. CURB & GUTTER (PITCH OUT)
- PROP. STORM SEWER
- PROP. SANITARY SEWER
- PROP. WATER MAIN
- PROP. STRUCTURE
- PROP. END SECTION
- C.O. PROP. CLEAN-OUT
- PROP. HYDRANT
- PROP. GATE VALVE
- PROP. CURB BOX
- V.B. PROP. GUTTER ELEV.
- PROP. TOP OF CURB ELEV.
- PROP. TOP OF WALK ELEV.
- PROP. TOP OF PAVEMENT ELEV.
- PROP. SPOT ELEV.
- PROP. DRAINAGE ARROW
- PROP. SILT FENCE
- PROP. TREE PROTECTION FENCE
- PROP. INLET FILTER
- PROP. ASPHALT
- PROP. CONCRETE
- PROP. LIGHT POLE



LEGAL DESCRIPTION

(PROVIDED BY OTHERS)
 (AS CONTAINED IN THE COMMITMENT NO.: 07082686, ISSUED BY TRANSWORLD TITLE COMPANY, LLC, DATED AUGUST 7, 2007 AT 08:00 AM) LAND SITUATED IN THE TOWNSHIP OF GENOA, COUNTY OF LIVINGSTON, STATE OF MICHIGAN, DESCRIBED AS: PARCEL 1: (TAX ID: 4711-12-100-002) THE WEST 1/2 OF THE NORTHWEST 1/4 OF SECTION 12, TOWN 2 NORTH, RANGE 5 EAST, COMMONLY KNOWN AS: 6989 MCCLEMENTS PARCEL 16; (TAX ID: 4711-11-200-001) THE EAST 1/2 OF THE NORTHEAST 1/4 OF SECTION 11, TOWN 2 NORTH, RANGE 5 EAST, COMMONLY KNOWN AS: 1441 KELLOGG ROAD

DESCRIPTION OF SURVEY:
 THE EAST 1/2 OF THE NORTHEAST 1/4 OF SECTION 11 AND THE WEST 1/2 OF THE NORTHWEST 1/4 OF SECTION 12, TOWN 2 NORTH, RANGE 5 EAST, GENOA TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN, DESCRIBED AS:
 BEGINNING AT THE NORTHEAST CORNER OF SECTION 11, ALSO BEING THE NORTHWEST CORNER OF SECTION 12; THENCE S89°30'25"E 1331.61 FEET ALONG THE NORTH LINE OF SECTION 12 AND THE CENTERLINE OF MCCLEMENTS ROAD (66.00 FEET WIDE); THENCE THE FOLLOWING 7 COURSES ALONG THE CENTERLINE (AS OCCUPIED) OF EULER ROAD (66.00 FEET WIDE): S00°22'05"W 648.29 FEET ALONG THE EAST LINE OF THE WEST 1/2 OF THE NORTHWEST 1/4 OF SECTION 12; 330.55 FEET ALONG THE CURVE TO THE RIGHT, HAVING A RADIUS OF 2050.00 FEET, A CENTRAL ANGLE OF 09°14'19" AND A CHORD BEARING S04°59'14"W 330.19 FEET; S09°38'23"W 615.30 FEET; 264.01 FEET ALONG THE CURVE TO THE LEFT, HAVING A RADIUS OF 750.00 FEET, A CENTRAL ANGLE OF 20°10'07" AND A CHORD BEARING S00°28'40"E 262.65 FEET; S10°33'44"E 322.66 FEET; 202.14 FEET ALONG THE CURVE TO THE RIGHT, HAVING A RADIUS OF 1300.00 FEET, A CENTRAL ANGLE OF 08°54'32" AND A CHORD BEARING S06°06'28"E 201.93 FEET; S01°39'12"E 319.67 FEET; THENCE N87°54'47"W 1304.24 FEET ALONG THE EAST-WEST 1/4 LINE OF SECTION 12 TO THE WEST 1/4 CORNER OF SECTION 12, ALSO BEING THE EAST 1/4 CORNER OF SECTION 11; THENCE S89°42'17"W 1327.65 FEET ALONG THE EAST-WEST 1/4 LINE OF SECTION 11; THENCE N00°09'08"E 2661.69 FEET ALONG THE WEST LINE OF THE EAST 1/2 OF THE NORTHEAST 1/4 OF SECTION 11 AND ALONG THE EAST LINE OF S. KELLOGG ROAD (66.00 FEET WIDE); THENCE S89°42'24"E 1335.91 FEET ALONG THE NORTH LINE OF SECTION 11 AND THE CENTERLINE OF S. KELLOGG ROAD TO THE POINT OF BEGINNING, CONTAINING 159.60 ACRES (6,952,357 SQ.FT.), MORE OR LESS. PORTION IN SECTION 11 CONTAINS 81.16 ACRES; PORTION IN SECTION 12 CONTAINS 78.44 ACRES.

LOCATION MAP:

1" = ±400 FEET

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APPLICANT/OWNER:
 THE CHALDEAN CATHOLIC CHURCH OF THE USA
 25603 BERG RD
 SOUTHFIELD, MI 48034
 PHONE: (248) 351-0440
 FAX: (248) 351-0443

ARCHITECT:
 SAROKI ARCHITECTURE
 430 N. OLD WOODWARD
 BIRMINGHAM, MI 48009
 PHONE: (248) 258-5707
 FAX: (248) 258-5515

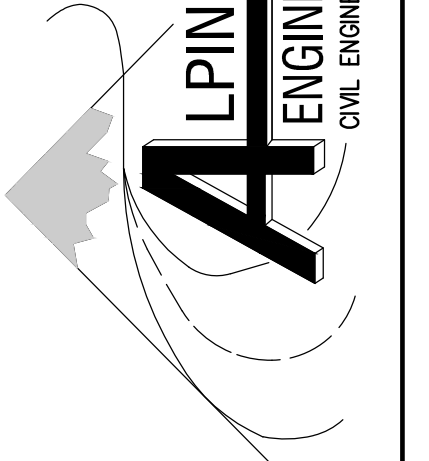
SURVEYOR/ENGINEER:
 ALPINE ENGINEERING, INC.
 46892 WEST ROAD, SUITE 109
 NOVI, MI 48377
 PHONE: (248) 926-3701
 FAX: (248) 926-3765

LANDSCAPE ARCHITECT:
 ALLEN DESIGN
 557 CARPENTER
 NORTHVILLE, MI 48167
 PHONE: (248) 467-4668

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 TOPOGRAPHIC SURVEYS
 PARCEL SPLITS

RESIDENTIAL
 SUBDIVISIONS
 SITE CONDOMINIUM
 MULTI-FAMILY
 HOA PLANS
 CONSTRUCTION LAYOUT



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CLIENT: THE CHALDEAN CATHOLIC CHURCH OF THE USA
 COVER SHEET
 THE PROPHET ELIJAH RETREAT CENTER
 SECTION: 11 & 12 TOWNSHIP: 2N RANGE: 5E
 GENOA TOWNSHIP
 LIVINGSTON COUNTY
 MICHIGAN

REVISED

10-19-2020 SITE PLAN REVIEW REVISION
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DATE: 07-31-2020

DRAWN BY: SD

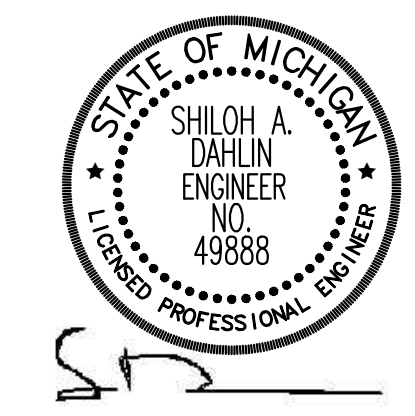
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NOT TO SCALE

FBK: 1

CHP: 1

SCALE: HOR 1" = 400 FT. VER 1" = 40 FT. 08-296.3

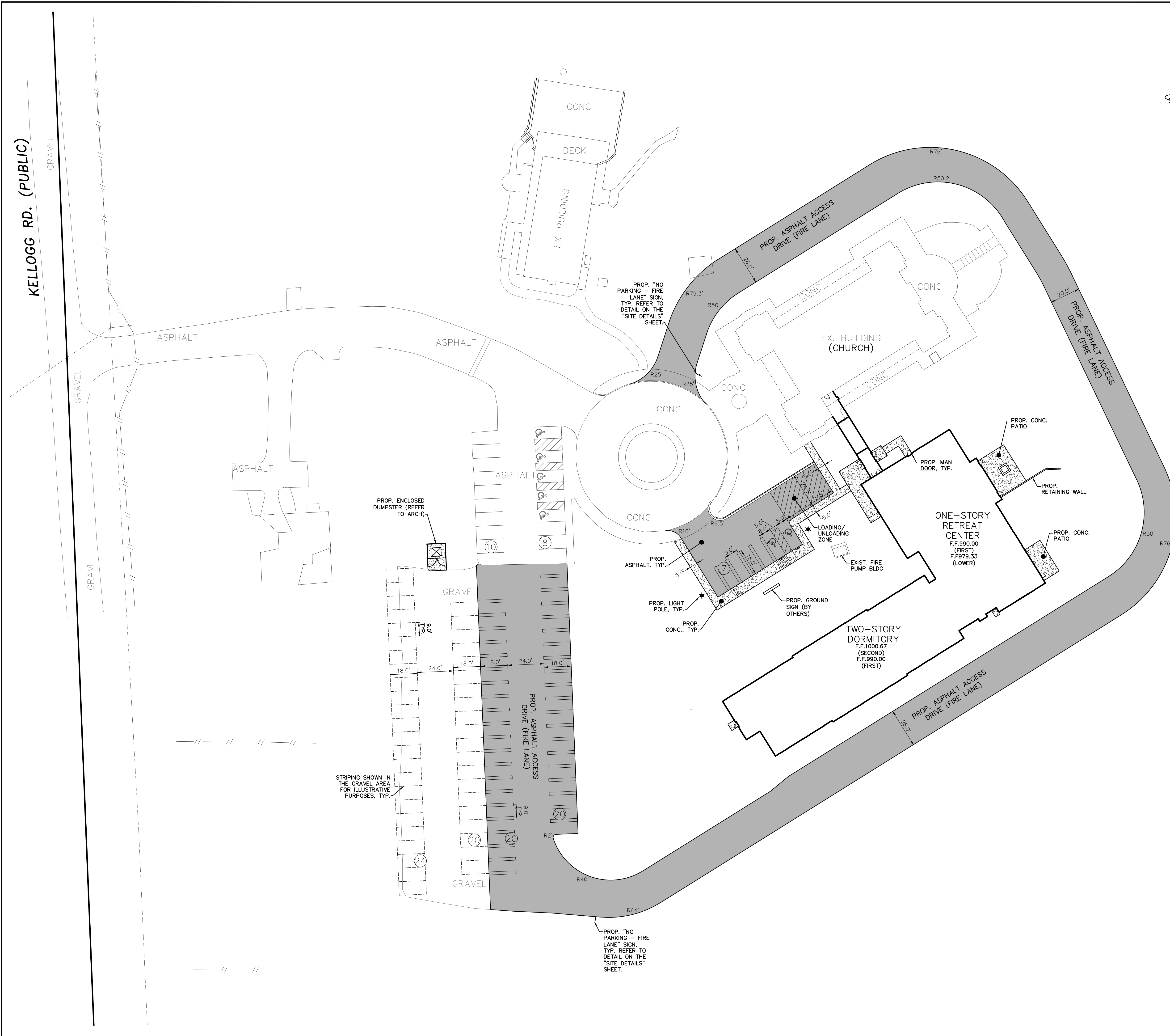


SHEET INDEX:

- 1 COVER SHEET
- 2 SITE PLAN
- 3 TOPOGRAPHIC SURVEY AND DEMOLITION PLAN
- 4 GRADING AND SOIL EROSION & SEDIMENTATION CONTROL PLAN
- 5 UTILITY PLAN
- 6 STORM WATER MANAGEMENT PLAN
- 7 SITE DETAILS

NOT FOR CONSTRUCTION

KELLOGG RD. (PUBLIC)



SITE DATA:
 OVERALL DEVELOPMENT AREA: 159.60 ACRES (6,952,357 SQ.FT.)

PARKING REQUIRED:
 EXISTING CHURCH: 1 PER 3 SEATS (285 SEATS) = 95 SPACES
 PROPOSED RETREAT CENTER (HOTELS/MOTELS WITH LOUNGE, RESTAURANT AND CONFERENCE): 1 SPACE PER GUEST ROOM PLUS 1 SPACE PER 100 SF OF LOUNGE, RESTAURANT, CONFERENCE, OR BANQUET ROOMS OR EXHIBIT SPACE: 40 + 34 = 74 SPACES
 TOTAL: 95 + 74 = 169 SPACES (INCLUDING 5 BARRIER FREE)

PARKING PROVIDED:
 EXISTING: 102 SPACES (INCLUDING 5 ADA PARKING SPACES)
 PROPOSED: 7 SPACES (INCLUDING 2 ADA PARKING SPACES)
 TOTAL: 109 SPACES (INCLUDING 7 ADA PARKING SPACES)

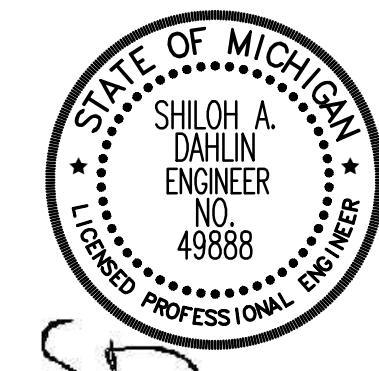
PROPOSED BUILDING SETBACKS

	DESIGNED
FRONT (WEST)	425'
FRONT (NORTH)	2064'
FRONT (EAST)	1928'
SIDE (SOUTH)	359'

- NOTES:**
1. ALL WORK TO CONFORM TO CURRENT STANDARDS AND SPECIFICATIONS OF THE GENOA TOWNSHIP, LIVINGSTON COUNTY, AND/OR MDOT.
 2. THE CONTRACTOR SHALL NOTIFY MISS DIG (800-482-1771) A MINIMUM OF 72 HOURS PRIOR TO START OF CONSTRUCTION.
 3. THE CONTRACTOR SHALL NOTIFY THE TOWNSHIP/COUNTY/STATE AS REQUIRED PRIOR TO START OF CONSTRUCTION.
 4. CONTRACTOR TO FIELD VERIFY LOCATION, DEPTH, CONDITION, AND SIZE OF ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION.
 5. CONTRACTOR TO PLACE BOLLARDS PER ARCHITECTURAL DRAWINGS. CONTRACTOR TO VERIFY THAT ADA ACCESS IS NOT IMPACTED BY THE BOLLARDS.
 6. REFER TO THE LANDSCAPING PLAN (PREPARED BY OTHERS).
 7. ALL PERMANENT AND TEMPORARY PAVEMENT MARKINGS AND SIGNAGE SHALL COMPLY WITH THE 2011 MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD). MARKINGS AND SIGNAGE INDICATING THE FIRE LANES TO BE INSTALLED PER THE REQUIREMENTS OF THE FIRE DEPARTMENT.
 8. REFER TO THE ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION REGARDING THE DUMPSTER ENCLOSURE AND PAD.
 9. ACCESS ROAD TO SITE SHALL BE PROVIDED AND MAINTAINED DURING CONSTRUCTION. ACCESS ROADS SHALL BE CONSTRUCTED TO BE CAPABLE OF SUPPORTING THE IMPOSED LOAD OF FIRE APPARATUS WEIGHTING AT LEAST 84,000 POUNDS.

LEGEND:

	EX. HYDRANT
	EX. PEDESTAL
	EX. TRANSFORMER
	EX. LIGHTPOLE
	EX. UTILITY POLE
	EX. GUY ANCHOR
	EX. COMM. MANHOLE
	EX. SIGN
	EX. POST/BOLLARD
	EX. FLAGPOLE
	EX. MONITOR WELL
	EX. AIR CONDITIONER
	EX. PUMP
	EX. FENCE
	F.F. PROP. FINISH FLOOR ELEV.
	PROP. CURB & GUTTER (PITCH OUT)
	PROP. ASPHALT
	PROP. CONCRETE
	PROP. LIGHT POLE



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CLIENT: THE CHALDEAN CATHOLIC CHURCH OF THE USA

SITE PLAN

THE PROPHET ELIJAH RETREAT CENTER
 SECTION: 11 & 12
 TOWNSHIP: 2N
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CHF:

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2

08-296.3

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- NOTES:**
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 2. THE CONTRACTOR SHALL NOTIFY MISS DIG A MINIMUM OF 72 HOURS PRIOR TO BEGINNING OF CONSTRUCTION.
 3. CONTRACTOR TO FIELD VERIFY LOCATION, DEPTH, CONDITION, AND SIZE OF ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION.
 4. TITLEWORK WAS NOT PROVIDED. ALL EASEMENTS MAY NOT BE SHOWN.

- LEGEND:**
- ⊕ EX. CATCH BASIN
 - EX. MANHOLE
 - EX. END SECTION
 - EX. OVERFLOW STRUCTURE
 - EX. DOWNSPOUT/ROOF DRAIN
 - EX. CLEANOUT
 - EX. WATER GATE VALVE
 - EX. HYDRANT
 - EX. WATER VALVE
 - EX. WATER SHUTOFF
 - EX. FIRE DEPT. CONNECTION
 - EX. GAS SHUTOFF
 - EX. GAS VENT
 - EX. ELECTRIC/GAS METER
 - EX. HANDHOLE
 - EX. PEDESTAL
 - EX. TRANSFORMER
 - EX. LIGHTPOLE
 - EX. UTILITY POLE
 - EX. GUY ANCHOR
 - EX. TREE
 - EX. TREE LINE
 - EX. SANITARY SEWER
 - EX. STORM SEWER
 - EX. WATER MAIN
 - EX. ELECTRIC CABLE
 - EX. COMMUNICATION
 - EX. GAS LINE
 - EX. OVERHEAD LINE
 - EX. SIGN
 - EX. POST/BOLLARD
 - EX. FLAGPOLE
 - EX. WATER WELL
 - EX. SATELLITE DISH
 - EX. PARKING METER
 - EX. UTILITY MARKER
 - EX. SOIL BORING
 - EX. MAILBOX
 - EX. GENERATOR
 - EX. MONITOR WELL
 - EX. AIR CONDITIONER
 - EX. PUMP
 - EX. FENCE
 - EX. FINISH FLOOR ELEVATION
 - APPROXIMATE AREA OF DISTURBANCE (CONTRACTOR TO COORDINATE WITH THE OWNER FOR EXACT LIMITS OF DEMOLITION WORK)

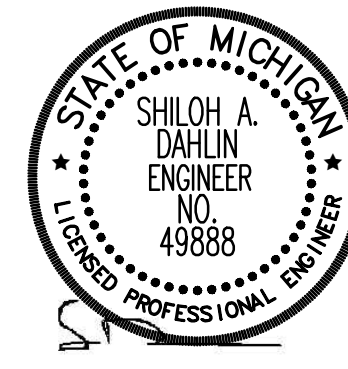
- DEMOLITION NOTES:**
1. DEMOLITION PLAN IS FOR GENERAL INFORMATION PURPOSES ONLY. CONTRACTOR IS RESPONSIBLE FOR OBTAINING NECESSARY PERMITS AND COORDINATING WITH OWNER TO DETERMINE DETAILED DEMOLITION REQUIREMENTS.
 2. CONTRACTOR TO COORDINATE WITH FRANCHISE UTILITY COMPANIES AND/OR CITY AND COUNTY DEPARTMENTS FOR REMOVAL AND/OR RELOCATION OF METER BOXES, UTILITY POLES, UNDERGROUND LINES, ABOVE GROUND LINES, ETC., AS NECESSARY.
 3. REMOVE EXISTING BUILDING WALLS, FLOOR SLABS, AND FOUNDATION AS DIRECTED BY THE GEOTECHNICAL ENGINEER, BACKFILL THE OPENING WITH SUITABLE MATERIAL TO CARRY BUILDING/PARKING LOT LOADS.
 4. REMOVE OR GROUT IN PLACE, AS DIRECTED BY THE FIELD INSPECTOR, EX. SEWERS AND/OR MAINS TO BE ABANDONED AS NECESSARY.
 5. CONTACT OWNER FOR ENVIRONMENTAL REPORT FOR ANY ENVIRONMENTAL CONCERNS.
 6. CONTRACTOR IS RESPONSIBLE FOR DOING AN EARTHWORK CALCULATION FOR CUT AND FILL REQUIREMENTS, AND IS RESPONSIBLE FOR INCLUDING IMPORT AND EXPORT OF MATERIALS IN THEIR BID. ALL EXCESS MATERIAL (INCLUDING TOPSOIL, CLEAN FILL, AND WASTE MATERIAL) SHALL BE REMOVED FROM THE SITE.
 7. CONTRACTOR TO PROTECT EX. WALKS, POSTS, CONDUITS, PAVEMENT, CURBS, GUTTER, WALLS, BUILDINGS, FENCES, LANDSCAPING, TREES, ETC. TO REMAIN DURING CONSTRUCTION. CONTRACTOR TO COORDINATE REPLACEMENT OF LANDSCAPING, ETC. WITH THE OWNER.
 8. PRIOR TO THE REMOVAL OR ABANDONMENT OF ANY EX. UNDERGROUND UTILITY OR BUILDING SERVICE LINES CALLED FOR ON THE PLANS OR DISCOVERED DURING EXCAVATION, THE CONTRACTOR MUST DETERMINE IF THE UTILITY LINE OR BUILDING SERVICE IS STILL IN USE. IF THE UTILITY LINE OR BUILDING SERVICE IS IN USE/ACTIVE THE CONTRACTOR MUST TAKE ALL THE NECESSARY STEPS TO GUARANTEE THAT THE UTILITY LINE OR BUILDING SERVICE IS RECONNECTED WITHOUT AN INTERRUPTION IN SERVICE. THE RECONNECTION OF THE UTILITY LINE OR BUILDING SERVICE MUST BE IN ACCORDANCE WITH THE STANDARDS AND THE REQUIREMENTS OF THE APPROPRIATE GOVERNMENTAL AGENCY OR PRIVATE UTILITY COMPANY.
 9. CONTRACTOR TO COORDINATE WITH THE ADJACENT LAND OWNERS AS REQUIRED.
 10. PROVIDE POSITIVE DRAINAGE AT ALL LOCATIONS TO ENSURE NO STANDING WATER WITHIN PAVEMENT OR GREEN AREAS. PRIOR TO CONSTRUCTION, FIELD VERIFY EXISTING PAVEMENT AND CURB ELEVATIONS WHERE PROPOSED PAVEMENT AND CURB MEETS EXISTING PAVEMENT AND CURB. PAVING CONTRACTOR SHALL TAKE EXTRA CARE TO ENSURE 1% MINIMUM PAVEMENT SLOPE IS ACHIEVED AND SHALL CONTACT DESIGN ENGINEER PRIOR TO CONSTRUCTION IF A CONFLICT IS APPARENT.
 11. CONTRACTOR TO FIELD VERIFY EXISTING IRRIGATION LOCATIONS AND REMOVE OR RELOCATE EXISTING IRRIGATION AS NECESSARY TO FACILITATE CONSTRUCTION.
 12. REMOVE AND REPLACE ADDITIONAL PAVEMENT AS NECESSARY TO FACILITATE LIGHT POLE, SIGNAGE AND IRRIGATION CONSTRUCTION. COORDINATE REMOVALS WITH LIGHTING, SIGNAGE AND IRRIGATION PLANS.
 13. CONTRACTOR TO ESTABLISH NEW BENCHMARKS, AS NECESSARY PRIOR TO DEMOLITION WORK.
 14. CONTRACTOR TO COORDINATE OBTAINING RIGHT-OF-WAY PERMITS WITH THE COUNTY ROAD COMMISSION IF WORK WITHIN THE ROAD RIGHT-OF-WAYS IS NECESSARY.

BENCHMARKS:
 BM#1 - ARROW ON HYDRANT ±2' SOUTHWEST OF THE SOUTHWEST CORNER OF CHURCH. ELEVATION 993.99 NAVD88 (GPS DERIVED)
 BM#2 - "X" IN LIGHT POLE BASE ON SOUTH SIDE OF ENTRANCE DRIVE, ±226' EAST OF KELLOGG RD. ELEVATION 989.26 NAVD88 (GPS DERIVED)

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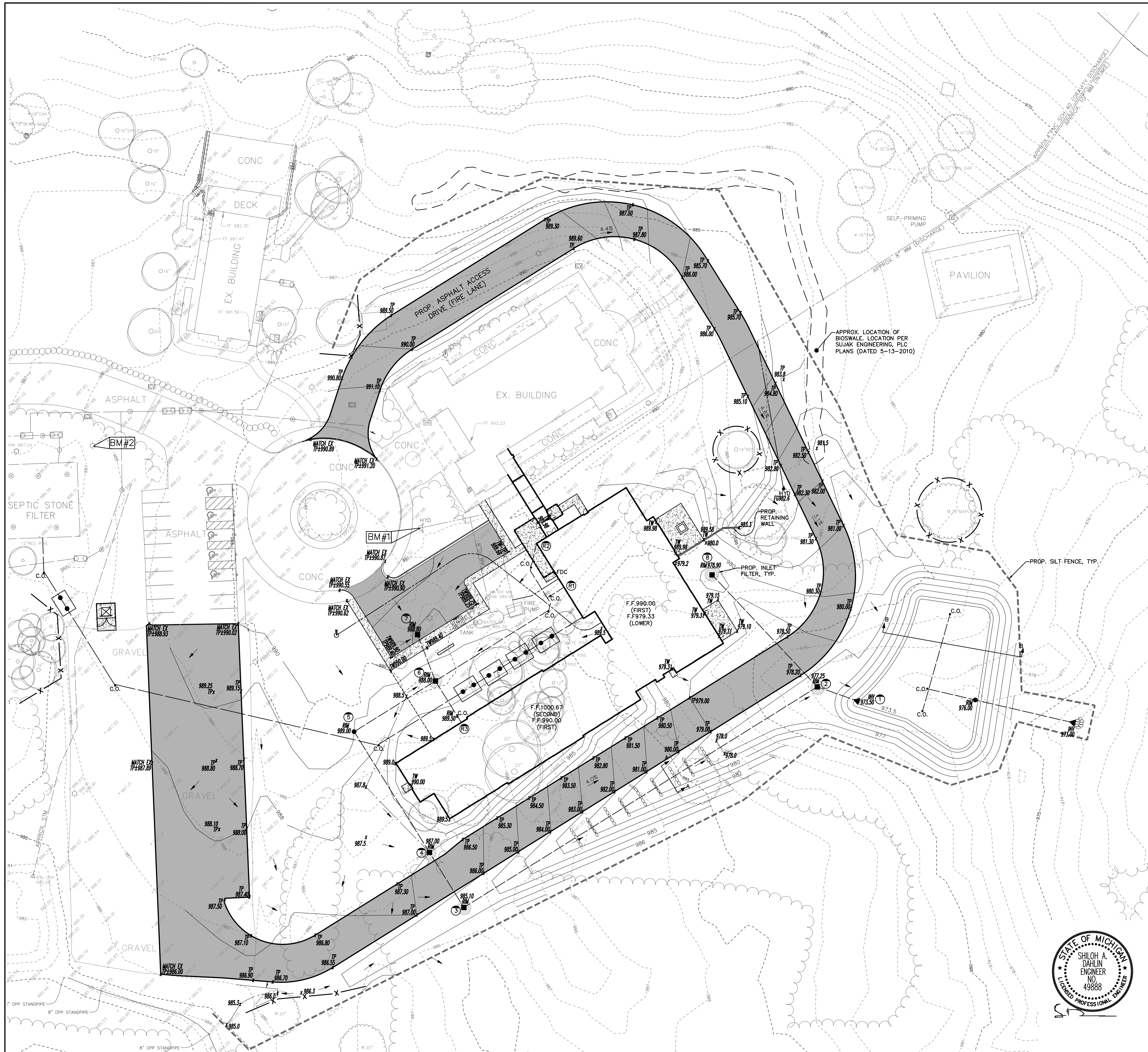
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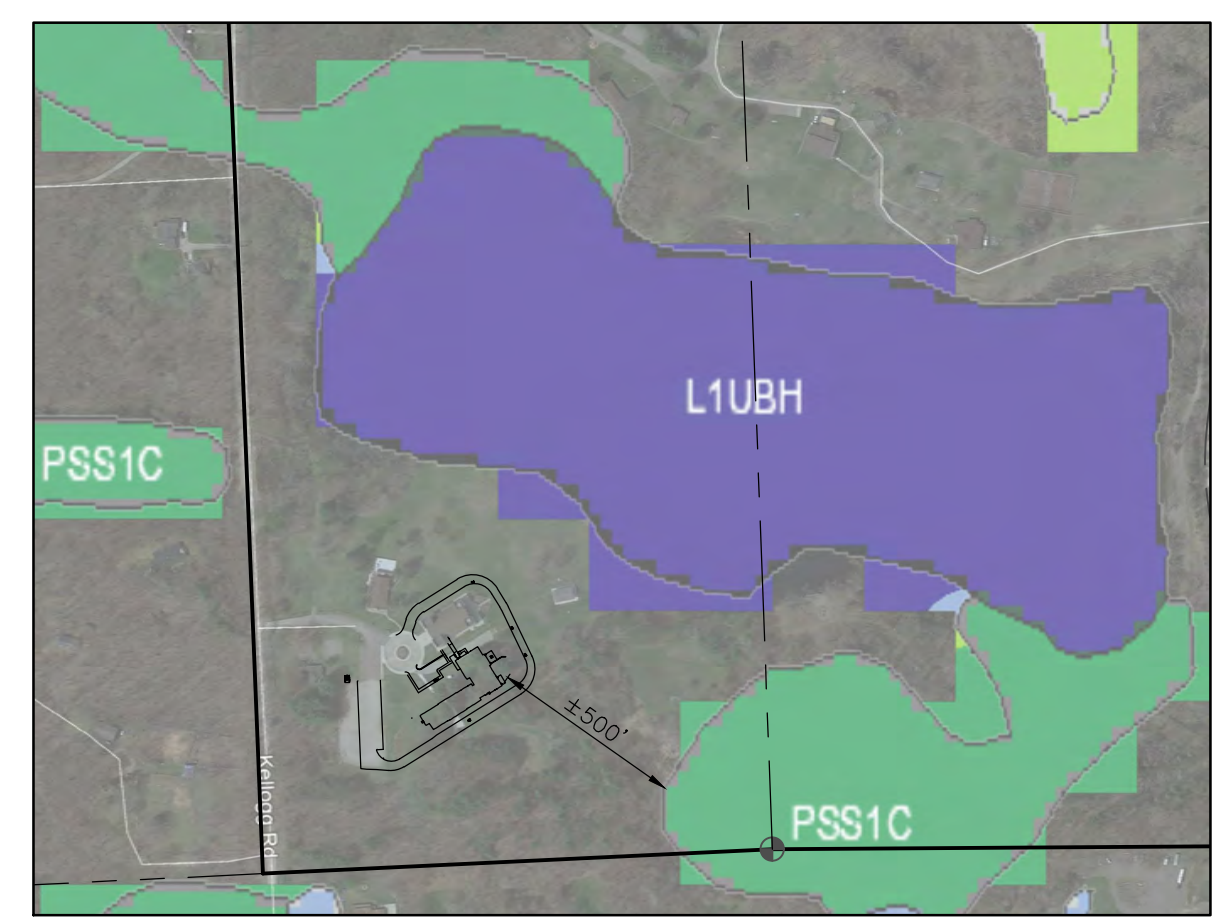
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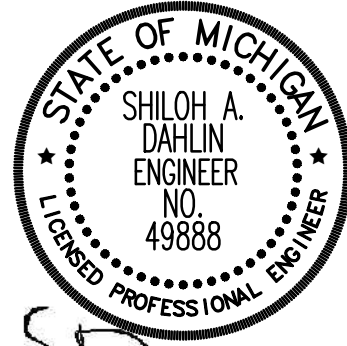
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 5. CONTRACTOR SHALL FIELD VERIFY EXACT LIMITS OF PAVEMENT IMPROVEMENTS. PAVING CONTRACTOR SHALL TAKE EXTRA CARE TO ENSURE 1% MINIMUM PAVEMENT SLOPE IS ACHIEVED. REMOVAL OF ADDITIONAL PAVEMENT MAY BE NECESSARY.
 6. THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE TO EXISTING UTILITIES, CURBS, SIDEWALKS, LANDSCAPING, SIGNS, LIGHT POLES, ETC. TO REMAIN.
 7. COMPACTED SAND BANKFILL SHALL BE PROVIDED FOR ALL UTILITIES WITHIN THE INFLUENCE OF PAVED AREAS.
 8. STEPS AND HAND RAILING TO MEET CURRENT TOWNSHIP/STATE/FEDERAL REQUIREMENTS.
 9. REFER TO THE GEOTECHNICAL ENGINEERING REPORT FOR ADDITIONAL INFORMATION REGARDING SITE PREPARATION, CONSTRUCTION METHODS, ETC.
 10. SOIL EROSION AND SEDIMENTATION NOTES AND DETAILS WILL BE PROVIDED ON THE FINAL ENGINEERING PLANS.

LEGEND:

EX. CATCH BASIN	EX. SOIL BORING
EX. MANHOLE	EX. MAILBOX
EX. END SECTION	EX. GENERATOR
EX. OVERFLOW STRUCTURE	EX. MONITOR WELL
EX. DOWNSPOUT/ROOF DRAIN	EX. AIR CONDITIONER
EX. CLEANOUT	EX. PUMP
EX. WATER GATE VALVE	EX. FENCE
EX. HYDRANT	F.F.
EX. WATER VALVE	PROP. FINISH FLOOR ELEVATION
EX. WATER SHUTOFF	PROP. CURB & GUTTER (PITCH OUT)
EX. FIRE DEPT. CONNECTION	PROP. STORM SEWER
EX. GAS SHUTOFF	PROP. SANITARY SEWER
EX. GAS VENT	PROP. WATER MAIN
EX. ELECTRIC/GAS METER	PROP. STRUCTURE
EX. HANDHOLE	PROP. END SECTION
EX. PEDESTAL	PROP. CLEAN-OUT
EX. TRANSFORMER	PROP. HYDRANT
EX. LIGHTPOLE	PROP. WATER WELL
EX. UTILITY POLE	PROP. GATE VALVE
EX. GUY ANCHOR	PROP. CURB BOX
EX. TREE	xGU 642.00
EX. TREE TAG & NUMBER	xTC 642.50
EX. TREE LINE	xTW 642.50
EX. SANITARY SEWER	xTP 642.50
EX. STORM SEWER	x643.5
EX. WATER MAIN	PROP. TOP OF CURB ELEV.
EX. ELECTRIC CABLE	PROP. TOP OF WALK ELEV.
EX. COMMUNICATION	PROP. TOP OF PAVEMENT ELEV.
EX. GAS LINE	PROP. SPOT ELEV.
EX. OVERHEAD LINE	PROP. DRAINAGE ARROW
EX. SIGN	PROP. SILT FENCE
EX. POST/BOLLARD	PROP. TREE PROTECTION FENCE
EX. FLAGPOLE	PROP. INLET FILTER
EX. WATER WELL	PROP. ASPHALT
EX. SATELLITE DISH	PROP. CONCRETE
EX. BOULDER	PROP. LIGHT POLE
EX. TREE STUMP	



NOTE:
1. WETLAND BOUNDARIES AS INDICATED ON THE GOOGLE AERIAL WITH U.S. FISH & WILDLIFE SERVICE: NATIONAL WETLANDS INVENTORY WETLANDS-DATA.KML OVERLAY
APPROXIMATE WETLAND BOUNDARIES
SCALE: 1" = 4500 FEET



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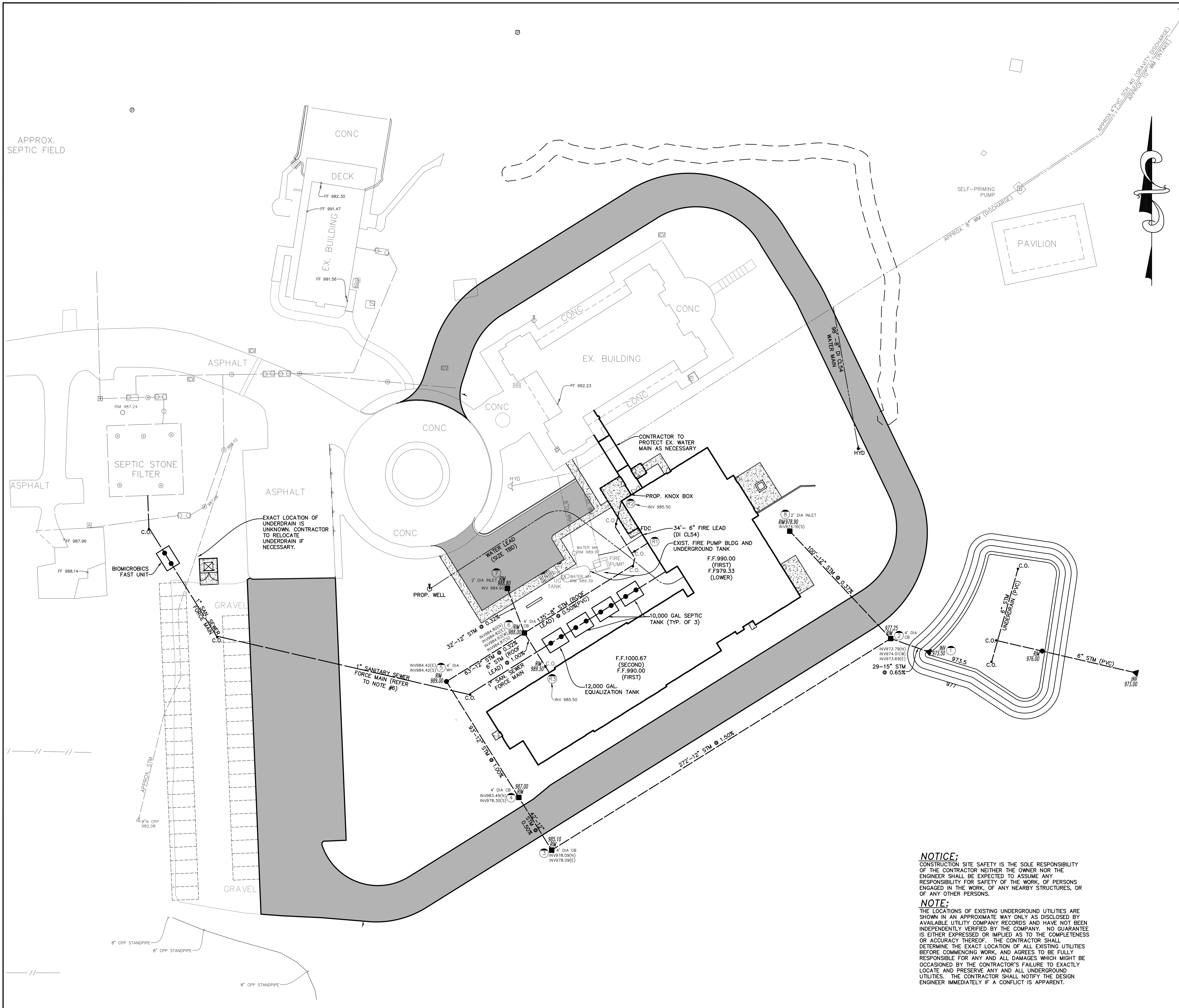
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CLIENT: THE CHALDEAN CATHOLIC CHURCH OF THE USA
GRADING AND SOIL EROSION & SEDIMENTATION CONTROL PLAN
THE PROPHET ELIJAH RETREAT CENTER
SECTION: 11 & 12 TOWNSHIP: 2N RANGE: 5E
GENOA TOWNSHIP
LIVINGSTON COUNTY
MICHIGAN

REVISED	
10-19-2020 SITE PLAN REVIEW REVISION	
08-26-2020 SITE PLAN REVIEW RESUBMITTAL	
07-31-2020 SITE PLAN REVIEW	
DATE: 07-31-2020	
DRAWN BY: SD	
CHECKED BY: TG	
FBK:	
CHF:	
SCALE: HOR 1" = 30 FT. VER 1" = 30 FT.	4
	08-296.3

NOT FOR CONSTRUCTION

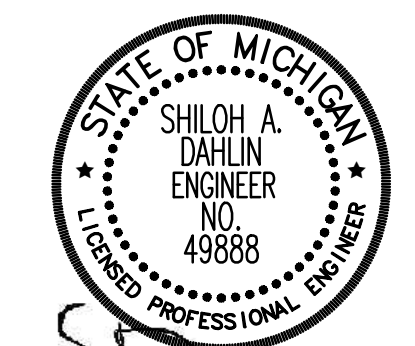


- NOTES:**
- ALL WORK TO CONFORM TO CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY, COUNTY, AND/OR MDOT.
 - THE CONTRACTOR SHALL NOTIFY MISS DIG (800-482-1771) A MINIMUM OF 72 HOURS PRIOR TO START OF CONSTRUCTION.
 - THE CONTRACTOR SHALL NOTIFY THE CITY/COUNTY/STATE AS REQUIRED PRIOR TO START OF CONSTRUCTION.
 - CONTRACTOR TO FIELD VERIFY LOCATION, DEPTH, CONDITION, AND SIZE OF ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION. EXACT LOCATIONS OF SOME EXISTING UTILITY LEADS (INCLUDING WELLS, IRRIGATION LINES, DOMESTIC LEADS, SANITARY LEADS, CLEANOUTS, ETC) ARE UNKNOWN.
 - COMPACTED SAND BANKFILL SHALL BE PROVIDED FOR ALL UTILITIES WITHIN THE INFLUENCE OF PAVED AREAS.
 - SANITARY SEWER SYSTEM DESIGN BY OTHERS.
 - ADDITIONAL DESIGN INFORMATION WILL BE PROVIDED ON THE FINAL ENGINEERING PLANS.
 - APPROVAL FROM THE LIVINGSTON COUNTY HEALTH DEPARTMENT FOR THE PROPOSED WELL AND SEPTIC IMPROVEMENTS WILL BE REQUIRED.
 - ALL STORM SEWER 12" AND LARGER TO BE C76 CLIV RCP UNLESS OTHERWISE NOTED.

- LEGEND:**
- EX. CATCH BASIN
 - EX. MANHOLE
 - EX. END SECTION
 - EX. OVERFLOW STRUCTURE
 - EX. DOWNSPOUT/ROOF DRAIN
 - EX. CLEANOUT
 - EX. WATER GATE VALVE
 - EX. HYDRANT
 - EX. WATER VALVE
 - EX. WATER SHUTOFF
 - EX. FIRE DEPT. CONNECTION
 - EX. GAS SHUTOFF
 - EX. GAS VENT
 - EX. ELECTRIC/GAS METER
 - EX. HANDHOLE
 - EX. PEDESTAL
 - EX. TRANSFORMER
 - EX. LIGHTPOLE
 - EX. UTILITY POLE
 - EX. GUY ANCHOR
 - EX. TREE
 - EX. TREE TAG & NUMBER
 - EX. TREE LINE
 - EX. SANITARY SEWER
 - EX. STORM SEWER
 - EX. WATER MAIN
 - EX. ELECTRIC CABLE
 - EX. COMMUNICATION
 - EX. GAS LINE
 - EX. OVERHEAD LINE
 - EX. SIGN
 - EX. POST/BOLLARD
 - EX. FLAGPOLE
 - EX. WATER WELL
 - EX. SATELLITE DISH
 - EX. BOULDER
 - EX. TREE STUMP
 - EX. PARKING MARKER
 - EX. UTILITY MARKER
 - EX. MAILBOX
 - EX. GENERATOR
 - EX. MONITOR WELL
 - EX. AIR CONDITIONER
 - EX. PUMP
 - EX. FENCE
 - PROP. FINISH FLOOR ELEVATION
 - PROP. CURB & GUTTER (PITCH OUT)
 - PROP. STORM SEWER
 - PROP. SANITARY SEWER
 - PROP. WATER MAIN
 - PROP. STRUCTURE
 - PROP. END SECTION
 - PROP. CLEAN-OUT
 - PROP. HYDRANT
 - PROP. WATER WELL
 - PROP. GATE VALVE
 - PROP. CURB BOX
 - PROP. ASPHALT
 - PROP. CONCRETE
 - PROP. LIGHT POLE

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

NOTE:
THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AS DISCLOSED BY AVAILABLE UTILITY COMPANY RECORDS AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE COMPANY. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY IF A CONFLICT IS APPARENT.



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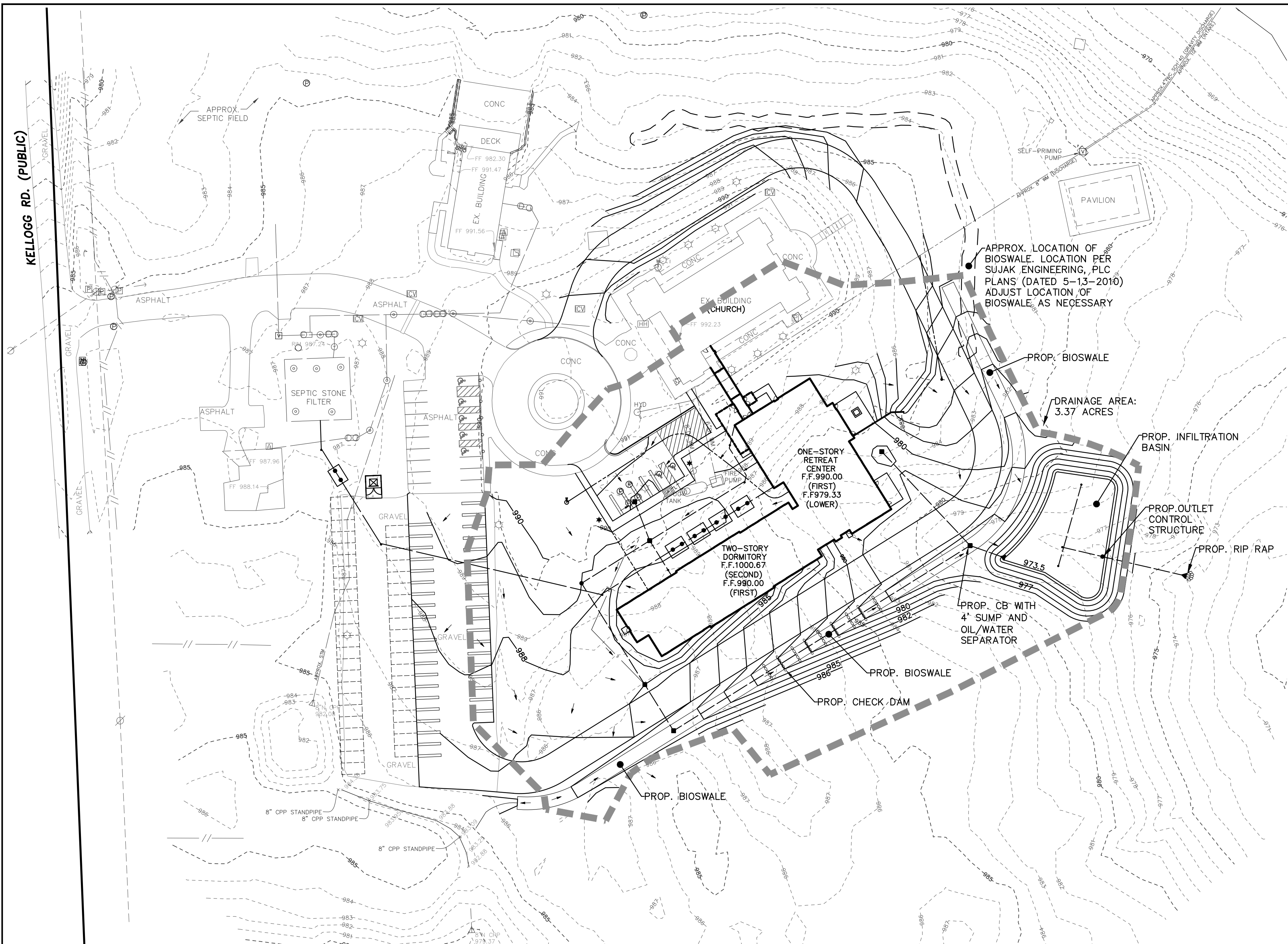
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UTILITY PLAN

THE PROPHET ELIJAH RETREAT CENTER
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NOT FOR CONSTRUCTION



- NOTES:**
- ALL WORK TO CONFORM TO CURRENT STANDARDS AND SPECIFICATIONS OF THE TOWNSHIP, COUNTY, AND/OR MDOOT.
 - THE CONTRACTOR SHALL NOTIFY MISS DIG (800-482-1771) A MINIMUM OF 72 HOURS PRIOR TO START OF CONSTRUCTION.
 - THE CONTRACTOR SHALL NOTIFY THE TOWNSHIP/COUNTY/STATE AS REQUIRED PRIOR TO START OF CONSTRUCTION.
 - CONTRACTOR TO FIELD VERIFY LOCATION, DEPTH, CONDITION, AND SIZE OF ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION.
 - CONTRACTOR SHALL FIELD VERIFY EXACT LIMITS OF PAVEMENT IMPROVEMENTS. PAVING CONTRACTOR SHALL TAKE EXTRA CARE TO ENSURE 1% MINIMUM PAVEMENT SLOPE IS ACHIEVED. REMOVAL OF ADDITIONAL PAVEMENT MAY BE NECESSARY.
 - THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE TO EXISTING UTILITIES, CURBS, SIDEWALKS, LANDSCAPING, SIGNS, LIGHT POLES, ETC. TO REMAIN.
 - COMPACTED SAND BANKFILL SHALL BE PROVIDED FOR ALL UTILITIES WITHIN THE INFLUENCE OF PAVED AREAS.
 - STEPS AND HAND RAILING TO MEET CURRENT TOWNSHIP/STATE/FEDERAL REQUIREMENTS.
 - REFER TO THE GEOTECHNICAL ENGINEERING REPORT FOR ADDITIONAL INFORMATION REGARDING SITE PREPARATION, CONSTRUCTION METHODS, ETC.
 - ADDITIONAL DESIGN INFORMATION WILL BE PROVIDED ON THE FINAL ENGINEERING PLANS.

- LEGEND:**
- EX. CATCH BASIN
 - EX. MANHOLE
 - EX. END SECTION
 - EX. DOWNSPOUT/ROOF DRAIN
 - EX. CLEANOUT
 - EX. WATER GATE VALVE
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 - PROP. WATER MAIN
 - PROP. STRUCTURE
 - PROP. END SECTION
 - PROP. CLEAN-OUT
 - PROP. HYDRANT
 - PROP. GATE VALVE
 - PROP. CURB BOX
 - PROP. GUTTER ELEV.
 - PROP. TOP OF CURB ELEV.
 - PROP. TOP OF WALK ELEV.
 - PROP. TOP OF PAVEMENT ELEV.
 - PROP. SPOT ELEV.
 - PROP. DRAINAGE ARROW
- xGU 642.00
 xTC 642.50
 xTW 642.50
 xTP 643.50



NOTE:

- SOIL TYPE PER THE ONLINE SOIL SURVEY ([HTTPS://WEBSOLSSURVEY.SC.EGOV.USDA.GOV](https://websolssurvey.sc.egov.usda.gov))
- SOIL TYPES:
 - MoE (MOWASSIE LOAM)
 - MoD (FOX SANDY LOAM)
 - Gd (GILFORD SANDY LOAM)
 - MoD (MIAMI LOAM)
 - Ho (HOUGHTON MUCK)
 - OmB (OWOSSO MIAMI SANDY LOAMS)

APPROXIMATE SOIL TYPE BOUNDARIES
SCALE: 1" = ±300 FEET

STORM WATER MANAGEMENT NARRATIVE:
CURRENTLY, THE DRAINAGE FROM THE PROPOSED IMPROVEMENT AREA FLOWS SOUTH/SOUTHEAST TO THE WETLAND AREA.

TO ACCOMMODATE THE PROPOSED IMPROVEMENT, BIOSWALES HAVE BEEN PROPOSED FOR PRE-TREATMENT FOR THE OVERLAND FLOW AND A CATCH BASIN WITH A FOUR (4)-FT SUMP AND OIL/WATER SEPARATOR HAS BEEN PROPOSED FOR PRE-TREATMENT OF THE ENCLOSED STORM SEWER PRIOR TO DISCHARGE TO THE BASIN.

AN INFILTRATION BASIN HAS BEEN PROPOSED TO ACCOMMODATE THE 100-YEAR STORM EVENT PER LIVINGSTON COUNTY DRAIN COMMISSIONER'S OFFICE REQUIREMENTS.

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ESTIMATED RUNOFF COEFFICIENT CALCULATION

LAND USE	AREA (A) (acres)	RUNOFF COEFFICIENT (C)
Building / Pavement	1.08	0.90
Grass	2.29	0.30
TOTAL AREA	3.37	

CALCULATE THE WEIGHTED RUNOFF COEFFICIENT:

$$C = \frac{\sum(A_i \times C_i)}{A} = \frac{(1.08 \times 0.9) + (2.29 \times 0.30)}{3.37}$$

$$= 0.49$$

Tributary Area (A) = 3.37 Acres
 Compound Run-off Coefficient C = 0.49
 Design Constant K = A x C = 1.65
 Allowable Outflow Rate (Qo) = 0.67 CFS
 (Assume 0.2 CFS / Acre)

1	2	3	4	5	6	7
Duration (Minutes)	Duration (Seconds)	Intensity (100 yr Storm) (In/Hr)	Col. #2 x Col. #3 (Inches)	Inflow Volume = Col.4 x K (Cu. Ft)	Outflow Volume Col.2 x Qo (Cu. Ft)	Storage Volume Col.5 - Col.6 (Cu. Ft)
5	300	9.17	2.751	4,543	202	4,341
10	600	7.86	4.716	7,788	404	7,383
15	900	6.88	6.192	10,225	607	9,618
20	1,200	6.11	7.332	12,107	809	11,299
30	1,800	5.00	9,000	14,862	1,213	13,649
60	3,600	3.24	11,664	19,261	2,426	16,834
90	5,400	2.39	12,906	21,312	3,640	17,672
120	7,200	1.90	13,680	22,590	4,853	17,737
180	10,800	1.34	14,472	23,898	7,279	16,619
240	14,400	1.04	14,976	24,730	9,708	15,022
300	18,000	0.85	15,300	25,265	12,132	13,133
360	21,600	0.71	15,336	25,324	14,558	10,766
420	25,200	0.62	15,624	25,800	16,985	8,815
480	28,800	0.54	15,552	25,681	19,411	6,270
540	32,400	0.49	15,676	26,216	21,838	4,378
620	37,200	0.43	15,996	26,414	25,073	1,341

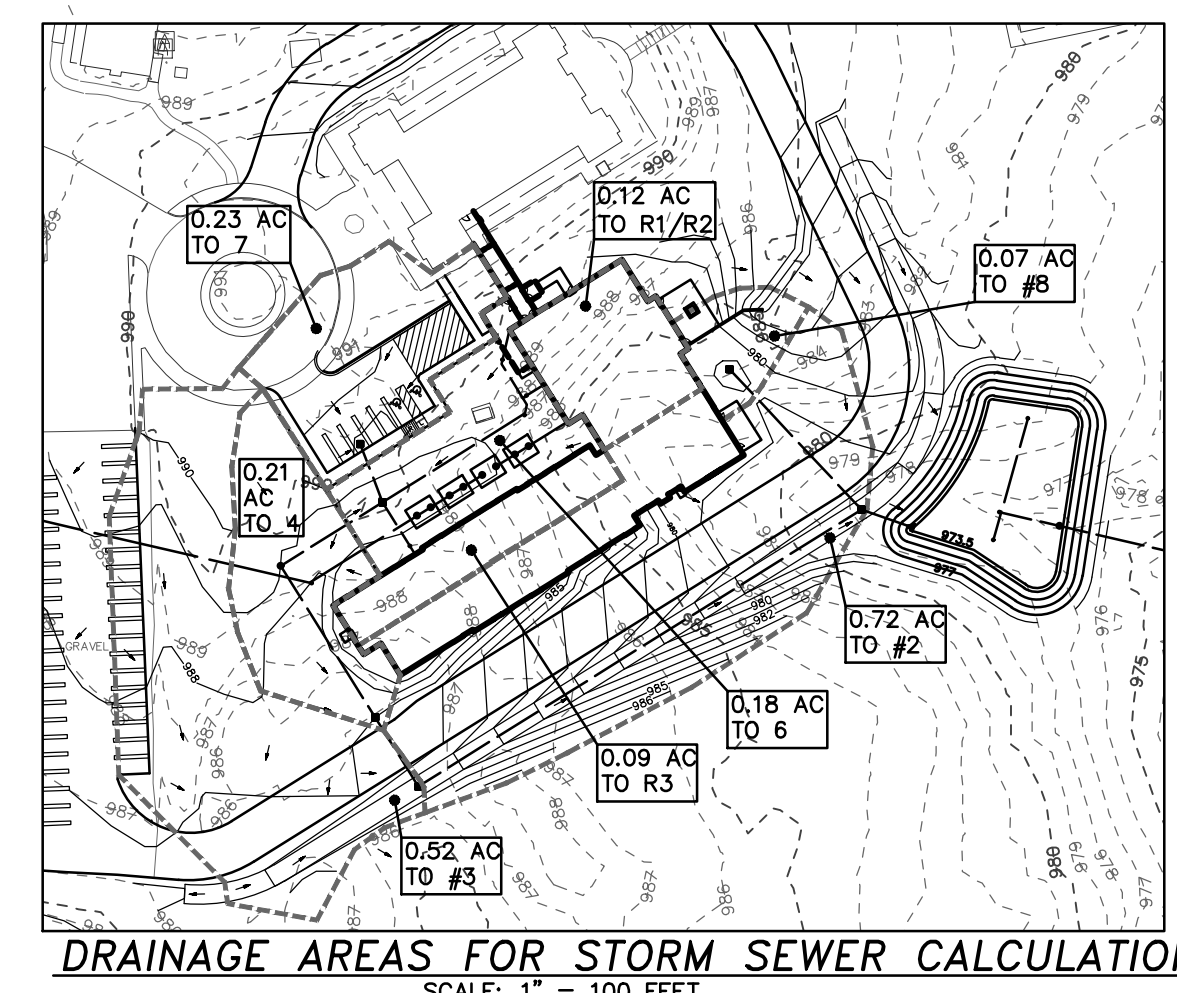
Therefore the required volume for a 100-year storm event is: 17,737 Cu. Ft.

DETENTION BASIN PROVIDED VOLUME

Elevation	Area	Average for Basin	Volume	Cumulative Volume
977.00	FREEBOARD			
976.00	8,421	7,895	7,895	17,830
975.00	7,368	6,870	6,870	9,936
974.00	6,371	6,133	3,066	3,066
973.50	5,894			

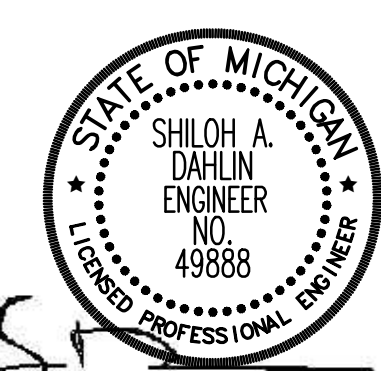
STORAGE ELEVATIONS

V ₁₀₀	17,737	cf provided at	Z ₁₀₀	976.0
			Z _{REMAINENT WATER}	973.5
			Z _{FREEBOARD}	977.0



STORM SEWER CALCULATIONS:

FROM MH INPUT	TO MH	INCRE- MENT ACRES (A)	C	EQUIV. AREA 100% ACRES CA	TOTAL AREA 100% ACRES SUM CA	T TIME (MIN.)	I (IN PER HOUR)	Q=CIA C.F.S. FLOW	CAPAC- ITY OF SEWER (C.F.S.)	DIAM. OF PIPE (IN.)	LENGTH OF LINE (FT.)	SLOPE OF PIPE (%)	MIN HG BASED ON "Q" (%)	HG FRS GIVEN "D" (%)	ACTUAL HG (%)	VEL. FLOW FULL (FT./ SEC.)	TIME OF FLOW (MIN.)	H.G. ELEV. UPPER END	H.G. ELEV. LOWER END	GROUND ELEV. UPPER END	GROUND ELEV. LOWER END	INVERT ELEV. UPPER END	INVERT ELEV. LOWER END
R1 & R2	6	0.12	0.90	0.11	0.11	15.00	4.38	0.47	0.86	8	135	0.50	0.15	0.52	0.15	2.45	0.9	985.61	985.40	990.00	988.00	985.50	984.82
6	5	0.18	0.40	0.07	0.45	15.90	4.28	1.90	2.02	12	63	0.32	0.29	0.30	0.29	2.57	0.4	985.40	985.22	988.00	989.00	984.62	984.42
5	4	0.00	0.90	0.00	0.45	16.30	4.24	1.90	3.57	12	93	1.00	0.29	0.30	0.29	4.54	0.3	984.56	984.29	989.00	987.00	984.42	983.49
4	3	0.21	0.40	0.08	0.53	16.60	4.21	2.23	2.52	12	42	0.50	0.39	0.30	0.39	3.21	0.2	979.06	978.89	987.00	985.10	978.30	978.09
3	2	0.52	0.40	0.21	0.74	16.80	4.19	3.09	4.36	12	272	1.50	0.75	0.30	0.75	5.56	0.8	976.85	974.81	985.10	977.25	978.09	974.01
2	1	0.72	0.50	0.36	1.12	17.60	4.11	4.61	5.21	15	29	0.65	0.51	0.23	0.51	4.25	0.1	974.85	974.50	977.25	988.00	973.69	973.50
7	6	0.23	0.80	0.18	0.18	15.00	4.38	0.81	2.02	12	32	0.32	0.05	0.30	0.05	2.57	0.2	985.61	985.60	988.00	988.00	984.90	984.80
8	2	0.07	0.35	0.02	0.02	15.00	4.38	0.81	2.17	12	100	0.37	0.05	0.30	0.05	2.76	0.6	974.70	974.65	978.00	977.25	974.16	973.79
R3	6	0.09	0.90	0.08	0.08	15.00	4.38	0.35	0.56	6	63	1.00	0.40	0.77	0.40	2.86	0.4	985.65	985.40	990.00	988.00	985.50	984.87



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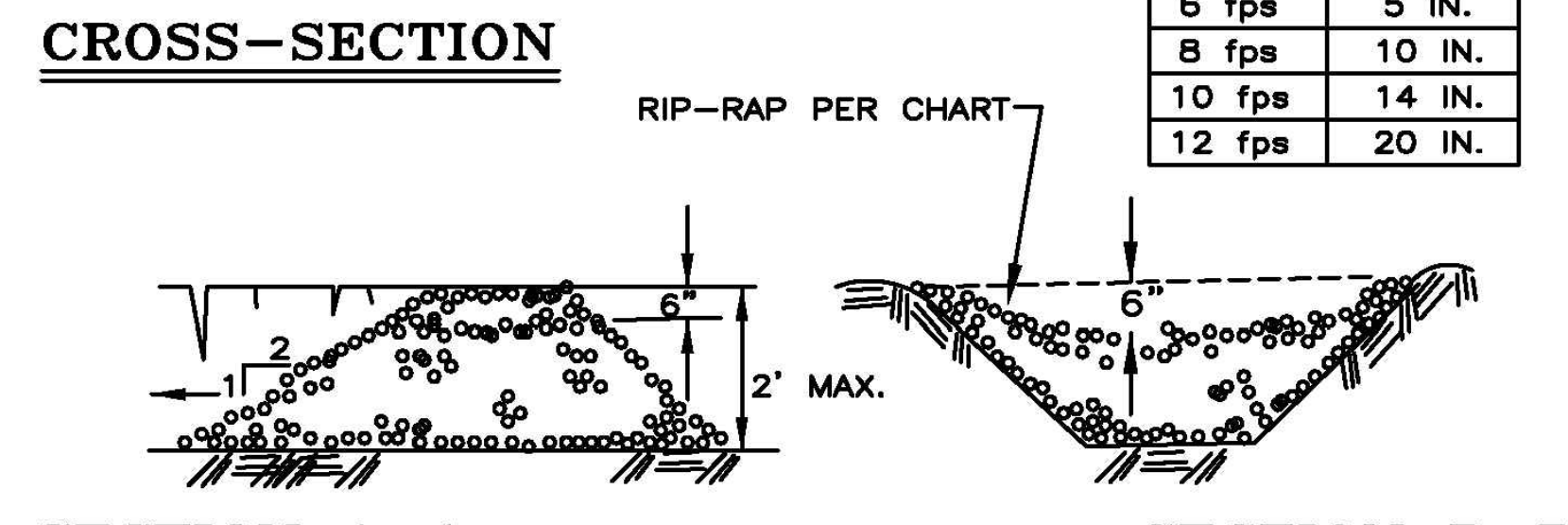
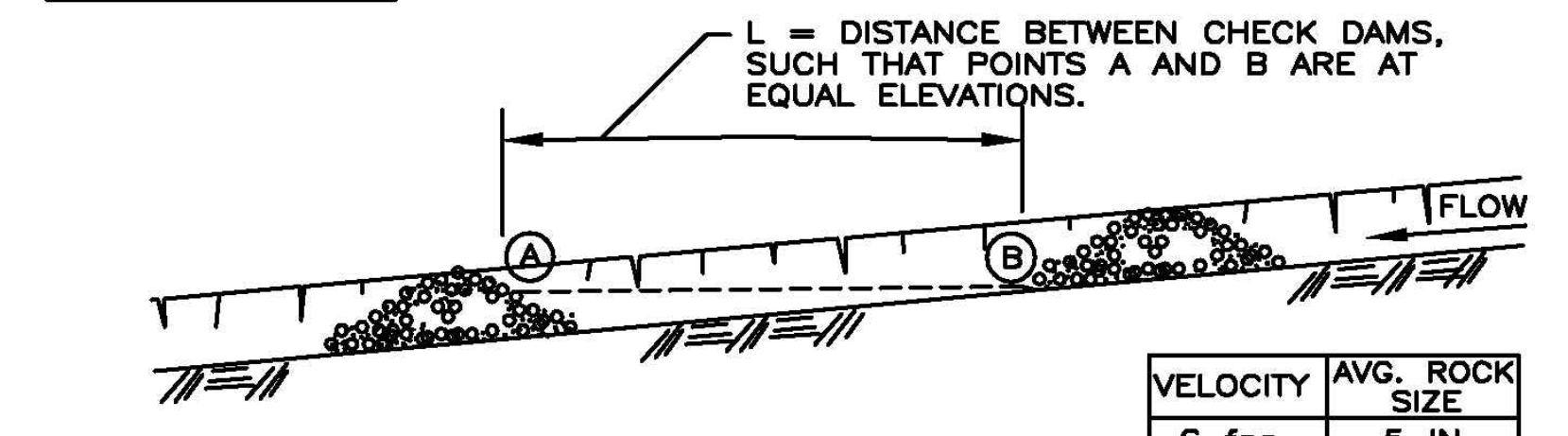
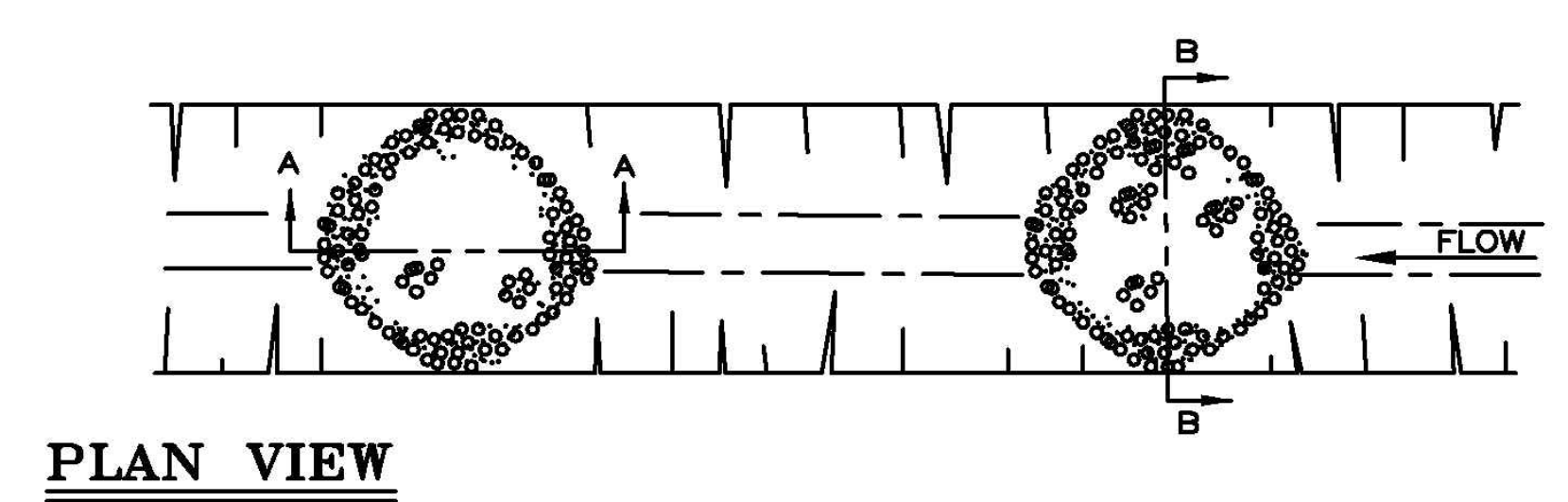
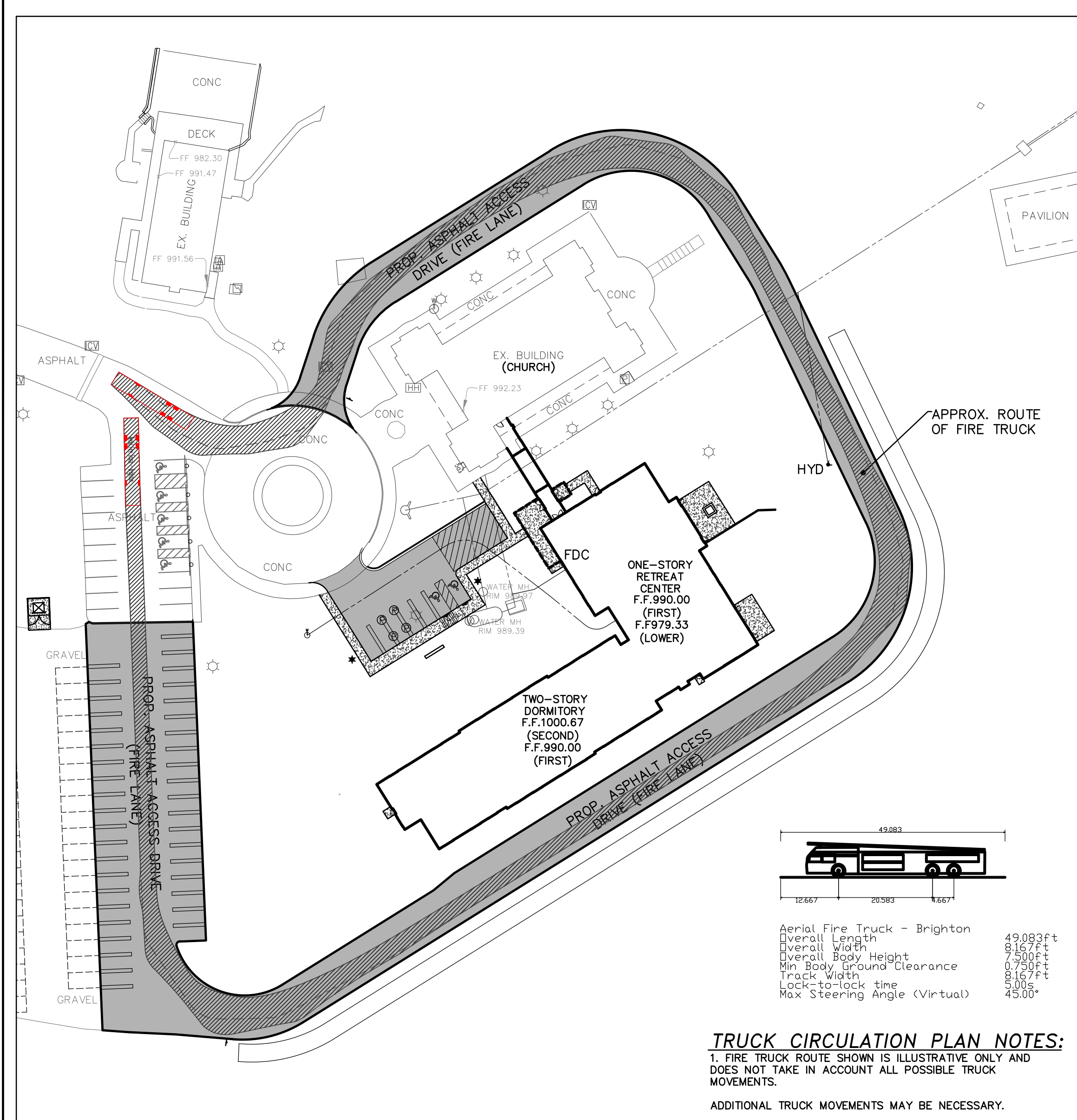
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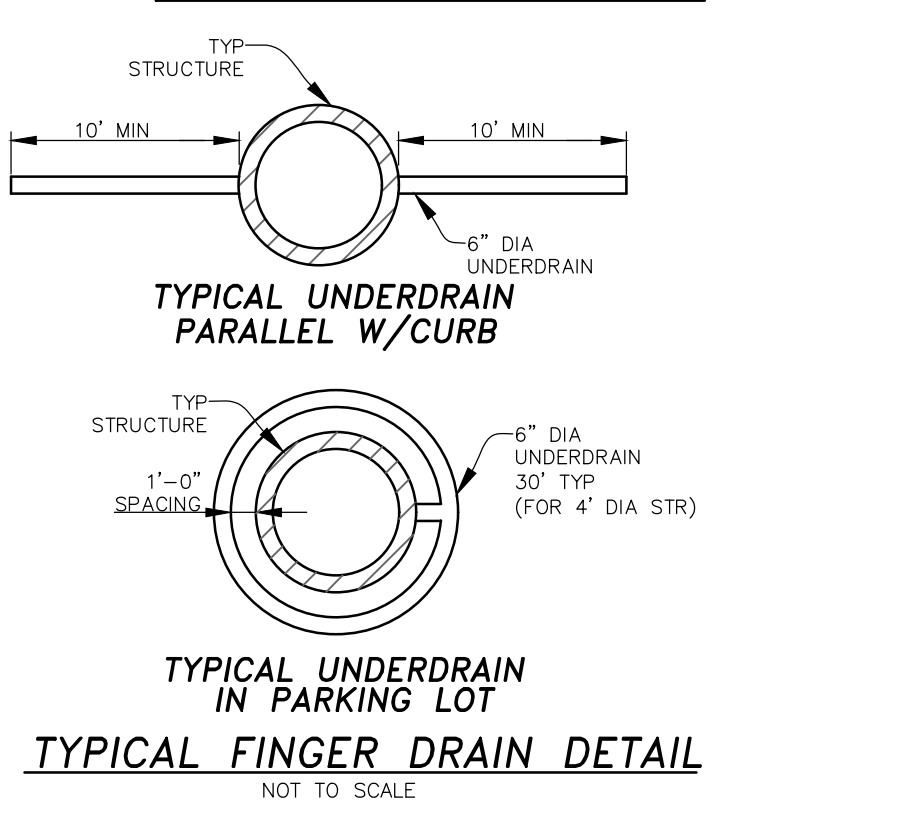
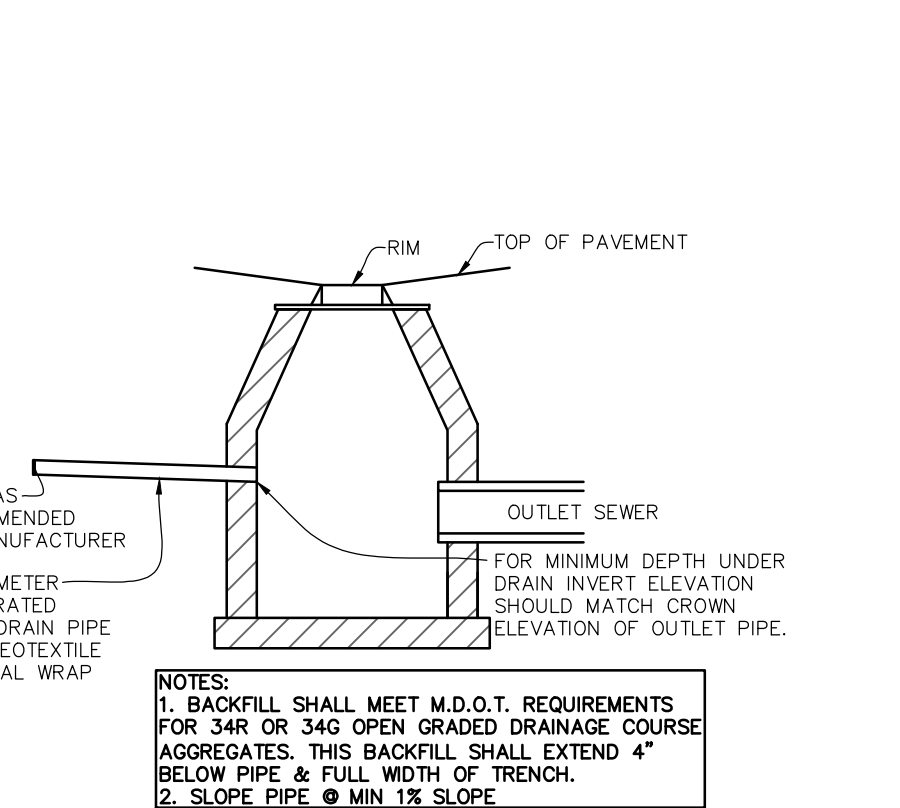
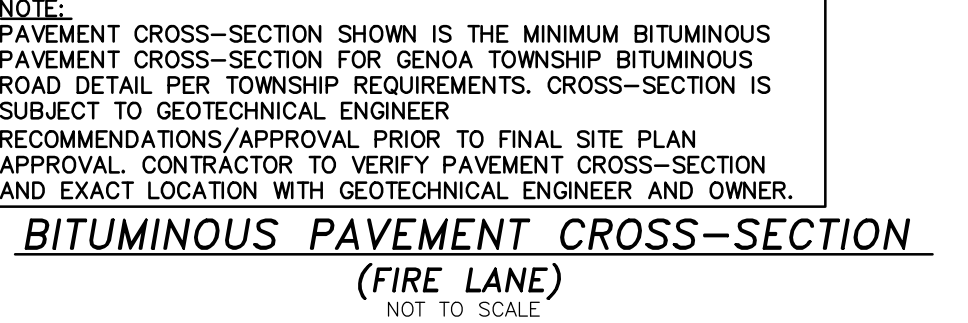
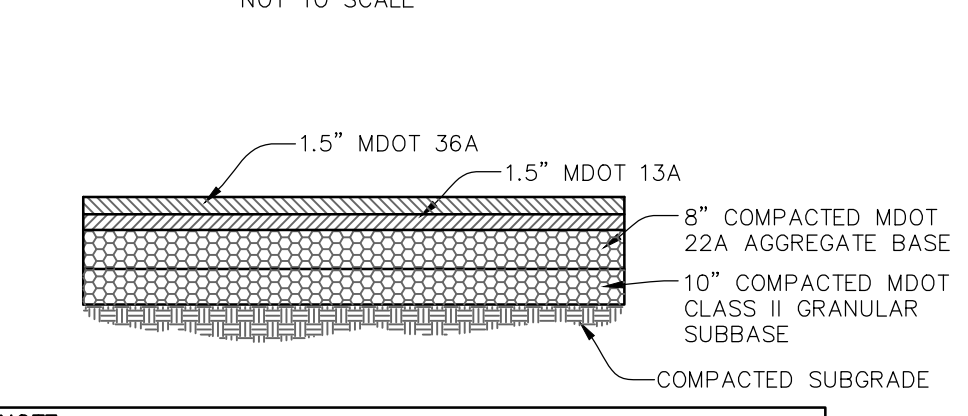
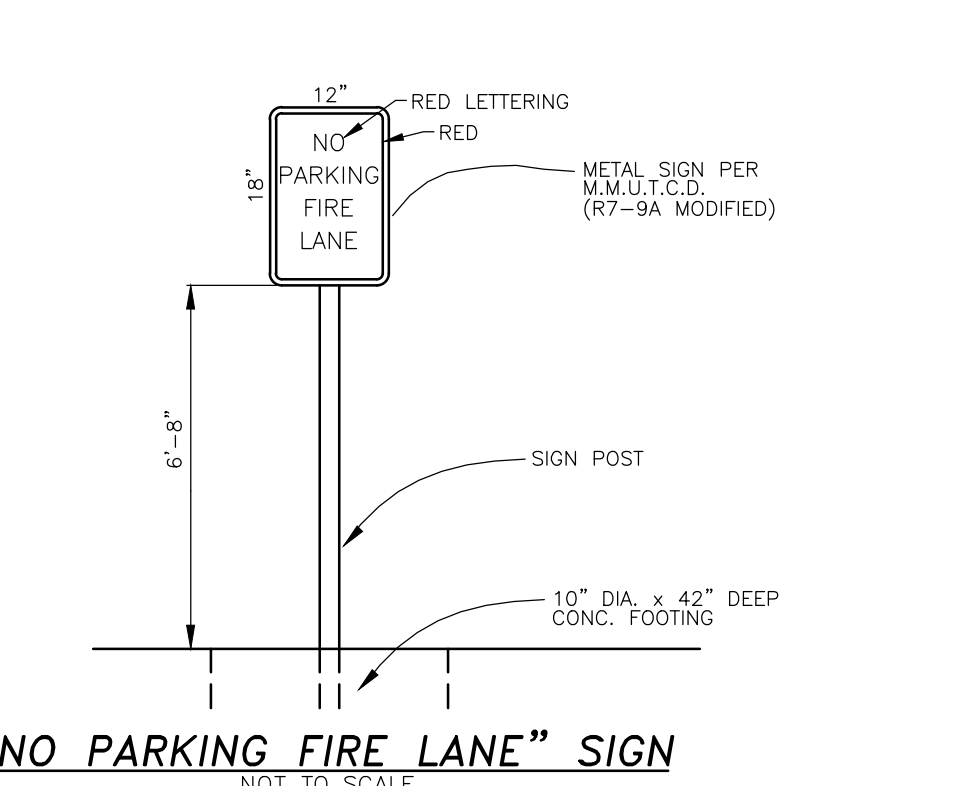
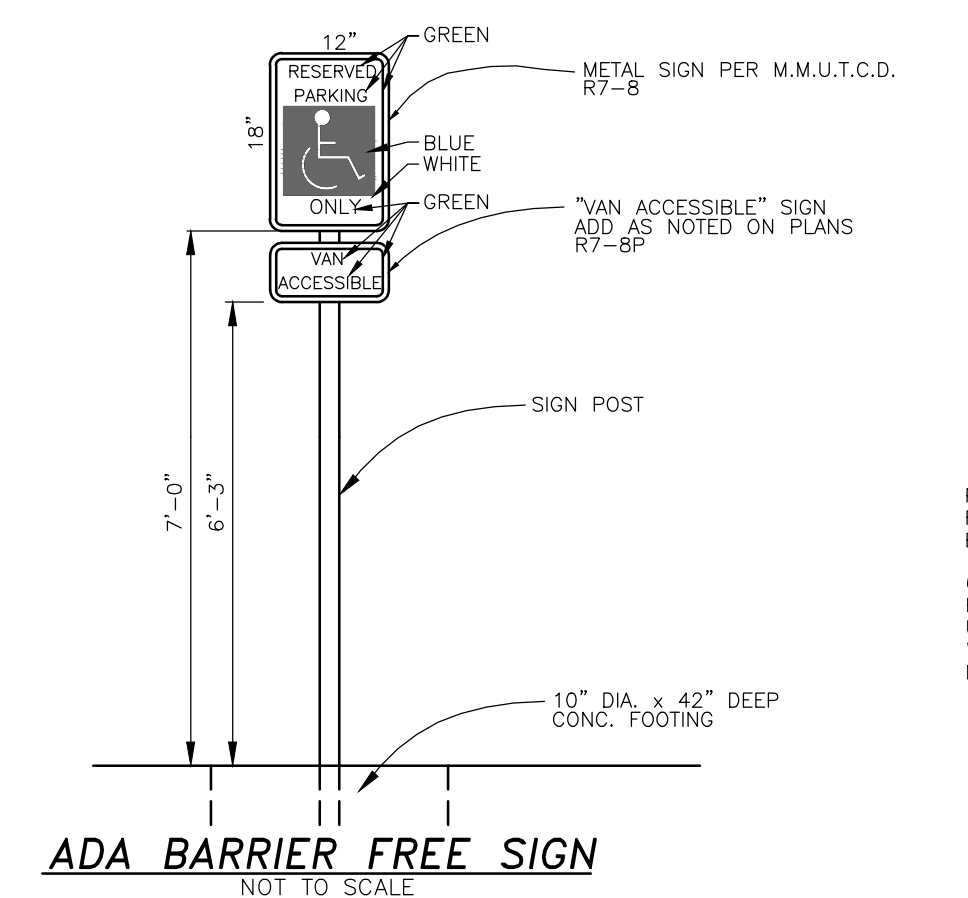
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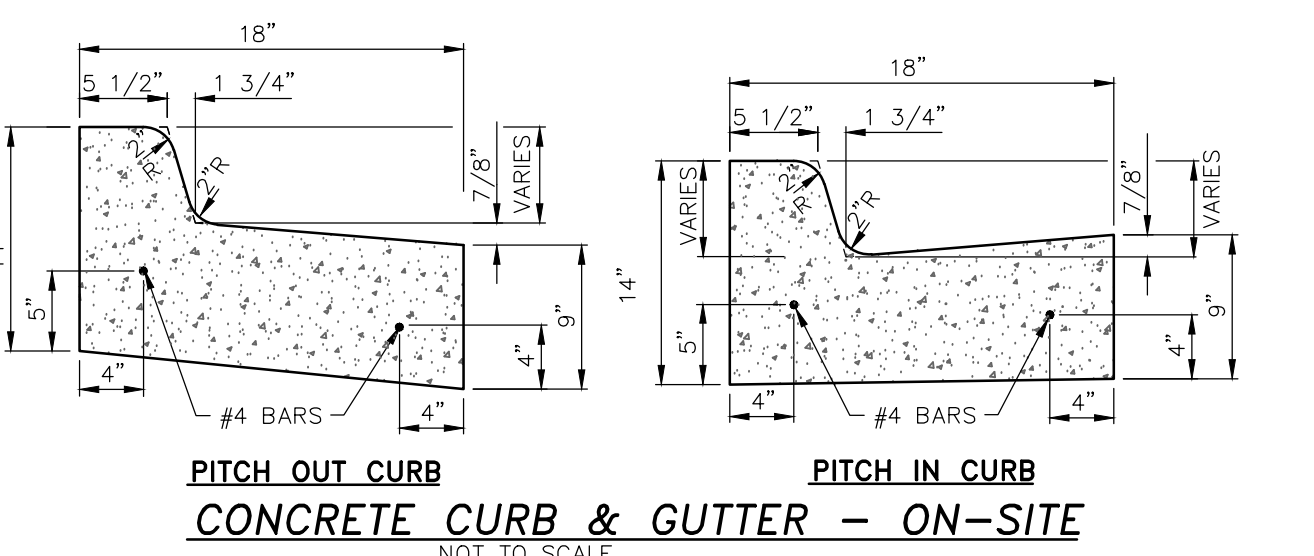
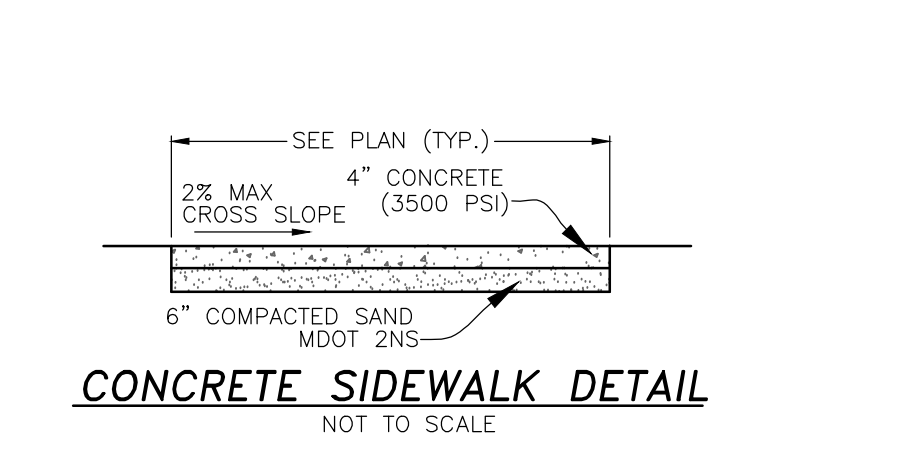
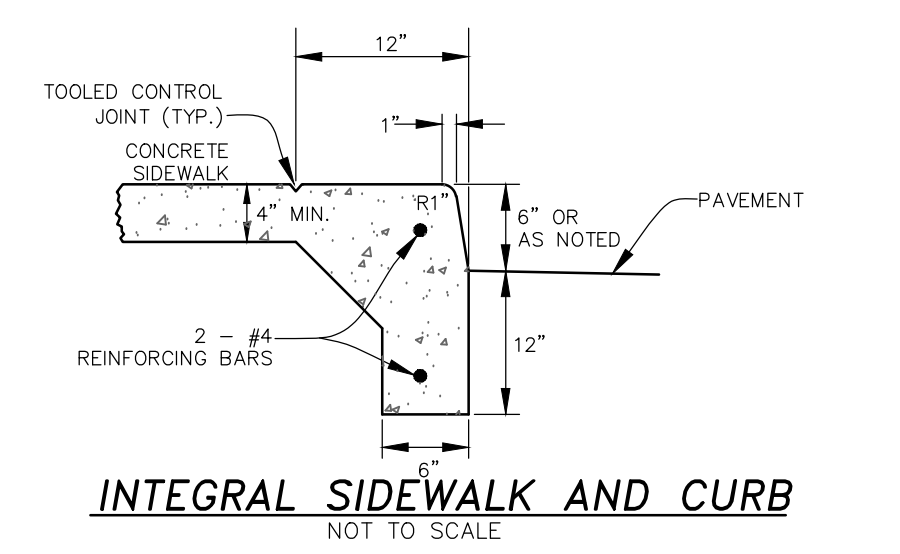
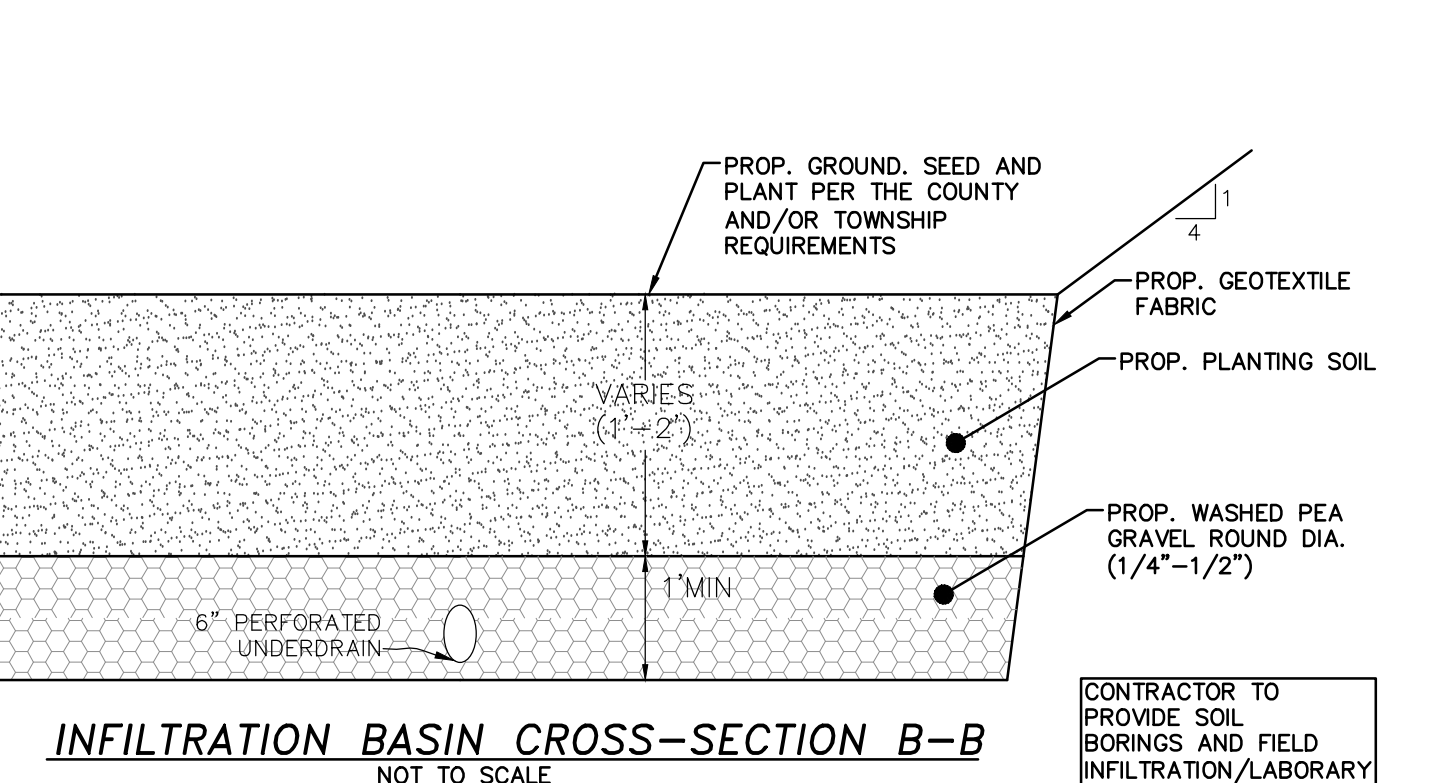
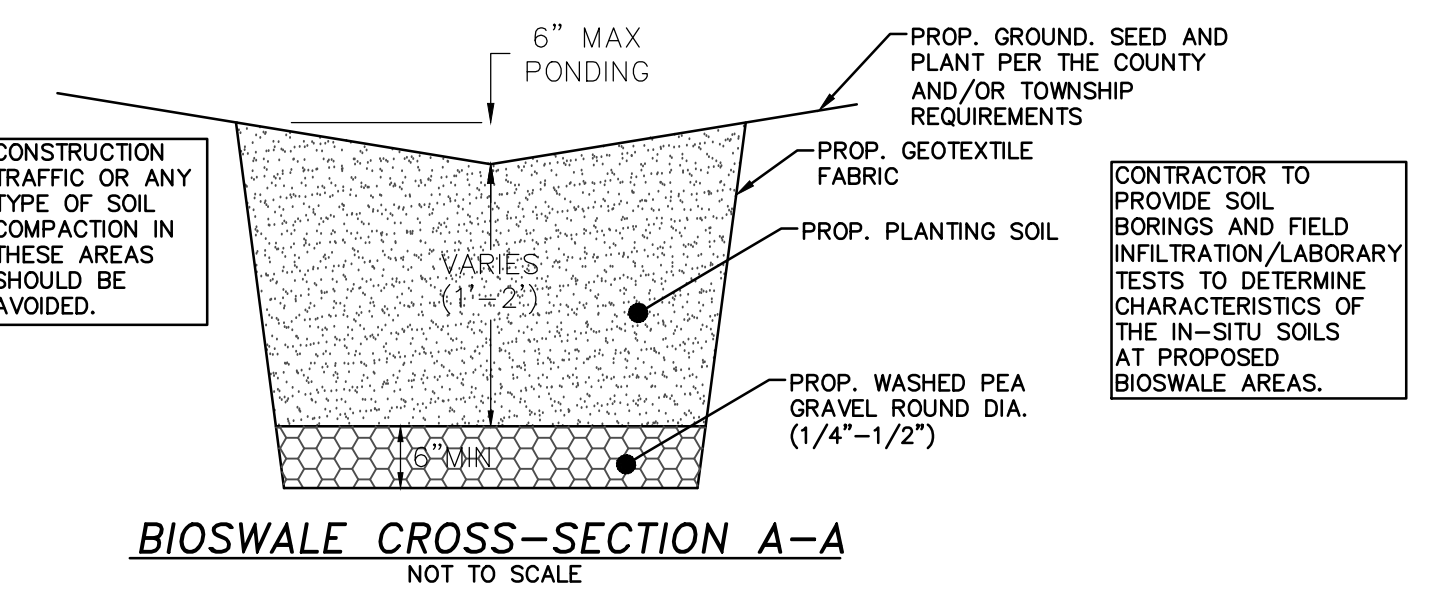


DEPENDING ON THE VELOCITY, SLOPE AND SOILS, USE THE PROPER SIZED RIP-RAP TO HANDLE THE SHEER STRESS OF THE SLOPE/CHANNEL.

CHECK DAMS
NOT TO SCALE

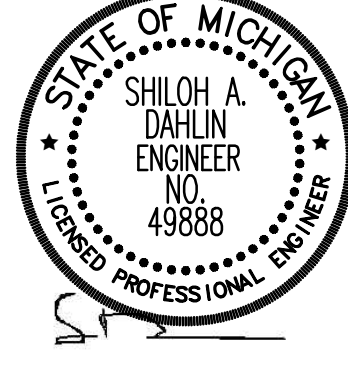
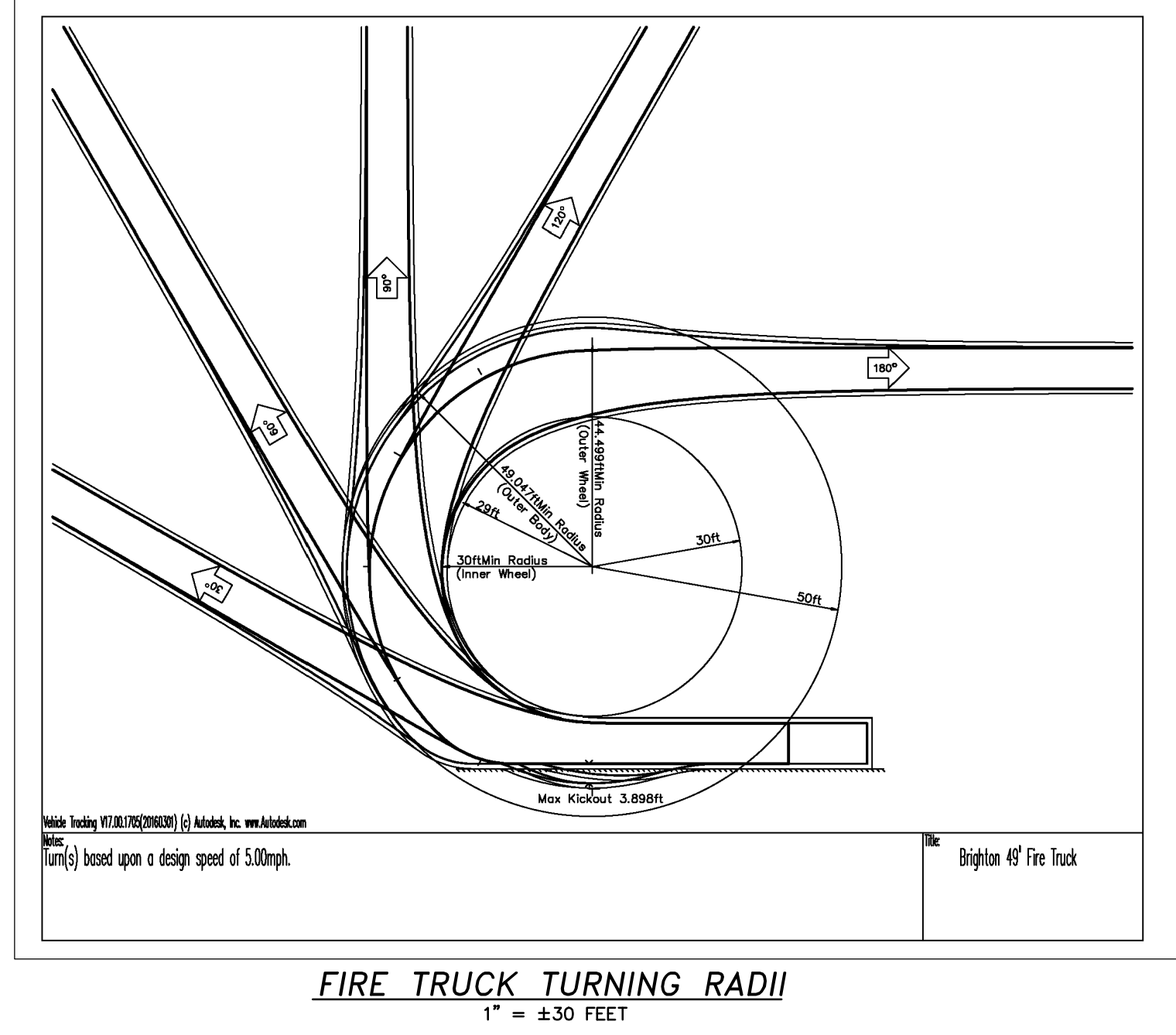


BIOSWALE/BASIN NOTES:
1. INSTALL TEMPORARY SEDIMENT CONTROL BMPs.
2. COMPLETE SITE GRADING, MINIMIZING COMPACTION AS MUCH AS POSSIBLE.
3. EXCAVATE THE BIOSWALES/BASIN TO THE PROP. DEPTHS AND SCARIFY THE EX. SOIL SURFACES. DO NOT COMPACT IN-SITU SOILS.
4. BACKFILL WITH THE AMENDED SOIL. LIGHT HAND TAMPING IS ACCEPTABLE IF NECESSARY.
5. PLANTING SOIL MUST BE A LOAM TOPSOIL CAPABLE OF SUPPORTING A HEALTHY VEGETATIVE COVER. SOILS MUST BE AMENDED WITH COMPOSTED ORGANIC MATERIAL. SOILS MUST BE FREE OF CONSTRUCTION DEBRIS AND SUBSOILS. SOILS MUST HAVE A CLAY CONTENT LESS THAN 10%. BE FREE OF TOXIC SUBSTANCES AND UNWANTED PLANT MATERIAL AND HAVE A 20-30% ORGANIC MATTER CONTENT. ADDITIONAL ORGANIC MATTER CAN BE ADDED TO THE SOIL TO INCREASE WATER HOLDING CAPACITY. TESTS SHOULD BE CONDUCTED BY A QUALIFIED GEOTECHNICAL ENGINEER TO VERIFY VOLUME STORAGE CAPACITY OF THE PLANTING SOIL.
6. PRESOAK THE PLANTING SOIL PRIOR TO PLANTING VEGETATION TO AID IN SETTLEMENT.
7. COMPLETE FINAL GRADING TO ACHIEVE PROPOSED DESIGN ELEVATIONS, LEAVING SPACE FOR UPPER LAYER OF COMPOST, MULCH OR TOPSOIL.



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

NOTE:
THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AS DISCLOSED BY AVAILABLE UTILITY COMPANY RECORDS AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE COMPANY. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY IF A CONFLICT IS APPARENT.



ALPINE ENGINEERING, INC.
CIVIL ENGINEERS & LAND SURVEYORS

COMMERCIAL
SITE PLANNING
SITE ENGINEERING
INDUSTRIAL & MULTI-UNIT
LAND SURVEYING
CONSTRUCTION LAYOUT

RESIDENTIAL
SUBDIVISIONS
SITE CONDOMINIUM
MULTI-FAMILY
LOT PLANS
CONSTRUCTION LAYOUT

46892 WEST ROAD
SUITE 109
NOVI, MICHIGAN 48377

(248) 926-3701 (BUS)
(248) 926-3765 (FAX)
WWW.ALPINE-INC.NET



CLIENT: THE CHALDEAN CATHOLIC CHURCH OF THE USA

SITE DETAILS

THE PROPHET ELIJAH RETREAT CENTER
SECTION: 11 & 12
TOWNSHIP: 2N
GENOA TOWNSHIP
LIVINGSTON COUNTY
MICHIGAN

REVISIONS

10-19-2020	SITE PLAN REVIEW REVISION
08-26-2020	SITE PLAN REVIEW RESUBMITTAL
07-31-2020	SITE PLAN REVIEW

DATE: 07-31-2020

DRAWN BY: SD

CHECKED BY: TG

AS NOTED

FBK:

CHF:

SCALE: HOR 1" = 30 FT. VER 1" = 10 FT.

REVISED

DATE: 07-31-2020

DRAWN BY: SD

CHECKED BY: TG

AS NOTED

FBK:

CHF:

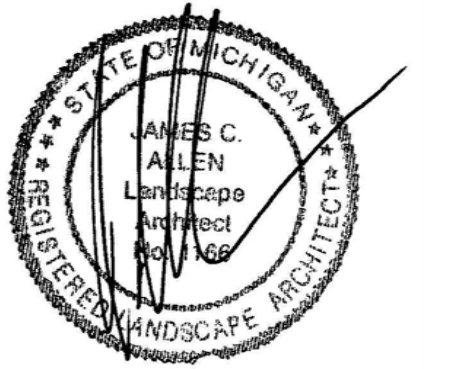
SCALE: HOR 1" = 30 FT. VER 1" = 10 FT.

08-296.3

NOT FOR CONSTRUCTION

Euler Lake

Seal:



Title:

Landscape Plan

Project:

**The Prophet Elijah
 Retreat Center
 Genoa Township, Michigan**

Prepared for:

Saroki Architecture
 430 N. Old Woodward
 Birmingham, Michigan 48009
 248.258.5707

Revision:

Site Plan Review
 Site Plan Submission
 Site Plan Review Revision

Issued:

July 31, 2020
 August 26, 2020
 October 19, 2020

Job Number:

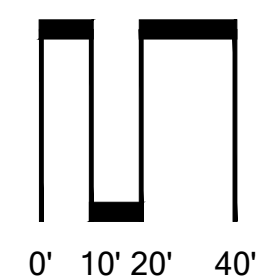
20-043

Drawn By:

jca

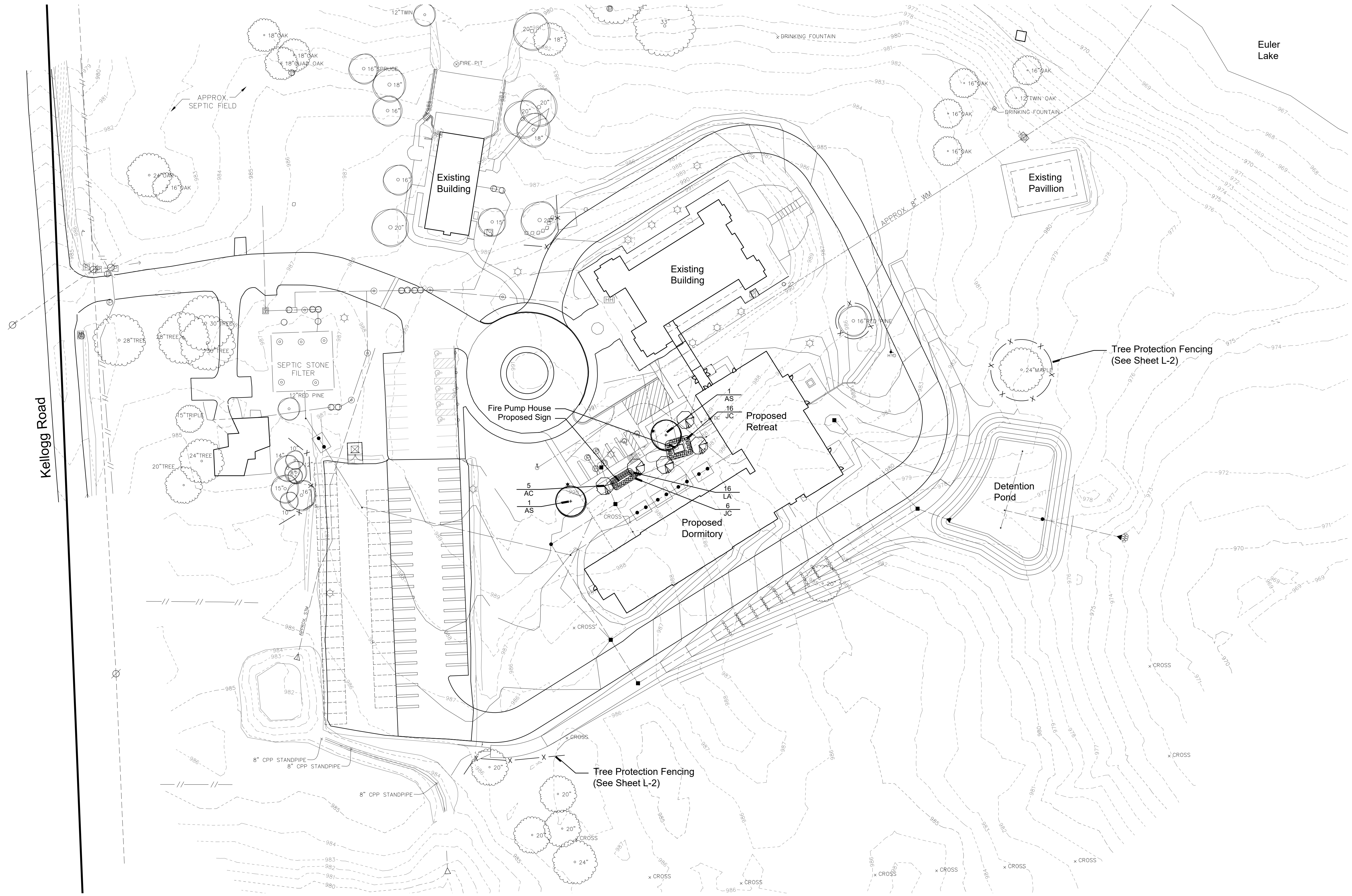
Checked By:

jca



Sheet No.

L-1



Plant List

sym.	qty.	botanical name	common name	caliper	spacing	root	height
AC	5	Amelanchier laevis	Shadblow	2.5"	as shown	B&B	
AS	2	Acer saccharum "Green Mountain"	Sugar Maple	3.0"	as shown	B&B	
JC	22	Juniperus ch. "Keteleer"	Keteleer Juniper		as shown	B&B	6'
LA	16	Lavandula angustifolia "Dwarf Blue"	Dwarf Blue Lavender	18" o.c.	cont.	#2	



NOTE:
GUY DECIDUOUS TREES ABOVE
3" CAL. STAKE DECIDUOUS
TREES BELOW 3" CAL.

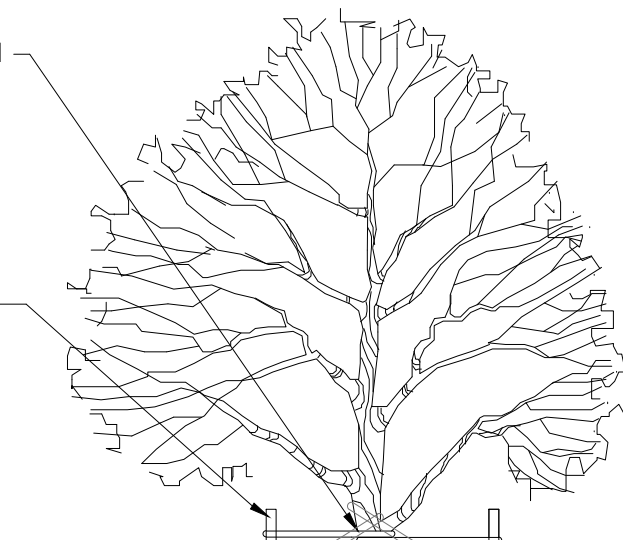
STAKE TREES AT FIRST BRANCH
USING 2"-3" WIDE BELT-LIKE
NYLON OR PLASTIC STRAPS.
ALLOW FOR SOME MINIMAL
FLEXING OF THE TREE.
REMOVE AFTER ONE YEAR.

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.

MOUND EARTH TO FORM SAUCER

REMOVE ALL
NON-BIODEGRADABLE MATERIALS
COMPLETELY FROM THE
ROOTBALL. CUT DOWN WIRE
BASKET AND FOLD DOWN BURLAP
FROM TOP 1/2 OF THE ROOTBALL.



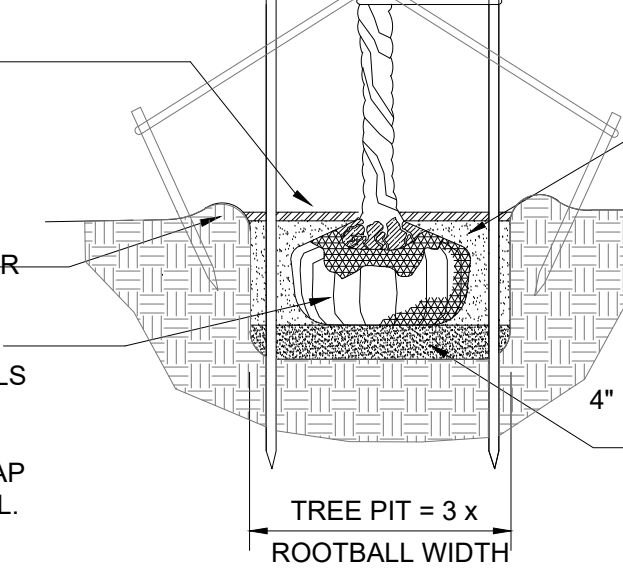
NOTE:
TREE SHALL BEAR SAME
RELATION TO FINISH GRADE AS
IT BORE ORIGINALLY OR
SLIGHTLY HIGHER THAN FINISH
GRADE UP TO 6" ABOVE GRADE,
IF DIRECTED BY LANDSCAPE
ARCHITECT FOR HEAVY CLAY
SOIL AREAS.

DO NOT PRUNE TERMINAL
LEADER. PRUNE ONLY DEAD OR
BROKEN BRANCHES.

REMOVE ALL TAGS, STRING,
PLASTICS AND OTHER
MATERIALS THAT ARE
UNSIGHTLY OR COULD CAUSE
GIRDLING.

PLANTING MIXTURE:
AMEND SOILS PER SITE
CONDITIONS AND
REQUIREMENTS OF
THE PLANT MATERIAL.
REMOVE DIRT FROM
ROOT FLARE.

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



DECIDUOUS TREE PLANTING DETAIL

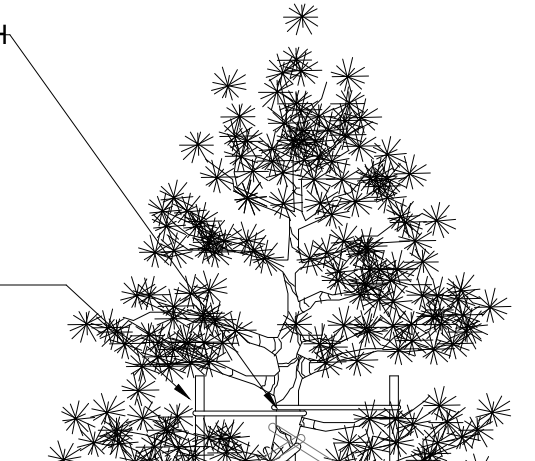
NOTE:
GUY EVERGREEN TREES ABOVE
12' HEIGHT. STAKE EVERGREEN
TREE BELOW 12' HEIGHT.

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.
MOUND EARTH TO FORM SAUCER

REMOVE ALL
NON-BIODEGRADABLE MATERIALS
COMPLETELY FROM THE
ROOTBALL. CUT DOWN WIRE
BASKET AND FOLD DOWN BURLAP
FROM TOP 1/2 OF THE ROOTBALL.



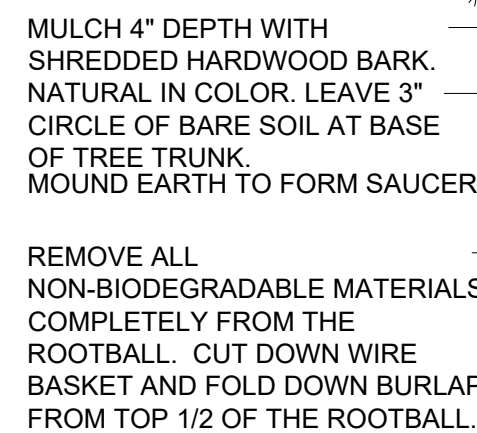
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SLIGHTLY HIGHER THAN FINISH
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PLASTICS AND OTHER
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PLANTING MIXTURE:
AMEND SOILS PER SITE
CONDITIONS AND
REQUIREMENTS OF
THE PLANT MATERIAL.
REMOVE DIRT FROM
ROOT FLARE.

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



EVERGREEN TREE PLANTING DETAIL

NOTE:
TREE SHALL BEAR SAME
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IT BORE ORIGINALLY OR
SLIGHTLY HIGHER THAN FINISH
GRADE UP TO 4" ABOVE GRADE,
IF DIRECTED BY LANDSCAPE
ARCHITECT FOR HEAVY CLAY
SOIL AREAS.

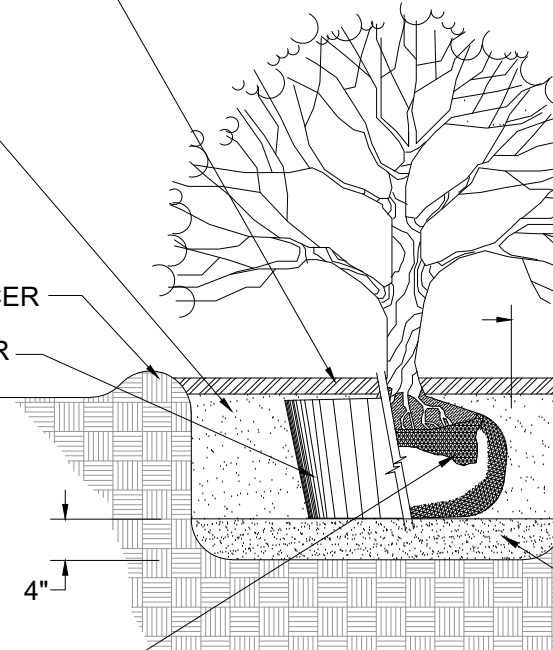
PRUNE ONLY DEAD OR BROKEN
BRANCHES.

REMOVE ALL TAGS, STRING,
PLASTICS AND OTHER
MATERIALS THAT ARE
UNSIGHTLY OR COULD CAUSE
GIRDLING.

PLANTING MIXTURE:
AMEND SOILS PER
SITE CONDITIONS
AND REQUIREMENTS
OF THE PLANT
MATERIAL.
MOUND EARTH TO FORM SAUCER

REMOVE COLLAR OF ALL FIBER
POTS. POTS SHALL BE CUT TO
PROVIDE FOR ROOT GROWTH.
REMOVE ALL NONORGANIC
CONTAINERS COMPLETELY.

REMOVE ALL
NON-BIODEGRADABLE MATERIALS
COMPLETELY FROM THE
ROOTBALL. FOLD DOWN BURLAP
FROM TOP 1/2 OF THE ROOTBALL.

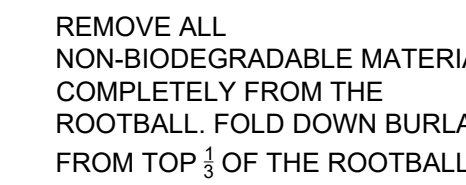


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SLIGHTLY HIGHER THAN FINISH
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GIRDLING.

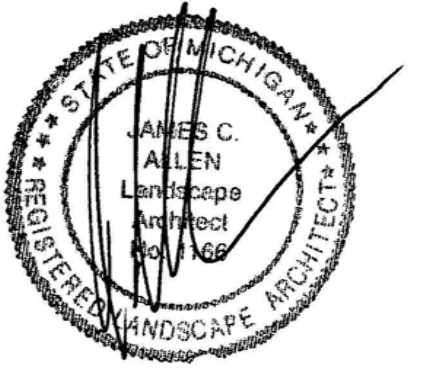
SCARIFY SUBGRADE
AND PLANTING PIT
SIDES. RECOMPACT
BASE OF TO 4"
DEPTH.



SHRUB PLANTING DETAIL

NOT TO SCALE

Seal:



Title:

Landscape Details

Project:

The Prophet Elijah
Retreat Center
Genoa Township, Michigan

Prepared for:

Saroki Architecture
430 N. Old Woodward
Birmingham, Michigan 48009
248.258.5707

Revision:

Issued:

Site Plan Review	July 31, 2020
Site Plan Submission	August 26, 2020
Site Plan Review Revision	October 19, 2020

Job Number:

20-043

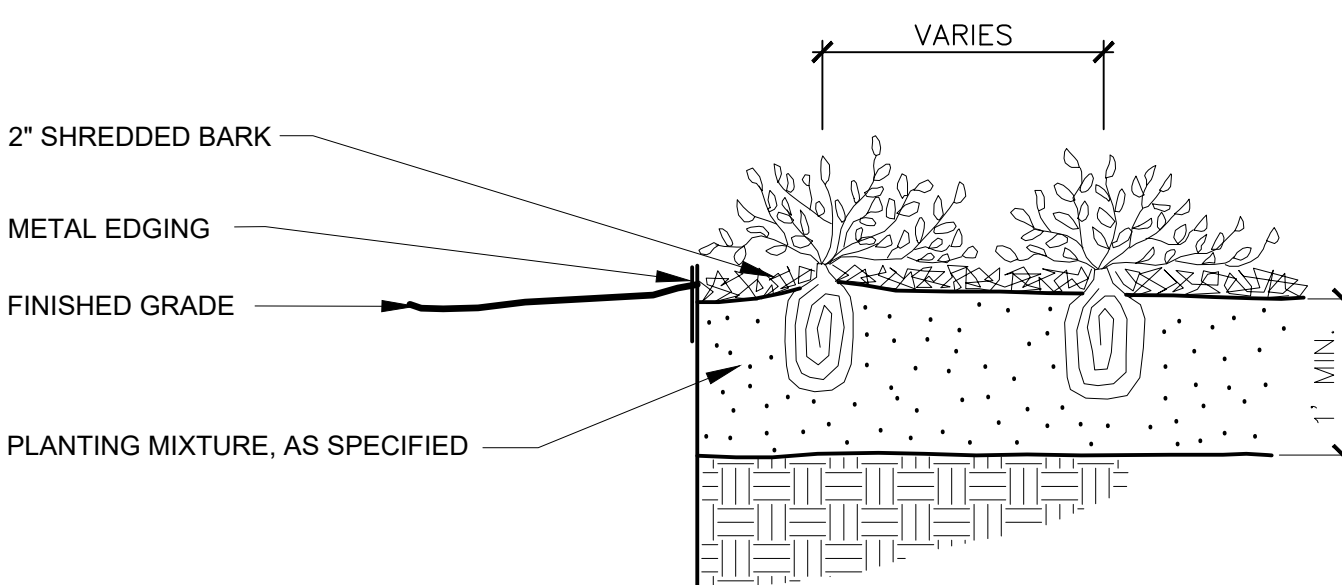
Drawn By:

jca

Checked By:

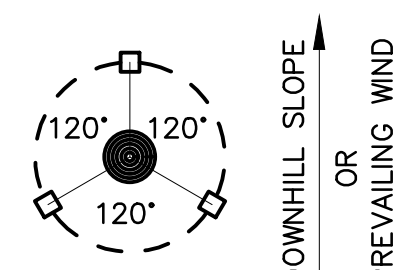
jca

Sheet No.



PERENNIAL PLANTING DETAIL

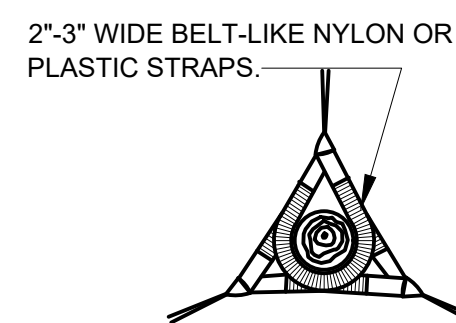
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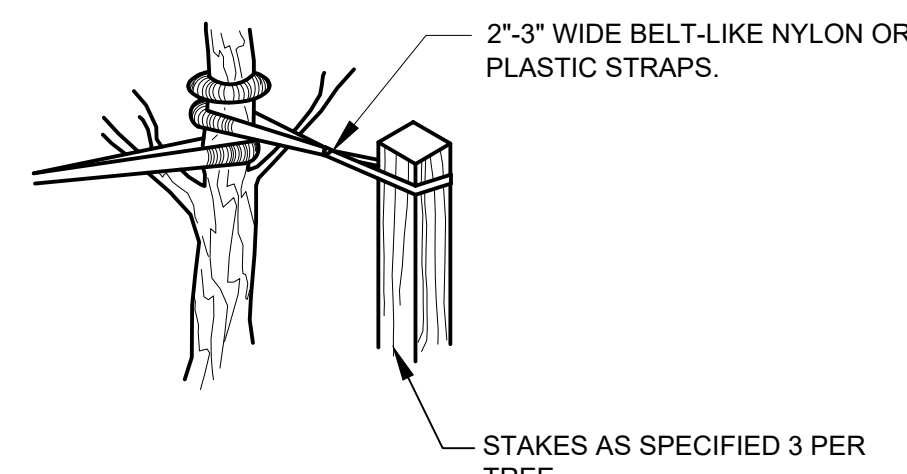
STAKING/GUYING LOCATION

NOTE:
ORIENT STAKING/GUYING TO PREVAILING
WINDS, EXCEPT ON SLOPES GREATER
THAN 3:1 ORIENT TO SLOPE.
USE SAME STAKING/GUYING
ORIENTATION FOR ALL PLANTS WITHIN
EACH GROUPING OR AREA

DOWNHILL SLOPE
OR
PREVAILING WIND



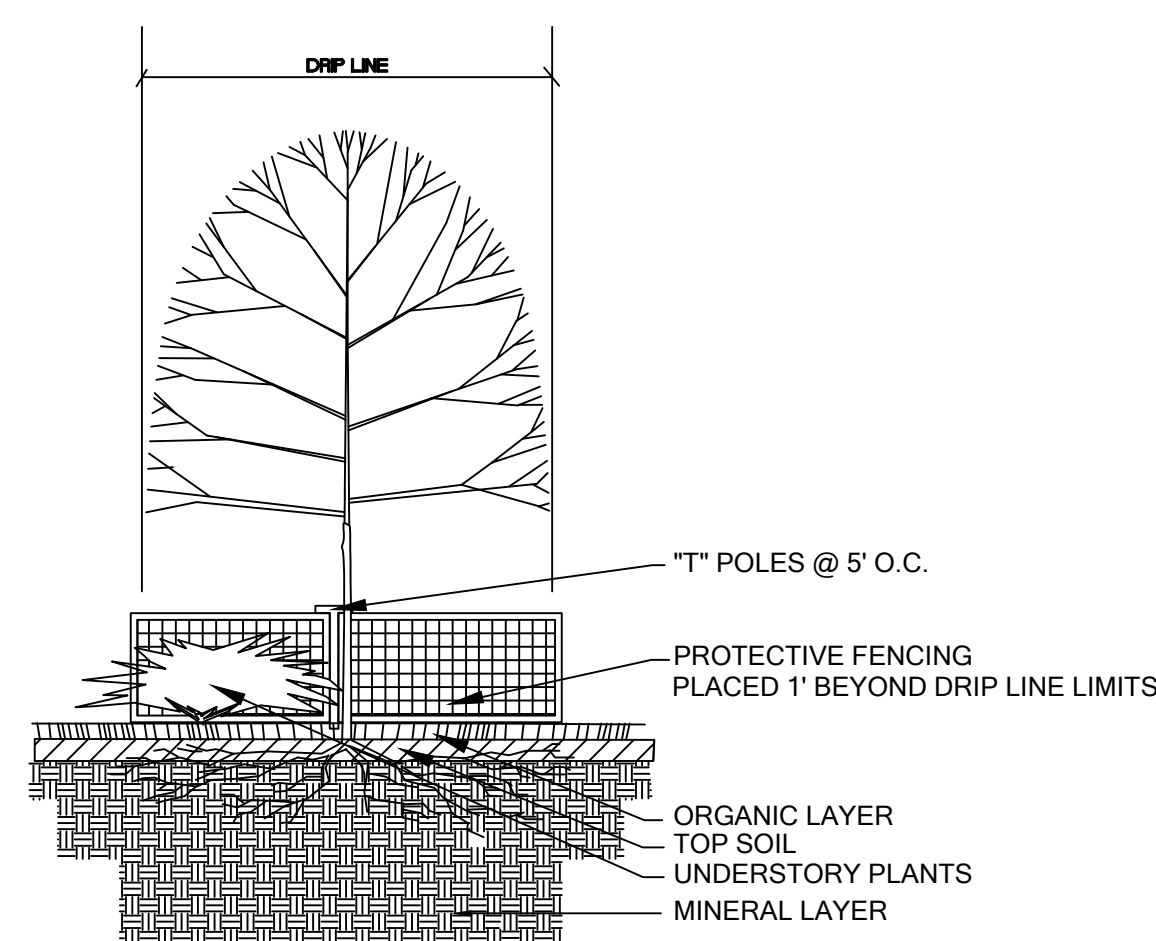
GUYING DETAIL



STAKING DETAIL

TREE STAKING DETAIL

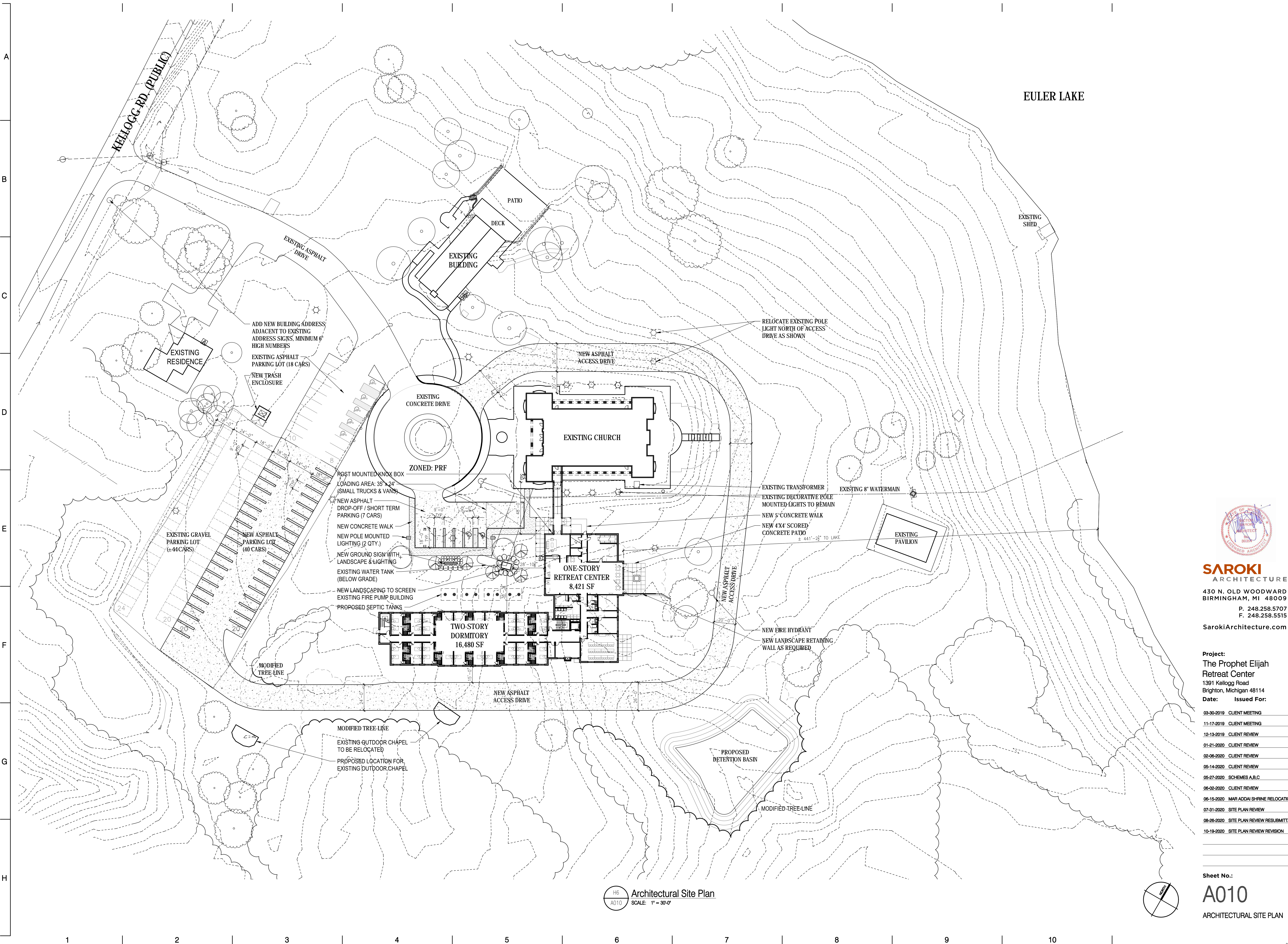
Not to scale



1. Either Plastic or Wood Orange Snow Fencing Shall be Installed at or Beyond the Dripline, Unless More Substantial Fencing is Required.
2. Stakes Shall be Metal "T" Poles Spaced no Further than 5' on Center.
3. Fencing Shall not be Installed Closer to the Tree than the Dripline of Those Trees to be Saved. Special Circumstances Shall be Reviewed by the City.
4. Fencing Shall be Erected Prior to Construction. The City Shall be Notified Once the Fencing is Installed for Inspection.
5. Under no Circumstances Shall the Protective Fencing be Removed Without Proper Approval from the City.
6. No Person Shall Conduct any Activity Within Areas Proposed to Remain. This Shall include, but not be Limited to:
 - a. No Solvents or Chemicals Within Protected Areas.
 - b. No Building Materials or Construction Equipment Within Protected Areas.
 - c. No Grade Changes, Including Fill, Within Protected Areas.
 - d. No Removal of Vegetation from the Ground Up Without Permission from the Proper Reviewing Authority, Including the Woodlands Review Board.
 - e. Any Required Swales Needs to be Directed Around the Protected Area. Instances Where Swales are Approved Through a Protected Area, the Swales Need to be HAND DUG. Machinery of Any Kind is Prohibited.
 - f. Regulated Woodland or Regulated Trees Adjacent to the Property are Also Required to be Protected Whether or not they are Shown on the Plan.

TREE PROTECTION DETAIL

NO SCALE



EULER LAKE



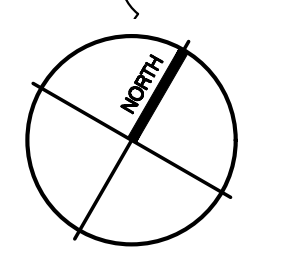
SAROKI
ARCHITECTURE
430 N. OLD WOODWARD
BIRMINGHAM, MI 48009
P. 248.258.5707
F. 248.258.5515
SarokiArchitecture.com

Project:
The Prophet Elijah
Retreat Center
1391 Kellogg Road
Brighton, Michigan 48114

Date: Issued For:

03-30-2019	CLIENT MEETING
11-17-2019	CLIENT MEETING
12-13-2019	CLIENT REVIEW
01-21-2020	CLIENT REVIEW
02-06-2020	CLIENT REVIEW
05-14-2020	CLIENT REVIEW
05-27-2020	SCHEMES A,B,C
06-02-2020	CLIENT REVIEW
06-15-2020	MAR ADDAI SHRINE RELOCATION
07-31-2020	SITE PLAN REVIEW
08-26-2020	SITE PLAN REVIEW RESUBMITTAL
10-19-2020	SITE PLAN REVIEW REVISION

Architectural Site Plan
SCALE: 1" = 30'-0"



Sheet No.:
A010
ARCHITECTURAL SITE PLAN

A
B
C
D
E
F
G
H

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10

Oak Landscape Lighting CATALOG # _____ PROJECT NAME _____ TYPE _____

SPECIFICATION SHEET

PRODUCT # GR526-BK

Housing: Die-cast aluminum Knuckle with adjustable thumb screw. Easy adjustable for vertical tilt and horizontal rotation.

Lens: Heat resistant Convex Glass Lens is fully sealed with silicon sealant reduces water build-up and puddle on the lens. Flat Tempered Glass.

Socket: High Temperature ceramic socket with nickel contacts. Stainless Steel spring.

Lamp: LED MR16 Lamp type, Max wattage 50W.

Gasket: High temperature silicone O-ring for water tight seal.

Wiring: 3' #18/2 Direct bury landscape lighting wire with UL listed, Pre-stripped hub-ready leads for quick installation.

Mounting: In-ground ABS Stake or Surface/Tree Mounting.

Electrical Notes: A remote 12V transformer required, may be ordered to Elram, Inc. separately. Voltage range for 12V halogen lamps are 11V-12.2V. Voltage range for LED lamps are 9V-17V.

Hardware: Hexagonal crew fix to part

Warranty: One (1) year warranty against housing and body defects.

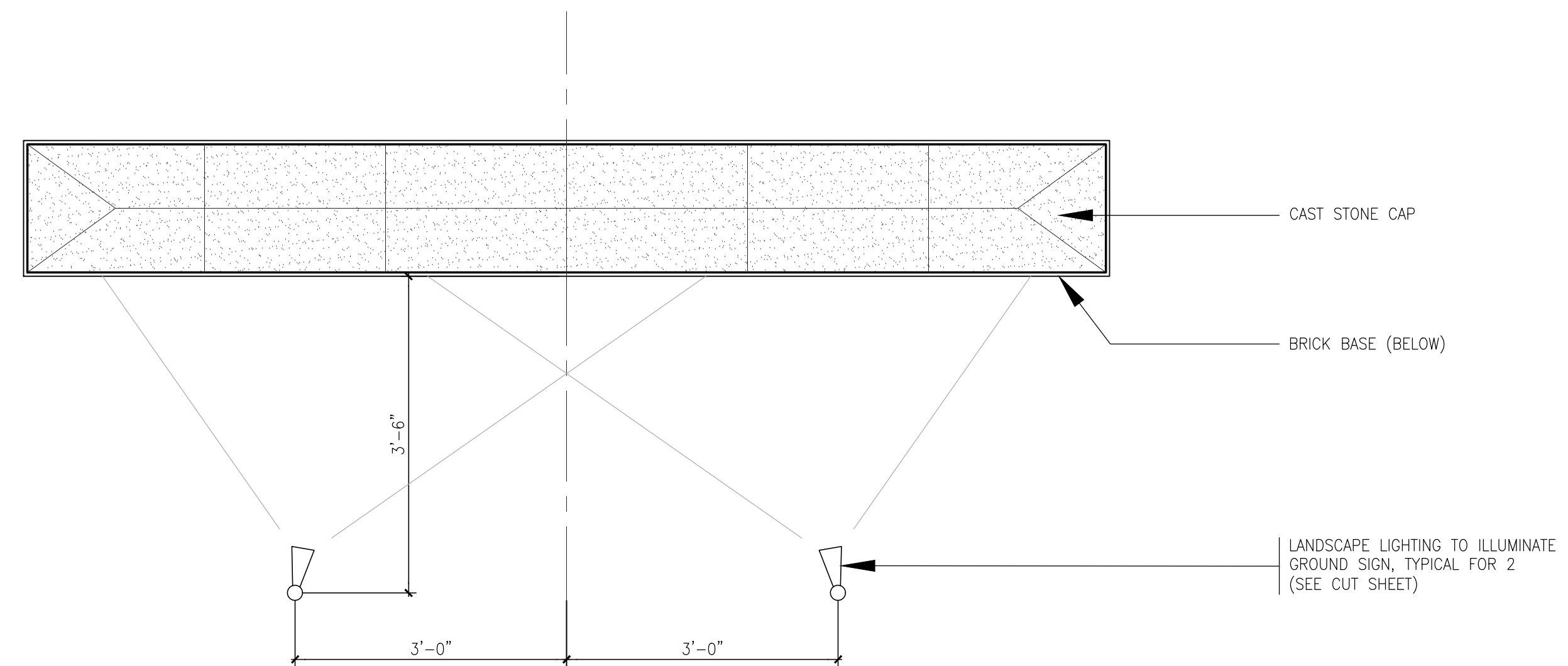
GR526	SERIES	FINISH	VOLTAGE	LAMP
GR526 - Bullet Fixture	GR526 - Surface / Tree	BK Black Aluminum	12V DC	L - LED LAMP

ACCESSORIES

In-Ground ABS Stake Surface / Tree Mounting

ELRAM, INC. • TF: 855-415-5550 • T: 323-46-ELRAM (35726) • elraminc.com • info@elraminc.com
© 2015 ELRAM, Inc. Elram, Inc. holds the right to change the design of our products at any time.

D2 Ground Sign Lighting
A011 SCALE: NONE



E6 Ground Sign - Plan
A011 SCALE: 3/4" = 1'-0"

Radean Arm Mount LED Area Luminaire

Specifications
 EPAK: 0.75 ft² (0.05 m²)
 Length: L1 24" (61cm), L2 30" (60.96cm)
 Width: 24" (61cm)
 Height: 4" (10.2cm)
 Weight (max): 29lb (13.15kg)

Introduction
 The RADEAN arm mount luminaire is the perfect choice for pedestrian applications where daytime aesthetics and visual comfort are needed. Adding architectural flair to any space, the RADEAN's low-profile shape and smooth curves blend in while adding a touch of elegance. Perfect for campuses, parks, pedestrian malls, courtyards and pathways, the RADEAN arm mount is the Architect's choice to provide beautiful aesthetics both day and night.

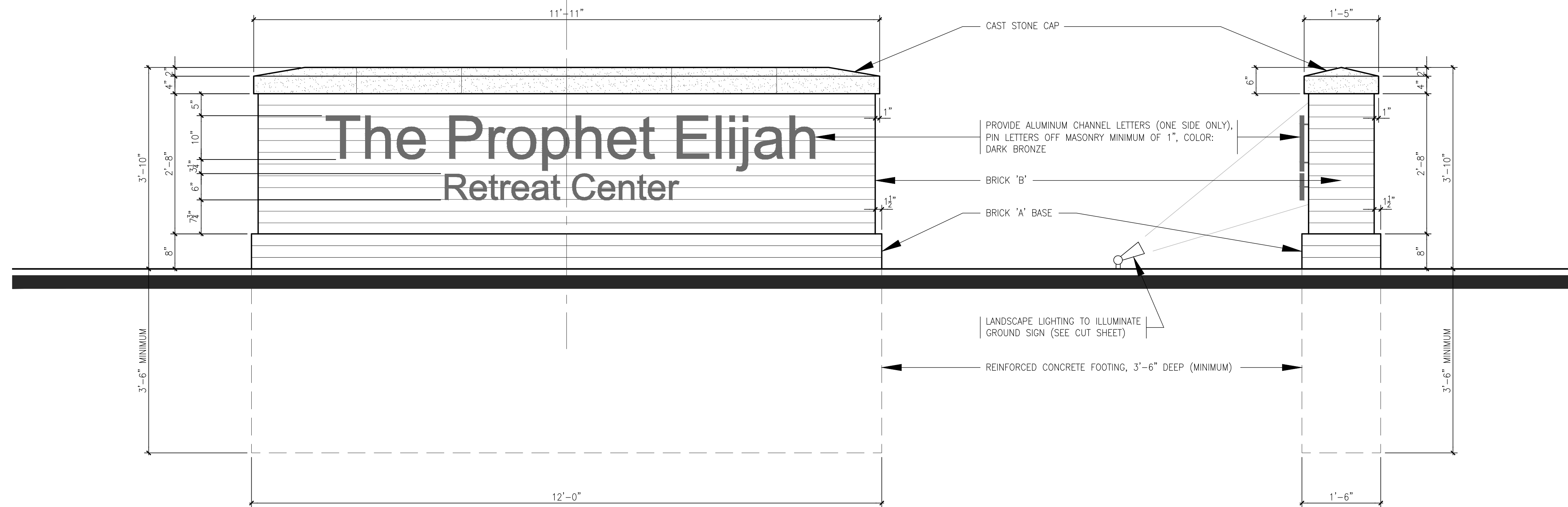
Ordering Information EXAMPLE: RAD1 LED P3 30K SYM MVOLT RPA PE DNAXD

Series	Performance Package	Color Temperature	Distribution	Voltage	Mounting
RAD1 LED	P1 1,000 Lumens	2700K	SYM Symmetric type I	MVOLT1 277V	SR Square pole mounting (includes adapter)
	P2 3,000 Lumens	3000K	ASY Asymmetric type IV	120V 347	IRA Round pole mounting
	P3 5,000 Lumens	3000K	PNR Pathway type II	200V 480	WIA Wall bracket
	P4 10,000 Lumens	4000K			
	P5 15,000 Lumens	5000K			

Control options	Other options	Finish options
Shipped installed NLM2 Night MR 2.0 enabled? PM 0-10V dimmer sensor (10% to 30% dimming) PE Remote photocell? RAD Field adjustable output?	SF Single face? DF Double face? LW Left-sided optics RO Right-sided optics	SH Shipped separately HS Housecolor shade? DBRD Dark bronze DRBK Black DRND Natural aluminum DRWH White

LITHONIA LIGHTING COMMERCIAL OUTDOOR One Lithonia Way • Conners, Georgia 30122 • Phone: 1-800-705-SERV (7378) • www.lithonia.com RAD1 LED Rev. 05/16/20

H2 Pole Mounted Site Lighting
A011 SCALE: NONE



H6 Ground Sign - Front Elevation
A011 SCALE: 3/4" = 1'-0"

H10 Ground Sign - Side Elevation
A011 SCALE: 3/4" = 1'-0"



SAROKI
ARCHITECTURE

430 N. OLD WOODWARD
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1391 Kellogg Road
Brighton, Michigan 48114

Date: **Issued For:**

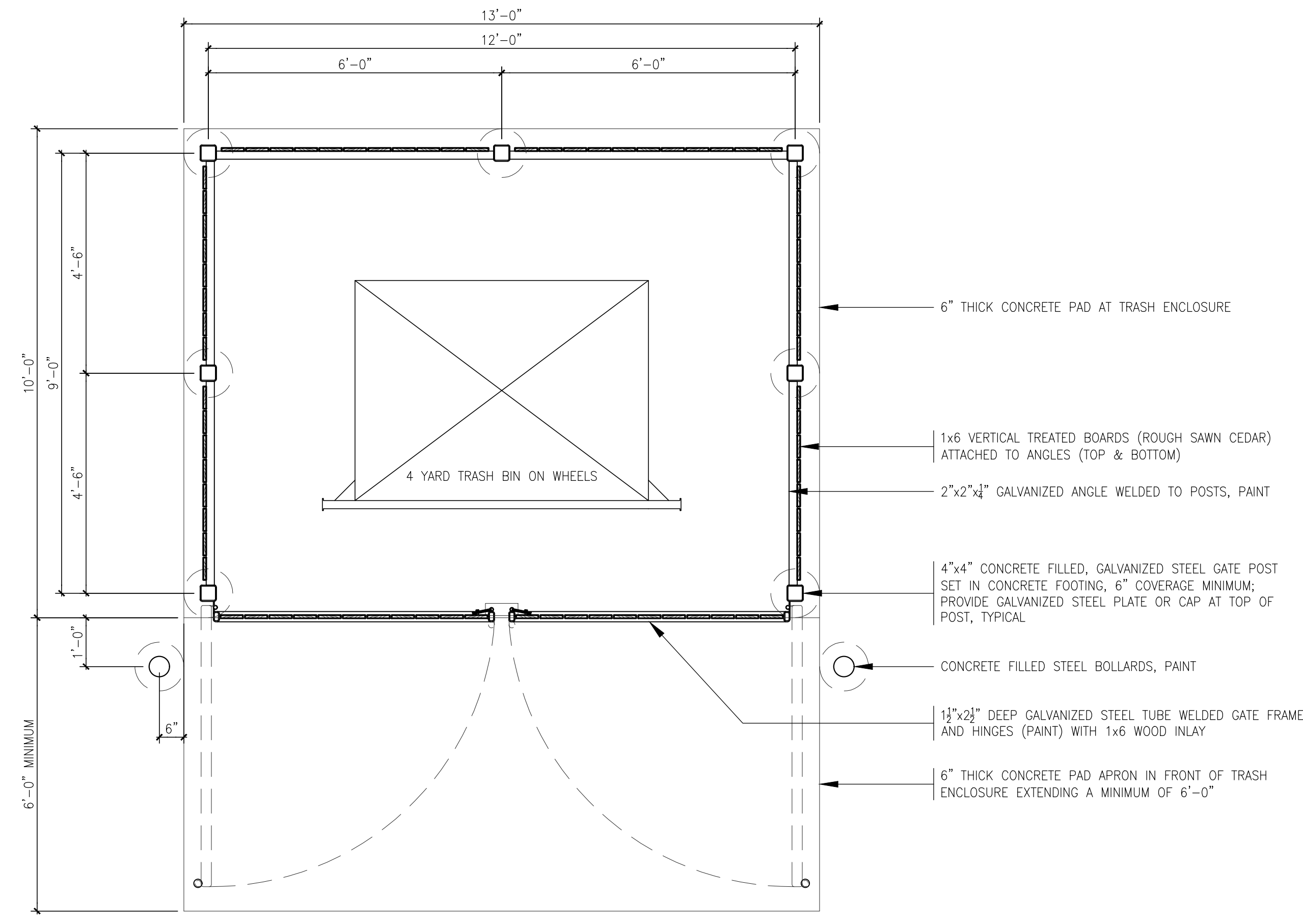
07-31-2020 SITE PLAN REVIEW

Sheet No.:

A011

SITE DETAILS

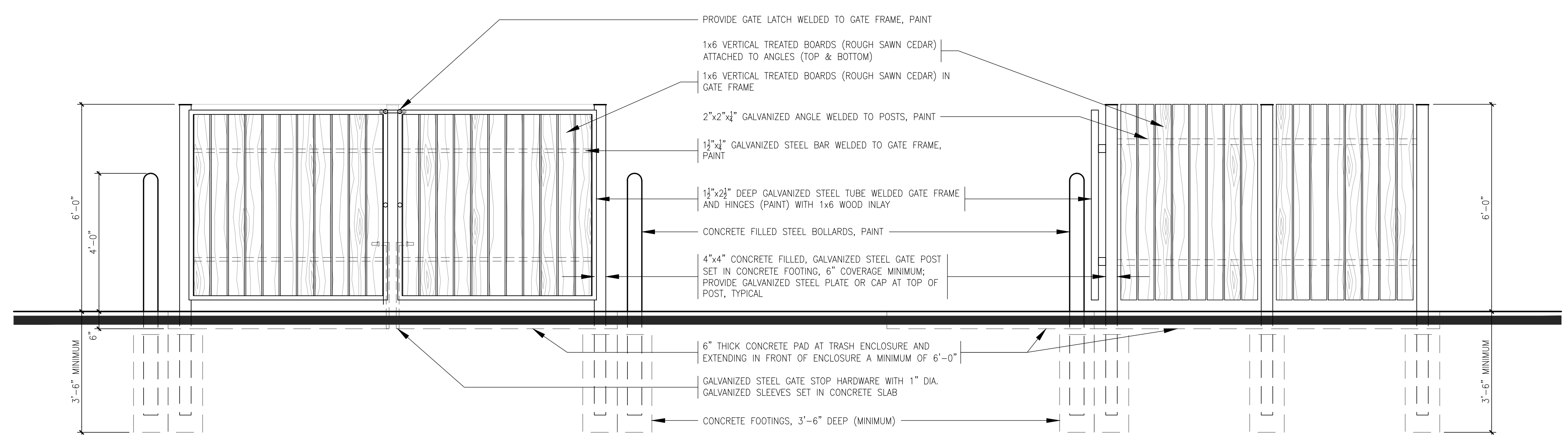
A
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C
D
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G
H



F5 Trash Enclosure - Plan
A012 SCALE: 1/2" = 1'-0"



F9 4 Yard Trash Dumpster with Lid
A012 SCALE: NONE



H5 Trash Enclosure - Front Elevation
A012 SCALE: 1/2" = 1'-0"

H9 Trash Enclosure - Side Elevation
A012 SCALE: 1/2" = 1'-0"



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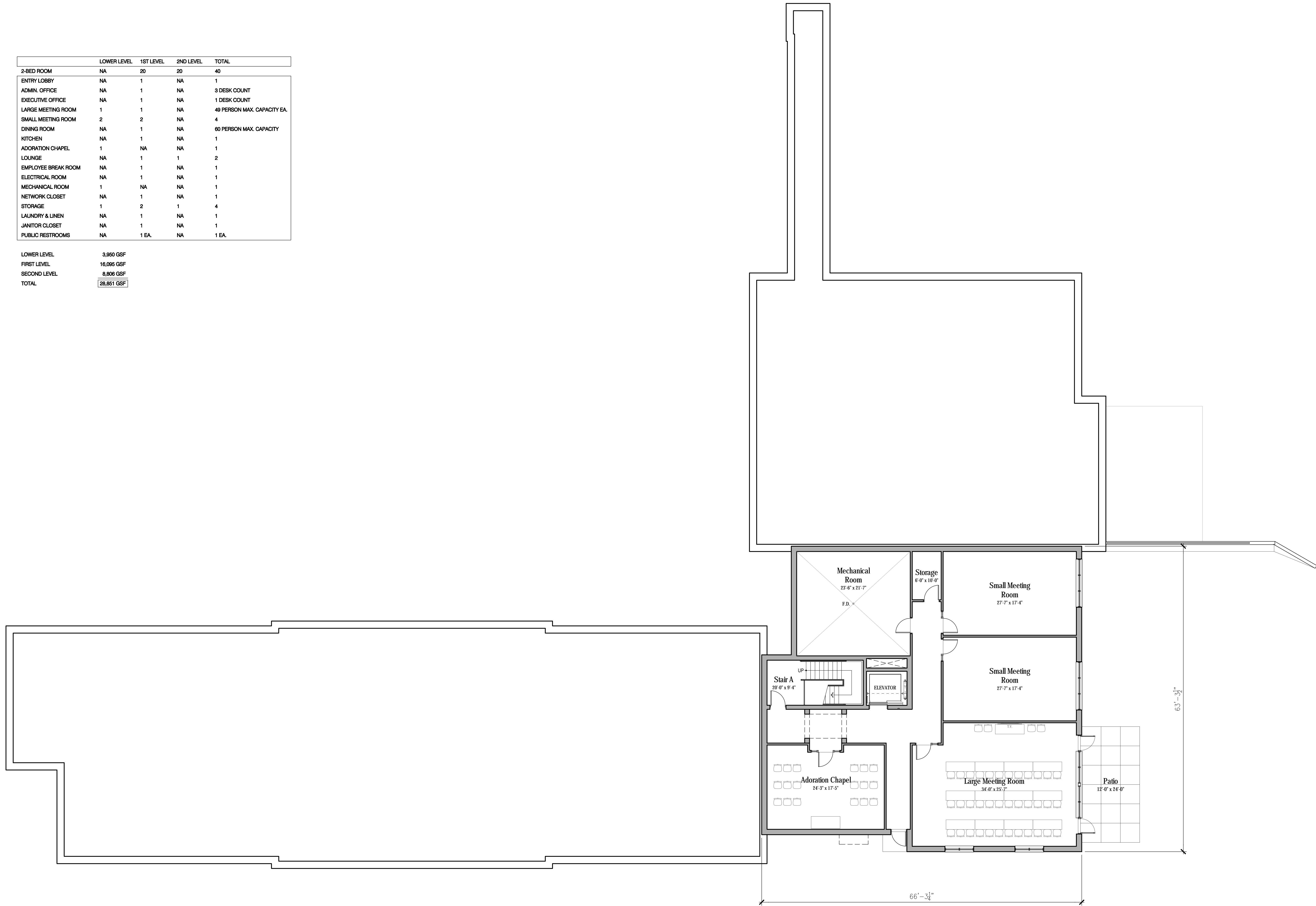
Date: Issued For:
07-31-2020 SITE PLAN REVIEW
08-26-2020 SITE PLAN REVIEW RESUBMITTAL

Sheet No.:
A012
TRASH ENCLOSURE

A
B
C
D
E
F
G
H

	LOWER LEVEL	1ST LEVEL	2ND LEVEL	TOTAL
2-BED ROOM	NA	20	20	40
ENTRY LOBBY	NA	1	NA	1
ADMIN. OFFICE	NA	1	NA	3 DESK COUNT
EXECUTIVE OFFICE	NA	1	NA	1 DESK COUNT
LARGE MEETING ROOM	1	1	NA	49 PERSON MAX. CAPACITY EA.
SMALL MEETING ROOM	2	2	NA	4
DINING ROOM	NA	1	NA	60 PERSON MAX. CAPACITY
KITCHEN	NA	1	NA	1
ADORATION CHAPEL	1	NA	NA	1
LOUNGE	NA	1	1	2
EMPLOYEE BREAK ROOM	NA	1	NA	1
ELECTRICAL ROOM	NA	1	NA	1
MECHANICAL ROOM	1	NA	NA	1
NETWORK CLOSET	NA	1	NA	1
STORAGE	1	2	1	4
LAUNDRY & LINEN	NA	1	NA	1
JANITOR CLOSET	NA	1	NA	1
PUBLIC RESTROOMS	NA	1 EA.	NA	1 EA.

LOWER LEVEL	3,950 GSF
FIRST LEVEL	16,095 GSF
SECOND LEVEL	8,806 GSF
TOTAL	28,851 GSF

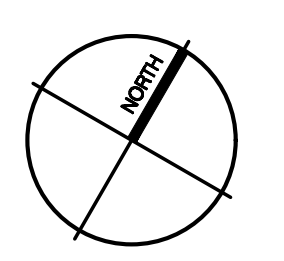


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05-27-2020 SCHEMES A,B,C
06-02-2020 CLIENT REVIEW
07-31-2020 SITE PLAN REVIEW

H6 Lower Level Floor Plan
A100 SCALE: 1/8" = 1'-0"



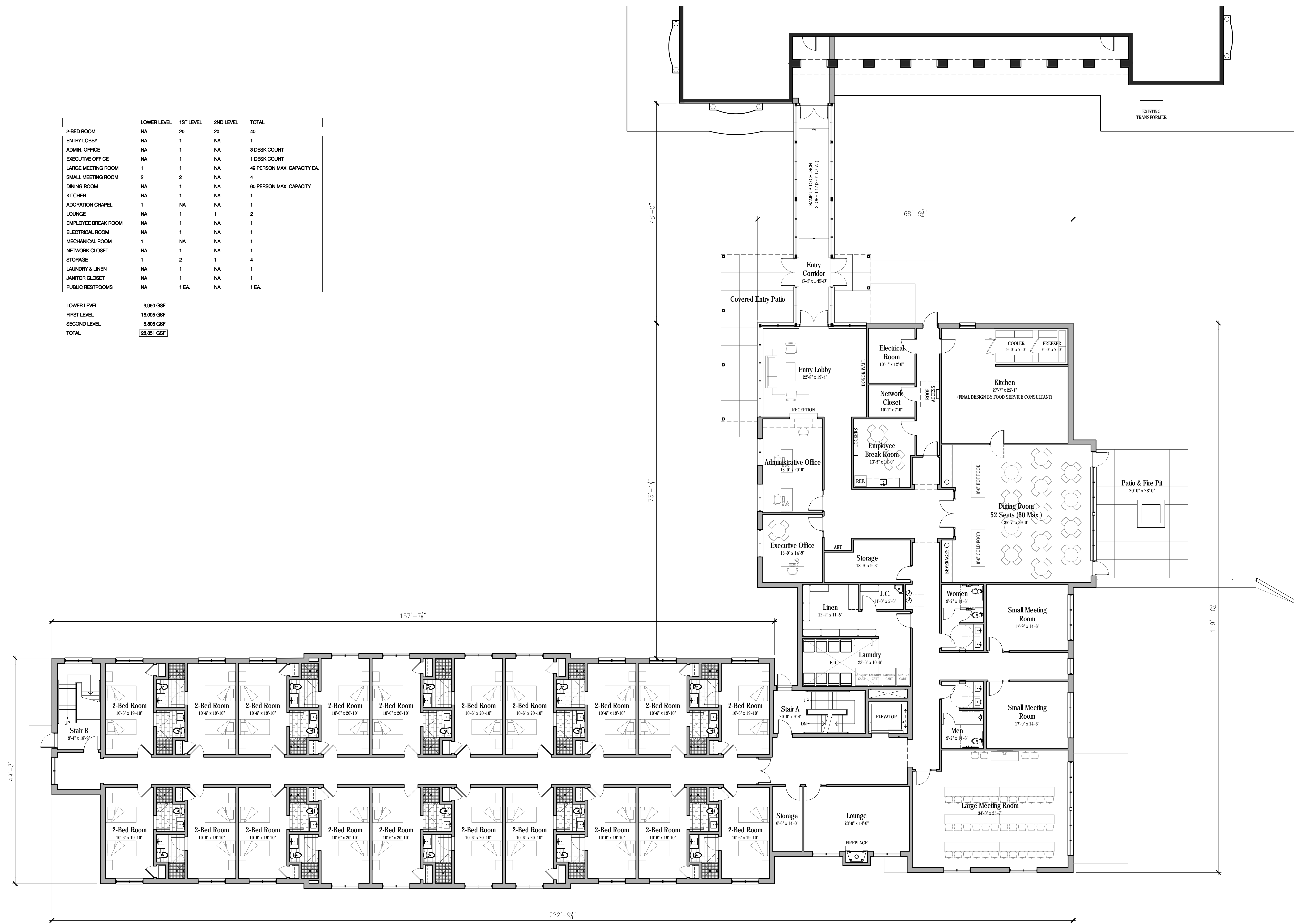
Sheet No.:
A100
LOWER LEVEL FLOOR PLAN

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10

A
B
C
D
E
F
G
H

	LOWER LEVEL	1ST LEVEL	2ND LEVEL	TOTAL
2-BED ROOM	NA	20	20	40
ENTRY LOBBY	NA	1	NA	1
ADMIN. OFFICE	NA	1	NA	3 DESK COUNT
EXECUTIVE OFFICE	NA	1	NA	1 DESK COUNT
LARGE MEETING ROOM	1	1	NA	49 PERSON MAX. CAPACITY EA.
SMALL MEETING ROOM	2	2	NA	4
DINING ROOM	NA	1	NA	60 PERSON MAX. CAPACITY
KITCHEN	NA	1	NA	1
ADORATION CHAPEL	1	NA	NA	1
LOUNGE	NA	1	1	2
EMPLOYEE BREAK ROOM	NA	1	NA	1
ELECTRICAL ROOM	NA	1	NA	1
MECHANICAL ROOM	1	NA	NA	1
NETWORK CLOSET	NA	1	NA	1
STORAGE	1	2	1	4
LAUNDRY & LINEN	NA	1	NA	1
JANITOR CLOSET	NA	1	NA	1
PUBLIC RESTROOMS	NA	1 EA.	NA	1 EA.

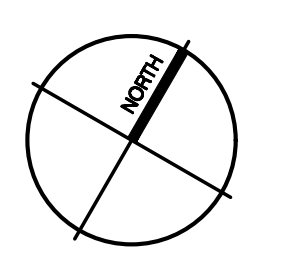
LOWER LEVEL	3,950 GSF
FIRST LEVEL	16,095 GSF
SECOND LEVEL	8,806 GSF
TOTAL	28,851 GSF



SAROKI
ARCHITECTURE
430 N. OLD WOODWARD
BIRMINGHAM, MI 48009
P. 248.258.5707
F. 248.258.5515
SarokiArchitecture.com

Project:
The Prophet Elijah
Retreat Center
1391 Kellogg Road
Brighton, Michigan 48114
Date: Issued For:
03-30-2019 CLIENT MEETING
11-17-2019 CLIENT MEETING
12-13-2019 CLIENT REVIEW
01-21-2020 CLIENT REVIEW
02-06-2020 CLIENT REVIEW
05-14-2020 CLIENT REVIEW
05-27-2020 SCHEMES A,B,C
06-02-2020 CLIENT REVIEW
07-31-2020 SITE PLAN REVIEW

H6
A110 First Level Floor Plan
SCALE: 1/8" = 1'-0"



Sheet No.:
A110
FIRST LEVEL FLOOR PLAN

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10

A
B
C
D
E
F
G
H

	LOWER LEVEL	1ST LEVEL	2ND LEVEL	TOTAL
2-BED ROOM	NA	20	20	40
ENTRY LOBBY	NA	1	NA	1
ADMIN. OFFICE	NA	1	NA	3 DESK COUNT
EXECUTIVE OFFICE	NA	1	NA	1 DESK COUNT
LARGE MEETING ROOM	1	1	NA	49 PERSON MAX. CAPACITY EA.
SMALL MEETING ROOM	2	2	NA	4
DINING ROOM	NA	1	NA	60 PERSON MAX. CAPACITY
KITCHEN	NA	1	NA	1
ADORATION CHAPEL	1	NA	NA	1
LOUNGE	NA	1	1	2
EMPLOYEE BREAK ROOM	NA	1	NA	1
ELECTRICAL ROOM	NA	1	NA	1
MECHANICAL ROOM	1	NA	NA	1
NETWORK CLOSET	NA	1	NA	1
STORAGE	1	2	1	4
LAUNDRY & LINEN	NA	1	NA	1
JANITOR CLOSET	NA	1	NA	1
PUBLIC RESTROOMS	NA	1 EA.	NA	1 EA.

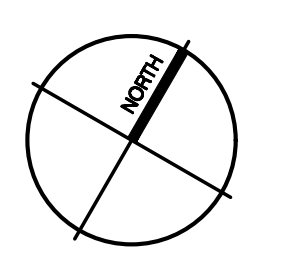
LOWER LEVEL 3,950 GSF
 FIRST LEVEL 16,095 GSF
 SECOND LEVEL 8,806 GSF
 TOTAL 28,851 GSF



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Project:
 The Prophet Elijah
 Retreat Center
 1391 Kellogg Road
 Brighton, Michigan 48114
Date: Issued For:
 03-30-2019 CLIENT MEETING
 11-17-2019 CLIENT MEETING
 12-13-2019 CLIENT REVIEW
 01-21-2020 CLIENT REVIEW
 02-06-2020 CLIENT REVIEW
 06-02-2020 CLIENT REVIEW
 07-31-2020 SITE PLAN REVIEW

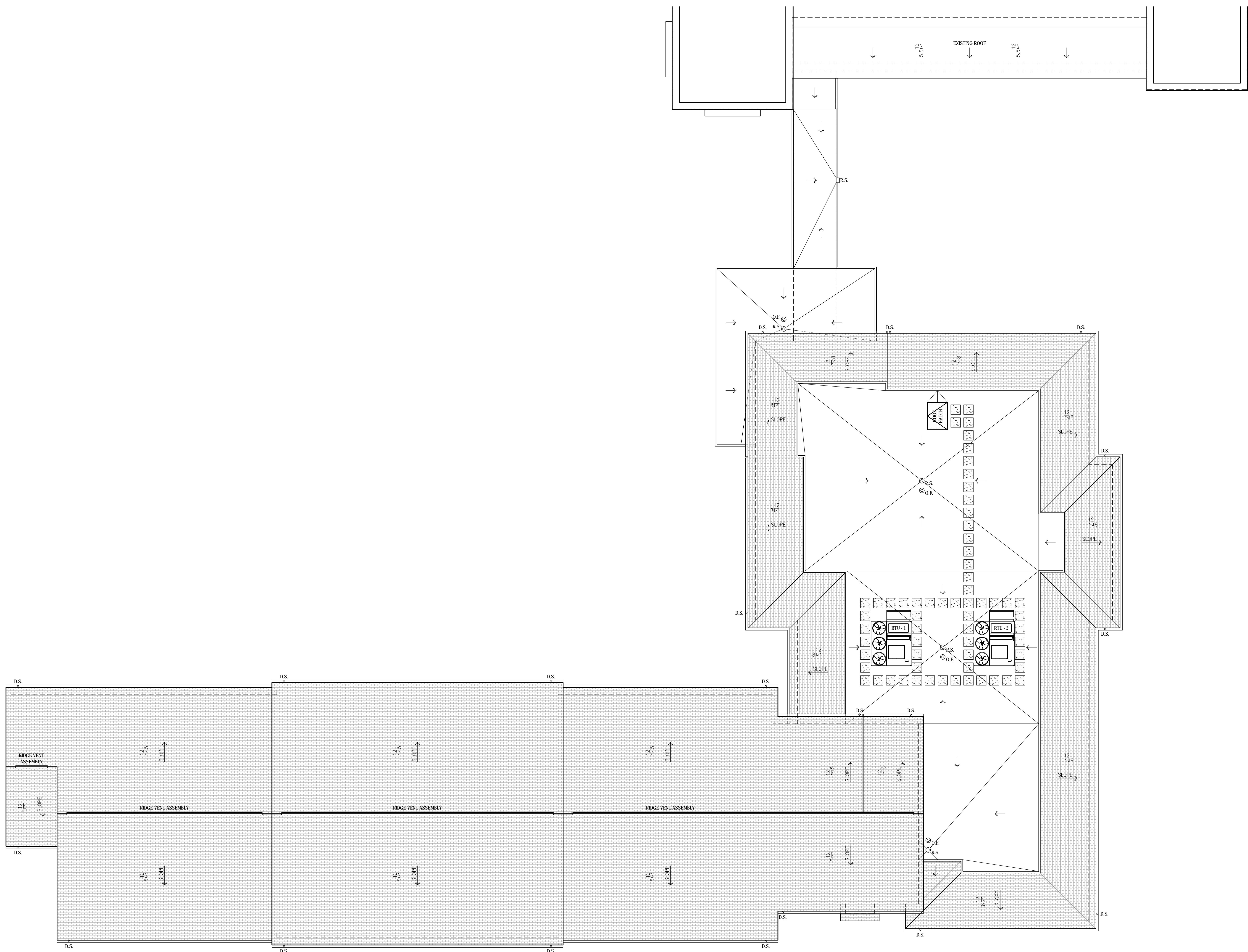
H6
 A120
Second Level Floor Plan
 SCALE: 1/8" = 1'-0"



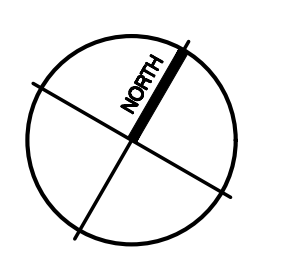
Sheet No.:
A120
 SECOND LEVEL FLOOR PLAN

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10

A
B
C
D
E
F
G
H



H6
A130
Roof Plan
SCALE: 1/8" = 1'-0"



SAROKI
ARCHITECTURE

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SarokiArchitecture.com

Project:
The Prophet Elijah
Retreat Center
1391 Kellogg Road
Brighton, Michigan 48114
Date: Issued For:
07-31-2020 SITE PLAN REVIEW

Sheet No.:
A130
ROOF PLAN

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10

EXTERIOR MATERIALS & FINISHES			
BRICK 'A'	MANUFACTURER: SIOUX CITY BRICK / GLEN-GERY COLOR: FINE ARTS FINISH: VELOUR SIZE: MODULAR MORTAR: GREY	STONE SILLS & WATERTABLES	MANUFACTURER: SHOULDRICE DESIGNER STONE TYPE: CHARINGTON SUPER SILL PROFILE: 424 WATERTABLE COLOR: PEARL WHITE FINISH: TAPESTRY SIZE: 4" HIGH
BRICK 'B'	MANUFACTURER: BOWERSTON SHALE COMPANY COLOR: 8515 FINISH: VELOUR SIZE: MODULAR MORTAR: GREY	ASPHALT SHINGLES	MANUFACTURER: GAF TYPE: TIMBERLINE HD ARCHITECTURAL SHINGLES COLOR: WEATHERED WOOD
LAP SIDING	MANUFACTURER: JAMES HARDIE TYPE: HARDIE PLANK COLOR: KHAKI BROWN FINISH: SELECT CEDARMILL SIZE: 8 1/4" WIDE (7" EXPOSED)	ALUMINUM STOREFRONT WINDOWS & DOORS	MANUFACTURER: TO BE DETERMINED COLOR: DARK BRONZE
TRIM	MANUFACTURER: JAMES HARDIE TYPE: HARDIE TRIM COLOR: ARCTIC WHITE FINISH: SMOOTH SIZE: 3/4" THICK (WIDTHS: 5 1/2" WIDE, 7 1/4" WIDE)	VINYL WINDOWS	MANUFACTURER: TO BE DETERMINED COLOR: DARK BRONZE
		PTAC ARCHITECTURAL GRILLES	MANUFACTURER: TO BE DETERMINED COLOR: DARK BRONZE
		EXTERIOR PAINT FOR CANOPIES, GUTTERS, ETC.	MANUFACTURER: SHERWIN WILLIAMS COLOR: SW 9605 CLOVE FINISH: SEMI-GLOSS

A
B
C
D
E
F
G
H



E6 North Elevation
A200 SCALE: 1/8" = 1'-0"



H6 South Elevation
A200 SCALE: 1/8" = 1'-0"



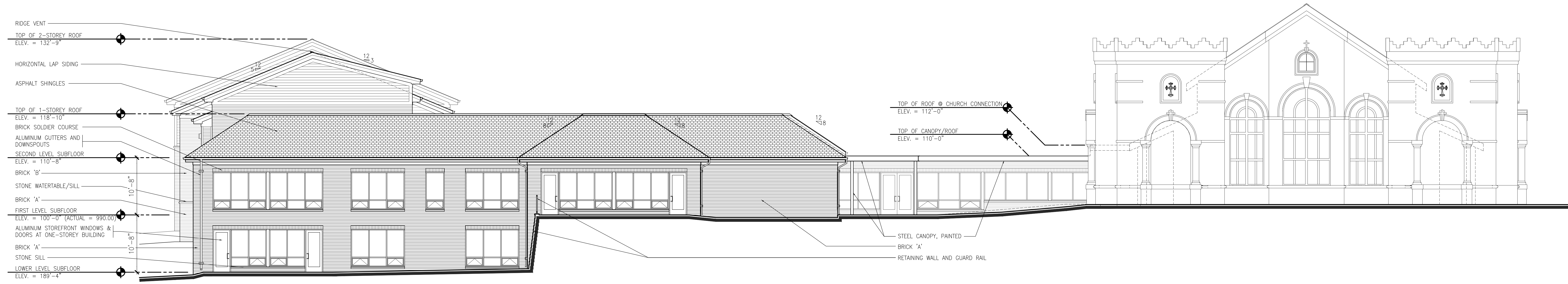
SAROKI
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Project:
The Prophet Elijah
Retreat Center
1391 Kellogg Road
Brighton, Michigan 48114
Date: Issued For:
07-31-2020 SITE PLAN REVIEW

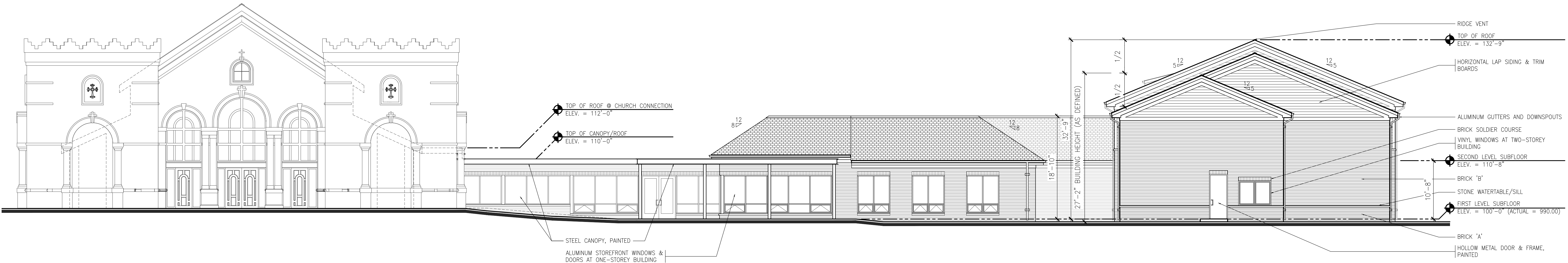
Sheet No.:
A200
EXTERIOR ELEVATIONS

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10

EXTERIOR MATERIALS & FINISHES			
BRICK 'A'	MANUFACTURER: SIOUX CITY BRICK / GLEN-GERY	STONE SILLS & WATERTABLES	MANUFACTURER: SHOULDRICE DESIGNER STONE
COLOR: FINE ARTS	FINISH: VELOUR	TYPE: CHARRINGTON SUPER SILL	PROFILE: 424 WATERTABLE
SIZE: MODULAR	MORTAR: GREY	COLOR: PEARL WHITE	FINISH: TAPESTRY
		SIZE: 4" HIGH	
BRICK 'B'	MANUFACTURER: BOWERSTON SHALE COMPANY	ASPHALT SHINGLES	MANUFACTURER: GAF
COLOR: 8515	FINISH: VELOUR	TYPE: TIMBERLINE HD ARCHITECTURAL SHINGLES	COLOR: WEATHERED WOOD
SIZE: MODULAR	MORTAR: GREY	ALUMINUM STOREFRONT WINDOWS & DOORS	MANUFACTURER: TO BE DETERMINED
		COLOR: DARK BRONZE	
LAP SIDING	MANUFACTURER: JAMES HARDIE	VINYL WINDOWS	MANUFACTURER: TO BE DETERMINED
TYPE: HARDIE PLANK	COLOR: KHAKI BROWN	COLOR: DARK BRONZE	
FINISH: SELECT CEDARMILL	SIZE: 8 1/4" WIDE (7" EXPOSED)	PTAC ARCHITECTURAL GRILLES	MANUFACTURER: TO BE DETERMINED
		COLOR: DARK BRONZE	
TRIM	MANUFACTURER: JAMES HARDIE	EXTERIOR PAINT FOR CANOPIES, GUTTERS, ETC.	MANUFACTURER: SHERWIN WILLIAMS
TYPE: HARDIE TRIM	COLOR: ARCTIC WHITE	COLOR: SW 9605 CLOVE	FINISH: SEMI-GLOSS
FINISH: SMOOTH	SIZE: 3/4" THICK (WIDTHS: 5 1/2" WIDE, 7 1/4" WIDE)		



E6 East Elevation
A201 SCALE: 1/8" = 1'-0"



H6 West Elevation
A201 SCALE: 1/8" = 1'-0"



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Project:
The Prophet Elijah
Retreat Center
1391 Kellogg Road
Brighton, Michigan 48114

Date: Issued For:
07-31-2020 SITE PLAN REVIEW

Sheet No.:
A201
EXTERIOR ELEVATIONS

A
B
C
D
E
F
G
H

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10



GENOA CHARTER TOWNSHIP
Application for Site Plan Review

TO THE GENOA TOWNSHIP PLANNING COMMISSION AND TOWNSHIP BOARD:

APPLICANT NAME & ADDRESS: Hugo Ceron 43980 Plymouth Oaks Blvd. Plymouth, MI 48170
If applicant is not the owner, a letter of Authorization from Property Owner is needed.

OWNER'S NAME & ADDRESS: Adam Marchwinski 1400 E Witcomb Madison Heights, MI 48071

SITE ADDRESS: 1183 Fendt Drive PARCEL #(s): 4711-08-201-007

APPLICANT PHONE: (269) 312-2498 OWNER PHONE: (248) 226-0950

OWNER EMAIL: amarchwinski@ups.com

LOCATION AND BRIEF DESCRIPTION OF SITE: _____

Site is located to the southeast corner of the cul-de-sac of Fendt Drive. The property is currently a gravel parking lot with no building.

BRIEF STATEMENT OF PROPOSED USE: _____

Site is currently a gravel employee parking lot for the UPS facility across the street. Parking lot improvements include lot with an asphalt pavement section with curb and gutter, storm sewer, lighting and landscaping.

THE FOLLOWING BUILDINGS ARE PROPOSED: Not building is proposed as part of this project.

I HEREBY CERTIFY THAT ALL INFORMATION AND DATA ATTACHED TO AND MADE PART OF THIS APPLICATION IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

BY: Hugo Ceron


ADDRESS: 43980 Plymouth Oaks Blvd. Plymouth MI 48170

Contact Information - Review Letters and Correspondence shall be forwarded to the following:

1.) Hugo Ceron of SME at hugo.ceron@sme-usa.com
Name Business Affiliation E-mail Address

FEE EXCEEDANCE AGREEMENT

As stated on the site plan review fee schedule, all site plans are allocated two (2) consultant reviews and one (1) Planning Commission meeting. If additional reviews or meetings are necessary, the applicant will be required to pay the actual incurred costs for the additional reviews. If applicable, additional review fee payment will be required concurrent with submittal to the Township Board. By signing below, applicant indicates agreement and full understanding of this policy.

SIGNATURE:  DATE: 08/05/2020
PRINT NAME: Hugo Ceron PHONE: (269)312-2498
ADDRESS: 43980 Plymouth Oaks Blvd. Plymouth MI 48170

October 6, 2020

Planning Commission
Genoa Township
2911 Dorr Road
Brighton, Michigan 48116

Attention:	Kelly Van Marter, AICP Planning Director and Assistant Township Manager
Subject:	UPS Howell – Site Plan Review #2
Location:	1183 Fendt Drive – east side of Fendt Drive, north of Grand Oaks Drive
Zoning:	IND Industrial District

Dear Commissioners:

At the Township’s request, we have reviewed the revised submittal from UPS Howell requesting site plan review/approval of a new parking lot at 1183 Fendt Drive (plans dated 9/23/20). The proposed parking lot is to be used in conjunction with the existing UPS facility on the west side of Fendt Drive.

A. Summary

1. We recommend the Commission require the applicant to provide and record an agreement stating that the two properties are tied together, and that a shared parking easement must be provided and recorded should either property be sold separately.
2. The applicant will need to obtain a variance from the ZBA to exceed the 300-foot spacing between the nearest parking space and public building entrance (Section 14.02.03).
3. The landscape plan is deficient in parking lot landscaping. The applicant requests that PC waive these requirements, per Section 12.02.13.
4. If signage is proposed in the future, a sign permit must be obtained from the Township prior to installation.

B. Proposal/Process

The project entails a new parking lot, including landscaping, lighting, and site engineering, for use in conjunction with the existing building/facility across the street.

It is our understanding that UPS has used the subject site as an unimproved parking lot for some time, and site improvements have been required by the Township.

Per Table 18.2, construction of a new parking lot requires site plan review/approval by the Planning Commission.

Procedurally, the Planning Commission has review and approval authority over the site plan, though the Township Board has the final approval authority over the Impact Assessment.

C. Site Plan Review

1. **Use.** In this instance, the proposed parking lot is to be used in conjunction with the facility across the street. Section 14.02.03 allows parking on lots under the same ownership, or where a shared parking easement is provided, and the nearest parking space is not more than 300 feet from the nearest public entrance.



Aerial view of site and surroundings (looking east)

Since the lots are under common ownership, an easement is not required at this time. However, one will be necessary if either lot is sold separately in the future.

In order to ensure adherence to this requirement, we recommend the Commission require that the applicant provide an agreement in recordable format allowing accessory parking dedicated to the use of the property across the street. Furthermore, said agreement should state that a shared parking easement must be provided and recorded upon the sale of either parcel separately.

Additionally, the 300-foot standard of Section 14.02.03 is not met. Based on Sheet C-600, the distance is approximately 310 feet. The applicant will need to obtain a variance from the ZBA to exceed this standard.

Lastly, use of the parking lot for outdoor storage is prohibited. By definition, “outdoor storage” occurs when goods, materials, or vehicles are kept in the same place for more than 24 hours. A note has been added Sheet C-600 acknowledging this standard.

- 2. Dimensional Requirements.** As shown in the table below, the project complies with the applicable dimensional requirements of the IND:

	Min. Lot Req.		Minimum Parking Setbacks (feet)			Max. Lot Coverage
	Area (acres)	Width (feet)	Front Yard	Side Yard	Rear Yard	
IND	1	150	20	10	10	85% impervious
Proposed	2.03	272.2	20	14 (N) 12 (S)	46	68.5%

- 2. Vehicular Circulation.** Vehicular access to/from Fendt Drive will be provided via 2 new driveways. The parking lot will utilize a two-way circulation pattern with 24-foot wide drive aisles, and a 26-foot wide fire lane looping around the lot.
- 3. Pedestrian Circulation.** Sidewalks are not typically required in the IND District; however, given the nature of the request, the applicant proposes sidewalks and crosswalks connecting the proposed parking lot to the developed site across the street.

4. **Parking.** The proposed parking has been reviewed for compliance with the standards of Article 14, as follows:

	Required	Proposed	Comments
Parking Spaces Warehousing (greater of 1 space/1,500 SF gross floor area or 1.2 spaces/employee in peak shift; plus 1 per corporate vehicle)	220	47 at facility 184 new lot 231 total	In compliance - based on 183 employees noted in EIA
Barrier Free Spaces	8	8	In compliance
Dimensions Spaces (75 to 90-degree) Drive aisle width (two-way)	9' x 18' 24'	9' x 18' 24' and 26'	In compliance

5. **Landscaping.** The landscape plan has been reviewed for compliance with the standards of Section 12.02, as noted in the following table:

Standard	Required	Proposed	Notes
Front yard greenbelt	20' width 7 canopy trees	20' width 7 canopy trees	In compliance
Parking lot	16 canopy trees 1,550 SF landscaped area	0 canopy trees 0 SF landscaped area	Applicant requests that PC waive requirements

In accordance with Section 12.02.13, the Planning Commission may waive or modify landscaping requirements.


6. **Exterior Lighting.** The lighting plan includes 4 poles with 2 fixtures each. Details include the use of downward directed LED fixtures, per Ordinance standards. Additionally, the photometric plan demonstrates compliance with maximum lighting intensities (both on-site and along property lines).

A note has been added to Sheet E-004 indicating the use of 30-foot tall light poles, which also complied with Ordinance standards.

7. **Signs.** The revised submittal notes that no new signage is proposed as part of this project. If signage is proposed in the future, a sign permit must be obtained from the Township prior to installation.
8. **Impact Assessment.** The submittal includes an Impact Assessment (dated September 2, 2020), which notes that the project is not anticipated to adversely impact natural features, public services/utilities, surrounding land uses, or traffic.

Should you have any questions concerning this matter, please do not hesitate to contact our office.

Respectfully,
SAFE BUILT STUDIO


Brian V. Borden, AICP
Planning Manager

October 5, 2020

Ms. Kelly Van Marter
Genoa Township
2911 Dorr Road
Brighton, MI 48116

**Re: UPS Parking Lot
Site Plan Review No. 2**

Dear Ms. Van Marter:

Tetra Tech conducted a second review of the proposed UPS Parking Lot site plan last dated September 23, 2020. The plans and impact assessment were submitted by SME. The site is on a 2-acre parcel located on the east side of Fendt Drive. The petitioner is proposing a 60,300 square foot asphalt parking lot to replace the existing 40,500 square foot gravel parking yard that is currently used as overflow parking for the UPS facility across the street. The Petitioner is proposing parking lot, storm sewer, and underground stormwater detention system.

After reviewing the site and impact assessment we offer the following:

DRAINAGE AND GRADING

1. The Petitioner is proposing a closed pipe type underground detention basin comprised of four 48-inch diameter pipes to provide 5,329 cubic feet of storage. A Stormwater Management System Maintenance Plan is included and details the cost and responsibility of maintaining the proposed storm system. The provided maintenance schedules include maintenance and inspection of the detention basin inlet, but not the outlet and emergency outlets. These components should be included in the schedules to make sure they remain clear of debris.
2. The proposed underground detention basin is designed to capture additional flow that will be generated from the parking lot being improved from gravel to asphalt, not to capture all onsite drainage. The Petitioner provided an email from Mitch Dempsey of the Livingston County Drain Commission permitting this basis of design.
3. The Petitioner reduced their outlet pipe size to 6 inches to create a restricted outflow. The 6-inch pipe will restrict outflow to 0.561 cfs, which meets the 0.2 cfs per acre maximum.
4. The Petitioner added an overflow outlet to the underground detention basin at catch basin 2. The emergency outlet is currently proposed as a 6-inch pipe. This appears to be undersized when reviewing the calculations for the pipes tributary to the detention system. The petitioner should size the outlet so that the combination of the outlet pipe (6 inch) and overflow pipe will accommodate the same amount of flow that is being calculated for the pipe between catch basins 3 and 2. This will limit the potential for the collection system to back up and overflow over the curb and thereby cause erosion of the parking lot embankment.

5. The plans include 10-foot-deep soil borings. The Genoa Township Engineering Standards require that soil borings shall be provided to a depth of 20 feet below the bottom of the proposed detention basin and the documented high level of the groundwater should be provided.

WATER MAIN

1. The Petitioner is proposing to relocate the existing fire hydrant at the end of Fendt Drive to accommodate one of the two proposed access drives to the parking lot. More detail needs to be provided on how this hydrant will be relocated. The relocation of the hydrant should be achieved by shutting off the existing hydrant isolation valve, removing the existing hydrant, installing any necessary fittings to get to the proposed location, and then installing a new isolation valve and the hydrant. The existing isolation valve can then be opened and buried with the operator removed. This method will not require the water main on Fendt Drive to be shut down. If the hydrant is relocated as it is currently shown, the water main will need to be shut down and the hydrant will need to be reinstalled using MHOG's terminal hydrant detail (<https://www.mhog.org/newdevelopment/designstandards>).

We recommend the petitioner revise the site plan to address the above comments prior to approval. Please call or email if you have any questions.

Sincerely,



Gary J. Markstrom, P.E.
Vice President



Shelby Scherdt
Project Engineer



BRIGHTON AREA FIRE AUTHORITY

615 W. Grand River Ave.
Brighton, MI 48116
o: 810-229-6640 f: 810-229-1619

October 7, 2020

Kelly VanMarter
Genoa Township
2911 Dorr Road
Brighton, MI 48116

RE: UPS Employee Parking Lot
1183 Fendt Drive
Genoa Twp., MI

Dear Kelly:

The Brighton Area Fire Department has reviewed the above mentioned site plan. The plans were received for review on September 30, 2020 and the drawings are dated September 2, 2020. The project is based on the reconfiguration of an existing 2.03-acre vacant parcel used as a gravel parking lot for employees of the nearby UPS distribution facility. There is no proposed structure in the application. The plan review is based on the requirements of the International Fire Code (IFC) 2018 edition.

All fire authorities requirements related to access have been substantially complied with.

If you have any questions about the comments on this plan review, please contact me at 810-229-6640.

Cordially,

A handwritten signature in black ink, appearing to read "R. Boisvert".

Rick Boisvert, CFPS
Fire Marshal

cc: Amy Ruthig amy@genoa.org



IMPACT ASSESMENT

UNITED PARCEL SERVICE FACILITY
GENOA TOWNSHIP, MICHIGAN

SME Project Number: 084617.00
September 2, 2020





The Kramer Building
43980 Plymouth Oaks Blvd.
Plymouth, MI 48170-2584

T (734) 454-9900

www.sme-usa.com

September 2, 2020

Mr. Adam Marchwinski
UPS Buildings & Systems Engineering
1400 E. Whitcomb
Madison Heights, Michigan 48071

Via E-mail: amarchwinski@ups.com (PDF file)

Re: Impact Assessment
UPS Genoa Township Facility
1212 Fendt Drive, Genoa Township, Michigan 48843
SME Project No. 084617.00

Dear Mr. Marchwinski:

We have completed our impact assessment for the proposed parking lot development at the UPS facility located in Genoa Township, Michigan. This letter summarizes the anticipated impacts for the project per Genoa Township site plan application submittal requirements.

Sincerely,

SME

Assessment Prepared by:
Kyle J. Wilson, EIT
Senior Staff Engineer

Assessment Reviewed by:
Hugo J. Ceron, PE
Project Engineer

TABLE OF CONTENTS

1.0 CONTACT INFORMATION	1
2.0 DESCRIPTION OF PROJECT SITE	1
3.0 IMPACT ON NATURAL FEATURES	1
4.0 IMPACT ON STORMWATER MANAGEMENT	1
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6.0 IMPACT ON PUBLIC FACILITIES AND SERVICES.....	2
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8.0 STORAGE AND HANDLING OF HAZARDOUS MATERIALS	2
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10.0 SPECIAL PROVISIONS	3

1.0 CONTACT INFORMATION

Prepared by:

SME
43980 Plymouth Oaks Blvd.
Plymouth, MI 48170

Prepared for:

UPS
1400 E. Whitcomb
Madison Heights, Michigan 48071

2.0 DESCRIPTION OF PROJECT SITE

The site is located at 1183 Fendt Drive near the northwest intersection of I-96 and South Latson Road in Genoa Township, Michigan. The site is located on Lot 7 of the Gen Tech Industrial Park on the east side of Fendt Drive and is zoned as Industrial. The parcel is approximately 2 acres in area. The site features an existing 4,500 square yard gravel parking lot that serves as overflow parking for employees at the UPS facility located on the west side of Fendt Drive. The project site is bound by industrial facilities to the North and South, Fendt drive to the West, and an existing drainage ditch and service drive between the existing Walmart and Lowe's to the East.

Proposed site improvements include an approximately 6,700 square yard asphalt pavement parking lot with concrete curb and gutter, site lighting, underground storm sewer pipe, and an underground storm water detention system. The parking lot will serve as parking UPS employees and will serve passenger vehicles. The proposed parking lot includes 186 parking stalls.

3.0 IMPACT ON NATURAL FEATURES

The existing site topography varies, with elevations generally ranging between 1005 and 1023. The site generally slopes from west to east, and from south to north, with the steepest slopes along the eastern third of the parcel toward an existing drainage ditch. The site also features an existing drainage ditch on the west side of the parcel along Fendt Drive. The site is generally free of trees and vegetation except for one deciduous tree on the parcel and grass in the existing greenbelt areas. The existing gravel lot has slopes up to approximately 3 percent. The site is located in FEMA floodplain Zone X, area of minimal flood hazard per FEMA flood insurance map 26093C0309D effective date September 17, 2008. The proposed development will have relatively low impact on natural features, with some of the existing greenbelt areas becoming paved parking lot, and other areas on site being re-graded.

4.0 IMPACT ON STORMWATER MANAGEMENT

Soil erosion and sediment control measures will be implemented at the start of the project and remain in place until final ground cover is restored. Silt fence will be utilized to control sediment runoff at the disturbance limits, inlet protection filters will be installed on new storm structures during construction, and gravel tracking pads will be used for site access. Disturbed greenbelt areas will be restored following construction with topsoil and grass seed. The SESC and Site Preparation Plan will be submitted to the Livingston County Drain Commissioner for review and a soil erosion permit will be obtained for the project.

5.0 IMPACT ON SURROUNDING LAND USED

The parcel is zoned as Industrial (IND) based on the Genoa Township Official Zoning Map with revision date February, 17, 2015 with the site use permitted in the Industrial district under warehousing establishments. The parcel is bordered by industrial zones to the North, West, and South and by a Non-Residential Planned Unit Development (NRPUD) zone to the east. The parcel conforms the dimensional and bulk requirements in Section 8.03 of the Genoa Township Zoning ordinance (as amended 12/31/06).

The lot area is approximately 2.0 acres and the lot width is approximately 265 feet. The proposed development will consist of a new employee parking lot for passenger vehicles of UPS employees. The proposed lot conforms to the parking setback requirements of 20 feet for the front yard 10 feet for the side and rear yards. The parking lot will feature exterior lighting that comply with Section 12.03 of the Genoa Township Zoning Ordinance. The proposed parking lot development will not have significant impact on noise and air pollution as the lot will be used for employee parking.

6.0 IMPACT ON PUBLIC FACILITIES AND SERVICES

The UPS Howell facility typically employs approximately 183 employees during normal operations, generally between the hours of 4:00AM and 9:30PM. Work at the facility generally occurs in 3 shifts, with 53 pre-loading employees working between the hours of 4:00AM and 10:00PM, 91 delivery drivers working between the hours of 8:30AM and 6:30PM, and 39 re-load employees working between the hours of 5:00PM and 9:30 PM.

The facility experiences an approximate employee increase of 35% during peak season, generally from November through January. The hours of operation generally span between the hours of 12:00AM and 11:00PM during these periods.

In general, the proposed development will have little impact on public facilities and services, as the project is located on a private road that serves industrial facilities and is not open to the public.

7.0 IMPACT ON PUBLIC UTILITIES

Gas, water, and sanitary sewer services are not included in the proposed parking lot development as no buildings are proposed for the site. Existing gas, water, and sanitary sewer lines are present along the private Fendt Drive right of way but will not need to be tapped for proposed development. The project will include relocation of an existing fire hydrant to accommodate the proposed northwest entrance driveway. The proposed hydrant location will be approximately 28' to the northwest of the existing location.

Catch basin structures and underground storm sewer pipes will be utilized to convey stormwater to existing drainage ditches. An underground detention system will be utilized to detain stormwater at the site. The detention system will be sized to accommodate the difference in pre-development and post-development runoff for a 100 year storm event per Livingston County's preliminary review of the proposed development. The stormwater will be treated using a mechanical forebay prior to outlet. The final stormwater outlet will be into existing the drainage ditch along the east side of the site. Plans and stormwater calculations will be submitted to Livingston County Drain Commissioner for review and a soil erosion permit will be obtained for the project.

8.0 STORAGE AND HANDLING OF HAZARDOUS MATERIALS

The proposed parking lot will serve passenger vehicles as an employee parking for UPS. As such, hazardous materials will not be handled or stored at the site.

9.0 IMPACT ON TRAFFIC AND PEDESTRIANS

The UPS facility has approximately 183 employees during normal operations, and 248 employees during the months of November through January. The proposed parking lot will serve employee passenger vehicles only, as such no vehicle trips for delivery trucks or tractor trailers will be generated from the proposed development. The maximum vehicle trips per day from the proposed lot is estimated at 621 trips, and includes arrival and departure of all employees during peak season, as well as lunch departure and arrival for non-delivery driver staff.

The peak hour for vehicle trips generally occurs between the hours of 8:00AM and 9:00AM. Approximately 50 percent of the employees are delivery driver staff that begin work by approximately 8:30AM. The peak flow rate is estimated at approximately 94 trips per hour and makes up approximately 15 percent of the estimated maximum vehicle trips per day. Little traffic impact is anticipated from the proposed parking lot development, as the existing gravel lot is being utilized for the same purpose, and the proposed parking lot will not generate additional trips beyond the existing conditions.

10.0 SPECIAL PROVISIONS

Special provisions are not applicable to the proposed development.



*Passionate People Building
and Revitalizing our World*



UNITED PARCEL SERVICE, INC.

STORMWATER MANAGEMENT SYSTEM MAINTENANCE PLAN

1. RESPONSIBILITY FOR MAINTENANCE OF NEW INFRASTRUCTURE

- a) During construction, it is the Contractor's responsibility to perform the maintenance of the new infrastructure.
- b) Following construction, it will be the responsibility of United Parcel Service Inc. (UPS) to perform the maintenance of the new infrastructure as described on Table 2.
- c) Following construction, routine maintenance of the new infrastructure must be completed within 14 days of receipt of written notification that action is required, unless other acceptable arrangements are made with the Genoa Township, Livingston County Drain Commissioner or successors. Emergency maintenance of the new infrastructure (i.e. when there is endangerment to public health, safety or welfare) shall be performed immediately upon receipt of written notice. Should UPS fail to act within these time frames, the Township of Genoa, Livingston County or successors may perform the needed maintenance and assess the costs against UPS.

2. SOURCE OF FINANCING

UPS is required to pay for the maintenance activities relating to the new infrastructure as described on Table 2 on a continuing basis.

3. MAINTENANCE TASKS AND SCHEDULE

- a) See the charts on the next three pages: The first describes maintenance tasks during construction to be performed by the Contractor, the second describes maintenance tasks by UPS with an approximate budget.
- b) An Additional inspection and maintenance guide for the water quality unit and underground detention system from the manufacturer is included.
- c) Immediately following construction, the Contractor will have the stormwater management system inspected by an engineer to verify grades of the filtration areas and make recommendations for any necessary sediment.

Table 1

MAINTENACE TASKS AND SCHEDULE DURING CONSTRUCTION				
Tasks	COMPONENTS			Schedule
	Storm Sewer System	Catch Basin Inlet Castings	Ditches and Swales	
Inspect for sediment accumulation	X		X	Weekly
Removal of sediment accumulation	X		X	As needed* & prior to turnover
Inspect for floatables and debris		X	X	Quarterly
Cleaning of floatables and debris		X	X	Quarterly & at turnover
Inspection for erosion			X	Weekly
Re-establish permanent vegetation on eroded slopes			X	As needed & at turnover
Mowing			X	0 to 2 times per year
Inspect Stormwater system components during wet weather and compare to as-built plans (by professional engineer reporting to UPS)			X	Annually and at turnover
Make adjustments or replacement as determined by annual wet weather inspection	X	X	X	As needed

*as needed means when sediment has accumulated to a maximum of one foot depth

Table 2

PERMANENT MAINTENANCE TASKS AND SCHEDULE				
Tasks	COMPONENTS		Schedule	Budget
	Catch Basins, Inlets, Castings	Ditches and Swales		
Inspect for sediment accumulation	X	X	Annually	\$ 100.00
Removal of sediment accumulation	X	X	Every 2 years as needed	\$ 500.00
Inspect for floatables and debris	X	X	Annually	\$ 100.00
Cleaning of floatables and debris	X	X	Annually	\$ 150.00
Inspection for erosion		X	Annually	\$ 100.00
Re-establish permanent vegetation on eroded slopes		X	As needed	\$ 350.00
Mowing		X	0 to 2 times per year	\$ 400.00
Inspect Stormwater system components during wet weather and compare to as-built plans (by professional engineer reporting to UPS)	X	X	Annually	\$ 150.00
Make adjustments or replacement as determined by annual wet weather inspection	X	X	As needed	\$ 400.00
Keep records of replacements as determined by annual wet weather inspection	X	X	Annually	\$ 200.00
Keep records of all costs for inspections, maintenance and repairs. Report to UPS	X	X	Annually	\$ -
Total Annual Budget				\$ 2,450.00

*as needed means when sediment has accumulated to a maximum of one foot depth

CDS Guide

Operation, Design, Performance and Maintenance



CDS®

Using patented continuous deflective separation technology, the CDS system screens, separates and traps debris, sediment, and oil and grease from stormwater runoff. The indirect screening capability of the system allows for 100% removal of floatables and neutrally buoyant material without blinding. Flow and screening controls physically separate captured solids, and minimize the re-suspension and release of previously trapped pollutants. Inline units can treat up to 6 cfs, and internally bypass flows in excess of 50 cfs (1416 L/s). Available precast or cast-in-place, offline units can treat flows from 1 to 300 cfs (28.3 to 8495 L/s). The pollutant removal capacity of the CDS system has been proven in lab and field testing.

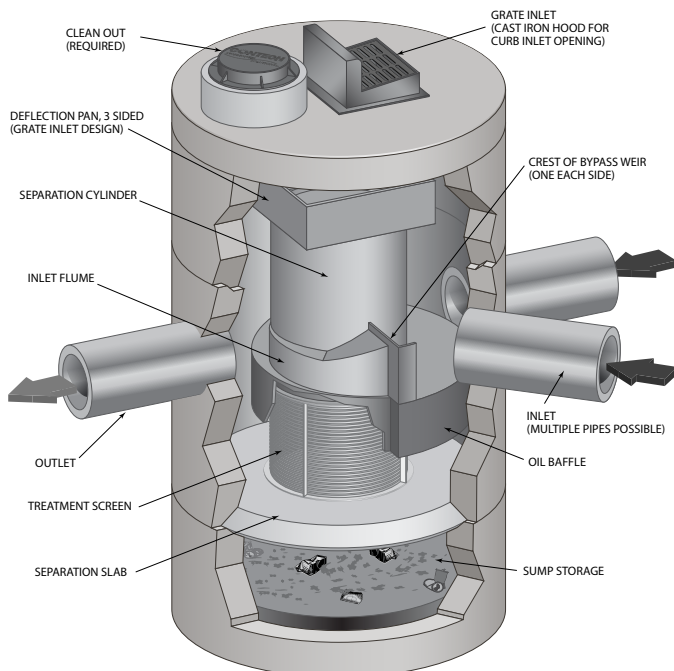
Operation Overview

Stormwater enters the diversion chamber where the diversion weir guides the flow into the unit's separation chamber and pollutants are removed from the flow. All flows up to the system's treatment design capacity enter the separation chamber and are treated.

Swirl concentration and screen deflection force floatables and solids to the center of the separation chamber where 100% of floatables and neutrally buoyant debris larger than the screen apertures are trapped.

Stormwater then moves through the separation screen, under the oil baffle and exits the system. The separation screen remains clog free due to continuous deflection.

During the flow events exceeding the treatment design capacity, the diversion weir bypasses excessive flows around the separation chamber, so captured pollutants are retained in the separation cylinder.



Design Basics

There are three primary methods of sizing a CDS system. The Water Quality Flow Rate Method determines which model size provides the desired removal efficiency at a given flow rate for a defined particle size. The Rational Rainfall Method™ or the Probabilistic Method is used when a specific removal efficiency of the net annual sediment load is required.

Typically in the United States, CDS systems are designed to achieve an 80% annual solids load reduction based on lab generated performance curves for a gradation with an average particle size (d50) of 125 microns (μm). For some regulatory environments, CDS systems can also be designed to achieve an 80% annual solids load reduction based on an average particle size (d50) of 75 microns (μm) or 50 microns (μm).

Water Quality Flow Rate Method

In some cases, regulations require that a specific treatment rate, often referred to as the water quality design flow (WQQ), be treated. This WQQ represents the peak flow rate from either an event with a specific recurrence interval, e.g. the six-month storm, or a water quality depth, e.g. 1/2-inch (13 mm) of rainfall.

The CDS is designed to treat all flows up to the WQQ. At influent rates higher than the WQQ, the diversion weir will direct most flow exceeding the WQQ around the separation chamber. This allows removal efficiency to remain relatively constant in the separation chamber and eliminates the risk of washout during bypass flows regardless of influent flow rates.

Treatment flow rates are defined as the rate at which the CDS will remove a specific gradation of sediment at a specific removal efficiency. Therefore the treatment flow rate is variable, based on the gradation and removal efficiency specified by the design engineer.

Rational Rainfall Method™

Differences in local climate, topography and scale make every site hydraulically unique. It is important to take these factors into consideration when estimating the long-term performance of any stormwater treatment system. The Rational Rainfall Method combines site-specific information with laboratory generated performance data, and local historical precipitation records to estimate removal efficiencies as accurately as possible.

Short duration rain gauge records from across the United States and Canada were analyzed to determine the percent of the total annual rainfall that fell at a range of intensities. US stations' depths were totaled every 15 minutes, or hourly, and recorded in 0.01-inch increments. Depths were recorded hourly with 1-mm resolution at Canadian stations. One trend was consistent at all sites; the vast majority of precipitation fell at low intensities and high intensity storms contributed relatively little to the total annual depth.

These intensities, along with the total drainage area and runoff coefficient for each specific site, are translated into flow rates using the Rational Rainfall Method. Since most sites are relatively small and highly impervious, the Rational Rainfall Method is appropriate. Based on the runoff flow rates calculated for each intensity, operating rates within a proposed CDS system are

determined. Performance efficiency curve determined from full scale laboratory tests on defined sediment PSDs is applied to calculate solids removal efficiency. The relative removal efficiency at each operating rate is added to produce a net annual pollutant removal efficiency estimate.

Probabilistic Rational Method

The Probabilistic Rational Method is a sizing program Contech developed to estimate a net annual sediment load reduction for a particular CDS model based on site size, site runoff coefficient, regional rainfall intensity distribution, and anticipated pollutant characteristics.

The Probabilistic Method is an extension of the Rational Method used to estimate peak discharge rates generated by storm events of varying statistical return frequencies (e.g. 2-year storm event). Under the Rational Method, an adjustment factor is used to adjust the runoff coefficient estimated for the 10-year event, correlating a known hydrologic parameter with the target storm event. The rainfall intensities vary depending on the return frequency of the storm event under consideration. In general, these two frequency dependent parameters (rainfall intensity and runoff coefficient) increase as the return frequency increases while the drainage area remains constant.

These intensities, along with the total drainage area and runoff coefficient for each specific site, are translated into flow rates using the Rational Method. Since most sites are relatively small and highly impervious, the Rational Method is appropriate. Based on the runoff flow rates calculated for each intensity, operating rates within a proposed CDS are determined. Performance efficiency curve on defined sediment PSDs is applied to calculate solids removal efficiency. The relative removal efficiency at each operating rate is added to produce a net annual pollutant removal efficiency estimate.

Treatment Flow Rate

The inlet throat area is sized to ensure that the WQQ passes through the separation chamber at a water surface elevation equal to the crest of the diversion weir. The diversion weir bypasses excessive flows around the separation chamber, thus preventing re-suspension or re-entrainment of previously captured particles.

Hydraulic Capacity

The hydraulic capacity of a CDS system is determined by the length and height of the diversion weir and by the maximum allowable head in the system. Typical configurations allow hydraulic capacities of up to ten times the treatment flow rate. The crest of the diversion weir may be lowered and the inlet throat may be widened to increase the capacity of the system at a given water surface elevation. The unit is designed to meet project specific hydraulic requirements.

Performance

Full-Scale Laboratory Test Results

A full-scale CDS system (Model CDS2020-5B) was tested at the facility of University of Florida, Gainesville, FL. This CDS unit was evaluated under controlled laboratory conditions of influent flow rate and addition of sediment.

Two different gradations of silica sand material (UF Sediment & OK-110) were used in the CDS performance evaluation. The particle size distributions (PSDs) of the test materials were analyzed using standard method "Gradation ASTM D-422 "Standard Test Method for Particle-Size Analysis of Soils" by a certified laboratory.

UF Sediment is a mixture of three different products produced by the U.S. Silica Company: "Sil-Co-Sil 106", "#1 DRY" and "20/40 Oil Frac". Particle size distribution analysis shows that the UF Sediment has a very fine gradation ($d_{50} = 20$ to $30 \mu\text{m}$) covering a wide size range (Coefficient of Uniformity, C averaged at 10.6). In comparison with the hypothetical TSS gradation specified in the NJDEP (New Jersey Department of Environmental Protection) and NJCAT (New Jersey Corporation for Advanced Technology) protocol for lab testing, the UF Sediment covers a similar range of particle size but with a finer d_{50} (d_{50} for NJDEP is approximately $50 \mu\text{m}$) (NJDEP, 2003).

The OK-110 silica sand is a commercial product of U.S. Silica Sand. The particle size distribution analysis of this material, also included in Figure 1, shows that 99.9% of the OK-110 sand is finer than 250 microns, with a mean particle size (d_{50}) of 106 microns. The PSDs for the test material are shown in Figure 1.

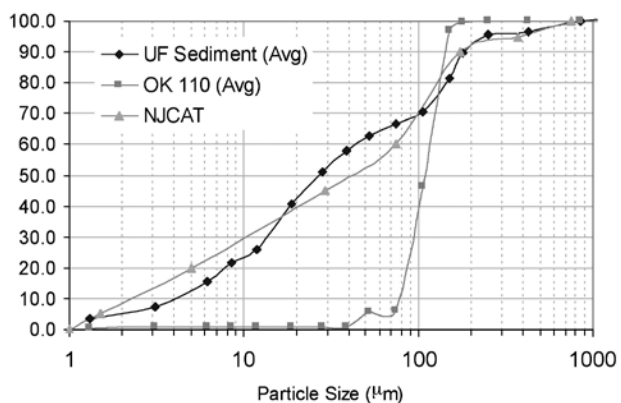


Figure 1. Particle size distributions

Tests were conducted to quantify the performance of a specific CDS unit (1.1 cfs (31.3-L/s) design capacity) at various flow rates, ranging from 1% up to 125% of the treatment design capacity of the unit, using the 2400 micron screen. All tests were conducted with controlled influent concentrations of approximately 200 mg/L. Effluent samples were taken at equal time intervals across the entire duration of each test run. These samples were then processed with a Dekaport Cone sample splitter to obtain representative sub-samples for Suspended Sediment Concentration (SSC) testing using ASTM D3977-97 "Standard Test Methods for Determining Sediment Concentration in Water Samples", and particle size distribution analysis.

Results and Modeling

Based on the data from the University of Florida, a performance model was developed for the CDS system. A regression analysis was used to develop a fitting curve representative of the scattered data points at various design flow rates. This model, which demonstrated good agreement with the laboratory data, can then be used to predict CDS system performance with respect

to SSC removal for any particle size gradation, assuming the particles are inorganic sandy-silt. Figure 2 shows CDS predictive performance for two typical particle size gradations (NJCAT gradation and OK-110 sand) as a function of operating rate.

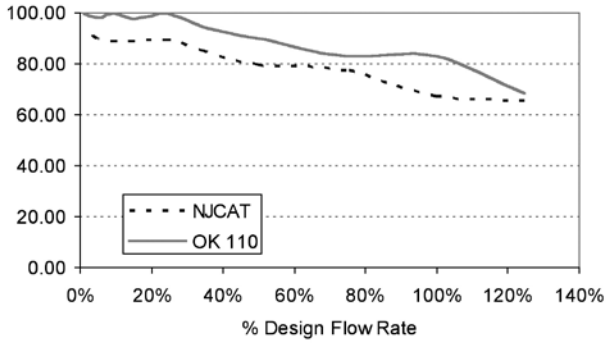


Figure 2. CDS stormwater treatment predictive performance for various particle gradations as a function of operating rate.

Many regulatory jurisdictions set a performance standard for hydrodynamic devices by stating that the devices shall be capable of achieving an 80% removal efficiency for particles having a mean particle size (d_{50}) of 125 microns (e.g. Washington State Department of Ecology — WASDOE - 2008). The model can be used to calculate the expected performance of such a PSD (shown in Figure 3). The model indicates (Figure 4) that the CDS system with 2400 micron screen achieves approximately 80% removal at the design (100%) flow rate, for this particle size distribution ($d_{50} = 125 \mu\text{m}$).

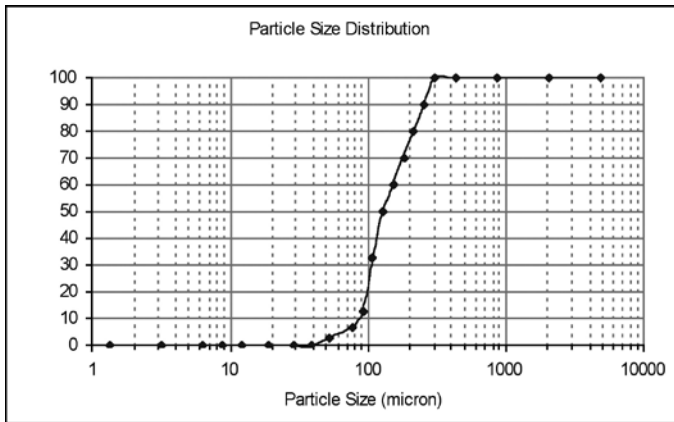


Figure 3. WASDOE PSD

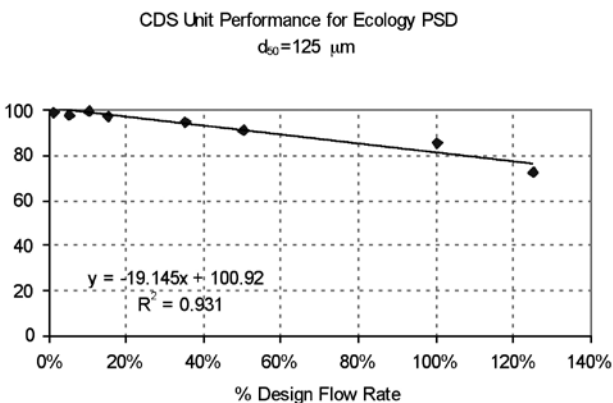


Figure 4. Modeled performance for WASDOE PSD.

Maintenance

The CDS system should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend more heavily on site activities than the size of the unit. For example, unstable soils or heavy winter sanding will cause the grit chamber to fill more quickly but regular sweeping of paved surfaces will slow accumulation.

Inspection

Inspection is the key to effective maintenance and is easily performed. Pollutant transport and deposition may vary from year to year and regular inspections will help ensure that the system is cleaned out at the appropriate time. At a minimum, inspections should be performed twice per year (e.g. spring and fall) however more frequent inspections may be necessary in climates where winter sanding operations may lead to rapid accumulations, or in equipment washdown areas. Installations should also be inspected more frequently where excessive amounts of trash are expected.

The visual inspection should ascertain that the system components are in working order and that there are no blockages or obstructions in the inlet and separation screen. The inspection should also quantify the accumulation of hydrocarbons, trash, and sediment in the system. Measuring pollutant accumulation can be done with a calibrated dipstick, tape measure or other measuring instrument. If absorbent material is used for enhanced removal of hydrocarbons, the level of discoloration of the sorbent material should also be identified



during inspection. It is useful and often required as part of an operating permit to keep a record of each inspection. A simple form for doing so is provided.

Access to the CDS unit is typically achieved through two manhole access covers. One opening allows for inspection and cleanout of the separation chamber (cylinder and screen) and isolated sump. The other allows for inspection and cleanout of sediment captured and retained outside the screen. For deep units, a single manhole access point would allow both sump cleanout and access outside the screen.

The CDS system should be cleaned when the level of sediment has reached 75% of capacity in the isolated sump or when an appreciable level of hydrocarbons and trash has accumulated. If absorbent material is used, it should be replaced when significant discoloration has occurred. Performance will not be impacted until 100% of the sump capacity is exceeded however it is recommended that the system be cleaned prior to that for easier removal of sediment. The level of sediment is easily determined by measuring from finished grade down to the top of the sediment pile. To avoid underestimating the level of sediment in the chamber, the measuring device must be lowered to the top of the sediment pile carefully. Particles at the top of the pile typically offer less resistance to the end of the rod than consolidated particles toward the bottom of the pile. Once this measurement is recorded, it should be compared to the as-built drawing for the unit to determine whether the height of the sediment pile off the bottom of the sump floor exceeds 75% of the total height of isolated sump.

Cleaning

Cleaning of a CDS system should be done during dry weather conditions when no flow is entering the system. The use of a vacuum truck is generally the most effective and convenient method of removing pollutants from the system. Simply remove the manhole covers and insert the vacuum hose into the sump. The system should be completely drained down and the sump fully evacuated of sediment. The area outside the screen should also be cleaned out if pollutant build-up exists in this area.

In installations where the risk of petroleum spills is small, liquid contaminants may not accumulate as quickly as sediment. However, the system should be cleaned out immediately in the event of an oil or gasoline spill. Motor oil and other hydrocarbons that accumulate on a more routine basis should be removed when an appreciable layer has been captured. To remove these pollutants, it may be preferable to use absorbent pads since they are usually less expensive to dispose than the oil/water emulsion that may be created by vacuuming the oily layer. Trash and debris can be netted out to separate it from the other pollutants. The screen should be cleaned to ensure it is free of trash and debris.

Manhole covers should be securely seated following cleaning activities to prevent leakage of runoff into the system from above and also to ensure that proper safety precautions have been followed. Confined space entry procedures need to be followed if physical access is required. Disposal of all material removed from the CDS system should be done in accordance with local regulations. In many jurisdictions, disposal of the sediments may be handled in the same manner as the disposal of sediments removed from catch basins or deep sump manholes. Check your local regulations for specific requirements on disposal.



CDS Model	Diameter		Distance from Water Surface to Top of Sediment Pile		Sediment Storage Capacity	
	ft	m	ft	m	y ³	m ³
CDS1515	3	0.9	3.0	0.9	0.5	0.4
CDS2015	4	1.2	3.0	0.9	0.9	0.7
CDS2015	5	1.5	3.0	0.9	1.3	1.0
CDS2020	5	1.5	3.5	1.1	1.3	1.0
CDS2025	5	1.5	4.0	1.2	1.3	1.0
CDS3020	6	1.8	4.0	1.2	2.1	1.6
CDS3025	6	1.8	4.0	1.2	2.1	1.6
CDS3030	6	1.8	4.6	1.4	2.1	1.6
CDS3035	6	1.8	5.0	1.5	2.1	1.6
CDS4030	8	2.4	4.6	1.4	5.6	4.3
CDS4040	8	2.4	5.7	1.7	5.6	4.3
CDS4045	8	2.4	6.2	1.9	5.6	4.3
CDS5640	10	3.0	6.3	1.9	8.7	6.7
CDS5653	10	3.0	7.7	2.3	8.7	6.7
CDS5668	10	3.0	9.3	2.8	8.7	6.7
CDS5678	10	3.0	10.3	3.1	8.7	6.7

Table 1: CDS Maintenance Indicators and Sediment Storage Capacities

Note: To avoid underestimating the volume of sediment in the chamber, carefully lower the measuring device to the top of the sediment pile. Finer silty particles at the top of the pile may be more difficult to feel with a measuring stick. These finer particles typically offer less resistance to the end of the rod than larger particles toward the bottom of the pile.



SUPPORT

- Drawings and specifications are available at www.ContechES.com.
- Site-specific design support is available from our engineers.



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Contech® CMP Detention Inspection and Maintenance Guide

Underground stormwater detention and infiltration systems must be inspected and maintained at regular intervals for purposes of performance and longevity.

Inspection

Inspection is the key to effective maintenance of CMP detention systems and is easily performed. Contech recommends ongoing, annual inspections. Sites with high trash load or small outlet control orifices may need more frequent inspections. The rate at which the system collects pollutants will depend more on-site specific activities rather than the size or configuration of the system.

Inspections should be performed more often in equipment washdown areas, in climates where sanding and/or salting operations take place, and in other various instances in which one would expect higher accumulations of sediment or abrasive/corrosive conditions. A record of each inspection is to be maintained for the life of the system.

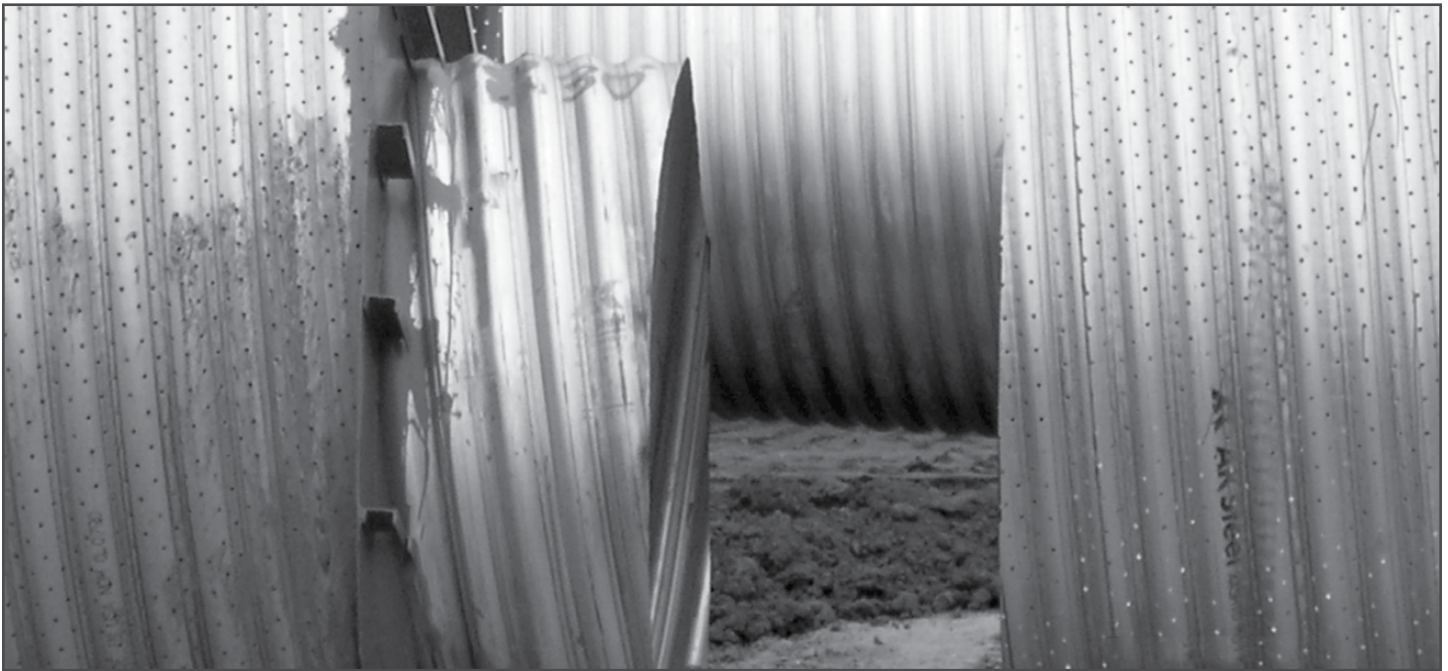
Maintenance

CMP detention systems should be cleaned when an inspection reveals accumulated sediment or trash is clogging the discharge orifice. Accumulated sediment and trash can typically be evacuated through the manhole over the outlet orifice. If maintenance is not performed as recommended, sediment and trash may accumulate in front of the outlet orifice. Manhole covers should be securely seated following cleaning activities. Contech suggests that all systems be designed with an access/inspection manhole situated at or near the inlet and the outlet orifice. Should it be necessary to get inside the system to perform maintenance activities, all appropriate precautions regarding confined space entry and OSHA regulations should be followed.

Annual inspections are best practice for all underground systems. During this inspection if evidence of salting/de-icing agents is observed within the system, it is best practice for the system to be rinsed, including above the spring line soon after the spring thaw as part of the maintenance program for the system.

Maintaining an underground detention or infiltration system is easiest when there is no flow entering the system. For this reason, it is a good idea to schedule the cleanout during dry weather.

The foregoing inspection and maintenance efforts help ensure underground pipe systems used for stormwater storage continue to function as intended by identifying recommended regular inspection and maintenance practices. Inspection and maintenance related to the structural integrity of the pipe or the soundness of pipe joint connections is beyond the scope of this guide.



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CMP DETENTION SYSTEMS

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ENGINEERED SOLUTIONS

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UPS Howell

Employee Parking Lot Improvements

1183 Fendt Drive

Howell, Michigan 48843

UTILITY COMPANIES

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DETROIT EDISON
NORTHWEST PLANNING AND DESIGN - FARMINGTON HILLS
37849 INTERCHANGE DR.
FARMINGTON HILLS, MI 48335
PH: 248.427.2200

GAS
CONSUMERS ENERGY COMPANY
G&GAM TRANSMISSION PIPELINE ENGINEERING
PH: 989.574.7538

WARNING!

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.



Orientation	Scale
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Project
UPS HOWELL
EMPLOYEE PARKING LOT
IMPROVEMENTS

LEGAL DESCRIPTION

LAND SITUATED IN THE TOWNSHIP OF GENOA, COUNTY OF LIVINGSTON, MICHIGAN, MORE PARTICULARLY DESCRIBED AS:

UNIT 7, OF GEN TECH INDUSTRIAL PARK, A MICHIGAN CONDOMINIUM, AS ADOPTED PURSUANT TO ACT 59 OF PUBLIC ACTS 1978, BEING LIVINGSTON COUNTY CONDOMINIUM NO. 68, A PORTION OF THE UNITS RECORDED IN THE MASTER DEED WHICH WAS RECORDED IN LIVINGSTON COUNTY REGISTER OF DEEDS OFFICE AT LIBER 1897, PAGES 42 THROUGH 101, TOGETHER WITH RIGHTS IN GENERAL COMMON ELEMENTS AND LIMITED COMMON ELEMENTS, AS SET FORTH IN THE ABOVE DESCRIBED MASTER DEED AND ALL AMENDMENTS THERETO; AND AS DESCRIBED IN ACT 59 OF THE PUBLIC ACTS OF 1978, AS AMENDED.

OWNER

UNITED PARCEL SERVICE
1212 FENDT DRIVE
HOWELL, MI 48843

CONTACT: MR. ADAM MARCHWINSKI
PH: 248-266-0950

ENGINEER AND APPLICANT

SME
43980 PLYMOUTH OAKS BLVD.
PLYMOUTH, MI 48170

CONTACT: MR. JASON SCHWARTZENBERGER, PE
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SME PROJECT NO. 083760.00

LANDSCAPE

SME
43980 PLYMOUTH OAKS BLVD.
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ELECTRICAL

PETER BASSO ASSOCIATES, INC.
5145 LIVERNOIS, SUITE 100
TROY, MI 48098

CONTACT: MR. SCOTT GIBBS, PE
PH: 248.879.5666

SURVEY

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342

PROJECT DESCRIPTION

PROJECT INCLUDES THE REPLACEMENT OF EXISTING GRAVEL PARKING LOT WITH AN ASPHALT PAVEMENT SECTION WITH CONCRETE CURB AND GUTTER, STORM UNDERGROUND INFRASTRUCTURE, SITE LIGHTING AND OTHER IMPROVEMENTS.

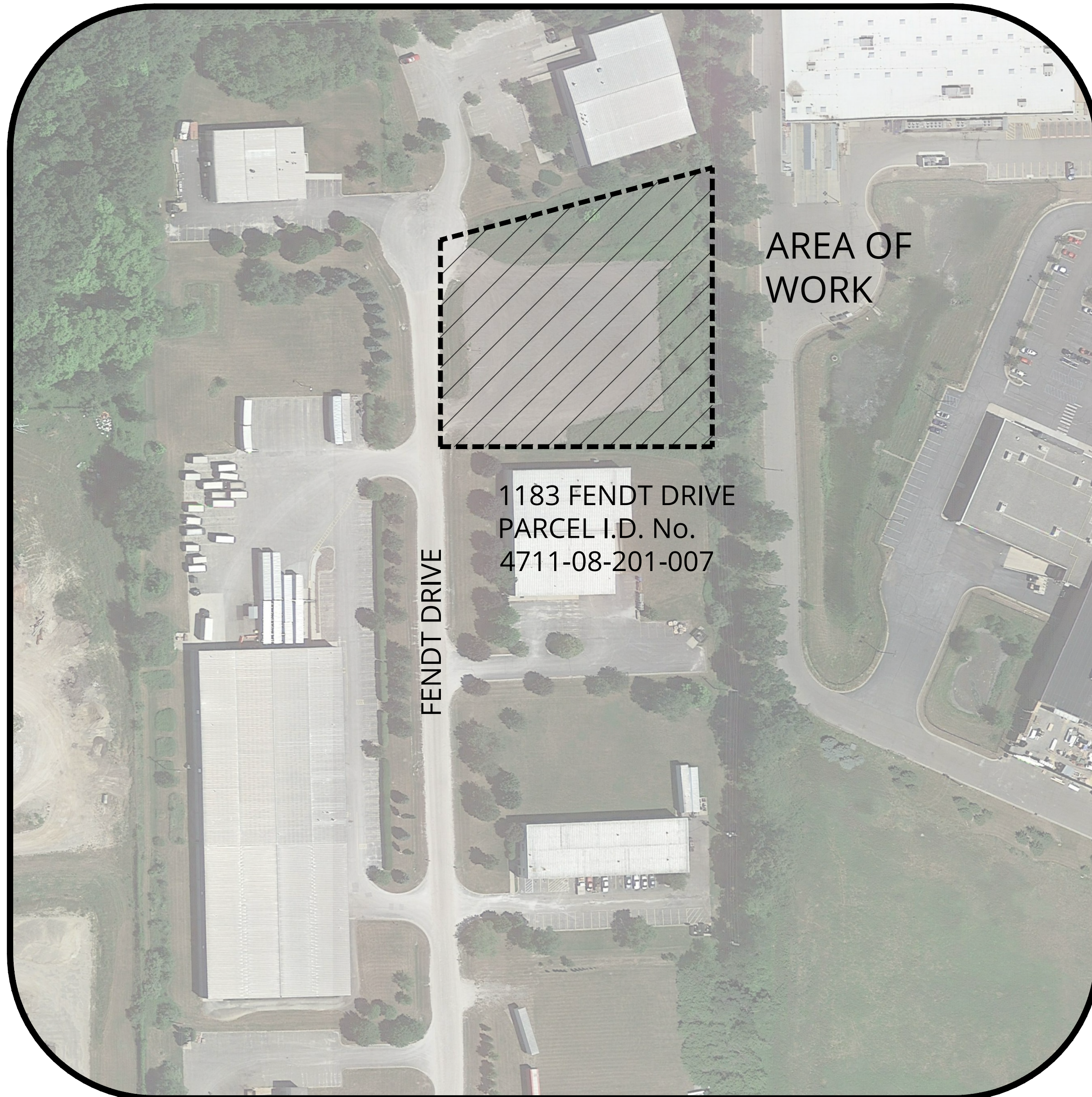
PERMITS REQUIRED FOR PROJECT		
PERMIT	CITY/AGENCY	APPROVAL
SESC	LIVINGSTON	

LIST OF DRAWINGS

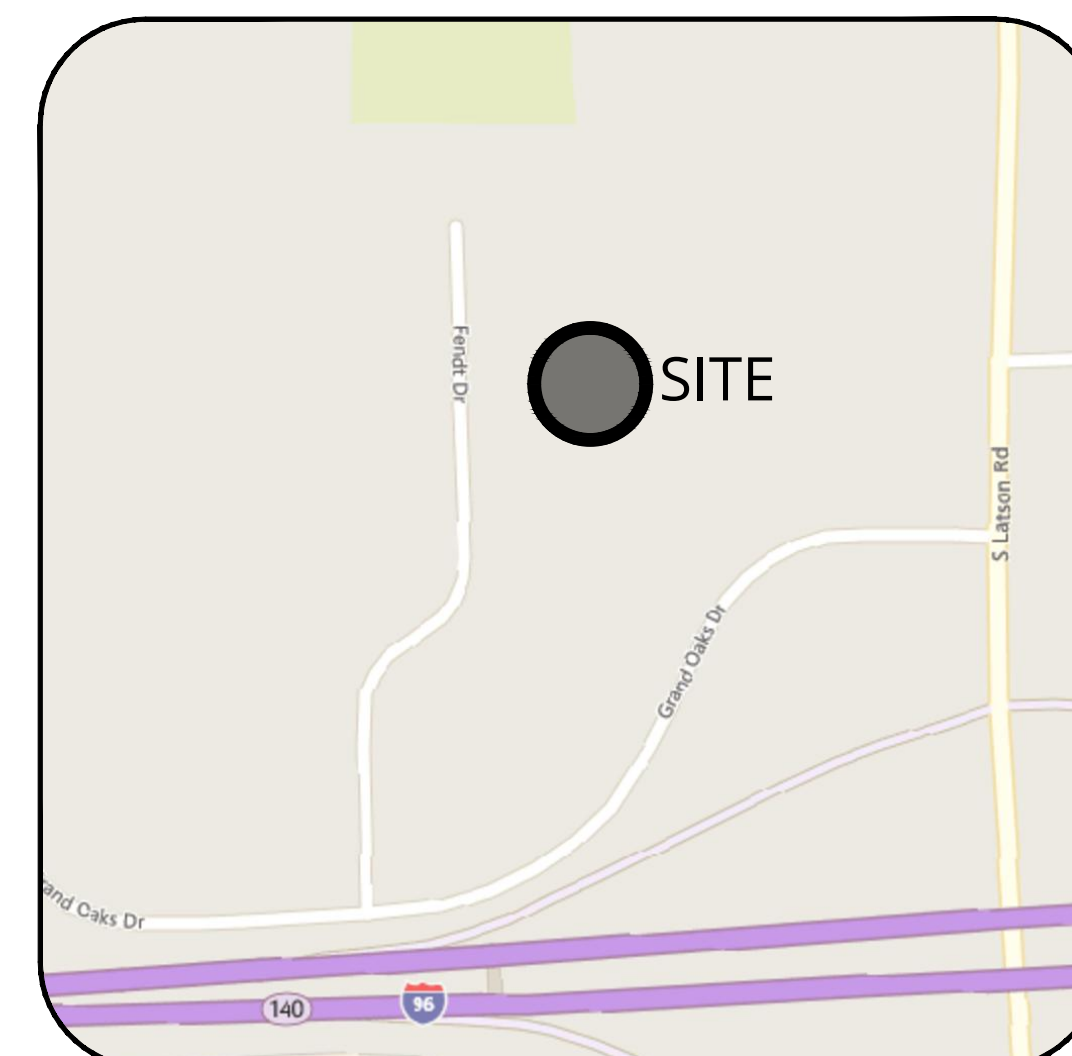
SHEET No.	SHEET TITLE
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2 OF 3	ALTA/NSPS/ LAND TITLE/ TOPOGRAPHIC/ TREE SURVEY
3 OF 3	TREE LIST
C-300	EXISTING SITE CONDITIONS
C-400	SESC AND SITE PREPARATION PLAN
C-500	REMOVAL PLAN
C-600	SITE LAYOUT PLAN
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C-602	VEHICLE TRACKING SIMULATION
C-700	PAVING AND GRADING PLAN
C-800	UTILITY PLAN AND DRAINAGE AREA MAP
C-801	STORM SEWER PROFILES
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D-100	DETAILS
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E-001	ELECTRICAL STANDARDS AND DRAWING INDEX
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E-003	ELECTRICAL DEMOLITION SITE PLAN
E-004	ELECTRICAL NEW WORK SITE PLAN
E-701	ELECTRICAL DETAILS AND DIAGRAMS
L-100	LANDSCAPE PLAN
L-201	PHOTOMETRIC PLAN

SITE DATA/ZONING REQUIREMENTS

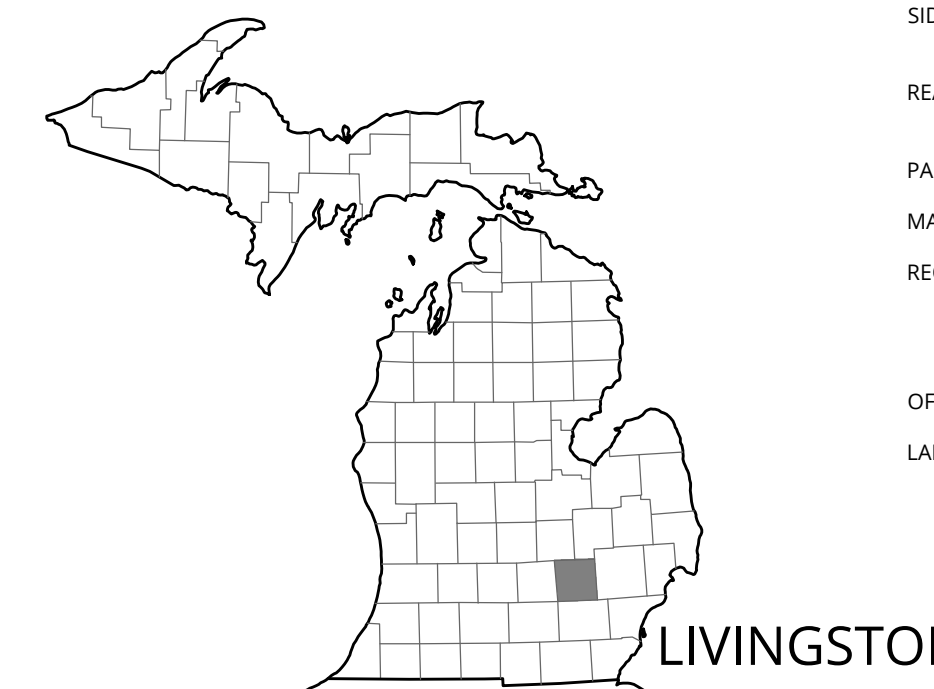
SITE AREA:	2.00 AC
SITE ZONING:	IND, INDUSTRIAL
MINIMUM LOT AREA:	1 ACRE
MINIMUM LOT WIDTH:	150 FT
MAXIMUM LOT COVERAGE:	40% BLDG/ 85% IMPERVIOUS SURFACE
MINIMUM SETBACKS:	
FRONT YARD:	85 FEET IF PARKING IN THE FRONT YARD 50 FEET IF NO PARKING IN THE FRONT YARD
SIDE YARD:	25 FEET, 50 FEET IF ADJACENT TO RESIDENTIAL DISTRICT
REAR YARD:	40 FEET, 80 FEET IF ADJACENT TO RESIDENTIAL DISTRICT
PARKING LOT:	20 FEET, 10 FEET SIDE AND REAR
MAXIMUM STRUCTURE HEIGHT:	30 FEET, 2 STORIES
REQUIRED PARKING:	1.5 SPACES PER 1,000 SFT GROSS FLOOR AREA, OR 1.2 SPACES PER EMPLOYEE AT PEAK SHIFT, WHICHEVER IS GREATER; PLUS 1 SPACE FOR EACH CORPORATE VEHICLE.
OFF STREET LOADING:	0 (UP TO 1,400 SFT GFA)
LANDSCAPE:	20' WIDE FRONT GREENBELT INCLUDING ONE (1) CANOPY TREE, ROUNDED UPWARD, FOR EVERY FORTY (40) LINEAR FEET OF FRONTAGE.



OVERALL SITE PLAN
NOT TO SCALE



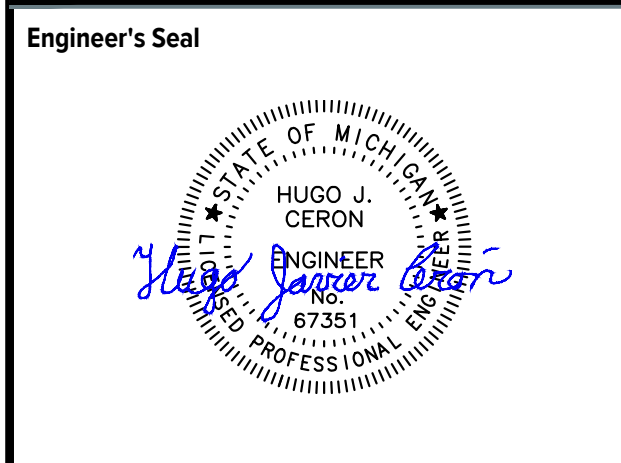
LOCATION MAP
NOT TO SCALE



COUNTY MAP
NOT TO SCALE

Project Location
1183 FENDT DRIVE
HOWELL, MI 48843

Sheet Name
COVER SHEET



Revisions			
REV	ISSUED FOR	DATE	BY
01	TOWNSHIP COMMENTS	09/23/2020	JAS



Date
09/02/2020

SME Project No.
084617.00

Project Manager:
J. SCHWARTZENBERGER

Designer:
H. CERON

CADD:
H. CERON

Checked By:
B. HART

Reviewed By:
J. SCHWARTZENBERGER

Sheet No.
C-100

ISSUED FOR SITE PLAN APPROVAL

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

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PLOT DATE: Sep 22, 2020 - 3:09pm - ceron

GENERAL NOTES

- MATERIAL AND CONSTRUCTION METHODS SHALL FOLLOW THE PRACTICE DEFINED BY THE 2012 EDITION OF THE MICHIGAN DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AND APPLICABLE SPECIAL PROVISIONS UNLESS OTHERWISE MODIFIED HEREWITHIN OR IN THE PROJECT SPECIFICATIONS.
- THE LOCATION OF ALL PUBLIC UTILITIES SHOWN ON THESE PLANS IS TAKEN FROM AVAILABLE DATA. OWNER WILL NOT BE RESPONSIBLE FOR ANY OMISSION OR VARIATIONS FROM THE LOCATIONS SHOWN. PURSUANT TO ACT 174 OF THE PA OF 2013 AS A CONDITION OF THIS CONTRACT NOTICE SHALL BE GIVEN TO MISS DIG PRIOR TO UNDERGROUND WORK TO BE PERFORMED IN ACCORDANCE WITH THIS CONTRACT. CALL 811.
- FOR PRIVATE UTILITIES, CONTRACTOR SHALL RETAIN THE SERVICES OF A PRIVATE UTILITY LOCATOR TO LOCATE ALL PRIVATE UTILITIES OWNED BY OWNER.
- CONTRACTOR SHALL NOTIFY OWNER'S REPRESENTATIVE A MINIMUM OF 72 HOURS PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES OR DISRUPTION OF ANY UTILITY.
- THE CONTRACTOR SHALL LOCATE ALL ACTIVE UNDERGROUND UTILITIES PRIOR TO STARTING WORK AND SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED. CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR UTILITIES DAMAGED DURING CONSTRUCTION. SPRINKLER SYSTEMS SHALL BE REPAIRED BY CONTRACTOR AT NO COST TO OWNER.
- THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER TO COMPLY WITH ALL FEDERAL, STATE, AND LOCAL CODES FOR NOISE LEVELS, VIBRATIONS, OR ANY OTHER RESTRICTIONS WHILE REMOVING PAVEMENT OR FOR ANY OTHER CONSTRUCTION OPERATIONS WITHIN THIS CONTRACT TO BE INCLUDED IN THE RESPECTIVE ITEM OF WORK.
- CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROTECTION OF PROPERTY.
- THE CONTRACTOR SHALL DESIGN, CONSTRUCT, AND MAINTAIN ALL SAFETY DEVICES, AND SHALL BE SOLELY RESPONSIBLE FOR CONFORMING TO ALL LOCAL, STATE, AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS, AND REGULATIONS. ALL TRAFFIC CONTROL ACTIVITIES SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST VERSION OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND SHALL SUBMIT ALL REQUESTS TO OWNER'S REPRESENTATIVE AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO THE ANTICIPATED NEED TO CLOSE AREAS.
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND CONFORMING TO ALL APPLICABLE PERMIT REQUIREMENTS.
- CONTRACTOR SHALL SUBMIT ALL MATERIAL SUBMITTALS REQUIRED BY THE PROJECT SPECIFICATIONS INCLUDING ASPHALT CONCRETE AND PORTLAND CEMENT CONCRETE MIX DESIGNS TO SME A MINIMUM OF 14 DAYS PRIOR TO BEGINNING FIELD WORK.
- CONTRACTOR IS RESPONSIBLE FOR LAYOUT AND FIELD VERIFICATION. ADJUST CATCHBASINS AS REQUIRED. CONTRACTOR IS RESPONSIBLE FOR PROVIDING POSITIVE DRAINAGE. (MIN. 1.5%). DRAINAGE ISSUES SHALL BE BROUGHT TO THE ATTENTION OF SME PRIOR TO PLACEMENT OF ANY PAVEMENT STRUCTURE LAYERS. AREAS OF PONDING WATER SHALL BE REPAIRED BY FULL DEPTH PATCHING AT NO ADDITIONAL COST TO OWNER. CONTRACTOR SHALL PERFORM WALKTHROUGH WITH OWNER AND SME BEFORE PLACEMENT OF ASPHALT CONCRETE LEVELING COURSE TO REVIEW PROPOSED GRADES.
- OBJECTS DESIGNATED TO REMAIN INCLUDING SIDEWALKS, PAVEMENT, CURB, LIGHT POLES, TRAFFIC SIGNS, LANDSCAPE AREAS, ETC. SHALL BE PROTECTED. IF DAMAGED BY THE CONTRACTOR, IT SHALL BE REPAIRED TO OWNER SATISFACTION AT NO ADDITIONAL COST TO THE OWNER.
- UPON COMPLETION OF EACH DAY OF WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LEAVING THE WORK AREA FREE OF HAZARDS AND SHALL PROVIDE ALL NECESSARY TEMPORARY SIGNS, WARNING DEVICES, AND BARRICADES.
- THE CONTRACTOR SHALL HAVE AN APPROVED SET OF FINAL PLANS MARKED "FOR CONSTRUCTION" ON THE JOB SITE AT ALL TIMES. THE CONTRACTOR SHALL KEEP ACCURATE AND LEGIBLE RECORDS OF ALL CHANGES OF WORK THAT OCCUR DURING CONSTRUCTION AND INFORMATION ON "AS-BUILT" CONDITIONS. DOCUMENTATION OF CHANGES AND AS-BUILT INFORMATION SHALL BE RECORDED ON AN APPROVED SET OF FINAL PROJECT PLANS AND DELIVERED TO SME AFTER COMPLETION OF WORK.
- THE CONTRACTOR SHALL TAKE THE NECESSARY STEPS TO PROTECT THE PROJECT AND ADJACENT PROPERTY FROM ANY EROSION AND SILTING THAT RESULT FROM THE CONSTRUCTION BY APPROPRIATE MEANS UNTIL SUCH TIME THE PROJECT IS COMPLETED AND ACCEPTED FOR MAINTENANCE BY OWNER.

EARTHWORK NOTES

- ALL NATURAL SOIL LEFT IN PLACE, IN CUT SECTIONS, SHALL BE COMPACTED TO NOT LESS THAN 95 PERCENT OF MAXIMUM DRY DENSITY OF THE MATERIAL AS DETERMINED BY THE MODIFIED PROCTOR TO A MINIMUM DEPTH OF 12 INCHES.
- THE LIMIT OF EARTH DISTURBANCE SHALL BE THE SLOPE STAKE LINE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- ALL SLOPES SHALL BE CLASS A SLOPES.
- AREAS DISTURBED BY THE CONTRACTOR OR SUBCONTRACTOR SHALL BE RESTORED AS SPECIFIED IN THE SOIL EROSION AND SEDIMENTATION CONTROL PLAN, RESTORATION PLAN OR DIRECTED BY THE ENGINEER. NO ADDITIONAL PAYMENT OR COMPENSATION WILL BE ALLOWED FOR AREAS DISTURBED OUTSIDE THE SLOPE STAKE LINE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE PROPERTY BEYOND THE GRADING LIMITS, INCLUDING EXISTING FENCING, LAWN, TREES, SHRUBBERY, AND SIDEWALKS.

EARTH EXCAVATION NOTES

- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE TEMPORARY STORAGE AREAS FOR EXCAVATED MATERIAL WHICH MAY BE USED AS EMBANKMENT MATERIAL IN OTHER AREAS IF IT IS SUITABLE MATERIAL AS DETERMINED BY THE ENGINEER. ANY EXTRA HANDLING OF EXCAVATED MATERIAL IS CONSIDERED INCLUDED IN THESE PAY ITEMS.
- EXCAVATION DROP-OFFS GREATER THAN 8 INCHES SHALL BE PROTECTED BY 4 FT TALL ORANGE PLASTIC SAFETY FENCE (SNOW FENCE) SECURELY ATTACHED TO GROUND DRIVEN STAKES WHEN LEFT OVERNIGHT. SAFETY FENCING SHALL BE MAINTAINED UNTIL AREA IS WITHIN 8 INCHES OF ADJACENT GRADE. PAYMENT FOR THIS WORK IS INCLUDED IN TRAFFIC CONTROL LUMP SUM UNIT PRICE.

SOIL BORING NOTES

- THE SOIL BORINGS LOGS DEPICT POINT LOCATIONS AND DO NOT INFER THAT THE SURFACE CONDITIONS ARE THE SAME IN OTHER AREAS. BORING LOCATIONS ARE SHOWN ON THE PLANS, SOIL BORING LOGS ARE INCLUDED IN THE SPECIFICATIONS.

SITE GRADING NOTES

- PROPOSED ELEVATIONS ARE SHOWN WHERE SIGNIFICANT GRADE CHANGES ARE ANTICIPATED. IF PROPOSED GRADES ARE NOT SHOWN THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING POSITIVE DRAINAGE WITH MIN. SLOPE OF 1.5%. LONGITUDINAL SLOPE ALONG GUTTER LINES SHALL BE 0.5% MIN.
- PRIOR TO INSTALLING ANY PAVEMENT LAYERS, THE CONTRACTOR SHALL REVIEW THE PROPOSED SITE GRADES WITH THE ENGINEER TO IDENTIFY AND RECTIFY ANY COMPLICATIONS.
- PROPOSED SIDEWALKS SHALL HAVE MIN. 1.0% AND MAX. 2.0% CROSS SLOPE.
- CONTRACTOR SHALL ADJUST ALL UTILITY RIMS LOCATED WITHIN THE WORK LIMITS AS NECESSARY TO BE FLUSH WITH THE PROPOSED FINISHED SURFACE. THIS INCLUDES ALL STORM MANHOLES, CATCH BASINS, CLEANOUTS, SANITARY MANHOLES AND CLEANOUTS, WATER MAIN MANHOLES, GATE VALVES, AND BOXES OR ANY OTHER UTILITY RIMS OR BOXES.
- WHERE PROPOSED PAVEMENT ABUTS EXISTING PAVEMENT DESIGNATED TO REMAIN, MATCH ELEVATIONS UNLESS INDICATED OTHERWISE.
- ADJUST GUTTER PAN FROM SPILL IN TO SPILL OUT AS REQUIRED TO ACHIEVE POSITIVE DRAINAGE.
- ADJUST ELEVATION OF CURB REPAIRS AS REQUIRED TO ACHIEVE POSITIVE DRAINAGE.
- TAPER CURB HEIGHT TO 0" IN 10" WHEN ABUTTING TO EX. PAVEMENT WITHOUT CURB.

GENERAL PAVING NOTES

- NEW PAVEMENT SHALL BE OF THE TYPE, THICKNESS AND CROSS-SECTION INDICATED ON THE PLANS.
- MATCH EXISTING ELEVATIONS WHERE NEW PAVEMENT ABUTS EXISTING PAVEMENTS OR OTHER FIXED OBJECTS.
- CONTRACTOR SHALL MATCH EXISTING STRIPING PATTERNS UNLESS OTHERWISE REQUIRED BY THE OWNER'S REPRESENTATIVE. CONTRACTOR SHALL DOCUMENT EXISTING STRIPING PATTERN PRIOR TO REMOVAL OF ANY PAVEMENT.
- CONTRACTOR IS RESPONSIBLE FOR LAYOUT TO PROVIDE POSITIVE SITE DRAINAGE. WATER PONDING AND BIRD BATHS SHALL BE CORRECTED AS DIRECTED BY THE OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST TO THE OWNER.
- NEW AGGREGATE BASE REQUIRED SHALL BE MDOT 21AA CRUSHED LIMESTONE MATERIAL.
- SUBGRADE SOIL FOUND TO BE UNSUITABLE SHALL BE RECONDITIONED OR REPLACED AS DIRECTED BY THE OWNER, INCLUDING THE NECESSARY FINE GRADING TO ENSURE THAT MINIMUM SPECIFIED PAVEMENT THICKNESS IS ACHIEVED.

TRAFFIC CONTROL NOTES

- OBTAIN WRITTEN PERMISSION FROM OWNER'S REPRESENTATIVE WHEN ROADS, SIDEWALKS AND PARKING LOTS NEED TO BE CLOSED PRIOR TO CLOSING ANY PAVED AREA.
- SUBMIT ALL REQUESTS TO OWNER'S REPRESENTATIVE AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO THE ANTICIPATED NEED TO CLOSE ANY PAVED AREA.
- PROVIDE ALTERNATE TRAFFIC ROUTES AROUND CLOSED OR OBSTRUCTED TRAFFIC ROUTES AS NECESSARY OR REQUIRED BY OWNER'S REPRESENTATIVE.
- THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING, PLACING AND MAINTAINING ALL TRAFFIC CONTROL DEVICES ACCORDING TO THE LATEST EDITION OF THE "MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES."

DEMOLITION NOTES

- SAWCUT FULL DEPTH THE PAVEMENT, SIDEWALK AND CURB DESIGNATED TO BE REMOVED AT THE LIMITS OF WORK SHOWN ON THE PLANS OR MARKED IN THE FIELD.
- REMOVE ONLY THE STRUCTURES AND PAVEMENTS WITHIN THE LIMITS OF WORK AS DETAILED ON THE PLANS AND CROSS SECTIONS. ALL OTHER STRUCTURES AND PAVEMENT SHALL BE PROTECTED AS REQUIRED.
- ALL EXISTING UNDERGROUND UTILITIES WITHIN THE AREA OF WORK SHALL REMAIN AND BE PROTECTED DURING CONSTRUCTION, UNLESS, OTHERWISE DESIGNATED TO BE REMOVED. CONTRACTOR SHALL VERIFY EXACT LOCATION AND DEPTHS OF ALL EXISTING UTILITIES PRIOR TO COMMENCEMENT OF DEMOLITION OPERATIONS.
- CONTRACTOR SHALL DISPOSE OF ALL CONCRETE, ASPHALT, AGGREGATE BASE AND SUBGRADE SPOILS AT LEGAL DISPOSAL SITE. CONTRACTOR SHALL PAY FOR ALL TRUCKING AND DISPOSAL COSTS.

CURB REPAIR NOTES

- SAWCUT THE CURB AREAS DESIGNATED FOR REPAIR AT THE LIMITS MARKED IN THE FIELD BY OWNER'S REPRESENTATIVE.
- REMOVE EXISTING CONCRETE WITHOUT CAUSING DAMAGE OR SPALLING TO ADJACENT SIDEWALK OR CURBS WHICH ARE DESIGNATED TO REMAIN. DAMAGED AREAS SHALL BE REMOVED AND REPLACED TO THE SATISFACTION OF THE OWNER AT NO ADDITIONAL COST.
- DRILL AND EPOXY GROUT TWO (2) #5 (18 INCH LONG EPOXY COATED) DEFORMED BARS A MINIMUM OF 6 INCHES INTO EXISTING CONCRETE CURBS (TWO FACES) WHICH ARE DESIGNATED TO REMAIN.
- MATCH EXISTING CURB GEOMETRY.
- PLACE AND CONSOLIDATE CONCRETE IN THE REPAIR AREA TO MATCH THE ELEVATION OF ADJACENT CURB AND SIDEWALK AREAS TO MAINTAIN POSITIVE DRAINAGE. FINISH CURBS TO MATCH FINISH OF ADJACENT AREAS WHICH ARE DESIGNATED TO REMAIN.
- VOIDS/HOLES (HONEYCOMB AREAS) ON THE CURB BACK/FACE SHALL BE REPAIRED WITH CEMENT MORTAR PASTE TO THE SATISFACTION OF THE OWNER.

CLEANUP AND RESTORATION NOTES

- CLEAN AND RESTORE ALL DISTURBED AREAS WITH 4 INCHES OF TOPSOIL, HYDROSEED AND HIGH VELOCITY MULCH BLANKETS. DISPOSE OF DEBRIS OFFSITE AT APPROVED DISPOSAL SITE.
- UPON COMPLETION OF WORK, THE ENTIRE SITE SHALL BE CLEARED OF EQUIPMENT, UNUSED MATERIALS, AND RUBBISH AND ANY DISTURBED AREAS RESTORED TO THE SATISFACTION OF THE OWNER.
- FINAL PAYMENT WILL NOT BE MADE UNTIL THE SITE IS CLEARED, RESTORED AND CLEANED PER THE PROJECT SPECIFICATIONS.

ABBREVIATIONS USED IN DRAWINGS

THE FOLLOWING ABBREVIATIONS ARE USED ON THESE PLANS:

@	AT (RATE OF)
&	AND
"	INCH
'	FOOT
#	NUMBER
AC	ASPHALT CONCRETE
ADA	AMERICANS WITH DISABILITIES ACT (BARRIER FREE ACCESS)
AGG	AGGREGATE BASE
ALT	ALTERNATE
APPROX.	APPROXIMATE/APPROXIMATELY
ARCH.	ARCHITECT
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AVG	AVERAGE
B	BORING
BDY	BOUNDARY
BIT	BITUMINOUS
BF	BARRIER FREE
BFF	BANK FULL FLOOD
BLDG	BUILDING
BM	BENCHMARK
BOT	BOTTOM
BRG	BEARING
BSMT	BASEMENT
C	CORE
CAP	CAPACITY
CB	CATCH BASIN
CENTL	CENTERLINE
CF	CUBIC FEET
CHAN.	CHANNEL
CJ	CONTROL JOINT
CLS	CRUSHED LIMESTONE
CL	CLASS
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
COEF	COEFFICIENT
COL	COLUMN
CO	CLEAN OUT
CONC.	CONCRETE
CONN.	CONNECTION
COV.	COVER
CULV.	CULVERT
CRB	CURB
CY	CUBIC YARD
DIA.	DIAMETER
DI	DUCTILE IRON
DIM.	DIMENSION
DEG.	DEGREE
DEMO.	DEMOLITION
DEPT.	DEPARTMENT
DMH	DROP MANHOLE
DS	DOWNSPOUT
EA	EACH
E	EAST
EE	EACH END
EG	EDGE OF GRAVEL
ELEV.	ELEVATION
EM	EDGE OF METAL
ENG.	ENGINEER
ENT.	ENTRANCE
EQUIP.	EQUIPMENT
ES	END SECTION
EXCAV.	EXCAVATE
EX.	EXISTING
EXPAN.	EXPANSION
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FDN	FOUNDATION
FDR	FULL DEPTH RECLAMATION
FF	FINISH FLOOR
FG	FINISH GRADE
FURN.	FURNISH
FP	FLOOD PLAIN
FT	FEET/FOOT
FTG	FOOTING
ELEV.	ELEVATION
EQUIP.	EQUIPMENT
GAL.	GALLON
GEN.	GENERAL
GU	GUTTER
GVA	GATE VALVE
GVL	GRAVEL
HD	HEAVY DUTY
HDPE	HIGH DENSITY POLYETHYLENE
HP	HIGH POINT
HGL	HYDRAULIC GRADE LINE
HMA	HOT MIX ASPHALT
HORIZ.	HORIZONTAL
HYD	HYDRANT
INT	INSTALL
LD	LIGHT DUTY
LF	LINEAR FEET
LP	LOW POINT
MAX.	MAXIMUM
ME	MATCH EXISTING
MDOT	MICHIGAN DEPARTMENT OF TRANSPORTATION
MH	MANHOLE
MIN.	MINIMUM
N	NORTH
NIC	NOT IN CONTRACT
NO	NUMBER
NFV	NOT FIELD VERIFIED
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
PCC	PORTLAND CEMENT CONCRETE
PVC	POLYVINYL CHLORIDE
PR	PROPOSED
RCP	REINFORCED CONCRETE PIPE
RY	REAR YARD
S	SOUTH
SAN	SANITARY SEWER
SBC	STABILIZED BASE COURSE
SESC	SOIL EROSION AND SEDIMENT CONTROL
SF	SQUARE FEET
SG	SUBGRADE
STM	STORM SEWER
SY	SQUARE YARD
TA	TOP OF HMA PAVEMENT ELEVATION
TC	TOP OF PROPOSED CURB
TERS	TEMPORARY EARTH RETENTION SYSTEM
TP	TEST PIT
TP.	TYPICAL
TW	TOP OF SIDEWALK
VB	VAPOR BARRIER
VCP	VITRIFIED CLAY PIPE
VERT.	VERTICAL
VIF	VERIFY IN FIELD
VLT	VAULT
VOL	VOLUME
W	WEST
BOW	BOTTOM OF WALL
WM	WATER MAIN
TOW	TOP OF WALL
WTR	WATER
WWF	WELDED WIRE FABRIC

DEFINITIONS USED IN DRAWINGS

THE FOLLOWING DEFINITIONS ARE USED ON THESE PLANS:

ENGINEER	SME
CITY	GENOA TOWNSHIP
COUNTY	LIVINGSTON
OWNER	UPS

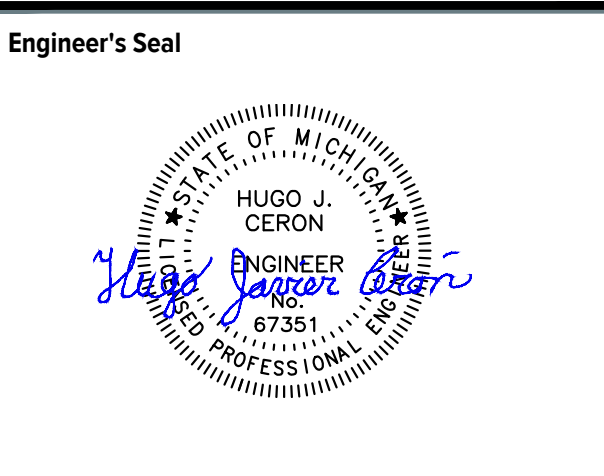


Orientation	Scale
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Project
UPS HOWELL EMPLOYEE PARKING LOT IMPROVEMENTS

Project Location
1183 FENDT DRIVE HOWELL, MI 48843

Sheet Name
GENERAL PROJECT NOTES



Revisions																												
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Date	09/02/2020
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SME Project No.	084617.00
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Project Manager:	J. SCHWARTZENBERGER
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Designer:	H. CERON
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CADD:	H. CERON
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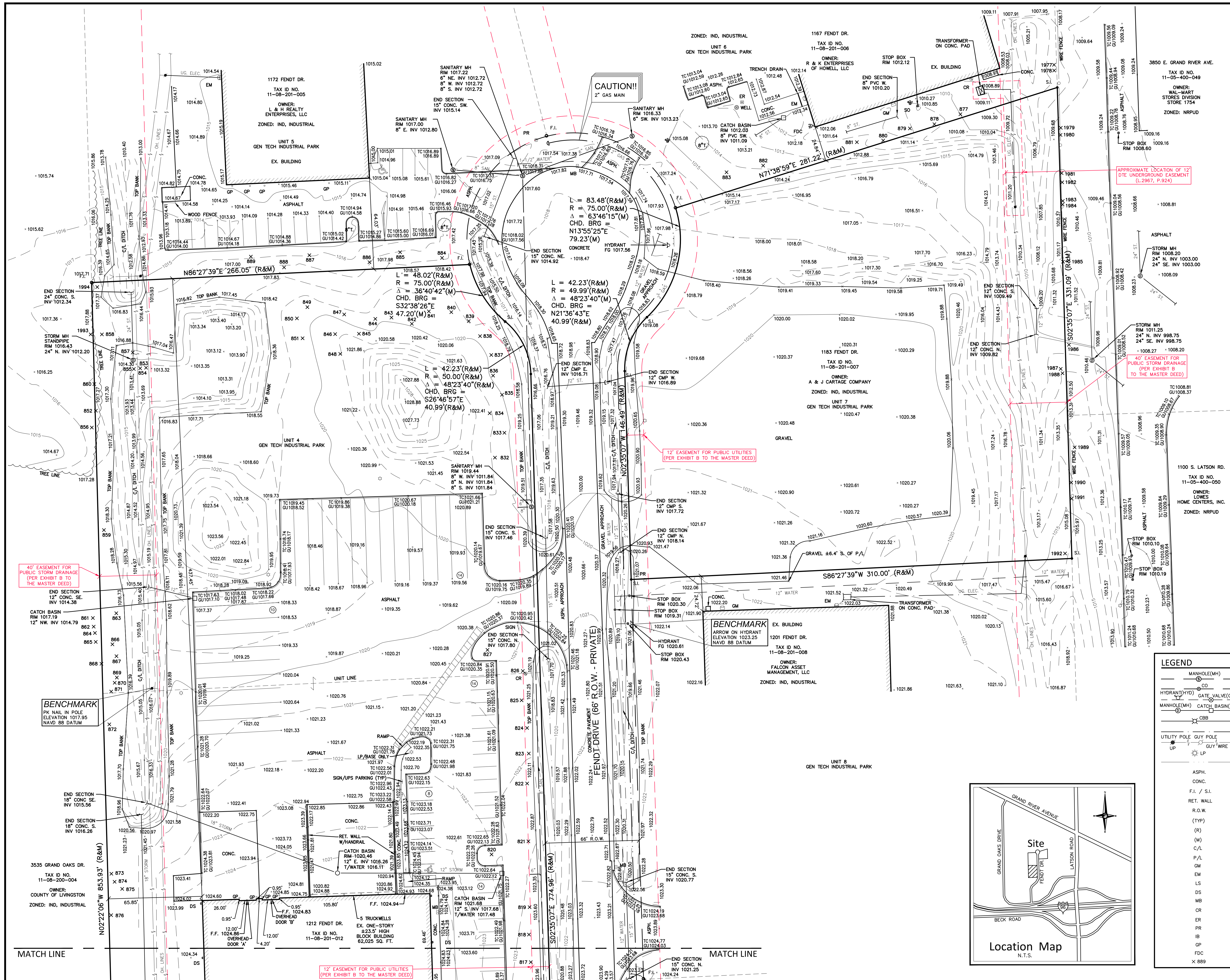
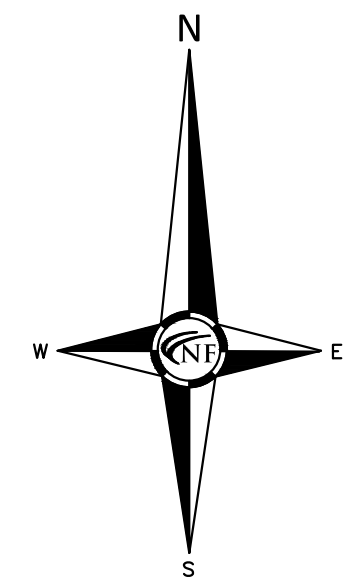
Checked By:	B. HART
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Reviewed By:	J. SCHWARTZENBERGER
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Sheet No.	C-200
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ISSUED FOR SITE PLAN APPROVAL



LEGEND

	MANHOLE(WH)		EXISTING SANITARY SEWER
	HYDRANT(HYD)		EXISTING SAN. CLEAN OUT
	MANHOLE(MW)		EXISTING WATER MAIN
	CATCH BASIN(CB)		EXISTING STORM SEWER
	CBB		EX. BEEHIVE CATCH BASIN
	UTILITY POLE (UP)		EX. UNDERGROUND (UG) CABLE
	GUY WIRE		OVERHEAD (OH) LINES
	LIGHT POLE		EXISTING GAS MAIN
	ASPH.		RETAINING WALL
	CONC.		RIGHT-OF-WAY
	F.I. / S.I.		TYPICAL
	RET. WALL		RECORD
	R.O.W.		MEASURED
	(TYP)		CENTERLINE
	(R)		PROPERTY LINE
	(M)		GAS METER
	C/L		ELECTRIC METER
	P/L		LANDSCAPE
	GM		DOWNSPOUT
	EM		MAIL BOX
	LS		CABLE RISER
	DS		ELECTRIC RISER
	MB		PHONE RISER
	CR		IRRIGATION BOX
	ER		GUARD POST
	PR		FIRE DEPARTMENT CONNECTION
	IB		TREE TAG NUMBER



SEAL

PROJECT
UPS Facility -
1212 & 1183 Fendt Drive
Howell, MI 48843

CLIENT
Sidock Group, Inc.
45650 Grand River Ave.
Novi, MI 48374

Contact: Casey Leach, PE
Phone: 248.349.4500
Email:
cleach@sidockgroup.com

PROJECT LOCATION
Part of the NE 1/4
of Section 8
T.2N., R.5E.,
Genoa Township,
Livingston County, Michigan

SHEET
ALTA/NSPS Land Title /
Topographic / Tree Survey



Know whats below
Call before you dig.

DATE ISSUED/REVISED
03-27-20 PRELIMINARY ALTA SURVEY ISSUED
03-30-20 ALTA & TOPO SURVEY ISSUED

DRAWN BY:
M. Carnaghi

DESIGNED BY:
K. Navaroli

APPROVED BY:
K. Navaroli

DATE:
March 27, 2020

SCALE: 1" = 30'
30 15 0 15 30 45

NFE JOB NO. SHEET NO.
L641 1 of 3



NOWAK & FRAUS ENGINEERS

CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
NOWAK & FRAUS ENGINEERS
4677 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257
WWW.NOWAKFRAUS.COM

SEAL

PROJECT
UPS Facility -
1212 & 1183 Fendt Drive
Howell, MI 48843

CLIENT
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45650 Grand River Ave.
Novi, MI 48374

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03-27-20 PRELIMINARY ALTA SURVEY ISSUED
03-30-20 ALTA & TOPO SURVEY ISSUED

DRAWN BY:
M. Carnaghi
DESIGNED BY:

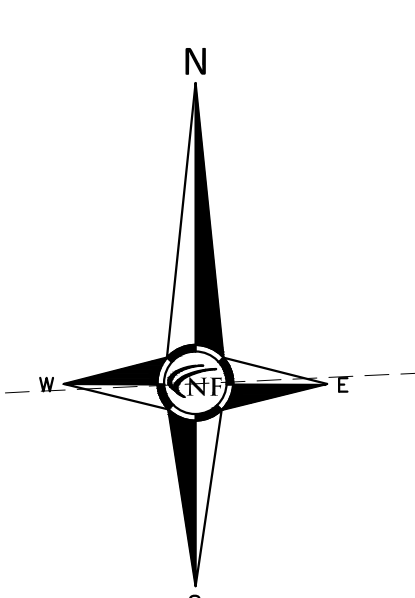
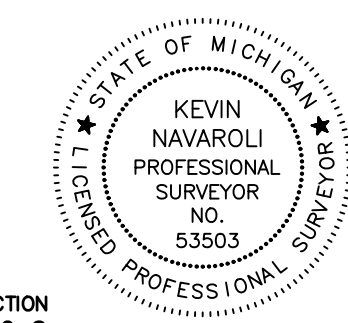
APPROVED BY:
K. Navaroli
DATE:
March 27, 2020

SCALE: 1" = 30'
30 15 0 15 30 45

NFE JOB NO. SHEET NO.
L641 2 of 3

CERTIFICATE OF SURVEY

CERTIFIED TO:
-UNITED PARCEL SERVICE, INC. AN OHIO CORPORATION
-A & J CARTAGE COMPANY
-B-I-GH, LLC
-BRIGGS & ALLISON - HOWELL, LLC
-STEWART TITLE GUARANTY COMPANY
THIS IS TO CERTIFY THAT THIS MAP OR PLAN AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDE ITEMS 1, 2, 3, 4, 6(a), 6(b), 7(a), 7(b)(1), 7(c), 8, 9, 11, 13, 14, 16, 17, 18 AND 20 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON 03-19-2020.
KEVIN NAVAROLI
PROFESSIONAL SURVEYOR
#33003
3-30-2020
DATE
KEVIN NAVAROLI, P.S. NO. 53503



1225 FENDT DR.
TAX ID NO.
11-08-201-009
OWNER:
GREG LEBLANC HOLDINGS, LLC
ZONED: IND, INDUSTRIAL
UNIT 9
GEN TECH INDUSTRIAL PARK

1247 FENDT DR.
TAX ID NO.
11-08-201-010
OWNER:
A & J CARTAGE COMPANY
ZONED: IND, INDUSTRIAL
UNIT 10
GEN TECH INDUSTRIAL PARK

LEGAL DESCRIPTION - PER TITLE COMMITMENT

LAND SITUATED IN THE TOWNSHIP OF GENOA, COUNTY OF LIVINGSTON, MICHIGAN, MORE PARTICULARLY DESCRIBED AS:
UNIT 7, OF GEN TECH INDUSTRIAL PARK, A MICHIGAN CONDOMINIUM, AS ADORPTED PURSUANT TO THE MASTER DEED THEREOF RECORDED IN LIVER 1897, PAGE 42, LIVINGSTON COUNTY RECORDS, AND DESCRIBED AS LIVINGSTON COUNTY CONDOMINIUM UNIT 7, SUBDIVISION PLAN NO. 68, AND ANY AMENDMENTS THERETO, TOGETHER WITH AN UNDIVIDED INTEREST IN THE COMMON ELEMENTS OF SAID CONDOMINIUM AS SET FORTH IN SAID MASTER DEED AND AS DESCRIBED IN ACT 59 OF THE PUBLIC ACTS OF 1976, AS AMENDED.

COMMONLY KNOWN AS: 1183 FENDT DR.
TAX PARCEL ID: 11-08-201-007

TITLE REPORT NOTES

- 2. RIGHTS OR CLAIMS OF PARTIES IN POSSESSION NOT SHOWN BY THE PUBLIC RECORDS.
- 3. EASEMENTS, OR CLAIMS OF EASEMENTS, NOT SHOWN BY THE PUBLIC RECORDS.
- 8. RIGHTS OF THE PUBLIC AND ANY GOVERNMENTAL UNIT IN ANY PART OF THE LAND TAKEN, DEEDED OR USED FOR ROAD, STREET OR HIGHWAY PURPOSES.
- 9. MINERALS OF WHATSOEVER KIND, SUBSURFACE AND SURFACE SUBSTANCES, INCLUDING BUT NOT LIMITED TO COAL, LIGNITE, OIL, GAS, URANIUM, CLAY, ROCK, SAND AND GRAVEL IN, ON, UNDER AND THAT MAY BE PRODUCED FROM THE LAND, TOGETHER WITH ALL RIGHTS, PRIVILEGES, AND IMMUNITIES RELATING THERETO, WHETHER OR NOT APPEARING IN THE PUBLIC RECORDS OR LISTED IN SCHEDULE B, THE COMPANY MAKES NO REPRESENTATION AS TO THE PRESENT OWNERSHIP OF ANY SUCH INTERESTS. THERE MAY BE LEASES, GRANTS, EXCEPTIONS OR RESERVATIONS OF INTERESTS THAT ARE NOT LISTED.
- 10. RIGHTS OF TENANTS AND/OR PARTIES IN POSSESSION UNDER ANY UNRECORDED LEASES, AND THE RIGHT OF ANY PARTY CLAIMING BY AND THROUGH SAID TENANT(S).
- 11. RIGHTS OF OTHERS OVER THAT PORTION OF THE LAND USED AS INGRESS AND EGRESS TO OTHER LANDS.
- 13. RIGHTS OF THE CO-OWNERS OF GEN TECH INDUSTRIAL PARK, A MICHIGAN CONDOMINIUM IN THE GENERAL COMMON ELEMENTS AND LIMITED COMMON ELEMENTS AS SET FORTH IN THE MASTER DEED RECORDED IN LIVER 1897, PAGES 42 THROUGH 101, INCLUSIVE, LIVINGSTON COUNTY RECORDS, AND AS AMENDED AND AS DESCRIBED IN ACT 59 OF THE PUBLIC ACTS OF 1976 AS AMENDED, AND ALL THE TERMS AND CONDITIONS, PROVISIONS, AGREEMENTS, REGULATIONS, RESTRICTIONS, EASEMENTS AND OTHER MATTERS SET FORTH IN THE ABOVE DESCRIBED MASTER DEED, AMENDMENTS(S) AND STATUTE. NOTE: THE MASTER DEED PROVIDES, AMONG OTHER THINGS FOR ASSESSMENTS TO BE MADE AGAINST EACH UNIT/APARTMENT, AND FOR EACH SUCH UNPAID DELINQUENT ASSESSMENTS TO CONSTITUTE A LIEN. [SAID EASEMENTS AS SHOWN ON EXHIBIT B TO THE MASTER DEED ARE PLOTTED HEREON].
- 14. DETROIT EDISON UNDERGROUND EASEMENT (RIGHT OF WAY) RECORDED IN LIVER 2967, PAGE 924. [SAID EASEMENT IS PLOTTED HEREON].
- 15. TERMS, CONDITIONS AND PROVISIONS SET FORTH IN MEMORANDUM OF PURCHASE OPTION RECORDED AUGUST 6, 2015 IN INSTRUMENT: 2015R-024898. [NO PLOTTABLE EASEMENTS/RESTRICTIONS. NOT PLOTTED HEREON].

ALL EXCEPTIONS SHOWN OR NOTED ON THIS SURVEY WERE OBTAINED FROM TITLE COMMITMENT NO. 1900010269, WITH AN EFFECTIVE DATE OF 12-02-2019, ISSUED BY STEWART TITLE GUARANTY COMPANY.

BASIS OF BEARING NOTE

ALL BEARINGS ARE IN RELATION TO GEN TECH INDUSTRIAL PARK AS RECORDED IN LIVER 1897, PAGES 42 THROUGH 101 LIVINGSTON COUNTY RECORDS.

FLOOD HAZARD NOTE

THE PROPERTY DESCRIBED ON THIS SURVEY DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY. THE PROPERTY LIES WITHIN ZONE X OF THE FLOOD INSURANCE RATE MAP IDENTIFIED AS MAP NO. 26093C0309D BEARING AN EFFECTIVE DATE OF 09-17-2008.

MISS DIG / UTILITY DISCLAIMER NOTE

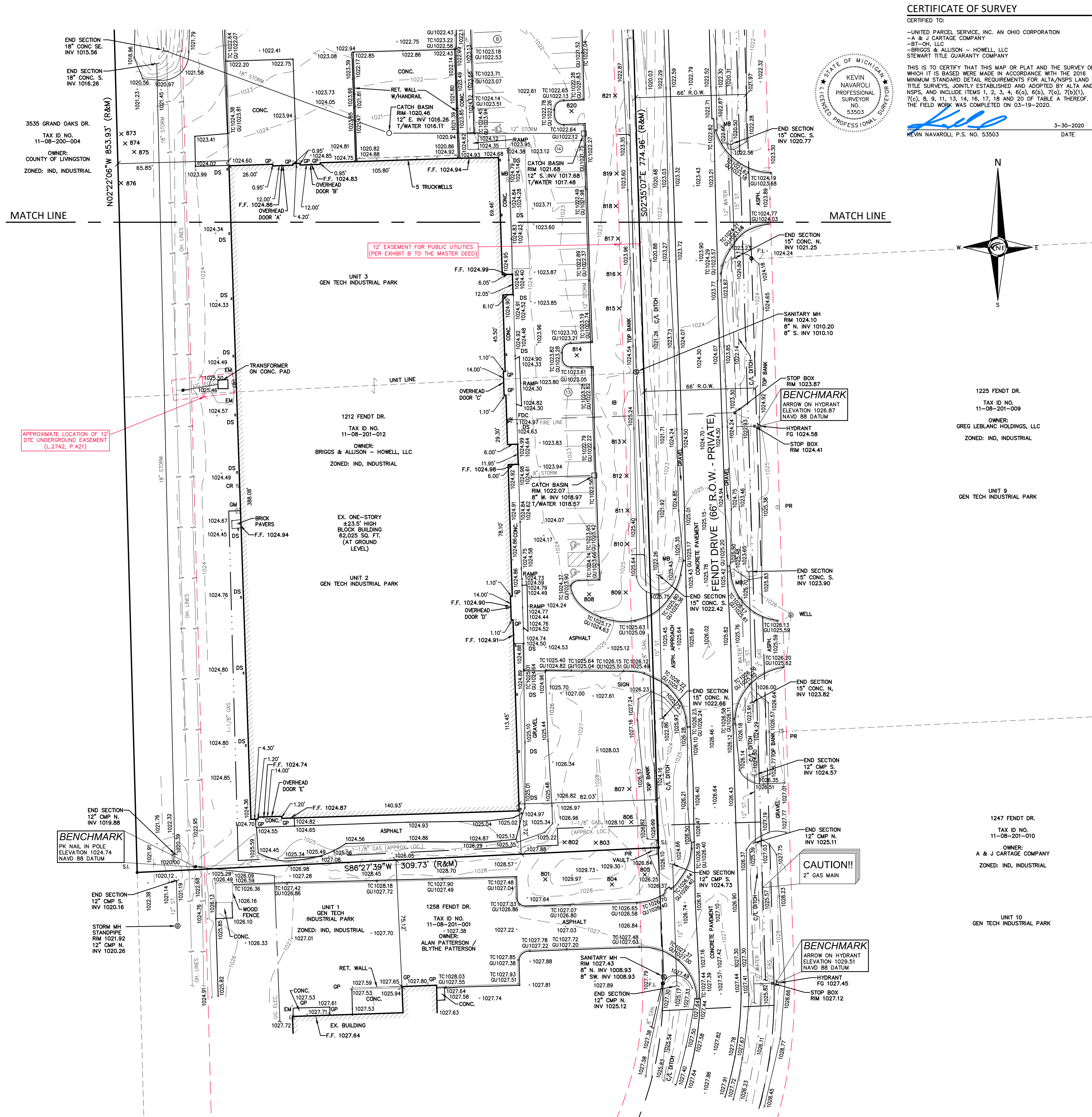
A MISS DIG TICKET NUMBER B0691502, PURSUANT TO MICHIGAN PUBLIC ACT 174 WAS ENTERED FOR THE SURVEYED PROPERTY, DUE TO THE EXTENDED REPORTING PERIOD FOR UNDERGROUND FACILITY OWNERS TO PROVIDE THEIR RECORDS, THE SURVEY MAY NOT REFLECT ALL THE UTILITIES AT THE TIME THE SURVEY WAS ISSUED ON MARCH 30, 2020. THE SURVEY ONLY REFLECTS THOSE UTILITIES WHICH COULD BE OBSERVED BY THE SURVEYOR IN THE FIELD OR AS DEPICTED BY THE UTILITY COMPANY RECORDS FURNISH PRIOR TO THE DATE THIS SURVEY WAS ISSUED. THE CLIENT AND/OR THEIR AUTHORIZED AGENT SHALL VERIFY WITH THE FACILITY OWNERS AND/OR THEIR AUTHORIZED AGENTS, THE COMPLETENESS AND EXACTNESS OF THE UTILITIES LOCATION.

DTE DISCLAIMER NOTE

PLEASE NOTE THAT DTE HAS NEW REGULATIONS THAT MAY IMPACT DEVELOPMENT OUTSIDE THEIR EASEMENT OR THE PUBLIC RIGHT OF WAY. CLIENT SHALL CONTACT DTE TO DETERMINE THE "NEW STRUCTURES AND POWER LINE" REQUIREMENTS AS THEY MAY APPLY TO ANY FUTURE BUILDING OR RENOVATION OF A STRUCTURE. DTE ENERGY CAN BE CONTACTED AT 800-477-4747

ALTA SURVEY NOTES

THERE IS NO VISIBLE EVIDENCE OF CURRENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS.
THERE IS NO PROPOSED CHANGES IN STREET RIGHT OF WAY LINES AND THERE IS NO EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIR.
THERE IS NO VISIBLE EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL.
THERE WERE NO FIELD DELINEATED WETLAND MARKERS OBSERVED ON THE SUBJECT PROPERTY.
LOCATION OF UTILITIES EXISTING ON OR SERVING THE PROPERTY AS DETERMINED BY: OBSERVED EVIDENCE OR EVIDENCE FROM PLANS REQUESTED BY THE SURVEYOR AND OBTAINED FROM UTILITY COMPANIES.
THE SUBJECT PROPERTY HAS ACCESS TO FENDT DRIVE, BEING A PRIVATE ROAD ACCORDING TO EXHIBIT B TO THE MASTER DEED OF GEN TECH INDUSTRIAL PARK CONDOMINIUM. FENDT DRIVE CONNECTS TO GRAND OAK DRIVE A PUBLICLY DEDICATED ROAD, VIA 66' PRIVATE ROAD EASEMENT RECORDED IN LIVER 1284, PAGE 875.



3535 GRAND OAKS DR.
TAX ID NO.
11-08-200-004
OWNER:
COUNTY OF LIVINGSTON
ZONED: IND, INDUSTRIAL

MATCH LINE

APPROXIMATE LOCATION OF 12' DTE UNDERGROUND EASEMENT (L.2742, P.421)

BENCHMARK
PK NAIL IN POLE
ELEVATION 1024.74
NAVD 88 DATUM

END SECTION
12' CMP N
INV 1020.16

END SECTION
12' CMP N
INV 1020.26

END SECTION
12' CMP N
INV 1020.26

END SECTION
12' CMP N
INV 1020.26

CAUTION!!
2" GAS MAIN

BENCHMARK
ARROW ON HYDRANT
ELEVATION 1029.51
NAVD 88 DATUM

END SECTION
12' CMP N
INV 1025.12

END SECTION
12' CMP N
INV 1025.12

END SECTION
12' CMP N
INV 1025.12



NOWAK & FRAUS ENGINEERS

CIVIL ENGINEERS LAND SURVEYORS LAND PLANNERS

NOWAK & FRAUS ENGINEERS 46777 WOODWARD AVE. PONTIAC, MI 48342-5032 TEL. (248) 332-7931 FAX. (248) 332-8257 WWW.NOWAKFRAUS.COM

SEAL

PROJECT

UPS Facility - 1212 & 1183 Fendt Drive Howell, MI 48843

CLIENT

Sidock Group, Inc. 45650 Grand River Ave. Novi, MI 48374

Contact: Casey Leach, PE Phone: 248.349.4500 Email: cleach@sidockgroup.com

PROJECT LOCATION

Part of the NE 1/4 of Section 8 T.2N., R.5E., Genoa Township, Livingston County, Michigan

SHEET

Tree List



Know what's below Call before you dig.

DATE ISSUED/REVISED 03-27-20 PRELIMINARY ALTA SURVEY ISSUED 03-30-20 ALTA & TOPO SURVEY ISSUED

DRAWN BY:

M. Carnaghi

DESIGNED BY:

APPROVED BY:

K. Navaroli

DATE:

March 27, 2020

SCALE: 1" = 30'



NFE JOB NO.

L641

SHEET NO.

3 of 3

Tree Inventory List

Job Number: L641 Job Location: 1212 Fendt Drive, Howell Michigan Date: Sunday, March 29, 2020 Performed By: Alexander Kriebel Forestry Registration No.

Condition Description Notes:

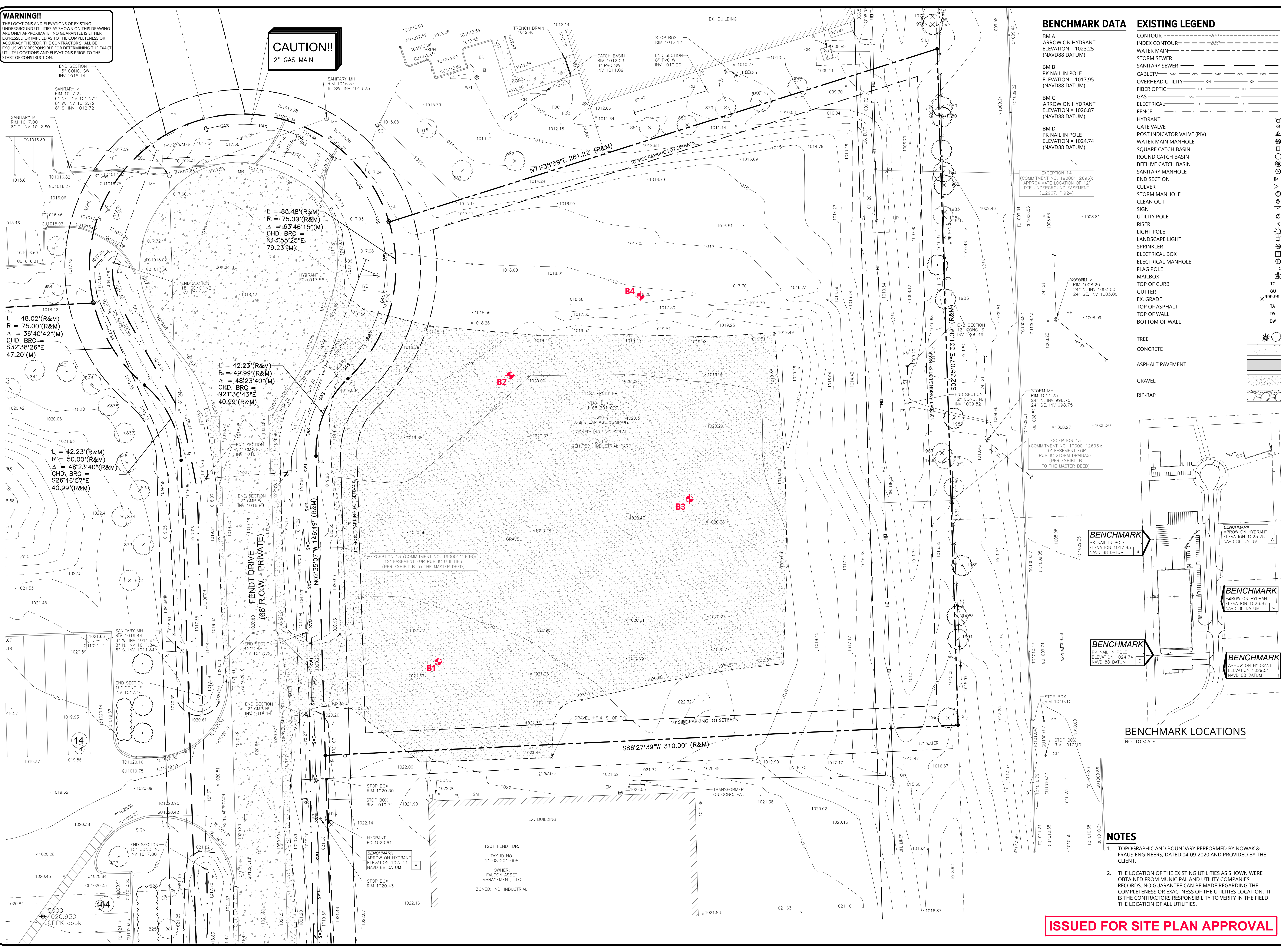
"Good" - no observed structural defects "Fair" - minor structural defects, marginal form, some insect activity noted "Poor" - major structural defects, poor form, insect infested

*Structural defects may include decayed wood, cracks, root problems, weak branch unions cankers, poor tree architecture, dead/failed branches due to various causes.

Table with columns: Tree #, Botanical Name, Common Name, Dia., Type, Other Dia., Condition, Comments. Contains 199 rows of tree inventory data.

WARNING!!
 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.

CAUTION!!
 2" GAS MAIN



BENCHMARK DATA

BM A
 ARROW ON HYDRANT
 ELEVATION = 1023.25
 (NAVD88 DATUM)

BM B
 PK NAIL IN POLE
 ELEVATION = 1017.95
 (NAVD88 DATUM)

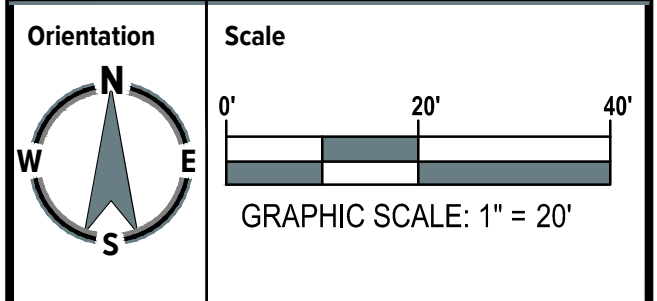
BM C
 ARROW ON HYDRANT
 ELEVATION = 1026.87
 (NAVD88 DATUM)

BM D
 PK NAIL IN POLE
 ELEVATION = 1024.74
 (NAVD88 DATUM)

EXISTING LEGEND

CONTOUR
 INDEX CONTOUR
 WATER MAIN
 STORM SEWER
 SANITARY SEWER
 CABLETV
 OVERHEAD UTILITY
 FIBER OPTIC
 GAS
 ELECTRICAL
 FENCE
 HYDRANT
 GATE VALVE
 POST INDICATOR VALVE (PIV)
 WATER MAIN MANHOLE
 SQUARE CATCH BASIN
 ROUND CATCH BASIN
 BEEHIVE CATCH BASIN
 SANITARY MANHOLE
 END SECTION
 CULVERT
 STORM MANHOLE
 CLEAN OUT
 SIGN
 UTILITY POLE
 RISER
 LIGHT POLE
 LANDSCAPE LIGHT
 SPRINKLER
 ELECTRICAL BOX
 ELECTRICAL MANHOLE
 FLAG POLE
 MAILBOX
 TOP OF CURB
 GUTTER
 EX. GRADE
 TOP OF ASPHALT
 TOP OF WALL
 BOTTOM OF WALL

TREE
 CONCRETE
 ASPHALT PAVEMENT
 GRAVEL
 RIP-RAP



Project
**UPS HOWELL
 EMPLOYEE PARKING LOT
 IMPROVEMENTS**

Project Location
**1183 FENDT DRIVE
 HOWELL, MI 48843**

Sheet Name
EXISTING SITE CONDITIONS

Engineer's Seal

HUGO J. CERON
 ENGINEER
 67351
 PROFESSIONAL ENGINEER

Revisions

REV	ISSUED FOR	DATE	BY
01	TOWNSHIP COMMENTS	09/23/2020	JAS

Date
09/02/2020

SME Project No.
084617.00

Project Manager:
J. SCHWARTZENBERGER

Designer:
H. CERON

CADD:
H. CERON

Checked By:
B. HART

Reviewed By:
J. SCHWARTZENBERGER

Sheet No.
C-300

EXCEPTION 14
 (COMMITMENT NO. 19000112696):
 APPROXIMATE LOCATION OF 12"
 DTE UNDERGROUND EASEMENT
 (L2967, P.924)

EXCEPTION 13
 (COMMITMENT NO. 19000112696):
 40' EASEMENT FOR
 PUBLIC STORM DRAINAGE
 (PER EXHIBIT D
 TO THE MASTER DEED)

BENCHMARK
 PK NAIL IN POLE
 ELEVATION 1017.95
 NAVD 88 DATUM

BENCHMARK
 ARROW ON HYDRANT
 ELEVATION 1026.87
 NAVD 88 DATUM

BENCHMARK
 ARROW ON HYDRANT
 ELEVATION 1023.25
 NAVD 88 DATUM

BENCHMARK
 PK NAIL IN POLE
 ELEVATION 1024.74
 NAVD 88 DATUM

ISSUED FOR SITE PLAN APPROVAL

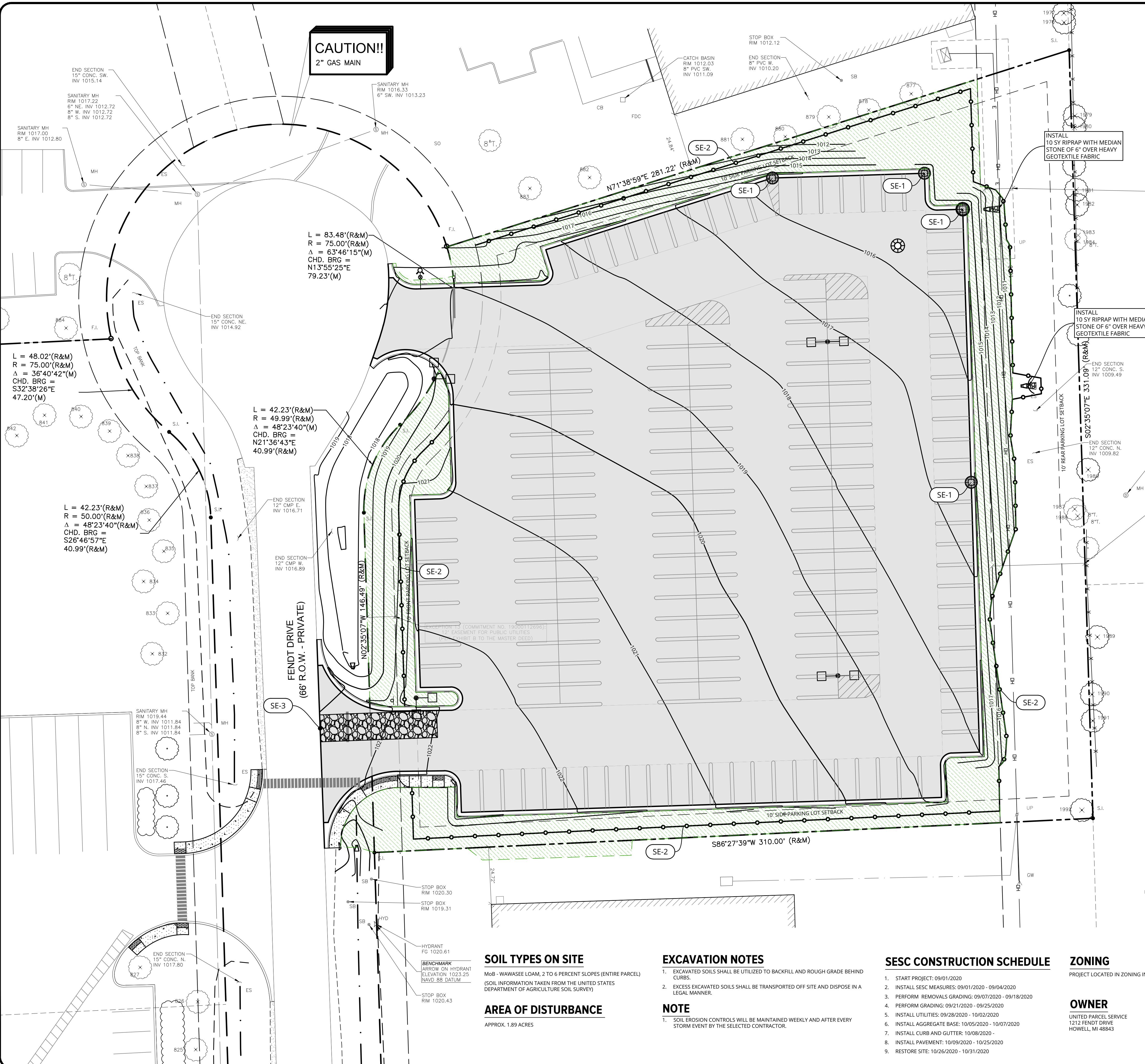
BENCHMARK LOCATIONS
 NOT TO SCALE

NOTES

- TOPOGRAPHIC AND BOUNDARY PERFORMED BY NOWAK & FRAUS ENGINEERS, DATED 04-09-2020 AND PROVIDED BY THE CLIENT.
- THE LOCATION OF THE EXISTING UTILITIES AS SHOWN WERE OBTAINED FROM MUNICIPAL AND UTILITY COMPANIES RECORDS. NO GUARANTEE CAN BE MADE REGARDING THE COMPLETENESS OR EXACTNESS OF THE UTILITIES LOCATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY IN THE FIELD THE LOCATION OF ALL UTILITIES.

5000
 1020.930
 CPPK cppk

14



BENCHMARK DATA

BM A
ARROW ON HYDRANT
ELEVATION = 1023.25
(NAVD88 DATUM)

BM B
PK NAIL IN POLE
ELEVATION = 1017.95
(NAVD88 DATUM)

BM C
ARROW ON HYDRANT
ELEVATION = 1026.87
(NAVD88 DATUM)

BM D
PK NAIL IN POLE
ELEVATION = 1024.74
(NAVD88 DATUM)

EXISTING LEGEND

CONTOUR
INDEX CONTOUR
WATER MAIN
STORM SEWER
SANITARY SEWER
CABLETV
OVERHEAD UTILITY
FIBER OPTIC
GAS
ELECTRICAL
FENCE
HYDRANT
GATE VALVE
POST INDICATOR VALVE (PIV)
WATER MAIN MANHOLE
SQUARE CATCH BASIN
ROUND CATCH BASIN
BEEHIVE CATCH BASIN
SANITARY MANHOLE
END SECTION
CULVERT
STORM MANHOLE
CLEAN OUT
SIGN
UTILITY POLE
RISER
LIGHT POLE
LANDSCAPE LIGHT
SPRINKLER
ELECTRICAL BOX
ELECTRICAL MANHOLE
FLAG POLE
MAILBOX
TOP OF CURB
GUTTER
EX. GRADE
TOP OF ASPHALT
TOP OF WALL
BOTTOM OF WALL

TREE
CONCRETE
ASPHALT PAVEMENT
GRAVEL
RIP-RAP

SOIL EROSION CONTROL LEGEND

SE-1 FURNISH AND INSTALL INLET PROTECTION FILTER
SE-2 FURNISH AND INSTALL SILT FENCE
SE-3 FURNISH AND INSTALL TEMPORARY GRAVEL TRACKING PAD
SE-4 RESTORE AREA PER GOVERNING AGENCY STANDARD AND SPECIFICATIONS

EROSION CONTROL
EARTH DISTURBANCE IS NOT PERMITTED OUTSIDE THE NOTED DISTURBANCE LIMITS. DISTURBANCE IS NOT PERMITTED WITHIN THE FLOODPLAIN LIMITS.
EARTH EXCAVATION FOR THIS PROJECT SHALL INCLUDE THE EXCAVATION FOR UNDERGROUND UTILITIES AND SITE BALANCING TO REACH FINAL PAVEMENT SUBGRADE LEVELS.
THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL SOIL EROSION AND SEDIMENTATION CONTROL (SESC) MEASURES, INCLUDING DUST CONTROL.
THE FOLLOWING MINIMUM SESC MEASURES SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND MAINTAINED UNTIL CONSTRUCTION IS COMPLETE AND TURF IS ESTABLISHED:
1. MUD MATS AT SITE ENTRANCE/EXIT POINTS TO MINIMIZE THE TRACKING OF DEBRIS/SOIL ONTO ROADWAYS OR NEIGHBORING PROPERTY. MUD MATS SHALL CONSIST OF LARGE COARSE AGGREGATE OVERLYING A GEOTEXTILE SEPARATOR FABRIC.
2. STOCKPILED SOILS SHALL BE COVERED OR OTHERWISE PROTECTED FROM ERODING INTO OFFSITE AREAS.
3. THE CONTRACTOR SHALL ESTABLISH PERMANENT STABILIZATION OF ALL EXPOSED AREAS WITHIN 7 DAYS OF FINAL GRADING.
4. BURLAP AND/OR STRAW BALES ARE NOT ALLOWED.
5. SEDIMENT TRAPS (I.E. SILT SACKS) SHALL BE INSTALLED AT EXISTING AND NEWLY INSTALLED INLET STRUCTURES AND SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
6. SILT FENCING SHALL BE INSTALLED ALONG THE PERIMETER OF THE DISTURBED LIMITS (SEE PLAN) AND MAINTAINED.

MAINTENANCE REQUIREMENTS FOR SOIL EROSION AND SEDIMENTATION CONTROL
THE CONTRACTOR IS RESPONSIBLE FOR THE REGULAR INSPECTION AND MAINTENANCE OF ALL SOIL EROSION AND SEDIMENTATION CONTROL (SESC) MEASURES THROUGHOUT CONSTRUCTION IN ACCORDANCE WITH MDEQ REQUIREMENTS.
REINSTALL OR OTHERWISE REPLACE SESC MEASURES IF FOUND TO BE DEFICIENT OR DO NOT MEET THE INTENDED FUNCTION.
SEDIMENT AND DEBRIS ACCUMULATIONS SHALL BE REGULARLY REMOVED FROM SITE ENTRANCES, CURBS, AND INLET FILTERS. SEDIMENT AND DEBRIS SHALL NOT BE PERMITTED TO MIGRATE OUTSIDE OF THE DISTURBANCE LIMITS INDICATED ON THESE DRAWINGS. ANY SILT OR MUD TRACKED ON PAVED SURFACES OUTSIDE OF THE AREA OF DISTURBANCE SHALL BE REMOVED IN A MANNER THAT DOES NOT GENERATE AIRBORNE DUST.
DUST CONTROL ACTIVITIES SHALL BE PERFORMED ON AN AS-NEEDED BASIS (MINIMUM OF ONCE PER DAY), AND SHALL CONSIST OF AT LEAST THE USE OF A WATER TRUCK.

RESTORATION NOTES
1. FOLLOWING FINAL GRADING CONTRACTOR SHALL INSTALL 4 INCHES OF TOPSOIL AND SEED OF DISTURBED AREAS.
2. INSTALL SOIL EROSION BLANKET ON ALL DISTURBED AREAS WITH SLOPES FLATTER THAN 1V:2H.
3. INSTALL HIGH VELOCITY SOIL EROSION BLANKET ON ALL DISTURBED AREAS WITH SLOPE STEEPER THAN 1V:2H.

EROSION CONTROL
EARTH DISTURBANCE IS NOT PERMITTED OUTSIDE THE NOTED DISTURBANCE LIMITS. DISTURBANCE IS NOT PERMITTED WITHIN THE FLOODPLAIN LIMITS.
EARTH EXCAVATION FOR THIS PROJECT SHALL INCLUDE THE EXCAVATION FOR UNDERGROUND UTILITIES AND SITE BALANCING TO REACH FINAL PAVEMENT SUBGRADE LEVELS.
THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL SOIL EROSION AND SEDIMENTATION CONTROL (SESC) MEASURES, INCLUDING DUST CONTROL.
THE FOLLOWING MINIMUM SESC MEASURES SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND MAINTAINED UNTIL CONSTRUCTION IS COMPLETE AND TURF IS ESTABLISHED:
1. MUD MATS AT SITE ENTRANCE/EXIT POINTS TO MINIMIZE THE TRACKING OF DEBRIS/SOIL ONTO ROADWAYS OR NEIGHBORING PROPERTY. MUD MATS SHALL CONSIST OF LARGE COARSE AGGREGATE OVERLYING A GEOTEXTILE SEPARATOR FABRIC.
2. STOCKPILED SOILS SHALL BE COVERED OR OTHERWISE PROTECTED FROM ERODING INTO OFFSITE AREAS.
3. THE CONTRACTOR SHALL ESTABLISH PERMANENT STABILIZATION OF ALL EXPOSED AREAS WITHIN 7 DAYS OF FINAL GRADING.
4. BURLAP AND/OR STRAW BALES ARE NOT ALLOWED.
5. SEDIMENT TRAPS (I.E. SILT SACKS) SHALL BE INSTALLED AT EXISTING AND NEWLY INSTALLED INLET STRUCTURES AND SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
6. SILT FENCING SHALL BE INSTALLED ALONG THE PERIMETER OF THE DISTURBED LIMITS (SEE PLAN) AND MAINTAINED.

MAINTENANCE REQUIREMENTS FOR SOIL EROSION AND SEDIMENTATION CONTROL
THE CONTRACTOR IS RESPONSIBLE FOR THE REGULAR INSPECTION AND MAINTENANCE OF ALL SOIL EROSION AND SEDIMENTATION CONTROL (SESC) MEASURES THROUGHOUT CONSTRUCTION IN ACCORDANCE WITH MDEQ REQUIREMENTS.
REINSTALL OR OTHERWISE REPLACE SESC MEASURES IF FOUND TO BE DEFICIENT OR DO NOT MEET THE INTENDED FUNCTION.
SEDIMENT AND DEBRIS ACCUMULATIONS SHALL BE REGULARLY REMOVED FROM SITE ENTRANCES, CURBS, AND INLET FILTERS. SEDIMENT AND DEBRIS SHALL NOT BE PERMITTED TO MIGRATE OUTSIDE OF THE DISTURBANCE LIMITS INDICATED ON THESE DRAWINGS. ANY SILT OR MUD TRACKED ON PAVED SURFACES OUTSIDE OF THE AREA OF DISTURBANCE SHALL BE REMOVED IN A MANNER THAT DOES NOT GENERATE AIRBORNE DUST.
DUST CONTROL ACTIVITIES SHALL BE PERFORMED ON AN AS-NEEDED BASIS (MINIMUM OF ONCE PER DAY), AND SHALL CONSIST OF AT LEAST THE USE OF A WATER TRUCK.

RESTORATION NOTES
1. FOLLOWING FINAL GRADING CONTRACTOR SHALL INSTALL 4 INCHES OF TOPSOIL AND SEED OF DISTURBED AREAS.
2. INSTALL SOIL EROSION BLANKET ON ALL DISTURBED AREAS WITH SLOPES FLATTER THAN 1V:2H.
3. INSTALL HIGH VELOCITY SOIL EROSION BLANKET ON ALL DISTURBED AREAS WITH SLOPE STEEPER THAN 1V:2H.

MAINTENANCE REQUIREMENTS FOR SOIL EROSION AND SEDIMENTATION CONTROL
THE CONTRACTOR IS RESPONSIBLE FOR THE REGULAR INSPECTION AND MAINTENANCE OF ALL SOIL EROSION AND SEDIMENTATION CONTROL (SESC) MEASURES THROUGHOUT CONSTRUCTION IN ACCORDANCE WITH MDEQ REQUIREMENTS.
REINSTALL OR OTHERWISE REPLACE SESC MEASURES IF FOUND TO BE DEFICIENT OR DO NOT MEET THE INTENDED FUNCTION.
SEDIMENT AND DEBRIS ACCUMULATIONS SHALL BE REGULARLY REMOVED FROM SITE ENTRANCES, CURBS, AND INLET FILTERS. SEDIMENT AND DEBRIS SHALL NOT BE PERMITTED TO MIGRATE OUTSIDE OF THE DISTURBANCE LIMITS INDICATED ON THESE DRAWINGS. ANY SILT OR MUD TRACKED ON PAVED SURFACES OUTSIDE OF THE AREA OF DISTURBANCE SHALL BE REMOVED IN A MANNER THAT DOES NOT GENERATE AIRBORNE DUST.
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3. INSTALL HIGH VELOCITY SOIL EROSION BLANKET ON ALL DISTURBED AREAS WITH SLOPE STEEPER THAN 1V:2H.

SOIL TYPES ON SITE
MoB - WAUWASE LOAM, 2 TO 6 PERCENT SLOPES (ENTIRE PARCEL)
(SOIL INFORMATION TAKEN FROM THE UNITED STATES DEPARTMENT OF AGRICULTURE SOIL SURVEY)

AREA OF DISTURBANCE
APPROX. 1.89 ACRES

EXCAVATION NOTES
1. EXCAVATED SOILS SHALL BE UTILIZED TO BACKFILL AND ROUGH GRADE BEHIND CURBS.
2. EXCESS EXCAVATED SOILS SHALL BE TRANSPORTED OFF SITE AND DISPOSED IN A LEGAL MANNER.

NOTE
1. SOIL EROSION CONTROLS WILL BE MAINTAINED WEEKLY AND AFTER EVERY STORM EVENT BY THE SELECTED CONTRACTOR.

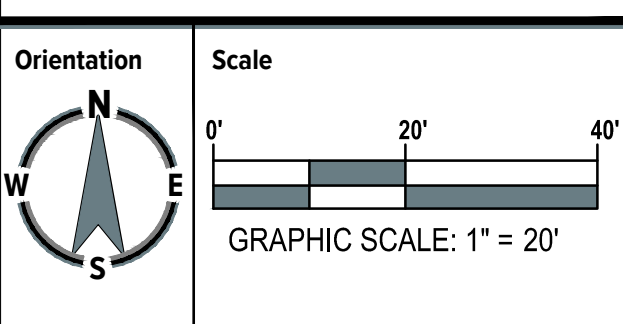
SESC CONSTRUCTION SCHEDULE

1. START PROJECT: 09/01/2020
2. INSTALL SESC MEASURES: 09/01/2020 - 09/04/2020
3. PERFORM REMOVALS GRADING: 09/07/2020 - 09/18/2020
4. PERFORM GRADING: 09/21/2020 - 09/25/2020
5. INSTALL UTILITIES: 09/28/2020 - 10/02/2020
6. INSTALL AGGREGATE BASE: 10/05/2020 - 10/07/2020
7. INSTALL CURB AND GUTTER: 10/08/2020 -
8. INSTALL PAVEMENT: 10/09/2020 - 10/25/2020
9. RESTORE SITE: 10/26/2020 - 10/31/2020

ZONING
PROJECT LOCATED IN ZONING IND., INDUSTRIAL

OWNER
UNITED PARCEL SERVICE
1212 FENDT DRIVE
HOWELL, MI 48843

ISSUED FOR SITE PLAN APPROVAL



Project
UPS HOWELL
EMPLOYEE PARKING LOT
IMPROVEMENTS

Project Location
1183 FENDT DRIVE
HOWELL, MI 48843

Sheet Name
SESC AND SITE PREPARATION
PLAN

Engineer's Seal

HUGO J. CERON
ENGINEER
67351

Revisions

REV	ISSUED FOR	DATE	BY
01	TOWNSHIP COMMENTS	09/23/2020	JAS

Date
09/02/2020

SME Project No.
084617.00

Project Manager:
J. SCHWARTZENBERGER

Designer:
H. CERON

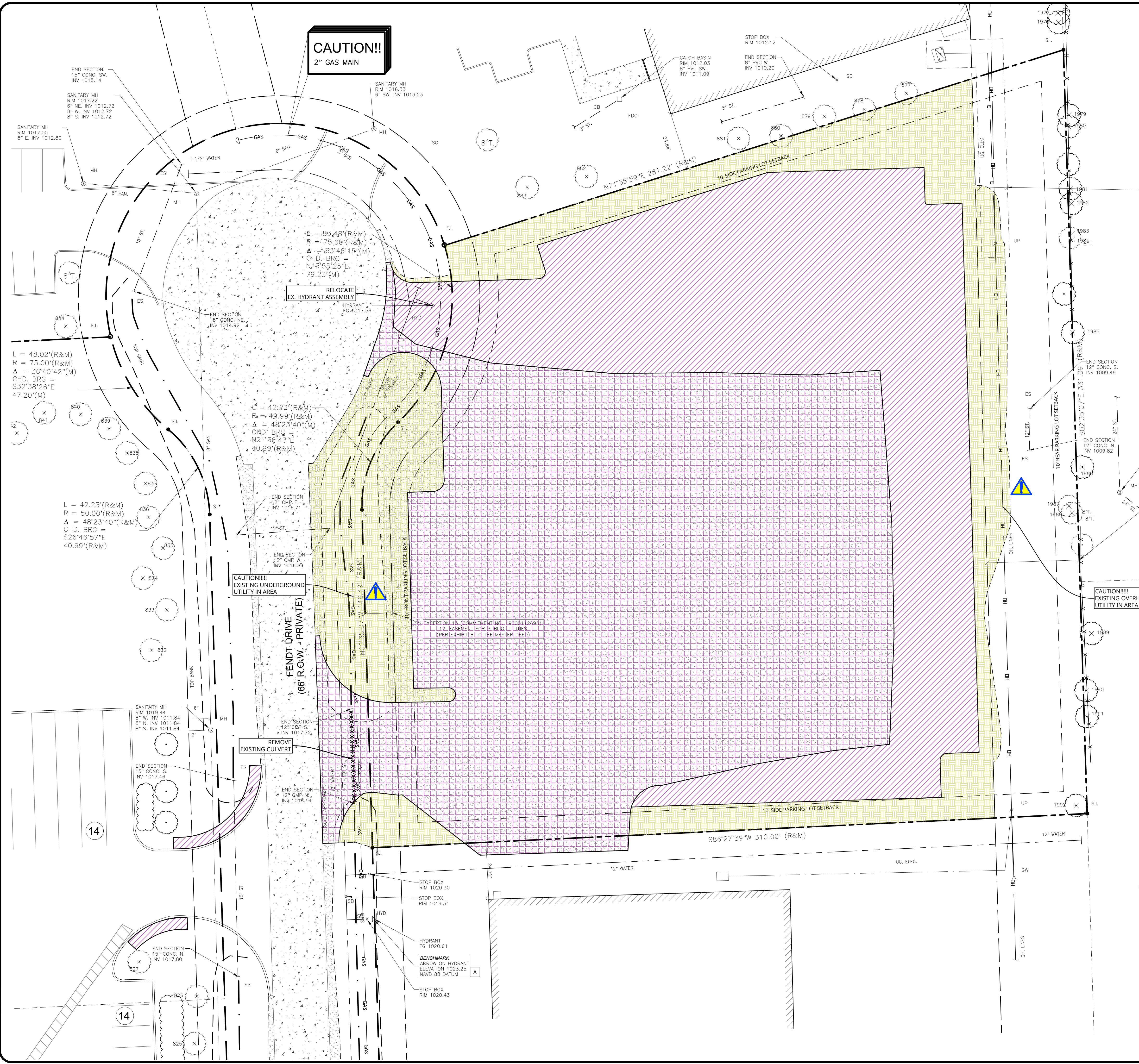
CADD:
H. CERON

Checked By:
B. HART

Reviewed By:
J. SCHWARTZENBERGER

Sheet No.
C-400

DRIVING NOTE: SCALE SPECIFIED TO MEANS FOR 24" X 36" AND WILL SCALE INCORRECTLY IF PRINTED ON ANY OTHER SIZE MEDIA
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BENCHMARK DATA

BM A
ARROW ON HYDRANT
ELEVATION = 1023.25
(NAVD88 DATUM)

BM B
PK NAIL IN POLE
ELEVATION = 1017.95
(NAVD88 DATUM)

BM C
ARROW ON HYDRANT
ELEVATION = 1026.87
(NAVD88 DATUM)

BM D
PK NAIL IN POLE
ELEVATION = 1024.74
(NAVD88 DATUM)

EXISTING LEGEND

- CONTOUR
- INDEX CONTOUR
- WATER MAIN
- STORM SEWER
- SANITARY SEWER
- CABLETV
- OVERHEAD UTILITY
- FIBER OPTIC
- GAS
- ELECTRICAL
- FENCE
- HYDRANT
- GATE VALVE
- POST INDICATOR VALVE (PIV)
- WATER MAIN MANHOLE
- SQUARE CATCH BASIN
- ROUND CATCH BASIN
- BEEHIVE CATCH BASIN
- SANITARY MANHOLE
- END SECTION
- CULVERT
- STORM MANHOLE
- CLEAN OUT
- SIGN
- UTILITY POLE
- RISER
- LIGHT POLE
- LANDSCAPE LIGHT
- SPRINKLER
- ELECTRICAL BOX
- ELECTRICAL MANHOLE
- FLAG POLE
- MAILBOX
- TOP OF CURB
- GUTTER
- EX. GRADE
- TOP OF ASPHALT
- TOP OF WALL
- BOTTOM OF WALL
- TREE
- CONCRETE
- ASPHALT PAVEMENT
- GRAVEL
- RIP-RAP

REMOVAL LEGEND

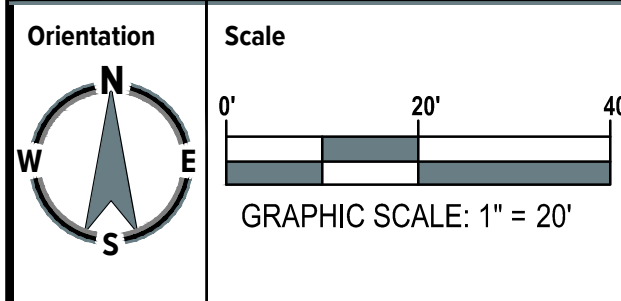
- EXCAVATE AND STOCKPILE EX. GRAVEL FOR RE-USE TO ACCOMMODATE PROPOSED PAVEMENT SECTIONS.
- EXCAVATE EX. GREENSPACE TO ACCOMMODATE INSTALLATION OF PROPOSED PAVEMENT SECTIONS.
- GRADING LIMITS TO ACCOMMODATE PROPOSED GRADING
- REMOVE EXISTING STORM SEWER
- CAUTION!!!! EX. UTILITY IN AREA

EXCEPTION 14
(COMMENT NO. 19000112696):
APPROXIMATE LOCATION OF 12' DTE UNDERGROUND EASEMENT (L.2967, P.924)

EXCEPTION 13
(COMMENT NO. 19000112696):
40' EASEMENT FOR PUBLIC STORM DRAINAGE (PER EXHIBIT B TO THE MASTER DEED)

EXCEPTION 12
(COMMENT NO. 19000112696):
12' EASEMENT FOR PUBLIC UTILITIES (PER EXHIBIT B TO THE MASTER DEED)

ISSUED FOR SITE PLAN APPROVAL



Project
UPS HOWELL
EMPLOYEE PARKING LOT
IMPROVEMENTS

Project Location
1183 FENDT DRIVE
HOWELL, MI 48843

Sheet Name
SITE LAYOUT PLAN

Engineer's Seal

Revisions

REV	ISSUED FOR	DATE	BY
01	TOWNSHIP COMMENTS	09/23/2020	JAS

Date
09/02/2020

SME Project No.
084617.00

Project Manager:
J. SCHWARTZENBERGER

Designer:
H. CERON

CADD:
H. CERON

Checked By:
B. HART

Reviewed By:
J. SCHWARTZENBERGER

Sheet No.
C-600

BENCHMARK DATA

BM A
ARROW ON HYDRANT
ELEVATION = 1023.25
(NAVD88 DATUM)

BM B
PK NAIL IN POLE
ELEVATION = 1017.95
(NAVD88 DATUM)

BM C
ARROW ON HYDRANT
ELEVATION = 1026.87
(NAVD88 DATUM)

BM D
PK NAIL IN POLE
ELEVATION = 1024.74
(NAVD88 DATUM)

EXISTING LEGEND

CONTOUR
INDEX CONTOUR
WATER MAIN
STORM SEWER
SANITARY SEWER
CABLETV
OVERHEAD UTILITY
FIBER OPTIC
GAS
ELECTRICAL
FENCE
HYDRANT
GATE VALVE
POST INDICATOR VALVE (PIV)
WATER MAIN MANHOLE
SQUARE CATCH BASIN
ROUND CATCH BASIN
BEEHIVE CATCH BASIN
SANITARY MANHOLE
END SECTION
CULVERT
STORM MANHOLE
CLEAN OUT
SIGN
UTILITY POLE
RISER
LIGHT POLE
LANDSCAPE LIGHT
SPRINKLER
ELECTRICAL BOX
ELECTRICAL MANHOLE
FLAG POLE
MAILBOX
TOP OF CURB
GUTTER
EX. GRADE
TOP OF ASPHALT
TOP OF WALL
BOTTOM OF WALL
TREE
CONCRETE
ASPHALT PAVEMENT
GRAVEL
RIP-RAP

PROPOSED LEGEND

PROPOSED ASPHALT CONCRETE PAVEMENT
PROPOSED CONCRETE SIDEWALK
PROPOSED CONCRETE PAVEMENT SECTION
PROPOSED CONCRETE CURB AND GUTTER
PROPOSED CONCRETE CURB AND GUTTER (REVERSE OR SPILLOUT)
PROPOSED ADA RAMP (TYPE SPECIFIED PER PLAN) WITH TRUNCATED DOME
FURNISH AND INSTALL CATCH BASIN
PROPOSED END SECTION
PROPOSED STD HYDRANT ASSEMBLY
PROPOSED GATE VALVE AND WELL
FURNISH AND INSTALL BLUE PAINT ADA COMPLIANT BARRIER FREE PARKING LOGO
PROPOSED SIGN ON POST
PROPOSED ADA SIGN ON POST
FURNISH AND INSTALL 4" WIDE PAINT STRIPES
FURNISH AND INSTALL STRIPING @ 36" O.C.
FURNISH AND INSTALL CROSS-WALK STRIPING
FURNISH AND INSTALL PAINTED ARROWS
PROPOSED STD./ADA STALL COUNT

NOTE
PARKING STALL DIMENSIONS TYPICAL UNLESS OTHERWISE NOTED.

VERTICAL CLEARANCE NOTE:
A MINIMUM OF 13.5 FT. VERTICAL CLEARANCE ABOVE THE ACCESS DRIVES TO BE MAINTAINED.

OUTDOOR STORAGE NOTE:
NO OUTDOOR STORAGE ALLOWED IN PARKING LOT FOR MORE THAN 24 HOURS.

DIMENSIONAL VARIANCE REQUIRED:
SECTION 14.02.03 - PARKING SPACES SHALL BE PROVIDED EITHER ON THE SAME LOT, WITHIN LOTS UNDER THE SAME OWNERSHIP OR WHERE A SHARED PARKING EASEMENT IS PROVIDED ON AN ADJACENT LOT WITHIN THREE HUNDRED (300) FEET OF THE BUILDING IT IS INTENDED TO SERVE, MEASURED FROM THE NEAREST PUBLIC BUILDING ENTRANCE TO THE NEAREST PARKING SPACE OF THE OFF-STREET PARKING LOT.

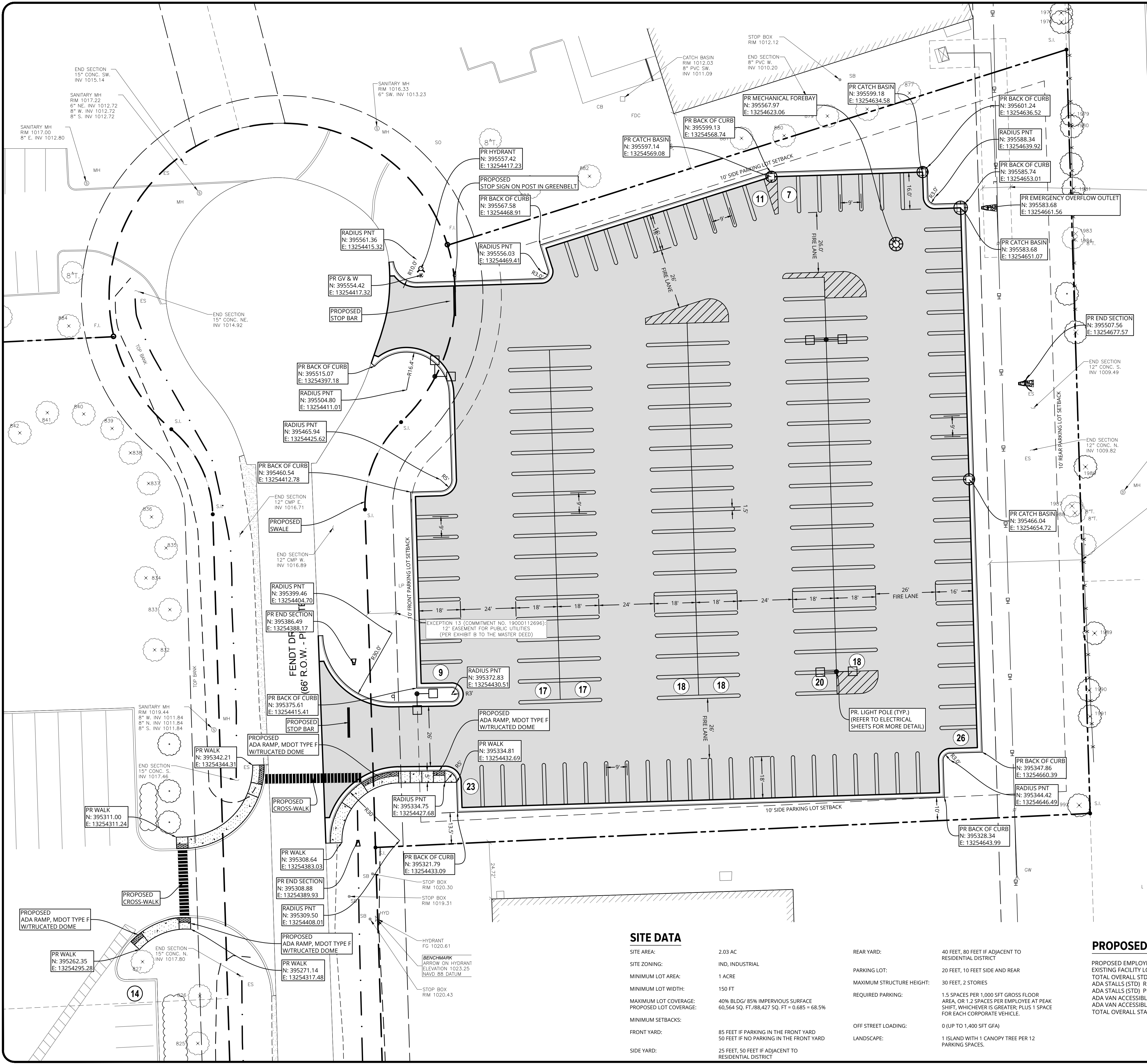
APPROX. 310 FEET FROM BUILDING ENTRANCE TO NEAREST PARKING SPACE OF THE OFF-STREET PARKING LOT.

PROPOSED PARKING DATA:

PROPOSED EMPLOYEE LOT STD STALLS	= 184
EXISTING FACILITY LOT STD STALLS	= 39
TOTAL OVERALL LOT STD STALLS	= 223
ADA STALLS (STD) REQ'D	= 6
ADA STALLS (STD) PROVIDED	= 6
ADA VAN ACCESSIBLE REQ'D	= 2
ADA VAN ACCESSIBLE PROVIDED	= 2
TOTAL OVERALL STALLS	= 231

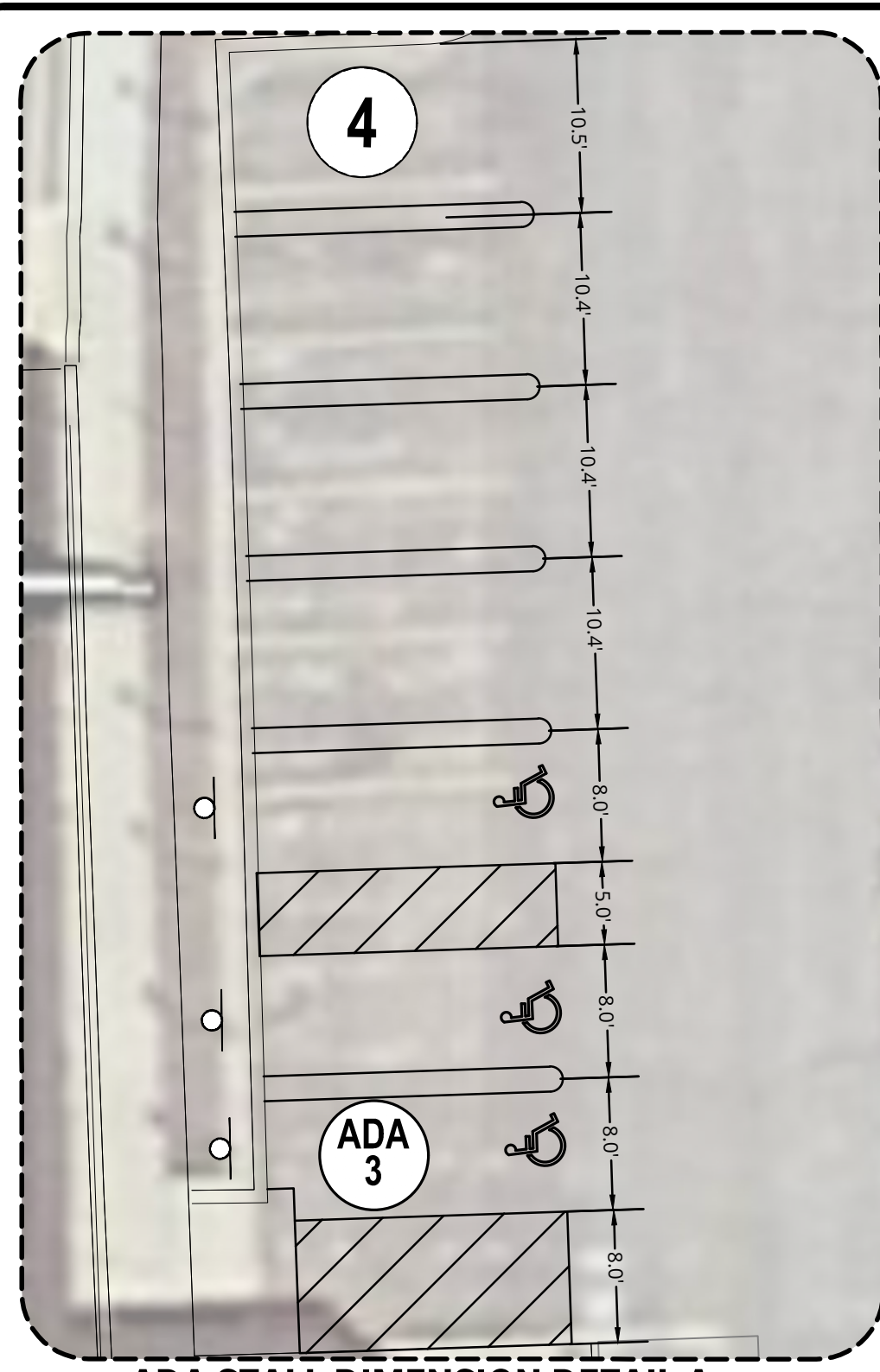
SITE DATA

SITE AREA:	2.03 AC	REAR YARD:	40 FEET, 80 FEET IF ADJACENT TO RESIDENTIAL DISTRICT
SITE ZONING:	IND. INDUSTRIAL	PARKING LOT:	20 FEET, 10 FEET SIDE AND REAR
MINIMUM LOT AREA:	1 ACRE	MAXIMUM STRUCTURE HEIGHT:	30 FEET, 2 STORIES
MINIMUM LOT WIDTH:	150 FT	REQUIRED PARKING:	1.5 SPACES PER 1,000 SFT GROSS FLOOR AREA, OR 1.2 SPACES PER EMPLOYEE AT PEAK SHIFT, WHICHEVER IS GREATER, PLUS 1 SPACE FOR EACH CORPORATE VEHICLE.
MAXIMUM LOT COVERAGE:	40% BLDG/ 85% IMPERVIOUS SURFACE	OFF STREET LOADING:	0 (UP TO 1,400 SFT GFA)
PROPOSED LOT COVERAGE:	60,564 SQ. FT./88,427 SQ. FT. = 0.685 = 68.5%	LANDSCAPE:	1 ISLAND WITH 1 CANOPY TREE PER 12 PARKING SPACES.
MINIMUM SETBACKS:			
FRONT YARD:	85 FEET IF PARKING IN THE FRONT YARD 50 FEET IF NO PARKING IN THE FRONT YARD		
SIDE YARD:	25 FEET, 50 FEET IF ADJACENT TO RESIDENTIAL DISTRICT		



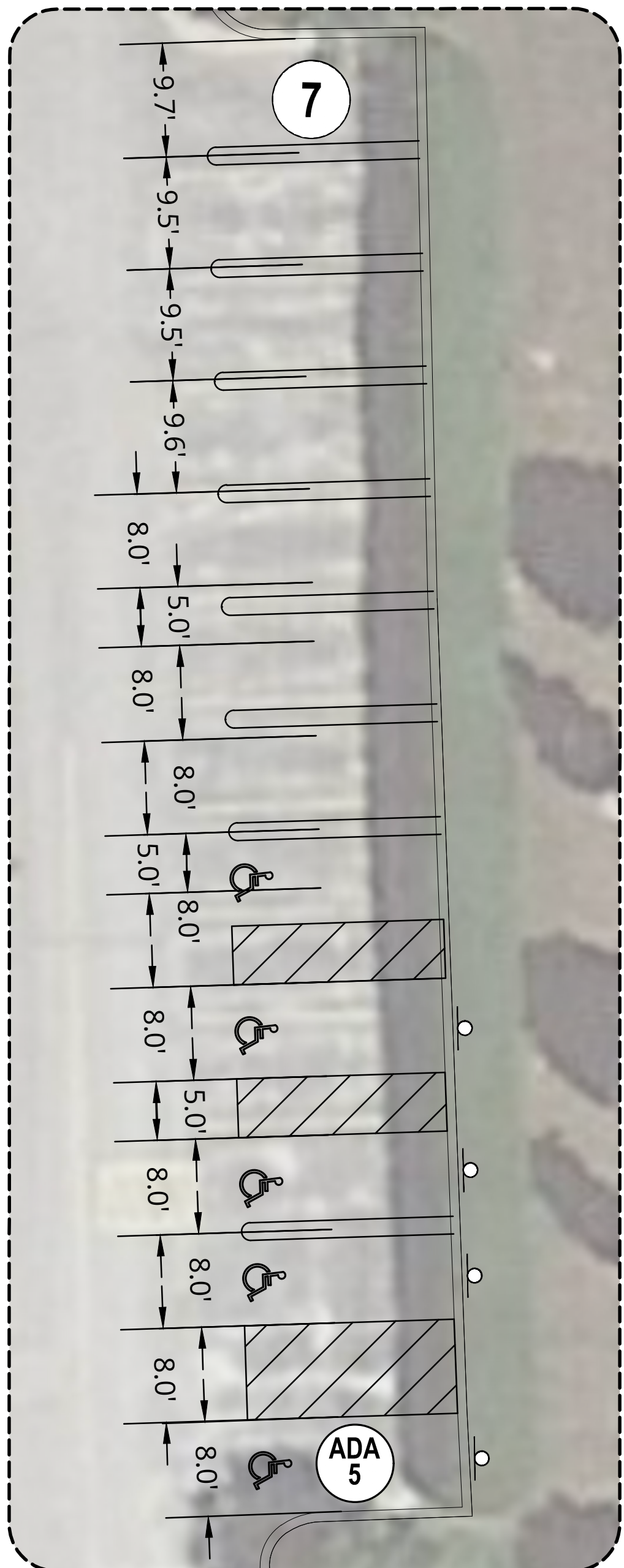
ISSUED FOR SITE PLAN APPROVAL

FILE LOCATION: I:\sme-inc\p\w\p\084617.00\CADD\DWG\SSPA\rev084617.00_SiteLayout.dwg



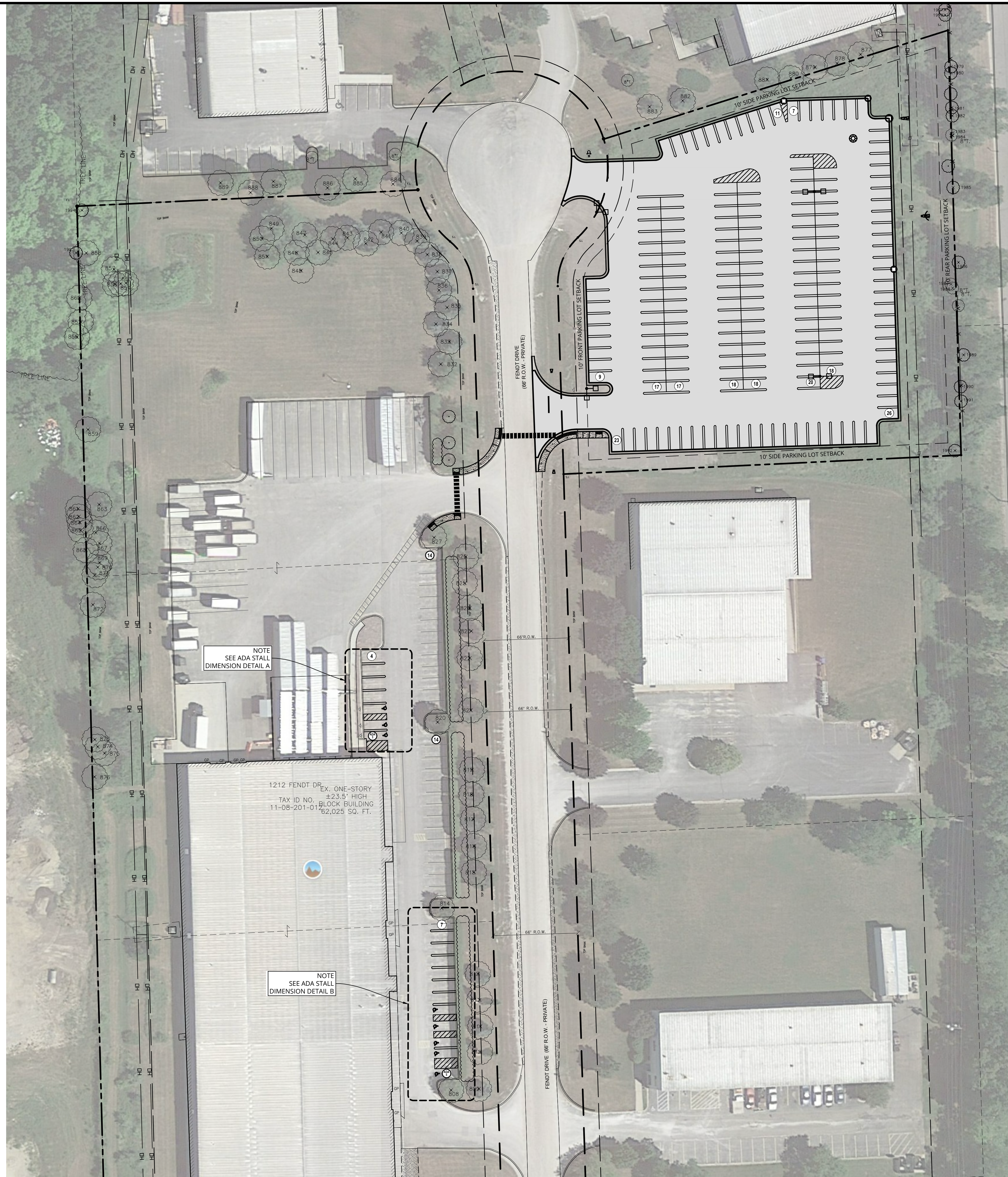
ADA STALL DIMENSION DETAIL A

SCALE: 1" = 10'



ADA STALL DIMENSION DETAIL B

SCALE: 1" = 10'



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(NAVD88 DATUM)

BM D
PK NAIL IN POLE
ELEVATION = 1024.74
(NAVD88 DATUM)

EXISTING LEGEND

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- INDEX CONTOUR
- WATER MAIN
- STORM SEWER
- SANITARY SEWER
- CABLETV
- OVERHEAD UTILITY
- FIBER OPTIC
- GAS
- ELECTRICAL
- FENCE
- HYDRANT
- GATE VALVE
- POST INDICATOR VALVE (PIV)
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- CULVERT
- STORM MANHOLE
- CLEAN OUT
- SIGN
- UTILITY POLE
- RISER
- LIGHT POLE
- LANDSCAPE LIGHT
- SPRINKLER
- ELECTRICAL BOX
- ELECTRICAL MANHOLE
- FLAG POLE
- MAILBOX
- TOP OF CURB
- GUTTER
- EX. GRADE
- TOP OF ASPHALT
- TOP OF WALL
- BOTTOM OF WALL
- TREE
- CONCRETE
- ASPHALT PAVEMENT
- GRAVEL
- RIP-RAP

PROPOSED LEGEND

- PROPOSED ASPHALT CONCRETE PAVEMENT
- PROPOSED CONCRETE SIDEWALK
- PROPOSED CONCRETE PAVEMENT SECTION
- PROPOSED CONCRETE CURB AND GUTTER
- PROPOSED CONCRETE CURB AND GUTTER (REVERSE OR SPILLOUT)
- PROPOSED ADA RAMP (TYPE SPECIFIED PER PLAN) WITH TRUNCATED DOME
- FURNISH AND INSTALL CATCH BASIN
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- PROPOSED STD HYDRANT ASSEMBLY
- PROPOSED GATE VALVE AND WELL
- FURNISH AND INSTALL BLUE PAINT ADA COMPLIANT BARRIER FREE PARKING LOGO
- PROPOSED SIGN ON POST
- PROPOSED ADA SIGN ON POST
- FURNISH AND INSTALL 4" WIDE PAINT STRIPES
- FURNISH AND INSTALL STRIPING @ 36" O.C.
- FURNISH AND INSTALL CROSS-WALK STRIPING
- FURNISH AND INSTALL PAINTED ARROWS
- PROPOSED STD./ADA STALL COUNT

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ADA VAN ACCESSIBLE PROVIDED	= 2
TOTAL OVERALL STALLS	= 231

SME
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Orientation: N
Scale: 0' 40' 80'
GRAPHIC SCALE: 1" = 40'

Project
**UPS HOWELL
EMPLOYEE PARKING LOT
IMPROVEMENTS**

Project Location
**1183 FENDT DRIVE
HOWELL, MI 48843**

Sheet Name
OVERALL STRIPING PLAN

Engineer's Seal
HUGO J. CERON
ENGINEER
67351
PROFESSIONAL ENGINEER

REV	ISSUED FOR	DATE	BY
01	TOWNSHIP COMMENTS	09/23/2020	JAS

Date: **09/02/2020**

SME Project No.: **084617.00**

Project Manager: **J. SCHWARTZENBERGER**

Designer: **H. CERON**

CADD: **H. CERON**

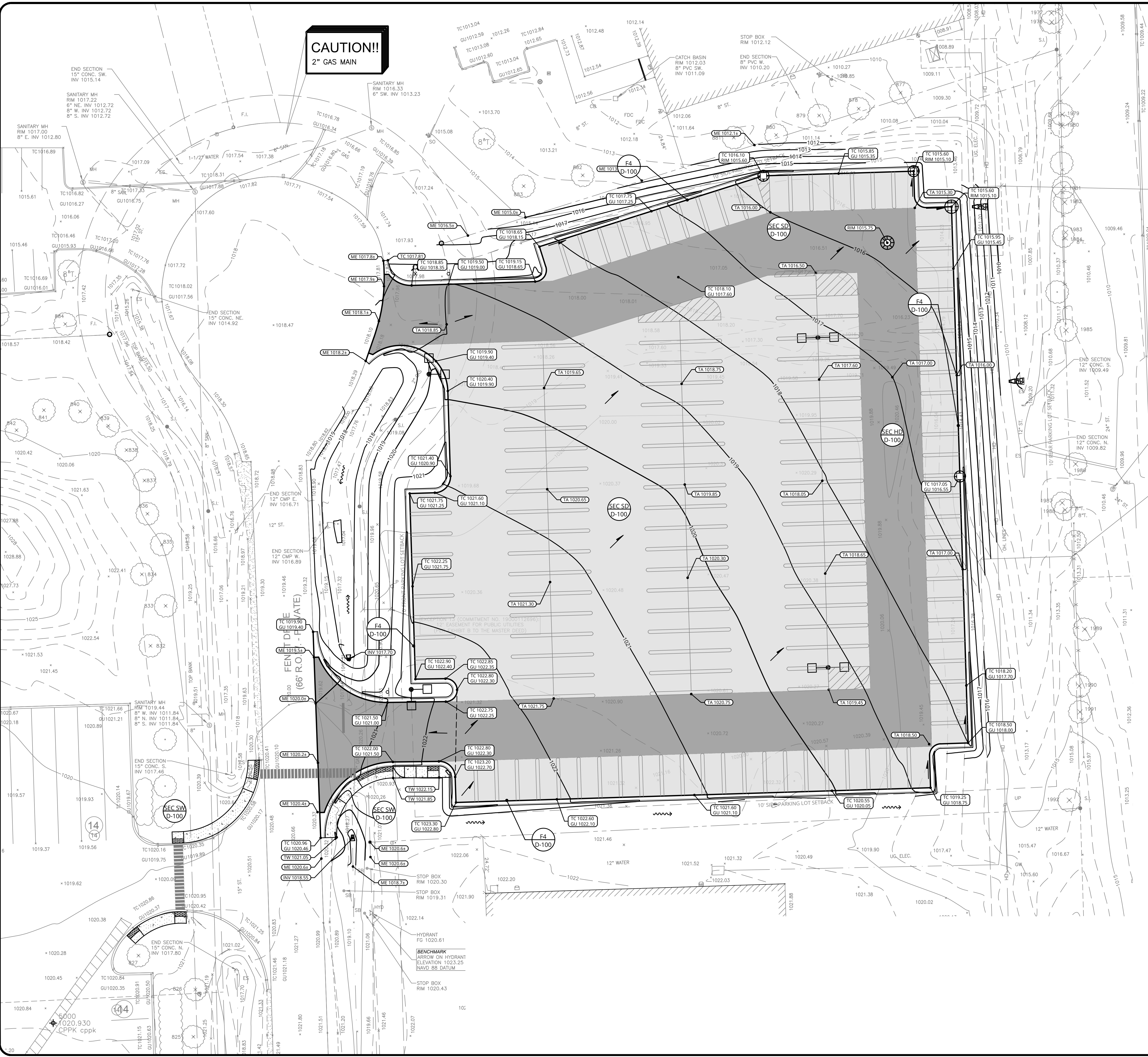
Checked By: **B. HART**

Reviewed By: **J. SCHWARTZENBERGER**

Sheet No.: **C-601**

ISSUED FOR SITE PLAN APPROVAL

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CAUTION!!
2" GAS MAIN

BENCHMARK DATA

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ARROW ON HYDRANT
ELEVATION = 1023.25
(NAVD88 DATUM)
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PK NAIL IN POLE
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(NAVD88 DATUM)
- BM C
ARROW ON HYDRANT
ELEVATION = 1026.87
(NAVD88 DATUM)
- BM D
PK NAIL IN POLE
ELEVATION = 1024.74
(NAVD88 DATUM)

EXISTING LEGEND

- CONTOUR
- INDEX CONTOUR
- WATER MAIN
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- ELECTRICAL MANHOLE
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- MAILBOX
- TOP OF CURB
- GUTTER
- EX. GRADE
- TOP OF ASPHALT
- TOP OF WALL
- BOTTOM OF WALL
- TREE
- CONCRETE
- ASPHALT PAVEMENT
- GRAVEL
- RIP-RAP

SEC. I.D. INSTALL/PAVING LEGEND

- SEC SD D-100: FURNISH AND INSTALL SD ASPHALT CONCRETE PAVEMENT SECTION
- SEC HD D-100: FURNISH AND INSTALL HD ASPHALT CONCRETE PAVEMENT SECTION
- SEC SW D-100: FURNISH AND INSTALL CONCRETE SIDEWALK
- F4 D-100: FURNISH AND INSTALL CONCRETE CURB AND GUTTER (STANDARD)
- REV-F4 D-100: FURNISH AND INSTALL CONCRETE CURB AND GUTTER (REVERSE/SPILL-OUT)
- ADA Ramp Symbol: FURNISH AND INSTALL ADA RAMP (TYPE SPECIFIED PER PLAN) WITH TRUNCATED DOME WARNING MAT
- Post Symbol: FURNISH AND INSTALL SIGN ON POST IN GREENBELT AS INDICATED ON PLAN
- Catch Basin Symbol: FURNISH AND INSTALL CATCH BASIN
- Hydrant Symbol: FURNISH AND INSTALL STD. HYDRANT ASSEMBLY
- Gate Valve Symbol: FURNISH AND INSTALL GATE VALVE AND WELL

GRADING LEGEND

- Proposed Spot Elevation Symbol: PROPOSED SPOT ELEVATION
- FF: FINISH FLOOR
- FG: FINISH GRADE
- GU: GUTTER ELEVATION
- HP: HIGH POINT
- ME: MATCH EX. ELEVATION
- RIM: RIM ELEVATION
- TA: TOP OF PR AC PAVEMENT
- TC: TOP OF CURB ELEVATION
- TW: TOP OF WALK
- BOW: BOTTOM OF WALL
- TOW: TOP OF WALL
- Slope Arrow Symbol: SLOPE DIRECTION (PAVEMENT)
- Greenbelt Arrow Symbol: SLOPE DIRECTION (GREENBELT)
- Proposed Contour (Minor) Symbol: PROPOSED CONTOUR (MINOR)
- Proposed Contour (Index) Symbol: PROPOSED CONTOUR (INDEX)

SME
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Orientation: N, S, E, W

Scale: 0' 20' 40'

GRAPHIC SCALE: 1" = 20'

Project

**UPS HOWELL
EMPLOYEE PARKING LOT
IMPROVEMENTS**

Project Location

**1183 FENDT DRIVE
HOWELL, MI 48843**

Sheet Name

PAVING AND GRADING PLAN

Engineer's Seal

Revisions

REV	ISSUED FOR	DATE	BY
01	TOWNSHIP COMMENTS	09/23/2020	JAS

Date 09/02/2020

SME Project No. 084617.00

Project Manager: J. SCHWARTZENBERGER

Designer: H. CERON

CADD: H. CERON

Checked By: B. HART

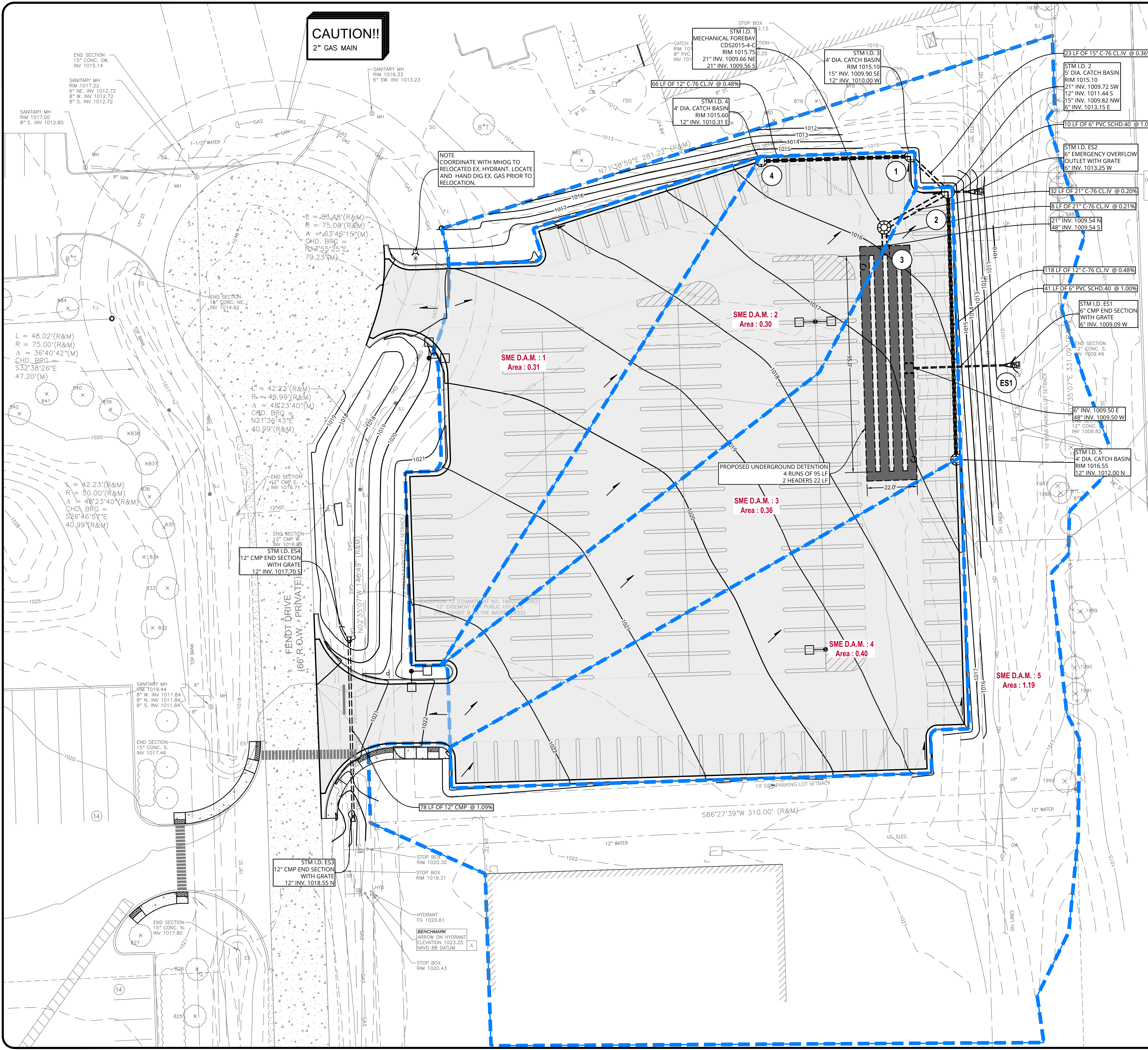
Reviewed By: J. SCHWARTZENBERGER

Sheet No. C-700

ISSUED FOR SITE PLAN APPROVAL

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CAUTION!!
2" GAS MAIN



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- BM C
ARROW ON HYDRANT
ELEVATION = 1026.87
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- BM D
PK NAIL IN POLE
ELEVATION = 1024.74
(NAVD88 DATUM)

EXISTING LEGEND

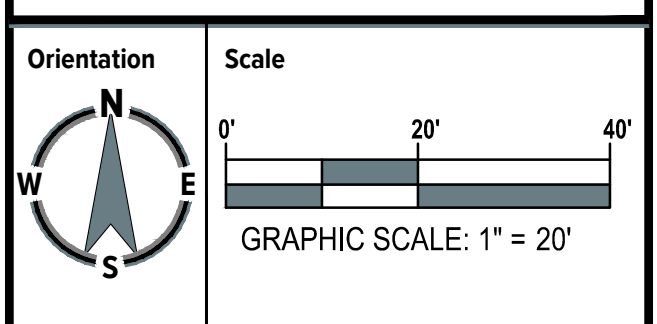
- CONTOUR
- INDEX CONTOUR
- WATER MAIN
- STORM SEWER
- SANITARY SEWER
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- TOP OF WALL
- BOTTOM OF WALL
- TREE
- CONCRETE
- ASPHALT PAVEMENT
- GRAVEL
- RIP-RAP

D.A.M. LEGEND

- AREA X
XXX.AC.
- PR STORM STRUCTURE IDENTIFICATION TAG

UTILITY LEGEND

- FURNISH AND INSTALL STORM SEWER PIPE
- FURNISH AND INSTALL CATCH BASIN
- FURNISH AND INSTALL REAR YARD CATCH BASIN
- FURNISH AND INSTALL STORM MANHOLE
- FURNISH AND INSTALL STD. HYDRANT ASSEMBLY
- FURNISH AND INSTALL GATE VALVE AND WELL
- FURNISH AND INSTALL WATER SERVICE LEAD
- FURNISH AND INSTALL 6" UNDERDRAIN

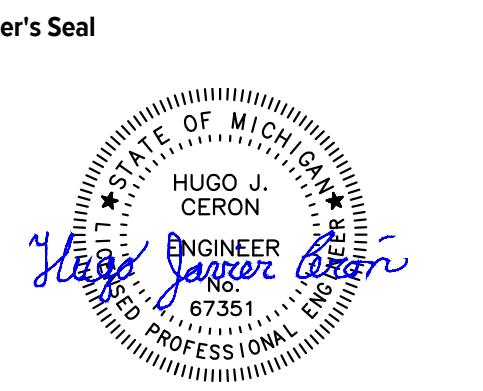


Project
**UPS HOWELL
EMPLOYEE PARKING LOT
IMPROVEMENTS**

Project Location
**1183 FENDT DRIVE
HOWELL, MI 48843**

Sheet Name
**UTILITY PLAN AND DRAINAGE
AREA MAP**

Engineer's Seal



Revisions

REV	ISSUED FOR	DATE	BY
01	TOWNSHIP COMMENTS	09/23/2020	JAS

Date	09/02/2020
SME Project No.	084617.00
Project Manager:	J. SCHWARTZENBERGER
Designer:	H. CERON
CADD:	H. CERON
Checked By:	B. HART
Reviewed By:	J. SCHWARTZENBERGER
Sheet No.	C-800

ISSUED FOR SITE PLAN APPROVAL

FILE LOCATION: I:\sme-hq\p\wip\084617\00\CADD\DWG\SS\SP\wip\084617_00-Utility.dwg
Sep 23, 2020 - 8:55am - ceron

UPS Howell Employee Parking Lot Improvements
 SME Project No. 084617.00
 $T_c = 15$ Min.
 $n = 0.013$
 $I = a/(Tc+b)$
 $a = 175$
 $b = 25$

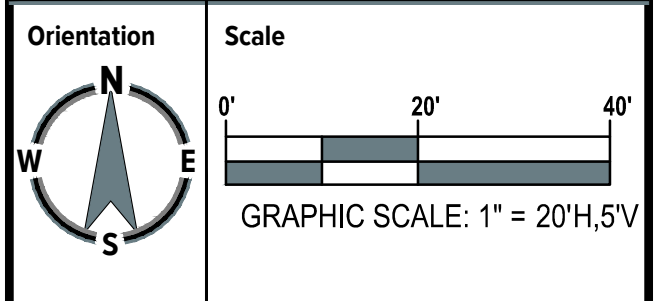
To Structure	From Structure	Area Drainage	Drainage Area (Acres)	Runoff Coefficient (C)	Equivalent Area (C*A) (Acres)	Total Area (sum(C*A))	Time of Concentration (Minutes)	Rainfall Intensity (in/hr)	Actual Discharge (CFS)	Pipe Size (in)	Pipe Size (ft)	Pipe Area (ft ²)	P Wetted Perimeter	Pipe Design Slope (%)	HG Slope (%)	Pipe Length (ft)	Flow Full Velocity (ft/sec)	Time of Flow (min)	Full Pipe Capacity (CFS)	Upper RIM Elevation (ft)	Lower RIM Elevation (ft)	Invert Elev. Upper End (ft)	Invert Elev. Lower End (ft)	HG Elev Top	Cover (ft)	Diff Rim to HG (ft)
4	3	1	0.31	0.94	0.291	0.291	15.00	4.375	1.275	12	1.00	0.79	3.14	0.48	0.13	66	3.14	0.350	2.47	1015.60	1015.10	1010.31	1,010.00	1011.22	4.29	4.38
3	2	1	0.30	0.94	0.282	0.573	15.35	4.337	2.487	15	1.25	1.23	3.93	0.36	0.15	23	3.16	0.121	3.88	1015.10	1015.10	1009.90	1,009.82	1011.13	3.95	3.97
5	2	4	0.40	0.94	0.376	0.376	15.00	4.375	1.645	12	1.00	0.79	3.14	0.48	0.21	118	3.14	0.626	2.47	1016.55	1015.10	1012.00	1,011.44	1011.69	3.55	4.86
2	1	3	0.36	0.94	0.338	1.288	16.10	4.258	5.484	21	1.75	2.41	5.50	0.20	0.12	32	2.95	0.181	7.09	1015.10	1015.75	1009.72	1,009.66	1011.10	3.63	4.00
1	UDS	-	0.00	0.94	0.000	1.288	16.28	4.240	5.460	21	1.75	2.41	5.50	0.20	0.12	8	2.95	0.045	7.09	1016.70	1009.30	1009.50	1,009.30	1010.71	5.45	5.99
UDS	ES1	-	0.00	0.94	0.000	1.288	16.32	4.235	5.454	6	0.50	0.20	1.57	1.00	45.34	41	2.86	0.239	0.561	1016.70	1,009.09	1009.50	1,009.09	1028.08	6.70	0.00

BENCHMARK DATA

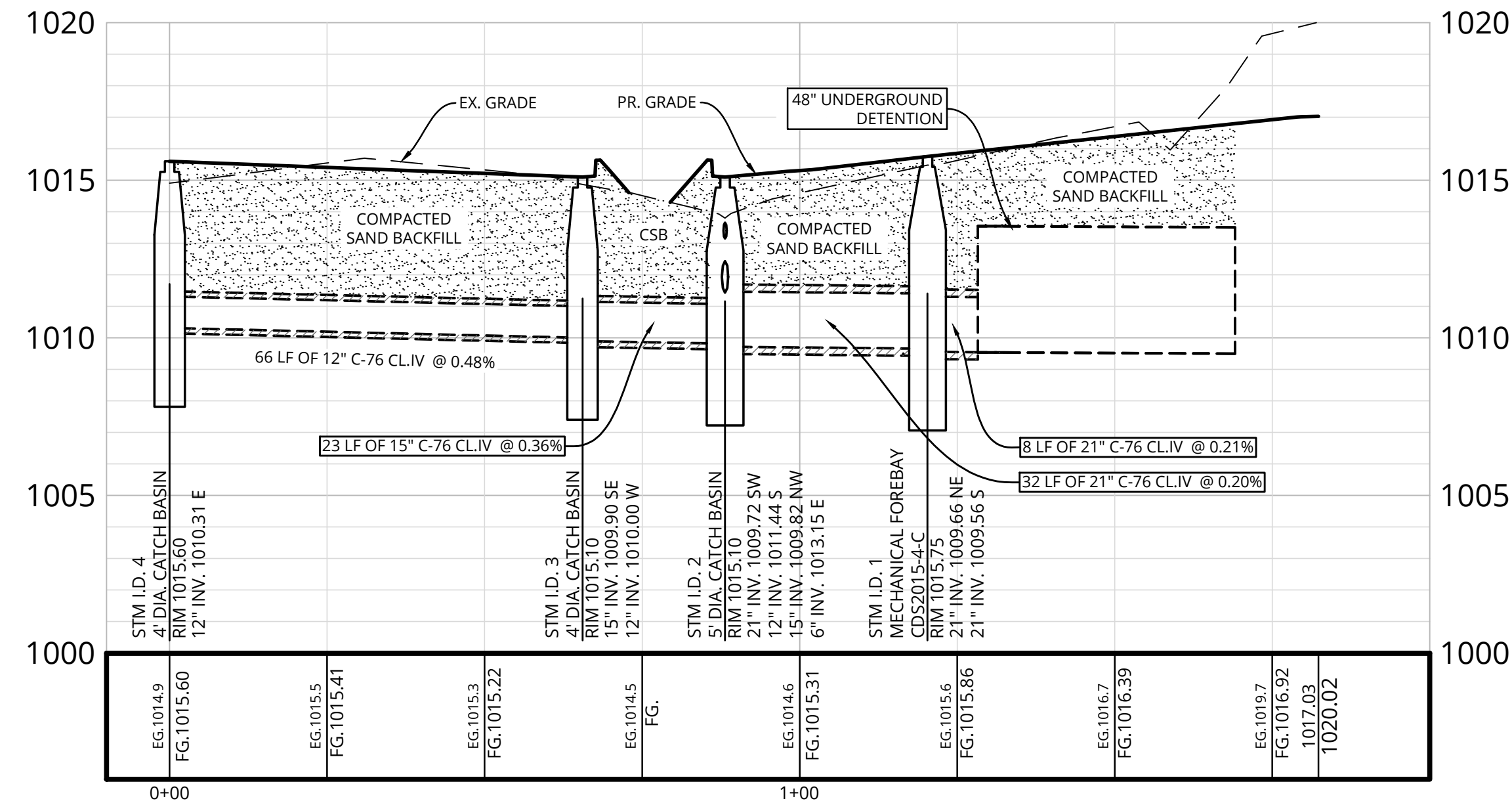
BM A
 ARROW ON HYDRANT
 ELEVATION = 1023.25
 (NAVD88 DATUM)
 BM B
 PK NAIL IN POLE
 ELEVATION = 1017.95
 (NAVD88 DATUM)
 BM C
 ARROW ON HYDRANT
 ELEVATION = 1026.87
 (NAVD88 DATUM)
 BM D
 PK NAIL IN POLE
 ELEVATION = 1024.74
 (NAVD88 DATUM)

NOTES

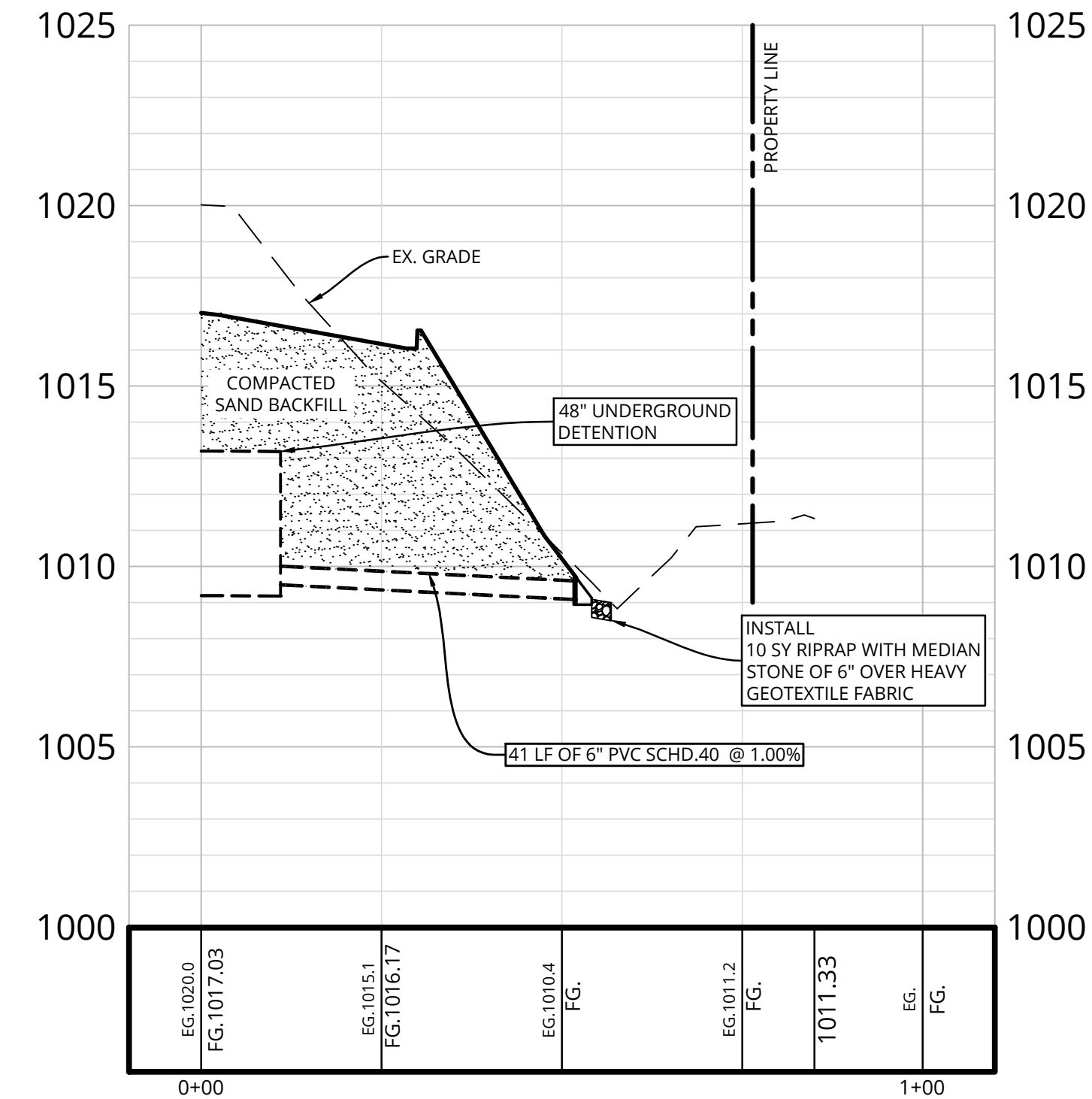
- ALL CATCH BASINS AND INLETS WILL HAVE 6" UNDERDRAIN, TAP AT ONE LOCATION.
- EACH UTILITY CROSSING SHALL MAINTAIN AN 18" VERTICAL CLEARANCE.
- ALL UTILITIES WITHIN, OR AT MOST 3 FEET FROM, PAVEMENT LIMITS SHALL BE BACKFILLED WITH COMPACTED SAND.
- *ALL FRANCHISE UTILITY LOCATIONS SHALL BE VERIFIED WITH THE FRANCHISE UTILITY OWNERS.
- ALL UTILITIES MUST BE CONSTRUCTED PER GENOA TOWNSHIP STANDARDS AND SPECIFICATIONS.
- LOCATIONS OF HYDRANT AND FIRE DEPARTMENT CONNECTION TO BE APPROVED BY FIRE CHIEF.
- ALL CATCH BASINS TO HAVE 2' SLUMP MINIMUM.
- ALL CATCH BASINS TO HAVE E.I.W. 7065-1-M1.
- ALL STORM SEWER MANHOLES TO HAVE E.I.W. 1040 TYPE C FRAME AND COVER.



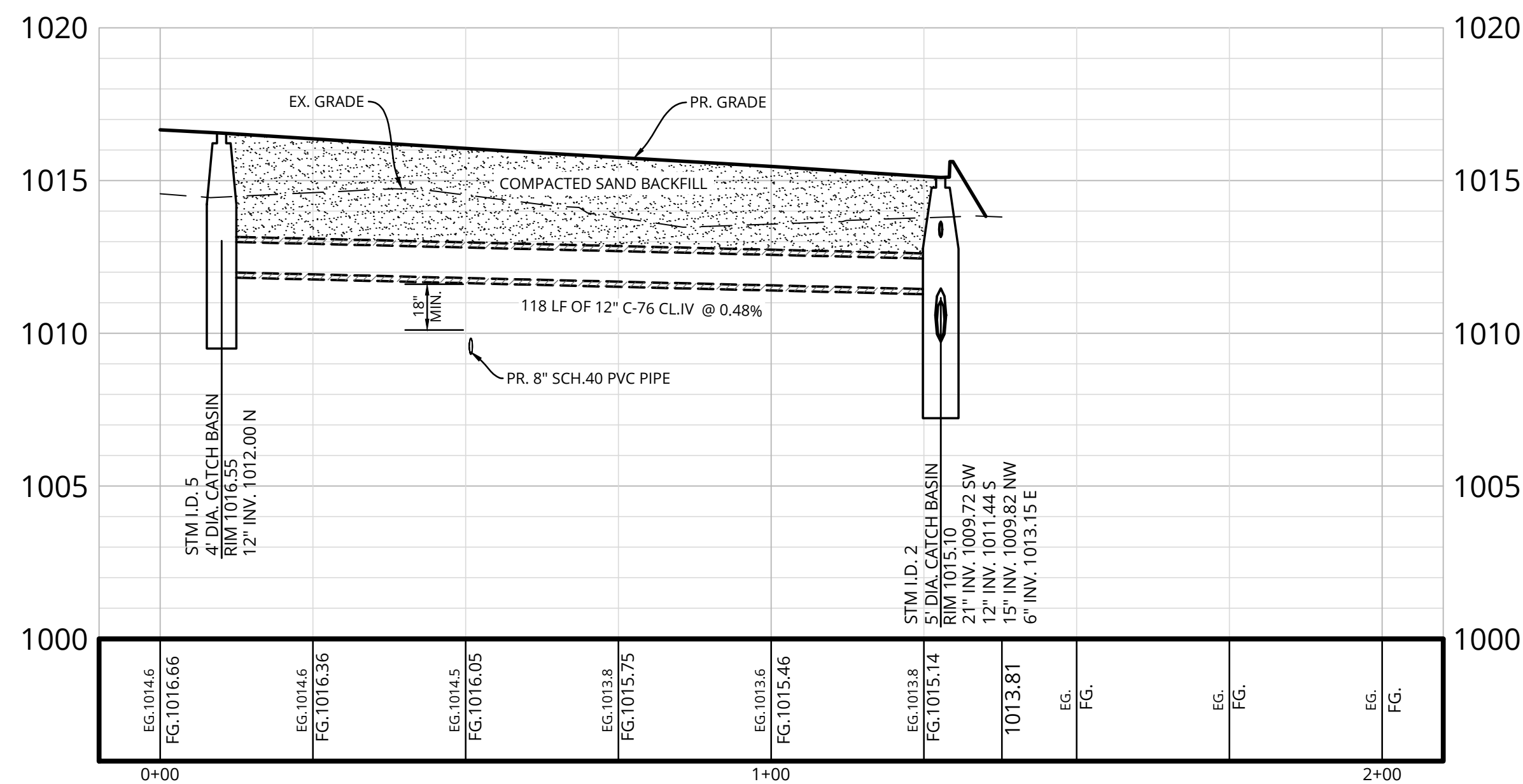
STRUCTURE 4 TO UNDERGROUND DETENTION PROFILE



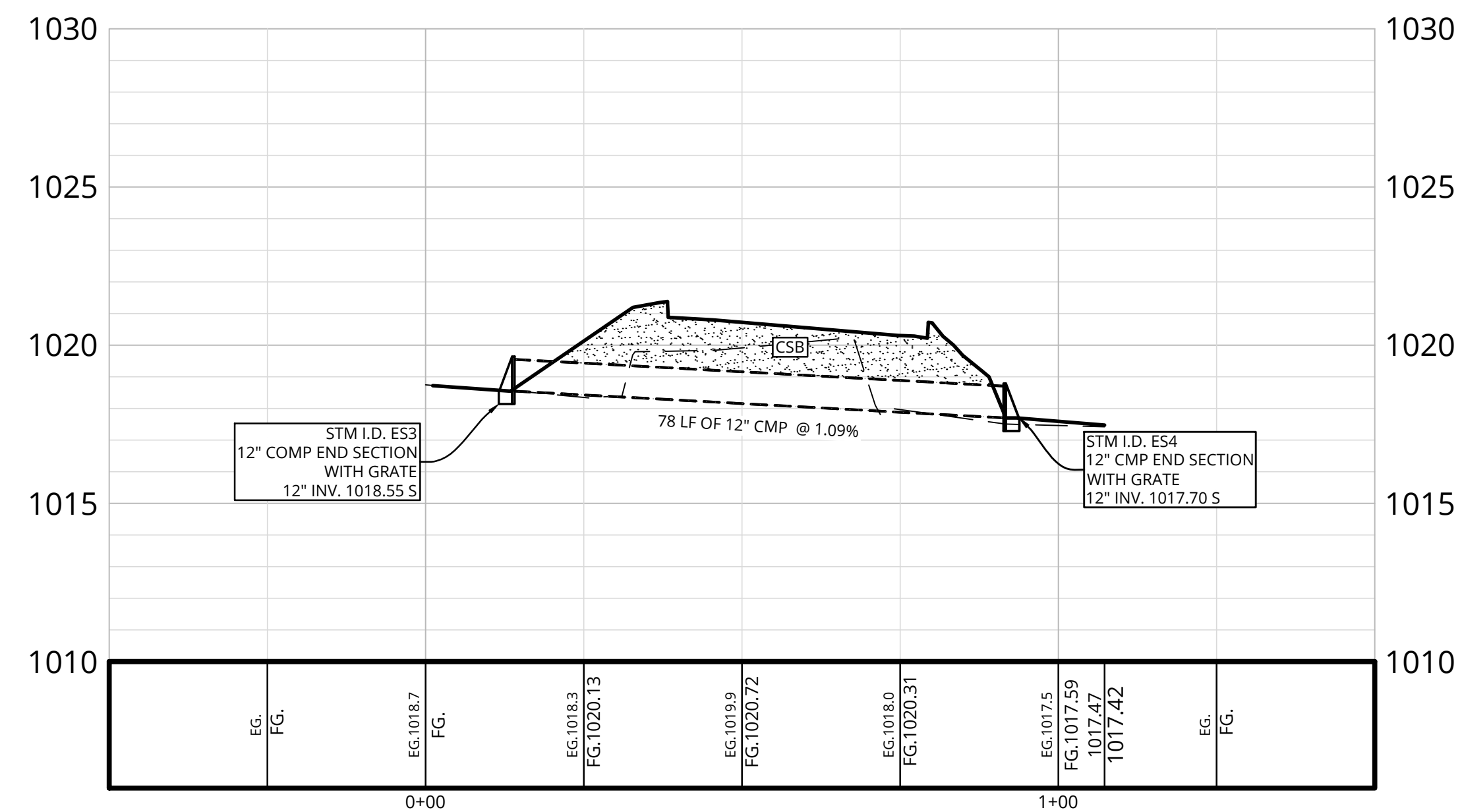
UNDERGROUND DETENTION TO OUTLET PROFILE



STRUCTURE 5 TO STRUCTURE 2 PROFILE



Pr Culvert PROFILE

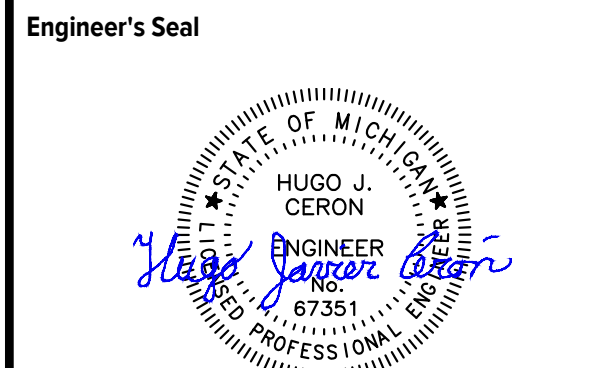


ISSUED FOR SITE PLAN APPROVAL

Project
 UPS HOWELL
 EMPLOYEE PARKING LOT
 IMPROVEMENTS

Project Location
 1183 FENDT DRIVE
 HOWELL, MI 48843

Sheet Name
 STORM SEWER PROFILES



Revisions

REV	ISSUED FOR	DATE	BY
01	TOWNSHIP COMMENTS	09/23/2020	JAS

Date
 09/02/2020

SME Project No.
 084617.00

Project Manager:
 J. SCHWARTZENBERGER

Designer:
 H. CERON

CADD:
 H. CERON

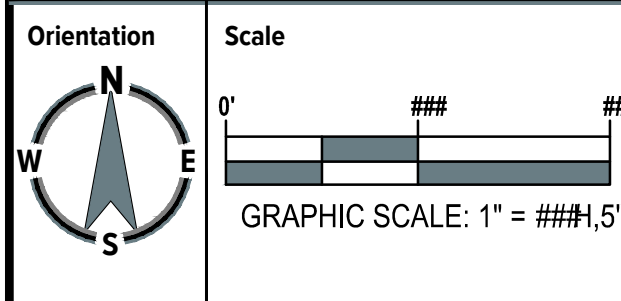
Checked By:
 B. HART

Reviewed By:
 J. SCHWARTZENBERGER

Sheet No.
 C-801

DRAWING NOTE: SCALE DERIVED IS MEANT FOR 24" X 36" AND WILL SCALE INCORRECTLY IF PRINTED ON ANY OTHER SIZE MEDIA.
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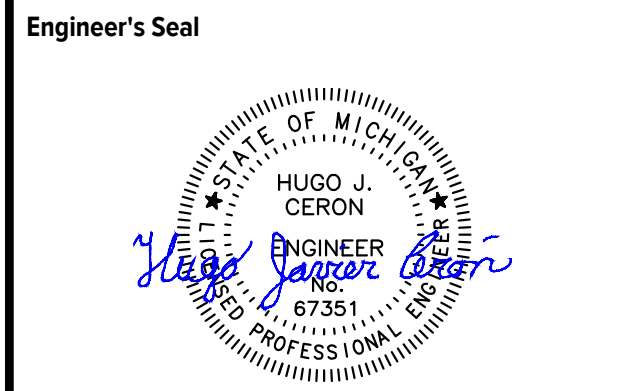
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Project
UPS HOWELL
EMPLOYEE PARKING LOT
IMPROVEMENTS

Project Location
1183 FENDT DRIVE
HOWELL, MI 48843

Sheet Name
MECHANICAL FOREBAY AND
DETENTION CALCULATIONS



Revisions

REV	ISSUED FOR	DATE	BY
01	TOWNSHIP COMMENTS	09/23/2020	JAS

Date
09/02/2020

SME Project No.
084617.00

Project Manager:
J. SCHWARTZENBERGER

Designer:
H. CERON

CADD:
H. CERON

Checked By:
B. HART

Reviewed By:
J. SCHWARTZENBERGER

Sheet No.
C-802

DRAWING NOTE: SCALE DIMENSIONS MEANT FOR 24" x 36" AND WILL SCALE INCORRECTLY IF PRINTED ON ANY OTHER SIZE MEDIA.
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 © 2020

Existing Site Conditions

	SFT	C	Compound C
Ex. Greenspace	64,620	0.3	0.551
Ex. Gravel	40,835	0.8	
Ex. Building	17,411	0.9	
Tributary Area (SFT)	122,866		
Tributary Area (A)	2.82	Acre	
Run-off Coefficient (C)	0.551		
Design Constant (K1)	1.555	K1 = A x C	
Allowable Outflow Rate (Q0)	0.564	cfs	Q0 = 0.2 cfs/acre x A
Intensity			I = 275/(t+25)

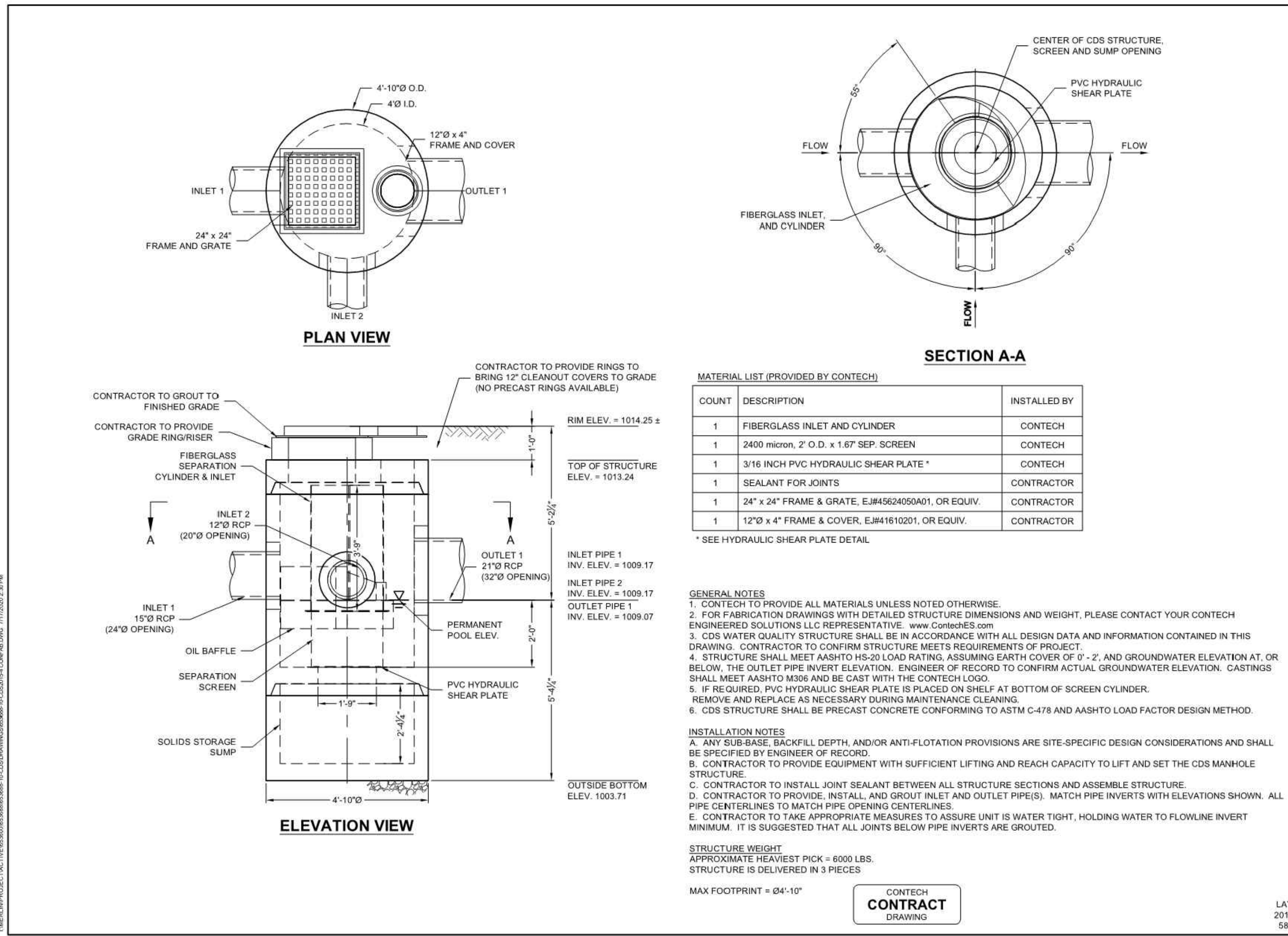
	1	2	3	4	5	6	7
Duration (m)	5	10	15	20	30	60	90
Duration (s)	300	600	900	1,200	1,800	3,600	5,400
Intensity	9.17	7.86	6.88	6.11	5.00	3.24	2.39
col 2x col 3	2,750	4,714	6,188	7,333	9,000	11,647	12,913
Col. 4 x K1	4,275	7,329	9,620	11,401	13,992	18,108	20,076
Outflow Volume (CFT)	169	338	508	677	1,015	2,031	3,046
Storage Volume (CFT)	4,106	6,991	9,112	10,724	12,977	16,077	17,330

Proposed Improvements

	SFT	C	Compound C
Ex. Greenspace	44,891	0.3	0.681
Proposed Pavement	60,564	0.9	
Ex. Building	17,411	0.9	
Tributary Area (SFT)	122,866		
Tributary Area (A)	2.82	Acre	
Run-off Coefficient (C)	0.681		
Design Constant (K1)	1.920	K1 = A x C	
Design Outflow Rate (Q0)	0.561	cfs	Q0 = 0.2 cfs/acre x A
Intensity			I = 275/(t+25)

	1	2	3	4	5	6	7
Duration (m)	5	10	15	20	30	60	90
Duration (s)	300	600	900	1,200	1,800	3,600	5,400
Intensity	9.17	7.86	6.88	6.11	5.00	3.24	2.39
col 2x col 3	2,750	4,714	6,188	7,333	9,000	11,647	12,913
Col. 4 x K1	5,281	9,052	11,881	14,082	17,282	22,365	24,796
Outflow Volume (CFT)	168	337	505	673	1,010	2,020	3,029
Storage Volume (CFT)	5,112	8,716	11,376	13,408	16,272	20,345	21,766

	Volume Required to Detain (CFT)	Volume Provided (CFT)
	5,329	5,329



Project: UPS Howell Employee Parking Lot
Location: Howell, MI
Prepared For: SME

Purpose: To calculate the first flush runoff flow rate (WQV) over a given site area. In this situation the WQV to be analyzed is the runoff produced by the first 0.5" of rainfall.

Reference: United States Department of Agriculture Natural Resources Conservation Service TR-55 Manual

Structure Name	A (acres)	A (miles ²)	Runoff Coefficient	Percent Imp. (%)	t _c (min)	t _c (hr)
WQU	1.32	0.00206	0.94	98.67	17.0	0.283
		0.00000		-33.33		0.000
		0.00000		-50.00		0.000

* Assumes runoff coefficient of 0.3 for pervious areas and 0.9 for impervious areas.

Procedure: The Water Quality Flow (WQF) is calculated using the Water Quality Volume (WQV). This WQV, converted to watershed inches, is substituted for the runoff depth (Q) in the Natural Resources Conservation Service (formerly Soil Conservation Service), TR-55 Gr

1. Compute WQV in watershed inches using the following equation:

$$WQV = P \cdot R$$

where: WQV = water quality volume (watershed inches)
 P = design precipitation (inches)
 R = volumetric runoff coefficient = 0.05 + 0.009(I)
 I = percent impervious cover

Structure Name	Percent Imp. (%)	R	P	WQV (CF)
WQU	98.67	0.938	0.5	2,247.26
	-33.33	-0.250		
	-50.00	-0.400		

2. Compute the NRCS Runoff Curve Number (CN) using the following equation, or graphically using Figure 2-1 from TR-55 (USDA, 1986):

$$CN = 1000 / [10 + 5P + 10Q - 10(Q^2 + 1.25PQ)^{0.5}]$$

where: CN = Runoff Curve Number
 P = design precipitation (inches)
 Q = runoff depth (watershed inches)

Structure Name	Q (in)	CN
WQU	0.469	99.73
	0.000	100.00
	0.000	100.00

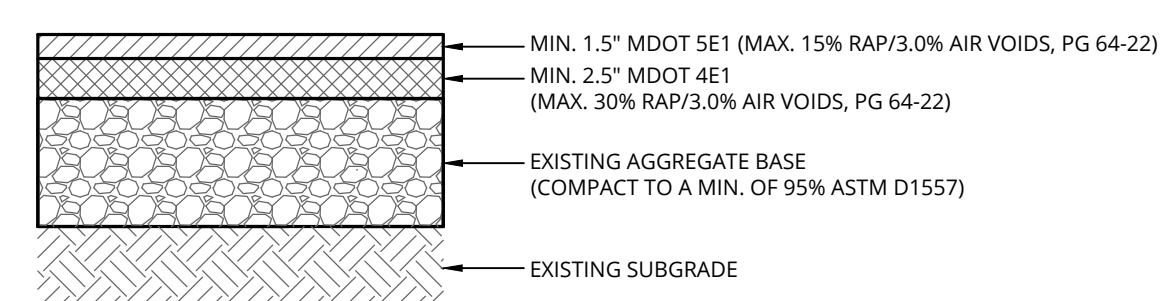
CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION
 BASED ON THE RATIONAL RAINFALL METHOD
 BASED ON AN AVERAGE PARTICLE SIZE OF 110 MICRONS
 UPS EMPLOYEE PARKING LOT
 HOWELL, MI
 for SYSTEM: WQU

Rainfall Intensity ¹ (in/hr)	Percent Rainfall Volume ¹	Cumulative Rainfall Volume	Total Flowrate (cfs)	Removal Efficiency (%)	Incremental Removal (%)
0.02	13.13%	13.1%	0.02	100.00	13.13
0.04	11.38%	24.5%	0.05	99.70	11.33
0.06	10.08%	34.6%	0.07	98.85	9.96
0.08	7.49%	42.1%	0.10	98.01	7.34
0.10	7.01%	49.1%	0.12	97.17	6.81
0.12	5.37%	54.4%	0.15	96.33	5.17
0.14	4.37%	59.2%	0.17	95.48	4.52
0.16	4.13%	63.3%	0.20	94.64	3.91
0.18	3.53%	66.8%	0.22	93.80	3.31
0.20	2.89%	69.8%	0.25	92.96	2.78
0.25	5.50%	75.3%	0.31	90.85	5.00
0.30	4.47%	79.8%	0.37	88.75	3.97
0.35	3.85%	83.6%	0.43	86.64	3.34
0.40	2.16%	85.8%	0.50	84.5	1.8
0.45	2.09%	87.9%	0.56	82.4	1.7
0.50	1.31%	89.2%	0.62	80.3	1.1
0.75	5.07%	94.3%	0.93	58.4	-3.0
1.00	2.58%	96.9%	1.24	43.8	-1.1
1.50	2.50%	99.4%	1.86	29.2	0.7
2.00	0.51%	99.9%	2.48	21.9	0.1
2.54	0.15%	100.0%	3.15	17.2	0.0
					90.12

Removal Efficiency Adjustment² = 6.5%
 Predicted % Annual Rainfall Treated = 87.9%
 Predicted Net Annual Load Removal Efficiency = 83.6%

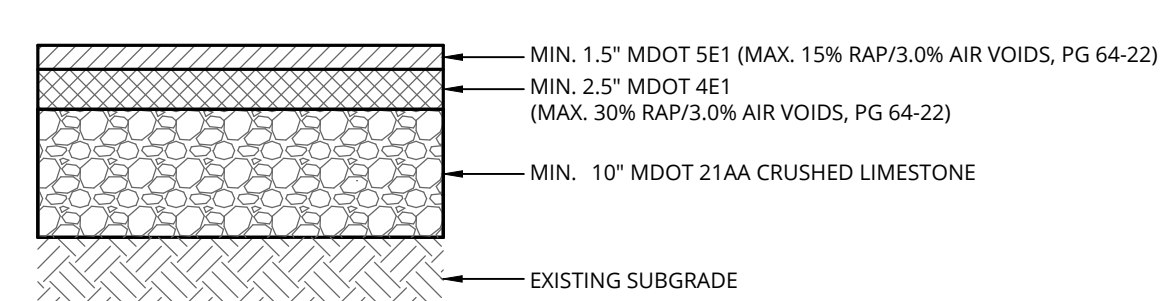
1 - Based on Rainfall Data from DETROIT METRO AP Station
 2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.

ISSUED FOR SITE PLAN APPROVAL



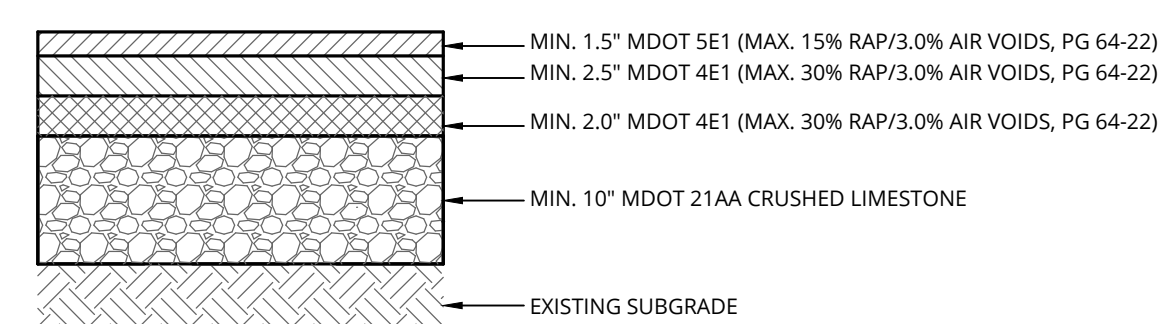
HMA OVER EXISTING AGGREGATE BASE - STANDARD DUTY - DETAIL
NOT TO SCALE

NOTE:
APPLY TACK COAT OF SS-IH (0.1 GALLONS/S.Y.) BETWEEN ALL HMA LAYERS



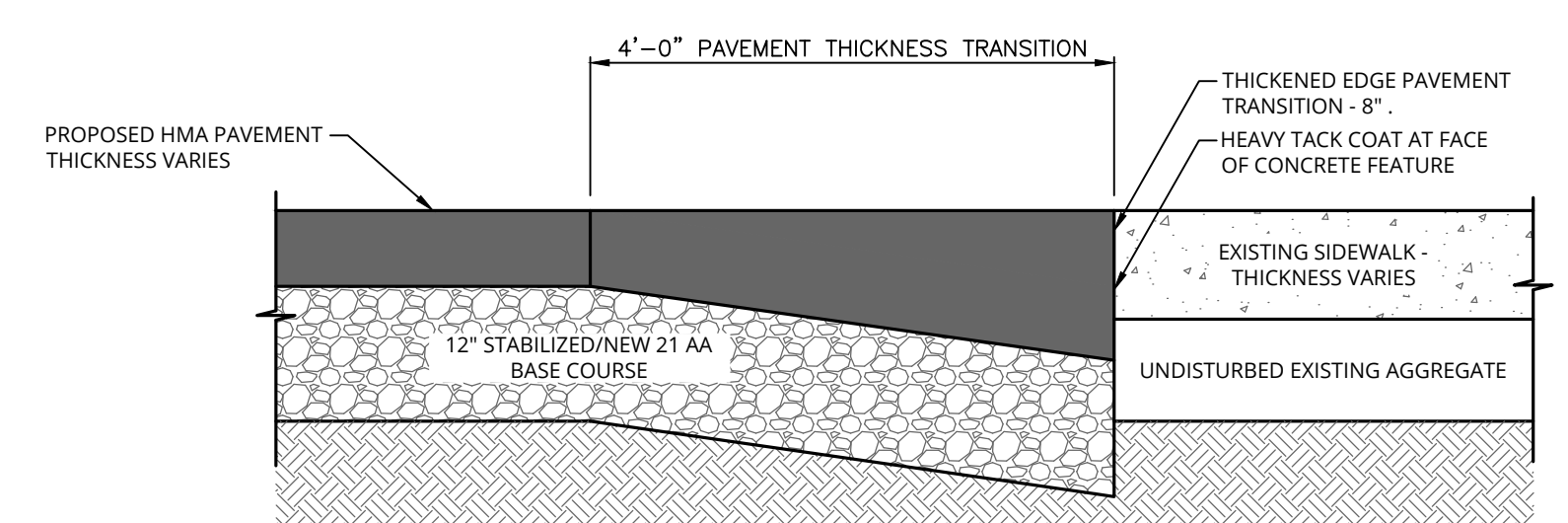
HMA OVER NEW AGGREGATE BASE - STANDARD DUTY - DETAIL
NOT TO SCALE

NOTE:
APPLY TACK COAT OF SS-IH (0.1 GALLONS/S.Y.) BETWEEN ALL HMA LAYERS

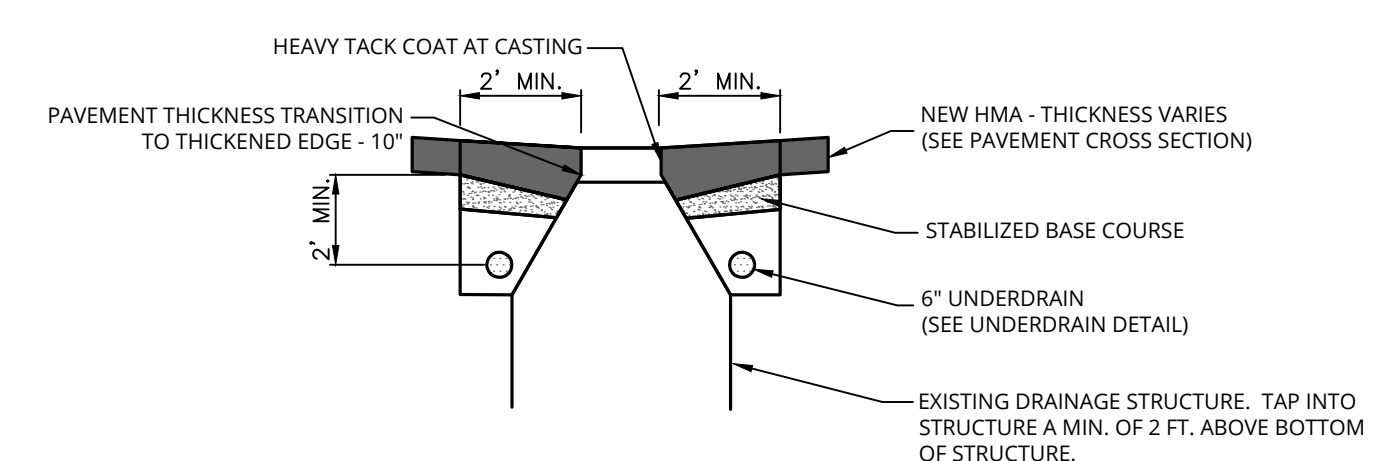


HMA OVER NEW AGGREGATE BASE - HEAVY DUTY - DETAIL
NOT TO SCALE

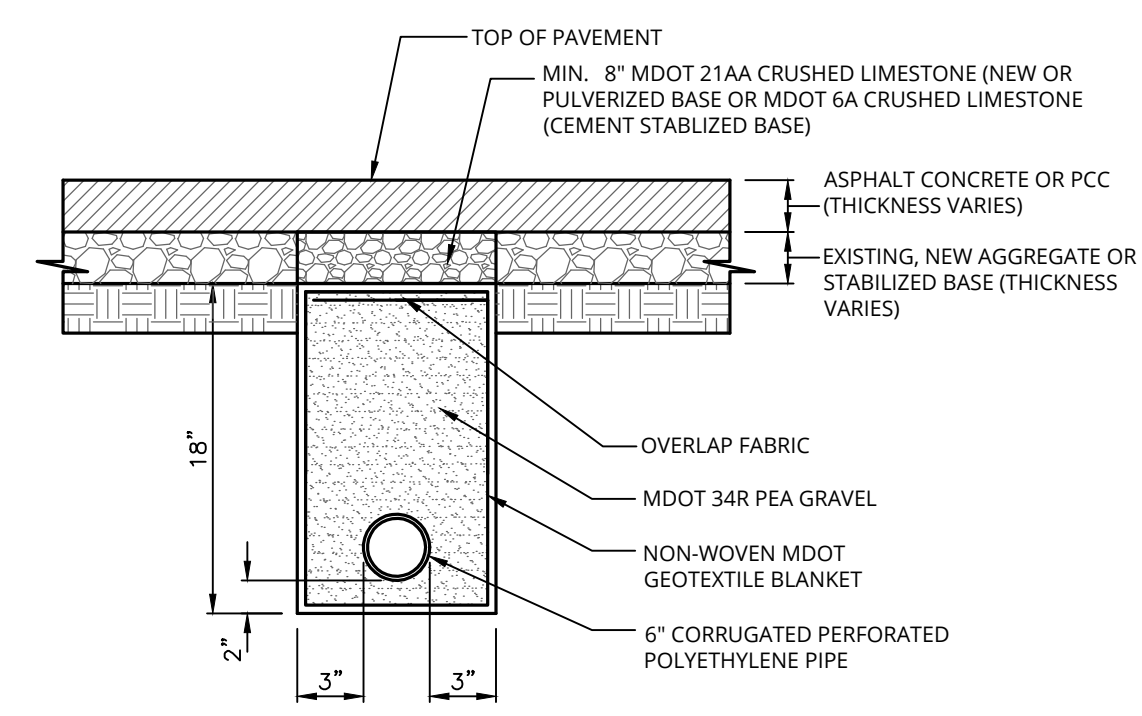
NOTE:
APPLY TACK COAT OF SS-IH (0.1 GALLONS/S.Y.) BETWEEN ALL HMA LAYERS



THICKENED EDGE DETAIL - DETAIL
NOT TO SCALE

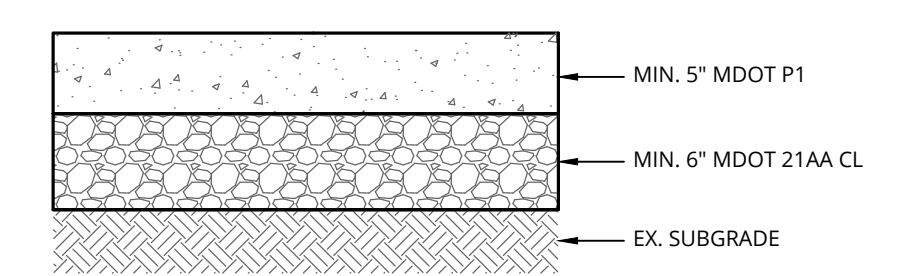


THICKENED EDGE HMA AT UTILITY STRUCTURE DETAIL
NOT TO SCALE

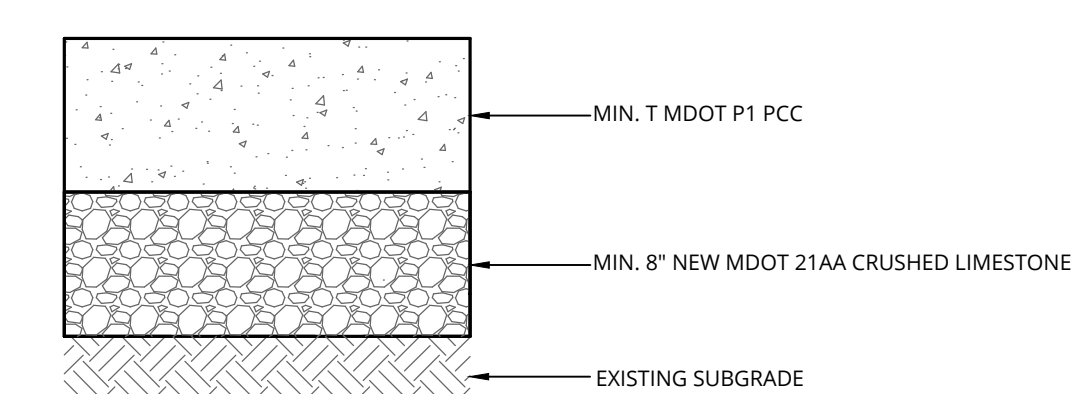


UNDERDRAIN / EDGEDRAIN - DETAIL
NOT TO SCALE

NOTES:
1. SLOPE UNDERDRAIN PIPES TOWARD EXISTING DRAINAGE STRUCTURES (MIN. 1.0%)
2. AT CATCH BASIN, INSTALL RING AROUND CATCH BASIN AND TAP STRUCTURE AT ONE LOCATION.
3. AT CURB INLETS, INSTALL HALF RING AROUND INLET AND TAP AT ONE LOCATION
4. IN CEMENT TREATED BASE AREAS, INSTALL UNDERDRAIN AFTER CEMENT TREATMENT.

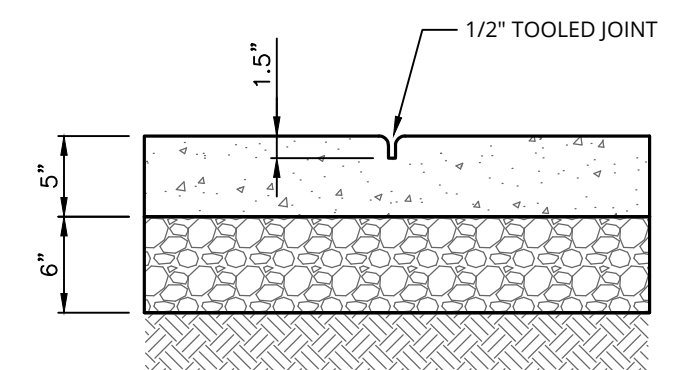


SIDEWALK - DETAIL
NOT TO SCALE



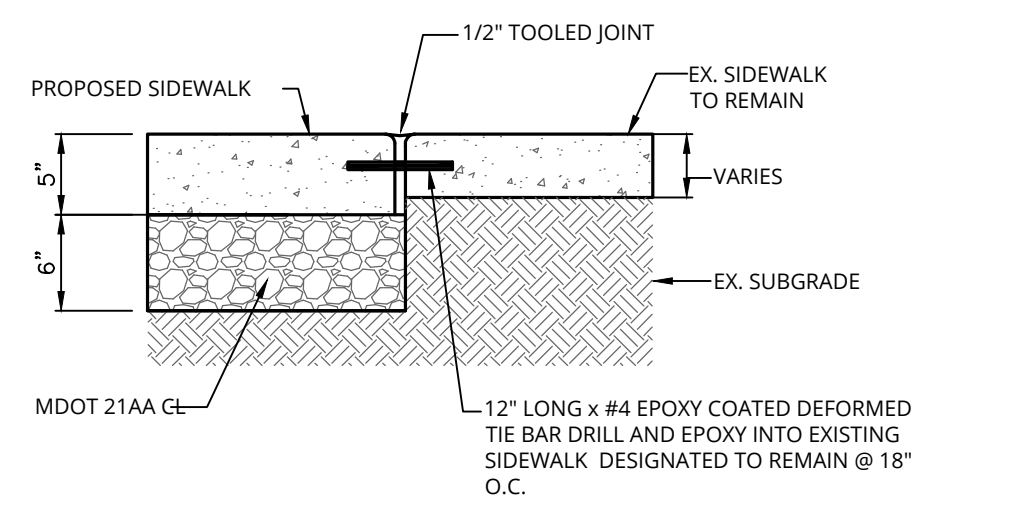
PCC OVER AGGREGATE BASE - DETAIL
NOT TO SCALE

NOTE: T=X"

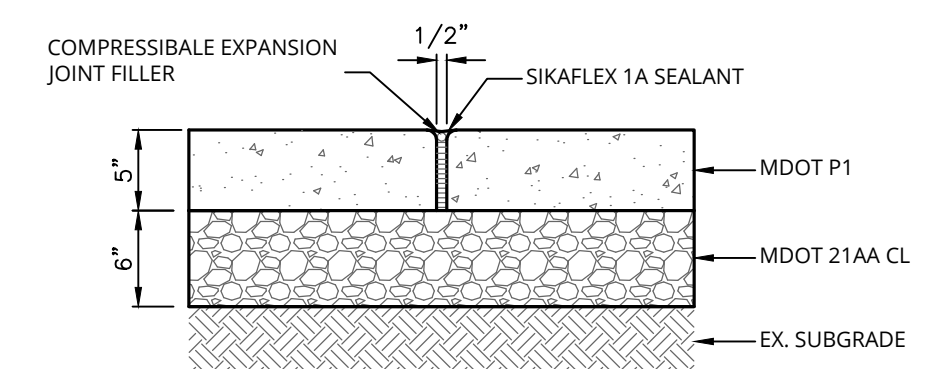


SIDEWALK CONTROL JOINT - DETAIL
NOT TO SCALE

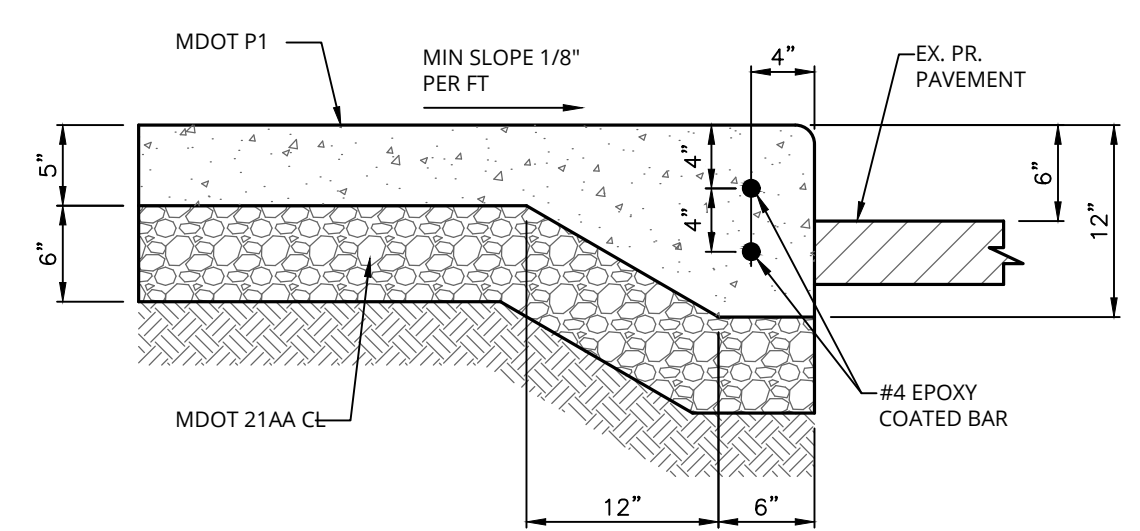
NOTE: T=X"



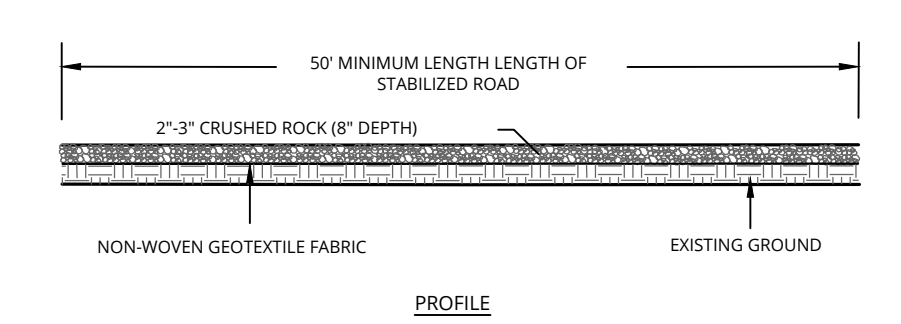
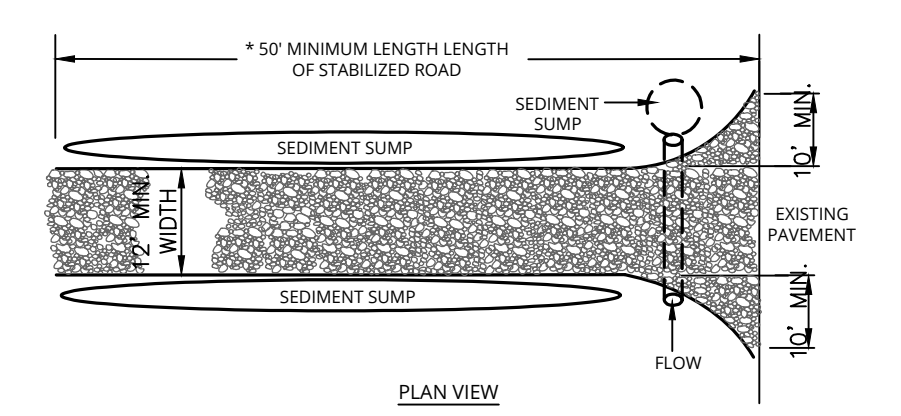
SIDEWALK CONSTRUCTION JOINT - DETAIL
NOT TO SCALE



SIDEWALK EXPANSION JOINT - DETAIL
NOT TO SCALE

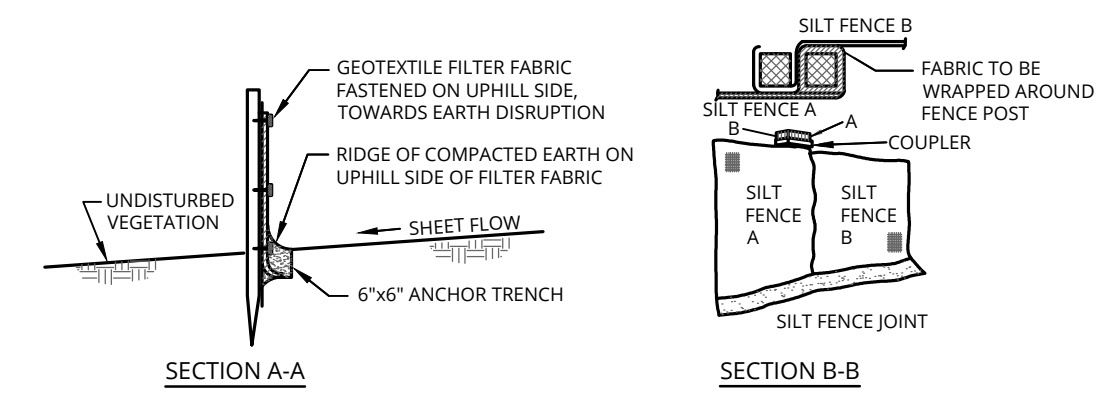
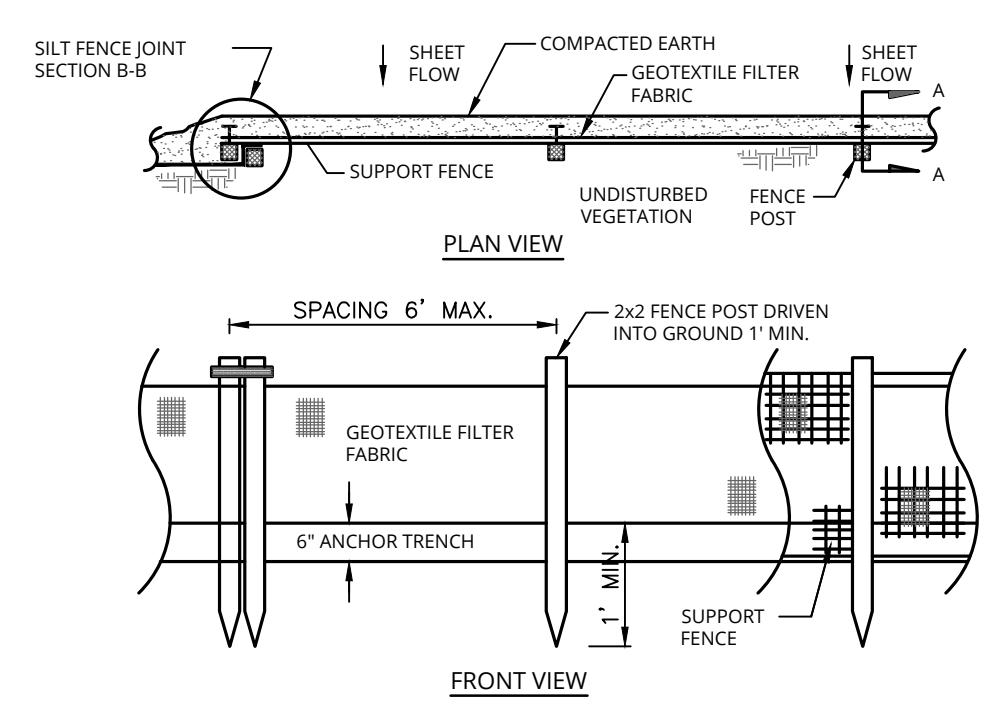


THICKENED EDGE SIDEWALK - DETAIL M110.05
NOT TO SCALE

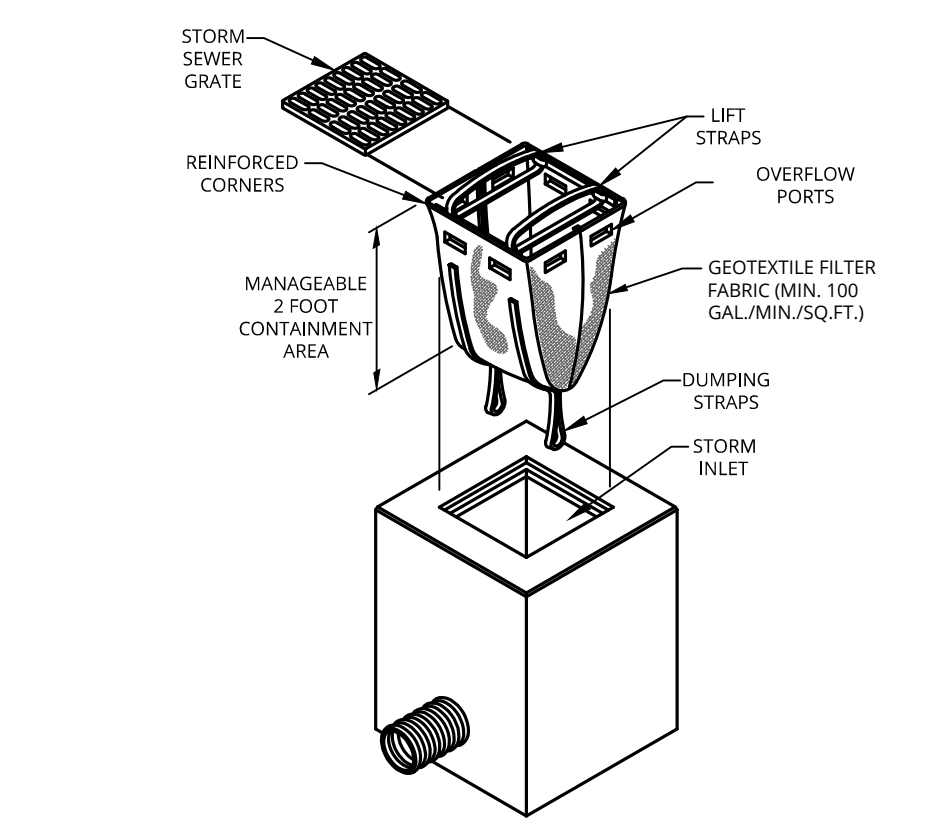


NOTES:
1. ESTABLISH STABILIZED CONSTRUCTION ENTRANCE PRIOR TO THE INITIATION OF SITE CONSTRUCTION ACTIVITIES.
2. CARE SHOULD BE TAKEN TO PREVENT MATERIAL MOVEMENT INTO ADJACENT WETLANDS/WATERBODIES.
3. CARE SHOULD BE TAKEN TO MAINTAIN EXISTING ROADSIDE DRAINAGE VIA CULVERT INSTALLATION, WITH SEDIMENT SUMP PLACED DOWNFLOW OF CULVERT.

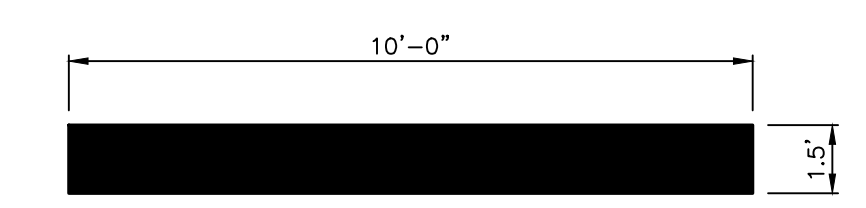
STABILIZED CONSTRUCTION ACCESS
NOT TO SCALE



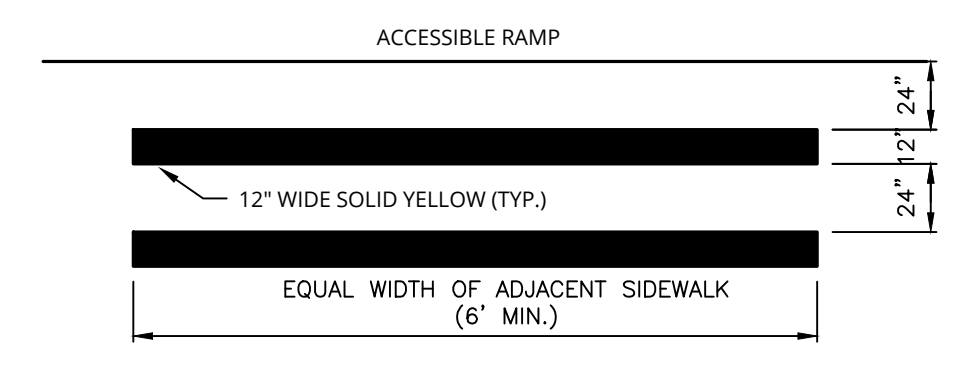
SILT FENCE - DETAIL
NOT TO SCALE



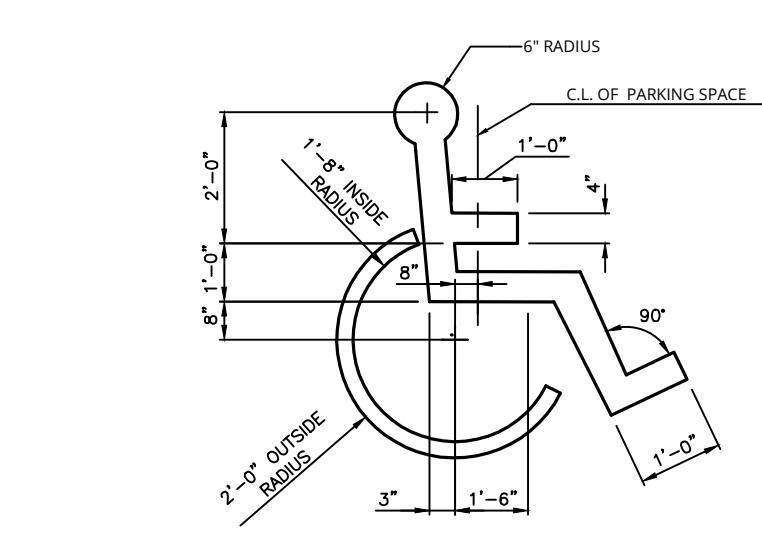
INLET FILTER - DETAIL
NOT TO SCALE



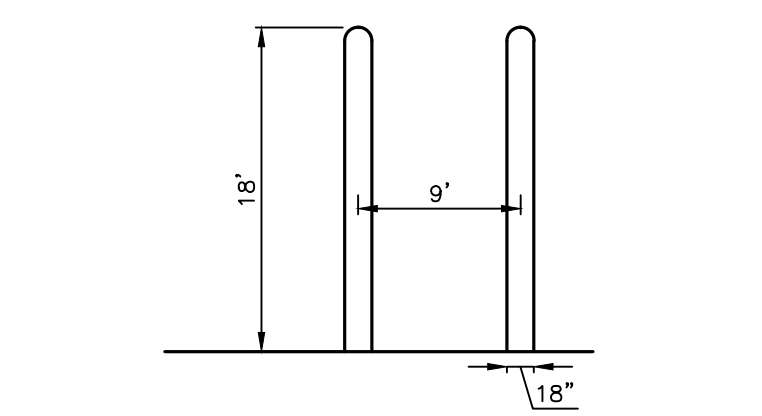
STOP BAR WITH STOP DETAIL
NOT TO SCALE



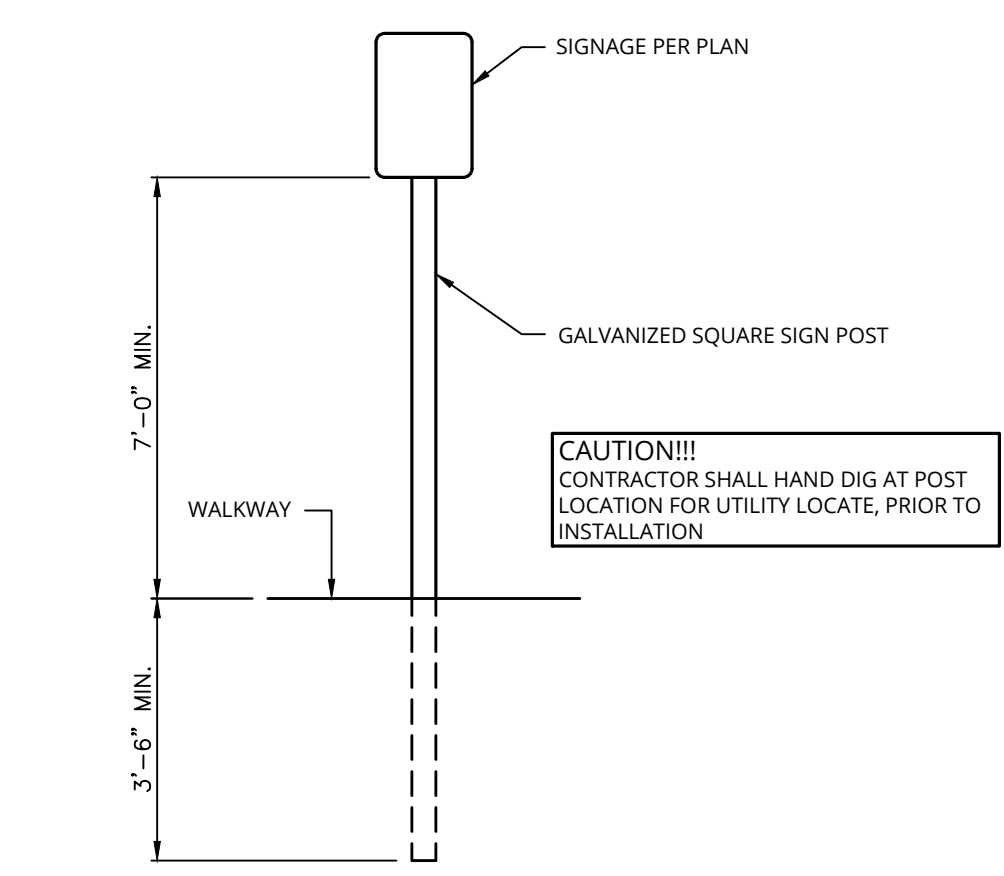
CROSSWALK MARKING DETAIL
NOT TO SCALE



BARRIER FREE DETAIL
NOT TO SCALE



90° ANGLE PARKING DETAIL
NOT TO SCALE



PARKING SIGN WITH POST IN GREENBELT
NOT TO SCALE

ISSUED FOR SITE PLAN APPROVAL

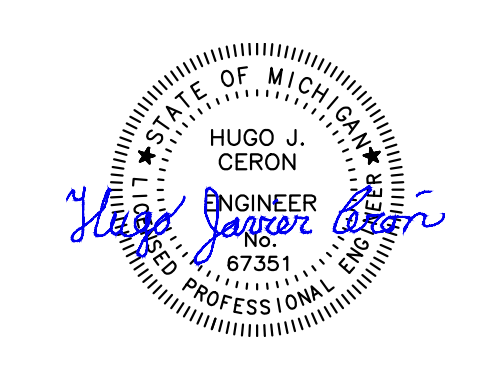
Orientation	Scale
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Project
**UPS HOWELL
EMPLOYEE PARKING LOT
IMPROVEMENTS**

Project Location
**1183 FENDT DRIVE
HOWELL, MI 48843**

Sheet Name
DETAILS

Engineer's Seal



Revisions

REV	ISSUED FOR	DATE	BY
01	TOWNSHIP COMMENTS	09/23/2020	JAS

Date
09/02/2020

SME Project No.
084617.00

Project Manager:
J. SCHWARTZENBERGER

Designer:
H. CERON

CADD:
H. CERON

Checked By:
B. HART

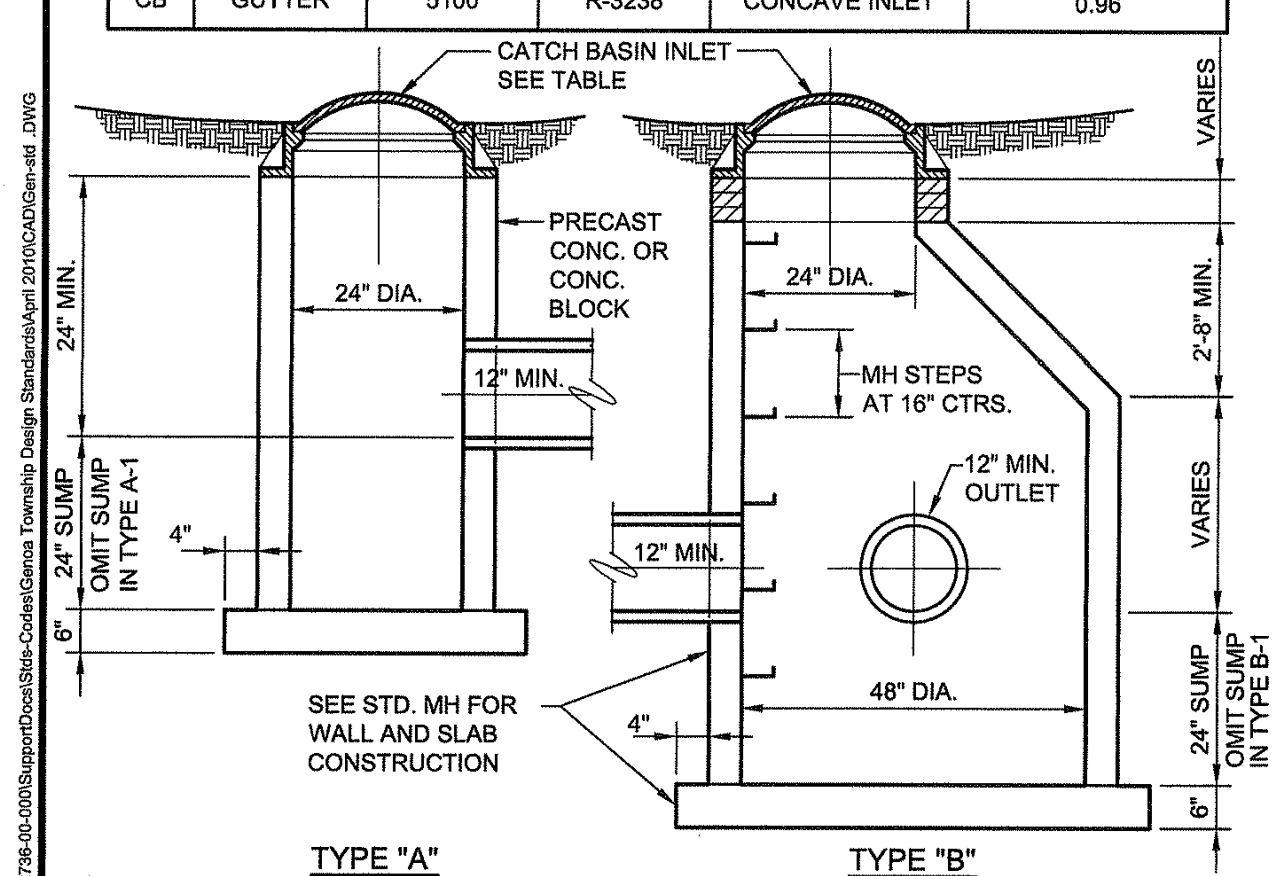
Reviewed By:
J. SCHWARTZENBERGER

Sheet No.
D-100

DRAWING NOTE: SCALE DERIVED IS MEANT FOR 24" X 36" AND WILL SCALE INCORRECTLY IF PRINTED ON ANY OTHER SIZE MEDIA
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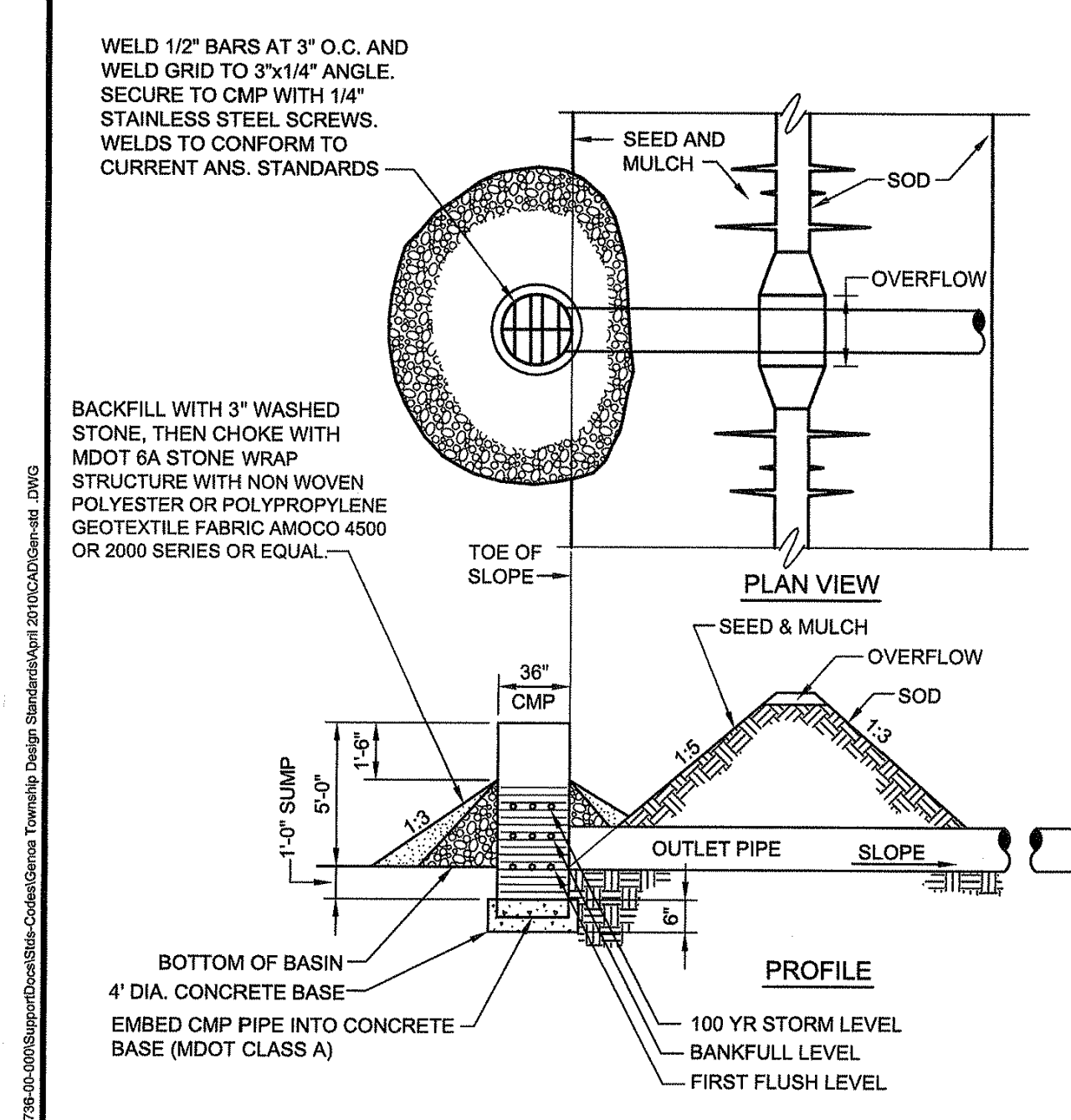
FILE LOCATION: I:\sme-inc\p\wip\084617\00\CAD\DWGS\SP\rev\084617_00_Details.dwg
PLOT DATE: Sep 22, 2020 - 3:33pm - ceron

MANHOLE FRAME & COVER & CATCH BASIN INLETS					
TYPE	LOCATION	MANUFACTURER OR EQUAL		TYPE OF COVER OR INLET	MAXIMUM DRAINAGE AREA (ACRES)
		EAST JORDAN	NEENAH		
MH	ALL	1040	R-1916 F1	SANITARY-SOLID SELF-SEALING STORM-VENTED	N/A
CB	TYPE A CURB	7000-T1-M1	R-3070	FLAT GRATE WITH VERT. OPEN BACK	0.71
CB	TYPE B CURB	7065-T1-M1	R-3034-B	FLAT GRATE WITH ROLL BACK	0.87
CB	PAVEMENT/ SHOULDER	1020-M1	R-2060-D	FLAT GRATE	0.66
CB	OPEN AREA	1020-01	R-2560-D	BEEHIVE GRATE 4" HIGH	0.63
CB	GUTTER	5100	R-3238	CONCAVE INLET	0.96



NOTE:
 TYPE A-1 EQUAL TO TYPE "A" EXCLUDING 24" SUMP BUT ADD ON BOTTOM CONC. FILLET.
 TYPE B-1 EQUAL TO TYPE "B" EXCLUDING 24" SUMP BUT ADD ON BOTTOM CONC. FILLET.

Genoa Charter Township
 CATCH BASIN
 Date: APRIL 2010
 R-1

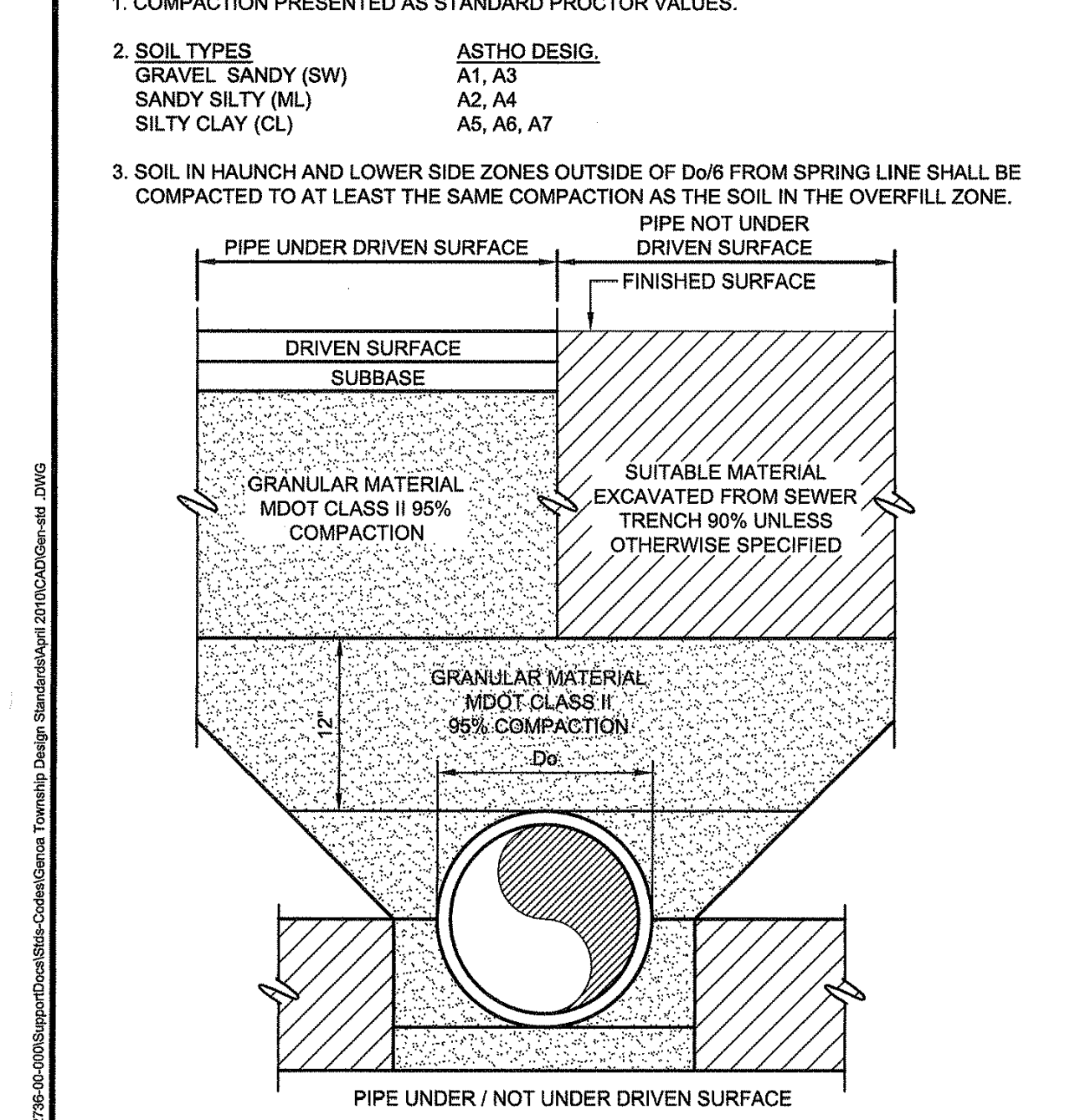


WELD 1/2" BARS AT 3" O.C. AND WELD GRID TO 3"x1/4" ANGLE. SECURE TO CMP WITH 1/4" STAINLESS STEEL SCREWS. WELDS TO CONFORM TO CURRENT ANS. STANDARDS.

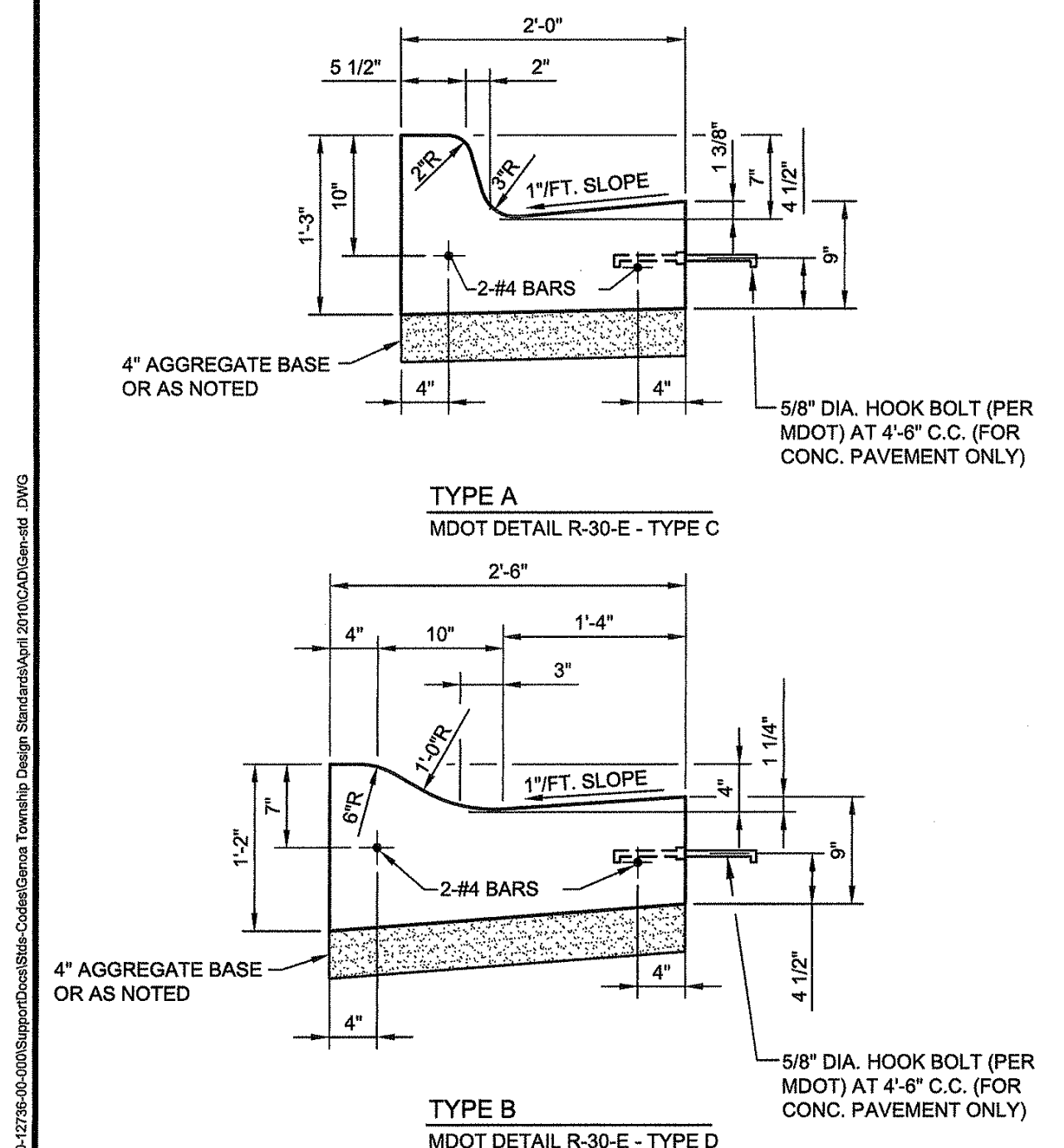
BACKFILL WITH 3" WASHED STONE, THEN CHOKE WITH MDOT 6A STONE WRAP STRUCTURE WITH NON WOVEN POLYESTER OR POLYPROPYLENE GEOTEXTILE FABRIC AMOCO 4500 OR 2000 SERIES OR EQUAL.

Genoa Charter Township
 OUTLET CONTROL STRUCTURE
 Date: APRIL 2010
 R-2

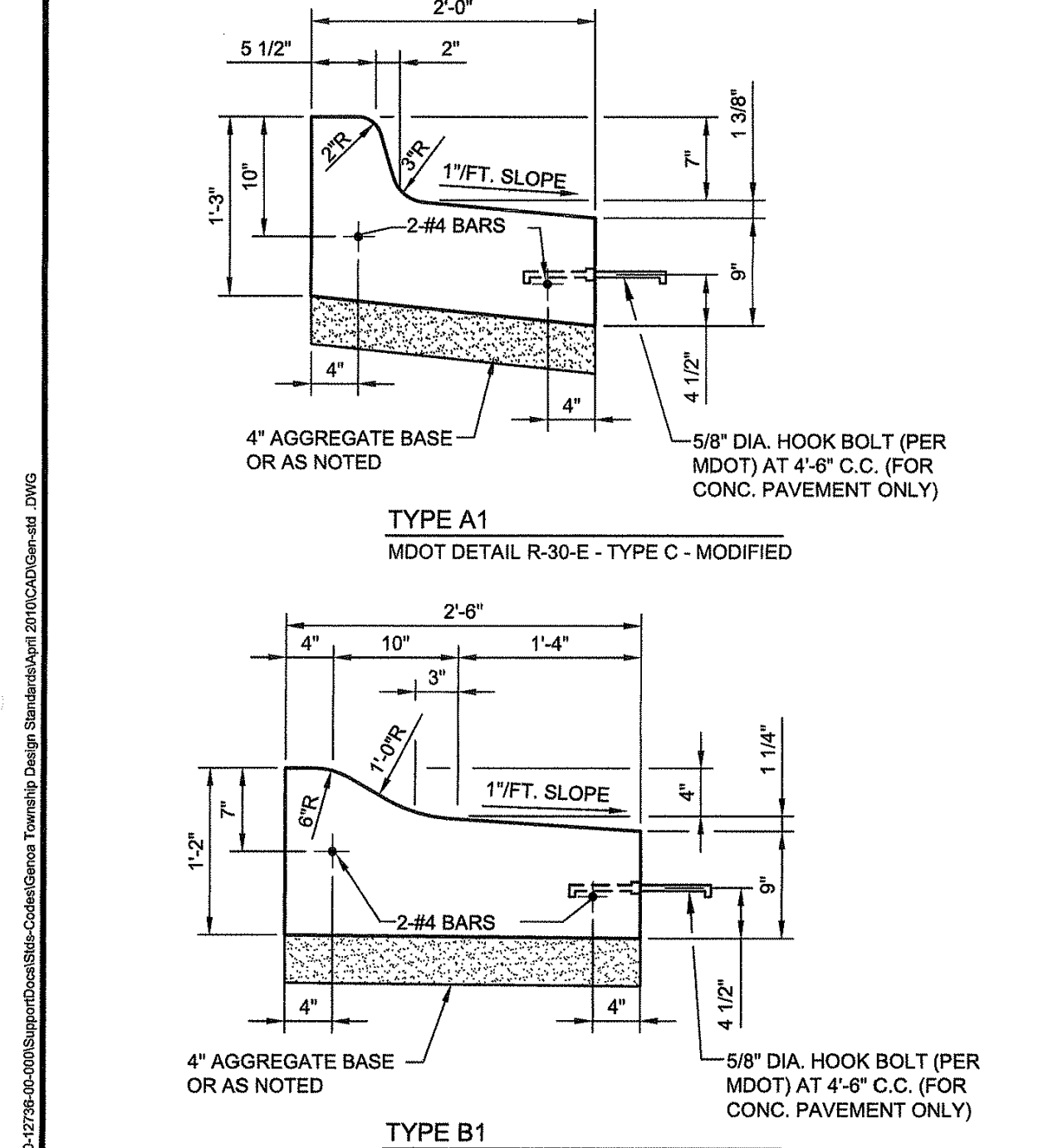
NOTES:
 1. COMPACTION PRESENTED AS STANDARD PROCTOR VALUES.
 2. SOIL TYPES ASTHO DESIG.
 GRAVEL SANDY (SW) A1, A3
 SANDY SILTY (ML) A2, A4
 SILTY CLAY (CL) A5, A6, A7
 3. SOIL IN HAUNCH AND LOWER SIDE ZONES OUTSIDE OF D_{0.6} FROM SPRING LINE SHALL BE COMPACTED TO AT LEAST THE SAME COMPACTION AS THE SOIL IN THE OVERFILL ZONE.



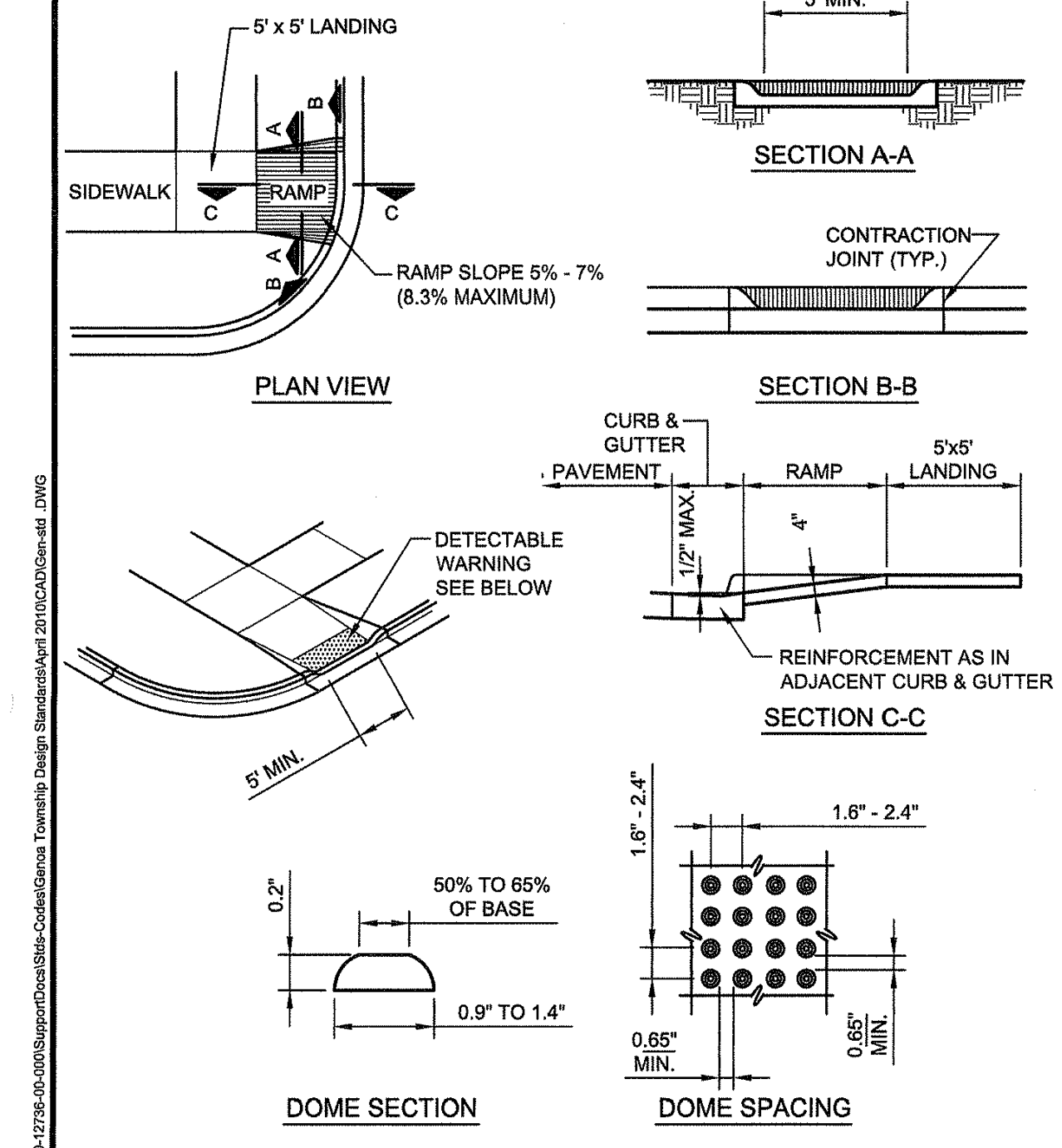
Genoa Charter Township
 TRENCH EXCAVATION & BACKFILL
 Date: APRIL 2010
 R-3



Genoa Charter Township
 CONCRETE CURB & GUTTER
 Date: APRIL 2010
 G-1



Genoa Charter Township
 CONCRETE CURB SPILLOUT
 Date: APRIL 2010
 G-2



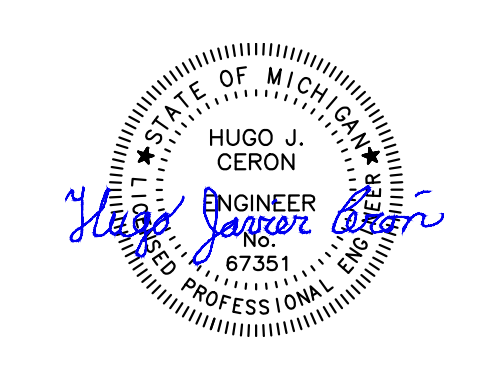
Genoa Charter Township
 SIDEWALK RAMP
 Date: APRIL 2010
 G-3

Orientation Scale

Project
**UPS HOWELL
 EMPLOYEE PARKING LOT
 IMPROVEMENTS**

Project Location
**1183 FENDT DRIVE
 HOWELL, MI 48843**

Sheet Name
**GENOA TOWNSHIP
 STANDARD DETAILS**

Engineer's Seal


Revisions

REV	ISSUED FOR	DATE	BY
01	TOWNSHIP COMMENTS	09/23/2020	JAS

Date: **09/02/2020**
 SME Project No.: **084617.00**
 Project Manager: **J. SCHWARTZENBERGER**
 Designer: **H. CERON**
 CADD: **H. CERON**
 Checked By: **B. HART**
 Reviewed By: **J. SCHWARTZENBERGER**

Sheet No. **D-101**

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ISSUED FOR SITE PLAN APPROVAL



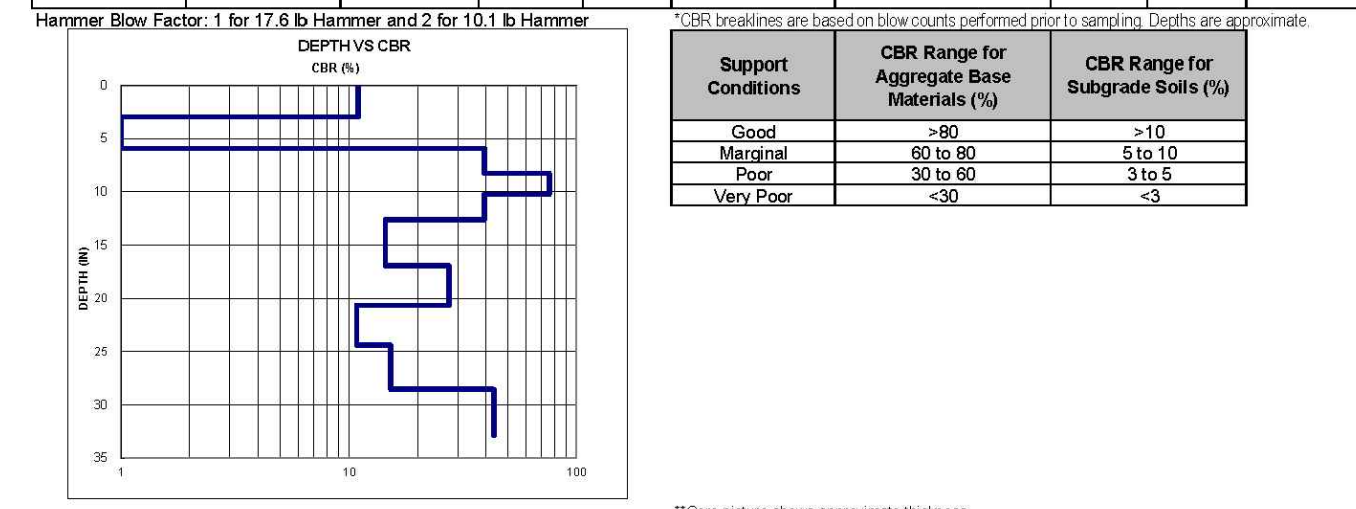
PAVEMENT CORE LOG AND USACE DCP DATA

PROJECT NAME: UPS Howell Parking Addition
PROJECT NO.: 083780
LOCATION: 1183 Fendt Dr., Howell MI
CLIENT: UPS
A/E:
DATE: 7/20/20
BY: BJM/JSF

Table with 4 columns: Layer, From, To, Description, Comment. Contains data for layers 0 to 84 inches.

Depth to Groundwater From Ground Surface Upon Completion: Not Encountered

DCP TEST RESULTS table with columns: No. of Blows, Pen. (mm), Blow Set (mm), Pen./Blow Factor, Depth from Surface (inches), CBR (%), Comment, Soil Type, Average CBR (%).



Hammer Blow Factor: 1 for 17.6 lb Hammer and 2 for 10.1 lb Hammer. CBR breaklines are based on blow counts performed prior to sampling. Depths are approximate.



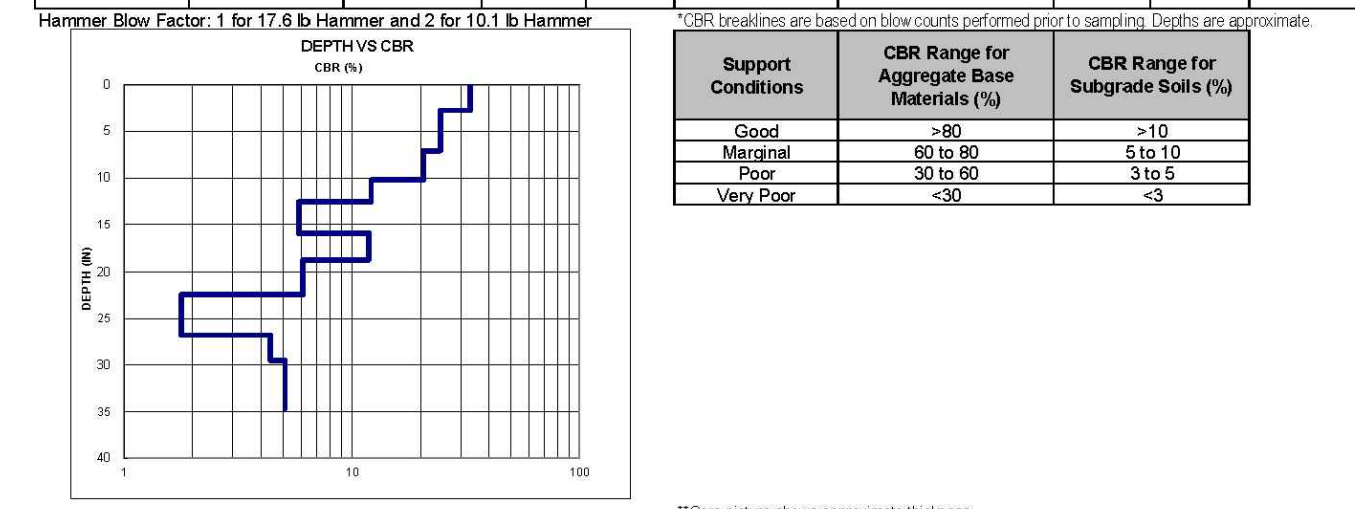
PAVEMENT CORE LOG AND USACE DCP DATA

PROJECT NAME: UPS Howell Parking Addition
PROJECT NO.: 083780
LOCATION: 1183 Fendt Dr., Howell MI
CLIENT: UPS
A/E:
DATE: 7/20/20
BY: BJM/JSF

Table with 4 columns: Layer, From, To, Description, Comment. Contains data for layers 0 to 120 inches.

Depth to Groundwater From Ground Surface Upon Completion: Not Encountered

DCP TEST RESULTS table with columns: No. of Blows, Pen. (mm), Blow Set (mm), Pen./Blow Factor, Depth from Surface (inches), CBR (%), Comment, Soil Type, Average CBR (%).



Hammer Blow Factor: 1 for 17.6 lb Hammer and 2 for 10.1 lb Hammer. CBR breaklines are based on blow counts performed prior to sampling. Depths are approximate.



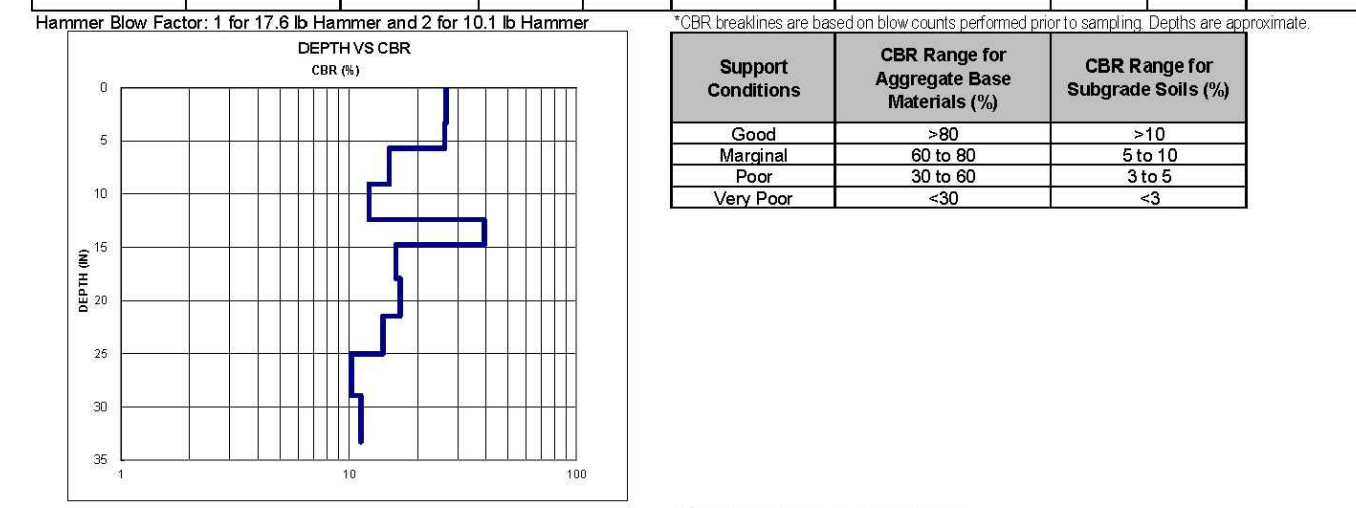
PAVEMENT CORE LOG AND USACE DCP DATA

PROJECT NAME: UPS Howell Parking Addition
PROJECT NO.: 083780
LOCATION: 1183 Fendt Dr., Howell MI
CLIENT: UPS
A/E:
DATE: 7/20/20
BY: BJM/JSF

Table with 4 columns: Layer, From, To, Description, Comment. Contains data for layers 0 to 120 inches.

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DCP TEST RESULTS table with columns: No. of Blows, Pen. (mm), Blow Set (mm), Pen./Blow Factor, Depth from Surface (inches), CBR (%), Comment, Soil Type, Average CBR (%).



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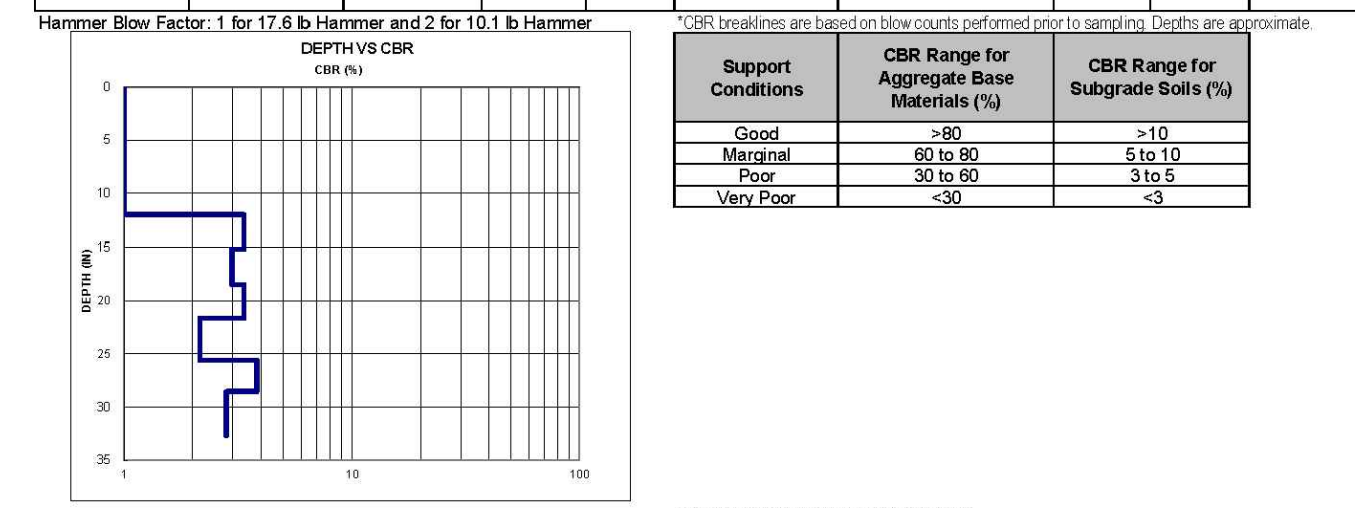
PAVEMENT CORE LOG AND USACE DCP DATA

PROJECT NAME: UPS Howell Parking Addition
PROJECT NO.: 083780
LOCATION: 1183 Fendt Dr., Howell MI
CLIENT: UPS
A/E:
DATE: 7/20/20
BY: BJM/JSF

Table with 4 columns: Layer, From, To, Description, Comment. Contains data for layers 0 to 120 inches.

Depth to Groundwater From Ground Surface Upon Completion: Not Encountered

DCP TEST RESULTS table with columns: No. of Blows, Pen. (mm), Blow Set (mm), Pen./Blow Factor, Depth from Surface (inches), CBR (%), Comment, Soil Type, Average CBR (%).



Hammer Blow Factor: 1 for 17.6 lb Hammer and 2 for 10.1 lb Hammer. CBR breaklines are based on blow counts performed prior to sampling. Depths are approximate.



Orientation: Scale

Project: UPS HOWELL EMPLOYEE PARKING LOT IMPROVEMENTS

Project Location: 1183 FENDT DRIVE HOWELL, MI 48843

Sheet Name: BORING LOGS

Engineer's Seal: HUGO J. CERON, ENGINEER, PROFESSIONAL ENGINEER, LICENSE NO. 67351

Revisions table with columns: REV, ISSUED FOR, DATE, BY. Contains one revision entry.

Date: 09/02/2020

SME Project No.: 084617.00

Project Manager: J. SCHWARTZENBERGER

Designer: H. CERON

CADD: H. CERON

Checked By: B. HART

Reviewed By: J. SCHWARTZENBERGER

Sheet No.: D-102

ISSUED FOR SITE PLAN APPROVAL

ELECTRICAL SYMBOL LIST

(NOTE: SOME SYMBOLS AND ABBREVIATIONS SHOWN MAY NOT APPLY TO THIS PROJECT)

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
FX (NL)	FIXTURE TYPE (NL INDICATES NIGHT LIGHT)	TWC	TWO-WAY COMMUNICATION SYSTEM CALL STATION
[Symbol]	LIGHTING FIXTURE	TWCD	TWO-WAY COMMUNICATION SYSTEM AUTO DIALER
[Symbol]	DIRECT/INDIRECT LIGHTING FIXTURE	TWCA	TWO-WAY COMMUNICATION SYSTEM ANNUNCIATOR & COMMUNICATION PANEL
[Symbol]	EMERGENCY FIXTURE	TWCP	TWO-WAY COMMUNICATION SYSTEM POWER SUPPLY WITH BATTERY BACK-UP
[Symbol]	LIGHTING FIXTURE	TWCDP	TWO-WAY COMMUNICATION SYSTEM AUTO DIALER POWER SUPPLY WITH BATTERY BACK-UP
[Symbol]	WALL MOUNTED LIGHTING FIXTURE	RGP	REMOTE GENERATOR ANNUNCIATOR PANEL
[Symbol]	LIGHTING FIXTURE	ATS	AUTOMATIC TRANSFER SWITCH
[Symbol]	DIRECTIONAL LIGHTING FIXTURE	UPS	UNINTERRUPTIBLE POWER SUPPLY
[Symbol]	PENDANT LIGHTING FIXTURE	CSX	LOW VOLTAGE CONTROL STATION "X" INDICATES TYPE
[Symbol]	WALL SCONCE		
[Symbol]	LIGHTING TRACK		
[Symbol]	TRACK LIGHTING FIXTURE		
[Symbol]	POLE MOUNTED LIGHTING FIXTURE		
[Symbol]	POLE MOUNTED LIGHTING FIXTURE - POST TOP		
[Symbol]	BOLLARD LIGHTING FIXTURE		
[Symbol]	EMERGENCY LIGHTING UNIT		
[Symbol]	EXIT LIGHTING FIXTURE WITH DIRECTIONAL ARROWS (SHADED AREA INDICATES FACE)		
[Symbol]	EXIT LIGHTING FIXTURE WITH DIRECTIONAL ARROWS (SHADED AREA INDICATES FACE)		
[Symbol]	EXIT LIGHTING FIXTURE - WALL MOUNTED BRANCH CIRCUIT EMERGENCY LIGHTING TRANSFER SWITCH		
[Symbol]	AUTOMATIC LOAD CONTROL RELAY		
[Symbol]	LIGHTING CONTROL DEVICE - REFER TO LIGHTING CONTROL SCHEDULE		
[Symbol]	ROOM CONTROL DESIGNATION - REFER TO LIGHTING CONTROL SCHEDULE		
[Symbol]	SINGLE POLE TOGGLE SWITCH		
[Symbol]	TWO POLE TOGGLE SWITCH		
[Symbol]	3 WAY TOGGLE SWITCH		
[Symbol]	4 WAY TOGGLE SWITCH		
[Symbol]	KEY OPERATED SWITCH		
[Symbol]	3 WAY KEY OPERATED SWITCH		
[Symbol]	4 WAY KEY OPERATED SWITCH		
[Symbol]	DIMMER SWITCH		
[Symbol]	3 WAY DIMMER SWITCH		
[Symbol]	DIMMER OCCUPANCY SENSOR SWITCH		
[Symbol]	LOW VOLTAGE DIMMER SWITCH		
[Symbol]	PILOT SWITCH		

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
[Symbol]	CONTROL PANEL	[Symbol]	SECURITY CAMERA
[Symbol]	MOTOR	[Symbol]	MOTION DETECTOR
[Symbol]	VARIABLE FREQUENCY CONTROLLER	[Symbol]	SECURITY KEY SWITCH
[Symbol]	MANUAL CONTROLLER	[Symbol]	DOOR CONTACT
[Symbol]	MAGNETIC CONTROLLER	[Symbol]	KEY PAD
[Symbol]	COMBINATION MAGNETIC CONTROLLER	[Symbol]	ACCESS CONTROL STATION
[Symbol]	NON-FUSIBLE DISCONNECT SWITCH	[Symbol]	DURESS PUSH BUTTON STATION
[Symbol]	FUSIBLE DISCONNECT SWITCH	[Symbol]	DELAYED EGRESS
[Symbol]	ENCLOSED CIRCUIT BREAKER	[Symbol]	REQUEST TO EXIT STATION
[Symbol]	PUSH BUTTON STATION	[Symbol]	CIRCUIT BREAKER
[Symbol]	JUNCTION BOX	[Symbol]	DRAWOUT CIRCUIT BREAKER MANUALLY OPERATED
[Symbol]	HARD WIRE POWER CONNECTION	[Symbol]	DRAWOUT CIRCUIT BREAKER ELECTRICALLY OPERATED
[Symbol]	AUTOMATIC DOOR CONTROLLER	[Symbol]	SWITCH
[Symbol]	AUTOMATIC DOOR PUSH PAD OPERATOR	[Symbol]	AUTOMATIC OR MANUAL TRANSFER SWITCH
[Symbol]	GROUND ROD	[Symbol]	FUSE
[Symbol]	GROUND CONNECTION	[Symbol]	TRANSFORMER
[Symbol]	HANDHOLE	[Symbol]	CURRENT TRANSFORMER
[Symbol]	CONDUIT SLEEVE WITH BUSHINGS LENGTH AS REQUIRED "X" INDICATES CONDUIT SIZE	[Symbol]	POTENTIAL TRANSFORMER
[Symbol]	CONDUIT UP	[Symbol]	LIGHTNING ARRESTOR
[Symbol]	CONDUIT DOWN	[Symbol]	PANELBOARD "X" INDICATES PANELBOARD NAME
[Symbol]	EMPTY BOX FOR FUTURE TELECOMMUNICATION OUTLET	[Symbol]	GROUND
[Symbol]	ABOVE COUNTER EMPTY BOX FOR FUTURE TELECOMMUNICATION OUTLET	[Symbol]	STRESS CONE TERMINATION
[Symbol]	EMPTY BOX FOR FUTURE CEILING MOUNTED TELECOMMUNICATION OUTLET "X" INDICATES TYPE	[Symbol]	SECURITY KEY INTERLOCK
[Symbol]	ABOVE COUNTER TELECOMMUNICATION OUTLET "X" INDICATES TYPE	[Symbol]	ENGINE GENERATOR
[Symbol]	TELECOMMUNICATION CEILING MOUNTED OUTLET "X" INDICATES TYPE	[Symbol]	UTILITY METER
[Symbol]	TELECOMMUNICATION BACKBOARD	[Symbol]	ELECTRONIC METERING UNIT
[Symbol]	TELECOMMUNICATION GROUNDING BUS BAR	[Symbol]	AMMETER
[Symbol]	TELECOMMUNICATION MAIN GROUNDING BUS BAR	[Symbol]	VOLTMETER
[Symbol]	INTERCOM OUTLET	[Symbol]	AMMETER SWITCH
[Symbol]	SPEAKER	[Symbol]	VOLTMETER SWITCH
[Symbol]	SPEAKER - WALL MOUNTED	[Symbol]	SURGE PROTECTIVE DEVICE
[Symbol]	MICROPHONE	[Symbol]	CONTROL RELAY
[Symbol]	VOLUME CONTROL/STATION SELECTOR	[Symbol]	TIME DELAY RELAY
[Symbol]	SIGNALING BELL	[Symbol]	THERMAL OVERLOAD RELAY
[Symbol]	SINGLE FACE CLOCK - CEILING MOUNTED	[Symbol]	NORMALLY OPEN CONTACTS
[Symbol]	SINGLE FACE CLOCK - WALL MOUNTED	[Symbol]	NORMALLY CLOSED CONTACTS
[Symbol]	DOUBLE FACE CLOCK - CEILING MOUNTED	[Symbol]	N.O. PUSH BUTTON SINGLE CIRCUIT
[Symbol]	DOUBLE FACE COMBINATION CLOCK/SPEAKER CEILING MOUNTED	[Symbol]	N.C. PUSH BUTTON SINGLE CIRCUIT
[Symbol]	DOUBLE FACE COMBINATION CLOCK/SPEAKER WALL MOUNTED	[Symbol]	BRANCH CIRCUIT PANELBOARD
[Symbol]	DOUBLE FACE COMBINATION CLOCK/SPEAKER WALL MOUNTED	[Symbol]	LOAD CENTER
[Symbol]	TIME CLOCK	[Symbol]	MOTOR CONTROL CENTER
[Symbol]	OCCUPANCY SENSOR	[Symbol]	TRANSFORMER
[Symbol]	OCCUPANCY SENSOR REFER TO ELECTRICAL STANDARD SCHEDULES	[Symbol]	DISTRIBUTION PANEL
[Symbol]	OCCUPANCY SENSOR "X" INDICATES TYPE	[Symbol]	GROUND BUS
[Symbol]		[Symbol]	PLUG IN BUSWAY
[Symbol]		[Symbol]	FEEDER BUSWAY

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
[Symbol]	SECURITY CAMERA	[Symbol]	MANUAL FIRE ALARM BOX
[Symbol]	MOTION DETECTOR	[Symbol]	SMOKE DETECTOR
[Symbol]	SECURITY KEY SWITCH	[Symbol]	DUCT SMOKE DETECTOR
[Symbol]	DOOR CONTACT	[Symbol]	CARBON MONOXIDE DETECTOR
[Symbol]	KEY PAD	[Symbol]	REMOTE TEST STATION (FOR DUCT DETECTOR)
[Symbol]	ACCESS CONTROL STATION	[Symbol]	THERMAL DETECTOR
[Symbol]	DURESS PUSH BUTTON STATION	[Symbol]	PROJECTED BEAM DETECTOR
[Symbol]	DELAYED EGRESS	[Symbol]	FIRE ALARM BELL
[Symbol]	REQUEST TO EXIT STATION	[Symbol]	FIRE ALARM AUDIBLE NOTIFICATION APPLIANCE
[Symbol]	CIRCUIT BREAKER	[Symbol]	FIRE ALARM VISUAL NOTIFICATION APPLIANCE "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
[Symbol]	DRAWOUT CIRCUIT BREAKER MANUALLY OPERATED	[Symbol]	FIRE ALARM COMBINATION VISUAL/AUDIBLE "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
[Symbol]	DRAWOUT CIRCUIT BREAKER ELECTRICALLY OPERATED	[Symbol]	FIRE ALARM COMBINATION VISUAL/AUDIBLE NOTIFICATION APPLIANCE - CEILING MOUNTED "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
[Symbol]	SWITCH	[Symbol]	FIRE ALARM VISUAL NOTIFICATION APPLIANCE CEILING MOUNTED "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
[Symbol]	AUTOMATIC OR MANUAL TRANSFER SWITCH	[Symbol]	FIRE ALARM AUDIBLE NOTIFICATION APPLIANCE - CEILING MOUNTED
[Symbol]	FUSE	[Symbol]	FIREFIGHTERS PHONE JACK
[Symbol]	TRANSFORMER	[Symbol]	
[Symbol]	CURRENT TRANSFORMER	[Symbol]	
[Symbol]	POTENTIAL TRANSFORMER	[Symbol]	
[Symbol]	LIGHTNING ARRESTOR	[Symbol]	
[Symbol]	PANELBOARD "X" INDICATES PANELBOARD NAME	[Symbol]	
[Symbol]	GROUND	[Symbol]	
[Symbol]	STRESS CONE TERMINATION	[Symbol]	
[Symbol]	SECURITY KEY INTERLOCK	[Symbol]	
[Symbol]	ENGINE GENERATOR	[Symbol]	
[Symbol]	UTILITY METER	[Symbol]	
[Symbol]	ELECTRONIC METERING UNIT	[Symbol]	
[Symbol]	AMMETER	[Symbol]	
[Symbol]	VOLTMETER	[Symbol]	
[Symbol]	AMMETER SWITCH	[Symbol]	
[Symbol]	VOLTMETER SWITCH	[Symbol]	
[Symbol]	SURGE PROTECTIVE DEVICE	[Symbol]	
[Symbol]	CONTROL RELAY	[Symbol]	
[Symbol]	TIME DELAY RELAY	[Symbol]	
[Symbol]	THERMAL OVERLOAD RELAY	[Symbol]	
[Symbol]	NORMALLY OPEN CONTACTS	[Symbol]	
[Symbol]	NORMALLY CLOSED CONTACTS	[Symbol]	
[Symbol]	N.O. PUSH BUTTON SINGLE CIRCUIT	[Symbol]	
[Symbol]	N.C. PUSH BUTTON SINGLE CIRCUIT	[Symbol]	
[Symbol]	BRANCH CIRCUIT PANELBOARD	[Symbol]	
[Symbol]	LOAD CENTER	[Symbol]	
[Symbol]	MOTOR CONTROL CENTER	[Symbol]	
[Symbol]	TRANSFORMER	[Symbol]	
[Symbol]	DISTRIBUTION PANEL	[Symbol]	
[Symbol]	GROUND BUS	[Symbol]	
[Symbol]	PLUG IN BUSWAY	[Symbol]	
[Symbol]	FEEDER BUSWAY	[Symbol]	

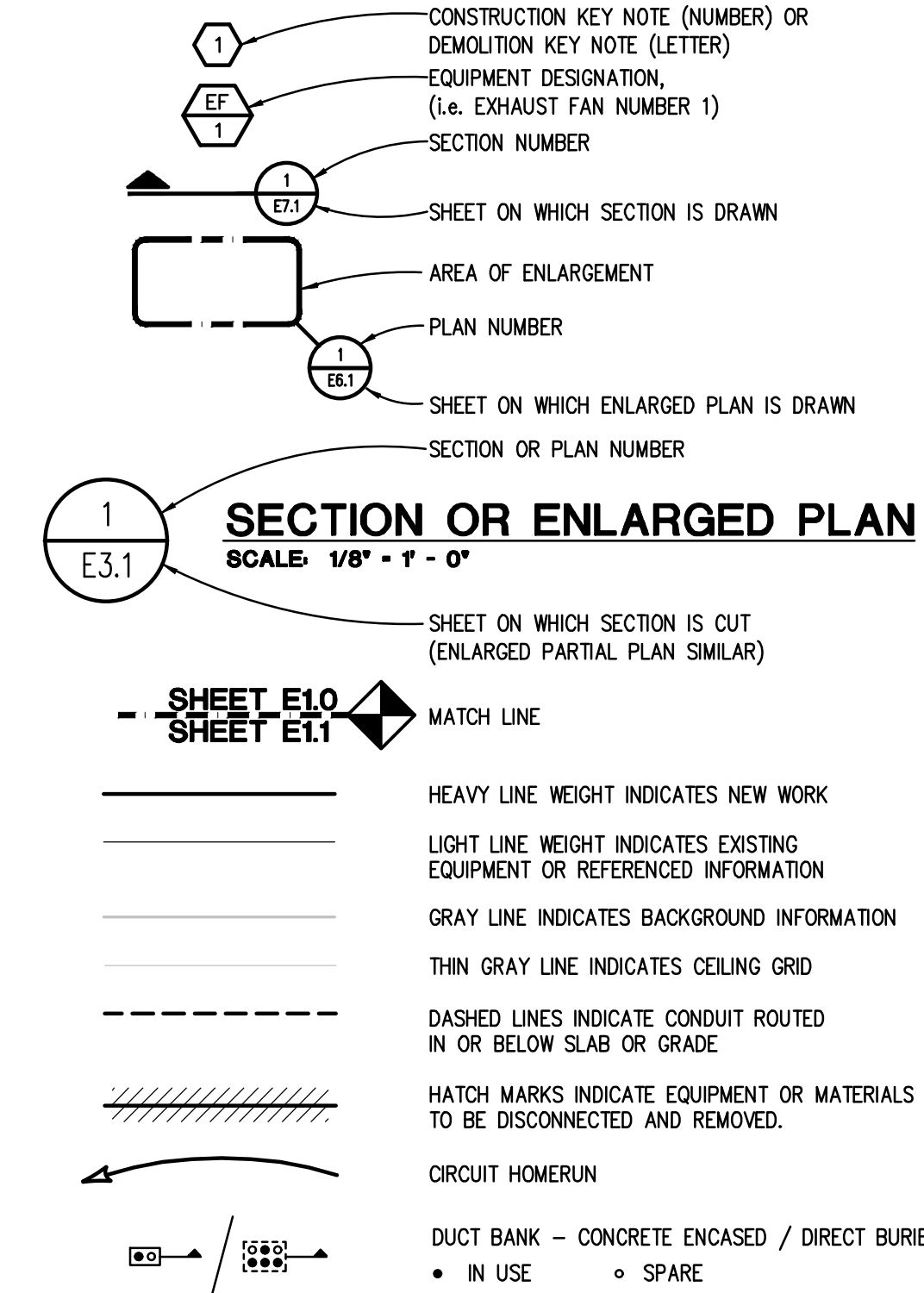
ELECTRICAL DRAWING INDEX

SHEET NO.	SHEET TITLE
E001	ELECTRICAL STANDARDS AND DRAWING INDEX
E003	ELECTRICAL SCHEDULES AND LIGHTING OUTSHEETS
E004	ELECTRICAL DEMOLITION SITE PLAN
E701	ELECTRICAL NEW WORK SITE PLAN
E701	ELECTRICAL DETAILS AND DIAGRAMS

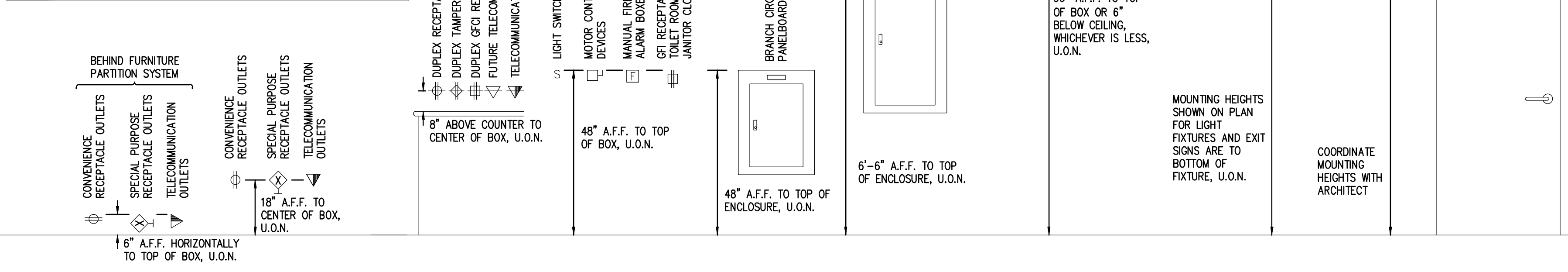
ELECTRICAL ABBREVIATION LIST

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
A	AMPERES	JB	JUNCTION BOX	P	POLE
AER	ARC ENERGY REDUCTION	KA	THOUSAND AMP	PB	PUSHBUTTON STATION
AF	AMPERES FRAME (BREAKER RATING)	KV	KILOVOLT	PH	PHASE
AFCI	ARC FAULT CIRCUIT INTERRUPTER ABOVE FINISH FLOOR	KVA	KILOVOLT - AMPERES	PT	POTENTIAL TRANSFORMER
A.F.F.	AMPS INTERRUPTING CAPACITY	KW	KILOWATT	PDP	POWER DISTRIBUTION PANEL
AIC	AUDIENCE LEFT	KWH	KILOWATT - HOURS	RECEPT.	RECEPTACLE
AL	AUDIENCE RIGHT	LA	LIGHTNING ARRESTOR	RDP	RECEPTACLE DISTRIBUTION PANEL
AR	AMPERES TRIP (BREAKER SETTING)	LP	LIGHTING PANEL	RP	RECEPTACLE PANEL
AT	AUTOMATIC TRANSFER SWITCH	LDP	LIGHTING DISTRIBUTION PANEL	RSC	RIGID STEEL CONDUIT
AUX	AUXILIARY	MAX	MAXIMUM	SCCR	SHORT CIRCUIT CURRENT RATING
BKR	BREAKER	MCA	MINIMUM CIRCUIT AMPACITY	SCHED	SCHEDULE
BPS	BOLTED PRESSURE SWITCH	MCB	MAIN CIRCUIT BREAKER	SW	SWITCH
C	CONDUIT	MCC	MOTOR CONTROL CENTER	SWBD	SWITCHBOARD
CB	CIRCUIT BREAKER	MDP	MAIN DISTRIBUTION PANEL	SWGR	SWITCHGEAR
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED	MECH	MECHANICAL	TB	TERMINAL BOX
CKT	CIRCUIT	MIN	MINIMUM	TELECOM	TELECOMMUNICATIONS
CT	CURRENT TRANSFORMER	MISC.	MISCELLANEOUS	TR	TAMPER RESISTANT
DEM	DEMOLITION	MLO	MAIN LUGS ONLY	TIB	TELEPHONE TERMINAL BACKBOARD
DIM	DIMENSION	MOP	MAXIMUM OVERCURRENT PROTECTION	TYP	TYPICAL
DISC	DISCONNECT	MTD	MOUNTED	U.O.N.	UNLESS OTHERWISE NOTED
DP	DISTRIBUTION PANEL	MTG	MOUNTING	US	UPSTAGE
DS	DOWNSTAGE	MTR	MOTOR	V	VOLTS
DWG	DRAWING	N	NEUTRAL	W	WIRE OR WATTS
EBU	EMERGENCY BATTERY UNIT	NC	NORMALLY CLOSED	WG	WIRE GUARD
EC	ELECTRICAL CONTRACTOR	NEC	NATIONAL ELECTRICAL CODE	WP	WEATHERPROOF
ELEC	ELECTRICAL	NEF	NON-FUSIBLE	XFMR	TRANSFORMER
EM/EMERG	EMERGENCY	NIC	NOT IN CONTRACT	XP	EXPLOSION PROOF
EMT	ELECTRICAL METALLIC TUBING	NL	NIGHT LIGHT	(E)	EXISTING
EO	ELECTRICALLY OPERATED	NO	NORMALLY OPEN	(R)	RELOCATED
EPO	EMERGENCY POWER OFF	NTS	NOT TO SCALE		
EW	ELECTRIC WATER COOLER	OC	ON CENTER		
EXIST	EXISTING	OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED		
FA	FIRE ALARM	OFI	OWNER FURNISHED, OWNER INSTALLED		
FLA	FULL LOAD AMPS				
FLR	FLOOR				
FOH	FRONT OF HOUSE				
FSEC	FOOD SERVICE EQUIPMENT CONTRACTOR				
FU	FUSE				
G/GRD/EG	GROUND				
GFCI	GROUND FAULT CIRCUIT INTERRUPTER				
GFP	GROUND FAULT PROTECTION				
HOA	HAND-OFF-AUTO				
HP	HORSEPOWER				
HV	HIGH VOLTAGE				
HZ	HERTZ				
IG	ISOLATED GROUND				

STANDARD METHODS OF NOTATION



STANDARD MOUNTING HEIGHTS

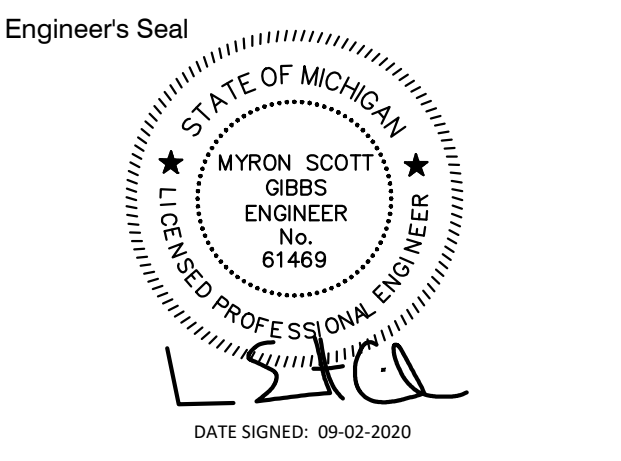


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www.PeterBassoAssociates.com
PBA Project No. 2020-0233

Project
**UPS HOWELL
EMPLOYEE PARKING LOT
IMPROVEMENTS**

Project Location
**1183 FENDT DRIVE
HOWELL, MI 48834**

Sheet Name
**ELECTRICAL STANDARDS
AND DRAWING INDEX**



Revisions

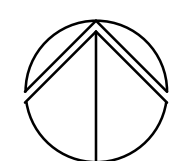
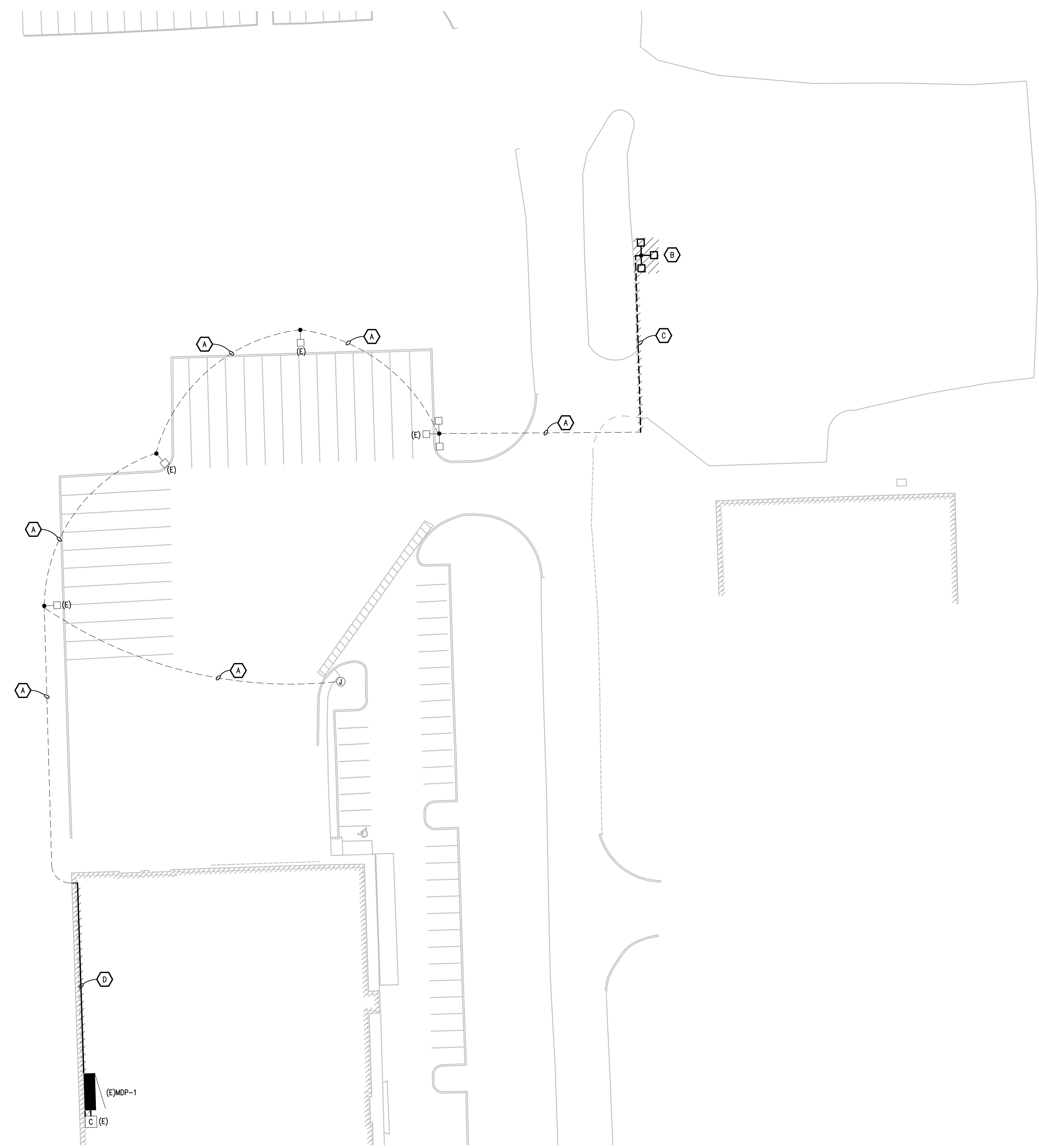
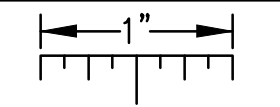
REV	ISSUED FOR	DATE	BY

811
Know what's below.
Call before you dig.
Min. Three Days prior to digging

Date	09/02/2020
SME Project No.	084617.00
Project Manager:	S. GIBBS
Designer:	B. REYNOLDS
CADD:	D. ABB
Checked By:	S. GIBBS
Sheet No.	E001

ISSUED FOR SITE PLAN APPROVAL

THE FOLLOWING DIMENSION EQUALS ONE INCH WHEN PRINTED TO SCALE.



ELECTRICAL DEMOLITION SITE PLAN

SCALE 1" = 30'

SITE PLAN GENERAL NOTES:

1. THESE NOTES ARE GENERIC GUIDELINES ONLY. ELECTRICAL CONTRACTOR'S PERSONNEL ON SITE SHALL BE THOROUGHLY FAMILIAR WITH THE PUBLISHED SPECIFICATIONS FOR EXACT DESCRIPTIONS OF SCOPE, METHODS, AND MATERIAL.
2. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS, BUT ARE NOT TO BE CONSIDERED FABRICATION DRAWINGS. COORDINATE WITH OTHER TRADES, AND PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS, AND OFFSETS.
3. CONDUCT A SURVEY TO IDENTIFY ALL UNDERGROUND UTILITIES. CALL 811 PRIOR TO EXCAVATION.
4. UTILITIES SHOWN ON THESE DRAWINGS ARE FOR REFERENCE ONLY. COORDINATE EXACT LOCATION OF ALL EXISTING UTILITIES, AND ROUTING OF ALL NEW UNDERGROUND UTILITIES PRIOR TO EXCAVATION.
5. DEWATER TRENCHES PRIOR TO INSTALLATION OF CONDUITS. PROVIDE WATER TIGHT FITTINGS ON ALL UNDERGROUND CONDUITS.
6. COORDINATE DEMOLITION WORK, AND ELECTRICAL AND TELEPHONE SERVICES TO THE SITE, WITH THE RESPECTIVE LOCAL UTILITY COMPANY REPRESENTATIVES PRIOR TO COMMENCEMENT OF WORK. INCLUDE ALL ASSOCIATED COST/FEE'S BY THE UTILITY COMPANIES IN THE BID PRICE.
7. INSTALL UNDERGROUND CONDUITS 42" BELOW FINISHED GRADE, MINIMUM, UNLESS NOTED OTHERWISE.
8. COORDINATE SERVICE SHUT-DOWNS WITH ALL TRADES INVOLVED ON SITE AND OBTAIN WRITTEN AUTHORIZATION FROM OWNER 72 HOURS PRIOR TO ANY ELECTRICAL AND/OR TELEPHONE SHUT-DOWN.
9. REMOVE ALL DE-ENERGIZED CONDUCTORS FROM SITE AT COMPLETION OF THE PROJECT.
10. OUTDOOR LIGHTING BRANCH CIRCUIT WIRING SHALL BE MINIMUM #8 AWG CONDUCTORS (XHHW-2), IN MINIMUM 1" DIA. CONDUIT, UNLESS NOTED OTHERWISE.
11. SPARE CONDUITS SHALL INCLUDE PULL STRING AND SHALL BE TERMINATED WITH A CAP.
12. EXCAVATE THE ENTIRE LENGTH OF TRENCH TO PROPERLY SET DUCT ELEVATIONS.

DEMOLITION KEY NOTES:

- A. REMOVE CONDUCTORS IN ALL EXTERIOR CONDUIT BACK TO SOURCE. EXTERIOR CONDUIT TO REMAIN WHERE INDICATED.
- B. REMOVE POLE, BASE, AND LIGHTING FIXTURES COMPLETE. TURN FIXTURES OVER TO OWNER.
- C. REMOVE CONDUIT WHERE INDICATED.
- D. REMOVE CONDUIT AND CONDUCTORS FOR PARKING LOT LIGHTING INSIDE BUILDING BACK TO SOURCE.

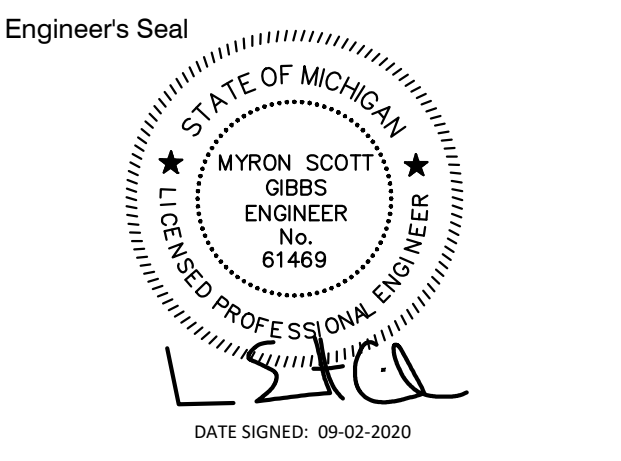


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www.PeterBassoAssociates.com
PBA Project No.: 2020.0203

Project
**UPS HOWELL
EMPLOYEE PARKING LOT
IMPROVEMENTS**

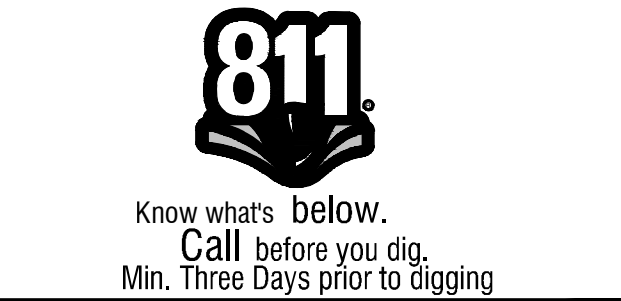
Project Location
**1183 FENDT DRIVE
HOWELL, MI 48834**

Sheet Name
**ELECTRICAL DEMOLITION
SITE PLAN**



Revisions

REV	ISSUED FOR	DATE	BY



Date	09/02/2020
SME Project No.	084617.00
Project Manager:	S. GIBBS
Designer:	B. REYNOLDS
CADD:	D. ABB
Checked By:	S. GIBBS
Sheet No.	E003

Not For Construction



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

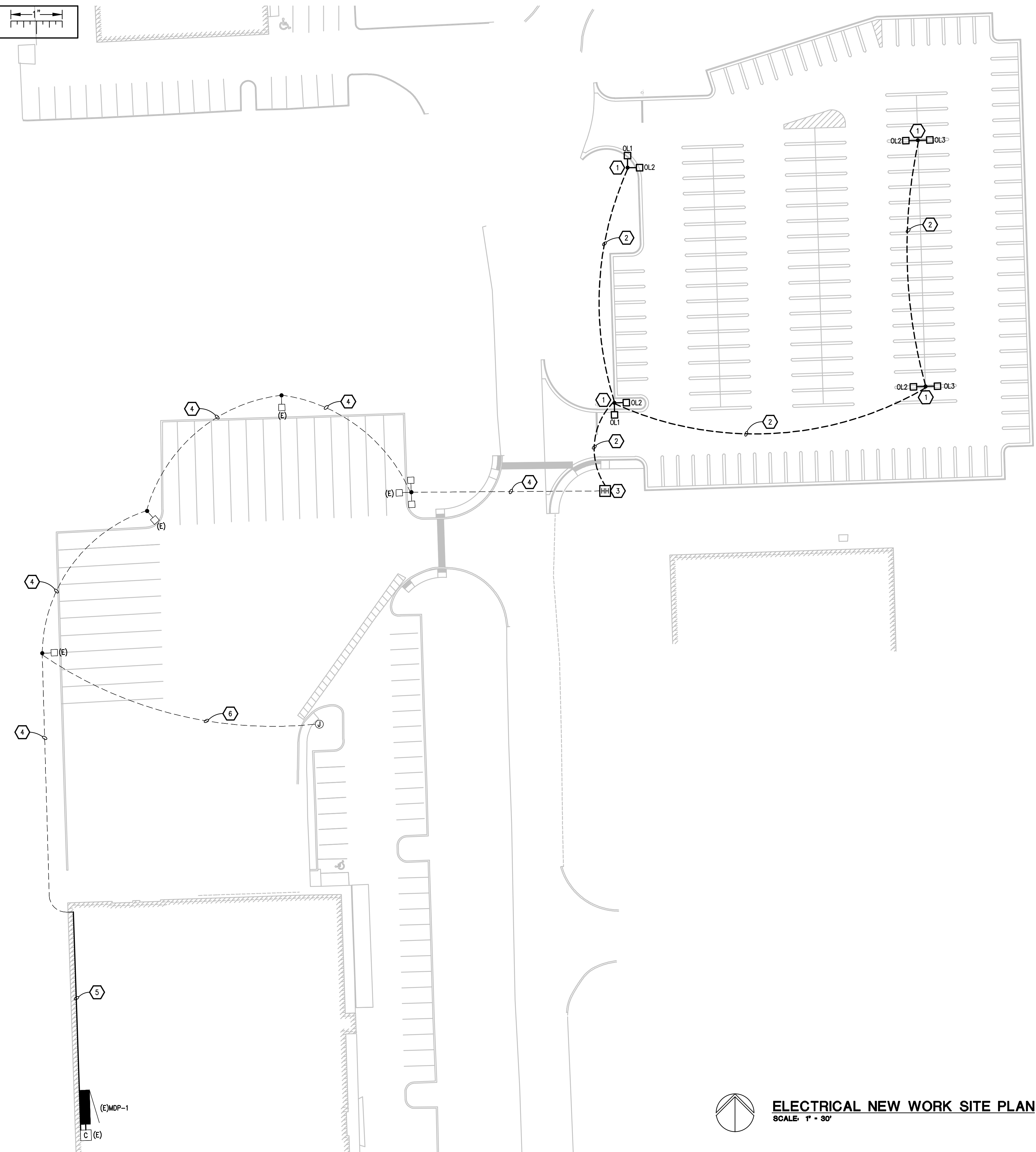
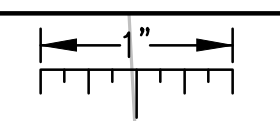
ISSUED FOR SITE PLAN APPROVAL

\\pba.local\projects\2020-0233-00\CAD\2020-0233-EO-SPD.dwg, E003, 9/1/2020 2:45:02 PM, Nadeen F. Hamid, Peter Basso Associates Inc.

FILE LOCATION: \\pba.local\projects\2020-0233-00\CAD\2020-0233-EO-SPD.dwg
PLOT DATE: Sep 01, 2020 2:45pm - rhamid

DRAWING NOTE: SCALE DERIVED IS MEANT FOR 24" X 36" AND WILL SCALE INCORRECTLY IF PRINTED IN ANY OTHER SIZE MEDIA
NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR CONSENT OF SME
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SITE PLAN GENERAL NOTES:

1. THESE NOTES ARE GENERIC GUIDELINES ONLY. ELECTRICAL CONTRACTOR'S PERSONNEL ON SITE SHALL BE THOROUGHLY FAMILIAR WITH THE PUBLISHED SPECIFICATIONS FOR EXACT DESCRIPTIONS OF SCOPE, METHODS, AND MATERIAL.
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9. REMOVE ALL DE-ENERGIZED CONDUCTORS FROM SITE AT COMPLETION OF THE PROJECT.
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11. SPARE CONDUITS SHALL INCLUDE PULL STRING AND SHALL BE TERMINATED WITH A CAP.
12. EXCAVATE THE ENTIRE LENGTH OF TRENCH TO PROPERLY SET DUCT ELEVATIONS.

CONSTRUCTION KEY NOTES:

1. PROVIDE 27"-6" ROUND TAPERED ALUMINUM POLE ON 2'-6" CONCRETE BASE.
2. PROVIDE (1)" SCHEDULE 40 PVC CONDUIT WITH 2#8 & 1#8G.
3. INTERCEPT EXISTING CONDUIT AND INSTALL 24"x24"x24" HANDHOLE.
4. PROVIDE 2#8 & 1#8G IN EXISTING EXTERIOR CONDUIT. PROVIDE NEW WIRING IN POLE TO FIXTURE.
5. PROVIDE 2#8 & 1#8G IN 3/4"C INSIDE BUILDING. RECONNECT PARKING LOT LIGHT FIXTURES TO EXISTING CONTACTOR ADJACENT TO (E)MDP-1.
6. EXISTING CONDUIT TO REMAIN AS SPARE.

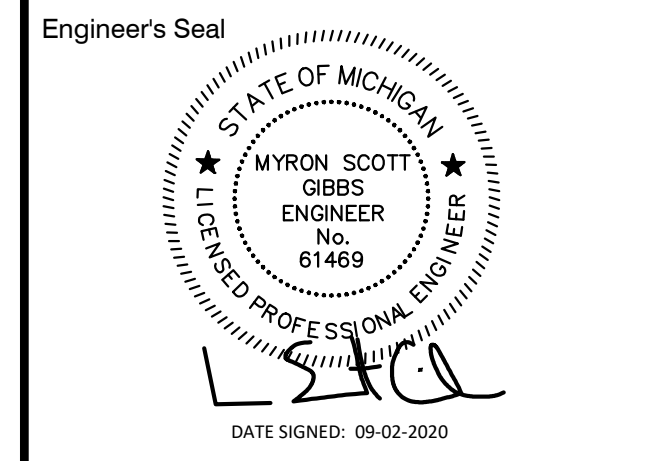


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PBA Project No. 2020-0204

Project
**UPS HOWELL
EMPLOYEE PARKING LOT
IMPROVEMENTS**

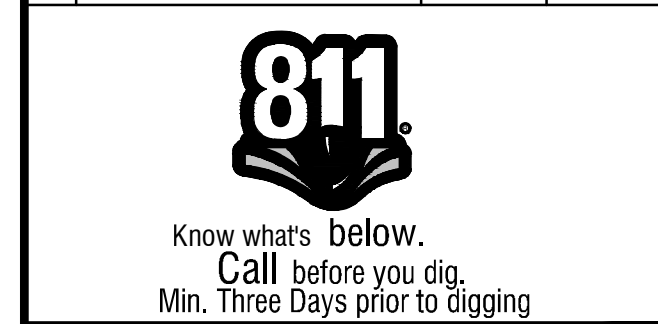
Project Location
**1183 FENDT DRIVE
HOWELL, MI 48834**

Sheet Name
**ELECTRICAL NEW WORK
SITE PLAN**



Revisions

REV	ISSUED FOR	DATE	BY



Date	09/02/2020
SME Project No.	084617.00
Project Manager:	S. GIBBS
Designer:	B. REYNOLDS
CADD:	D. ABB
Checked By:	S. GIBBS
Sheet No.	E004

Not For Construction



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

ISSUED FOR SITE PLAN APPROVAL

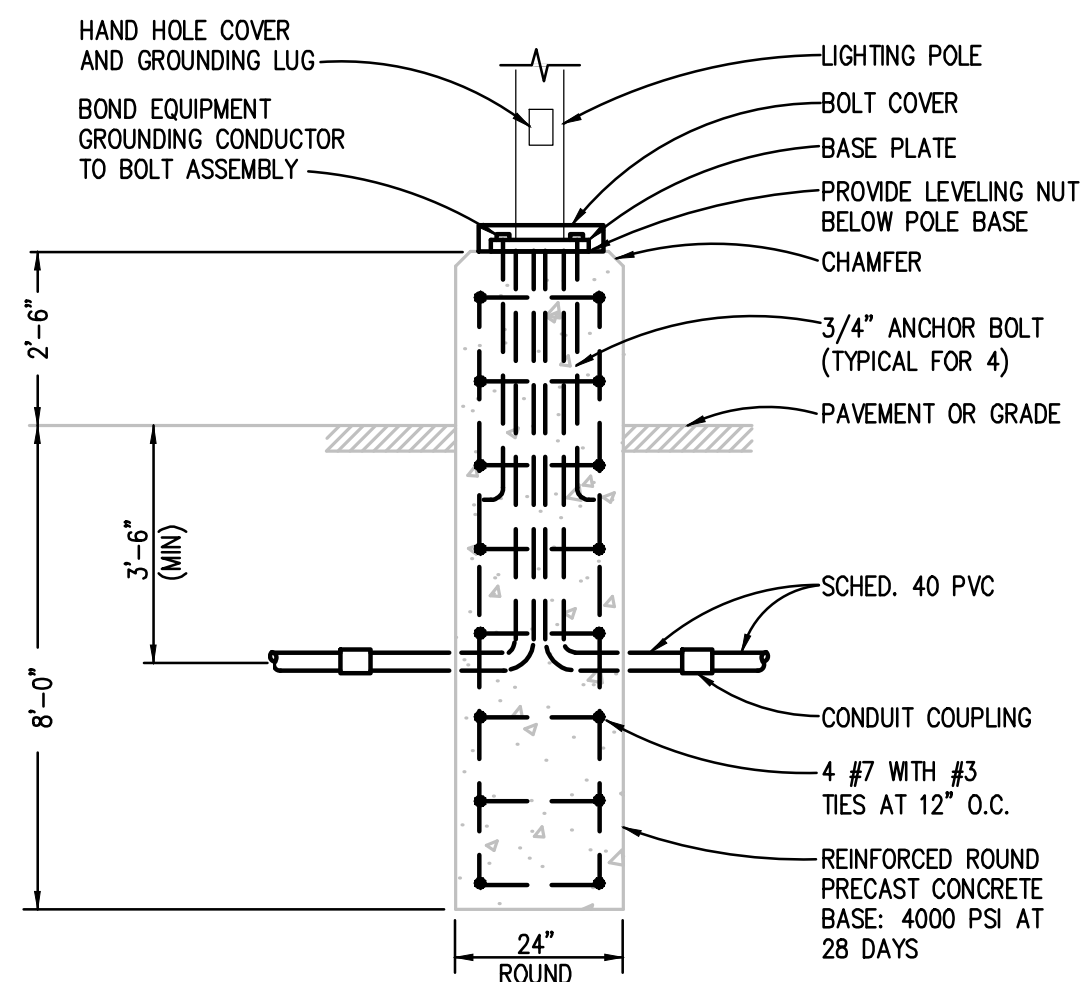
ELECTRICAL NEW WORK SITE PLAN
SCALE: 1" = 30'

\\pba.local\projects\2020-0233-00\CAD\2020-0233-EO-SPN.dwg, E004, 9/1/2020 2:45:21 PM, Nadeen F. Hamid, Peter Basso Associates Inc.

PLOT DATE: Sep 01, 2020 2:45pm - rhamid FILE LOCATION: \\pba.local\projects\2020-0233-00\CAD\2020-0233-EO-SPN.dwg

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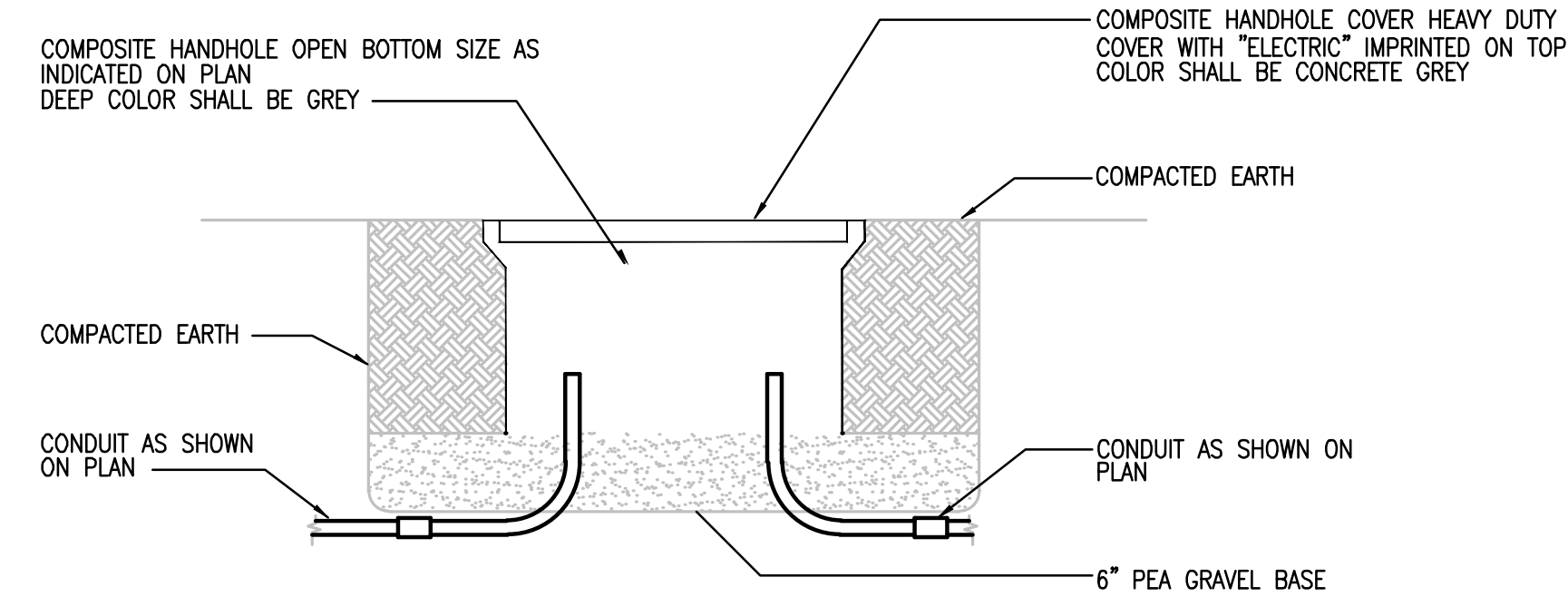


LIGHTING POLE BASE DETAIL

NO SCALE

NOTE:

1. PROVIDE PRECAST CONCRETE BASE AS MANUFACTURED BY NORTHERN CONCRETE PIPE, INC. OR APPROVED EQUAL.
2. CONCRETE REINFORCEMENTS SHALL BE BARE, ZINC GALVANIZED, OR ELECTRICALLY CONDUCTIVE COATED STEEL. BOND ALL CONCRETE REINFORCEMENTS AND ANCHOR BOLTS TOGETHER SO THAT SYSTEM IS ELECTRICALLY CONTINUOUS.



COMPOSITE HANDHOLE DETAIL FOR ELECTRIC

NO SCALE

(E)PANELBOARD MDP-1															
#	LOAD TYPE	DESCRIPTION	CB TYPE	CB	VA	ØA	ØB	ØC	VA	CB TYPE	DESCRIPTION	LOAD TYPE	#		
1	NC		EXIST	27713	31593				3880	EXIST		M	2		
3	NC	(E)CDP-1 PANEL	EXIST	125	27713	31593			3880	30	EXIST	(E)A/C UNIT	M	4	
5	NC		EXIST	27713			31593		3880		EXIST		M	6	
7	L	(E)LIGHTING (EMERGENCY)	EXIST	20	4432	8864			4432	20	EXIST	(E)LIGHTING	L	8	
9	L	(E)LIGHTING	EXIST	20	4432	8864			4432	20	EXIST	(E)LIGHTING	L	10	
11	L	LIGHTING (PHOTOCELL)	EXIST	20	3562			7994	4432	20	EXIST	(E)LIGHTING	L	12	
13	L	(E)LIGHTING (EMERGENCY)	EXIST	20	4432	8864			4432	20	EXIST	(E)LIGHTING	L	14	
15	L	(E)LIGHTING	EXIST	20	4432	8864			4432	20	EXIST	(E)LIGHTING	L	16	
17	NC		EXIST	22170				26602	4432	20	EXIST	(E)LIGHTING	L	18	
19	NC	(E)RP1-1	EXIST	100	22170	26602			4432	20	EXIST	(E)LIGHTING	L	20	
21	NC		EXIST	22170		26602			4432	20	EXIST	(E)LIGHTING	L	22	
23	L	(E)LIGHTING	EXIST	20	4432		8864		4432	20	EXIST	(E)LIGHTING	L	24	
25	MH		EXIST	4739	9171				4432	20	EXIST	(E)LIGHTING	L	26	
27	MH	(E)EXHAUST FANS	EXIST	20	4739		9171		4432	20	EXIST	(E)LIGHTING	L	28	
29	MH		EXIST	4739			9171		4432	20	EXIST	(E)LIGHTING	L	30	
					85094	85094	84224								
					ØA	ØB	ØC								
PANELBOARD INFORMATION		BRANCH CIRCUIT CONNECTED LOAD		DEMAND FACTOR	CALCULATED DEMAND	FEEDER AND OVERCURRENT SIZING		NOTES:							
VOLTAGE: 480Y/277		CONTINUOUS LOAD (C)		100%		125%									
BUS AMPACITY: 400A		ELECTRIC HEAT (E)		100%		125%									
MAIN TYPE: 400A MCB		NON-CONTINUOUS LOAD (NC)		100%	149649	100%		149649							
MINIMUM A.I.C.: 22,000		KITCHEN LOAD (K)		100%		100%									
MOUNTING: SURFACE		RECEPTACLE BASE LOAD (R)		100%		100%									
<input type="checkbox"/> FEED-THROUGH LUGS		RECEPTACLE DEMAND LOAD (R)		50%		100%									
<input type="checkbox"/> DOUBLE LUGS		LIGHTING LOAD (L)		100%	78906	100%		78906	125%	98633					
<input type="checkbox"/> INTEGRAL SPD		ADDITIONAL TRACK LIGHTING LOAD							100%						
PANELBOARD LOCATION		MOTORS, HIGHEST LOAD (MH)		100%	14217	100%		14217	125%	17771					
WEST WALL (CENTER)		MOTORS, REMAINING LOAD (M)		100%	11640	100%		11640	100%	11640					
				TOTAL (KVA):	254.41										
				TOTAL (AMPS):	306					TOTAL (AMPS):	334				

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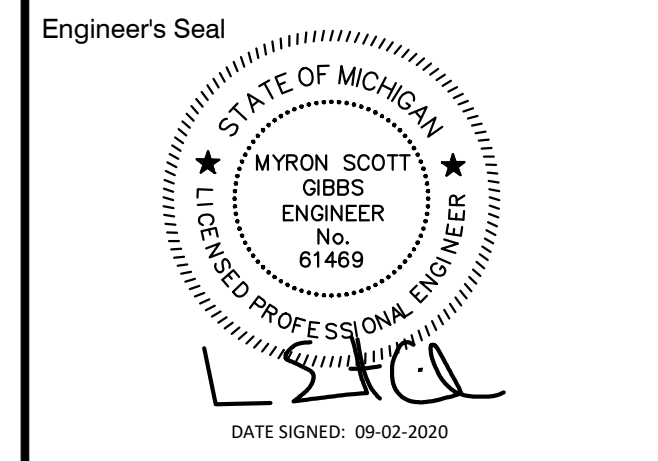


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PBA Project No. 2020.0229

Project
**UPS HOWELL
EMPLOYEE PARKING LOT
IMPROVEMENTS**

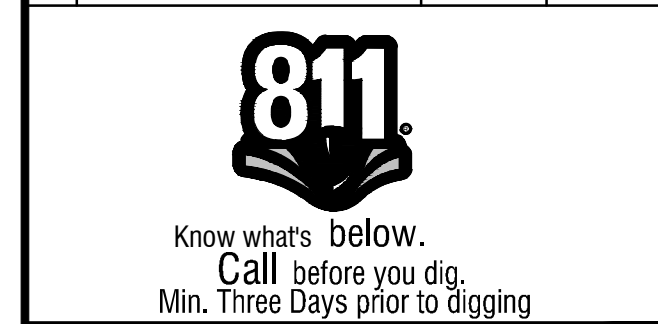
Project Location
**1183 FENDT DRIVE
HOWELL, MI 48834**

Sheet Name
**ELECTRICAL DETAILS AND
DIAGRAMS**



Revisions

REV	ISSUED FOR	DATE	BY



Date	09/02/2020
SME Project No.	084617.00
Project Manager:	S. GIBBS
Designer:	B. REYNOLDS
CADD:	D. ABB
Checked By:	S. GIBBS
Sheet No.	E701

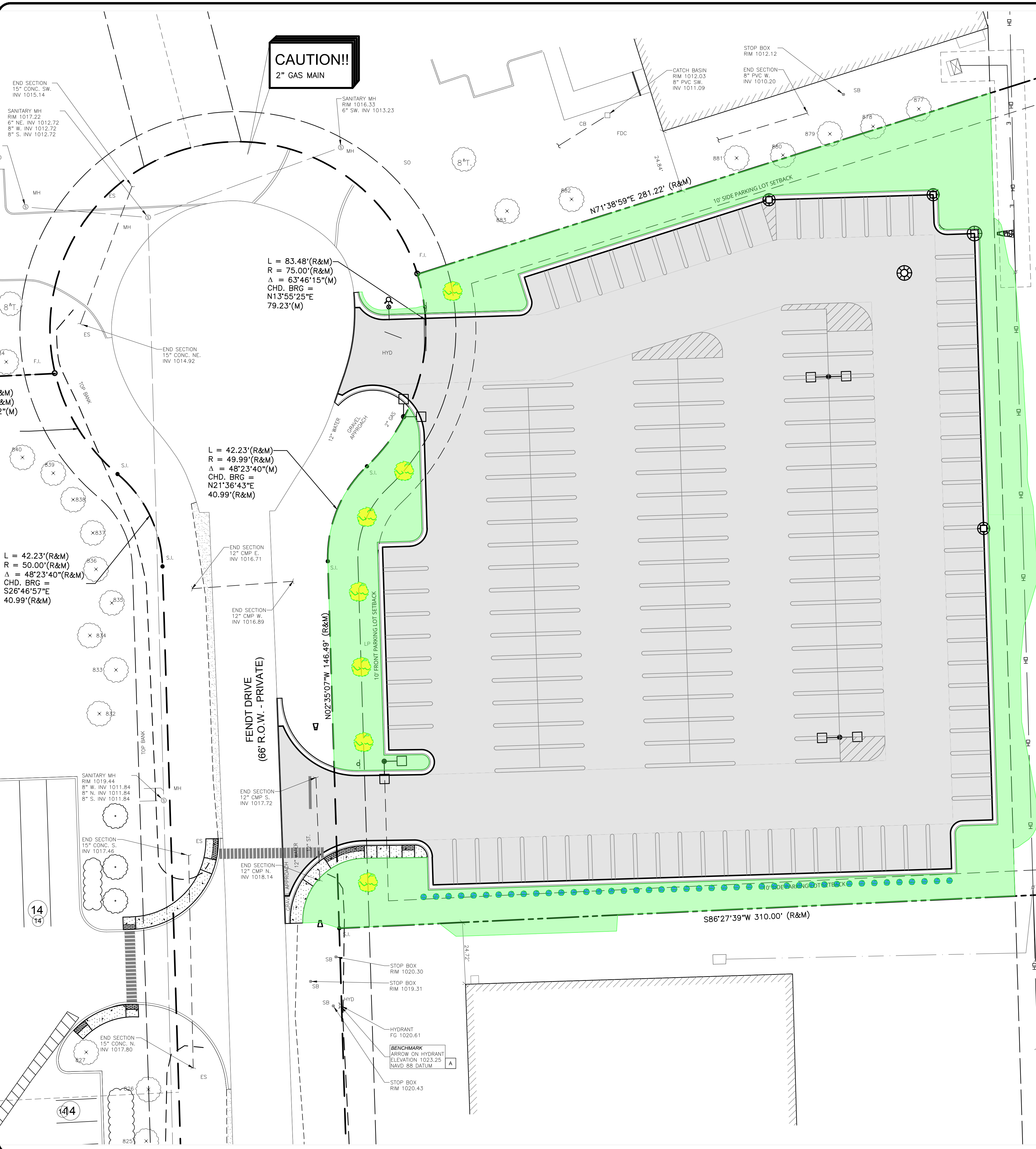
Not For Construction

ISSUED FOR SITE PLAN APPROVAL

\\pba.local\projects\2020\2020-0233-00\CAD\2020-0233-E7-DT.dwg, E701, 9/1/2020 2:45:38 PM, Nadeen F. Hamid, Peter Basso Associates Inc.

FILE LOCATION: \\pba.local\projects\2020\2020-0233-00\CAD\2020-0233-E7-DT.dwg PLOT DATE: Sep 01, 2020 2:45pm - rhamid

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CAUTION!!
2" GAS MAIN

L = 83.48'(R&M)
R = 75.00'(R&M)
Δ = 63°46'15"(M)
CHD. BRG =
N13°55'25"E
79.23'(M)

L = 42.23'(R&M)
R = 49.99'(R&M)
Δ = 48°23'40"(M)
CHD. BRG =
N21°36'43"E
40.99'(R&M)

L = 42.23'(R&M)
R = 50.00'(R&M)
Δ = 48°23'40"(R&M)
CHD. BRG =
S26°46'57"E
40.99'(R&M)

FENDT DRIVE
(66' R.O.W. - PRIVATE)

END SECTION
12" CMP W.
INV 1016.89

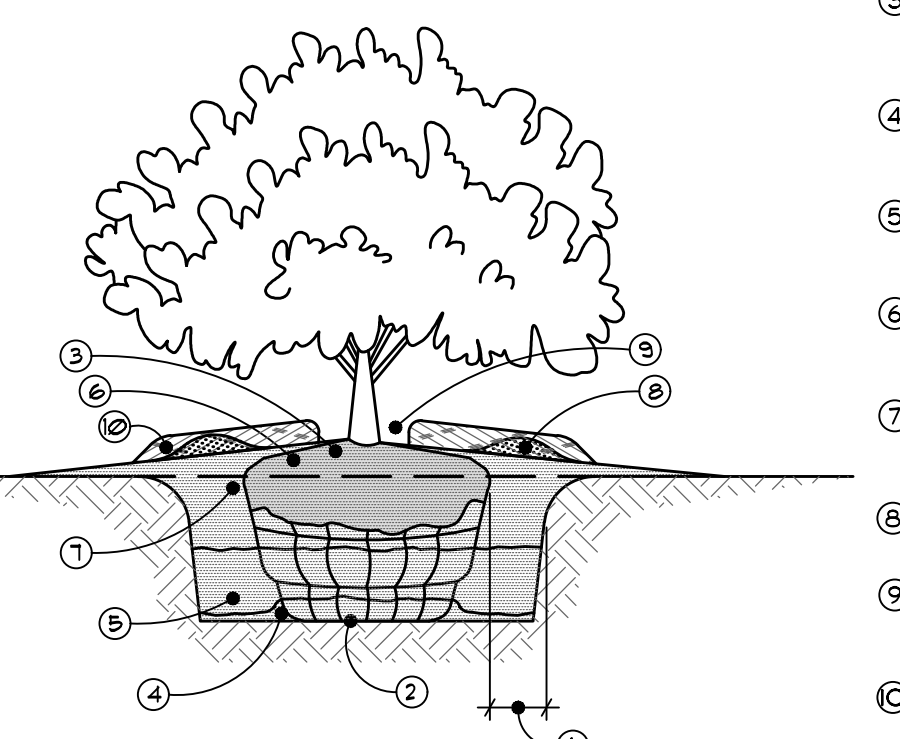
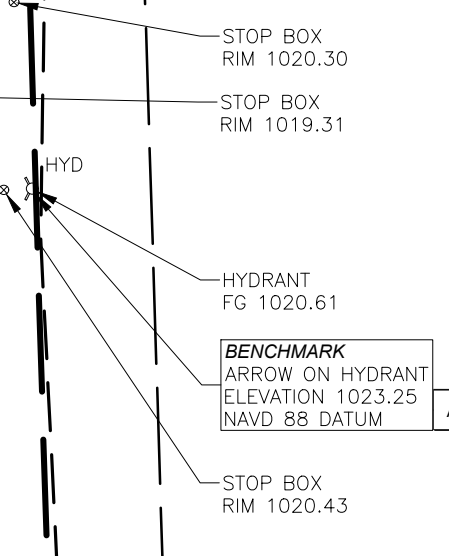
END SECTION
12" CMP N.
INV 1017.72

END SECTION
15" CONC. S.
INV 1017.46

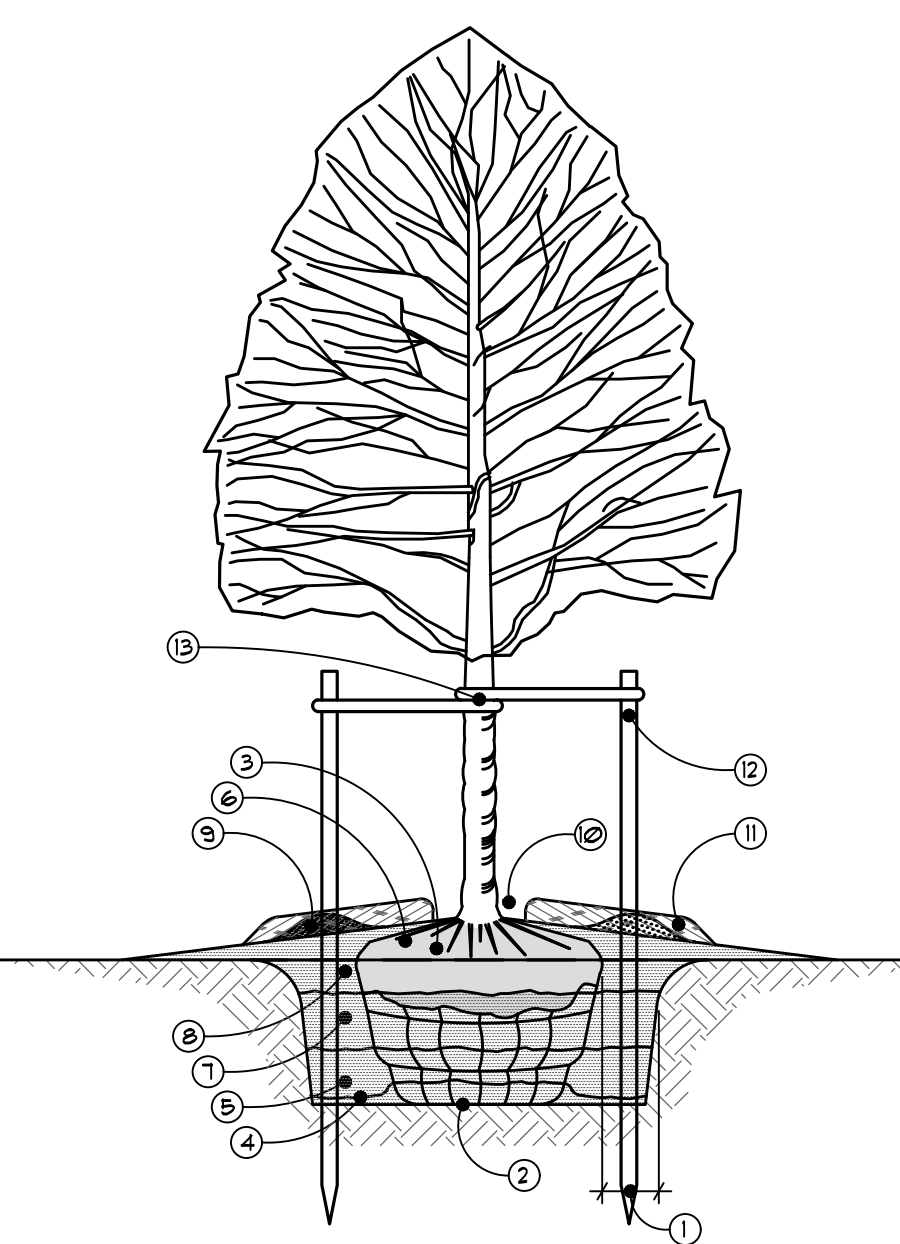
END SECTION
15" CONC. N.
INV 1017.80

END SECTION
15" CONC. S.W.
INV 1015.14

END SECTION
15" CONC. N.E.
INV 1014.92



BALLED & BURLAPED SHRUB PLANTING DETAIL
NOT TO SCALE



3" CAL. & UNDER - DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE

- INSTALLATION NOTES:
- 1) DIG PLANT POCKET 6" WIDER THAN EDGE OF ROOTBALL.
 - 2) THOROUGHLY COMPACT BOTTOM OF PLANT POCKET.
 - 3) REMOVE ALL TWINE FROM TOP OF ROOTBALL. EXAMINE TRUNK COLLAR AND REMOVE EXCESS SOIL FROM TOP OF ROOTBALL DOWN TO THE UPPER LEVEL OF SYSTEM. SET ROOTBALL WITH TOP 1/8 OF BALL ABOVE FINISH GRADE.
 - 4) PLACE BACKFILL UNDER & ALONGSIDE BASE OF BALL TO STRAIGHTEN SHRUB. THOROUGHLY COMPACT TO FILL ALL VOIDS.
 - 5) BACKFILL PLANT POCKET 1/2 WITH PLANTING MIX CONSISTING OF 50% TOPSOIL & 50% NATIVE SOIL & COMPACT THOROUGHLY, ASSURING SHRUB IS STILL STRAIGHT.
 - 6) BEFORE CONTINUING WITH BACKFILL, REMOVE EXCESS BURLAP. IF APPLICABLE, REMOVE TOP WIRE LOOPS, OR BEND LOOPS DOWN UNTIL THEY TOUCH SIDE OF BALL.
 - 7) BACK FILL REMAINING 1/2 OF PLANT POCKET WITH PLANTING MIX & COMPACT THOROUGHLY, ASSURING SHRUB IS STILL STRAIGHT.
 - 8) IF PLANTED IN NON-IRRIGATED AREAS, FORM A SAUCER WITH SOIL AT OUTSIDE EDGE OF ROOTBALL.
 - 9) SHREDDED BARK MULCH, 3" DEPTH. MULCH TO BE NATURAL IN COLOR. LEAVE 1-2" RING EXPOSED AT BASE OF TRUNK.
 - 10) IF NOT PLANTED WITHIN A LANDSCAPE BED, MULCH RINGS TO BE CONSISTENT IN SIZE WITH PLANT TYPE/SIZE THROUGHOUT PROJECT AND SHOULD NOT EXTEND BEYOND PLANT POCKET.

www.sme-usa.com

Orientation: N, S, E, W

Scale: 0' 20' 40'

GRAPHIC SCALE: 1" = 20'

Project
**UPS HOWELL
EMPLOYEE PARKING LOT
IMPROVEMENTS**

Project Location
**1183 FENDT DRIVE
HOWELL, MI 48843**

Sheet Name
LANDSCAPE PLAN

Engineer's Seal

Revisions

REV	ISSUED FOR	DATE	BY
01	TOWNSHIP COMMENTS	09/23/2020	JAS

Date
09/02/2020

SME Project No.
084617.00

Project Manager:
J. SCHWARTZENBERGER

Designer:
H. CERON

CADD:
H. CERON

Checked By:
B. HART

Reviewed By:
J. SCHWARTZENBERGER

Sheet No.
L-100

PLANT LIST

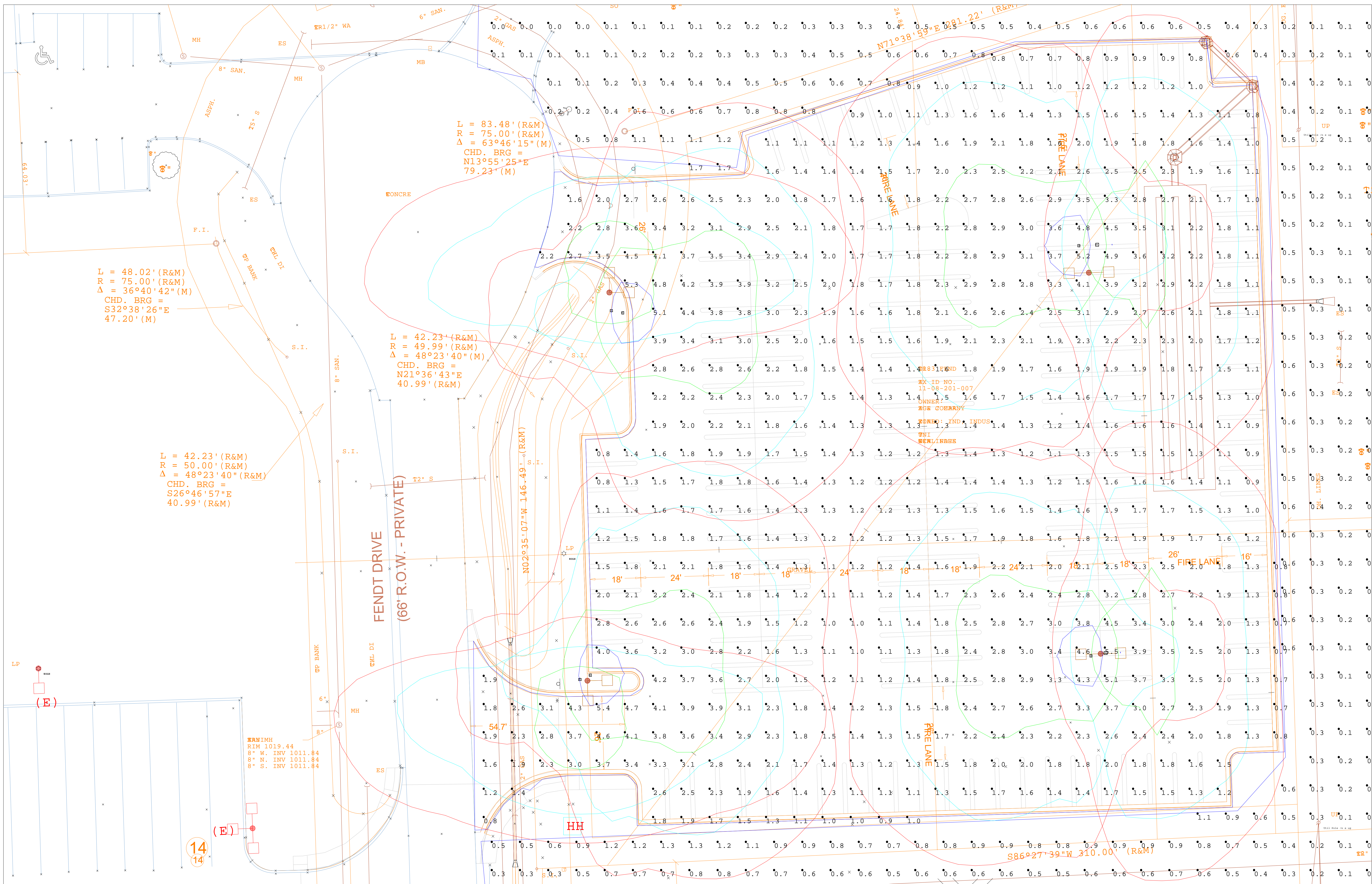
EVERGREEN SHRUBS						
CODE	QTY	KEY	SCIENTIFIC NAME	COMMON NAME	SIZE	COMMENTS
TH	1		GLEDISIA TRIACANTHOS INERMIS	THORNLESS HONEYLOCUST	3 GAL.	
EVERGREEN SHRUBS						
CODE	QTY	KEY	SCIENTIFIC NAME	COMMON NAME	SIZE	COMMENTS
x	43		THUJA OCCIDENTALIS 'RHEINGOLD'	RHEINGOLD ARBORVITAE	3 GAL.	60" O.C.
LANDSCAPING						
	16,225 SF		SEEDED LAWN ON MIN. 4" DEPTH TOPSOIL,			

SIDE	DESCRIPTION	CALCULATIONS	REQUIRED	PROVIDED
FRONT	20' WIDE GREENBELT ONE CANOPY TREEFOR EVERY FORTY LINEAR FEET OF FRONTAGE	275.3 LF FRONTAGE/40 LF PER TREE = 7	7	7

NOTES:
INTERIOR LANDSCAPE REQUIREMENT IS REQUESTED TO BE WAIVED TO ACCOMMODATE THE PROPERTY OWNER'S NEED FOR ADDITIONAL PARKING STALLS DURING PEAK SEASONS AS WELL AS GENERAL LACK OF INTERIOR ISLANDS ON OTHER PARCELS IN THE DEVELOPMENT. THIS IS ONE POINT DISCUSSED AT THE PRE-APPLICATION MEETING.

BUFFER ZONED "C" ON THE EAST IS REQUESTED TO BE WAIVED DUE TO THE EXISTING STORMWATER EASEMENT AND TREES ALREADY PROVIDING A BUFFER/SCREEN FROM THE PROPERTY TO THE EAST.

ISSUED FOR SITE PLAN APPROVAL



Scale: 1 inch= 15 Ft.

Luminaire Schedule						
Symbol	Qty	Label	Lum. Lumens	LLF	Lum. Watts	Description
☐	2	L1	18996	0.900	163	DSX1 LED P6 40K T2M MVOLT
☐	4	L2	27577	0.900	241	DSX1 LED P9 40K TFTM MVOLT
☐	2	L3	20139	0.900	183	DSX1 LED P7 40K T3M MVOLT

Calculation Summary						
Label	Units	Avg	Max	Min	Max/Min	Avg/Min
Light Trespass_Planar	Fc	0.21	1.7	0.0	N.A.	N.A.
Parking Lot_Planar	Fc	2.03	5.5	0.7	7.86	2.90

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 T: 248-879-5666 F: 248-879-007
 www.PeterBassoAssociates.com
 PBA Project #

PROJECT TITLE
UPS Howell
 Employee Parking Lot Improvements

SHEET TITLE
Lighting Calculations

DATE
 09-02-2020

ISSUE
 For Review

SHEET No.
L201



GENOA CHARTER TOWNSHIP
Application for Site Plan Review

RECEIVED 8-31-2020

TO THE GENOA TOWNSHIP PLANNING COMMISSION AND TOWNSHIP BOARD:

APPLICANT NAME & ADDRESS: BMH Realty, LLC, 775 N. Second St, Brighton, MI 48116
If applicant is not the owner, a letter of Authorization from Property Owner is needed.

OWNER'S NAME & ADDRESS: BMH Realty, LLC, 775 N. Second St, Brighton, MI 48116

SITE ADDRESS: 4525 E. Grand River PARCEL #(s): see below

APPLICANT PHONE: (810) 494-2169 OWNER PHONE: ()

OWNER EMAIL: bmaynes@corriganoil.com

LOCATION AND BRIEF DESCRIPTION OF SITE: Site is located at the corner of Grand River and Lawson Drive. The project is situated surrounding the existing Sunoco station. A vacant former pool store and fence company occupy the west edge of the site.

BRIEF STATEMENT OF PROPOSED USE: The owner plans a mixed-use project for the entire site. A drive-inside climate controlled building and other improvements to the overall site layout are in the current site plan.

THE FOLLOWING BUILDINGS ARE PROPOSED: Site improvements to be constructed at this time include a 37,275 sq ft pre-engineered building which will be upfit with storage equipment and a mezzanine structure for a drive through climate controlled self storage building and rental office. Small flex office spaces will also be included in the building.

I HEREBY CERTIFY THAT ALL INFORMATION AND DATA ATTACHED TO AND MADE PART OF THIS APPLICATION IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

BY: _____

ADDRESS: 775 N. Second St, Brighton, MI 48116

Contact Information - Review Letters and Correspondence shall be forwarded to the following:

1.) Wayne Perry, P.E. of Desine Inc. at waynep@desineinc.com
 Name Business Affiliation E-mail Address

FEE EXCEEDANCE AGREEMENT

As stated on the site plan review fee schedule, all site plans are allocated two (2) consultant reviews and one (1) Planning Commission meeting. If additional reviews or meetings are necessary, the applicant will be required to pay the actual incurred costs for the additional reviews. If applicable, additional review fee payment will be required concurrent with submittal to the Township Board. By signing below, applicant indicates agreement and full understanding of this policy.

SIGNATURE:  DATE: 8-29-2020
 PRINT NAME: Mike Corrigan - BMH Realty, LLC PHONE: 810-494-2169
 ADDRESS: 775 N. Second St, Brighton, MI 48116

October 19, 2020

Planning Commission
 Genoa Township
 2911 Dorr Road
 Brighton, Michigan 48116

Attention:	Kelly Van Marter, AICP Planning Director and Assistant Township Manager
Subject:	BHM-Premier Genoa – Final PUD Site Plan Review #1
Location:	4525 and 4433 E. Grand River Avenue – northwest corner of Grand River and Lawson Drive
Zoning:	GCD General Commercial District and RDPUD Redevelopment Planned Unit Development Overlay

Dear Commissioners:

At the Township’s request, we have reviewed the submittal from BHM Realty, LLC requesting final PUD site plan review/approval for Phase 1 of their redevelopment PUD (plans dated 9/28/20).

A. Summary

1. The overall site plan layout for Phase 1 – buildings, circulation, and parking – is consistent with the approved Conceptual PUD Site Plan.
2. The proposed building elevations and materials are consistent with the approved Conceptual PUD Site Plan.
3. Sheet A-6, which includes building material calculations, was not included in the materials submitted to our office.
4. We request the applicant present building material and color samples to the Commission.
5. The Heximer PUD requires sidewalks along road frontages. Given the proposal for off-site stormwater management, a sidewalk along the north side of White Horse is required.
6. Parking spaces must include looped striping.
7. We suggest the applicant replace the gas station canopy lighting with LED fixtures that reduce the illumination levels.
8. Based on our review, there is an inconsistency in the quantity of two types of shrub plantings.
9. The applicant should be aware that a sign permit will be required from the Township prior to the installation of any new signage.

B. Proposal/Process

The applicant requests site plan review/approval for Phase 1 of their Redevelopment PUD. The Township recently approved the RDPUD overlay zoning, Conceptual PUD Site Plan, and PUD Agreement for the project.

Phase 1 entails a 37,275 square foot (ground floor area) building for use as climate-controlled indoor storage, which is a principal permitted use per the PUD Agreement.

The proposal also includes exterior site improvements to vehicular access, parking, landscaping, lighting, the gas station building façade, and site engineering for the overall PUD property.

Procedurally, the Planning Commission is put forth a recommendation to the Township Board on the final PUD site plan.



Aerial view of site and surroundings (looking north)

C. Review

We have reviewed the final PUD site plan in accordance with the applicable provisions of the Genoa Township Zoning Ordinance, as well as the PUD Agreement for this project.

1. **Dimensional Requirements.** As shown in the table below, the site plan complies with the dimensional requirements for this PUD:

	Property		Minimum Yard Setbacks (feet)			Max. Lot Coverage (%)	Max. Height
	Lot Area	Lot Width	Front Yard	Rear Yard	Parking Lot		
GCD / RDPUD	5 acres (PUD)	150 (GCD)	50 Grand River 59 Lawson 35 White Horse	60 (W)	20 front 10 side/rear	40% building 85% impervious	35'
Proposed	5.12 acres	578	50 Grand River 115 Lawson 35 White Horse	130	22 front 10.5 rear	20.6% building 57.6% impervious	33'

2. **Building Design and Materials.** The project includes the proposed climate-controlled indoor storage building, as well as façade improvements to the existing gas station/convenience store building.

The proposed building includes brick, simulated wood paneling, metal panels, glass (windows and spandrel), EIFS, and a CMU base around the entire building.

Improvements to the existing gas station/convenience store building include placement of new simulated wood paneling over the existing EIFS on the front and rear, new paneling atop the existing vertical block columns, and painting of remaining materials.

The proposed elevations and materials for both buildings are consistent with the approved Conceptual PUD Site Plan; however, there are references to material calculations on Sheet A-6, which was not included with the materials submitted to our office.

Lastly, we request the applicant present building material and color samples to the Commission for their consideration as part of this review.

3. Vehicular Circulation. There will be 4 ingress/egress points to the subject property:

- The existing curb cut for the gas station on Grand River;
- Use of the existing curb cut for the adjacent bank on Grand River via shared/cross access;
- Improvement to the existing curb cut on Lawson; and
- A new curb cut on White Horse, west of the proposed building.

The number and location of vehicular access points is consistent with the approved Conceptual PUD Site Plan, though the drive approaches along Lawson and White Horse have been widened to accommodate a left turn lane for vehicles exiting the site.

Internal drive aisles meet or exceed Ordinance standards, and are consistent with the approved Conceptual PUD Site Plan.

The applicant will need to address any technical comments provide by the Township Engineer or Brighton Area Fire Authority.

4. Pedestrian Circulation. The project includes a reconfigured sidewalk along Grand River, as well as new public sidewalks along Lawson and White Horse. An easement will be provided for those portions of the sidewalks that are on the subject property (and not within the public right-of-way).

Internal sidewalks are also provided between the new parking areas and the proposed building (south, east, and west sides).

Lastly, the project includes use of land to the north across White Horse (within the Heximer PUD) for stormwater management purposes. The PUD Agreement for that development requires construction of sidewalks along all frontages.

5. Parking. Phase 1 includes 53 parking spaces for the climate-controlled storage building and the gas station/convenience store. The total includes 3 barrier-free spaces, which meets Ordinance standards.

The layout and size of parking spaces complies with the applicable Ordinance standards; however, spaces are to include looped striping, per Section 14.06.07.

6. Lighting. The lighting plan includes 17 pole mounted fixtures around the site, including 2 mounted to existing poles (gas station property), as well as 9 wall mounted fixtures around the perimeter of the proposed building.

The 15 new pole fixtures are to be mounted at a height of 27 feet, while the 2 existing poles will have fixtures mounted at 18 feet. The wall mounted fixtures are all at a height of 18 feet.

All of the new lighting is in the form of LED fixtures that are downward directed and provide compliant illumination readings (both internal to the site and along property lines).

The plan also depicts 16 existing fixtures mounted underneath the gas station canopies (8 on each side). The illumination readings from these fixtures greatly exceed Ordinance standards. Based on review of aerial photos of the site, these fixtures also appear to be quite dated.

As part of this project, we suggest that the applicant replace the gas station canopy lighting with LED fixtures that reduce the illumination levels, thereby bringing the site closer to compliance with current Ordinance standards.

- 7. Landscaping.** The Phase 1 landscape plan (Sheets L-1 through L-4) is consistent with the approved Conceptual PUD Site Plan, which allowed fewer greenbelt trees along Grand River and Lawson in exchange for additional greenbelt trees along White Horse.

Our only additional comment on the landscape plan is that we were unable account for some of the shrubs listed in the plant schedule on Sheet L-3. More specifically, the table lists 36 Dark Green Arborvitae and 63 Summer Wine Ninebark, though we found only 21 and 54, respectively.

- 8. Signage.** The site plan includes a new monument sign for the development in the southwest portion of the site (along Grand River) with space for 3 businesses.

The proposed monument sign complies with the setback, height, and area regulations of Article 16.

The plan also includes retention of the existing gas station price sign, as well as a directional sign at the White Horse driveway.

Footnote 3 of Table 16.1 allows 2 monument signs for corner lots.

The applicant should be aware that a sign permit will be required from the Township prior to the installation of any new signage (including the proposed monument sign and any future wall signage).

- 9. Waste Receptacle/Enclosure.** Phase 1 includes 3 waste receptacles – on the east and west sides of the proposed building, and another to the south. The locations are consistent with the approved Conceptual PUD Site Plan.

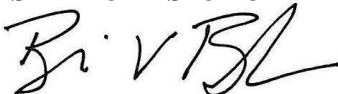
Details on Sheet DT2 identify the use of a concrete base pad and masonry enclosure for each receptacle, as required by Section 12.04.

- 10. Impact Assessment.** The submittal includes an Impact Assessment (dated August 5, 2020).

In summary, the Assessment notes that the project is not anticipated to adversely impact natural features, public services/utilities, surrounding land uses or traffic.

Should you have any questions concerning this matter, please do not hesitate to contact our office.

Respectfully,
SAFEBUILT STUDIO



Brian V. Borden, AICP
Planning Manager



October 14, 2020

Ms. Kelly Van Marter
Genoa Township
2911 Dorr Road
Brighton, MI 48116

**Re: Premier Genoa PUD
Site Plan Review No. 4**

Dear Ms. Van Marter:

Tetra Tech conducted a fourth review of the proposed Premier Genoa PUD site plan last dated September 28, 2020. The plans and impact assessment were submitted by Desine Inc. on behalf of Premier Genoa LLC. The site consists of six partially developed parcels totaling 5.12 acres at 4525 E Grand River Avenue at the northwest quadrant of the Lawson Drive and Grand River Avenue intersection. The petitioner is proposing to retain the existing Sunoco gas station and develop 37,275 net rentable square feet of self-storage space. Site improvements will include the extension of the existing 8-inch water main on the northwest corner of the site and extending municipal water and sanitary sewer services to the proposed buildings.

The revised site plan addressed our previous comments and we have no further engineering related concerns regarding the proposed site plan. The proposed water main will be public infrastructure and will require construction plan review and EGLE permitting through MHOG after site plan approval.

Please call or email if you have any questions.

Sincerely,

A blue ink signature of Gary J. Markstrom, written in a cursive style.

Gary J. Markstrom, P.E.
Vice President

A blue ink signature of Shelby Scherdt, written in a cursive style.

Shelby Scherdt
Project Engineer



BRIGHTON AREA FIRE AUTHORITY

615 W. Grand River Ave.
Brighton, MI 48116
o: 810-229-6640 f: 810-229-1619

October 13, 2020

Kelly VanMarter
Genoa Township
2911 Dorr Road
Brighton, MI 48116

RE: Premier PUD Final - Indoor Storage
Lawson/Whitehorse Dr.
Genoa Twp., MI

Dear Kelly:

The Brighton Area Fire Authority has reviewed the above-mentioned site plan. The plans were received for review on October 7, 2020, and the drawings are dated September 28, 2020. The project is a 5.12-acre site comprising six parcels to be used for the proposed redevelopment and construction of a two-story IIB construction 74,500 square foot climate-controlled storage (S-1) structure with accessory office space. The existing gas station will remain and will undergo minor renovation. This plan review is based on the requirements of the International Fire Code (IFC) 2018 edition.

1. A discrepancy was noted in the impact assessment related to the Impact on Public Facilities and Services. It refers to the addition of a single fire hydrant to meet fire protection capabilities to be located along Whitehorse Dr. There are actually three fire hydrants being added to the project, one at the East and the West side of the property in addition to the one specified in the assessment.

Additional comments will be given during the building plan review process specific to the building, life safety fire protection systems. Submittals for all required fire protection systems shall be pro prior to permitting issuance by the Building Department and that the authority will also review the building plans for life safety requirements in conjunction with the Building Department. If you have any questions about the comments on this plan review please contact me at 810-229-6640.

Cordially,

A handwritten signature in black ink, appearing to read "R. Boisvert".

Rick Boisvert, CFPS
Fire Marshal

cc: Amy Ruthig amy@genoa.org

62

2020R-036768
RECORDED ON
10/15/2020 01:32:23 PM
BRANDON DENBY
REGISTER OF DEEDS
LIVINGSTON COUNTY, MI 48843
RECORDING: 26.00
REMON: 4.00
PAGES: 62



STATE OF MICHIGAN
COUNTY OF LIVINGSTON
GENOA CHARTER TOWNSHIP

PLANNED UNIT DEVELOPMENT AGREEMENT

THIS PLANNED UNIT DEVELOPMENT AGREEMENT ("Agreement") is made and entered into on this 14th day of OCTOBER, 2020, by BMH Realty, L.L.C., a Michigan limited liability company, 775 N. Second Street, Brighton, Michigan 48116 ("Owner"), and GENOA CHARTER TOWNSHIP, a Michigan municipal corporation, 2911 Dorr Road, Brighton, Michigan 48116 (referred to as "Township").

WHEREAS, Owner owns real property located in the Charter Township of Genoa, County of Livingston, State of Michigan, and more particularly described on Exhibit A attached hereto ("Property"). There is an existing gas station and two retail buildings located within the Property. The balance of the Property is vacant. Owner intends to develop the Property as a planned unit development.

WHEREAS, Owner has submitted to the Township a request for rezoning of the Property to Redevelopment Planned Unit Development ("RDPUD"), including all Conceptual Submittal items set forth in Section 10.05 of the Township Zoning Ordinance, including, but not limited to, proof of ownership of the Property; a completed application and application fee; an impact assessment meeting the requirements of Article 18 of the Township Zoning Ordinance, a copy of which is attached hereto as Exhibit B ("Impact Assessment"); this Agreement; drawings of at least 24" x 36", containing a cover sheet, a plan sheet of existing conditions, a parallel plan, and a conceptual PUD plan sheet, a copy of which drawings are attached to this Agreement as Exhibit C ("PUD Plan").

WHEREAS, the Charter Township of Genoa Planning Commission ("GPC") has reviewed the PUD Plan, conducted a public hearing on March 9, 2020, and recommended approval of the Conceptual PUD Site Plan to the Charter Township of Genoa Board of Trustees ("Township Board") and Livingston County Planning Commission ("LCPC") on March 9, 2020.

WHEREAS, on May 20, 2020, the LCPC conducted a public hearing on the requested Conceptual PUD Site Plan, and recommended approval to the Township Board on May 20, 2020.

WHEREAS, Owner made revisions to incorporate conditions noted by the GPC and LCPC, if any, and submitted required copies to the Township, providing sufficient time for review prior to the Township Board meeting.

15 OCT '20 PM 12:29
RCUD

WHEREAS, the Township Board conducted a public hearing on the PUD rezoning, PUD Plan and PUD Agreement on July 6, 2020, and provided conceptual approval of these documents pursuant to Section 10.04.01 of the Township Zoning Ordinance on July 6, 2020.

WHEREAS, Owner has submitted to the Township all Final PUD Site Plan Submittal items set forth in Section 10.06 of the Township Zoning Ordinance, including, but not limited to, the PUD Plan containing all materials required by Article 18 of the Township Zoning Ordinance; an Impact Statement; a Traffic Impact Statement; a hydrologic impact assessment, a final copy of this Agreement (collectively the "Final Plan"), and all required fees.

WHEREAS, the GPC and Township Board actions set forth above have been taken in strict compliance with the Township Zoning Ordinance and with Act 110 of the Public Acts of 2006, as amended, and have rezoned the Property as an RDPUD, finding that such classification properly achieved the purposes of Article 10 of the Township's Zoning Ordinance, as amended, including the encouragement of innovation in land use, compatibility with adjacent uses, the promotion of efficient provision of public services and utilities, the reduction of adverse traffic impacts, and the provision of adequate employment. Further, the GPC and Township Board find the RDPUD, the PUD Plan, and this Agreement are consistent with the adopted Master Plan.

WHEREAS, the Township Board has found and concluded that the uses and future development plans and conditions shown on the approved PUD Plan and as set forth herein are reasonable and promote the public health, safety and welfare of the Township, and that they are consistent with the plans and objectives of the Township and consistent with surrounding uses of land for reasons including, but not limited to, the following:

- a. the Property has been previously developed for the purpose of a commercial, office, or industrial use, and redevelopment of the site will be an enhancement to the site and surrounding area;
- b. all buildings on the site are proposed to be removed or renovated;
- c. a use permitted within the underlying zoning district is proposed;
- d. the Township has determined that flexibility in dimensional standards is necessary to allow for innovative design in redeveloping a site with constraints and where a clear public benefit is being derived;
- e. to encourage flexibility and creativity consistent with the intent of the PUD, the Township is permitting specific departures from the requirements of the Zoning Ordinance as a part of the approval process;
- f. For all deviations, the Township has found that the deviation shall result in a higher quality of development than would be possible using conventional zoning standards;
- g. a parallel plan was provided showing how the site could be redeveloped without the use of the PUD;
- h. a table was provided on the site plan that specifically details all deviations from the zoning regulations, including ordinance provisions from which deviations are sought, the reasons the deviations are necessary and mechanisms to be utilized to mitigate any impacts; and
- i. The permitted deviations are consistent with the intent of the Township's PUD ordinance.

NOW, THEREFORE, OWNER AND TOWNSHIP, in consideration of the mutual promises contained in the Agreement, HEREBY AGREE AS FOLLOWS:

ARTICLE I. GENERAL TERMS OF AGREEMENT

- 1.1 The Township and Owner acknowledge and represent that the recitations set forth above are true, accurate and binding on the respective parties.
- 1.2 The Township acknowledges and represents that the zoning of the Property as RDPUD, regulated by the PUD Plan and this Agreement may be relied upon for future land use and development of the Property by Owner, its successors, assigns and transferees. This Agreement is for the benefit of the Property, and shall run with the Property, and shall bind and inure to the benefit of the successors, assigns and transferees of the parties to this Agreement.
- 1.3 The PUD Plan, attached as Exhibit C, has been approved by the Township in accordance with its authority granted by the Genoa Charter Township Zoning Ordinance, The Michigan Zoning Enabling Act, being MCL 125.3101, et seq, and the Michigan Planning Enabling Act, being MCL 125.3801, et seq, subject to the terms of this Agreement.
- 1.4 Deviations from the Township Zoning Ordinance shall be permitted as set forth in this Agreement or the PUD Plan, or as otherwise be agreed upon by the Township and the Owner. Changes to the PUD Plan and/or PUD Agreement shall be processed as set forth in the Zoning Ordinance and this Agreement.
- 1.5 All improvements constructed in accordance with this Agreement and the PUD Plan shall be deemed to be conforming under the Township Zoning Ordinance and in compliance with all other ordinances of the Township.
- 1.6 The approval of the PUD Plan shall be subject to the conditions set forth herein, inclusive of Exhibits.
- 1.7 All common areas and features, such as walkways, signs, lighting and landscaping, will be maintained by Owner, and financed on a pass-through basis to tenants through Owner's standard lease.
- 1.8 The construction, improvement and maintenance of all streets and necessary utilities (including public water, wastewater collection and treatment) to mitigate the impacts of the PUD project through construction shall be performed by the Owner, or sufficient performance bond given by the Owner to assure such construction.

ARTICLE II. LAND USE AUTHORIZATIONS

- 2.1 In addition to the uses set forth in the PUD Plan, uses listed in the GCD zoning classification of the Township Zoning Ordinance shall be allowed subject to the applicable permitted or special land use regulations, as well as those uses set forth on Exhibit D attached hereto.
- 2.2 The PUD Plan identifies the location and configuration of the currently-proposed structures that may be developed on the Property subject to the following:

- A. Owner shall be permitted to adjust the size or shape of the various parcels and/or the size or configuration of the proposed buildings within the parcels, as set forth in, and in compliance with, the Township's Code of Ordinances.
 - B. The buildings identified on the PUD Plan are flexible use buildings that may be converted to retail, office or other uses in the future, provided that such uses are permitted under this Agreement.
- 2.3 The timing of development of the PUD shall be in compliance with the Charter Township of Genoa Code of Ordinances, but otherwise as determined by the Owner.
- 2.4 Owner shall have the right to develop the Property as a commercial condominium project by following the procedures required by Michigan law and any applicable Township ordinances. Owner shall additionally retain the right to apply to the Township for one or more lot splits that comply with Michigan law, Township Ordinances and the PUD Plan.

ARTICLE III. CURB CUTS AND OFF-SITE TRANSPORTATION IMPROVEMENTS

- 3.1 The number and general location of entrances to the site from adjacent public thoroughfares shall be as identified on the PUD Plan.

ARTICLE IV. INTERNAL ROAD NETWORK

- 4.1 The internal system of private roads or drives shall be as identified on the PUD Plan.

ARTICLE V. DRAINAGE

- 5.1 Storm drainage from the Property shall be managed by means of an off-site retention basin to be developed by Owner on the adjacent property shown on the PUD Plan, with permission of the owner of that property. Owner has obtained the necessary easements to improve, utilize, maintain and repair the off-site retention basin (the "Basin"), and to access the Basin across White Horse Drive.

ARTICLE VI. SITE IMPROVEMENTS

- 6.1 There shall be a coordination of site improvements within the overall Property, with the objective of creating site improvements that are integrated and mutually supportive among the respective portions of the development, including the utilities, landscaping and lighting, as more specifically set forth in the PUD Plan.
- 6.2 Comprehensive and interconnected pedestrian walkways shall be constructed as shown on the PUD Plan contemporaneously with construction of the building they are designed to serve.
- 6.3 Site elements, including site design and landscaping to diminish the prominence of parking lots as viewed from public roads and parking lot configuration, shall be constructed as shown on the PUD Plan.

- 6.4 The Township shall grant to Owner and its contractors and subcontractors all Township permits and authorizations necessary to bring and/or construct all utilities necessary to service the Property and to otherwise develop and improve the Property in accordance with the PUD Plan, provided the Owner has complied with any and all legally-applicable requirements for such permits and authorizations, including paying any required fees. Any applications for permits or authorizations from the Township shall be processed by the Township in the customary manner.
- 6.5 All trees and woodlands will be preserved as shown on the PUD Plan, or replaced on a caliper-for-caliper basis, as more fully set forth in the PUD Plan.

ARTICLE VII. DESIGN OF BUILDING AND SIGNS

- 7.1 The architecture, building materials, colors and shapes of all buildings shall be consistent with the building elevations attached to this Agreement as Exhibit E and otherwise conform to the Zoning Ordinance.
- 7.2 All signs shall be permitted as authorized in the Zoning Ordinance. Any permitted sign shall have a base constructed of materials that coordinate with and are consistent with the architecture of the building, unless mounted directly on the building. The primary sign text of wall-mounted signs shall use channel-cut lettering, with the exception of ancillary logos or "pill box" messages which shall consist of not more than 25% of the sign area.
- 7.3 The landscaping within the PUD shall demonstrate consistency in terms of design and materials. Parking lot, street and walkway lighting shall be consistent throughout the PUD and comply with the Zoning Ordinance.

ARTICLE VIII. UTILITIES

- 8.1 All buildings that require plumbing must connect to the municipal water system and municipal sanitary sewer system. The internal water and sewer main plan shall be completed and approved with the site plan. The Township does not guarantee public utility availability without adequate planning and approval of the Township Engineer.
- 8.2 Fees, charges and costs for utilities shall be as set forth in the Genoa Township Equivalent User Table as applicable and as may be amended from time to time.

ARTICLE IX. MISCELLANEOUS

- 9.1 This Agreement may not be modified, replaced, amended or terminated without the prior written consent of the parties to this Agreement. With respect to any portion of the Property owned by Owner, the Owner and the Township shall be entitled to modify, replace or amend this Agreement without the consent of any other person or entity, regardless of whether such person or entity now or hereafter has any interest in any part of the Property, including subsequent purchasers, tenants, mortgagees, or others, unless

required by Federal, State or local law or ordinance. Amendments and deviations, whether minor or major, shall be made in compliance with the procedures set forth in the Charter Township of Genoa Code of Ordinances at the time the amendment or deviation is sought. Nothing whatsoever provided in this Agreement shall be construed so as to prevent Owner from seeking major and/or minor changes to the PUD Plan in accordance with the applicable provisions of the Zoning Ordinance.

- 9.2 With the exception of Paragraph 9.1, reference in this Agreement to activities by the Owner in relation to development is intended to include Owner's transferees and assigns unless context dictates to the contrary.
- 9.3 In the event of any direct conflict between the specific terms and provisions of this Agreement (including the attached PUD Plan) and the provisions of the Zoning Ordinance, or other Township ordinances, rules or regulations, the provisions of this Agreement shall control. To the extent that this Agreement is silent as to an issue, that issue shall be governed by the provisions of the Zoning Ordinance, including, but not limited to, a) requirements for temporary outdoor sales and temporary outdoor events permitted by right under Exhibit D, b) procedural requirements for approval of special land uses permitted by Exhibit D.
- 9.4 In the event a portion of the Property is submitted for site plan approval, and such approval is denied, the party submitting such site plan shall be entitled to appeal such decision to the Zoning Board of Appeals as provided by law.
- 9.5 The undersigned parties acknowledge that the conditions imposed upon the development of the Property are reasonable conditions necessary to ensure that public services and facilities affected by the proposed land use or activity will be capable of accommodating increased service and facility loads caused by the land use or activity, to protect the natural environment and conserve natural resources and energy, to ensure compatibility with adjacent uses of land, and to promote the use of land in a socially and economically desirable manner. Further, it is acknowledged that the conditions meet all of the requirements of Section 503 of Public Act 110 of 2006, MCL 125.3503.

THE PARTIES have executed this Planned Unit Development Agreement on the dates set below their names, to be effective on the date set on the first page of this agreement.

(REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK)

GENOA CHARTER TOWNSHIP
a Michigan municipal corporation

By: Bill Rogers, Bill Rogers
Its: SUPERVISOR

STATE OF MICHIGAN)
)SS
COUNTY OF LIVINGSTON)

This Amendment was acknowledged before me in LIVINGSTON County, Michigan, this 14th day of OCTOBER, 2020, by BILL ROGERS, the SUPERVISOR of Genoa Charter Township, a Michigan municipal corporation, on behalf of the corporation.

KELLY VANMARTER
Notary Public, Livingston County, MI
My Commission Expires March 8, 2027


Kelly VanMarter
KELLY VANMARTER, Notary Public
LIVINGSTON County, Michigan
My Commission Expires: 3/8/2027
Acting in the County of LIVINGSTON

BMH REALTY, L.L.C.
a Michigan limited liability company

Michael B. Corrigan
By: Michael B. Corrigan
Its: Member

STATE OF MICHIGAN)
)SS
COUNTY OF Livingston)

This Amendment was acknowledged before me in Livingston County, Michigan, this 12th day of October, 2020, by Michael B. Corrigan, the Member of BMH Realty, L.L.C., a Michigan limited liability company, on behalf of the company.

[Signature]
_____, Notary Public
_____, Michigan
My Commission Expires: Livingston
Acting in the County of 03/08/2025 

DRAFTED BY AND WHEN RECORDED
RETURN TO:
Bradford L. Maynes, Esq.
Corrigan Oil Company
775 North Second Street
Brighton, Michigan 48116

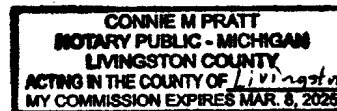


Exhibit A

Property Description

Real estate situated in the Township of Genoa, County of Livingston, State of Michigan, described as:

Part of the Northeast quarter of Section 9, Town 2 North, Range 5 East, Michigan, described as follows: Beginning at a point South 2°24' West 636.58 feet from the North quarter corner of said Section 9; thence South 2°24' West 172.53 feet; thence South 60°0' East 141.66 feet along the Northerly right of way line of Grand River; thence North 30°0' East 200.00 feet; thence North 72°0' West 226.54 feet to the point of beginning.

Commonly known as: 4483 E. Grand River, Howell, MI
PARCEL ID NO. 4711-09-200-005

A part of the Northeast quarter of Section 9, Town 2 North, Range 5 East, Genoa Township, Livingston County, Michigan, described as follows: Commencing at the North quarter corner of said Section 9; thence South 02°24'00" West along the West line of Charles Garlock Survey No. 142-33, dated February 2, 1977, 809.11 feet to the Northerly right-of-way of Grand River Avenue; thence South 60°00'00" East along the Northerly right-of-way of Grand River Avenue, 141.66 feet to the point of beginning of the parcel to be described; thence North 30°00'00" East 200.00 feet; thence South 60°00'00" East 274.00 feet; thence South 25°32'20" West 217.67 feet to the Northerly right-of-way of Grand River Avenue; thence North 60°00'00" West along the Northerly right-of-way 289.86 feet to the point of beginning.

Commonly known as: 4525 E. Grand River, Howell, MI
PARCEL ID NO. 4711-09-200-010 and 4711-09-200-015

A part of the Northeast quarter of Section 9, Town 2 North, Range 5 East, Genoa Township, Livingston County, Michigan, described as follows: Commencing at the North quarter corner of said Section 9; thence South 02°24'00" West along the West line of Charles Garlock Survey No. 142-33, dated February 2, 1977, 809.11 feet to the Northerly right-of-way of Grand River Avenue; thence South 60°00'00" East along said Northerly right-of-way of Grand River Avenue, 431.52 feet to the point of beginning of the parcel to be described; thence North 25°32'20" East 217.67 feet; thence South 64°27'40" East 106.63 feet; thence South 05°09'00" West 23.38 feet; thence South 16°19'00" West 210 feet to the Northerly right-of-way of Grand River Avenue; thence North 60°00'00" West along said Northerly right-of-way 148.90 feet to the point of beginning.

Commonly known as: 4533 E. Grand River, Howell, MI
PARCEL ID NO. 4711-09-200-014

A part of the Northeast quarter of Section 9, Town 2 North, Range 5 East, Genoa Township, Livingston County, Michigan, described as follows: Commencing at the North quarter corner of said Section 9; thence South 02°24'00" West along the West line of Charles Garlock Survey No. 142-33, dated February 2, 1977,

459.11 feet to the point of beginning of the parcel to be described; thence South 67°30'00" East 612.00 feet; thence South 05°09'00" West 205.00 feet; thence North 64°27' 40" West 106.63 feet; thence North 60°00'00" West 274.00 feet; thence North 72°00'00" West 226.54 feet; thence North 02°24'00" East 77.47 feet to the point of beginning.

Commonly known as: 1098 Lawson Road, Howell, MI
PARCEL ID NO. 4711-09-200-016

A part of the Northeast quarter of Section 9, Town 2 North, Range 5 East, Genoa Township, Livingston County, Michigan, described as follows: Commencing at the North quarter corner of said Section 9; thence South 02°24'00" West 459.11 feet; thence South 67°33'00" East 501.50 feet to the point of beginning; thence South 03°14'18" West 177.38 feet; thence South 64°26'59" East 121.69 feet; thence- South 16°19'00" West 210.00 feet; thence North 19°06'45" East 232.36 feet; thence North 13°44'25" East 192.25 feet; thence North 8 19°06'45" West 44.87 feet±; thence North 67°33'00" West 110.50 feet to .the point of beginning.

Commonly known as: 4525 E. Grand River, Howell, MI
PARCEL ID NO. 4711-09-200-017

Exhibit B
Impact Assessment

**BMH – PREMIER GENOA PUD
Genoa Township, Michigan
Site Plan Application**

IMPACT ASSESSMENT

Owner:
BMH Realty, L.L.C.
775 N. Second Street
Brighton, Michigan 48116

Prepared by:
DESINE INC.
2183 Pless Drive
Brighton, Michigan 48114

BMH – PREMIER PUD

A. INTRODUCTION

This impact assessment has been prepared pursuant to Article 18 – SITE PLAN REVIEW of the Zoning Ordinance for the Township of Genoa, Livingston County, Michigan. This assessment addresses the impact of the proposed building additions and parking expansion on the surrounding community and the economic condition and social environment of the Township.

This Impact Assessment has been prepared under the direction of Wayne Perry, P.E., DESINE INC., 2183 Pless Drive, Brighton, Michigan 48114. Mr. Perry is a licensed Civil Engineer, providing professional engineering services in Livingston County since 1988 with experience in private and municipal development including projects within Genoa Township and Livingston County.

B. SITE LOCATION / DESCRIPTION

The site is comprised of six parcels, containing a total of 5.12 acres of property, bordered on the North by White Horse Drive, Lawson Drive on the East, Grand River Avenue on the South and the Lake Trust Credit Union to the West, as shown on Figure 1. The Southeasterly four parcels are zoned General Commercial (GCD) district, the Southwesterly Parcel is zoned Office Service (OSD) district, and the North Parcel is split zoned with the East 1/2 zoned GCD and the West 1/2 zoned OSD.

The property currently contains three buildings and related improvements. An existing fuel station with a 2,670 square foot convenience store building, parking lot and storm water basin is located on the two center parcels. A 7,900 square foot commercial building, occupied by the Total Pool Supplies and Service, is located on the Southeast parcel. The Northeast parcel contains a 2,440 square foot industrial building, with a fenced outdoor storage yard, currently home to Security Access Controls and Fence Company. A residential home and related improvements, located on the Westerly parcel, were previously removed. The Existing Conditions Plan provides a detailed overview of the existing site features.

The BMH-Premier PUD development plan depicts proposed site improvements to be constructed on the site. Improvements consist of A 37,275 sq ft multi-purpose, adaptive use building, currently proposed to be up-fit with equipment to operate a drive-through, climate controlled building, with the potential for small flex-office spaces for rent, a 7,000 sq ft building appropriate for use for office, retail, restaurant, or a mix of those uses, a 2,336 sq ft out parcel pad suitable for use for retail or drive through fast food or other commercial use, and the existing gas station with a convenience store and related (existing) ancillary propane and kerosene sales. Additionally, the PUD plan features new parking areas, access drives, a storm water management system, lighting, landscaping and related site improvements.

Access to the property from Grand River Avenue and from Lawson Drive is provided through existing drives to the fuel station and convenience store. New access drives are proposed on White Horse Drive, in the Northeast portion of the project, and connection to the existing cross-access drive to Lake Trust Credit Union, located at the Southwest corner

BMH – PREMIER PUD

of the site. The development will provide 102 parking spaces, including 6 barrier free accessible spaces, are to be developed on the site. Appurtenant features including commercial access drives, drive aisles, unloading/loading area, sidewalks and landscaping are also presented in the site plan. An aerial photograph depicting the proposed site improvements is provided in Figure 2.

Adjacent uses include the Lake Trust Credit Union to the West and the DTE Service Center to the Northeast. Property to the North and East of the site is currently vacant. An aerial photograph depicting the proposed site improvements is provided in Figure 2.

C. IMPACT ON NATURAL FEATURES

Natural features on the subject parcel consist of re-established field grasses and shrub/scrub brush on the Westerly portion of the property. Existing topography of the site is generally flat to gently sloping terrain. The elevation of the property varies from an elevation of 991 at the Westerly property line, to approximately 986 at the Southeast corner of the parcel. Surface water drainage on the property generally flows to the Southeast.

Existing soils on the property are primarily Miami loam. These soils are generally moderately drained, moderately permeable, loams. Soil classifications are prepared by the United States Department of Agriculture, Soil Conservation Service, and “Soil Survey of Livingston County”. The Soils Map, shown in Figure 3, shows the locations of specific soil types as classified.

The proposed construction and improvements will require filling and grading in the Southeast portion of the property, filling the existing storm water basin and modifications to site elevations on the Northwest corner of Lawson Drive and Grand River. Excavation will be required to construct the proposed storm water retention system proposed on the North side of White Horse Drive.

The limits of disturbance have been depicted on the grading plan. Grading for this project will maintain the general character of the existing site. Development of this project will require earthwork to construct to proposed retention basin and modify site grades with useable materials from the site, requiring the exporting of excess soil and importing of additional structural fill material. The proposed elevations and grading of the site mesh with the existing grades at the property lines.

Landscaping is proposed for the developed portion of the site to reduce the visual impact of the proposed project. All proposed landscaping areas meet or exceed the planting requirements of Genoa Township’s current Zoning Ordinance and have been designed to improve the aesthetics of the property. Within the developed portion of the site, areas not otherwise covered, shall have lawn or other vegetative surface cover established.

Surface drainage characteristics on the property will be affected by the construction of the proposed building expansions and parking lots. Construction of the proposed improvements will reduce the permeable area of the property resulting in an increase in the surface water runoff generated. A storm water management system has been designed to

collect and control the surface water runoff, reducing the discharge rate from the property and increasing the infiltration of surface water runoff.

The proposed changes and modifications to the surface drainage conditions will not significantly impact local aquifer characteristics or groundwater recharge capacity. All surface water runoff from the site will be directed into the proposed retention basin to be constructed North of White Horse Drive. Reduction in the surface permeability will affect onsite infiltration, surface water flow path and duration. Surface water runoff from the development will be reduced and no significant impact to adjacent properties are anticipated from the proposed construction and re-development of the site.

Upland wildlife habitats on the property are minimal and consist of primarily field grass and shrub/scrub brush areas in the Northwest portion of the property. Wildlife supported in this area is generally smaller field animals and birds. Previous development and the existing use of the property, the adjoining developments and the proximity of Grand River, limits the existing upland habitat.

The project site does not currently support any significant wildlife habitat and the proposed construction will not have a significant impact on overall habitat quality. No significant adverse impact to natural features is anticipated due to the proposed re-development of this property.

D. IMPACT ON STORM WATER MANAGEMENT

Excavation and grading will be undertaken to construct the proposed stormwater retention basin. Earthwork will be required to direct storm water flow into the storm water collection system. This system will discharge surface water runoff generated by development of the property to the proposed sedimentation basin and retention basin. Site grading will mesh with existing grades on adjoining properties. No adverse impact to adjoining properties is anticipated due to the construction and grading of the property.

Surface water runoff generated from all improved areas of the site will be collected by catch basins, conveyed through a storm sewer system, and discharged to the sedimentation and retention basin located on the North side of White Horse Drive. Storm water will be retained within the basin during a storm event and will infiltrate into the ground.

Soil erosion and sedimentation are controlled by the Soil Erosion Control Act No. 347 of the Public Acts of 1972, as amended and is administered by the Livingston County Drain Commissioner. Silt fencing will be installed around a majority of the site during construction. The Contractor shall comply with all regulations including control during and after construction.

Impact on adjoining properties due to the construction of this site will be minimized by implementing soil erosion control methods. No adverse impact to adjacent properties due to surface water runoff will be created as a result of the proposed improvements.

E. IMPACT ON SURROUNDING LAND USES

Surrounding land uses to the North of the site, on the North side of White Horse Drive, zoned Mixed-Use Planned Unit Development (MU-PUD), consists of an industrial user and vacant property. Land to the East is zoned Non-Residential Planned Unit Development (NR-PUD) and is vacant. Land to the South, zoned Non-Residential Planned Unit Development (NR-PUD) and Industrial (IND), contains a mix of commercial and industrial users including an auto wash and Reuland Electric Company. Property to the West is the Lake Trust Credit Union, zoned Mixed-Use Planned Unit Development (MU-PUD).

The Genoa Township Future Land Use Plan designates this property for General Commercial uses. The surrounding property is designated for a mix of General Commercial, Neighborhood Commercial and Medium Density Residential uses.

The proposed uses depicted on the development plan are consistent with existing development in the area and are generally consistent with the long-term planning within the Township.

The landscaping and architecture proposed will allow this site to be developed to compliment the surrounding properties. The impact of the improvements to the surrounding area has been minimized.

Ambient noise levels on and around the property are largely generated by Grand River vehicle traffic. Daily activities within the proposed building are not anticipated to create an increase in the sound level in the area.

All site lighting shall meet the requirements of the Genoa Township Zoning Ordinance. Proposed building mounted fixtures and pole mounted site lighting will be shielded and down directed on the site. The existing fuel station and convenience store lighting shall be on from dusk until dawn. General site lighting for other uses, excluding safety and emergency lighting, shall be energized between the times from dusk to 12:01 a.m. and from 5:00 a.m. to dawn.

The building façade along the building front (South side) and the East side elevations are most visible from Grand River. The East and West ends of the storage building provide primary entrance features. The storage building is designed to grant vehicular access into and out of the respective East and West ends of the building. The entire length of the building is designed with a 30' wide drive and parking aisle through the building, reducing demand for exterior onsite parking needs and eliminating the need for any outdoor parking and loading areas to access the building for pick up and delivery of stored items.

HVAC units serving the multi-purpose facility are placed inside of the building eliminating unsightly large heating and cooling mechanical equipment typically located either on rooftops or outside within landscaped buffers, which if placed on the available area outside of the building these mechanicals would be seen along White Horse Drive or Lawson Drive. The proposed interior placement reduces visibility by drivers accessing nearby residential neighborhoods and indoor placement of the HVAC lessens the total height and

mass of the structure.

The proposed use of the property does not create any significant emissions of smoke, airborne solids, odors, gases, vibrations, noise or glare discernable and substantially annoying or injurious to person and/or property beyond the lot lines. No significant change in air pollution is anticipated.

The Contractor shall be responsible for initiating and maintaining adequate dust control measures during and after construction until the project site is fully stabilized and a vegetative cover established. Dust control measures used during construction may consist of site watering, mulching of completed areas, installation of windbreak fencing, and application of chemical dust control materials. The site will comply with the performance standards contained in Section 13.05 of the Township Zoning Ordinance.

F. IMPACT ON PUBLIC FACILITIES AND SERVICES

The Livingston County Sheriff and Michigan State Police will provide Police protection. Public safety services required to accommodate the proposed use are anticipated to be minor.

The Brighton Area Fire Department as a part of an existing governmental agreement will provide fire protection service. A fire hydrant will be constructed on the property within the White Horse Drive Right-of-way to provide adequate fire protection capabilities. The building is provided with an internal fire suppression system. A Fire Department Connection is located near the Northwest corner of the building along with a Knox box and required address labeling to meet the Fire Departments requirements. No significant increase in fire protection services are anticipated as a result of the proposed use.

The property is accessed from Grand River, White Horse Drive and Lawson Drive, providing adequate access for emergency vehicles. A wide drive aisle on the West side of the building will serve as a fire access lane between Grand River and White Horse Drive.

The proposed uses will not create any direct adverse impact on the public schools.

G. IMPACT ON PUBLIC UTILITIES

The property is presently within municipal sewer and water districts and existing buildings are connected to the municipal utilities.

Water service to the storage building is provided from a new water main extension to be constructed along White Horse Drive. A water service lead is connected to this main to supply the building and a fire suppression line is also provided from this main. An easement for repair, maintenance and access are provided for this connecting water main. Capacity is available within the existing water system to provide adequate service to this site.

Sanitary sewer is located along the North side of Grand River. Capacity is available within the existing sanitary sewer system to provide adequate service for the site.

The site is currently serviced by electric, gas, phone and cable systems located along Grand River Avenue.

All solid wastes will be properly disposed of through a licensed disposal firm on a regular basis. Dumpster enclosures with screen walls are located on the East, South and West sides of the storage building. The enclosures will be constructed decorative CMU material, matching material used on the site and complimenting the adjacent architecture of the building. Additional landscaping is provided in these areas to further enhance the aesthetics of these enclosures.

Delivery services are generally limited to parcel trucks, such as UPS, and similar single axle vehicles. These delivery service providers use available parking and drop off areas during their deliveries. Large vehicles accessing the site will be capable of maneuvering on the proposed access drives around the building and will utilize the proposed storage building for loading and unloading purposes.

H. STORAGE AND HANDLING OF ANY HAZARDOUS MATERIALS

The proposed uses within the building will not use, store, generate and/or discharge potentially polluting materials. Small quantities of material such as cleaning products and chemicals may be stored on-site.

I. TRAFFIC IMPACT STUDY

A traffic impact study for the development has been prepared by Rowe Engineering and is submitted with the Site Plan packet. ¹

Pedestrian access to the property is provided by an existing sidewalk along Grand River. A new sidewalk will be constructed along the East side of the property on Lawson Drive. Sidewalks throughout the property provide safe and efficient means for pedestrians to access the various uses within the property.

No adverse impact on pedestrian traffic in the area is anticipated as a result of developing the proposed project.

J. HISTORIC AND CULTURAL RESOURCES

The existing buildings on the property do not have any major historic significance on a local, regional or state level.

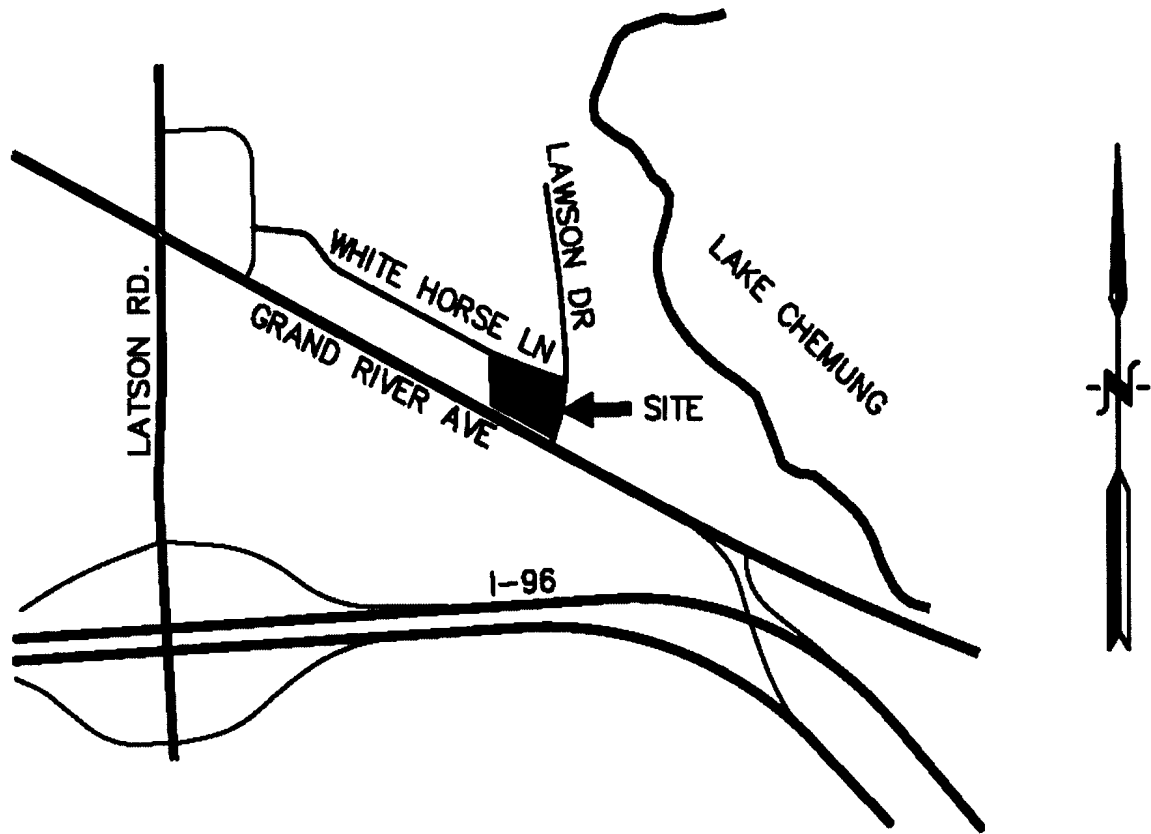
K. SPECIAL PROVISIONS

No special provisions or requirements are currently proposed for this facility.

END NOTE

¹ Net difference between development plan analyzed within the Rowe Engineering Traffic Study compared to the PUD plan part of this proposal includes a net 3,100 sq ft reduction in the retail/flex-office out building on the West end of the site and an increase of 2,685 net rentable sf in storage space.

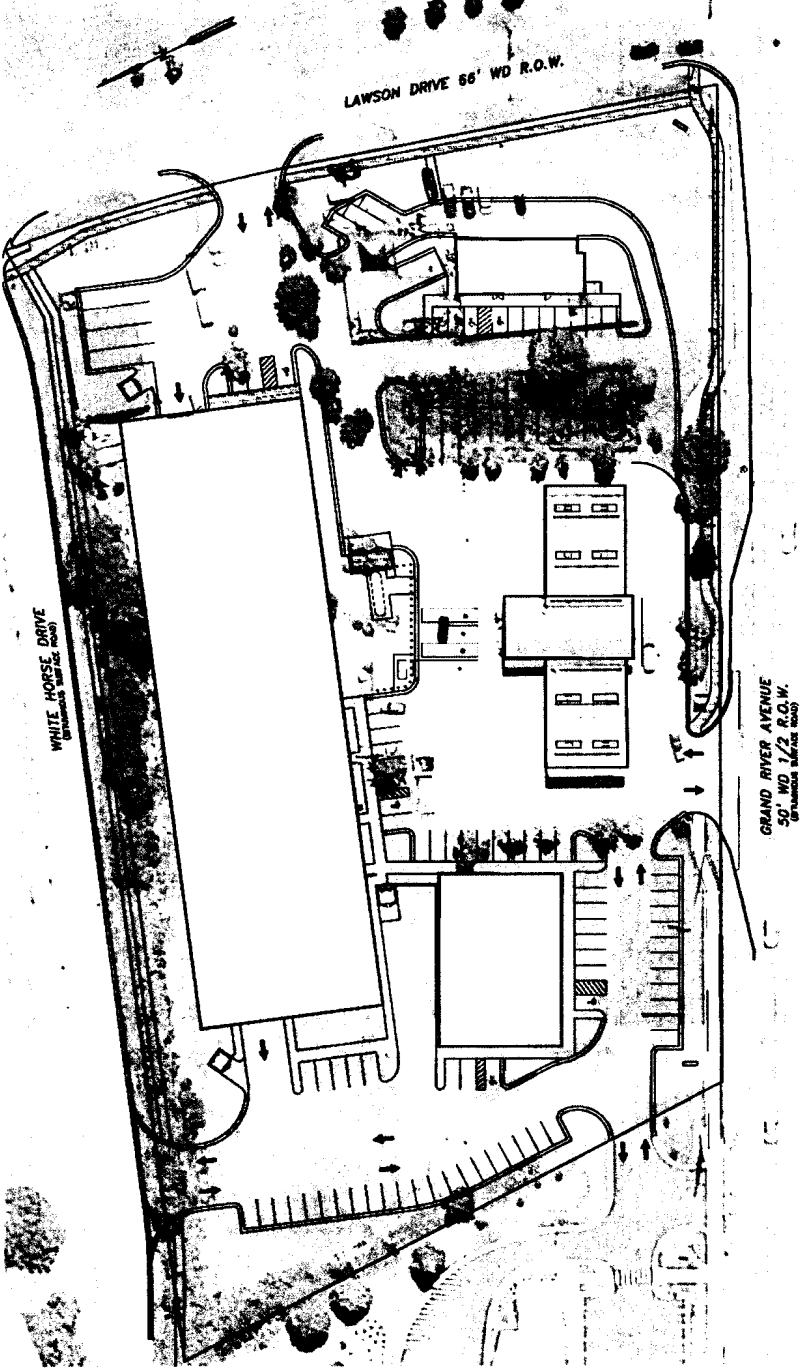
FIGURE 1



LOCATION MAP
NOT TO SCALE

BMH – PREMIER PUD

FIGURE 2
PHOTO DEPICTING SITE IMPROVEMENTS
NOT TO SCALE



BMH – PREMIER PUD

FIGURE 3
SOILS MAP
(NOT TO SCALE)



SOILS MAP

Map Unit Symbol	Map Unit Name
BtB	Boyer-Oshtemo loamy sands, 2 to 6 percent slopes
BtC	Boyer-Oshtemo loamy sands, 6 to 12 percent slopes
BtE	Boyer-Oshtemo loamy sands, 18 to 25 percent slopes
BwA	Bronson loamy sand, 0 to 2 percent slopes
CvA	Conover loam, 0 to 2 percent slopes
FrB	Fox-Boyer complex, 2 to 6 percent slopes
FrC	Fox-Boyer complex, 6 to 12 percent slopes
FrD	Fox-Boyer complex, 12 to 18 percent slopes
FrE	Fox-Boyer complex, 18 to 25 percent slopes
Ho	Houghton muck
MoB	Miami loam, 2 to 6 percent slopes
W	Water

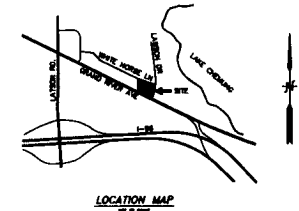
BMH – PREMIER PUD

Exhibit C:

PUD Plan

CONCEPTUAL PLAN FOR BMH - PREMIER P.U.D.

GENOA TOWNSHIP, MICHIGAN
A PART OF THE NE 1/4 OF SECTION 9, T2N, R5E.
GENOA TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN



LEGAL DESCRIPTION

Reference Official Land Survey as recorded in
Document No. 2000-080, Livingston County Records.

Situated in the Township of Genoa, County of Livingston and State of Michigan, and described as follows:

PARCELS No. 11-00-000-000

Commencing at the North 1/4 Corner of Section 8, Town 2 North, Range 5 East, Genoa Township, Livingston County, Michigan; thence S89°50'15" W (S27°50'15" E) 200.00 feet along the North-South 1/4 line of said Section 8 to the PLACE OF BEGINNING; thence S27°50'15" W 200.00 feet (S27°50'15" W 200.00 feet as recorded); thence S89°50'15" W 142.80 feet (S27°50'15" W 142.80 feet as recorded); along the North-South line of said four acres (20 feet wide 1/2 right-of-way) thence S89°50'15" W 175.20 feet (S27°50'15" W 175.20 feet as recorded); along with North-South 1/4 line of Section 9 to the Place of Beginning. Being a part of the Northeast 1/4 of Section 8, Town 2 North, Range 5 East, Genoa Township, Livingston County, Michigan. Containing 6.25 acres of land, more or less. Subject to and together with all easements and restrictions affecting this to be described above provision.

PARCELS No. 11-00-000-000

Commencing at the North 1/4 Corner of Section 8, Town 2 North, Range 5 East, Genoa Township, Livingston County, Michigan; thence S89°50'15" W 200.00 feet (S27°50'15" W 200.00 feet as recorded); along the North-South 1/4 line of said Section 8 thence S27°50'15" W 142.80 feet (S27°50'15" W 142.80 feet as recorded); along the North-South line of said four acres (20 feet wide 1/2 right-of-way) to the PLACE OF BEGINNING; thence S89°50'15" W 175.20 feet (S27°50'15" W 175.20 feet as recorded); thence S89°50'15" W 200.00 feet (S27°50'15" W 200.00 feet as recorded); along with North-South 1/4 line of Section 9 to the Place of Beginning. Being a part of the Northeast 1/4 of Section 8, Town 2 North, Range 5 East, Genoa Township, Livingston County, Michigan. Containing 6.25 acres of land, more or less. Subject to and together with all easements and restrictions affecting this to be described above provision.

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PARCELS No. 11-00-000-000

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AERIAL PHOTOGRAPH
SCALE: 1" = 60'



OWNER
BMH REALTY L.L.C.
775 N. SECOND STREET
BRIGHTON, MICHIGAN 48116

DEVELOPER
PREMIER GENOA LLC
775 N. SECOND STREET
BRIGHTON, MICHIGAN 48116

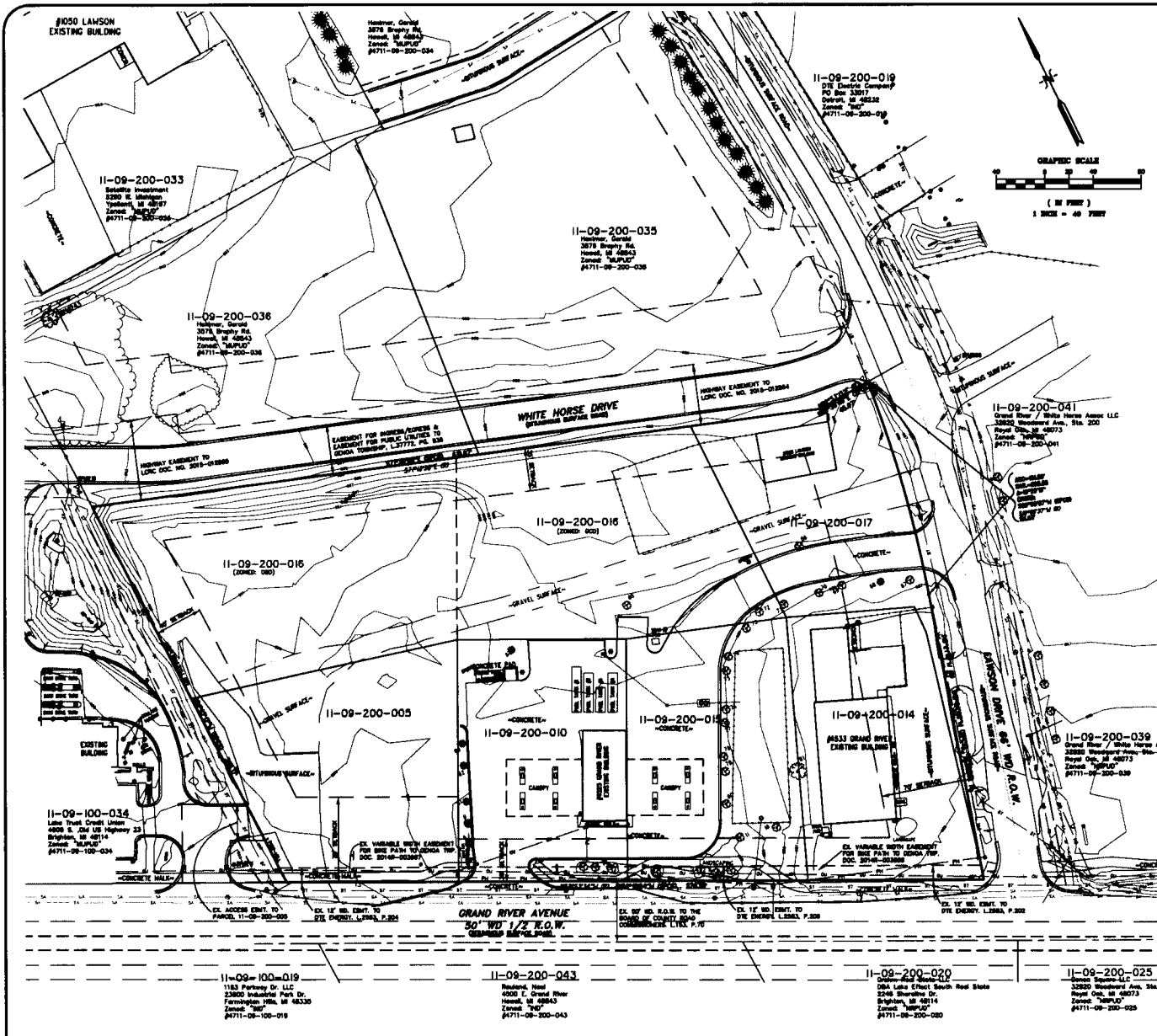
ARCHITECT
DRN & ASSOCIATES, ARCHITECTS PC
50850 APPLEBROOKE DR.
NORTHVILLE, MICHIGAN 48167
PHONE (248) 880-6523

ENGINEER/SURVEYOR
DESINE INC.
2183 PLESS DRIVE
BRIGHTON, MICHIGAN 48114
PHONE: (610) 227-9533

LANDSCAPE ARCHITECT
VERT VERDE
LANDSCAPE ARCHITECT
PLYMOUTH, MICHIGAN

- SHEET INDEX**
- EX EXISTING CONDITIONS
 - PD PRELIMINARY PUD
 - PDP PARALLEL DEVELOPMENT PLAN
 - SP SITE PLAN
 - UT UTILITY PLAN
 - EVC EMERGENCY VEHICLE CIRCULATION PLAN
 - GR1 GRADING PLAN
 - GR2 RETENTION BASIN DETAIL AND DRAINAGE CALCULATION
 - DT1 NOTES AND DETAILS
 - DT2 SIGNAGE AND PAVEMENT MARKING NOTES AND DETAILS
 - L1 PRELIMINARY LANDSCAPE PLAN
 - L2 ENLARGEMENTS
 - L3 ENLARGEMENTS AND LANDSCAPE DETAILS
 - A-1 SELF STORAGE BUILDING, FLOOR PLANS
 - A-2 SELF STORAGE BUILDING, ELEVATIONS
 - A-3 RETAIL BUILDING
 - A-4 FUEL STATION AND CONVENIENCE STORE
 - A-5 SECTIONS

REVISED	SCALE: AS NOTED
DATE: 07/20/24	PROJECT NO.: 183450
FILED: 07/14/2024	DWG NAME: 3450.COV
	PRINT: 11/20/24 9:30 AM



BENCHMARK
 DATUM BASED ON "2008 SPMS-48 SOLUTION REPORT", DATED MAY 25, 2004 AT 10.00 AM

BENCHMARK #000
 CORNER OF HIGHWAY, LOCATED AT LAMSON DRIVE, NORTH OF DRIVE FOR PARCEL.
 11-09-200-011
 ELEVATION = 562.00 NAVD 83

BENCHMARK #10
 CORNER OF HIGHWAY, LOCATED NEAR THE SOUTH SIDE OF DRIVE FOR REAR ENTRANCE OF PARCEL, PARCEL 11-09-200-014.
 ELEVATION = 562.00 NAVD 83

BENCHMARK #14
 TOP LAST END OF A LIGHT POLE B.M., LOCATED EAST OF THE SOUTH SIDE ENTRANCE OF PARCEL, 11-09-200-034, OFF ROAD DRIVE.
 ELEVATION = 562.00 NAVD 83

BENCHMARK #200
 CORNER OF HIGHWAY, LOCATED NEAR THE SOUTH SIDE OF DRIVE FOR REAR ENTRANCE OF PARCEL, 11-09-200-034, OFF ROAD DRIVE.
 ELEVATION = 562.00 NAVD 83

- LEGEND**
- PNEC STRUCTURE GAS LANCE/PIPE
 - HULL / PROTECTOR HELL
 - BELLMAN
 - FUSE
 - LIGHT POLE
 - LIGHT FIXTURE / RECREATIVE LIGHT
 - LIGHT MISC
 - TRAFFIC POLE / TRAFFIC SIGNAL POLE
 - OVERHEAD TRAFFIC SIGNAL
 - UTILITY PETERS & BOXES
 - ELECTRIC, GAS, WATER, PHONE, CABLE, CITY, RAIL, DIRT, UTIL, BOND
 - AIR CONDITIONER UNIT
 - UTILITY HANDLE GAS LANCE/PIPE
 - UTILITY POLE / MOUNT WIRE
 - OVERHEAD UTILITY LINES
 - 1/4" UTILITY LINES UNARMED/NOT ARMED/ELECTRIC/ABLE TO BE WITTED
 - EDGE OF ASPHALT / TREE SWP LINE
 - BOUNDARY TREE UNARMED/NOT ARMED
 - CONCRETE TREE UNARMED/NOT ARMED
 - FENCE
 - CHAIN RAIL
 - EDGE OF GRAVEL
 - CONCRETE CURB
 - SANITARY SEWER PARALLEL UNARMED/NOT ARMED
 - SANITARY SEWER PIPE
 - CLEAR OUT
 - STORM WATER PARALLEL UNARMED/NOT ARMED
 - CATCH BASIN UNARMED/NOT ARMED
 - CONTROL STRUCTURE
 - FLARED END SECTION
 - STORM WATER DRAINAGE PIPE
 - HYDRANT
 - WATER SHUT OFF
 - WATER GATE VALVE MELL / PARALLEL
 - WATER VALVE BOX
 - WATER MAIN
 - GAS PARALLEL / PARALLEL COVER
 - GAS SHUT OFF
 - GAS GAS
 - F CONTINUED
 - F CONTINUED

- TREE SCHEDULE**
- | NO. | DESCRIPTION |
|-----|----------------|
| 1 | 1" TREE 1" |
| 2 | 2" TREE 2" |
| 3 | 3" TREE 3" |
| 4 | 4" TREE 4" |
| 5 | 5" TREE 5" |
| 6 | 6" TREE 6" |
| 7 | 7" TREE 7" |
| 8 | 8" TREE 8" |
| 9 | 9" TREE 9" |
| 10 | 10" TREE 10" |
| 11 | 11" TREE 11" |
| 12 | 12" TREE 12" |
| 13 | 13" TREE 13" |
| 14 | 14" TREE 14" |
| 15 | 15" TREE 15" |
| 16 | 16" TREE 16" |
| 17 | 17" TREE 17" |
| 18 | 18" TREE 18" |
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| 21 | 21" TREE 21" |
| 22 | 22" TREE 22" |
| 23 | 23" TREE 23" |
| 24 | 24" TREE 24" |
| 25 | 25" TREE 25" |
| 26 | 26" TREE 26" |
| 27 | 27" TREE 27" |
| 28 | 28" TREE 28" |
| 29 | 29" TREE 29" |
| 30 | 30" TREE 30" |
| 31 | 31" TREE 31" |
| 32 | 32" TREE 32" |
| 33 | 33" TREE 33" |
| 34 | 34" TREE 34" |
| 35 | 35" TREE 35" |
| 36 | 36" TREE 36" |
| 37 | 37" TREE 37" |
| 38 | 38" TREE 38" |
| 39 | 39" TREE 39" |
| 40 | 40" TREE 40" |
| 41 | 41" TREE 41" |
| 42 | 42" TREE 42" |
| 43 | 43" TREE 43" |
| 44 | 44" TREE 44" |
| 45 | 45" TREE 45" |
| 46 | 46" TREE 46" |
| 47 | 47" TREE 47" |
| 48 | 48" TREE 48" |
| 49 | 49" TREE 49" |
| 50 | 50" TREE 50" |
| 51 | 51" TREE 51" |
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| 92 | 92" TREE 92" |
| 93 | 93" TREE 93" |
| 94 | 94" TREE 94" |
| 95 | 95" TREE 95" |
| 96 | 96" TREE 96" |
| 97 | 97" TREE 97" |
| 98 | 98" TREE 98" |
| 99 | 99" TREE 99" |
| 100 | 100" TREE 100" |

ZONING SCHEDULE

PARCEL ID #	EXISTING ZONING	PROPOSED ZONING	SITE AREA (Ac.)
4711-09-200-005	GSD	ROPUD	0.75
4711-09-200-010	GCD	ROPUD	0.64
4711-09-200-014	GCD	ROPUD	0.65
4711-09-200-015	GCD	ROPUD	0.67
4711-09-200-016	GCD&GSD	ROPUD	1.83
4711-09-200-017	GCD	ROPUD	0.58
TOTAL AREA-			6.12

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 OR VISIT CALL811.COM

PREMIER GENCO, LLC
 775 N. SECOND ST.
 BRIGHTON, MICHIGAN 48116

SCALE: 1" = 40'
 PROJECT No.: 183490
 DWG NAME: 3450 EX
 ISSUED: FEB 14 2020

EX

(810) 327-8633
 CIVIL ENGINEERS
 LAND SURVEYORS
 2183 PLEAS DRIVE
 BRIGHTON, MICHIGAN 48114

DESIGNER/FA	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAWN: JMS	1	2-14-20	REVISED PER TOWNSHIP REVIEW COMMENTS DATED JAN. 2020			
CHECK: WMP						

BMH-PRMIER P.U.D.

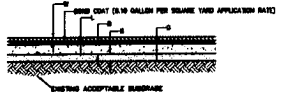
EXISTING CONDITIONS PLAN

11-09-200-019
 1183 Parkway Dr. LLC
 23800 Industrial Park Dr.
 Farmington Hills, MI 48334
 Zoned: "M2U1"
 #4711-09-200-019

11-09-200-043
 Redwood, Neal
 4500 E. Grand River
 Howell, MI 48843
 Zoned: "M2U1"
 #4711-09-200-043

11-09-200-020
 DBA Lake Effect South Real Estate
 2546 Sherrill Dr.
 Brighton, MI 48114
 Zoned: "M2U1"
 #4711-09-200-020

11-09-200-025
 Premier Genco LLC
 33200 Westland Ave. Ste. 200
 Royal Oak, MI 48073
 Zoned: "M2U1"
 #4711-09-200-025



BITUMINOUS PAVEMENT CROSS SECTION
NOT TO SCALE

TYPE "A" CROSS SECTION

REV	DESCRIPTION	MATERIAL SPECIFICATION	MINIMUM COMPACTED THICKNESS
1	SEARING COURSE	MDOT 3BA	1.5"
2	LEVELING COURSE	MDOT 13A	2.5"
3	ADDRESS BASE	MDOT 23A	8"
4	SHOULDER SURFACE	MDOT CLASS 1	7"
5	GROUND	N/A	N/A

TYPE "B" CROSS SECTION

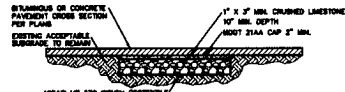
REV	DESCRIPTION	MATERIAL SPECIFICATION	MINIMUM COMPACTED THICKNESS
1	SEARING COURSE	MDOT 3BA	1.5"
2	LEVELING COURSE	MDOT 13A	1.5"
3	ADDRESS BASE	MDOT 23A	8"
4	SHOULDER SURFACE	MDOT CLASS 1	7"
5	GROUND	N/A	N/A

MINIMUM TOWNSHIP CROSS SECTION

REV	DESCRIPTION	MATERIAL SPECIFICATION	MINIMUM COMPACTED THICKNESS
1	SEARING COURSE	MDOT 3BA	1.5"
2	LEVELING COURSE	MDOT 13A	1.5"
3	ADDRESS BASE	MDOT 23A	8"
4	SHOULDER SURFACE	MDOT CLASS 1	7"
5	GROUND	N/A	N/A

BITUMINOUS PAVEMENT NOTES:

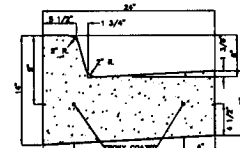
- The construction specifications of the appropriate Local Municipality are a part of this work. Refer to the General Notes, Road and/or Driveway and Parking Lot Construction Notes and Typical Road and/or Pavement Cross Section details on the project plans for additional requirements.
- Unsuitable soils found within the 1 on 1 influence zone of the roadway, such as truck, post, topsoil, mud, silt or other unstable materials shall be excavated and replaced up to the proposed subgrade elevation with MDOT Class III granular material compacted to 95% maximum unit weight, modified proctor.
- Contractor shall proof roll prepared subgrade as directed by Engineer. Unacceptable areas of subgrade shall be undercut and replaced as directed by Engineer.
- Owner/Developer may delay placement of the bituminous wearing course, outside of the public road right of way. Repair of the bituminous leveling course may be necessary due to any delay in placement of the bituminous wearing course. Subsequent repair to the bituminous leveling course may be necessary if placement of the bituminous wearing course is delayed for more than 12 months after placement of the bituminous leveling course. The bituminous leveling course shall be repaired as directed by Engineer prior to placement of the bituminous wearing course.



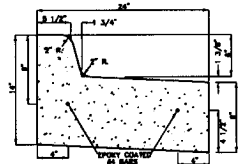
SUBGRADE UNDERCUT AND REPLACEMENT CROSS-SECTION
NOT TO SCALE

PAVEMENT SUBGRADE UNDERCUT NOTES:

- Areas of pavement subgrade that do not pass a proof roll inspection shall be undercut when directed by the Material Testing Engineer and/or Project Engineer. All undercut work shall be witnessed and field measured by the Material Testing Engineer and/or Project Engineer.
- Undercut areas shall be excavated to a depth of 12" below the proposed subgrade elevation using an Excavator or Machine with a Smooth Edged Ditching Bucket as not to damage the underlying soils. Undercut areas shall remain free of all construction traffic and exposure to wind drying and/or tracking of the underlying soils.
- MDOT HP 570 Woven Geotextile fabric (or approved equal) shall be placed over all undercut areas per the Manufacturer's specifications. Overlap all seams a minimum of 12" unless specified otherwise by the Manufacturer.
- Backfill the undercut areas with 1" to 2" minimum size crushed aggregate hauled up to the proposed subgrade elevation. Crushed concrete material shall NOT be substituted for crushed limestone material. The backfill material shall be spread with a Water Truck (water to maintain loading on the underlying soil). Stone fill the backfill material with a large smooth roller.
- Construct the appropriate Bituminous or Concrete Pavement Cross Section over the undercut areas per the Project Plans.
- The General Contractor and/or Earthwork Subcontractor shall provide ALL jobs with staking to perform subgrade undercut work per square yard (SY) of undercut area. Undercut Unit Pricing SHALL include excavation, loading, hauling and off-site disposal of excess soils, placement of geotextile fabric and backfill including all labor, equipment and materials necessary to complete pavement subgrade undercut work as specified on the Project Plans.



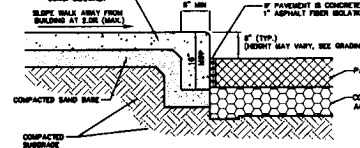
MDOT TYPE F4 CURB
NOT TO SCALE



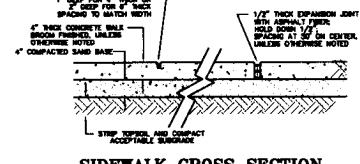
MDOT TYPE F4 CURB REVERSE PITCH
NOT TO SCALE

CONCRETE CURB NOTES:

- Refer to the project plans for the proposed locations of the specific curb types.
- The construction specifications of the appropriate Local Municipality are a part of this work. Refer to the General Notes and Curb Cross Section Details on the project plans for additional requirements.
- Extend the base and/or subbase material of the appropriate adjacent pavement construction horizontally to 1 foot behind the back of curb. Concrete curb shall be constructed on less than 6" of combined depth of compacted base/subbase material.
- Concrete material shall meet or exceed the specification requirements of the appropriate Local Municipality. Unless specified otherwise by the Local Municipality, concrete material shall be air-entrained and shall have a minimum 28-day compressive strength of 3500 psi. Contractor shall submit concrete mix design and aggregate mechanical analysis report to the Local Municipality and Engineer for review and approval prior to use.
- Install transverse expansion control joints in concrete curb with 1' minimum depth at 10' on center. Tool joints in fresh concrete or saw cut within 8 hours.
- Install transverse expansion control joints in concrete curb as follows: 400' maximum on center, at spring points of intersecting streets and within 10' on each side of each house. Transverse expansion control joints shall be 1" thick asphalt fiber joint filler matching outer curb cross section.
- Provide 30" asphalt fiber control joint between curb and all other concrete structures, such as concrete sidewalks and concrete driveways.
- Curb Contractor shall provide final adjustment of each curb castings on curb line. Castings shall be back tamped to structure tight with concrete or mortar trowel and outside of casting.
- Install curb cuts for all existing and proposed sidewalks and pedestrian ramps in accordance with the American Disabilities Act and the Barrier Free Design requirements of the appropriate Local, County and/or State Agency. Refer to MDOT Standard Plan R-26, latest revision. Install curb cuts for all existing and proposed vehicular ramps and drives as noted on the project plans.



SIDEWALK WITH INTERGAL CURB & ISOLATION JOINT DETAIL
NOT TO SCALE



SIDEWALK CROSS SECTION
NOT TO SCALE

SIDEWALK CROSS SECTION NOTES:

- The construction specifications of the Local Municipality are a part of this work. Refer to the General Notes and the Sidewalk Cross Section Details on the Project Plans for additional requirements.
- Sidewalk widths may vary. See the Project Plans for the proposed sidewalk widths at each location. In-lane sidewalks may vary. Minimum thickness of driveways and other areas exposed to vehicular traffic.
- The existing subgrade soils shall be prepared prior to placement of the granular subbase. Unsuitable soils found within the 1 on 1 influence zone of the proposed sidewalk areas, such as truck, post, topsoil, mud, silt or other unstable materials shall be excavated and replaced with arisum fill. Structural fill shall be MDOT Class II granular material placed in accordance with the General Notes on the Project Plans.
- The sidewalk compacted subbase material shall be MDOT C.I.I. sand. No subbase material substitutions shall be permitted without prior written approval of the Project Engineer and receipt of the Owner's Authorization. The subbase shall be compacted to a minimum of 95% of the maximum unit weight, modified proctor.
- Concrete material shall meet or exceed the specification requirements of the appropriate Local Municipality. Unless specified otherwise by the Local Municipality, concrete material shall be air-entrained and shall have a minimum 28-day compressive strength of 3500 psi. Contractor shall submit concrete mix design and aggregate mechanical analysis report to the Local Municipality and Engineer for review and approval prior to use.
- Install transverse expansion control joints in accordance with the Sidewalk Cross Section Detail. Space concrete control joints to match sidewalk width, but no greater than 10' on center. Tool joints in fresh concrete or saw cut within 8 hours.
- Install transverse expansion control joints in accordance with the Sidewalk Cross Section Detail. Space expansion control joints at 50 feet on center maximum. Transverse expansion control joints shall be 1/2" thick asphalt fiber joint filler matching curb or sidewalk cross section.
- Provide 30" asphalt fiber control joint between concrete sidewalks and all other concrete structures, such as concrete building foundations, concrete curb and concrete driveways.
- Contractor shall Barrier Free Sidewalk Ramps in accordance with the American Disabilities Act and the Barrier Free Design Requirements of the appropriate Local, County or State Agency with jurisdiction over the project. Refer to MDOT Standard Plan R-26, latest revision.
- The Concrete Pavement shall not be exposed to vehicular traffic until the concrete has reached at least 75 % of the design flexural strength.

GENERAL NOTES:

- Contractor shall perform the work in accordance with the requirements of the appropriate Local, County and State Agencies and all other Government and Regulatory Agencies with jurisdiction over the project. Contractor shall notify the appropriate Agencies in advance of each stage of work in accordance with each Agency's requirements.
- Contractor shall comply with all permit, licensing, licensing and inspection requirements associated with the work. Prior to construction, Contractor and Owner/Developer shall determine who is responsible for obtaining each required permit. Contractor shall verify that the each required permit has been obtained prior to commencement of the stage of work associated with the required permit(s).
- Contractor shall furnish liability, automobile and property damage insurance to and in favor of the Owner, Developer, Architect, Engineer, Surveyor and Government Agencies for any accident occurring during the construction period. Refer to the appropriate Local, County and State Agencies for additional requirements. Copies of insurance certificates shall be made available to the Owner/Developer.
- Contractor shall conduct and perform work in a safe and expeditious manner. Contractor shall perform all necessary measures to provide for traffic and pedestrian safety from the start of work and through substantial completion. Contractor shall determine procedures and provide safety equipment such as traffic control, warning devices, temporary work marking and signs as needed. Contractor shall comply with the safety standards of the State Department of Labor, the occupational health standards of the State Department of Health and safety regulations of the appropriate Local, County, State and Federal Agencies. Refer to the safety specifications of the appropriate Regulatory Agencies. The Contractor shall designate a qualified employee with complete job site authority over the work and safety precautions, well designated employee shall be on site at all times during the work.
- Contractor shall coordinate scheduling of all work in the proper sequence, including work by Subcontractors. Additional costs due to improper planning by Contractor or work done out of sequence as determined by standard acceptable construction practices, shall be Contractor's responsibility.
- Contractor shall contact the Hill Public Underground Utility Locating System or other appropriate local underground utility locating Agency, a minimum of three (3) working days prior to construction. Existing utility information on the project plans may be from information disclosed to this firm by the Utility Companies, Local, County or State Agencies, and/or various other sources. No guarantee is given as to the completeness or accuracy thereof. Prior to construction, locations and depths of all existing utilities (in possible conflict with the proposed improvements) shall be verified in the field.
- Contractor shall coordinate scheduling a Pre-Construction Meeting with Engineer prior to commencement of work.
- The Local Municipality, County and/or State Agency to which the project is located may require an Engineer's Certification of Construction of the proposed construction. Contractor shall verify the certification requirements with Engineer prior to commencement of work. Contractor shall coordinate construction staking, testing, documentation, submission and observations with the appropriate Agency. Surveyor and/or Engineer as required for Engineer's Certification and Government Agency Acceptance. All materials used and work done shall meet or exceed the requirements of certification and acceptance, the contract documents and/or beyond. Prior to construction, locations and depths of all existing utilities (in possible conflict with the proposed improvements) shall be verified in the field. Contractor shall provide submittals and/or Agency review prior to accepting work.
- Engineer may provide submittals and/or evaluation results, if available, to Contractor upon request. Submittals and evaluation results, soils maps and/or any other documentation does NOT guarantee existing soil conditions or that sufficient, acceptable on-site granular material is available for use as structural fill, pipe bedding, pipe backfill, and subbase or use as any other granular material specified on the project plans. On-site granular material that meets or exceeds the material specifications noted on the project plans may be used as structural fill, pipe bedding, pipe backfill and/or road subbase material. On-site granular material shall be stockpiled and used as acceptable to the appropriate Agency and/or Engineer prior to use.
- During the performance of that work, Contractor shall be solely responsible for determining soil conditions and appropriate construction methods based on the actual field conditions. Contractor will furnish, install and maintain electric shoring, bracing, trench shields, and other soil and equipment and/or construction techniques as needed for the safety and protection of the workers, pedestrian and vehicular traffic and for protection of adjacent structures and site improvements.
- Contractor shall install temporary sand plywood and/or erosion and sedimentation control devices at the appropriate stages of construction in accordance with the appropriate regulatory agency's requirements.
- Structural fill shall be placed as specified on the project plans and within the 1 on 1 influence zone of all structures, part of area and other areas subject to vehicle traffic. Structural fill shall be placed using the controlled density method (12" maximum lifts, compacted to 95% maximum unit weight, modified proctor). Fill material shall meet or exceed the specifications noted on the project plans as directed by Engineer when so specified on the project plans.
- All existing monuments, property corners, ground control and benchmarks shall be protected and preserved, and if disturbed by Contractor, shall be restored at Contractor's expense. Contractor shall notify State and/or local agencies of any conflicts between existing monuments, property corners, ground control and benchmarks and the proposed site improvements.
- Contractor shall notify Owner/Developer and Engineer immediately upon encountering any field conditions, which are inconsistent with the project plans and/or specifications.
- When noted on the project plans for demolition and/or removal, Contractor shall remove existing structures, building and debris and recycle and/or dispose of in accordance with Local, County, State and Federal regulations.
- Contractor shall remove excess construction materials and debris from site and perform reclamation in accordance with the project plans and specifications. Disposing of excess materials and debris shall be performed in accordance with Local, County, State and Federal regulations.
- Construction access to the site shall be located in accordance to the Owner/Developer and to the appropriate Local, County and/or State Agency with jurisdiction over the road(s) providing access to the site. Construction access shall be maintained and cleaned in accordance with the appropriate Local, County and/or State Agencies and as directed by Owner/Developer and/or Engineer.
- Contractor shall take necessary precautions to protect all site improvements from heavy equipment and construction procedures. Damage resulting from Contractor activities shall be repaired at Contractor's expense.

DESIGNER: FAF	DRAWN: JHS	CHECK: WMP	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION

BMH - PREMIER P.U.D.

SITE PAVEMENT NOTES & DETAILS

CLIENT: PREMIER GENCO LLC
775 N. SECOND STREET
BRIGHTON, MICHIGAN 48116

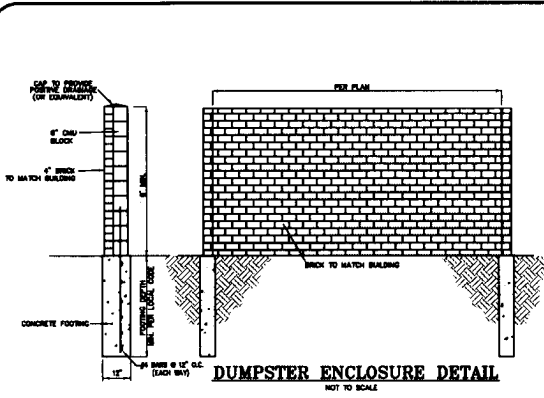
SCALE: NO SCALE
PROJECT No.: 185450
DWG NAME: 3450 DT
ISSUED: FEB 14 2020

DT1

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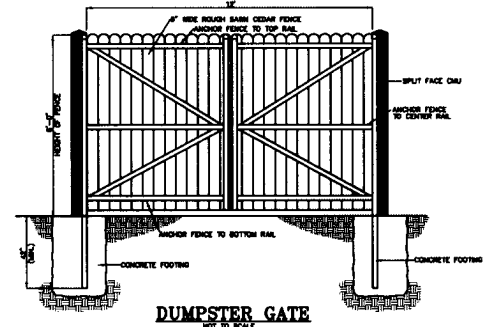


DUMPSTER ENCLOSURE DETAIL
NOT TO SCALE



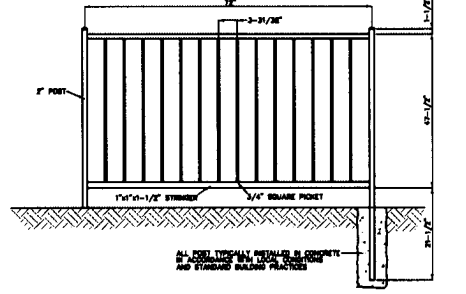
DUMPSTER PAD SLAB CROSS-SECTION
NOT TO SCALE

- CONCRETE NOTES:**
- UNDESIRABLE SOILS, SUCH AS GRAVEL, PEAT, TORPEDO, SAND, SILT OR OTHER UNDESIRABLE MATERIALS, SHALL BE UNDOUBTLY AND REPLACED WITH COMPACTED SAND SUBGRADE FILL WHERE NECESSARY TO ACHIEVE GRADES.
 - AREAS OF SUBGRADE FILL SHALL BE CONSTRUCTED USING 1 1/2" THICK LAYER OF COMPACTED SAND, MOIST CLASS II OR EQUIVALENT CHEMISTRY ACCEPTABLE SUBGRADE.



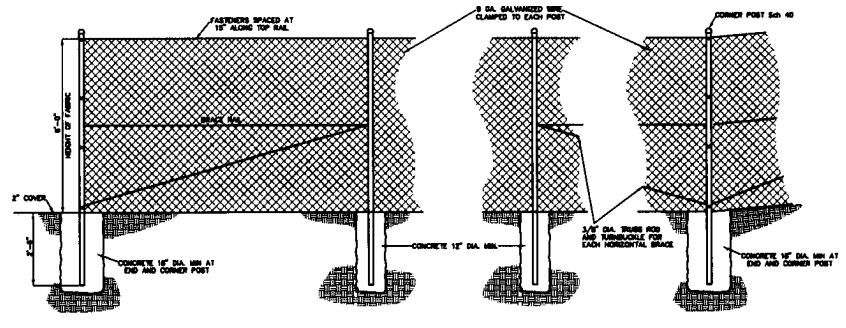
DUMPSTER GATE
NOT TO SCALE

NOTE: ALL POSTS, RAILS AND HARDWARE SHALL BE GALVANIZED STEEL.



ORNAMENTAL FENCE DETAIL
NOT TO SCALE

NOTE: MATERIAL SHALL BE ALUMINUM WITH BLACK FINISH.

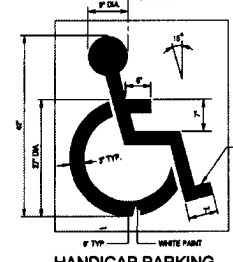


CHAIN LINK FENCE DETAIL
NOT TO SCALE

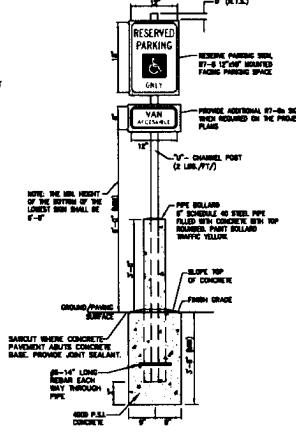
NOTE: ALL POSTS AND HARDWARE SHALL BE GALVANIZED STEEL.

SIGNAGE AND PAVEMENT MARKING NOTES

- Pavement markings shall be in accordance with the type, color, size and locations shown on the plans. If the information on the plans is not complete and the authority having jurisdiction does not have specific requirements, then use the following. Plans shall be applied in accordance with AASHTO M 248 latest edition. Colors shall be as follows: (V) YELLOW, parking stalls, loading zones, parking stalls, no parking zones and fire lanes (W) WHITE, stop bars, pedestrian crossings, lane designations, directional arrows and lettering (B) BLUE, handicap parking stalls and symbols. Stencil widths shall be as follows: (14" - parking spaces, drive-way lanes, barrier free loading zones and no parking zones) (12" - crosswalks) (24" - stop bars).
- The pavement shall be clean and free of dirt, dust, moisture, oils and other foreign materials at time of marking application. Any old pavement markings shall be removed unless paints are compatible and do not detract. The surface of the pavement prior to application shall be a minimum of 45 degrees F and lying within the Manufacturer's recommended wet range.
- The signage shall be in accordance with the type, color, size and locations shown on the plans to specifications, with AASHTO M 248. The signage shall be installed in accordance with the Local Municipality and the Michigan Manual of Uniform Traffic Device latest edition.
- Posts, brackets and frames shall be steel per ASTM A-36, A-242, A-441, A-572, A-588, Grade 50 and hot dip galvanized in accordance with ASTM A123. All cutting, drilling and/or other pole modifications shall be painted with galvalume paint. All mounting hardware shall be stainless steel.
- Sign post footings shall be a maximum of 3'-0" deep and 8" in diameter unless poor soils or frost conditions require greater depth and/or diameter. Sign posts shall be kept plumb, 6 inches off the bottom of footing excavation and centered as 3000-psi concrete is placed under and around the sign post. The overall sign and post systems should be able to withstand 33 pounds per square foot. All signs located in partial areas or with less than 3 feet of clearance between the centerline of sign post and the back of curb and/or edge of pavement shall be installed in a pipe bollard. Pipe bollards shall be 6" diameter schedule 40 steel pipe. Pipe bollards shall be filled with concrete that is rounded at the top of the bollard. Bollards shall be painted traffic yellow. Increase the sign post footing diameter to 14" minimum for pipe bollards and embed the bollard into the concrete footing a minimum of 4 feet below proposed finish grade.
- Signs shall not be mounted on posts until after concrete has cured for a minimum of seven days or 75% strength is achieved.
- All barrier free striping and signage shall meet the Americans with Disabilities Act (ADA) requirements.
- All Fire Lane signs shall have a Red Border and Red Letters on White Background. All Fire Lane signs shall be Reflective. Fire lane striping and signage shall meet the requirements of the Local Building Inspector and Fire Department.
- "Mounting Height" shall be the minimum height of the bottom of the sign above finish grade. When signs are located downhill from the roadway, driveway and/or parking area, then the "Mounting Height" shall be the height of the bottom of the sign above the top of pavement finish grade at the nearest edge of pavement adjacent to the sign.
- All Traffic Control and Fire Lane signs shall be installed at 5 feet behind the back of curb and/or edge of pavement to the centerline of the sign post unless noted otherwise on the project plans.
- The Contractor and/or Subcontractors responsible for installation of the sign posts shall contact the 811 Public Underground Utility Locating System a minimum of three (3) working days prior to installation of the signposts. Install the sign posts in the locations specified on the project plans. When underground utilities conflict with the proposed sign post locations, field adjust the sign locations the minimum amount necessary to safely clear the underground utilities. Maintain a minimum of 2 feet of clearance between the edge of sign and the back of curb and/or edge of sidewalk.



HANDICAP PARKING STRIPING DETAIL
N.T.S.



BARRIER FREE PARKING SIGN DETAIL
NOT TO SCALE

SIGN SCHEDULE					
SIGN	KEY	SIZE OR H X W	TYPE OR MOUNT	MOUNTING HEIGHT	QUANTITY
	HP-6	12' x 12'	POST MOUNTED	7'-0"	8
	HP-6a	12' x 12'	BUILDING MOUNTED	7'-0"	0
	FP-1	12' x 12'	POST MOUNTED	6'-0"	8

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CIVIL ENGINEERS
LAND SURVEYORS
2183 PLEAS DRIVE
BRIGHTON, MICHIGAN 48114

DESIGNER	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
FAF						
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CHECK						

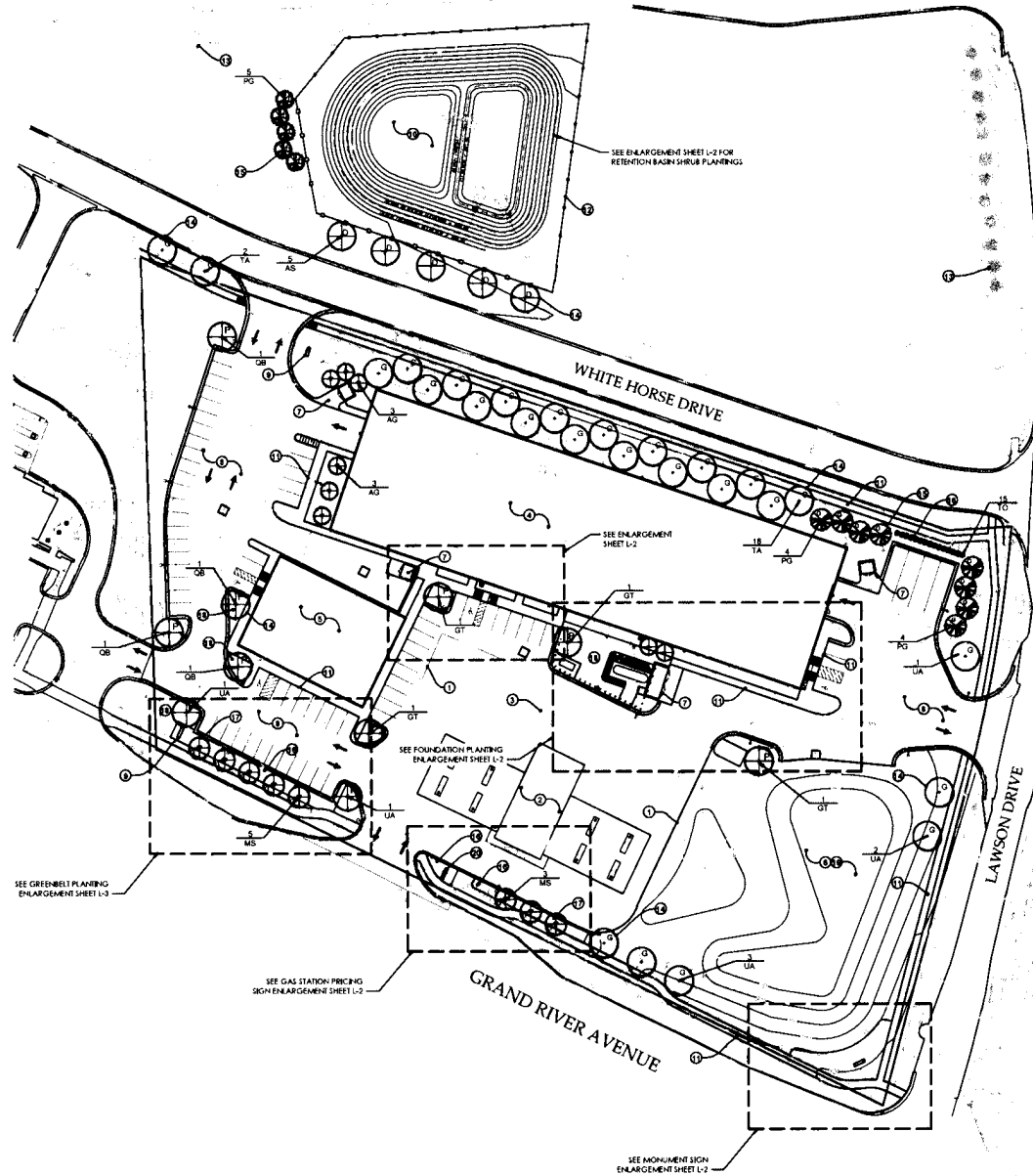
**BMH - PREMIER
P.U.D.**

**SIGNAGE &
PAVEMENT MARKING
NOTES & DETAILS**

CLIENT:
PREMIER GENCO LLC
775 N. SECOND STREET
WEBERVILLE, MICHIGAN 48892
(817) 521-3807

SCALE: AS NOTED
PROJECT No.: 9183460
DWG NAME: 3450 DT
ISSUED: FEB 14, 2024

DT2



SITE LANDSCAPE DATA											
Project: BMH-Premier PUD		Location: Genoa Township, Michigan									
Company: Van Yvrde Landscape Architecture, LLC		Address: 4425 East Grand River Ave.									
Owner: Premier Genoa, LLC		Proposed zoning: RD-PUD									
<table border="1"> <tr> <th>DATE</th> <th>REVISION/COMMENTS</th> <th>PROPOSED/COMMENTS</th> <th>RD-PUD</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>				DATE	REVISION/COMMENTS	PROPOSED/COMMENTS	RD-PUD				
DATE	REVISION/COMMENTS	PROPOSED/COMMENTS	RD-PUD								
EXISTING LOT LANDSCAPE											
1 Deciduous Canopy Tree and 100 sq. ft. of landscape area / 30 species required - 70 species	Required	Provided	Deficient								
19 Trees and 2,500 sq. ft. landscape area											
Providing 1 additional tree											
PROPOSED LOT LANDSCAPE											
1 Deciduous Canopy Tree / 40 sq. ft. of landscape area											
Grand River Ave. - 538 sq. ft.	15	11									
Lawson Drive - 420 sq. ft.	11	7									
White Horse Drive - 800 sq. ft.	24	24									
Providing 3 additional trees											
RETENTION BASIN LANDSCAPE											
1 Tree and 30 shrubs / 50% of retention basin - 480 sq. ft.	30 Trees and 90 shrubs	30 Trees and 90 shrubs									
OPEN SPACE REQUIREMENTS											
Minimum of 20% of the site shall be open space	58,750 sq. ft.	59,077 sq. ft. (26.3%)									
See Area 22A(03) at 12.12.19											

TREE PLANTING KEY:
 D - REQUIRED DIRECTION BASE TREE
 P - REQUIRED PARKING LOT TREE
 G - REQUIRED GREEN-BELT TREE

Note Key:

- 1 LIMBETS EXISTING PARKING LOT
- 2 EXISTING GAS STATION
- 3 EXISTING UTILITY INFRASTRUCTURE
- 4 PROPOSED STORAGE FACILITY SEE ARCHITECTURE
- 5 PROPOSED OFFICE / RETAIL SPACE SEE ARCHITECTURE
- 6 FUTURE SUBDIVISION
- 7 PROPOSED FUTURE ENCLOSURE
- 8 PROPOSED PARKING LOT SEE CIVIL ENGINEERING (DRAWINGS)
- 9 PROPOSED MONUMENT SIGN
- 10 PROPOSED SIGN IN RETAIL BASIN SEE CIVIL ENGINEERING DRAWINGS
- 11 PROPOSED CONCRETE SIDEWALKS - 15" MIN.
- 12 PROPOSED FENCE WITH GATE
- 13 EXISTING TREES TO REMAIN
- 14 DECIDUOUS CANOPY TREE USE TREE SPECIFICATION AND SPECIES AND TREE SCHEDULE AND TREE SCHEDULE
- 15 EVERGREEN TREE SEE SHEET L-3 FOR PLANT SCHEDULE AND TREE SCHEDULE
- 16 CANOPY AND PERENNIAL PLANTING SEE SHEETS L-1 AND L-2 FOR TREE SPECIFICATION AND TREE SCHEDULE AND TREE SCHEDULE AND TREE SCHEDULE
- 17 PERENNIAL PLANTING TREE SEE SHEET L-3 FOR PLANT SCHEDULE AND TREE SCHEDULE
- 18 SHROUBED LAWN
- 19 LEGGED LAWN
- 20 EXISTING GAS STATION FENCING SIGN

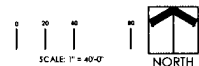
Maintenance Notes

LANDSCAPE SPECIFIED BY THIS CONTRACTOR SHALL BE MAINTAINED IN ACTIVE 18" MIN. AND ORDER 1" OPERATIONAL FREE FROM RUBBLE AND RUBBLE. ALL UNLIVELY AND DEAD PLANT MATERIAL SHALL BE REMOVED IMMEDIATELY. THE SCHEDULE SPECIFIED APPROXIMATE FOR MATERIAL. BEYOND INITIAL PLANTING AND MAINTENANCE SHALL BE PROVIDED BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER CARE AND MAINTENANCE OF ALL PLANTING AND MATERIAL. ALL LANDSCAPE AREAS SHALL BE MAINTAINED WITHIN 10% OF THE SPECIFIED SCHEDULE.

SURVEY PROVIDED BY:

LEIGH, INC.
 15000 N. 10th St.
 Brighton, MI 48116
 (810) 223-7911
 (DATE) JOB NUMBER (YEAR)
 DATED FEBRUARY 17, 2019

NOT FOR CONSTRUCTION



Date	Owner / Revision
12.20.2018	Owner / Review
01.03.2019	Revision
01.08.2019	Pre-submittal Review
12.27.2019	Conceptual PUD Submittal
02.14.2020	Revision
06.08.2020	PUD Submittal

Page 1
BMH - Premier PUD
 4525 East Grand River Ave.
 Genoa Township, MI

Project Sponsor:
 Premier Genoa, LLC
 775 N. Second Street
 Brighton, MI 48116

Preliminary Landscape Plan



Drawn: JG
 Check: JG
 Date: 12.10.2018
 Scale: 1" = 40'-0"

Project Number: 18.033

Sheet Number: L-1

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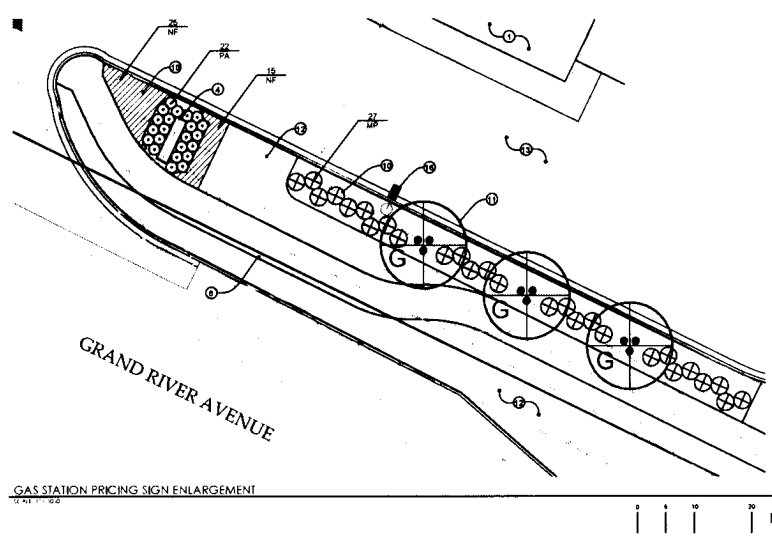
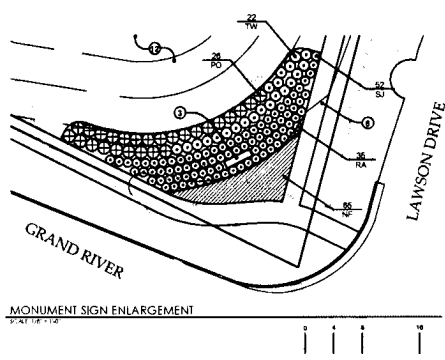
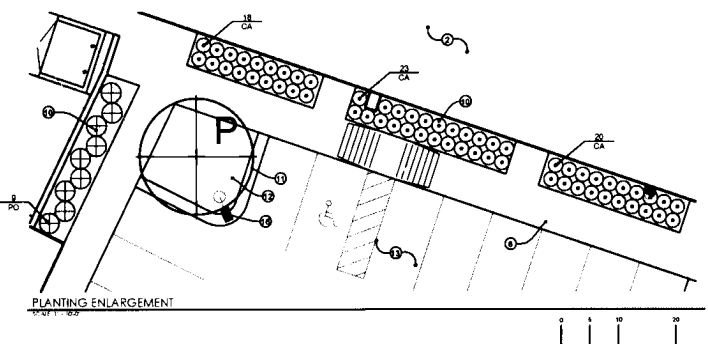
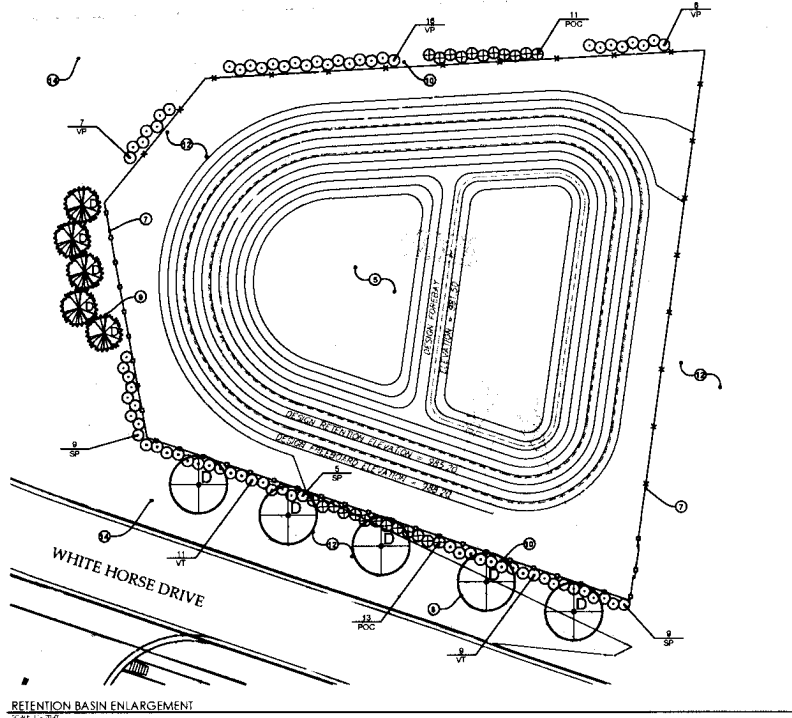
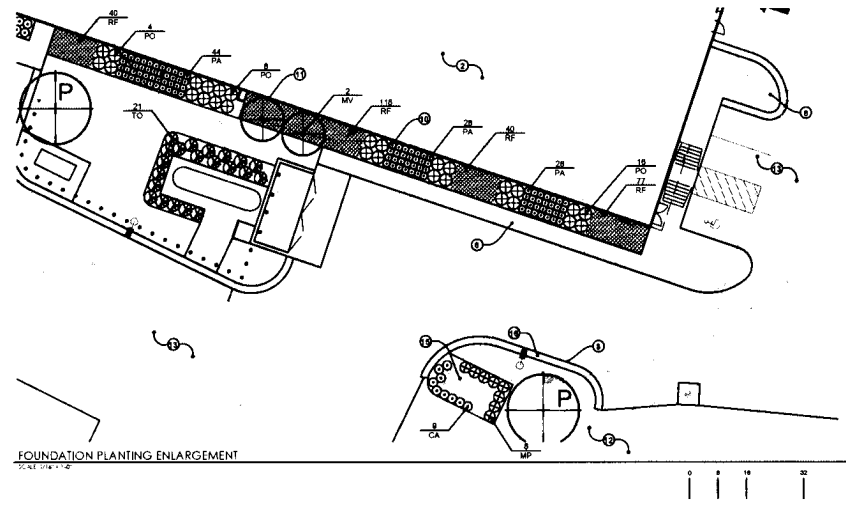


Project:
 12.20.2018 Owner Review
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 02.14.2020 Revision
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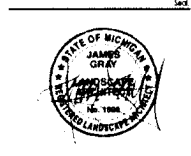
Project Sponsor:
BMH - Premier PUD
 4525 East Grand River Ave.
 Genoa Township, MI

Project Sponsor:
Premier Genoa, LLC
 775 N. Second Street
 Brighton, MI 48116

Sheet Name:
Enlargements



- Note Key:**
- ① EXISTING GAS STATION
 - ② PROPOSED STORAGE TANKS, SEE ARCHITECTURAL
 - ③ PROPOSED MONUMENT SIGN
 - ④ EXISTING GAS STATION PRICING SIGN
 - ⑤ PROPOSED RETENTION BASIN, SEE CIVIL ENGINEERING DRAWINGS
 - ⑥ PROPOSED CONCRETE SIDEWALK, TYPICAL
 - ⑦ PROPOSED FENCE WITH GATE
 - ⑧ EXISTING ASPHALT DRIVE, SEE SHEET 18-033 FOR QUANTITIES AND SPECIES, SEE SHEET 18-033 FOR SCHEDULE AND TYPICAL DETAILS
 - ⑨ 1" CORNER TREE, SEE SHEET 18-033 FOR QUANTITIES AND SPECIES, SEE SHEET 18-033 FOR PLANTING SCHEDULE AND TYPICAL DETAILS
 - ⑩ SHRUB AND PERENNIAL PLANTINGS, SEE SHEET 18-033 FOR QUANTITIES AND TYPICAL DETAILS
 - ⑪ TREMPERAMENTAL TREES, 1" DBH, SEE SHEET 18-033 FOR QUANTITIES AND SPECIES, SEE SHEET 18-033 FOR PLANTING SCHEDULE AND TYPICAL DETAILS
 - ⑫ 18" DIAMETER 18" DEPTH TORSION TOWER LIGHT, 18" DEPTH TORSION TOWER LIGHT
 - ⑬ ASPHALT PAVING, 10"
 - ⑭ PROPOSED RETENTION BASIN ENLARGEMENT, SEE SHEET 18-033 FOR QUANTITIES AND SPECIES, SEE CIVIL ENGINEERING DRAWINGS
 - ⑮ TRANSFORMER PAD
 - ⑯ PROPOSED LIGHT POLE, SEE LIGHTING PLAN



Drawn: JG
 Checked: JG
 Date: 12.10.2018
 Scale: AS NOTED

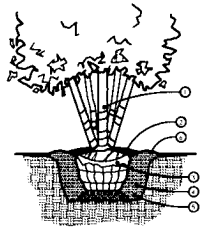
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 18.033

Sheet Number:
 L-2

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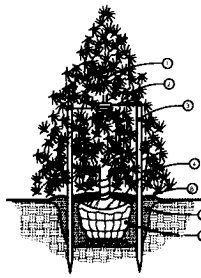


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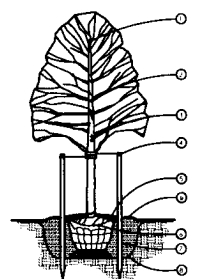
- 5 MULTISTEM TREE PLANTING**
- 1. REMOVE ALL TRUNK BRANCHES, PLACES, AND LEAVES FROM MAIN TRUNK AND BRANCHES TO BE REMOVED.
 - 2. CUT OFF MAIN TRUNK AT BASE OF MAIN TRUNK.
 - 3. REMOVE ALL TRUNK BRANCHES, PLACES, AND LEAVES FROM MAIN TRUNK AND BRANCHES TO BE REMOVED.
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5 L-1 MULTISTEM TREE PLANTING



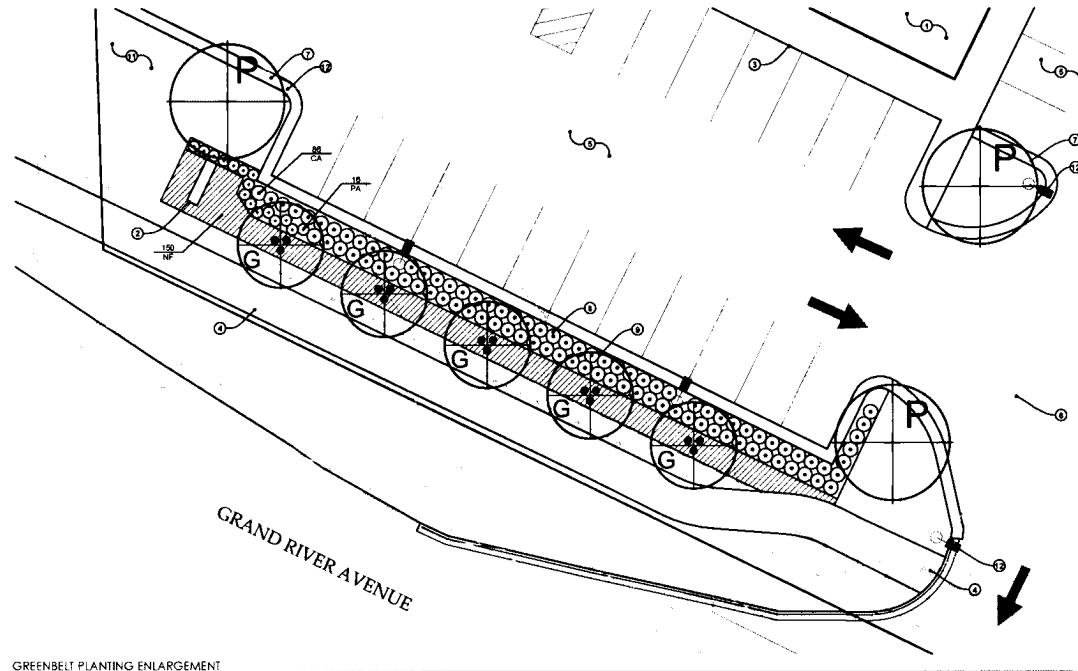
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4 L-1 EVERGREEN TREE PLANTING

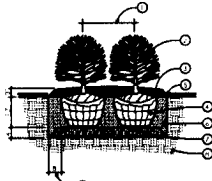


- 3 DECIDUOUS TREE PLANTING**
- 1. REMOVE ALL TRUNK BRANCHES, PLACES, AND LEAVES FROM MAIN TRUNK AND BRANCHES TO BE REMOVED.
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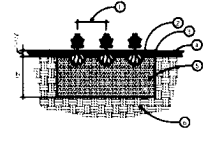
3 L-1 DECIDUOUS TREE PLANTING



GREENBELT PLANTING ENLARGEMENT



2 L-1 SHRUB PLANTING



1 L-2 PERENNIAL / GROUND COVER PLANTING

- Note Key:**
- 1. Hatched area indicates space to be filled with mulch.
 - 2. Proposed sidewalk location.
 - 3. Proposed driveway location.
 - 4. Proposed parking space location.
 - 5. Proposed utility location.
 - 6. Proposed lighting pole location.
 - 7. Proposed irrigation system location.
 - 8. Proposed fence location.
 - 9. Proposed gate location.
 - 10. Proposed sign location.
 - 11. Proposed bench location.
 - 12. Proposed bike rack location.
 - 13. Proposed trash can location.
 - 14. Proposed fire hydrant location.
 - 15. Proposed fire alarm location.
 - 16. Proposed fire extinguisher location.
 - 17. Proposed fire hose location.
 - 18. Proposed fire alarm pull station location.
 - 19. Proposed fire alarm control panel location.
 - 20. Proposed fire alarm notification appliance location.
 - 21. Proposed fire alarm control panel location.
 - 22. Proposed fire alarm control panel location.
 - 23. Proposed fire alarm control panel location.
 - 24. Proposed fire alarm control panel location.
 - 25. Proposed fire alarm control panel location.
 - 26. Proposed fire alarm control panel location.
 - 27. Proposed fire alarm control panel location.
 - 28. Proposed fire alarm control panel location.
 - 29. Proposed fire alarm control panel location.
 - 30. Proposed fire alarm control panel location.

PLANT SCHEDULE

QTY	SYM	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	ROOT	COMMENTS
5	AG	Acacia Green Wreath	Green Wreath Acacia	2.5' x 4'	as shown	BBB	Single straight trunk
8	AG	Amorpha fruticosa	False Indigo	6' x 4'	as shown	BBB	Minimum 3 stems
4	GT	Gleditsia triacanthos	Black Locust	2.5' x 4'	as shown	BBB	Single straight trunk
13	PG	Physocarpus opulifolius	Walters' Dogwood	6' x 4'	as shown	BBB	Unwanted: attached to ground
4	OB	Quercus bicolor	Swamp White Oak	2.5' x 4'	as shown	BBB	Single straight trunk
8	UA	Ulmus americana 'Nelsa Form'	American Elm 'Nelsa Form'	2.5' x 4'	as shown	BBB	Single straight trunk
20	TA	Tilia americana 'Boulevar'	Boulevard American Lilac	2.5' x 4'	as shown	BBB	Single straight trunk
1	MS	Malva Spring Snow	Spring Snow Malva	6' x 4'	as shown	BBB	Minimum 3 stems
2	MY	Myrica verticillata	Wetland Spicebush	2.5' x 4'	as shown	BBB	Single straight trunk

QTY	SYM	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	ROOT	COMMENTS
22	SP	Syringa 'New Ken'	New Ken Dwarf Korean Lilac	30" H	as shown	CON	Well rooted
21	VP	Viburnum p. 'Narrow'	Narrowleaf American Snowball Bush	30" H	as shown	BBB	Well rooted
38	CD	Chamaecyparis 'Nelsa'	Nelsa Dwarf Arborvitae	8" H	as shown	BBB	Thin to hedge
22	WY	Thuja 'Narrowleaf'	Narrowleaf Chinese Arborvitae	30" H	as shown	CON	Well rooted
82	PD	Physocarpus 'Summer White'	Summer White Japanese Amelanchier	30" H	as shown	CON	Well rooted
24	POC	Physocarpus 'Opalescence'	Opalescence Japanese Amelanchier	30" H	as shown	CON	Well rooted
22	VT	Viburnum 'Molokini Compact'	Compact American Cranberry Bush	30" H	as shown	CON	Well rooted
18	MA	Malva japonica 'Nelsa'	Nelsa Dwarf Malva	30" H	as shown	CON	Well rooted
82	BJ	Berberis 'Nelsa'	Nelsa Dwarf Barberry	24" H	as shown	CON	Well rooted
82	BJ	Berberis 'Nelsa'	Nelsa Dwarf Barberry	24" H	as shown	CON	Well rooted

SYM	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	ROOT	COMMENTS	
75	CA	Centropogon 'Karl Foerster'	Karl Foerster Feather Reed Grass	42	as shown	CON	Well rooted
138	PA	Parthenocissus 'Nelsa'	Nelsa Dwarf Parthenocissus	42	as shown	CON	Well rooted
276	RF	Rudbeckia 'Goldstrum'	Goldstrum Black-eyed Susan	42	as shown	CON	Well rooted
266	RF	Rudbeckia 'Nelsa'	Nelsa Dwarf Black-eyed Susan	42	as shown	CON	Well rooted

landscape architecture
73247 1366 Plymouth, MI
james@landscape.com

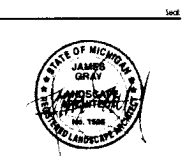
12.20.2018
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06.08.2020

Owner Review
Pre-submittal Review
Conceptual PUD Submittal
Revision
PUD Submittal

BMH - Premier PUD
4525 East Grand River Ave.
Genoa Township, MI

Premier Genoa, LLC
775 N. Second Street
Brighton, MI 48116

Enlargements and Landscape Details



Drawn: JG
Checked: JG
Date: 12.10.2018
Scale: AS NOTED

Project Number: 18.033

Sheet Number: L-3

811
NOT FOR CONSTRUCTION
NORTH

Exhibit D

Uses

Schedule of Uses – BMH Realty, LLC RDPUD			
		RDPUD/GCD	Use Conditions
Retail Uses			
Retail establishments and shopping centers which provide goods such as bakery goods, including bakery items produced on the premises, groceries, produce, meats, provided no slaughtering shall take place on the premises, seafood; dairy products, beverages appliances, electronics, furniture, and home furnishings, apparel, jewelry, art, pharmaceuticals, home improvement supplies, hardware, and garden supplies, sporting goods, bicycles, toys, hobby crafts, videos (rental, and sales), music, musical instruments, books, computer hardware and software, antiques, flower shops, greeting card shops, auto parts and similar establishments not specifically addressed elsewhere	Uses with up to 15,000 square feet gross floor area	P	
	Uses 15,001 - 30,000 square feet of gross floor area	P	(a)
	Uses 30,000 - 60,000 square feet of gross floor area	S	(a)
	Pharmacies with drive-up window	S	(b)
Automobile, motorcycle, boat and recreational vehicle sales, new and used		S	(c)
Outdoor commercial display, sales or storage		S	(d)
Service Uses			
Banquet halls, assembly halls, dance halls, private clubs, fraternal order halls, lodge halls or other similar places of assembly		P	
Business services such as mailing, copying, data processing and retail office supplies		P	
Child care centers, preschool and commercial day care		P	(e)
Conference Centers		S	(f)
Funeral home or mortuary		P	(g)
Bed and breakfast inns, hotels and motels with no more than 25 rooms not including accessory convention/meeting		P	

Schedule of Uses – BMH Realty, LLC RDPUD			
	RDPUD/GCD	Use Conditions	
facilities or restaurants These uses may include the residence for the owner/manger's family			
Hotels and motels with more than 25 rooms including accessory convention/meeting facilities and restaurants	P		
Laundromats	P		
Personal and business service establishments, performing services on the premises, including: dry cleaning drop-off stations (without on site processing), photographic studios, copy centers, mailing centers, data processing centers, dressmakers and tailors, shoe repair shops, tanning salons, beauty parlors, barber shops, and similar establishments	P		
Dry cleaning drop-off stations with drive-through service	S	(b)	
Restaurants, taverns, bars, delicatessen, food carryout, coffee shops, and similar establishments serving food or beverages	Standard restaurants and coffee shops, except as provided below	P	
	Restaurants and bars serving alcoholic beverages	P	
	Bars providing dancing and live music	P	
	Restaurants with open front windows	S	(i)
	Restaurants with outdoor seating	P	(i)
	Drive-through restaurants	S	(j)
	Drive- in restaurants	S	(j)
	Carry-out restaurants	P	
	Coffee Shop with drive-through	S	(j)
	Brewpub	P	
Micro-brewery, small distillery and small winery	S	(y)	
Studios of photographers and artists	P		
Tattoo parlors	P		
Tool and equipment rental, excluding vehicles	P		
Kennel, commercial	S	(h)	
Pet day care center	S	(w)	
Climate-controlled indoor commercial storage	P		
Auto Service Uses			
Minor auto repair establishment	S	(k)	

Schedule of Uses – BMH Realty, LLC RDPUD			
		RDPUD/GCD	Use Conditions
Auto/gasoline service station, limited to one (1) on the Property at any time		P (1)	(k)
Automobile wash, automatic or self serve		S	(l)
Leasing and rental of automobiles, trucks and trailers		S	
Office Service and Medical Uses			
Adult day care facilities		S	
Banks, credit unions, savings and loan establishments and similar financial institutions	With up to 3 drive-through teller windows	P	(m)
	With more than 3 drive-through teller windows	S	(m)
	Stand alone automatic drive-up teller machines	S	
Offices of non-profit professional, civic, social, political and religious organizations		P	
Medical urgent care facilities, medical centers and clinics		P	
Medical offices of doctors, dentists, optometrists, chiropractors, psychiatrists, psychologists and similar or allied professions, excluding clinics, and urgent care centers	Buildings up to 15,000 square feet of gross floor area	P	
	Buildings over 15,000 square feet of gross floor area	P	
Offices of lawyers, engineers, architects, insurance, and real estate agents, financial consultants, and brokers, advertising offices, accounting, and bookkeeping services, clerical, and stenographic services, sales offices, other types of executive, or administrative offices and similar or allied professions	Buildings up to 15,000 square feet of gross floor area	P	
	Buildings between 15,000 and 55,000 square feet of gross floor area	P	
	Buildings over 55,000 square feet of gross floor area	P	
Veterinary hospitals		S	(o)
Veterinary clinics without boarding or overnight care		S	(x)
Recreation			

Schedule of Uses – BMH Realty, LLC RDPUD		
	RDPUD/GCD	Use Conditions
Accessory fuel storage and use or storage of hazardous materials	S	13.07

Use Conditions: Uses noted above shall only be allowed where the following requirements are complied with:

- (a) Shopping centers and home improvement centers over 15,000 square feet shall comply with the following requirements:
 - (1) The center shall have access to at least one County Primary Road or roadway with a right-of-way of at least eight six (86) feet.
 - (2) The design of the center shall ensure that vehicular circulation patterns will minimize conflicts between vehicles and pedestrians on-site,
 - (3) The impacts of traffic generated by the center on adjacent streets will be mitigated to ensure a level of service D, or maintenance of the current level of service if lower than D, along the site's frontage and nearest signalized intersections.
 - (4) Internal circulation shall be designed such that no intersection includes more than four aisles or drives.
 - (5) Site entrances shall be restricted to three-way movements, with unrestricted inbound movements.
 - (6) Internal drives defined by the ends of aisles shall have raised curbed islands at appropriate locations to define circulation paths and control movements through the parking lot.
 - (7) Loading facilities which serve the commercial establishment in the principal building shall be screened from public view.
 - (8) Any building side facing a public street or residential district shall be constructed with brick, split face block or similar decorative material, unless a landscaped berm is approved by the Township.
 - (9) Any outlots shall have access, circulation and parking designed to complement the entire site.
- (b) Accessory drive-through service for uses other than restaurants and banks shall comply with the following requirements:
 - (1) The drive-through facility must be attached to the structure.
 - (2) The drive-through service, including any lighting associated therewith shall be screened from adjacent residential land uses such that it will not impact the use and enjoyment of said residential land use.
 - (3) Clear identification and delineation between the drive-through facility and the parking lot shall be provided.
 - (4) Each drive-through facility shall provide an escape lane to allow other vehicles to pass those waiting to be served. The Planning Commission may

waive the requirement for an escape lane where it can be demonstrated that such a waiver will not result in an adverse effect on public safety or the convenience of patrons of the facility.

- (5) There shall be a minimum of three (3) stacking spaces.
 - (6) The drive-through facility shall be located on the side or rear elevation of the building to minimize visibility from the public or private roadway.
 - (7) The number of on-site directional signage shall be limited to two (2) signs meeting the area and location requirements of Article 16.
 - (8) The principal structure shall be setback a minimum of fifty (50) feet from all lot lines and the public right-of-way, unless a greater setback applies.
 - (9) When located in the NSD district, accessory drive-through service windows for pharmacies/drug stores shall be used only for prescription drug pick-up and drop-off. Only one drive-through service lane is permitted for each pharmacy or drug store structure in the NSD district.
- (c) Automobile, motorcycle, boat and recreational vehicle sales, new and used shall comply with the following requirements:
- (1) Sale space for used mobile homes, recreational vehicles and boats may only be carried on in conjunction with a regularly authorized new mobile home, recreational vehicle or boat sales dealership on the same parcel of land.
 - (2) All outdoor storage areas shall be paved with a permanent, durable and dustless surface and shall be graded and drained to dispose storm water without negatively impact adjacent property. The Township Board, following a recommendation of the Planning Commission and the Township Engineer, may approve a gravel surface for all or part of the display or storage area for low intensity activities, upon a finding that neighboring properties and the environment will not be negatively impacted.
 - (3) No storage or display of vehicles shall be permitted in any landscape greenbelt area, provided the Township may permit a display pod for an automobile within the greenbelt area where it is integrated into the landscape design.
 - (4) The site shall include a building of at least five hundred (500) feet of gross floor area for office use in conjunction with the use.
 - (5) All loading and truck maneuvering shall be accommodated on-site.
 - (6) All outdoor storage area property lines adjacent to a residential district shall provide a buffer zone A as described in Section 12.02. A buffer zone B shall be provided on all other sides. The Planning Commission may approve a six (6) foot high screen wall or fence, or a four (4) foot high landscaped berm as an alternative.
- (d) Commercial Outdoor Display Sales or Storage including, but not limited to, sales or storage of: building/lumber supply, contractor's yards, garden/landscape supplies, nurseries, greenhouses, stone, farm implements, automobiles, trucks,

recreational vehicles, mobile homes, boats, jet skis, mowing equipment, construction equipment and similar materials or equipment shall comply with the following requirements:

- (1) Minimum lot area shall be one (1) acre.
 - (2) Any stockpiles of soils, fertilizer or similar loosely packaged materials shall be sufficiently covered or contained to prevent dust or blowing of materials.
 - (3) All outdoor storage areas shall be paved with a permanent, durable and dustless surface and shall be graded and drained to dispose stormwater without negatively impact adjacent property. The Township Board, following a recommendation of the Planning Commission and the Township Engineer, may approve a gravel surface for all or part of the display or storage area for low intensity activities, upon a finding that neighboring properties and the environment will not be negatively impacted.
 - (4) No outdoor storage shall be permitted in any required yard (setback) of buildings for the district in which the commercial outdoor display, sales or storage use is located. Any approved outdoor sales or display within a parking lot shall meet the required parking lot setback; provided the Planning Commission may require additional landscaping screening or ornamental fencing.
 - (5) The site shall include a building of at least five hundred (500) feet of gross floor area for office use in conjunction with the use.
 - (6) All loading and truck maneuvering shall be accommodated on-site.
 - (7) All outdoor storage area property lines adjacent to a residential district shall provide a buffer zone A as described in Section 12.02. A buffer zone B shall be provided on all other sides. The Planning Commission may approve a six (6) foot high screen wall or fence, or a four (4) foot high landscaped berm as an alternative.
 - (8) The height of all material and equipment stored in an outdoor storage area shall not exceed the height of any landscape screening, wall or fence. Boats and recreational vehicles may exceed the height of the fence provided that they are setback from the fence a distance equal to their height. Storage of materials up to the height of the adjacent building wall may be permitted in the rear yard if it is illustrated on the site plan, the rear yard does not abut a residential district, will not be visible from an expressway and such storage is confined to within twenty (20) feet of the building.
- (e) Child day cares shall provide not less than the minimum amount of indoor and outdoor play areas required by the State of Michigan. The required outdoor play area shall be fenced.
- (f) Conference Centers shall comply with the following requirements:

- (1) The site shall have direct access, via lot frontage or an improved road, to at least one paved arterial roadway (County Primary Road).
 - (2) The location, geometric design and throat depth of site access points, and overall internal site circulation, shall prevent unreasonable traffic congestion on public roadways. The level of service shall not be below "D" for any turning movements for any event. A traffic management program shall be submitted as part of the application.
 - (3) Building height shall not exceed thirty-five (35) feet but may be three (3) stories (i.e. a permitted exception from the maximum number of stories allowed for other buildings in the various zoning districts).
 - (4) Minimum floor area shall be ten thousand (10,000) square feet of usable conference rooms, meeting rooms, banquet rooms and pre-function space.
 - (5) Minimum building and outdoor use areas shall be setback at least one-hundred (100) feet from any property line of residentially zoned and/or seventy-five (75) feet from any other property line. Buffer zones shall be provided as required for "community commercial" uses in Section 12.02. The Planning Commission may reduce the required setbacks by up to fifty percent (50%) where more extensive landscaping or existing features provide an extensive screen.
 - (6) Parking setbacks shall be forty (40) feet in the front yard, twenty-five (25) feet for side and rear yards adjacent to residential uses, and ten (10) feet elsewhere.
 - (7) The proposed building(s) may provide atriums, lobbies, or other public gathering places.
 - (8) The accessory uses, specialty shops, and activity centers shall be customarily incidental to the primary components of the conference center.
 - (9) All uses, except for off-street parking or loading spaces and approved outdoor gathering places (such as courtyards, plazas, etc.) shall be conducted within a completely enclosed building. Sales, display, and outdoor storage of any commodities or storage containers, vehicles or other uses shall be expressly prohibited.
 - (10) In addition to other requirements, the Impact Assessment shall describe intended and anticipated number, type and frequency of events that may be expected at the proposed site including hours of operation. Include information about outdoor receptions and the location where they may be held.
- (g) Funeral homes shall comply with the following requirements:
- (1) Minimum lot area shall be one (1) acre and minimum lot width shall be one hundred and fifty (150) feet.

- (2) An off-street vehicle assembly area shall be provided to be used in support of funeral processions and activities. This area shall be in addition to the required off-street parking and its related maneuvering area.
- (h) Commercial kennels shall comply with the following requirements:
- (1) For kennels housing dogs, the minimum lot size shall be two (2) acres for the first four (4) dogs and an additional one-third (1/3) acre for each one (1) additional dog.
 - (2) Buildings wherein dogs are kept, dog runs, and/or exercise areas shall not be located nearer than five hundred (500) feet to a residential use or property line, two hundred (200) feet from any adjacent principal building or unit, and shall be setback one hundred and fifty (150) feet to any lot line and/or road right-of-way.
 - (3) Adequate odor control measures shall be implemented so that odor from inside or outside the kennel will not be discernible outside the building.
 - (4) All kennels shall be operated in conformance with all applicable county and state regulations and operated by a licensed operator.
 - (5) Any dog and food waste shall be properly and lawfully disposed of to not create a litter, insect, rodent, vermin or offensive odor nuisance. Approval from the Genoa MHOG Utility Department, the Drain Commissioner and Health Department shall be provided as part of the special use application.
 - (6) The applicant may be required to post a financial guarantee, the amount of which to be determined by the Township board, before a permit is granted or renewed.
 - (7) The application shall include a floor plan for the facility that indicates noise insulation measures.
 - (8) All enclosures for breeding, rearing, shelter, or other uses in connection with harboring of animals, shall be hard surfaces and provided with proper drains for washing with water pressure.
 - (9) The applicant shall provide a waste management plan detailing both indoor and outdoor waste management procedures to ensure animal waste is not discharged to surface or storm water. Outdoor animal areas shall be designated and shall consist of properly maintained lawn, special canine grass or other methods as approved by the Planning Commission following a recommendation by the Township Engineer.
 - (10) Such facilities shall be subject to other conditions and requirements necessary to ensure against the occurrence of any possible nuisance (i.e., fencing, sound-proofing, sanitary requirements).
 - (11) Applicants shall submit, at the time of special land use application, a proposed site plan and floor plan and written operating procedures including waste and noise management methods, such as those recommended by the International Boarding and Pet Services Association (IBPSA). These procedures shall be followed for the duration of the business and shall be designed to prevent or control animal behavior that

- may adversely impact surrounding uses, including loud or excessive barking.
- (12) All animals shall be kept indoors between the hours of 10:00 PM and 8:00 AM.
- (i) Open front restaurant (window service) and restaurants with outdoor seating shall comply with the following requirements:
- (1) All trash containers shall be provided outside. Both recycle bins and trash receptacles shall be provided.
 - (2) For open front restaurants with window service, all signs for an open front window placed on the building shall be flat; and interior signs visible to patrons through glass or an opening shall not exceed twenty-five percent (25%) of that area.
 - (3) Additional parking shall be provided for outdoor seating and standing areas.
 - (4) Outdoor noise shall not be greater than that commonly associated with a restaurant. The Township Board may place restriction on outdoor speakers or hours of operation to control the noise.
 - (5) The Zoning Administrator shall approve a land use permit for any outdoor seating including a sketch plan illustrating seating areas, enclosures/railings, sufficient off-street parking and lighting.
- (j) Restaurants or coffee shops with drive-in or drive-through facilities shall comply with the following requirements:
- (1) Principal and accessory buildings shall be setback fifty (50) feet from any adjacent public right of way line or property line.
 - (2) The establishment of a new drive-through restaurant shall require the lot be separated a minimum of five hundred (500) feet from any other lot containing a drive-through restaurant.
 - (3) Only one (1) access shall be provided onto any street.
 - (4) Such restaurants constructed adjacent to other commercial developments shall have a direct vehicular access connection where possible.
- (k) Automobile service stations and maintenance establishments (including those accessory to another use) shall comply with the following requirements:
- (1) There shall be a minimum lot area of one (1) acre and minimum lot frontage of two hundred fifty (250) feet.
 - (2) Pump islands shall be a minimum of twenty (20) feet from any public right of way or lot line, and at least forty (40) feet from any residential lot line.
 - (3) Access driveways shall meet the standards of Article 15; turning movements may be restricted in consideration of traffic conditions. Only one driveway shall be permitted from each street unless the Planning Commission determines additional driveways will be consistent with the purpose of Article 15.
 - (4) Where adjoining residentially zoned or used property, a solid fence or wall six (6) feet in height shall be erected along any common lot line. Such fence

- or wall shall be continuously maintained in good condition. The Planning Commission may approve a landscaped berm as an alternative.
- (5) All repair work shall be conducted completely within an enclosed building. Garage doors shall not face any public roadway except as approved by the Planning Commission under the following circumstances:
 - a. For through garages where doors are provided on the front and rear of the building;
 - b. Garages located on corner or through lots; and,
 - c. Where the Planning Commission determines that a rear garage would have a negative impact on an abutting residential district. Under these circumstances the Planning Commission may require additional landscape screening above and beyond what is required for street frontage landscaping.
 - (6) There shall be no outdoor storage or display of vehicle components and parts, supplies, or equipment or other merchandise, except within an area defined on the site plan approved by the Planning Commission and which extends no more than ten (10) feet beyond the building.
 - (7) Storage of wrecked, partially dismantled, or other derelict vehicles is prohibited, unless such storage is required under police or court order. Vehicles shall not be stored outdoors for more than seven (7) days in any thirty (30) day period.
 - (8) Storage of gasoline shall be at least four hundred (400) feet from churches, schools or similar public/quasi public places of assembly.
 - (9) Below ground fuel storage tanks shall be at least two thousand (2000) feet from any drinking water well serving two or more residential units.
 - (10) The design and materials of the canopy shall be compatible with the main building. The proposed clearance of any canopy shall be noted on the site plan. Any signs, logo or identifying paint scheme on the canopy shall be reviewed by the Planning Commission and considered part of the maximum wall sign permitted. Details on the canopy lighting shall be provided to ensure there is no glare on the public streets or adjacent property, and that lighting levels are in accordance with Section 12.03. Canopy lighting shall be recessed such that the light source cannot be seen from off site.
 - (11) The applicant shall submit a Pollution Incidence Protection Plan (PIPP) as part of the Impact Assessment. The PIPP shall describe measures to prevent groundwater contamination caused by accidental gasoline spills or leakage, such as: special check valves, drain back catch basins and automatic shut off valves.
 - (12) In the event that an automobile service station use has been abandoned or terminated for a period of more than one (1) year, all underground gasoline storage tanks shall be removed from the premises.

- (13) The establishment of a new automobile service station shall require the lot to be separated a minimum of five hundred (500) feet from any other lot containing an existing automobile service station.
- (14) Automobile service stations and maintenance establishments shall comply with the requirements of Section 13.07 Hazardous Materials and Fuel Storage.
- (l) Automobile washes, automatic or self-service, shall comply with the following requirements:
 - (1) Only one (1) ingress/egress driveway shall be permitted on any single street.
 - (2) Where adjoining a residential district, a solid fence or wall six (6) feet in height shall be erected along any common lot line. Such fence or wall shall be continuously maintained in good condition. The Planning Commission may require landscaping, including a berm, as an alternative.
 - (3) All washing facilities shall be within a completely enclosed building.
 - (4) Vacuuming and drying may be located outside the building, but shall not be in the required front yard and shall be set back at least fifty (50) feet from any residential district.
 - (5) All cars required to wait for access to the facilities shall be provided stacking spaces fully off the street right-of-way which does not conflict with vehicle maneuvering areas to access gasoline pumps or vacuums, and as required Article 14, Parking and Loading-Unloading Standards.
- (m) Banks, credit unions, savings and loan institutions with drive-through facilities shall only be permitted one (1) ingress/egress driveway, or one (1) pair of one-way driveways along any street.
- (o) Veterinary hospitals which include overnight stays and/or boarding of animals shall comply with the following requirements:
 - (1) The principal accessory building or structure shall be setback seventy five (75) feet from the front property line and fifty (50) feet from all other property lines.
 - (2) All principal use activities shall be conducted within a totally enclosed principal building.
 - (3) The applicant shall provide a waste management plan detailing both indoor and outdoor waste management procedures to ensure animal waste is not discharged to surface or storm water. Outdoor animal areas shall be designated and shall consist of properly maintained lawn, special canine grass or other methods as approved by the Planning Commission following a recommendation by the Township Engineer.
 - (4) Adequate odor control measures shall be implemented so that odor from inside or outside the veterinary hospital will not be discernible outside the building.
 - (5) Applicants shall submit, at the time of special land use application, a proposed site plan and floor plan and written operating procedures

including waste and noise management methods, such as those recommended by the International Boarding and Pet Services Association (IBPSA). These procedures shall be followed for the duration of the business and shall be designed to prevent or control animal behavior that may adversely impact surrounding uses, including loud or excessive barking.

- (p) Carnivals, fairs, commercial cider mills and amusement parks shall comply with the following requirements:
 - (1) Minimum lot size shall be ten (10) acres.
 - (2) A site plan shall be provided clearly defining activity areas using fences, buildings, walkways or other suitable barriers.
 - (3) All buildings, structures and parking shall be at least three hundred (300) feet from any dwelling unit excluding any dwelling unit on the site.
 - (4) The Township Board may require placement of a six (6) foot high fence around all or part of the site.
 - (5) Access shall be provided onto a primary road, as designated by the Livingston County Road Commission. Access shall be controlled, with capability to accommodate at least three (3) lanes of ingress traffic. At least three hundred (300) feet on stacking (queuing) area shall be provided on site before parking fee collection.
 - (6) The amount of on-site parking shall be deemed sufficient.
 - (7) Maximum coverage by buildings and structures shall be twenty percent (20%).
 - (8) The Township Board may require posting of a performance bond or other form of financial guarantee. The bond shall be in an amount determined by the Board as necessary to cover any potential damage or clean-up on the site or adjacent properties.
 - (9) The Township Board may establish limits on hours of operation, time limits on validity of special use permit, or any other measures deemed necessary to minimize negative impacts on nearby uses and traffic operations along public streets.
 - (10) Prior to issuance of a Special Land Use Permit, the applicant shall provide evidence of public liability insurance and property damage insurance to cover potential liability for death or injury to persons, or damage to property, which may result from the conduct of the activity.
- (q) Commercial Outdoor Recreation Establishments (excluding golf related uses) shall comply with the following requirements:
 - (1) Such uses shall include, but need not be limited to, the following: recreational fields, rinks or courts, including football, softball, soccer, tennis, basketball, ice skating, and similar activities, swimming pools open to the general public or operated by a private non-profit organization, archery and shooting ranges, animal racing, go-cart, automobile or motorcycle tracks, music concert pavilions and band shells, amusement

- parcs and uses accessory to the above uses, such as refreshment stands, retail shops selling items related to the above uses, maintenance buildings, office for management functions, spectator seating and service areas, including locker rooms and rest rooms.
- (2) The site shall be adequate to accommodate the intended use(s), parking and adequate buffer areas without significant impact on nearby properties in terms of noise, traffic, lighting glare, views, odors, trespassing, dust or blowing debris, as determined by the Planning Commission. The applicant shall provide documentation the site size is adequate using national facility standards.
 - (3) The site shall be located on a paved street which is classified as a Primary Route by the Livingston County Road Commission.
 - (4) No building or spectator seating facility shall be located within one hundred (100) feet of a property line.
 - (5) The site shall be periodically cleared of debris.
- (r) Golf Driving Ranges, Miniature Golf Courses shall comply with the following requirements:
- (1) All traffic ingress and egress shall be from a Primary Road, as classified by the Livingston County Road Commission.
 - (2) Any lot line abutting a residential district shall provide a fifty (50) foot wide, landscaped buffer zone A, as defined in Section 12.02.
 - (3) A minimum twenty (20) foot wide greenbelt, as described in Section 12.02, shall be provided along any public street or highway.
 - (4) Site size shall be adequate to retain all golf balls within the site by means of a fence no more than six (6) feet high.
 - (5) The Planning Commission may restrict the hours of operation in consideration of the adjacent land uses and zoning.
- (s) Indoor commercial recreation: (bowling alleys, ice arenas, skating rinks, etc.) shall comply with the following requirements:
- (1) The principal and accessory buildings and structures shall be not be located within one-hundred (100) feet of any residential district or permitted residential use.
 - (2) All uses shall be conducted completely within a fully enclosed building.
- (t) Animal shelters shall comply with the following requirements:
- (1) Buildings wherein dogs are kept, dog runs, and/or exercise areas shall not be located nearer than five hundred (500) feet to a residential use or property line, two hundred (200) feet from any adjacent principal building or unit, and shall be setback one hundred and fifty (150) feet to any lot line and/or road right-of-way.
 - (2) Adequate odor control measures shall be implemented so that odor from inside or outside the animal shelter will not be discernible outside the building.

- (3) All shelters shall be operated in conformance with all applicable county and state regulations and operated by a licensed operator.
 - (4) Any dog and food waste shall be properly and lawfully disposed of to not create a litter, insect, rodent, vermin or offensive odor nuisance. Approval from the Genoa MHOG Utility Department, Drain Commissioner and Health Department shall be provided as part of the special use application.
 - (5) The applicant shall provide a waste management plan detailing both indoor and outdoor waste management procedures to ensure animal waste is not discharged to surface or storm water. Outdoor animal areas shall be designated and shall consist of properly maintained lawn, special canine grass or other methods as approved by the Planning Commission following a recommendation by the Township Engineer.
 - (6) The applicant may be required to post a financial guarantee, the amount of which to be determined by the Township board, before a permit is granted or renewed.
 - (7) The application shall include a floor plan for the facility that indicates noise insulation measures.
 - (8) All enclosures for breeding, rearing, shelter, or other uses in connection with harboring of animals, shall be hard surfaces and provided with proper drains for washing with water pressure.
 - (9) Such facilities shall be subject to other conditions and requirements necessary to ensure against the occurrence of any possible nuisance (i.e., fencing, sound-proofing, sanitary requirements).
 - (10) Applicants shall submit, at the time of special land use application, a proposed site plan and floor plan and written operating procedures including waste and noise management methods, such as those recommended by the International Boarding and Pet Services Association (IBPSA). These procedures shall be designed to prevent or control animal behavior that may adversely impact surrounding uses, including loud or excessive barking.
- (u) Shelters and rehabilitation centers for philanthropic or non-profit institutions shall comply with the following requirements:
- (1) The center shall have access to at least one County Primary Road, State Trunkline or roadway with a right-of-way of at least eight six (86) feet.
 - (2) The site shall not be located within five hundred (500) feet of a residential zoning district.
- (v) Temporary outdoor sales and Temporary outdoor events may be permitted on the same lot with a developed permitted use and shall comply with the following conditions:
- (1) The total of all such uses on any given lot shall be allowed for a combined total of a maximum of twenty-eight (28) days during a calendar year.
 - (2) There shall be no outside vendors. Merchandise sold or service provided shall be that of the regular use in the principal building of the site. Proof

- of tenant occupancy in the principal building shall be provided to the satisfaction of the Zoning Administrator.
- (3) All such uses shall be contained on-site and shall not have an adverse impact on adjacent properties or the surrounding neighborhood. Parking shall be provided on-site and shall not exceed parking and/or occupancy loads.
 - (4) Such uses shall not occupy or utilize the street right-of-way nor block traffic movement on the street, and shall not interfere with pedestrian's use of the sidewalks. Available sanitation facilities must be adequate to meet the requirements of the expected attendance and any temporary facilities shall be approved for use by the Livingston County Health Department. Traffic and dust control measures shall be utilized as deemed necessary by the Zoning Administrator throughout the duration of the sale or event.
 - (5) In addition to being subject to Genoa Township Ordinances, such uses shall be subject to all other applicable law, rules, and regulations including but not limited to the Livingston County Sanitary Code, the regulations of the Livingston County Health Department, Building Department, Road Commission, Drain Commission, Sheriff's Department and the Brighton Area Fire Authority, as applicable. The applicant shall allow for inspections by Township officials, the Brighton Area Fire Authority and all other public agencies having jurisdiction.
 - (6) The applicant shall submit and obtain the Zoning Administrator's approval of a Land Use Permit for each Temporary outdoor sale and/or Temporary outdoor event prior to each such use. The application for Land Use Permit shall include a site plan illustrating location of structures and sale/event areas (with setbacks), sufficient off-street parking, means of ingress/egress, location of utilities, fire lanes, proposed and existing lighting and signs prior to initiation of such activity.
 - (7) The use of any sound system shall be controlled so as not to become a nuisance to adjacent properties and shall comply with the Township Noise Ordinance.
 - (8) Failure to comply with any of the standards within this section shall constitute grounds for immediate termination of the Land Use Permit for the temporary sale and/or event.
 - (9) The restrictions set forth herein shall be enforceable except to the extent pre-empted by state law.
- (w) Pet Daycare Centers (as differentiated from Kennels, which commonly have outdoor runs and are primarily operated for purposes of sheltering, boarding, impounding, keeping or breeding of animals with minimal social interaction among animals), including retail sale of dog care products, grooming, overnight boarding, and outdoor play area, provided the following conditions are met:

- (1) Hours of operation open to the public are limited to twelve (12) hours per day and shall not extend later than 7 p.m.
- (2) There shall not be individual, outdoor dog runs.
- (3) Walls, partitions and floor/ceilings assemblies separating dog daycare facilities from adjacent uses shall adequately soundproofed with a sound transmission class over sixty (60) and shall be constructed so that there will be no emission of noise detrimental to surrounding properties. The applicant shall provide a noise impact study performed by a certified acoustical engineer to ensure the noise levels produced by the pet daycare use will not exceed fifty (50) decibels above ambient noise at the outside of an exterior wall or at the opposite side of a common interior wall. The study shall also confirm compliance with the Township Noise Ordinance in regard to noise levels at the property line.
- (4) The number of pets cared for at any one time shall not exceed one (1) pet per one hundred (100) square feet of gross floor area, which is subject to discretionary review by the Planning Commission.
- (5) Overnight boarding of pets shall be an accessory use to the daycare center. The length of stay for boarded animals shall be limited to fourteen (14) consecutive days, and no outdoor boarding shall be permitted.
- (6) Adequate odor control measures shall be implemented so that odor from inside or outside the pet daycare center will not be discernible outside the building or unit.
- (7) Any outdoor play area shall be attached to the center and shall be setback a minimum of three hundred (300) feet from the nearest residential use.
- (8) The outdoor play area for the pets shall be surrounded with a masonry wall or other material that is aesthetically compatible in terms of material, color and finish with the principal and surrounding buildings. Said wall shall be at least six (6) feet in height and maintained in good condition at all times. Failure to maintain the wall in its original condition shall be considered a violation of the site plan approval.
- (9) Any outdoor play area is for periodic use only, and pets shall not be allowed to access the outdoor play area on their own. Not more than fifteen (15) pets shall be permitted in the outdoor play area at any one time. While in the outdoor play area, dogs shall be escorted and supervised by a dog handler who will be responsible for preventing or quickly suppressing any dog behavior that may adversely impact surrounding uses, including loud or excessive barking.
- (10) The applicant shall provide a waste management plan detailing both indoor and outdoor waste management procedures to ensure animal waste is not discharged to surface or storm water. Outdoor animal areas shall be designated on the plan and shall consist of properly maintained lawn, special canine grass or other methods with an appropriate drainage system to control surface run-off. The outdoor area surface shall be approved by

the Planning Commission following a recommendation by the Township Engineer. The outdoor play area must be maintained in a clean, sanitary manner, and adequate odor control measures shall be implemented so that odor will not be discernible beyond the area. Solid pet waste in the outdoor play area must be promptly picked up.

- (11) Any pet and food waste shall be properly and lawfully disposed of to not create a litter, insect, rodent, vermin or offensive odor nuisance. Approval from the Utility Authority, Drain Commissioner and Health Department shall be provided as part of the special use application.
 - (12) The applicant shall demonstrate the proposed drop-off/pick-up pattern and shall provide one (1) parking space for each staff member and one (1) space for each 5 animals permitted at the daycare.
 - (13) Applicants shall submit, at the time of special land use application, a proposed site plan and floor plan and written operating procedures including waste and noise management methods, such as those recommended by the International Boarding and Pet Services Association (IBPSA). These procedures shall be followed for the duration of the business and shall be designed to prevent or control animal behavior that may adversely impact surrounding uses, including loud or excessive barking.
- (x) Veterinary Clinic (as differentiated from Veterinary Hospital, which commonly has animal boarding or overnight in-patient animal care) provided the following conditions are met:
- (1) A site plan shall be provided as part of the Land Use Permit application showing a dedicated outdoor animal area. Outdoor animal areas shall consist of properly maintained lawn, special canine grass or other methods with an appropriate drainage system to control surface run-off. The outdoor area surface shall be approved by the Planning Commission following a recommendation by the Township Engineer. The outdoor area must be maintained in a clean, sanitary manner, and adequate odor control measures shall be implemented so that odor will not be discernible beyond the area. Solid pet waste in the outdoor area must be promptly picked up.
 - (2) Applicants shall submit, at the time of land use application, a proposed site plan and floor plan and written operating procedures including waste and noise management methods. The waste management plan shall detail both indoor and outdoor waste management procedures to ensure animal waste is not discharged to surface or storm water. These procedures shall be followed for the duration of the business and shall be designed to prevent or control animal behavior that may adversely impact surrounding uses, including loud or excessive barking.

- (y) Micro-breweries, small distilleries and small wineries shall comply with all requirements of the State of Michigan for the production, sale and/or distribution of alcoholic beverages and shall obtain all necessary licenses and permits. Such uses shall also provide sufficient on-site space and circulation for loading/unloading. Any vehicles affiliated with the use shall be parked or stored only in the rear yard.
- (aa) Upper floor dwelling units shall incorporate parking and waste receptacles for the dwelling units in the site plan for the facility.

Exhibit E
Elevations

BMH - PREMIER - P.U.D. Howell, Michigan

PRELIMINARY, NOT FOR CONSTRUCTION



BMH-PREMIER P.U.D.
HOWELL, MI

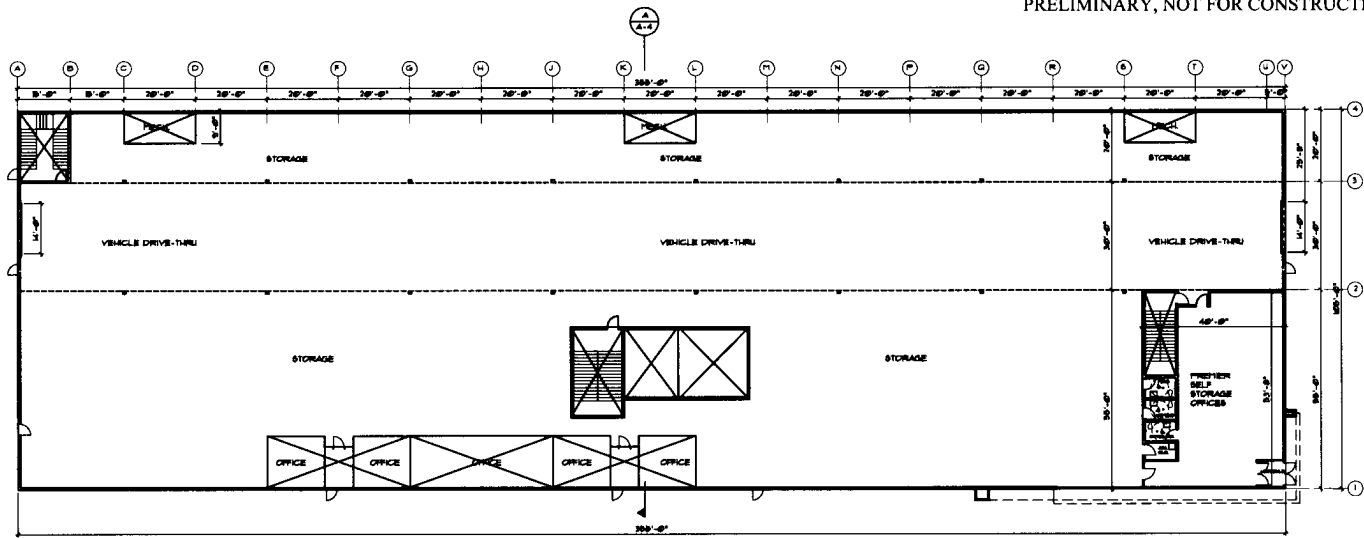
COVER SHEET

Scale
N/A
Date
12/4/20
SAC No
A-0

PRELIMINARY, NOT FOR CONSTRUCTION

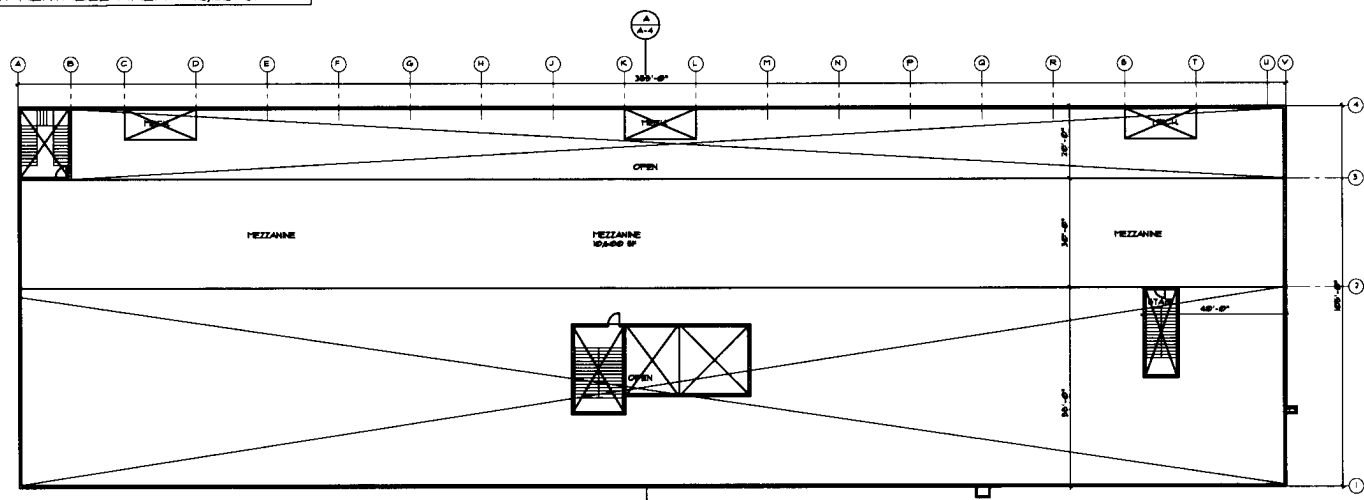


DESIGN
DIN & ASSOCIATES, ARCHITECTS, P.C.



GROUND LEVEL, USE GROUP S-1 & B
37,275 SF GROSS
NET RENTABLE AREA = 19,120 SF

GROUND LEVEL PLAN
SCALE: 1/8"=1'-0"



UPPER LEVEL, USE GROUP S-1
37,275 SF GROSS (10,600 SF PERMANENT MEZZANINE)
NET RENTABLE AREA = 27,225 SF

UPPER LEVEL PLAN
SCALE: 1/8"=1'-0"



BMI-PREMIER P.U.D
HOWELL, MI

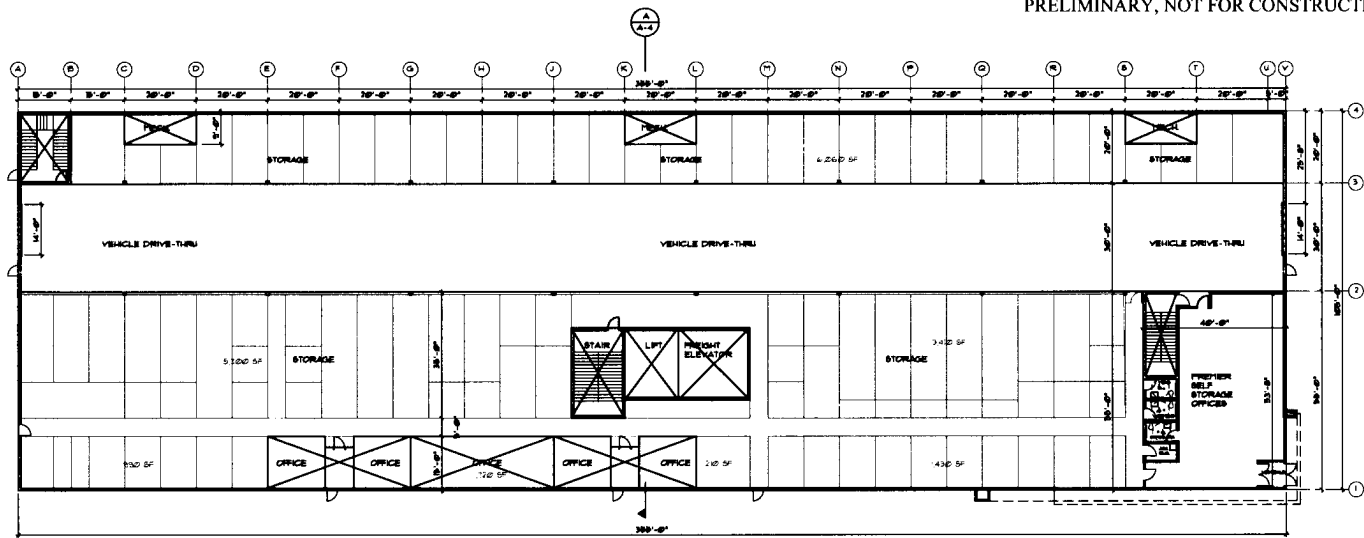
BUILDING ENVELOPE
FLOOR PLAN

Scale: 1/8"=1'-0"
Date: 12/4/20
SAC: M
A-1

PRELIMINARY, NOT FOR CONSTRUCTION



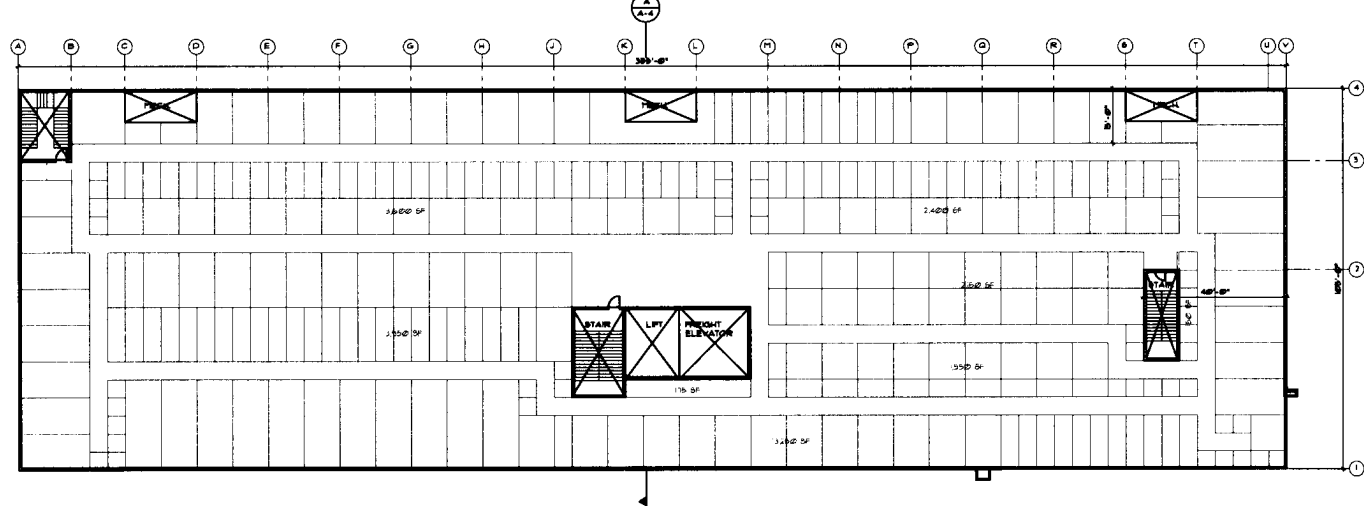
5000 Appleton Ct
 Northville, MI 48168
 313.486.8800
 DAN A. ASSOCIATES ARCHITECTS, PC
 10000 Northville Rd
 Northville, MI 48168
 313.486.8800



GROUND LEVEL, USE GROUP S-1 & B
 37,275 SF GROSS
 NET RENTABLE AREA = 19,120 SF

SYMBOL KEY:
 STORAGE SYSTEM CONSISTS OF PARTITIONS, 2ND FLOOR DECK, AND STORAGE UNIT DOORS. THESE COMPONENTS ARE SEPARATELY ENGINEERED AND INSTALLED WITHIN THE PERMANENT STRUCTURE.
 PROPOSED NEW CONSTRUCTION PERMANENT BUILDING ELEMENT

SELF STORAGE SYSTEM - GROUND LEVEL PLAN
 SCALE: 1/8"=1'-0"
 TL RENTABLE AREA
 STORAGE: 17,400 SF
 OFFICE: 170 SF



UPPER LEVEL, USE GROUP S-1
 37,275 SF GROSS (10,600 SF PERMANENT MEZZANINE)
 NET RENTABLE AREA = 27,225 SF

SELF STORAGE SYSTEM - UPPER LEVEL
 SCALE: 1/8"=1'-0"
 TOTAL RENTABLE AREA
 STORAGE: 27,225 SF



BMH-PREMIER P.U.D
 HOWELL, MI

STORAGE SYSTEM
 FLOOR PLAN

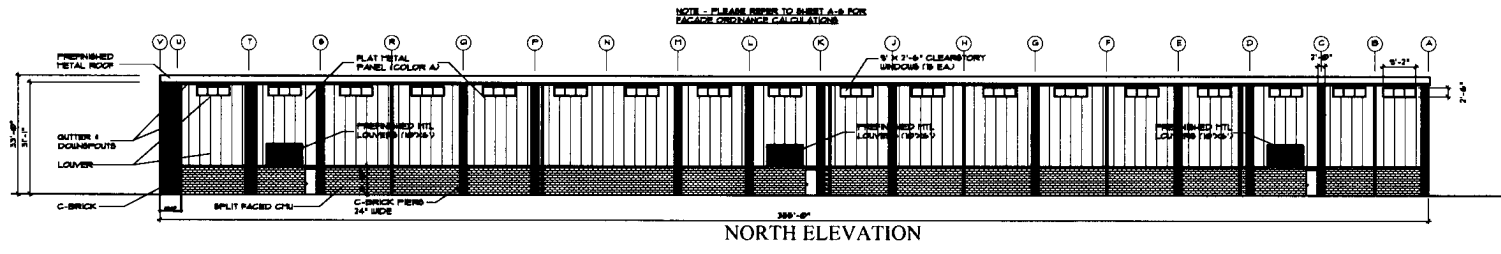
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 Size: 11
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PRELIMINARY, NOT FOR CONSTRUCTION

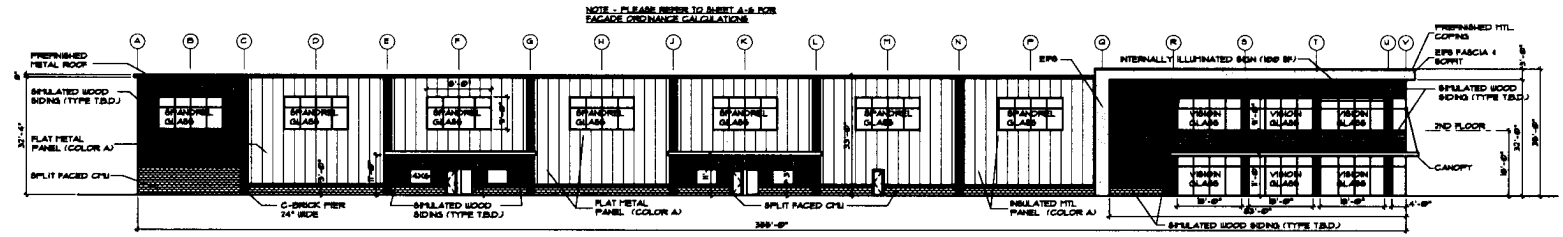


1000 Michigan Ave. Suite 1000
 Ann Arbor, MI 48106
 734.769.1234
 www.bccbrivar.com

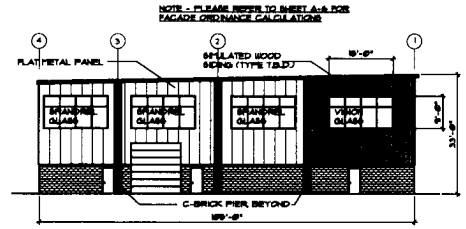
1000 Michigan Ave. Suite 1000
 Ann Arbor, MI 48106
 734.769.1234
 www.bccbrivar.com



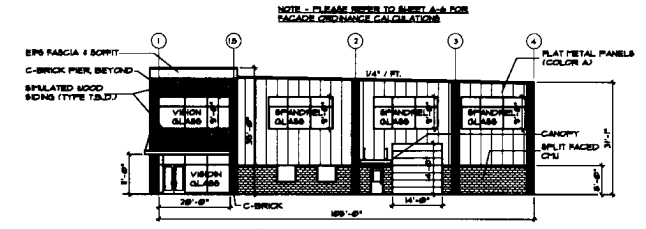
NORTH ELEVATION



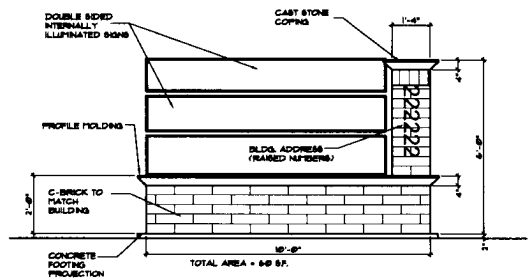
SOUTH ELEVATION



WEST ELEVATION



EAST ELEVATION



MONUMENT SIGN(S)
12'x11'-0"

BMH-PREMIER P.U.D
 HOWELL, MI

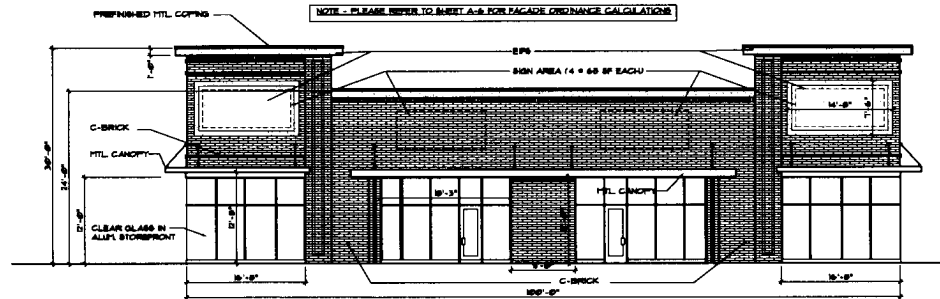
SELF STORAGE
 BLDG. ELEVATIONS

Sheet
 106-11-01
 Date
 12-4-20
 Scale
 As Shown
 A-2

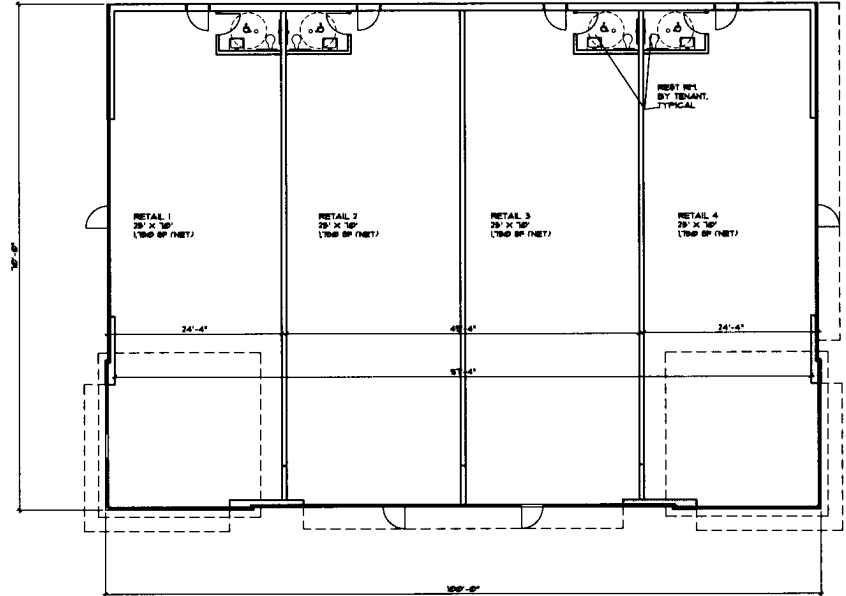
PRELIMINARY, NOT FOR CONSTRUCTION



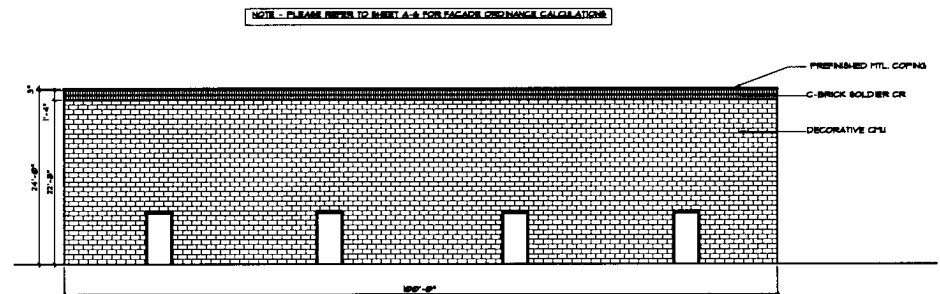
CONSULTANT OF RECORD 2018
PREZ
 DESIGN ASSOCIATES, ARCHITECTS, PC
 1000 Westland Ave., Suite 100
 Westland, MI 48186



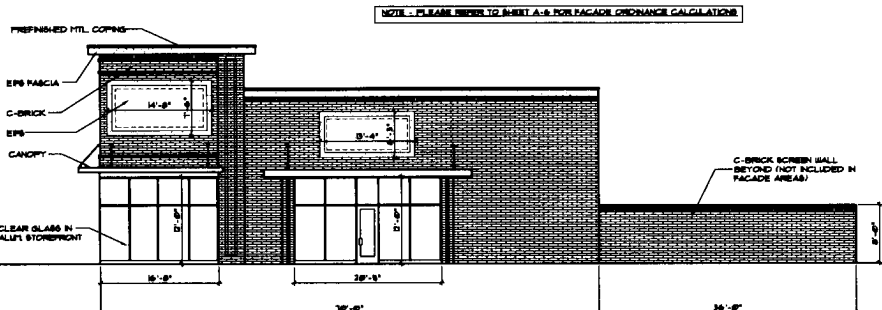
SOUTH ELEVATION



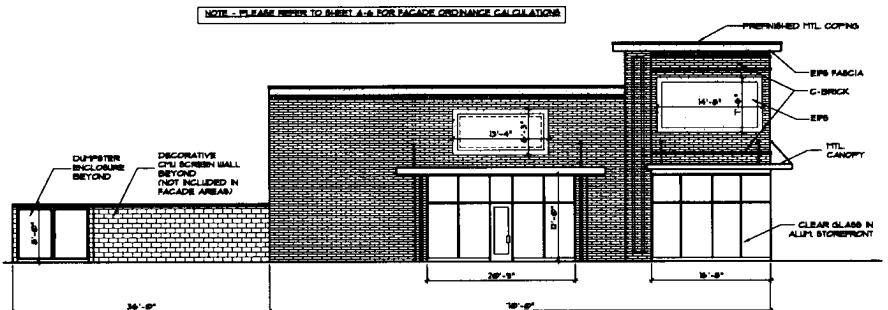
FLOOR PLAN
 SCALE: 1/8"=1'-0"



NORTH ELEVATION



EAST ELEVATION



WEST ELEVATION

BMH-PREMIER P.U.D
 HOWELL, MI

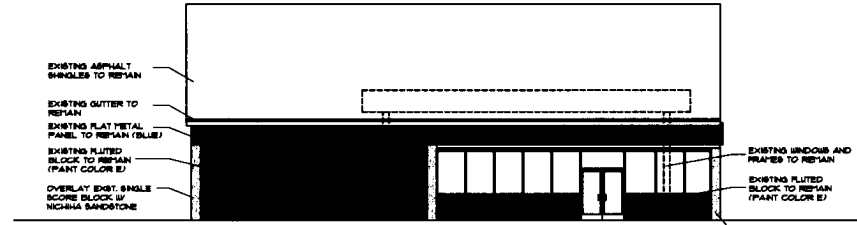
RETAIL BUILDING

Scale: 1/8"=1'-0"
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 SAE: M
 A-3

PRELIMINARY, NOT FOR CONSTRUCTION

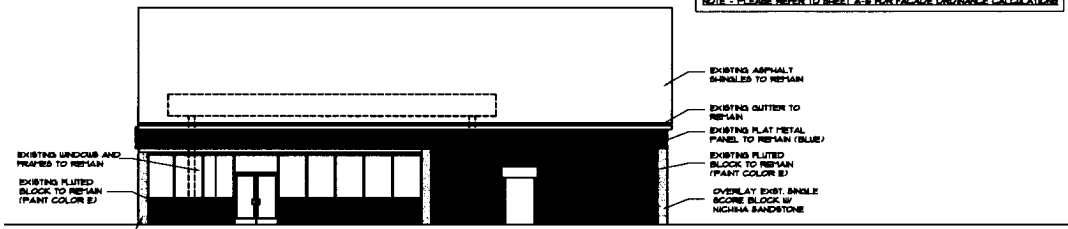


NOTE - PLEASE REFER TO SHEET A-8 FOR FACADE ORDINANCE CALCULATIONS



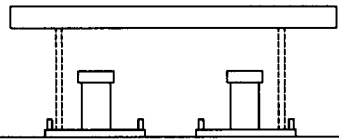
WEST ELEVATION

NOTE - PLEASE REFER TO SHEET A-8 FOR FACADE ORDINANCE CALCULATIONS



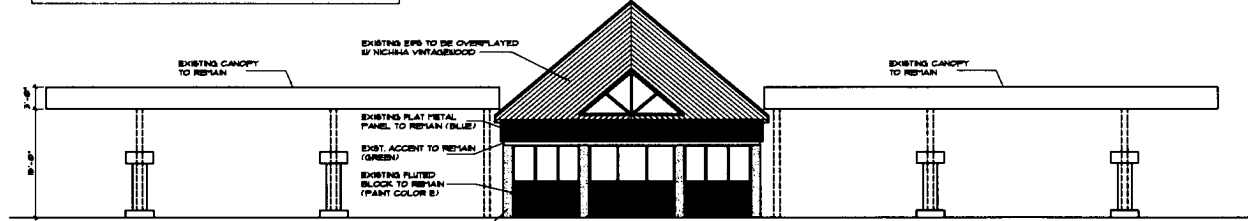
EAST ELEVATION

FACADE AREA: CANOPY EAST ELEVATION UNALTERED FACADE AREA: CANOPY WEST ELEVATION UNALTERED



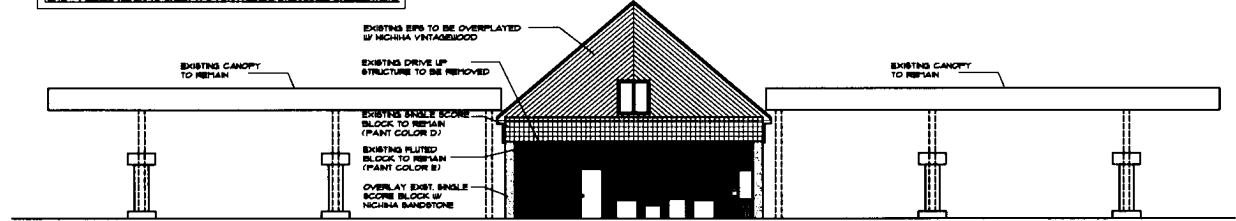
CANOPY EAST & WEST ELEVATION

NOTE - PLEASE REFER TO SHEET A-8 FOR FACADE ORDINANCE CALCULATIONS



SOUTH (FRONT) ELEVATION

NOTE - PLEASE REFER TO SHEET A-8 FOR FACADE ORDINANCE CALCULATIONS



NORTH (REAR) ELEVATION

PERMANENT EASEMENT FOR PRIVATE UTILITIES

This Permanent Easement for Private Utilities (“Easement”) is made this ____ day of _____, 2020, by and between PREMIER GENOA, LLC, a Michigan limited liability company, whose address is 775 N. Second Street, Brighton, Michigan, 48116 (hereinafter referred to as the “OWNER”) and BMH REALTY, L.L.C., whose address is 775 N. Second Street, Brighton, Michigan, 48116, a Michigan limited liability company (hereinafter referred to as the “GRANTEE”) who agree as hereinafter set forth:

WHEREAS, the GRANTEE proposes to install permanent private utilities, including, but not limited to utilities for stormwater drainage and related improvements upon OWNER’S property in accordance with a Planned Unit Development approved by the Charter Township of Genoa;

WHEREAS, in order to construct said improvements it is necessary for the GRANTEE and/or its agents, licensees and contractors to enter upon a portion of the lands owned by OWNER to complete the construction;

WHEREAS, OWNER is the holder of marketable title to the property (the “Property”) legally described as follows:

Parcel Identification # 4711-09-200-036

Part of the Northeast 1/4 of Section 9, Town 2 North, Range 5 East, Genoa Township, Livingston County, Michigan, more particularly described as follows:

Commencing at the North 1/4 of Section 9; thence along the North-South 1/4 line (as previously surveyed and monumented) South 01 degrees 39 minutes 41 seconds West (previously described as South 02 degrees 24 minutes West), 302.11 feet to the POINT OF BEGINNING of the parcel to be described; thence South 89 degrees 43 minutes 06 seconds East 335.95 feet; thence South 07 degrees 58 minutes 20 seconds West 279.64 feet; thence along the South line of a private road easement (variable width) North 68 degrees 02 minutes 22

seconds West (previously described as North 67 degrees 30 minutes West) 325.31 feet; thence along the North-South 1/4 line (as previously surveyed and monumented), North 01 degrees 39 minutes 41 seconds East (previously described as North 02 degrees 24 minutes East), 157.00 feet to the point of beginning.

WHEREAS, OWNER has agreed to allow the GRANTEE and/or its agents, licensees and contractors, to enter a portion of OWNER'S property to construct and complete the private utility installation and related improvements; and

WHEREAS, the Easement is over, under and across the entirety of the Property;

NOW THEREFORE, for the consideration of One Dollar (\$1.00), it is agreed as follows:

1. The OWNER hereby conveys and warrants to the GRANTEE a permanent easement for private use upon and across and under the Property, including but not limited to, the following: installation, maintenance, use, and repair of any and all private utilities, including, but not limited to, landscaping irrigation, water main, sanitary sewer, storm sewers, underground cable, telephone, electric and other utilities, and appurtenances and equipment thereto including, but not limited to forebays and detention and retention basins.

2. The OWNER acknowledges that the GRANTEE, by accepting the easements set forth herein, has no obligation to make any improvements other than those which presently exist in, over or upon the real estate which is the subject of the easements or any other real estate.

3. All of the easements set forth herein shall inure to the benefit of the GRANTEE or any of its licensees, grantees or assignees.

4. The easement shall run with the land for the durations set forth herein and shall be binding on the OWNER, its tenants, heirs, administrators and assigns for as long as the said easement continues.

5. This conveyance is exempt from any revenue tax by virtue of MCL 207.526(a) and 207.505(a).

6. The OWNER has through its duly authorized officer executed this agreement and it shall be effective on the recorded date.

**BMH – PREMIER GENOA PUD
Genoa Township, Michigan
Site Plan Application**

IMPACT ASSESSMENT

Owner:

BMH Realty, L.L.C.
775 N. Second Street
Brighton, Michigan 48116

Prepared by:

DESINE INC.
2183 Pless Drive
Brighton, Michigan 48114

A. INTRODUCTION

This impact assessment has been prepared pursuant to Article 18 – SITE PLAN REVIEW of the Zoning Ordinance for the Township of Genoa, Livingston County, Michigan. This assessment addresses the impact of the proposed building additions and parking expansion on the surrounding community and the economic condition and social environment of the Township.

This Impact Assessment has been prepared under the direction of Wayne Perry, P.E., DESINE INC., 2183 Pless Drive, Brighton, Michigan 48114. Mr. Perry is a licensed Civil Engineer, providing professional engineering services in Livingston County since 1988 with experience in private and municipal development including projects within Genoa Township and Livingston County.

B. SITE LOCATION / DESCRIPTION

The site is comprised of six parcels, containing a total of 5.12 acres of property, bordered on the North by White Horse Drive, Lawson Drive on the East, Grand River Avenue on the South and the Lake Trust Credit Union to the West, as shown on Figure 1. The Southeasterly four parcels are zoned General Commercial (GCD) district, the Southwesterly Parcel is zoned Office Service (OSD) district, and the North Parcel is split zoned with the East 1/2 zoned GCD and the West 1/2 zoned OSD.

The property currently contains three buildings and related improvements. An existing fuel station with a 2,670 square foot convenience store building, parking lot and storm water basin is located on the two center parcels. A 7,900 square foot commercial building, occupied by the Total Pool Supplies and Service, is located on the Southeast parcel. The Northeast parcel contains a 2,440 square foot industrial building, with a fenced outdoor storage yard, currently home to Security Access Controls and Fence Company. A residential home and related improvements, located on the Westerly parcel, were previously removed. The Existing Conditions Plan provides a detailed overview of the existing site features.

The BMH-Premier PUD Phase 1 Site Plan depicts proposed site improvements to be constructed on the site. Improvements consist of A 37,275 sq ft multi-purpose, adaptive use building, currently proposed to be up-fit with equipment to operate a drive-through, climate controlled building, with the potential for small flex-office spaces for rent and the existing gas station with a convenience store and related (existing) ancillary propane and kerosene sales. Additionally, the Site Plan features new parking areas, access drives, a storm water management system, lighting, landscaping and related site improvements.

Access to the property from Grand River Avenue and from Lawson Drive is provided through existing drives to the fuel station and convenience store. New access drives are proposed on White Horse Drive, in the Northeast portion of the project, and connection to the existing cross-access drive to Lake Trust Credit Union, located at the Southwest corner of the site. The site plan depicts 53 parking spaces, including 3 barrier free accessible spaces, are to be constructed on the site. Appurtenant features including commercial access drives, drive aisles, unloading/loading area, sidewalks and landscaping are also presented

in the site plan. An aerial photograph depicting the proposed site improvements is provided in Figure 2.

Adjacent uses include the Lake Trust Credit Union to the West and the DTE Service Center to the Northeast. Property to the North and East of the site is currently vacant. An aerial photograph depicting the proposed site improvements is provided in Figure 2.

C. IMPACT ON NATURAL FEATURES

Natural features on the subject parcel consist of re-established field grasses and shrub/scrub brush on the Westerly portion of the property. Existing topography of the site is generally flat to gently sloping terrain. The elevation of the property varies from an elevation of 991 at the Westerly property line, to approximately 986 at the Southeast corner of the parcel. Surface water drainage on the property generally flows to the Southeast.

Existing soils on the property are primarily Miami loam. These soils are generally moderately drained, moderately permeable, loams. Soil classifications are prepared by the United States Department of Agriculture, Soil Conservation Service, and “Soil Survey of Livingston County”. The Soils Map, shown in Figure 3, shows the locations of specific soil types as classified.

The proposed construction and improvements will require filling and grading in the Southeast portion of the property, filling the existing storm water basin and modifications to site elevations on the Northwest corner of Lawson Drive and Grand River. Excavation will be required to construct the proposed storm water retention system proposed on the North side of White Horse Drive.

The limits of disturbance have been depicted on the grading plan. Grading for this project will maintain the general character of the existing site. Development of this project will require earthwork to construct to proposed retention basin and modify site grades with useable materials from the site, requiring the exporting of excess soil and importing of additional structural fill material. The proposed elevations and grading of the site mesh with the existing grades at the property lines.

Landscaping is proposed for the developed portion of the site to reduce the visual impact of the proposed project. All proposed landscaping areas meet or exceed the planting requirements of Genoa Township’s current Zoning Ordinance and have been designed to improve the aesthetics of the property. Within the developed portion of the site, areas not otherwise covered, shall have lawn or other vegetative surface cover established.

Surface drainage characteristics on the property will be affected by the construction of the proposed building expansions and parking lots. Construction of the proposed improvements will reduce the permeable area of the property resulting in an increase in the surface water runoff generated. A storm water management system has been designed to collect and control the surface water runoff, reducing the discharge rate from the property and increasing the infiltration of surface water runoff.

The proposed changes and modifications to the surface drainage conditions will not significantly impact local aquifer characteristics or groundwater recharge capacity. All surface water runoff from the site will be directed into the proposed retention basin to be constructed North of White Horse Drive. Reduction in the surface permeability will affect onsite infiltration, surface water flow path and duration. Surface water runoff from the development will be reduced and no significant impact to adjacent properties are anticipated from the proposed construction and re-development of the site.

Upland wildlife habitats on the property are minimal and consist of primarily field grass and shrub/scrub brush areas in the Northwest portion of the property. Wildlife supported in this area is generally smaller field animals and birds. Previous development and the existing use of the property, the adjoining developments and the proximity of Grand River, limits the existing upland habitat.

The project site does not currently support any significant wildlife habitat and the proposed construction will not have a significant impact on overall habitat quality. No significant adverse impact to natural features is anticipated due to the proposed re-development of this property.

D. IMPACT ON STORM WATER MANAGEMENT

Excavation and grading will be undertaken to construct the proposed stormwater retention basin. Earthwork will be required to direct storm water flow into the storm water collection system. This system will discharge surface water runoff generated by development of the property to the proposed sedimentation basin and retention basin. Site grading will mesh with existing grades on adjoining properties. No adverse impact to adjoining properties is anticipated due to the construction and grading of the property.

Surface water runoff generated from all improved areas of the site will be collected by catch basins, conveyed through a storm sewer system, and discharged to the sedimentation and retention basin located on the North side of White Horse Drive. Storm water will be retained within the basin during a storm event and will infiltrate into the ground.

Soil erosion and sedimentation are controlled by the Soil Erosion Control Act No. 347 of the Public Acts of 1972, as amended and is administered by the Livingston County Drain Commissioner. Silt fencing will be installed around a majority of the site during construction. The Contractor shall comply with all regulations including control during and after construction.

Impact on adjoining properties due to the construction of this site will be minimized by implementing soil erosion control methods. No adverse impact to adjacent properties due to surface water runoff will be created as a result of the proposed improvements.

E. IMPACT ON SURROUNDING LAND USES

Surrounding land uses to the North of the site, on the North side of White Horse Drive, zoned Mixed-Use Planned Unit Development (MU-PUD), consists of an industrial user and vacant property. Land to the East is zoned Non-Residential Planned Unit Development

(NR-PUD) and is vacant. Land to the South, zoned Non-Residential Planned Unit Development (NR-PUD) and Industrial (IND), contains a mix of commercial and industrial users including an auto wash and Reuland Electric Company. Property to the West is the Lake Trust Credit Union, zoned Mixed-Use Planned Unit Development (MU-PUD).

The proposed Phase 1 Site Plan conforms to the approved PUD plan. No adverse impact to adjacent properties is anticipated due to construction of the Phase 1 improvements.

Ambient noise levels on and around the property are largely generated by Grand River vehicle traffic. Daily activities within the proposed building are not anticipated to create an increase in the sound level in the area.

All site lighting shall comply with conditions of the approved PUD. Proposed building mounted fixtures and pole mounted site lighting will be shielded and down directed on the site. The existing fuel station and convenience store lighting shall be on from dusk until dawn. General site lighting for other uses, excluding safety and emergency lighting, shall be energized between the times from dusk to 12:01 a.m. and from 5:00 a.m. to dawn.

The building façade along the building front (South side) and the East side elevations are most visible from Grand River. The East and West ends of the storage building provide primary entrance features. The storage building is designed to grant vehicular access into and out of the respective East and West ends of the building. The entire length of the building is designed with a 30' wide drive and parking aisle through the building, reducing demand for exterior onsite parking needs and eliminating the need for any outdoor parking and loading areas to access the building for pick up and delivery of stored items.

HVAC units serving the multi-purpose facility are placed inside of the building eliminating unsightly large heating and cooling mechanical equipment typically located either on rooftops or outside within landscaped buffers, which if placed on the available area outside of the building these mechanicals would be seen along White Horse Drive or Lawson Drive. The proposed interior placement reduces visibility by drivers accessing nearby residential neighborhoods and indoor placement of the HVAC lessens the total height and mass of the structure.

The proposed use of the property does not create any significant emissions of smoke, airborne solids, odors, gases, vibrations, noise or glare discernable and substantially annoying or injurious to person and/or property beyond the lot lines. No significant change in air pollution is anticipated.

The Contractor shall be responsible for initiating and maintaining adequate dust control measures during and after construction until the project site is fully stabilized and a vegetative cover established. Dust control measures used during construction may consist of site watering, mulching of completed areas, installation of windbreak fencing, and application of chemical dust control materials. The site will comply with the performance standards contained in Section 13.05 of the Township Zoning Ordinance.

F. IMPACT ON PUBLIC FACILITIES AND SERVICES

The Livingston County Sheriff and Michigan State Police will provide Police protection. Public safety services required to accommodate the proposed use are anticipated to be minor.

The Brighton Area Fire Department as a part of an existing governmental agreement will provide fire protection service. A fire hydrant will be constructed on the property within the White Horse Drive Right-of-way to provide adequate fire protection capabilities. The building is provided with an internal fire suppression system. A Fire Department Connection is located near the Northwest corner of the building along with a Knox box and required address labeling to meet the Fire Departments requirements. No significant increase in fire protection services are anticipated as a result of the proposed use.

The property is accessed from Grand River, White Horse Drive and Lawson Drive, providing adequate access for emergency vehicles. A wide drive aisle on the West side of the building will serve as a fire access lane between Grand River and White Horse Drive.

The proposed uses will not create any direct adverse impact on the public schools.

G. IMPACT ON PUBLIC UTILITIES

The property is presently within municipal sewer and water districts and existing buildings are connected to the municipal utilities.

Water service to the storage building is provided from a new water main extension to be constructed along White Horse Drive. A water service lead is connected to this main to supply the building and a fire suppression line is also provided from this main. An easement for repair, maintenance and access are provided for this connecting water main. Capacity is available within the existing water system to provide adequate service to this site.

Sanitary sewer is located along the North side of Grand River. Capacity is available within the existing sanitary sewer system to provide adequate service for the site.

The site is currently serviced by electric, gas, phone and cable systems located along Grand River Avenue.

All solid wastes will be properly disposed of through a licensed disposal firm on a regular basis. Dumpster enclosures with screen walls are located on the East, South and West sides of the storage building. The enclosures will be constructed decorative CMU material, matching material used on the site and complimenting the adjacent architecture of the building. Additional landscaping is provided in these areas to further enhance the aesthetics of these enclosures.

Delivery services are generally limited to parcel trucks, such as UPS, and similar single axle vehicles. These delivery service providers use available parking and drop off areas during their deliveries. Large vehicles accessing the site will be capable of maneuvering

on the proposed access drives around the building and will utilize the proposed storage building for loading and unloading purposes.

H. STORAGE AND HANDLING OF ANY HAZARDOUS MATERIALS

The proposed uses within the building will not use, store, generate and/or discharge potentially polluting materials. Small quantities of material such as cleaning products and chemicals may be stored on-site.

I. TRAFFIC IMPACT STUDY

A traffic impact study for the development has been prepared by Rowe Engineering and is submitted with the Site Plan packet. ¹

Pedestrian access to the property is provided by an existing sidewalk along Grand River. A new sidewalk will be constructed along the East side of the property on Lawson Drive. Sidewalks throughout the property provide safe and efficient means for pedestrians to access the various uses within the property.

No adverse impact on pedestrian traffic in the area is anticipated as a result of developing the proposed project.

J. HISTORIC AND CULTURAL RESOURCES

The existing buildings on the property do not have any major historic significance on a local, regional or state level.

K. SPECIAL PROVISIONS

No special provisions or requirements are currently proposed for this facility.

FIGURE 1

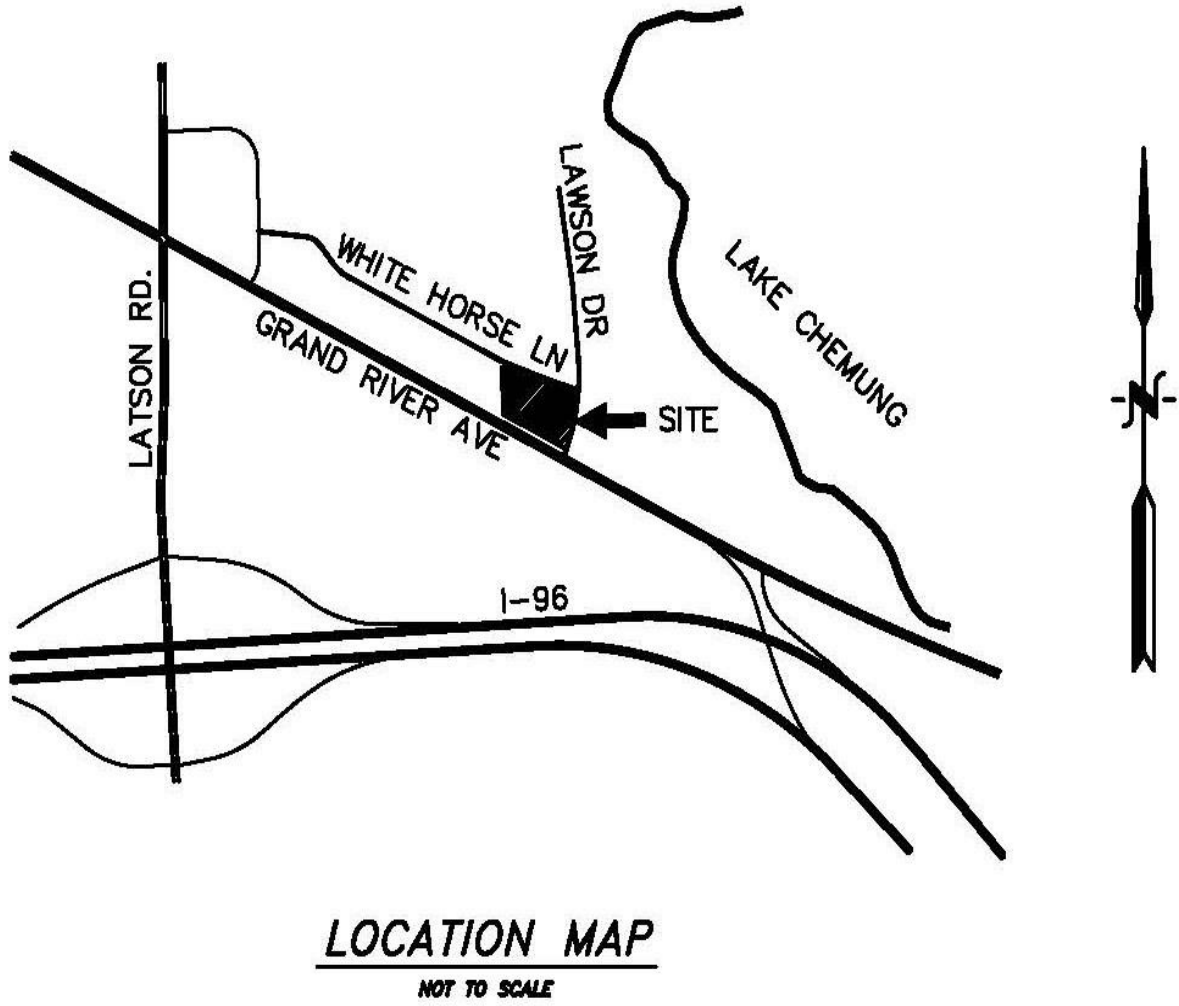


FIGURE 2
PHOTO DEPICTING SITE IMPROVEMENTS
NOT TO SCALE

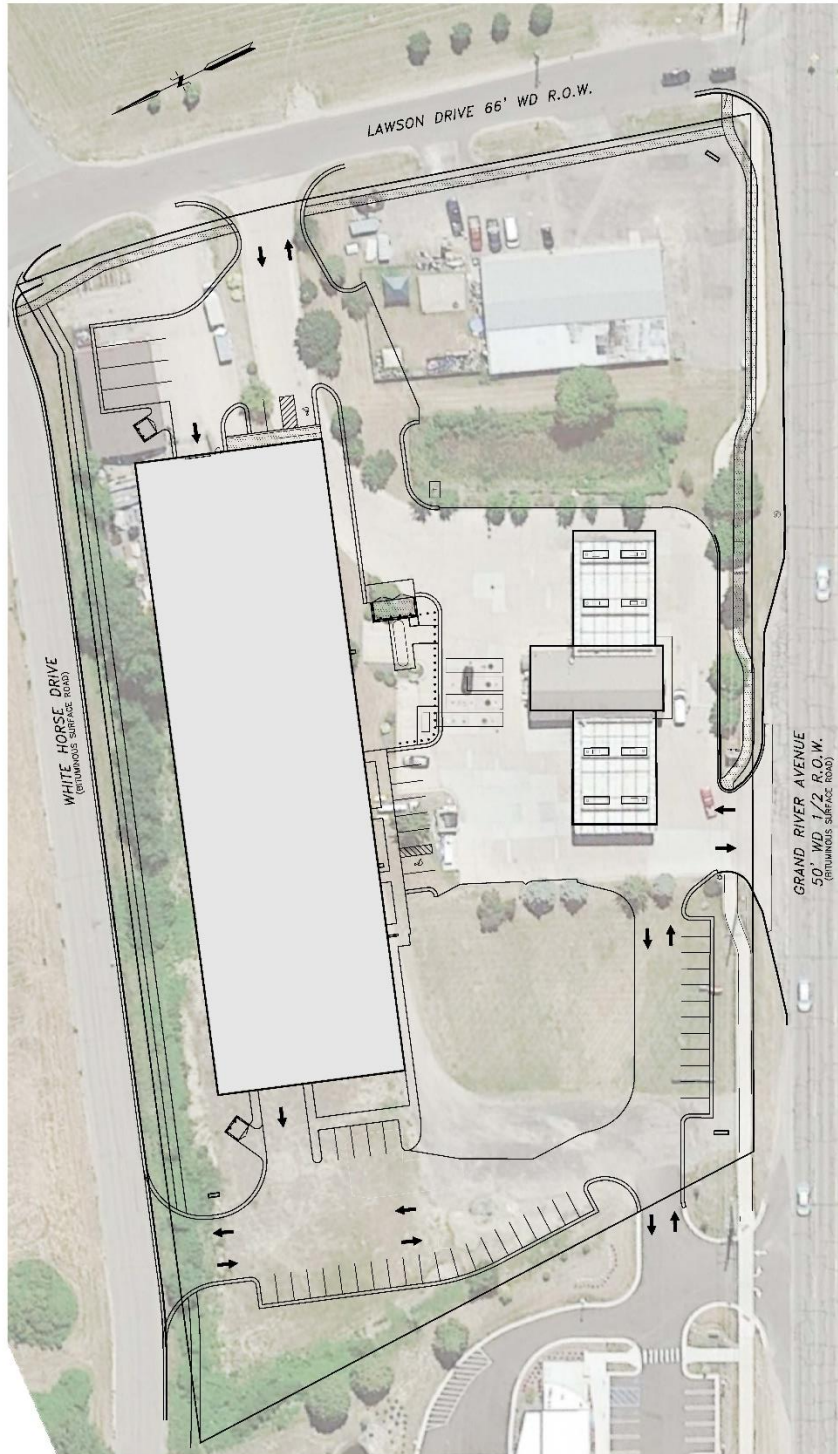


FIGURE 3
SOILS MAP
(NOT TO SCALE)



SOILS MAP

Map Unit Symbol	Map Unit Name
BiB	Boyer-Oshtemo loamy sands, 2 to 6 percent slopes
BiC	Boyer-Oshtemo loamy sands, 6 to 12 percent slopes
BiE	Boyer-Oshtemo loamy sands, 18 to 25 percent slopes
BwA	Bronson loamy sand, 0 to 2 percent slopes
CvA	Conover loam, 0 to 2 percent slopes
FrB	Fox-Boyer complex, 2 to 6 percent slopes
FrC	Fox-Boyer complex, 6 to 12 percent slopes
FrD	Fox-Boyer complex, 12 to 18 percent slopes
FrE	Fox-Boyer complex, 18 to 25 percent slopes
Ho	Houghton muck
MoB	Miami loam, 2 to 6 percent slopes
W	Water

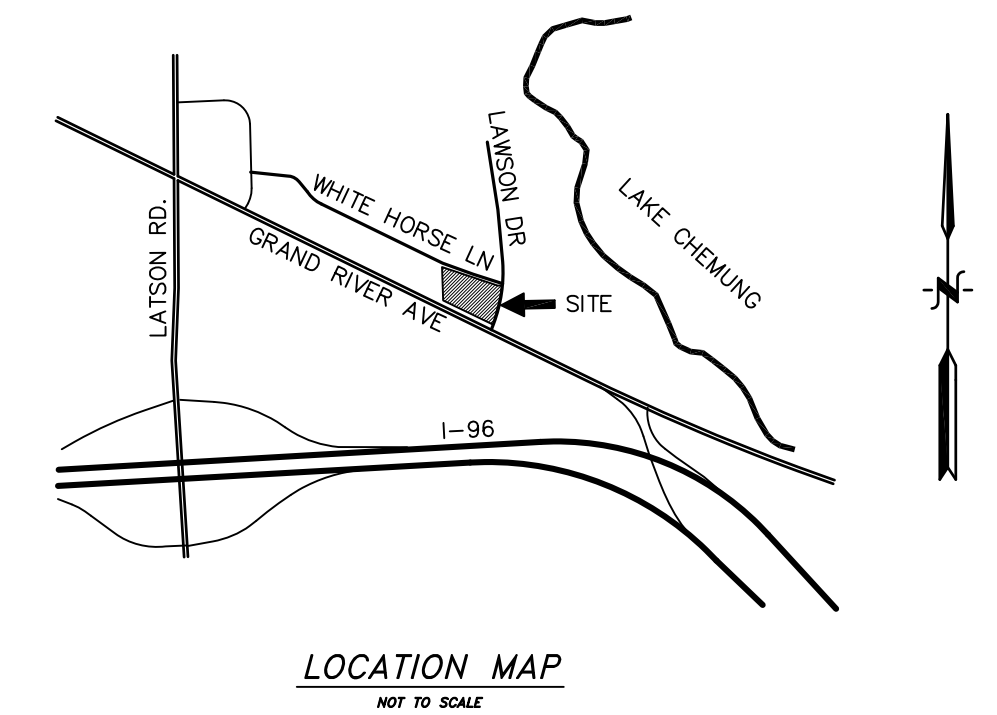
RECEIVED
9-28-2020

Phase 1 Site plan & Construction Plans

FOR

BMH - PREMIER P.U.D.

GENOA TOWNSHIP, MICHIGAN
A PART OF THE NE 1/4 OF SECTION 9, T2N, R5E.
GENOA TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN



AERIAL PHOTOGRAPH
SCALE: 1in. = 60ft

AERIAL PHOTOGRAPHY BY:
Google maps
Aerial photographic underlay is an unrectified image and is orientated to the engineering line work within reasonable accuracy and precision, and may not accurately depict current site conditions.

LEGAL DESCRIPTION

Parcels No's: 4711-09-200-005, 4711-09-200-010, 4711-09-200-014, 4711-09-200-015, 4711-09-200-016 and 4711-09-200-017 combined.

Commencing at the North 1/4 Corner of Section 9, Town 2 North, Range 5 East, Genoa Township, Livingston County, Michigan; thence S01°47'17"E (SPCS) (recorded as S01°30'47"E) 459.11 feet along the North and South 1/4 line of said Section 9 to the PLACE OF BEGINNING; thence the following two courses along the South line of White Horse Drive (variable width Right-of-way): 1) S71°50'00"E (SPCS) (recorded as S71°13'30"E) 610.87 feet, and 2) N88°36'45"E (SPCS) (recorded as N88°53'15"E) 45.07 feet; thence the following two courses along the West line of Lawson Drive (66 foot wide Right-of-way): 1) Southerly 181.88 feet along the arc of a 993.83 foot radius curve to the right, through a central angle of 10°29'16" and having a chord bearing S09°50'07"W (SPCS) (recorded as S10°36'37"W) 181.63 feet, and 2) S15°04'45"W (SPCS) (recorded as S15°21'15"W) 238.04 feet; thence N64°10'04"W (SPCS) (recorded as N63°53'34"W) 578.26 feet along the Northerly line of Grand River Avenue (50 foot wide 1/2 Right-of-way); thence N01°47'17"W (SPCS) (recorded as N01°30'47"W) 348.17 feet along said North and South 1/4 line of Section 9 to the Place of Beginning.

Being a part of the Northeast 1/4 of Section 9, Town 2 North, Range 5 East, Genoa Township, Livingston County, Michigan
Containing 5.12 acres of land, more or less.
Subject to and together with all easements and restrictions affecting title to the described above premises.

SHEET INDEX

- EX EXISTING CONDITIONS & DEMOLITION PLAN
- SP SITE PLAN
- UT1 UTILITY PLAN
- UT2 STORM SEWER PROFILES
- UT3 WATERMAIN PROFILES
- GR1 GRADING PLAN
- GR2 RETENTION BASIN DETAIL AND DRAINAGE CALCULATION
- AP1 LAWSON DRIVE ENTRANCE PLAN
- AP2 WHITEHORSE DRIVE ENTRANCE PLAN
- SE1 SOIL EROSION CONTROL PLAN
- SE2 SOIL EROSION CONTROL NOTES & DETYAILS
- DT1 NOTES AND DETAILS
- DT2 SIGNAGE AND PAVEMENT MARKING NOTES AND DETAILS
- L1 LANDSCAPE PLAN
- L2 ENLARGEMENTS
- L3 ENLARGEMENTS AND LANDSCAPE DETAILS
- L4 LANDSCAPE SPECIFICATIONS
- RL PHOTOMETRIC PLAN
- LIGHTING CUT SHEET
- MHOG STANDARD DETAILS
- ARCHITECTURAL PLANS
- A-1 SELF STORAGE BUILDING ENVELOPE FLOOR PLANS
- A-1.1 SELF STORAGE SYSTEM FLOOR PLAN
- A-2 SELF STORAGE BUILDING ELEVATIONS
- A-4 FUEL STATION AND CONVENIENCE STORE

WATER MAIN (PH1 CONSTRUCTION)		
8" CL 52 D.I. WATER MAIN PIPE	1170	LF.
8" -45° VERTICAL BEND	4	QTY.
8" -45° HORIZONTAL BEND	4	QTY.
8" -22.5° VERTICAL BEND	1	QTY.
8"X8"X8" TEE	3	QTY.
8" GATE VALVE W/BOX & COVER	3	QTY.
8"X6"X8" TEE	2	QTY.
8"X6" REDUCER	2	QTY.
6" CL 52 D.I. WATER MAIN PIPE	158	LF.
6" -90° HORIZONTAL BEND	1	QTY.
6" GATE VALVE W/BOX & COVER	1	QTY.
2" TYPE "K" COPPER WATER SERVICE	188	LF.
2" CURB STOP & CURB BOX W/COVER	2	QTY.
FIRE HYDRANT ASSEMBLY	3	QTY.

OWNER
BMH REALTY L.L.C.
775 N. SECOND STREET
BRIGHTON, MICHIGAN 48116

DEVELOPER
PREMIER GENOA LLC
775 N. SECOND STREET
BRIGHTON, MICHIGAN 48116

ARCHITECT
DRN & ASSOCIATES, ARCHITECTS PC
50850 APPLEBROOKE DR.
NORTHVILLE, MICHIGAN 48167
PHONE (248) 880-6523

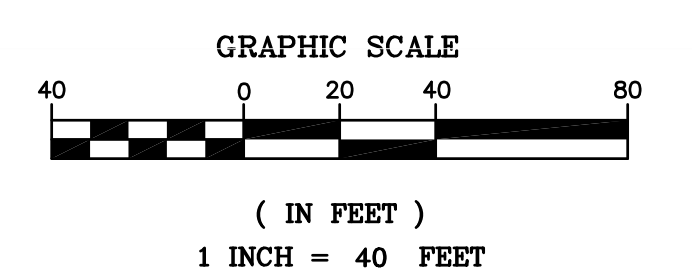
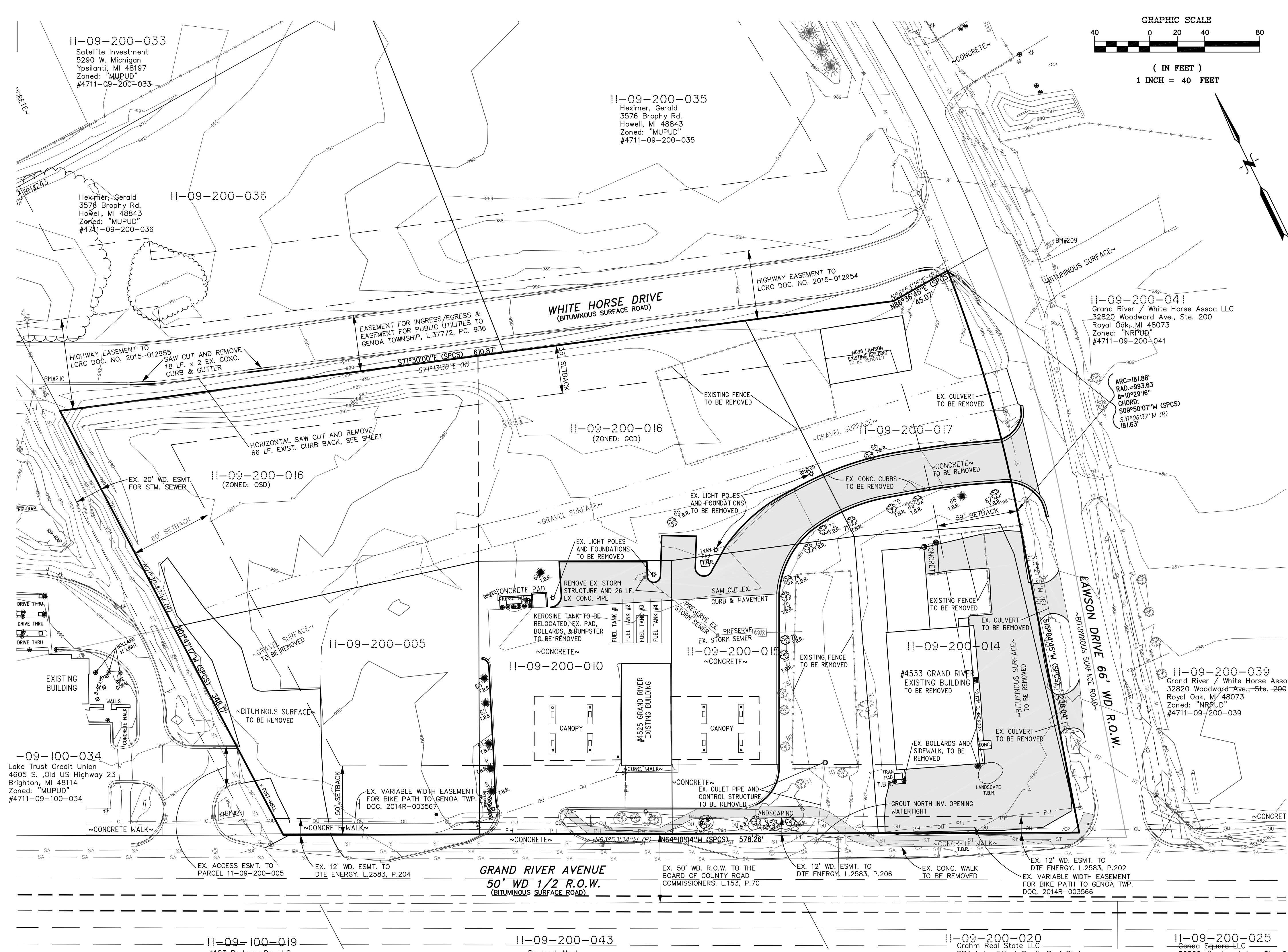
ENGINEER/SURVEYOR
DESINE INC.
2183 PLESS DRIVE
BRIGHTON, MICHIGAN 48114
PHONE: (810) 227-9533

LANDSCAPE ARCHITECT
VERT VERDE
LANDSCAPE ARCHITECT
PLYMOUTH, MICHIGAN

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LAND SURVEYORS
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BRIGHTON, MICHIGAN 48114

REVISED AUG. 5, 2020	SCALE: AS NOTED
	PROJECT No.: 183450
	DWG NAME: 3450 COV
	PRINT: SEPT. 28 2020



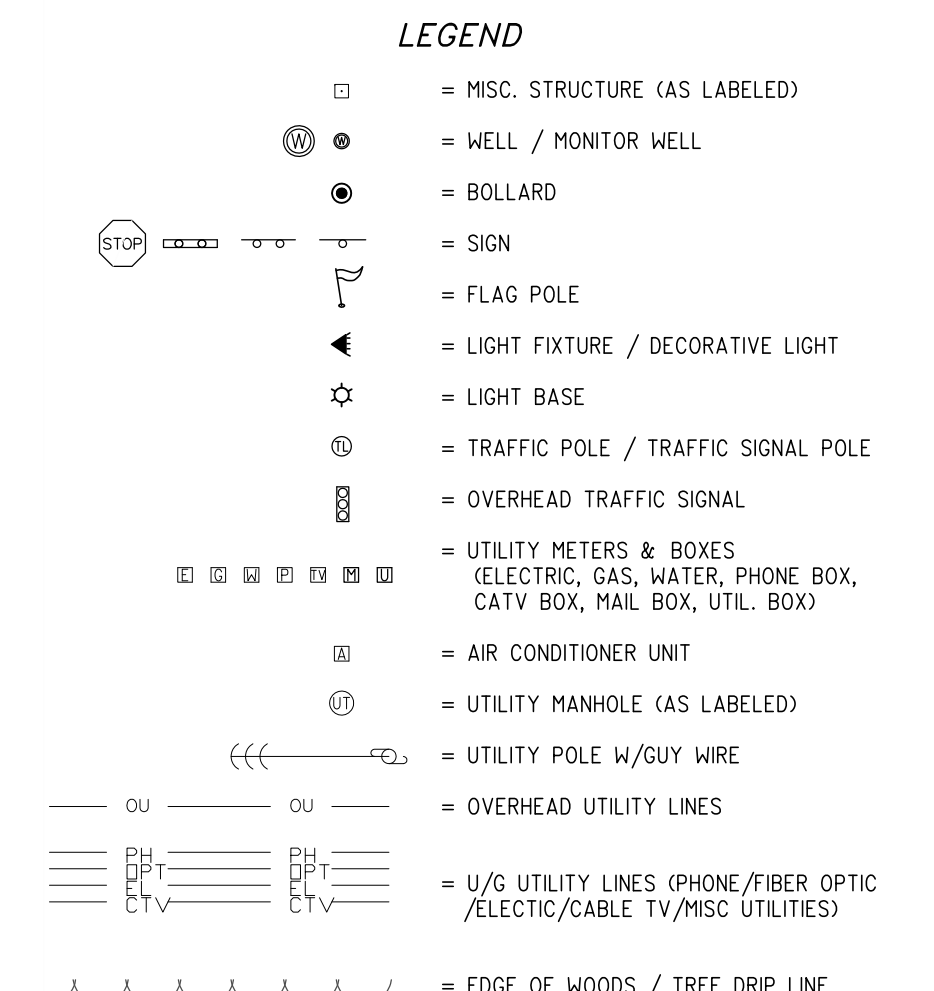
BENCHMARK
 DATUM BASED ON "NGS OPUS-RS SOLUTION REPORT," DATED MAY 25, 2011 AT 10:13 AM

BENCHMARK #209
 ARROW OF HYDRANT, LOCATED OF LAWSON DRIVE, NORTH OF DRIVE FOR PARCEL #11-09-200-041.
 ELEVATION = 999.90 (NAVD 88)

BENCHMARK #210
 ARROW OF HYDRANT, LOCATED NEAR THE SOUTH SIDE OF DRIVE FOR REAR ENTRANCE OF BANK, PARCEL #11-09-100-024.
 ELEVATION = 994.68 (NAVD 88)

BENCHMARK #211
 TOP EAST SIDE OF A LIGHT POLE BASE, LOCATED EAST OF THE SOUTH BANK ENTRANCE OF PARCEL #11-09-100-034, OFF GRAND RIVER.
 ELEVATION = 993.82 (NAVD 88)

BENCHMARK #240
 ARROW OF HYDRANT, LOCATED NEAR THE WEST SIDE OF LAWSON DRIVE, 75± FEET NORTH OF DRIVE FOR PARCEL #11-09-200-034.
 ELEVATION = 991.66 (NAVD 88)



TREE SCHEDULE

No.	DESCRIPTION	T.B.R.
1	MAPLE 6"	T.B.R.
2	MAPLE 2"	T.B.R.
3	MAPLE 6"	T.B.R.
4	MAPLE 6"	T.B.R.
5	MAPLE 6"	T.B.R.
6	MAPLE 4"	T.B.R.
7	MAPLE 9"	T.B.R.
8	PINE 10"	T.B.R.
9	PINE 6"	T.B.R.
10	SPRUCE 6"	T.B.R.
11	CHERRY 4"	T.B.R.
61	PINE 12"	T.B.R.
62	PINE 12"	T.B.R.
63	PINE 13"	T.B.R.
64	PINE 15"	T.B.R.
65	DECIDUOUS 8"	T.B.R.
66	DECIDUOUS 8"	T.B.R.
67	DECIDUOUS 10" MULTI.	T.B.R.
68	PINE 12"	T.B.R.
69	DECIDUOUS 12"	T.B.R.
70	DECIDUOUS 6" MULTI.	T.B.R.
71	DECIDUOUS 6"	T.B.R.
72	DECIDUOUS 6" MULTI.	T.B.R.
73	DECIDUOUS 6" MULTI.	T.B.R.
74	PINE 9"	T.B.R.
75	PINE 6"	T.B.R.
76	PEAR 5"	T.B.R.
77	PEAR 5"	T.B.R.
78	PEAR 5"	T.B.R.
79	PEAR 5"	T.B.R.
80	PEAR 8"	T.B.R.
81	DECIDUOUS 24"	T.B.R.

- DEMOLITION NOTES:**
- The demolition specifications of the Local Municipality are a part of this work. Refer to the General Notes on the project plans for additional requirements.
 - Contractor shall contact the 811 Underground Public Utility Locating System or other appropriate local underground utility locating Agency, a minimum of three (3) working days prior to performing demolition work. Existing utility information on the project plans may be from information disclosed to this firm by the Utility Companies, Local, County or State Agencies, and/or various other sources. No guarantee is given as to the completeness or accuracy thereof. Prior to construction, locations and depths of all existing utilities (in possible conflict with the proposed improvements) shall be verified in the field.
 - Contractor shall contact the appropriate Agencies to coordinate disconnect of the electric, gas, phone, cable and other public utilities as necessary prior to performing demolition work.
 - Contractor shall contact the appropriate Agencies to coordinate removal and/or relocation of any underground and/or overhead public utility lines as necessary prior to performing demolition work.
 - Contractor shall recycle and/or dispose of all demolition material and debris in accordance with the appropriate Local, County, State and Federal regulations.
 - All bituminous and concrete pavement to be removed shall be saw cut at the limits of removal to provide for a clean straight edge for future abutment.
 - All existing storm sewer to be removed shall be terminated at the limits of demolition or as indicated on the project plans. Temporary plugs shall be installed in the ends of pipe in accordance with the appropriate Agency and the locations of marked for future connection. Permanent bulkheads shall be installed in the ends of pipe and/or openings in terminating structures in accordance with the appropriate Agency. The Contractor shall record the location of all permanent bulkheads and provide the location information to the appropriate Agency.
 - All existing light sources to be removed shall have their power cables removed up to the power source or properly terminated for future connection at the limits of demolition or as necessary to allow for construction of the proposed site improvements. Removal and termination of power cables shall be performed in accordance with local electric codes.
 - All existing utility meters to be removed shall be properly removed to allow for reuse. Any existing utility meters that are not to be reused as a part of this project shall be returned to the appropriate Agency.
 - All trenches and/or excavations resulting from the demolition of underground utilities, building foundations, etc., that are located within the 1 on 1 influence zone of proposed structures, paved areas and/or other areas subject to vehicular traffic shall be backfilled with MDOT Class III granular material (or better) to the proposed subgrade elevation. Backfill shall be placed using the controlled density method (12" maximum lifts, compacted to 95% maximum unit weight, Modified Proctor).

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 BRIGHTON, MICHIGAN 48114

DESIGN: FA	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: JHG						
CHECK: WMP						

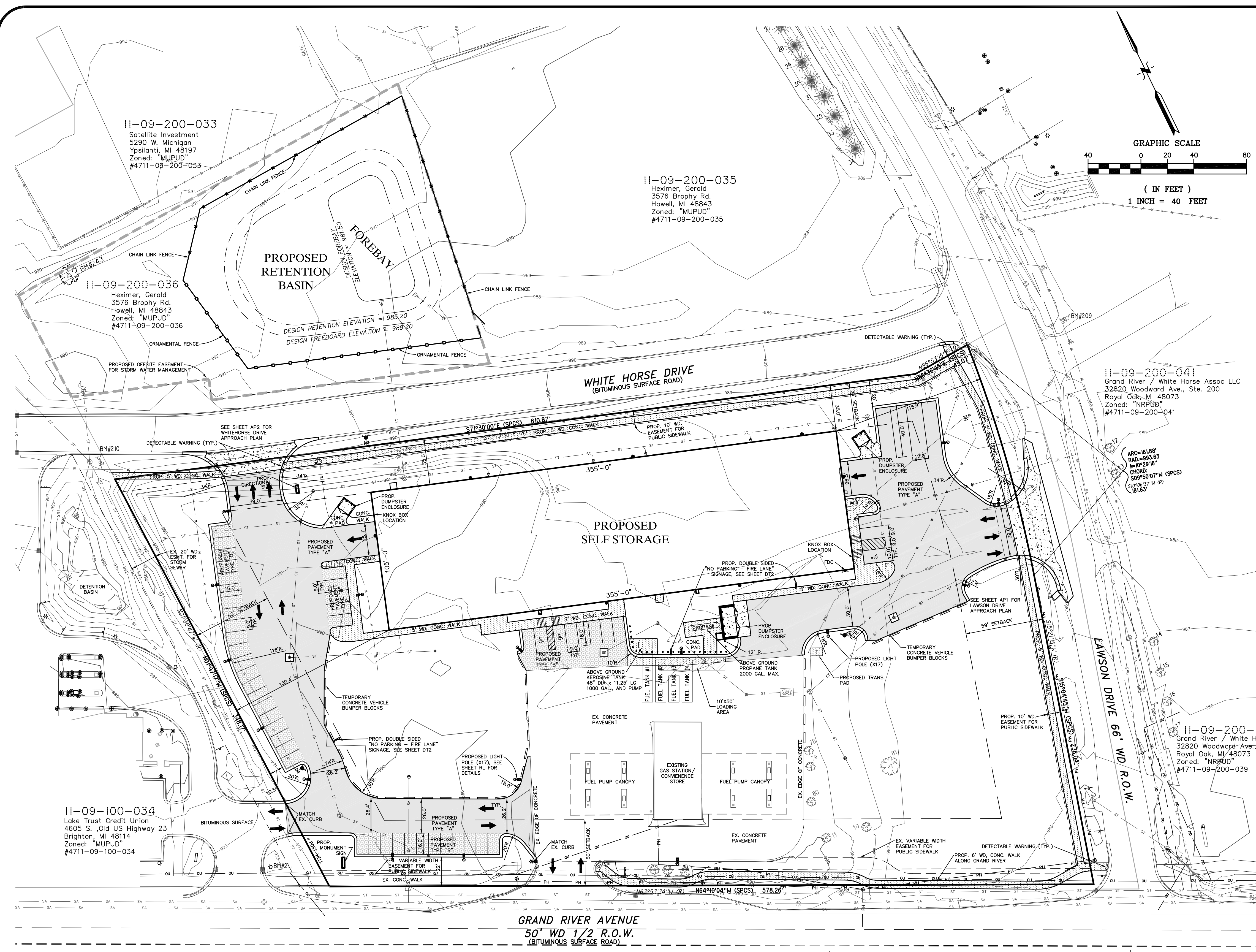
BMH-PREMIER P.U.D.
PHASE 1

EXISTING CONDITIONS AND DEMOLITION PLAN

CLIENT:
 PREMIER GENOA, LLC
 775 N. SECOND ST.
 BRIGHTON, MICHIGAN 48116

SCALE: 1in. = 40ft.
 PROJECT No.: 183450
 DWG NAME: 3450 EX
 ISSUED: **AUG. 5, 2020**

EX



SITE DATA & ZONING TABLE		
Project / Owner: BMH-Premier PUD / Premier Genoa, LLC		
Location: Genoa Township, Michigan		
Address: 4525 East Grand River Ave.		
Tax ID Number(s): #4711-09-200-005,010,014,015,016 & 017		
Zoning: RD-PUD		
Data	REQUIRED	PROVIDED
Lot Width =	5.00 Ac. (217,800 sf)	5.12 Ac. (223,031 sf)
Lot Width =	150'	578.26'
Yard Setbacks:		
North (White Horse Dr) =	35'	35'
East (Lawson Dr) =	59'	115.90'
South (E. Grand River) =	50'	50'
Side Yard Setback =	N/A	N/A
Rear Yard Setback =	60'	130.40'
Front Parking Setback =	20'	20'
Side Parking Setbacks =	N/A	N/A
Rear Parking Setbacks =	10'	10.5'
Max. Building Height:	In Feet = 35'	35'
LOT COVERAGE:		
Max. Lot Coverage Area =	35%	20.55%
Max. Impervious Coverage Area =	75%	57.58%
Min. Open Space Area =	25%	39.63%
PARKING (Art. 15, Sec. 15-01):		
	REQUIRED	PROVIDED
Use: Flex-Office		
One (1) space per 300 SF of gross floor area	(1,720 / 300) = 6 spaces	
Use: Storage Warehouse		
Minimum of (6) parking spaces	6 spaces Minimum	
Use: Gas Station		
Two (2) spaces per serving bay, plus two (2) spaces per employee, plus one (1) space per each tow truck, plus one (1) space per each 500 SF of area devoted to sales	(2 employee X 2) = 4 spaces (2,671 / 500) = 6 Spaces serving bays = 0 tow truck = 0	
Total Parking Spaces =	22	53
Total Loading Spaces (10 X 50) =	1	1
Barrier Free Spaces =	1	3

- LEGEND**
- = MISC. STRUCTURE (AS LABELED)
 - ⊙ = WELL / MONITOR WELL
 - = BOLLARD
 - ⚡ = SIGN
 - ⚡ = FLAG POLE
 - ⚡ = LIGHT FIXTURE / DECORATIVE LIGHT
 - ⚡ = LIGHT BASE
 - ⚡ = TRAFFIC POLE / TRAFFIC SIGNAL POLE
 - ⚡ = OVERHEAD TRAFFIC SIGNAL
 - ⚡ = UTILITY METERS & BOXES (ELECTRIC, GAS, WATER, PHONE BOX, CITY BOX, MAIL BOX, UTIL. BOX)
 - ⚡ = AIR CONDITIONER UNIT
 - ⚡ = UTILITY MANHOLE (AS LABELED)
 - ⚡ = UTILITY POLE W/SLY WIRE
 - ⚡ = OVERHEAD UTILITY LINES
 - ⚡ = U/G UTILITY LINES (PHONE/FIBER OPTIC/ELECTRIC/CABLE TV/MISC UTILITIES)
 - ⚡ = EDGE OF WOODS / TREE DRIP LINE
 - ⚡ = DECIDUOUS TREE W/IDENTIFIER
 - ⚡ = CONIFEROUS TREE W/IDENTIFIER
 - ⚡ = FENCE
 - ⚡ = GUARD RAIL
 - ⚡ = EDGE OF GRAVEL
 - ⚡ = CONCRETE CURB
 - ⚡ = SANITARY SEWER MANHOLE W/IDENTIFIER
 - ⚡ = SANITARY SEWER PIPE
 - ⚡ = CLEAN OUT
 - ⚡ = STORM WATER MANHOLE W/IDENTIFIER
 - ⚡ = CATCH BASIN W/IDENTIFIER
 - ⚡ = CONTROL STRUCTURE
 - ⚡ = FLARED END SECTION
 - ⚡ = STORM WATER DRAINAGE PIPE
 - ⚡ = HYDRANT
 - ⚡ = WATER SHUT OFF
 - ⚡ = WATER GATE VALVE WELL / MANHOLE
 - ⚡ = WATER VALVE BOX
 - ⚡ = WATER MAIN
 - ⚡ = GAS MANHOLE / GASOLINE COVER
 - ⚡ = GAS SHUT OFF
 - ⚡ = U/G GAS
 - ⚡ = F CONTOUR
 - ⚡ = S CONTOUR
 - ⚡ = PROP. CONCRETE PAVEMENT
 - ⚡ = PROP. BITUMINOUS PAVEMENT TYPE A
 - ⚡ = PROP. CONCRETE SIDEWALK
 - ⚡ = PROP. BITUMINOUS PAVEMENT TYPE B
 - ⚡ = PROP. DETECTABLE WARNING

BENCHMARK
 DATUM BASED ON "NGS OPUS-RS SOLUTION REPORT," DATED MAY 25, 2011 AT 10:13 AM

BENCHMARK #209
 ARROW OF HYDRANT, LOCATED OF LAWSON DRIVE, NORTH OF DRIVE FOR PARCEL #11-09-200-041.
 ELEVATION = 989.90 (NAVD 88)

BENCHMARK #210
 ARROW OF HYDRANT, LOCATED NEAR THE SOUTH SIDE OF DRIVE FOR REAR ENTRANCE OF BANK, PARCEL #11-09-100-024.
 ELEVATION = 994.68 (NAVD 88)

BENCHMARK #211
 TOP EAST SIDE OF A LIGHT POLE BASE, LOCATED EAST OF THE SOUTH BANK ENTRANCE OF PARCEL #11-09-100-034, OFF GRAND RIVER.
 ELEVATION = 993.82 (NAVD 88)

NOTE:
 EXTERIOR SITE LIGHTING SHALL BE OF A CONSISTENT TYPE AND MATERIAL THROUGHOUT THE PUD.

11-09-200-033
 Satellite Investment
 5290 W. Michigan
 Ypsilanti, MI 48197
 Zoned: "MUPUD"
 #4711-09-200-033

11-09-200-036
 Heximer, Gerald
 3576 Brophy Rd.
 Howell, MI 48843
 Zoned: "MUPUD"
 #4711-09-200-036

11-09-200-035
 Heximer, Gerald
 3576 Brophy Rd.
 Howell, MI 48843
 Zoned: "MUPUD"
 #4711-09-200-035

11-09-200-041
 Grand River / White Horse Assoc LLC
 32820 Woodward Ave., Ste. 200
 Royal Oak, MI 48073
 Zoned: "NRPUD"
 #4711-09-200-041

11-09-200-039
 Grand River / White Horse Assoc LLC
 32820 Woodward Ave., Ste. 200
 Royal Oak, MI 48073
 Zoned: "NRPUD"
 #4711-09-200-039

11-09-100-034
 Lake Trust Credit Union
 4605 S. Old US Highway 23
 Brighton, MI 48114
 Zoned: "MUPUD"
 #4711-09-100-034

11-09-100-019
 1183 Parkway Dr. LLC
 23800 Industrial Park Dr.
 Farmington Hills, MI 48335
 Zoned: "IND"
 #4711-09-100-019

11-09-200-043
 Reuland, Noel
 4500 E. Grand River
 Howell, MI 48843
 Zoned: "IND"
 #4711-09-200-043

11-09-200-020
 DBA Lake Effect South Real State
 2246 Shoreline Dr.
 Brighton, MI 48114
 Zoned: "NRPUD"
 #4711-09-200-020

11-09-200-025
 Genoa-Square-LLC
 32820 Woodward Ave, Ste. 200
 Royal Oak, MI 48073
 Zoned: "NRPUD"
 #4711-09-200-025

DESIGN:FA	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: JHG			
CHECK: WMP			

BMH - PREMIER P.U.D.

PHASE 1

PROPOSED SITE PLAN

CLIENT: PREMIER GENOA, LLC
 775 N. SECOND ST.
 BRIGHTON, MICHIGAN 48116
 810-229-6323

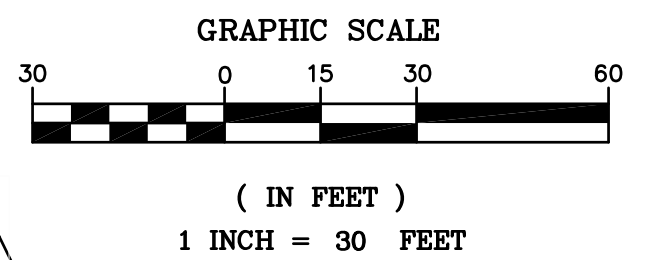
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 PROJECT No.: 183450
 DWG NAME: 3450 SP
 ISSUED: AUG. 5, 2020

SP

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- LEGEND**
- = MISC. STRUCTURE (AS LABELED)
 - ⊙ = WELL / MONITOR WELL
 - = BOLLARD
 - = SIGN
 - = FLAG POLE
 - = LIGHT FIXTURE / DECORATIVE LIGHT
 - = LIGHT BASE
 - = TRAFFIC POLE / TRAFFIC SIGNAL POLE
 - = OVERHEAD TRAFFIC SIGNAL
 - = UTILITY METERS & BOXES (ELECTRIC, GAS, WATER, PHONE, BOX, CITY BOX, MAIL BOX, UTE, BOSS)
 - = AIR CONDITIONER UNIT
 - = UTILITY HANDLE (AS LABELED)
 - = UTILITY POLE W/ GUY WIRE
 - = OVERHEAD UTILITY LINES
 - = U/G UTILITY LINES (PHONE/FIBER OPTIC/ELECTRIC/CABLE TV/MISC UTILITIES)
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 - = SANITARY SEWER PIPE
 - = CLEAN OUT
 - = STORM WATER MANHOLE W/ IDENTIFIER
 - = STORM WATER DRAINAGE PIPE
 - = HYDRANT
 - = WATER SHUT OFF
 - = WATER GATE VALVE WELL / MANHOLE
 - = WATER VALVE BOX
 - = WATER MAIN
 - = GAS MANHOLE / GASOLINE COVER
 - = GAS SHUT OFF
 - = U/G GAS
 - = 1' CONTOUR
 - = 5' CONTOUR

BENCHMARK
 DATUM BASED ON "MIS OPUS-RES SOLUTION REPORT," DATED MAY 25, 2011 AT 10:13 AM

BENCHMARK #209
 ARROW OF HYDRANT, LOCATED ON LAWSON DRIVE, NORTH OF DRIVE FOR PARCEL #11-09-200-041. ELEVATION = 989.90 (NAVD 88)

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 ARROW OF HYDRANT, LOCATED NEAR THE SOUTH SIDE OF DRIVE FOR REAR ENTRANCE OF BANK, PARCEL #11-09-100-024. ELEVATION = 994.66 (NAVD 88)

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 TOP EAST SIDE OF A LIGHT POLE BASE, LOCATED EAST OF THE SOUTH BANK ENTRANCE OF PARCEL #11-09-100-034, OFF GRAND RIVER. ELEVATION = 993.82 (NAVD 88)

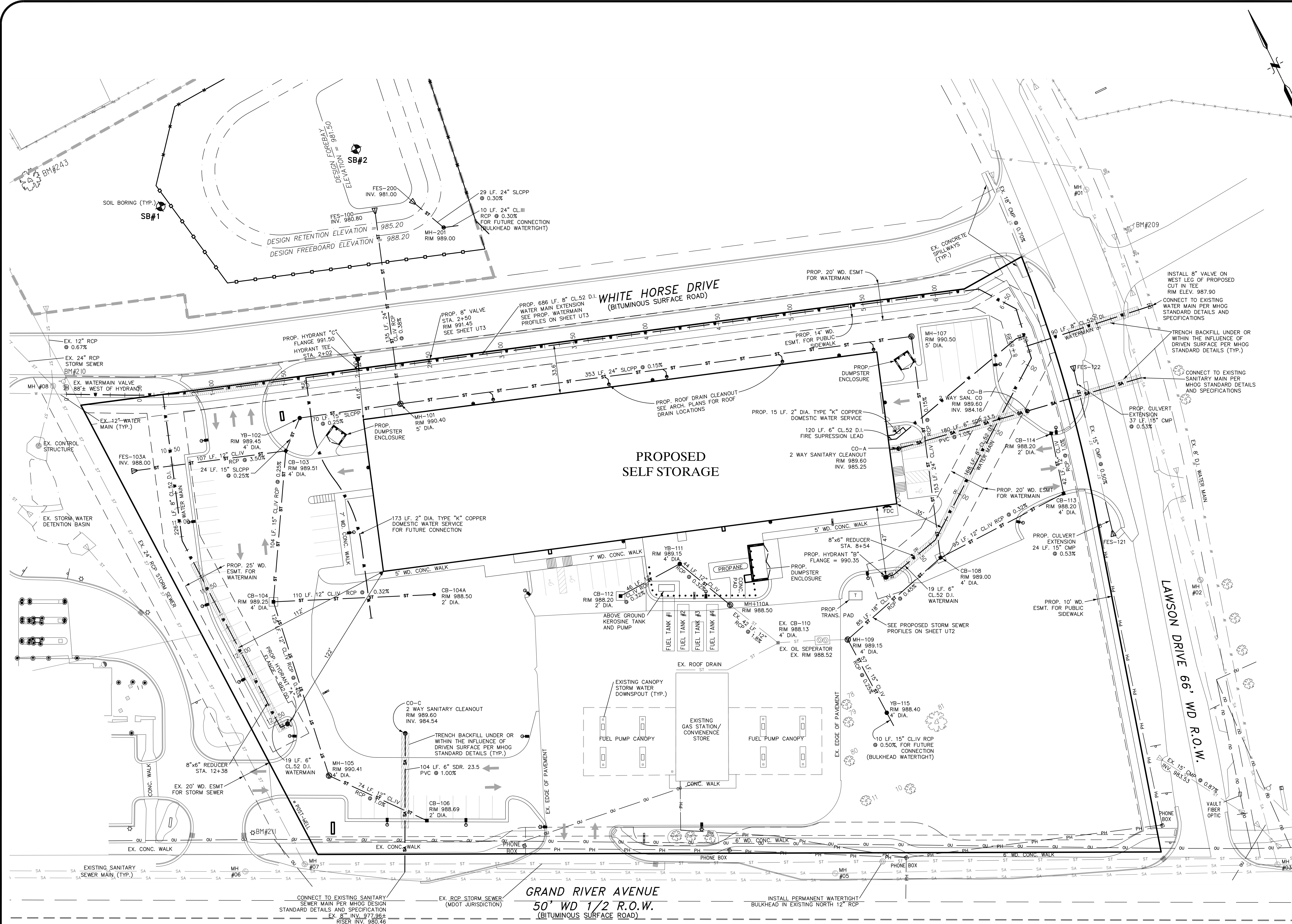
BENCHMARK #240
 ARROW OF HYDRANT, LOCATED NEAR THE WEST SIDE OF LAWSON DRIVE, 754 FEET NORTH OF DRIVE FOR PARCEL #11-09-200-034. ELEVATION = 991.66 (NAVD 88)

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 BRIGHTON, MICHIGAN 48114



DESIGN:FA	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: JHG	1	9-28-20	REVISED WATERMAIN EASEMENT WIDTH TO 25'			
CHECK: WMP						

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PHASE 1

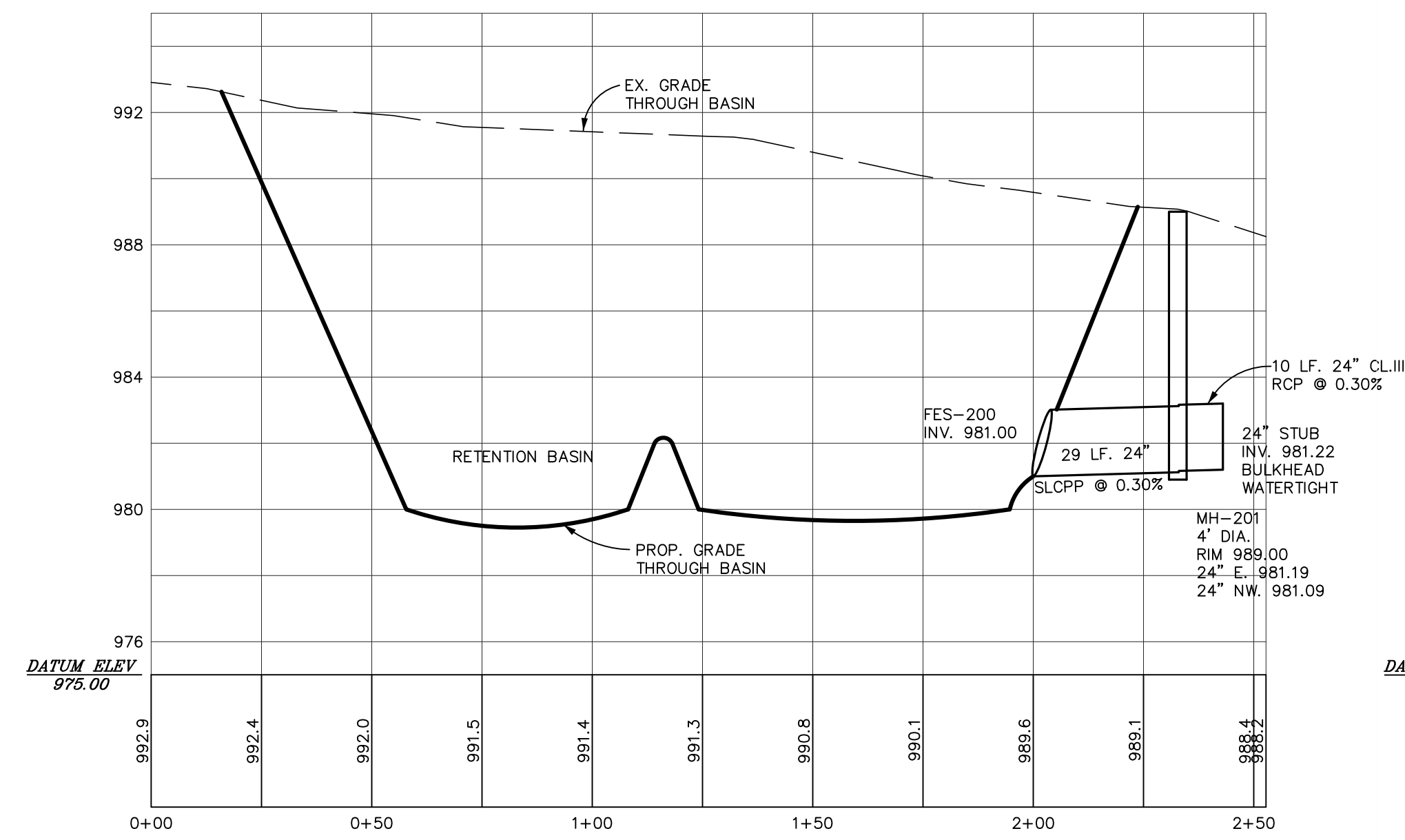
PROPOSED UTILITY PLAN

CLIENT: PREMIER GENOA, LLC
 775 N. SECOND ST.
 BRIGHTON, MICHIGAN 48116
 810-229-6323

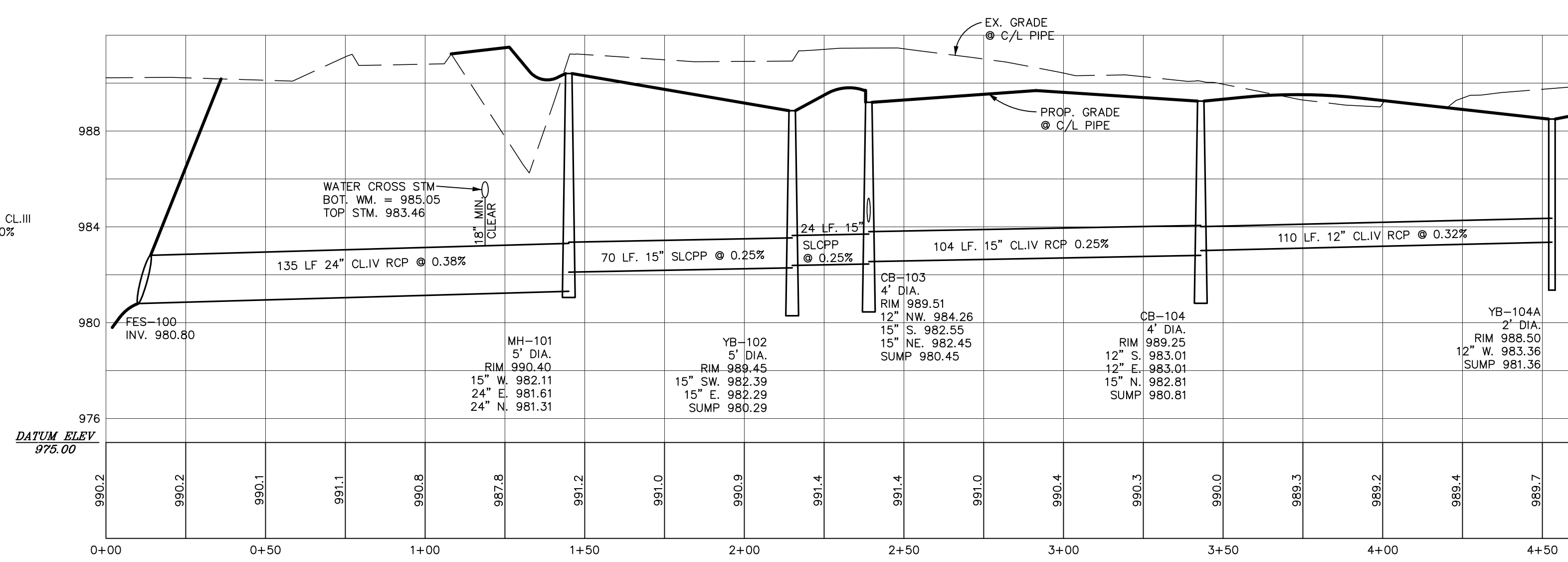
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PROJECT No.: 183450
 DWG NAME: 3450 UT
 ISSUED: SEPT. 28, 2020

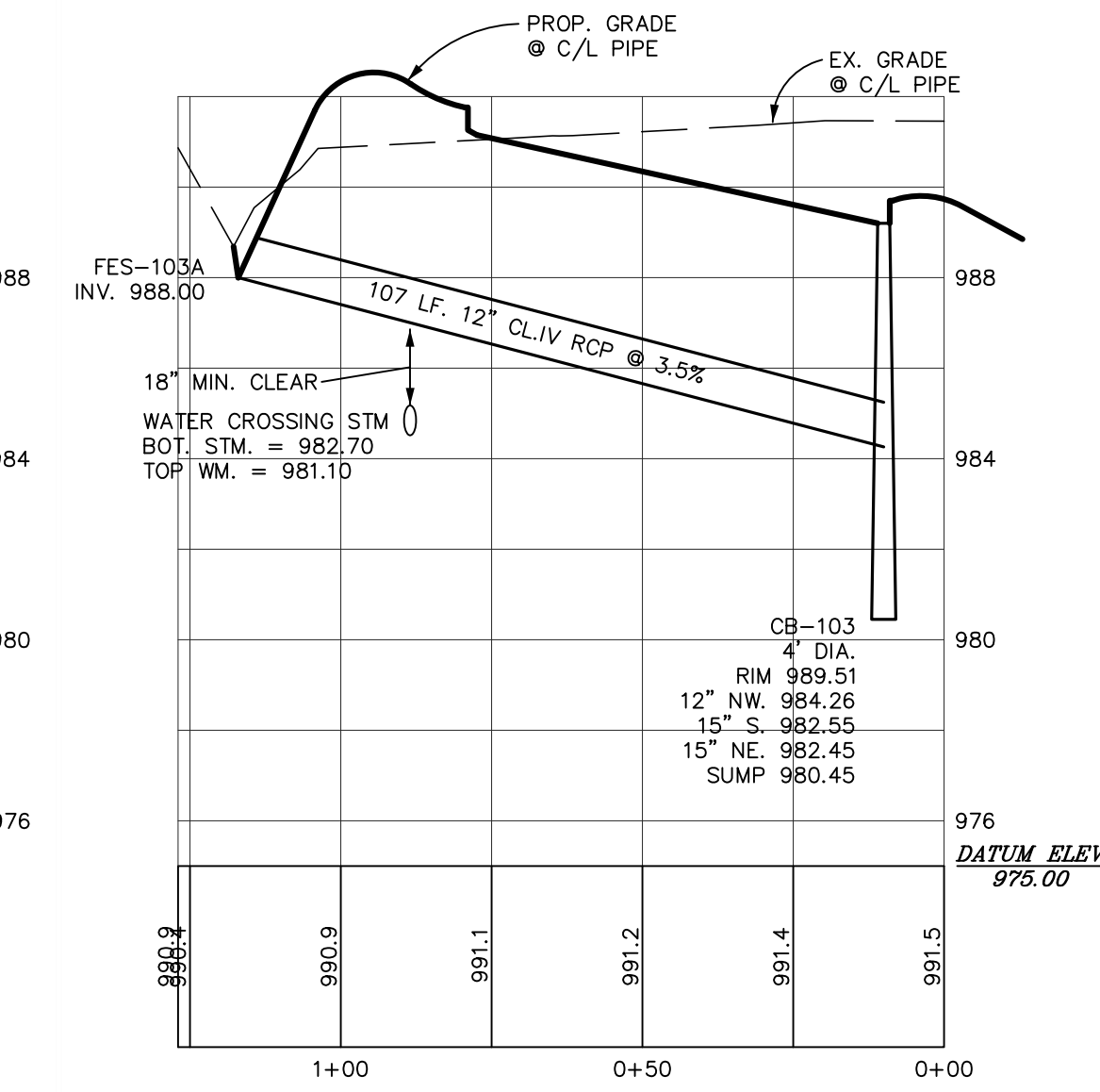
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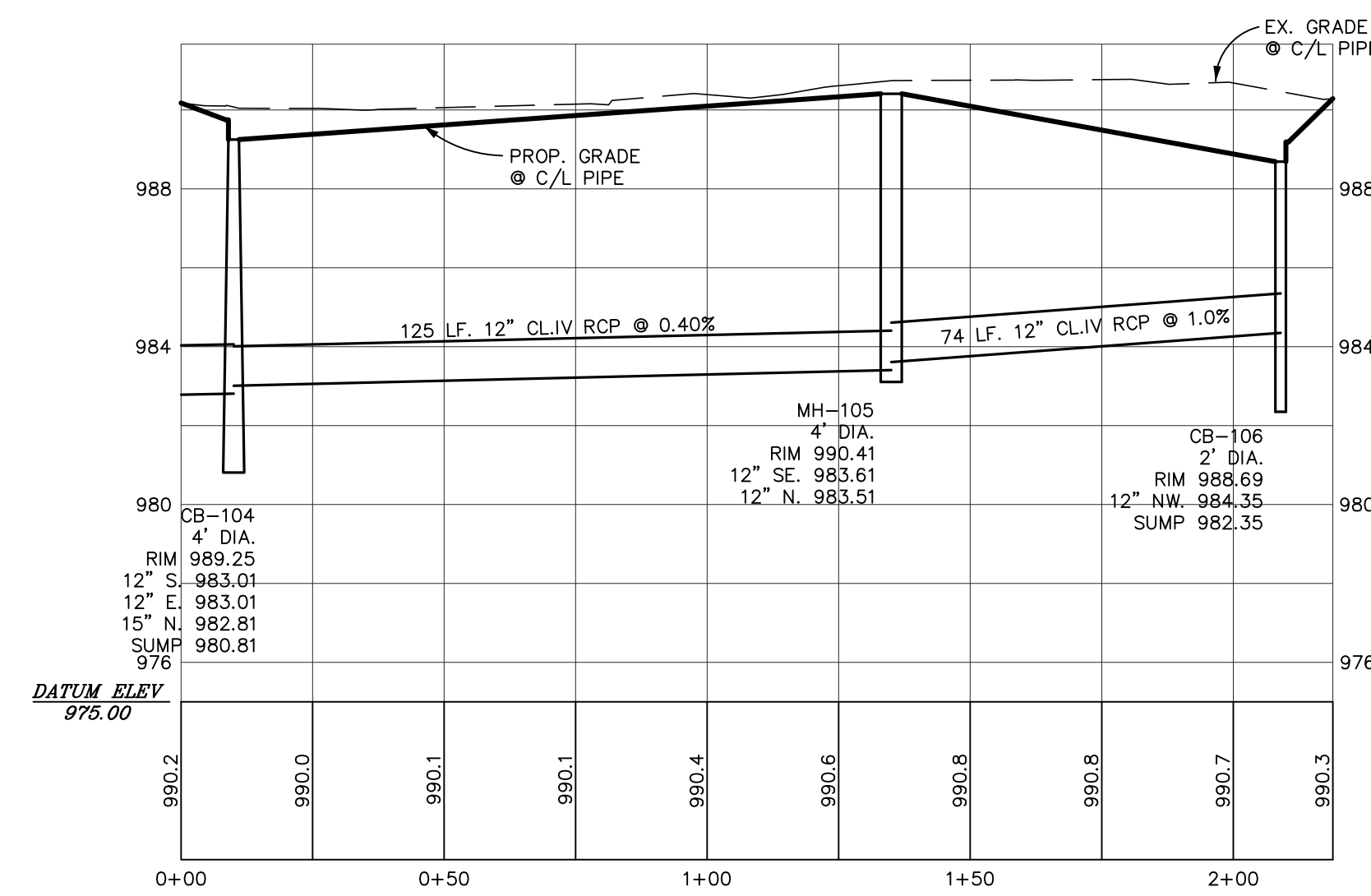
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VERT. 1in. = 4ft.



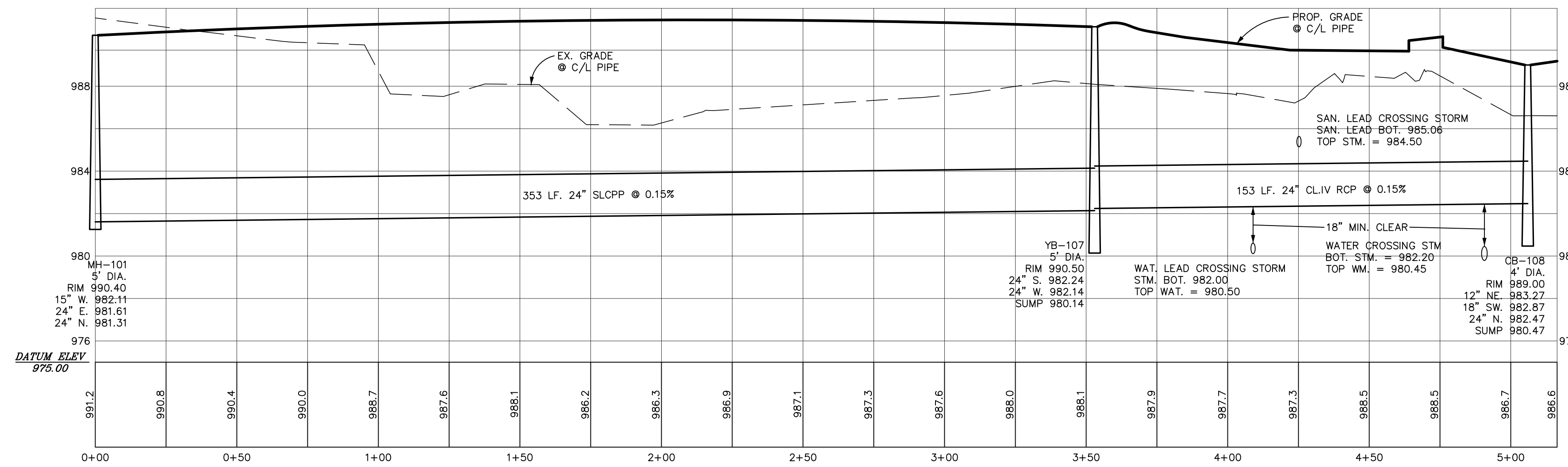
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VERT. 1in. = 4ft.



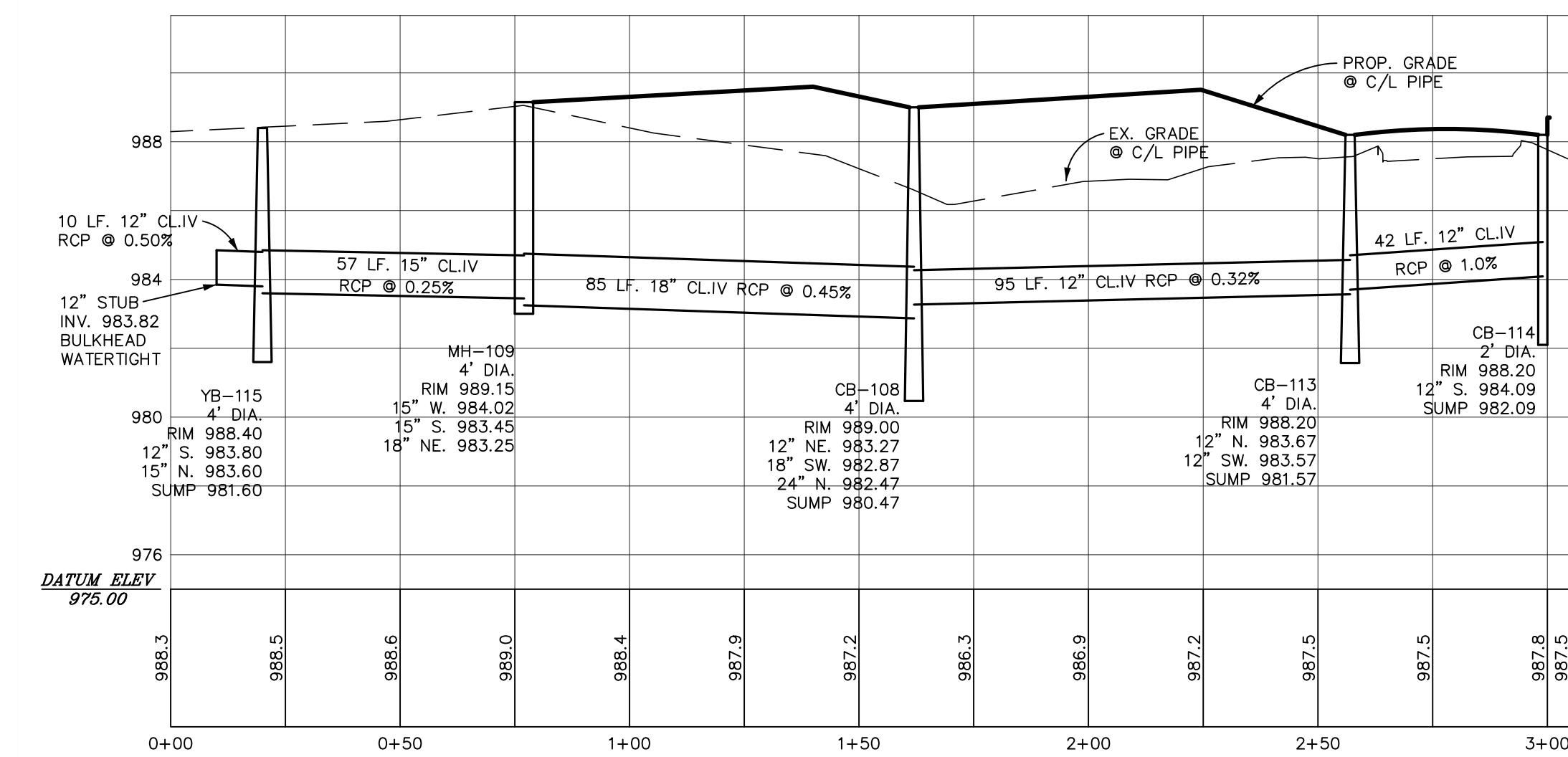
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VERT. 1in. = 4ft.



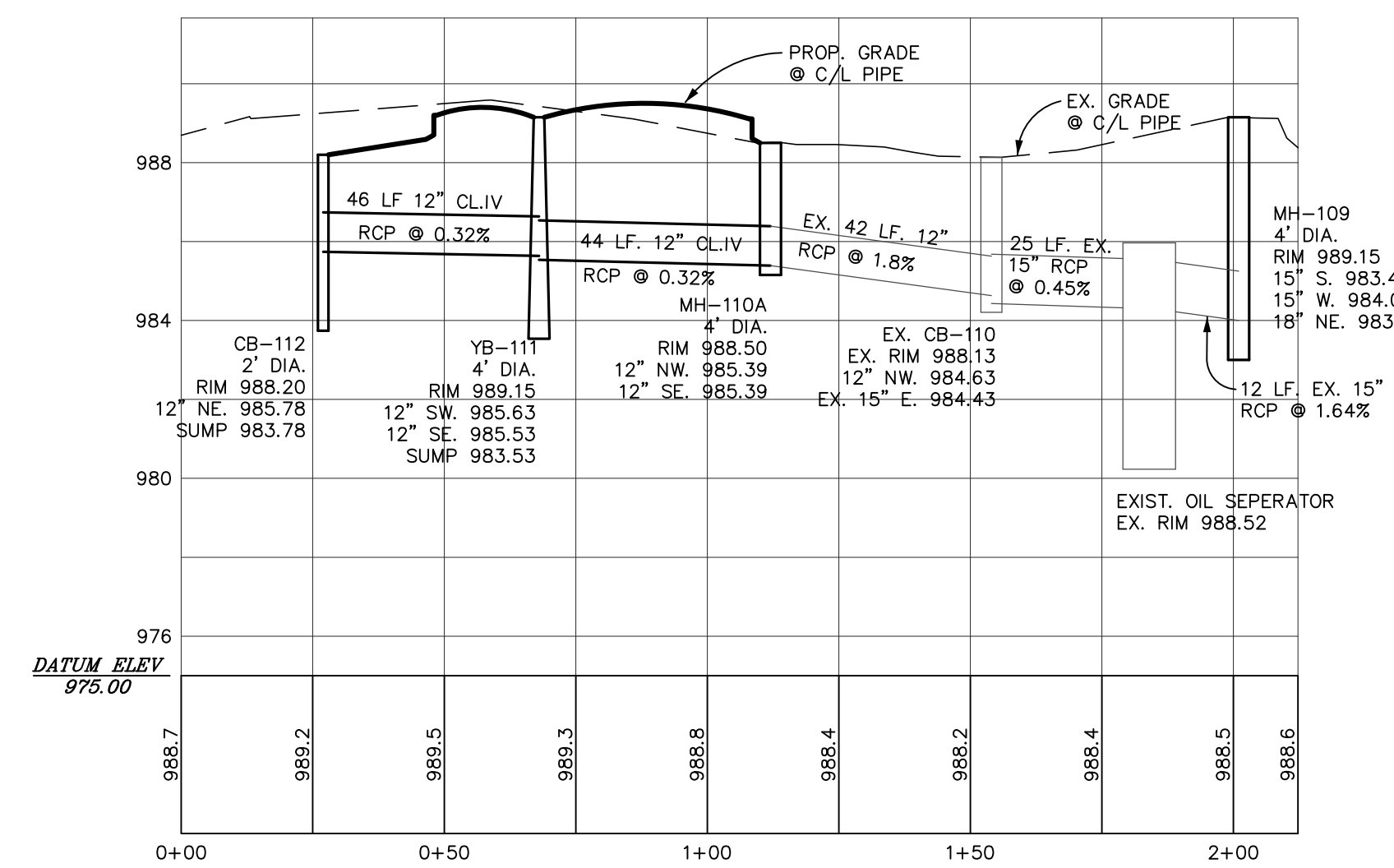
PROFILE: CB-104 / CB-106
SCALE: HORIZ. 1in. = 30ft.
VERT. 1in. = 4ft.



PROFILE: MH-101 / CB-108
SCALE: HORIZ. 1in. = 30ft.
VERT. 1in. = 4ft.



PROFILE: YB-115 / CB-114
SCALE: HORIZ. 1in. = 30ft.
VERT. 1in. = 4ft.



PROFILE: CB-112 / MH-109
SCALE: HORIZ. 1in. = 30ft.
VERT. 1in. = 4ft.

STRUCTURE / CASTING SCHEDULE		
Structure	Diameter	Casting Type
Storm Sewer		
EX. CB#110	4 ft	(REUSE)
CB103 & CB113	4 ft	EJIW 7000-M1-T1
CB106 & CB114	2 ft	EJIW 7000-M1-T1
MH101, MH105, MH107, MH109 & MH201	4 ft	EJIW 1020 (FRAME) / TYPE-A (SOLID COVER)
YB102, YB 111 & YB 115	4 ft	EJIW 1020 (FRAME) / TYPE 01 (BEEHIVE)
YB 104A	2 ft	EJIW 1020 (FRAME) / TYPE 01 (BEEHIVE)
CB104 & CB108	4 ft	EJIW 1020 (FRAME) / TYPE M1 (FLAT GRATE)
CB112	2 ft	EJIW 1020 (FRAME) / TYPE M1 (FLAT GRATE)
8" DIA. ROOF DRAIN CLEANOUT (CO):		EJIW 15782-A



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DESIGN: FA	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: JHG						
CHECK: WMP						

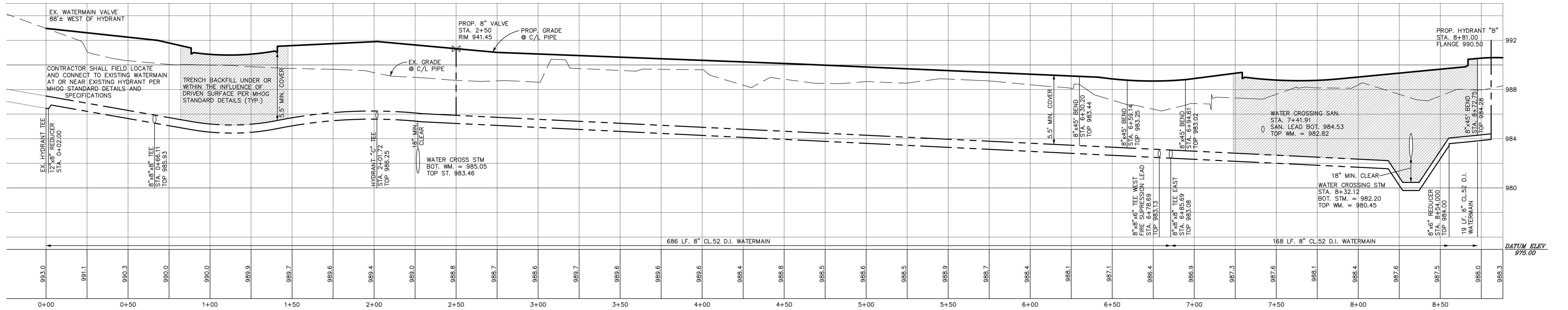
**BMH - PREMIER P.U.D.
PHASE 1**

**PROPOSED
STORM SEWER PROFILES**

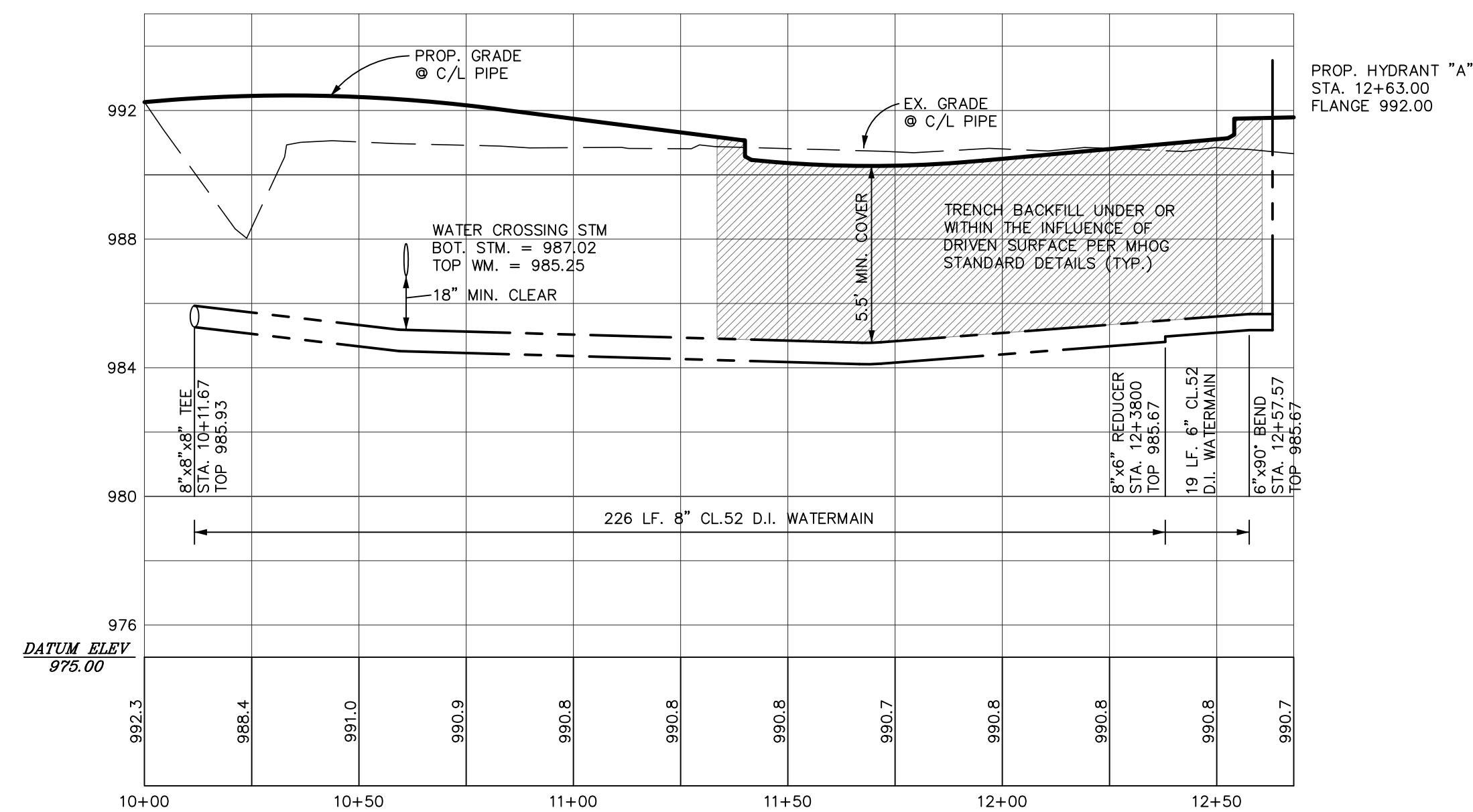
CLIENT:
PREMIER GENOA, LLC
775 N. SECOND ST.
BRIGHTON, MICHIGAN 48116
810-229-6323

SCALE: NONE
PROJECT No.: 183450
DWG NAME: 3450 UT
ISSUED: **AUG. 5, 2020**

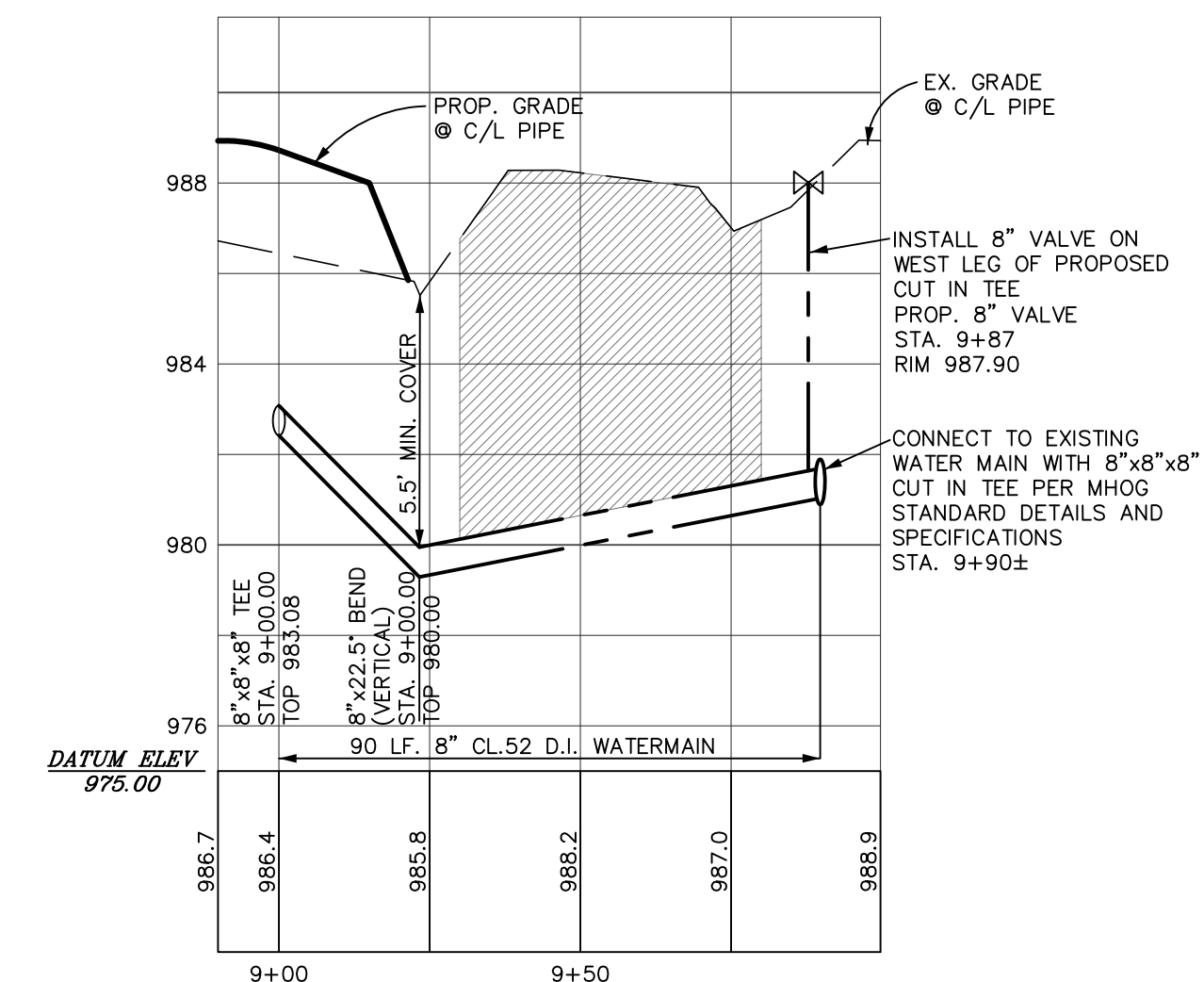
UT2



PROFILE: CONNECTION TO HYDRANT "B"
 SCALE: HORIZ. 1in. = 30ft.
 VERT. 1in. = 4ft.

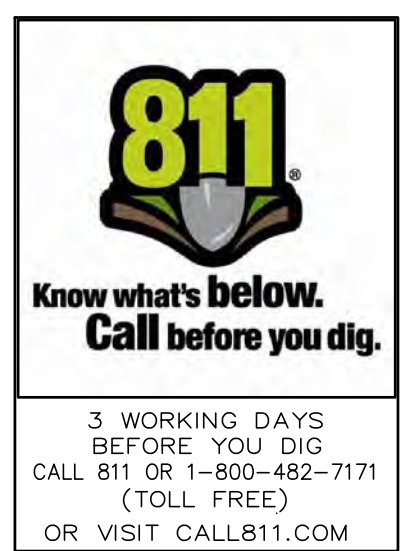


PROFILE: TEE TO HYDRANT "A"
 SCALE: HORIZ. 1in. = 30ft.
 VERT. 1in. = 4ft.



PROFILE: TEE TO CONNECTION
 SCALE: HORIZ. 1in. = 30ft.
 VERT. 1in. = 4ft.

WATER MAIN (PH1 CONSTRUCTION)		
8" CL 52 D.I. WATER MAIN PIPE	1170	LF.
8" -45° VERTICAL BEND	4	QTY.
8" -45° HORIZONTAL BEND	4	QTY.
8" -22.5° VERTICAL BEND	1	QTY.
8"X8" Tee	3	QTY.
8"X6" Tee	2	QTY.
8"X6" REDUCER	2	QTY.
6" CL 52 D.I. WATER MAIN PIPE	158	LF.
6" -90° HORIZONTAL BEND	1	QTY.
6" GATE VALVE W/BOX & COVER	1	QTY.
2" TYPE "K" COPPER WATER SERVICE	188	LF.
2" CURB STOP & CURB BOX W/COVER	2	QTY.
FIRE HYDRANT ASSEMBLY	3	QTY.



DESIGN: FA	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: JHG	1	9-28-20	ADDED WATER MAIN VALVES			
CHECK: WMP						

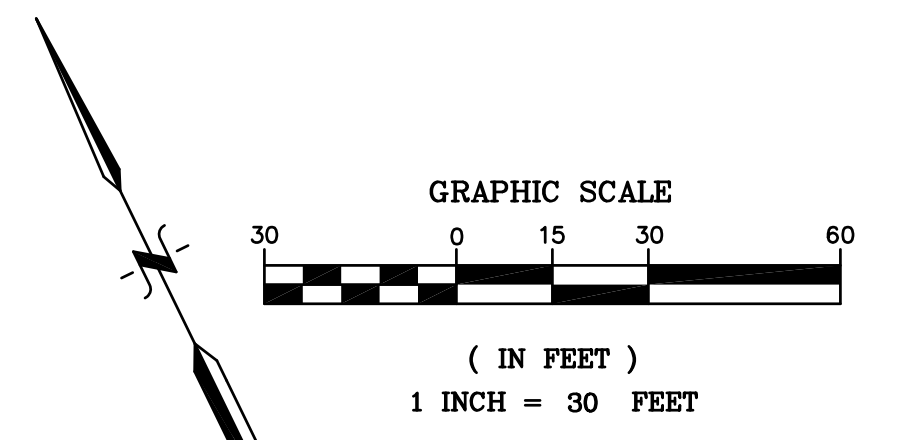
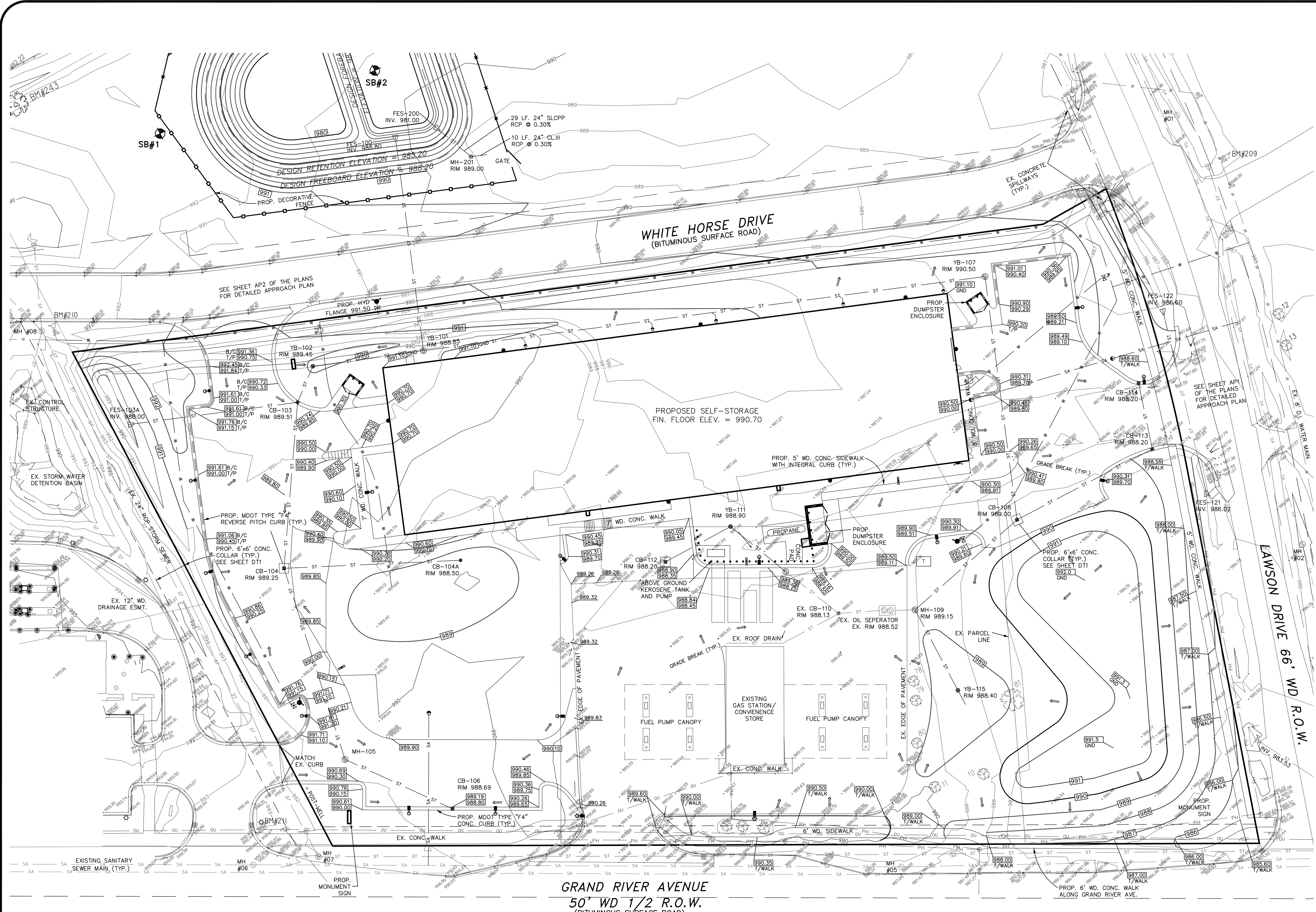
BMH - PREMIER P.U.D.
 PHASE 1

PROPOSED
 WATERMAIN PROFILES

CLIENT:
 PREMIER GENOA, LLC
 775 N. SECOND ST.
 BRIGHTON, MICHIGAN 48116
 810-229-6323

SCALE: NONE
 PROJECT No.: 183450
 DWG NAME: 3450 UT
 ISSUED: SEPT. 28, 2020

UT3



- LEGEND**
- = MISC. STRUCTURE (AS LABELED)
 - = WELL / MONITOR WELL
 - = BOLLARD
 - = SIGN
 - = FLAG POLE
 - = LIGHT FIXTURE / DECORATIVE LIGHT
 - = LIGHT BASE
 - = TRAFFIC POLE / TRAFFIC SIGNAL POLE
 - = OVERHEAD TRAFFIC SIGNAL
 - = UTILITY METERS & BOXES (ELECTRIC, GAS, WATER, PHONE BOX, CATV BOX, MAIL BOX, UTIL. BOX)
 - = AIR CONDITIONER UNIT
 - = UTILITY MANHOLE (AS LABELED)
 - = UTILITY POLE W/UTL WIRE
 - = OVERHEAD UTILITY LINES
 - = U/G UTILITY LINES (PHONE, FIBER OPTIC, ELECTRIC, CABLE TV, MISC UTILITIES)
 - = EDGE OF WOODS / TREE DRP LINE
 - = DECIDUOUS TREE W/IDENTIFIER
 - = CONIFEROUS TREE W/IDENTIFIER
 - = FENCE
 - = GUARD RAIL
 - = EDGE OF GRAVEL
 - = CONCRETE CURB
 - = SANITARY SEWER MANHOLE W/IDENTIFIER
 - = SANITARY SEWER PIPE
 - = CLEAN OUT
 - = STORM WATER MANHOLE W/IDENTIFIER
 - = CATCH BASIN W/IDENTIFIER
 - = CONTROL STRUCTURE
 - = FLARED END SECTION
 - = STORM WATER DRAINAGE PIPE
 - = HYDRANT
 - = WATER SHUT OFF
 - = WATER GATE VALVE WELL / MANHOLE
 - = WATER VALVE BOX
 - = WATER MAIN
 - = GAS MANHOLE / GASOLINE COVER
 - = GAS SHUT OFF
 - = U/G GAS
 - = 1' CONTOUR
 - = 5' CONTOUR

BENCHMARK
 DATUM BASED ON "NSG OPUS-RS SOLUTION REPORT," DATED MAY 25, 2011 AT 10:13 AM

BENCHMARK #209
 ARROW OF HYDRANT, LOCATED OF LAWSON DRIVE, NORTH OF DRIVE FOR PARCEL #11-09-200-041.
 ELEVATION = 989.90 (NAVD 88)

BENCHMARK #210
 ARROW OF HYDRANT, LOCATED NEAR THE SOUTH SIDE OF DRIVE FOR REAR ENTRANCE OF PARCEL #11-09-100-024.
 ELEVATION = 994.88 (NAVD 88)

BENCHMARK #211
 TOP EAST SIDE OF A LIGHT POLE BASE, LOCATED EAST OF THE SOUTH BANK ENTRANCE OF PARCEL #11-09-100-034, OFF GRAND RIVER.
 ELEVATION = 993.82 (NAVD 88)

BENCHMARK #240
 ARROW OF HYDRANT, LOCATED NEAR THE WEST SIDE OF LAWSON DRIVE, 75± FEET NORTH OF DRIVE FOR PARCEL #11-09-200-034.
 ELEVATION = 991.66 (NAVD 88)

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 (810) 227-9533
 CIVIL ENGINEERS
 LAND SURVEYORS
 2183 PLESS DRIVE
 BRIGHTON, MICHIGAN 48114

DESIGN:FA	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: JHG						
CHECK: WMP						

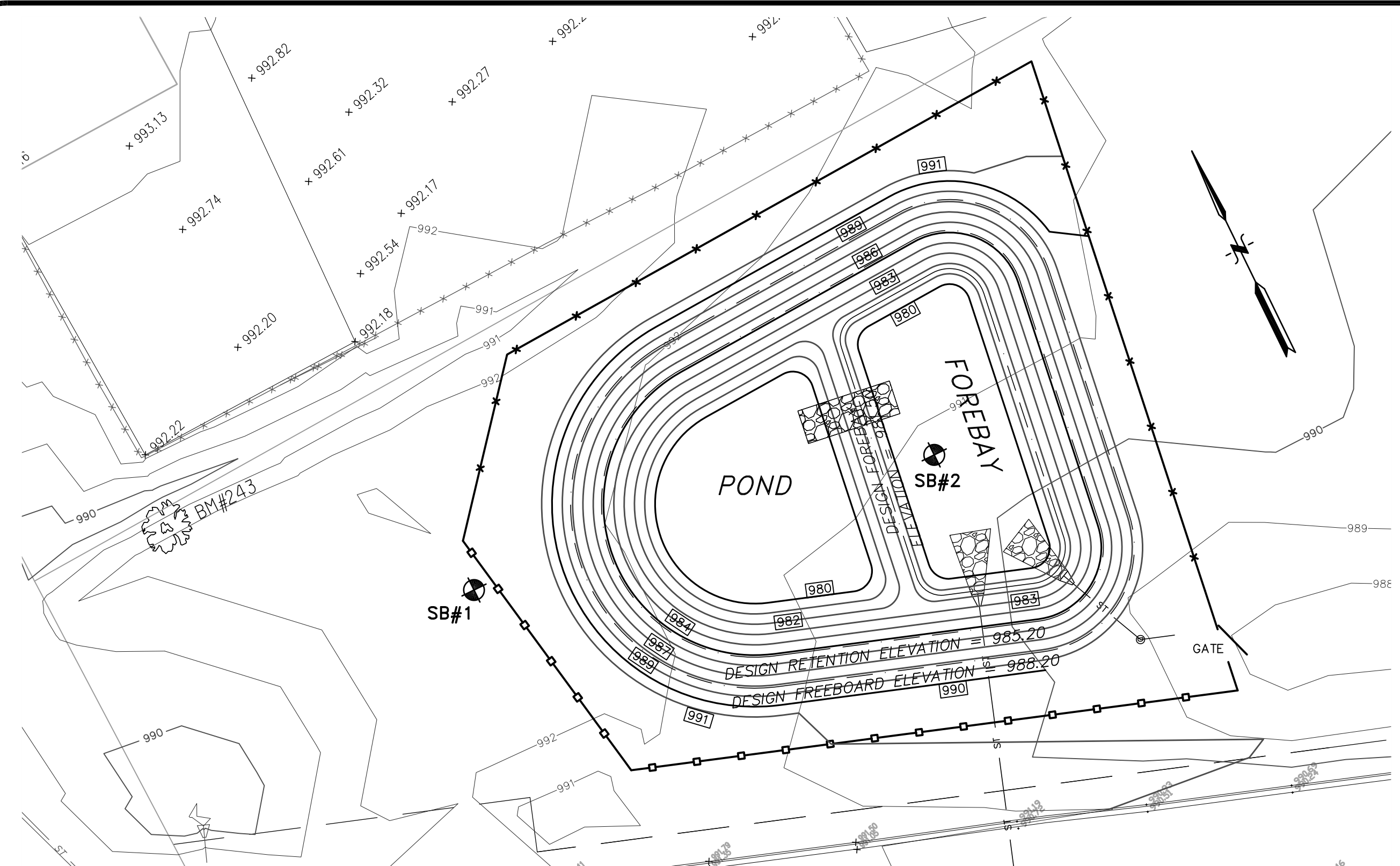
**BMH - PREMIER P.U.D.
 PHASE 1**

**PROPOSED
 GRADING PLAN**

CLIENT:
 PREMIER GENOA, LLC
 775 N. SECOND ST.
 BRIGHTON, MICHIGAN 48116
 810-229-6323

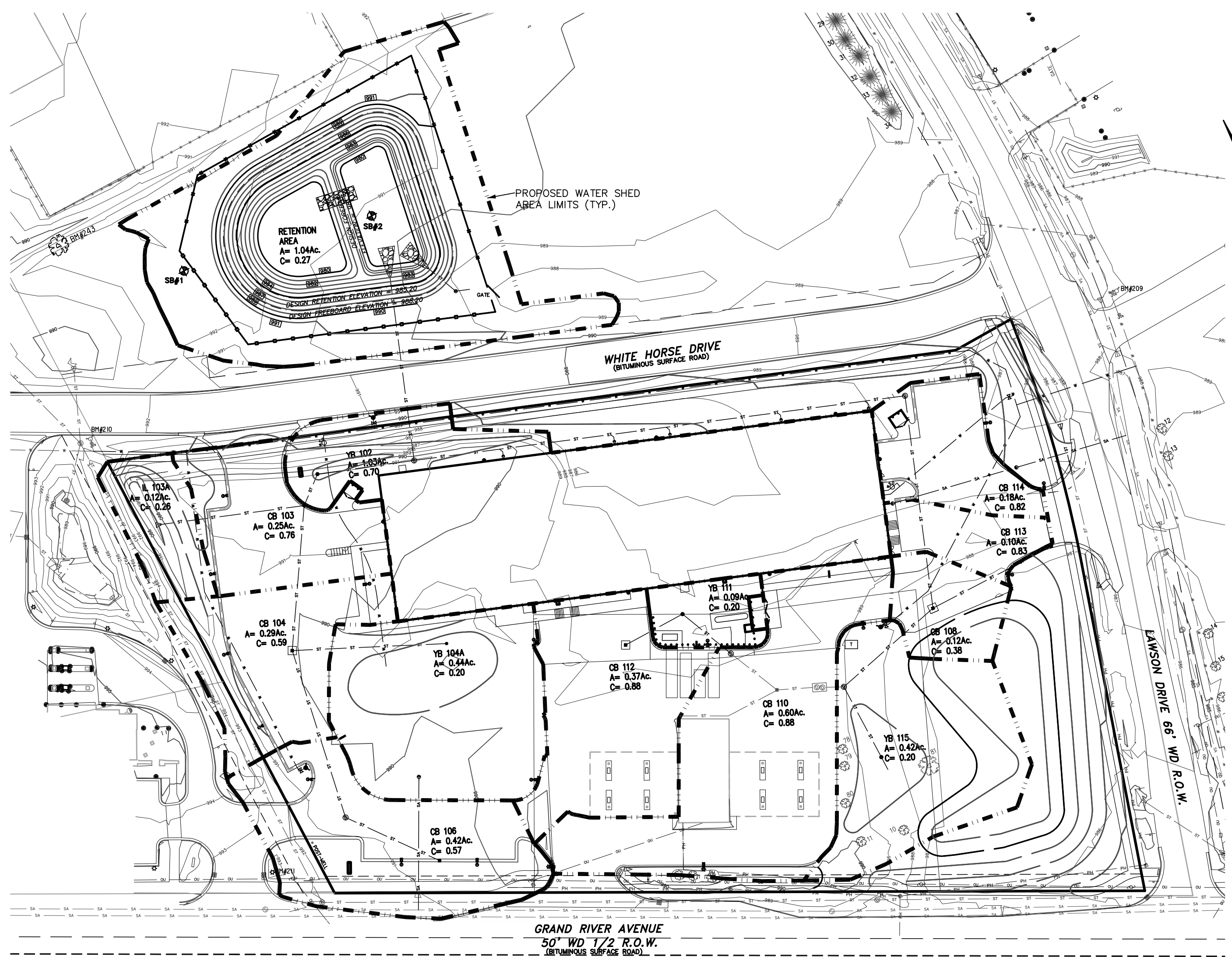
SCALE: 1in. = 30ft.
 PROJECT No.: 183450
 DWG NAME: 3450 GR
 ISSUED: **AUG. 5, 2020**

GR1



RETENTION BASIN DETAIL
SCALE: 1in. = 30ft.

HARTLEY GEOTECHNICAL GROUP									
TEST BORING REPORT									
BORING NO.	GROUND SURFACE ELEV.	DATE	CLIENT	DATE DRILLED	DRILLER	DRILLING METHOD	NO. OF SAMPLES	SOIL CLASSIFICATION	W.L.
B.1	103.12	8/18/18	BMH/AV CONSTRUCTION CO.	8/21/18	T. HAYES	4" AUGER ON ATV	10	SS	98.5
B.2	103.23	8/18/18	BMH/AV CONSTRUCTION CO.	8/21/18	T. HAYES	4" AUGER ON ATV	10	SS	98.5



WATER SHED PLAN
SCALE: 1in. = 60ft.

RETENTION CALCULATIONS

Required Retention Volume: 2" of rainfall over the tributary area onsite plus 3' freeboard

Retention Tributary Area = 241,711 SF = 5.48 Acres

- Total Required Retention Volume per LCDC = (238,709) * (2/12) = **39,785 CF**
- Runoff Coefficient Weighted Volume = (238,709) * (2/12) * (0.54) = 21,484 CF
- Total Required Forebay Volume per LCDC = (0.05) * (39,785 CF) = **1,989 CF**

(95% of required retention volume is being proposed)

Proposed Retention Freeboard Elevation of 988.20 (Restricted by proposed CB-113 & CB-114 casings to be located at Lawson Dr. entrance)

PROPOSED RETENTION VOLUME ELEVATION

POND DEPTH (FT)	ELEV.	CONTOUR AREA (SF)	INCREMENTAL VOLUME (CF)	TOTAL VOLUME (CF)
BOTT.	980.00	7,067	0	0
1.0	981.00	8,088	7,372	7,372
2.0	982.00	9,166	8,921	16,163
3.0	983.00	10,300	9,727	25,921
4.0	984.00	11,491	10,890	36,811
5.0	985.00	12,739	12,110	48,920
6.0	986.00	14,043	13,388	62,308
7.0	987.00	15,403	14,718	77,024
8.0	988.00	16,820	16,106	93,130
9.0	989.00	18,294	33,656	130,179

Retention Storage Volume Elevation Calculation:

ELEV.	VOLUME	VOLUME REQ.	ELEVATION CALC.
LOWER	984.00	38,811	39,785
HIGHER	985.00	48,920	984.25

PROPOSED FOREBAY VOLUME ELEVATION

POND DEPTH (FT)	ELEV.	CONTOUR AREA (SF)	INCREMENTAL VOLUME (CF)	TOTAL VOLUME (CF)
BOTT.	980.00	2,865	0	0
1.0	981.00	3,581	3,216	3,216
2.0	982.00	4,357	2,077	7,177

Forebay Volume Elevation Calculation:

ELEV.	VOLUME	VOLUME REQ.	ELEVATION CALC.
LOWER	980.00	0	1,989
HIGHER	981.00	3,216	980.62

* A proposed HWL elevation of 985.20 is being proposed.

* The designed freeboard overflow is proposed to discharge through proposed CB#113 & CB#114 casings located at proposed commercial approach, West of Lawson Dr.

* A proposed Spillway Elevation of 981.50 is being proposed for the Forebay.

Project: BMH-Premier PUD (PH1 Construction)
Location: Genoa Township, Livingston County, MI
Design Criteria: 10 year event (t = 175t + 25) RCP n= 0.013 HDPE n= 0.013 SLCPP n= 0.010 PVC n= 0.010 Date: 8/10/2020

From MH#	To MH#	Pipe Material	Area	Area	Eqv. Area	Total Area	Time	Inch	Q (GPM)	Di. of pipe	Slope	Slope	Length	Vel. Flow	Time of flow	Cap of pipe	H.G. Elev. upper	Ground Elev. upper	Invert Elev. upper	Lower end	Upper end	Lower end	Cover
114	113	RCP	0.18	0.82	0.15	0.15	15.0	4.38	0.68	12	1.00	0.03	42	4.54	0.2	3.56	985.83	988.20	988.20	984.09	983.67	2.92	3.34
113	108	RCP	0.10	0.83	0.08	0.23	15.2	4.36	1.00	12	0.32	0.08	95	2.57	0.6	2.02	985.82	988.20	989.00	983.57	983.27	3.44	4.54
112	111	RCP	0.37	0.88	0.33	0.33	15.0	4.38	1.42	12	0.32	0.16	46	2.57	0.3	2.02	986.70	988.20	988.50	985.78	985.63	1.23	1.68
111	110A	RCP	0.00	0.00	0.00	0.33	15.3	4.34	1.41	12	0.32	0.16	44	2.57	0.3	2.02	986.46	988.50	989.15	985.53	985.39	1.78	2.57
110A	110	RCP	0.09	0.20	0.02	0.34	15.6	4.31	1.48	12	1.80	0.17	42	6.09	0.1	4.78	986.10	989.15	988.13	985.39	984.63	2.57	2.31
110	INLET	RCP	0.60	0.88	0.53	0.87	15.7	4.30	3.75	15	0.45	0.34	25	3.53	0.1	4.33	986.03	988.13	988.52	984.43	984.32	2.57	2.76
INLET	OUTLET	RCP	0.00	0.00	0.00	0.87	15.8	4.29	3.74	15	1.50	0.33	10	3.26	0.1	4.48	985.94	988.52	988.52	984.32	984.22	2.76	2.86
OUTLET	109	RCP	0.00	0.00	0.00	0.87	15.9	4.28	3.73	15	1.84	0.33	12	6.74	0.1	8.27	985.91	988.52	989.15	984.22	984.02	2.86	3.09
STUB	115	RCP	0.00	0.00	0.00	0.00	15.0	4.38	0.00	12	0.50	0.00	10	3.21	0.1	2.52	985.87	988.40	988.40	983.80	983.60	3.36	3.41
115	109	RCP	0.42	0.20	0.08	0.08	15.0	4.37	0.37	15	0.25	0.00	57	2.63	0.4	3.23	985.87	988.40	989.15	983.60	983.45	3.36	4.26
109	108	RCP	0.00	0.00	0.00	0.96	16.0	4.27	4.08	18	0.45	0.15	85	3.99	0.4	7.05	985.87	989.15	989.00	983.25	982.87	4.19	4.42
108	107	RCP	0.12	0.38	0.05	1.23	16.4	4.23	5.21	24	0.15	0.05	153	2.79	0.9	6.76	985.74	989.00	990.50	982.47	982.24	4.28	6.01
107	101	SLCPP	0.00	0.00	0.00	1.23	17.3	4.14	5.10	24	0.15	0.03	353	3.63	1.6	11.39	985.66	990.50	990.40	982.14	981.61	6.11	6.54
106	105	RCP	0.42	0.57	0.24	0.24	15.0	4.38	1.05	12	1.00	0.09	74	4.54	0.3	3.56	986.38	988.69	990.41	984.35	983.61	3.15	5.81
105	104	RCP	0.00	0.00	0.00	0.24	15.3	4.35	1.04	12	0.40	0.09	125	2.87	0.7	2.25	986.31	990.41	989.25	983.51	983.01	5.71	5.05
104A	104	RCP	0.44	0.20	0.09	0.09	15.0	4.38	0.39	12	0.32	0.01	110	2.57	0.7	2.02	986.22	988.50	989.25	983.36	983.01	3.85	5.05
104	103	RCP	0.29	0.59	0.17	0.50	16.0	4.27	2.13	15	0.25	0.11	104	2.63	0.7	3.23	986.21	989.25	989.51	982.81	982.55	5.00	5.52
103A	103	RCP	0.12	0.26	0.26	0.26	15.0	4.38	1.14	12	3.50	0.10	107	6.49	0.2	6.67	986.20	989.00	989.51	988.00	984.26	4.06	4.06
103	102	SLCPP	0.25	0.76	0.19	0.95	16.7	4.20	3.98	15	0.25	0.23	24	3.42	0.1	4.20	986.09	989.51	989.45	982.45	982.39	5.62	5.62
102	101	SLCPP	1.03	0.70	0.72	1.87	16.8	4.19	6.99	15	0.25	0.69	70	5.70	0.2	4.20	986.04	989.45	990.40	982.29	982.11	6.72	6.85
101	100	RCP	0.00	0.00	0.00	2.90	18.9	3.99	11.56	24	0.38	0.26	135	4.44	0.5	13.94	985.55	990.40	980.80	981.31	980.80	6.84	---
STUB	201	RCP	0.00	0.00	0.00	0.00	15.0	4.38	0.00	24	0.30	0.00	10	3.94	0.0	12.39	985.20	989.00	989.00	981.22	981.19	7.02	5.80
201	200	SLCPP	0.00	0.00	0.00	0.00	15.0	4.37	0.00	24	0.30	0.00	29	5.13	0.1	16.11	985.20	989.00	981.00	981.09	981.00	5.70	---

PROPOSED RUNOFF COEFFICIENT CALCULATION

RETENTION BASIN (PUD SOUTH, PH1 CONSTRUCTION)

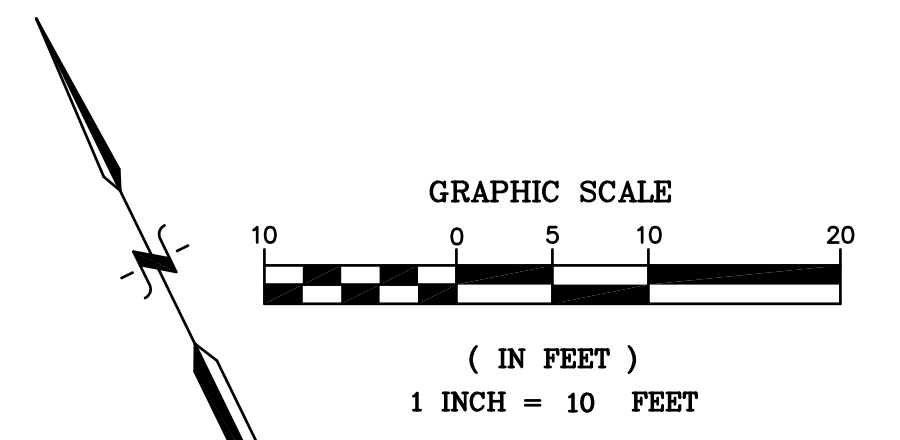
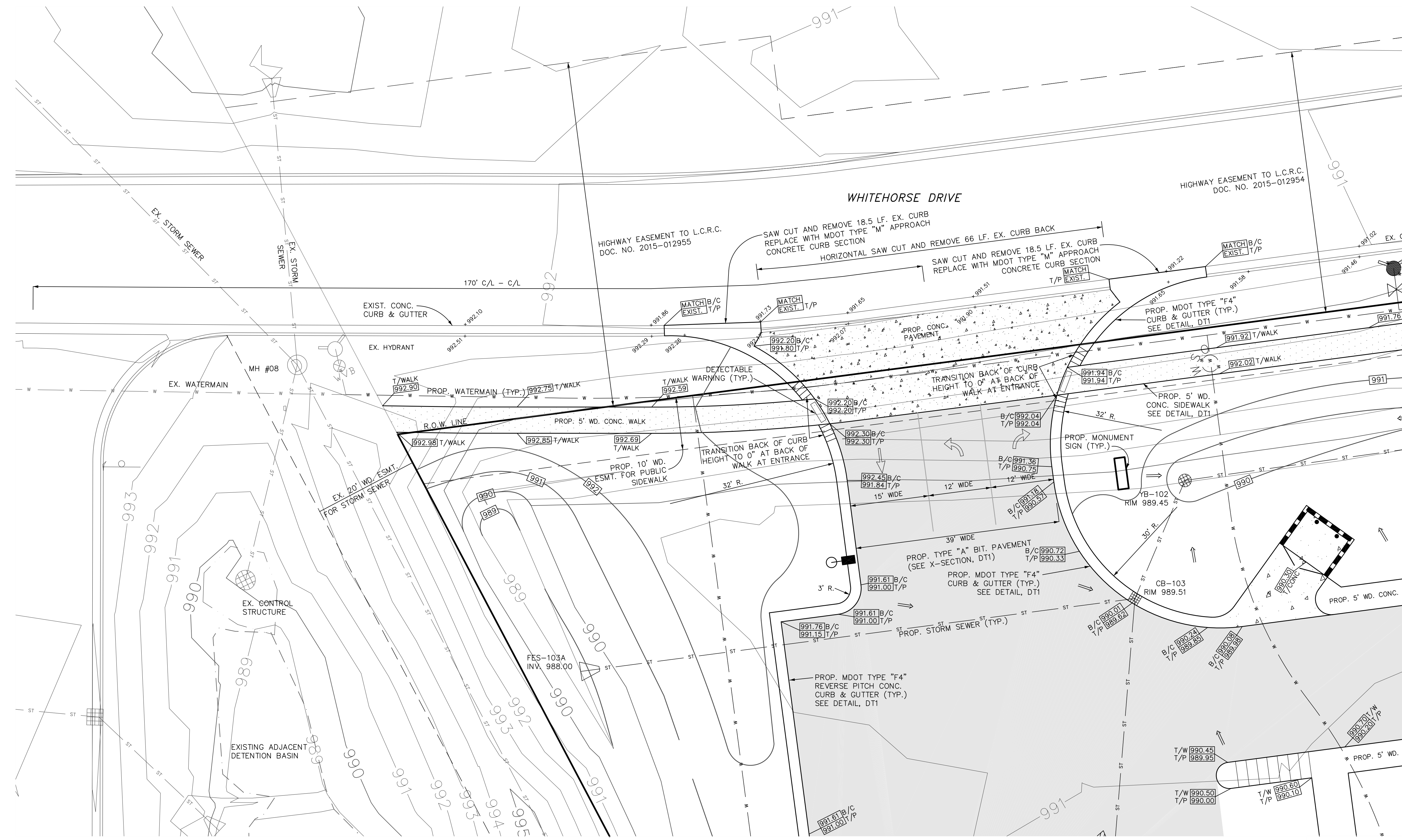
Structure	1.00	0.90	0.80	0.80	0.20	0.15	(ACRES)	"C"
FES 103A							0.11	0.12
YB 102		0.01		0.86			0.17	1.03
CB 103		0.20		0.05			0.25	0.76
CB 104		0.16		0.13			0.29	0.59
CB 104A				0.44			0.44	0.20
CB 106		0.22		0.20			0.42	0.67
YB 108		0.03		0.10			0.13	0.36
CB 110		0.47		0.13			0.60	0.88
CB 111		0.36		0.09			0.09	0.20
CB 112		0.36		0.01			0.37	0.88
CB 114		0.16		0.02			0.18	0.62
CB 113		0.09		0.01			0.10	0.83
YB 115				0.42			0.42	0.20
POND		0.03	0.08				0.93	1.04
TOTAL AREA = 5.48								Ac.
RUNOFF COEFFICIENT = 0.54								

DESIGN:FA	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: JHG						
CHECK: WMP						

BMH - PREMIER P.U.D.
PAHSE 1

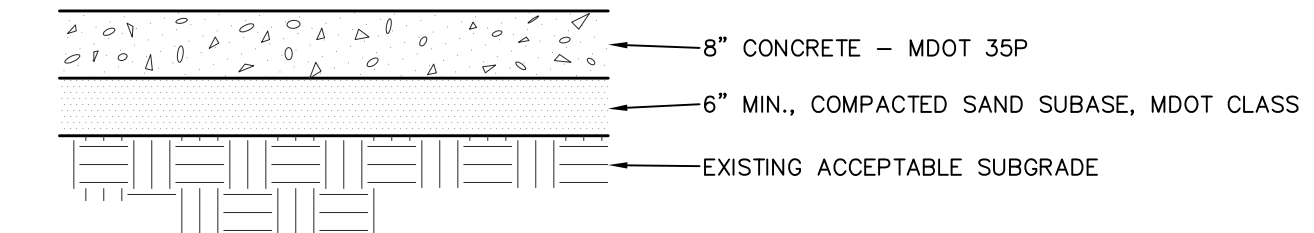
PROPOSED RETENTION BASIN
DETAIL, WATERSHED &
DRAINAGE CALCULATIONS

CLIENT: PREMIER GENOA, LLC 775 N. SECOND ST. BRIGHTON, MICHIGAN 48116 810-229-6323	SCALE: AS NOTED PROJECT No.: 183450 DWG NAME: 3450 GR ISSUED: AUG. 5, 2020	GR2
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- LEGEND**
- = MISC. STRUCTURE (AS LABELED)
 - ⊙ = WELL / MONITOR WELL
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 - ⊙ = CONCRETE CURB
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 - ⊙ = SANITARY SEWER PIPE
 - ⊙ = CLEAN OUT
 - ⊙ = STORM WATER MANHOLE W/DENTIFIER
 - ⊙ = CATCH BASIN W/DENTIFIER
 - ⊙ = CONTROL STRUCTURE
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 - ⊙ = GAS MANHOLE / GASOLINE COVER
 - ⊙ = GAS SHUT OFF
 - ⊙ = U/G GAS
 - ⊙ = 1' CONTOUR
 - ⊙ = 5' CONTOUR
 - ⊙ = PROP. CONCRETE PAVEMENT
 - ⊙ = PROP. BITUMINOUS PAVEMENT TYPE A
 - ⊙ = PROP. DETECTABLE WARNING

APPROACH PAVEMENT CROSS-SECTION



- PAVEMENT NOTES:**
- UNSATURABLE SOILS, SUCH AS MUCK, PEAT, TOPSOIL, MARL, SILT OR OTHER UNSATURABLE MATERIALS, SHALL BE UNDERCUT AND REPLACED WITH COMPACTED SAND SUBBASE.
 - AREAS OF FILL SHALL BE CONSTRUCTED TO GRADE USING 6" THICK LIFTS OF COMPACTED SAND SUBBASE.

BENCHMARK
 DATUM BASED ON "NGS OPUS-RS SOLUTION REPORT," DATED MAY 25, 2011 AT 10:13 AM

BENCHMARK #209
 ARROW OF HYDRANT, LOCATED OF LAWSON DRIVE, NORTH OF DRIVE FOR PARCEL #11-09-200-041.
 ELEVATION = 989.90 (NAVD 88)

BENCHMARK #210
 ARROW OF HYDRANT, LOCATED NEAR THE SOUTH SIDE OF DRIVE FOR REAR ENTRANCE OF BANK, PARCEL #11-09-100-024.
 ELEVATION = 994.68 (NAVD 88)

BENCHMARK #211
 TOP EAST SIDE OF A LIGHT POLE BASE, LOCATED EAST OF THE SOUTH BANK ENTRANCE OF PARCEL #11-09-100-034, OFF GRAND RIVER.
 ELEVATION = 993.82 (NAVD 88)

BENCHMARK #240
 ARROW OF HYDRANT, LOCATED NEAR THE WEST SIDE OF LAWSON DRIVE, 75± FEET NORTH OF DRIVE FOR PARCEL #11-09-200-034.
 ELEVATION = 991.66 (NAVD 88)

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 2183 PLESS DRIVE
 BRIGHTON, MICHIGAN 48114

DESIGN:FA	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: JHG						
CHECK: WMP						

BMH - PREMIER P.U.D.
PHASE 1

WHITEHORSE DRIVE ENTRANCE PLAN

CLIENT:
 PREMIER GENOA, LLC
 775 N. SECOND ST.
 BRIGHTON, MICHIGAN 48116
 810-229-6323

SCALE: 1in. = 10ft.
 PROJECT No.: 183450
 DWG NAME: 3450 AP
 ISSUED: **AUG. 5, 2020**

AP2



SOILS MAP

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CvraaB	Conover loam, 0 to 4 percent slopes	2.1	5.8%
MoB	Wauwasee loam, 2 to 6 percent slopes	22.1	62.0%
MoC	Wauwasee loam, 6 to 12 percent slopes	11.3	31.8%
SVB	Spijks-Oakville loamy sands, 0 to 6 percent slopes	0.1	0.4%
Totals for Area of Interest		35.7	100.0%

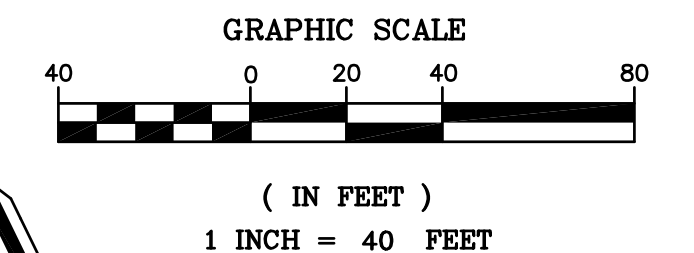
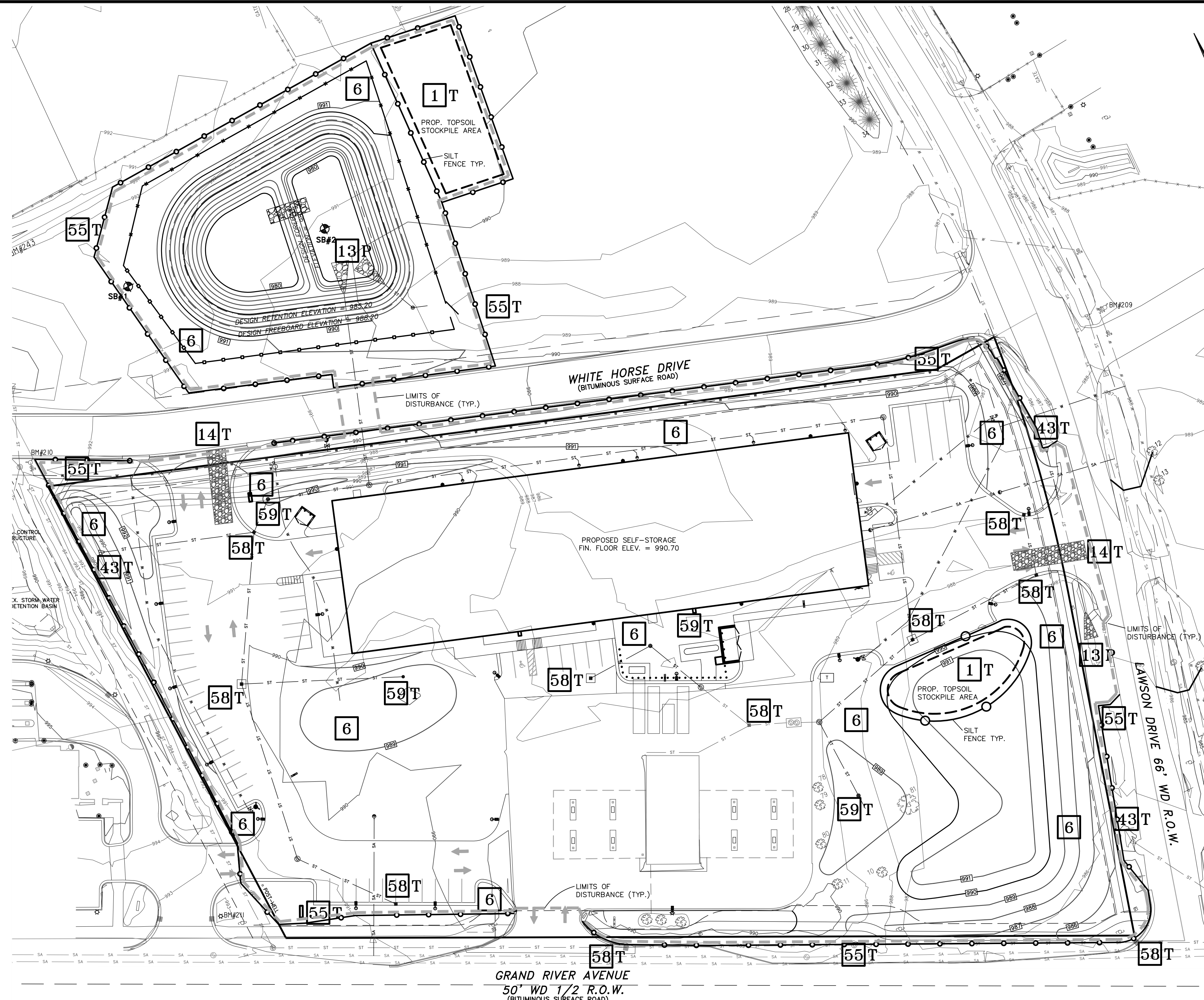
LEGAL DESCRIPTION

Parcels No's: 4711-09-200-005, 4711-09-200-010, 4711-09-200-014, 4711-09-200-015, 4711-09-200-016 and 4711-09-200-017 combined.

Commencing at the North 1/4 Corner of Section 9, Town 2 North, Range 5 East, Genoa Township, Livingston County, Michigan; thence S01°47'17"E (SPCS) (recorded as S01°30'47"E) 458.11 feet along the North and South 1/4 line of said Section 9 to the PLACE OF BEGINNING; thence the following two courses along the South line of White Horse Drive (variable width Right-of-way): 1) S71°30'00"E (SPCS) (recorded as S71°13'30"E) 610.87 feet, and 2) N86°36'45"E (SPCS) (recorded as N86°53'15"E) 45.07 feet; thence the following two courses along the West line of Lawson Drive (66 foot wide Right-of-way): 1) Southerly 181.88 feet along the arc of a 993.63 foot radius curve to the right, through a central angle of 10°29'16" and having a chord bearing S09°50'07"W (SPCS) (recorded as S10°06'37"W) 181.63 feet, and 2) S15°04'45"W (SPCS) (recorded as S15°21'15"W) 238.04 feet; thence N64°10'04"W (SPCS) (recorded as N63°53'34"W) 578.26 feet along the Northerly line of Grand River Avenue (50 foot wide 1/2 Right-of-way); thence N01°47'17"W (SPCS) (recorded as N01°30'47"W) 348.17 feet along said North and South 1/4 line of Section 9 to the Place of Beginning.
Being a part of the Northeast 1/4 of Section 9, Town 2 North, Range 5 East, Genoa Township, Livingston County, Michigan
Containing 5.12 acres of land, more or less.
Subject to and together with all easements and restrictions affecting title to the described above premises.

SOIL EROSION CONTROL AND CONSTRUCTION SEQUENCE:

- Obtain all necessary Soil Erosion and Sedimentation Control related permits from the appropriate Local, County and/or State Agencies. Refer to the General Notes on the project plans for additional requirements.
- Prior to commencement of any earth disruption install Silt Fence and Mud Tracking Control Device(s) in accordance with the Soil Erosion and Sedimentation Control Plan.
- Construct Retention/Detention and Sedimentation Basins, including associated spillways, in accordance with the project plans. Finish grade and establish vegetative growth in Retention/Detention and Sedimentation Basins prior to massive earth disruption. Install temporary Soil Erosion Control Measures as necessary to stabilize Retention/Detention and Sedimentation Basins.
- Strip and stockpile topsoil. Perform mass grading and land balancing. Install appropriate Soil Erosion Control Measures in accordance with the Soil Erosion and Sedimentation Control Plan.
- Install proposed underground utilities. (i.e., storm and sanitary sewer, water main, etc.) Install appropriate Soil Erosion Control Measures in accordance with the Soil Erosion and Sedimentation Control Plan.
- Construct building(s) if required on the project plans. Install appropriate Soil Erosion Control Measures in accordance with the Soil Erosion and Sedimentation Control Plan.
- Construct roadways and/or parking areas. Install appropriate Soil Erosion Control Measures in accordance with the Soil Erosion and Sedimentation Control Plan.
- Finish grade all disturbed areas outside of pavement. Perform final restoration, including placement of topsoil and establishment of vegetative growth outside of pavement.
- Following establishment of sufficient vegetative ground cover and receipt of approval from the Permitting Agency, remove all temporary Soil Erosion Control Measures, clean all storm sewer structures and repair all permanent Soil Erosion Control Measures.



- LEGEND**
- MISC. STRUCTURE (AS LABELED)
 - WELL / MONITOR WELL
 - BOLLARD
 - SIGN
 - FLAG POLE
 - LIGHT FIXTURE / DECORATIVE LIGHT
 - LIGHT BASE
 - TRAFFIC POLE / TRAFFIC SIGNAL POLE
 - OVERHEAD TRAFFIC SIGNAL
 - UTILITY METERS & BOXES (ELECTRIC, GAS, WATER, PHONE, CATV, MAIL BOX, UTIL. BOX)
 - AIR CONDITIONER UNIT
 - UTILITY MANHOLE (AS LABELED)
 - UTILITY POLE W/GUY WIRE
 - OVERHEAD UTILITY LINES
 - U/G UTILITY LINES (PHONE/FIBER OPTIC/ELECTRIC/CABLE TV/MISC. UTILITIES)
 - EDGE OF WOODS / TREE DRIP LINE
 - DECIDUOUS TREE W/DENIFIER
 - CONIFEROUS TREE W/DENIFIER
 - FENCE
 - GUARD RAIL
 - EDGE OF GRAVEL
 - CONCRETE CURB
 - SANITARY SEWER MANHOLE W/DENIFIER
 - SANITARY SEWER PIPE
 - CLEAN OUT
 - STORM WATER MANHOLE W/DENIFIER
 - CATCH BASIN W/DENIFIER
 - CONTROL STRUCTURE
 - FLARED END SECTION
 - STORM WATER DRAINAGE PIPE
 - HYDRANT
 - WATER SHUT OFF
 - WATER GATE VALVE WELL / MANHOLE
 - WATER VALVE BOX
 - WATER MAIN
 - GAS MANHOLE / GASOLINE COVER
 - GAS SHUT OFF
 - U/G GAS
 - 1" CONTOUR
 - 5' CONTOUR
 - PROP. SILT FENCE

BENCHMARK
DATUM BASED ON "NSG OPUS-RS SOLUTION REPORT," DATED MAY 25, 2011 AT 10:13 AM

BENCHMARK #209
ARROW OF HYDRANT, LOCATED OF LAWSON DRIVE, NORTH OF DRIVE FOR PARCEL #11-09-200-041.
ELEVATION = 989.90 (NAVD 88)

BENCHMARK #210
ARROW OF HYDRANT, LOCATED NEAR THE SOUTH SIDE OF DRIVE FOR REAR ENTRANCE OF BANK, PARCEL #11-09-100-024.
ELEVATION = 994.88 (NAVD 88)

BENCHMARK #211
TOP EAST SIDE OF A LIGHT POLE BASE, LOCATED EAST OF THE SOUTH BANK ENTRANCE OF PARCEL #11-09-100-034, OFF GRAND RIVER.
ELEVATION = 993.82 (NAVD 88)

BENCHMARK #240
ARROW OF HYDRANT, LOCATED NEAR THE WEST SIDE OF LAWSON DRIVE, 75+ FEET NORTH OF DRIVE FOR PARCEL #11-09-200-034.
ELEVATION = 991.66 (NAVD 88)

SOIL EROSION CONTROL LEGEND

1	SHIPPING & STOCKPILING TOPSOIL	TOPSOIL MAY BE STOCKPILED ABOVE BORROW AREAS TO ACT AS A DIMENSION STOCKPILE SHOULD BE TEMPORARILY SEED
6	SEEDING WITH MULCH AND/OR WAVING	FACILITATES ESTABLISHMENT OF VEGETATIVE COVER EFFECTIVE FOR DRAINAGES WITH LOW VELOCITY EASILY PLACED IN SMALL QUANTITIES BY INEXPERIENCED PERSONNEL SHOULD INCLUDE PERMANENT TOPSOIL BED
13	BORROW, RUBBLE, GRADINGS	USED WHERE VEGETATION IS NOT EASILY ESTABLISHED EFFECTIVE FOR HIGH VELOCITIES OR HIGH CONCENTRATION PERMITS RUNOFF TO RECHARGE SOIL RESERVES ENERGY FLOW AT SYSTEM OUTLETS
14	ADAPTATIVE CHECK	STABILIZES SOIL SURFACE, TRAPS MINOR EROSION PROMPTS CONSTRUCTION TRAFFIC IN ADEQUATE WEATHER MAY BE USED AS PART OF PERMANENT BASE CONSTRUCTION OF PAVED AREAS
43	CATCH BASIN TRAP	EASY TO INSTALL AT INLET KEEPS CULVERT CLEAN AND FREE FLOWING MAY BE CONSTRUCTED OF LUMBER OR LOGS
55	GEOTEXTILE SILT FENCE	USES GEOTEXTILE AND POSTS OR POLES MAY BE CONSTRUCTED OR PREPACKAGED EASY TO CONSTRUCT AND LOCATE AS NECESSARY
58	INLET FABRIC FILTER	USES PREPACKAGED GEOTEXTILE BAGS FILTERS SEDIMENT FROM RUNOFF AT CATCH BASIN INLET EASY TO INSTALL AND MAINTAIN
59	INLET FABRIC TRAP	PREVENTS SEDIMENT FROM ENTERING STORM SYSTEM AT STRUCTURES USES GEOTEXTILE FABRIC AND POSTS OR POLES SILT FENCE CAN BE USED

OVERALL AREA OF DISTURBANCE = 6.48 AC.
DISTANCE TO NEAREST OPEN WATER COURSE = 232' (UNNAMED PRIVATE POND)
A COMMERCIAL SESC PERMIT FROM LCDC IS REQUIRED FOR THIS SITE
AN NPDES PERMIT FROM EGLE IS REQUIRED FOR THIS SITE

TIME LINE OF SOIL EROSION CONTROL AND CONSTRUCTION SEQUENCE
BMH PREMIER-P.U.D. (PH1)

CONSTRUCTION & WORK CATEGORIES	2020	MONTH 1	MONTH 2	MONTH 3	MONTH 4	MONTH 5
1 - OBTAIN PERMITS						
2 - SESC MEASURES						
3 - INSPECT / MAINTAIN						
4 - DEMOLITION WORK						
5 - EARTH WORK						
6 - UTILITIES						
7 - BUILDING						
8 - PAVEMENT						
9 - TOPSOIL/VEGETATION						
10 - LANDSCAPING						
11 - RESTORATION						
12 - PERMIT CLOSURE						

*REFER TO THE MAJOR WORK ITEMS OUTLINED IN THE SOIL EROSION CONTROL AND CONSTRUCTION SEQUENCE NOTES.

DESIGN: FA	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: JHG						
CHECK: WMP						

BMH - PREMIER P.U.D.
PHASE 1

PROPOSED
SOIL EROSION CONTROL PLAN

CLIENT:
PREMIER GENOA, LLC
775 N. SECOND ST.
BRIGHTON, MICHIGAN 48116
810-229-6323

SCALE: 1in. = 40ft.
PROJECT No.: 183450
DWG No: 3450 SE
ISSUED: AUG. 5, 2020

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LAND SURVEYORS
2183 PLESS DRIVE
BRIGHTON, MICHIGAN 48114

SE1

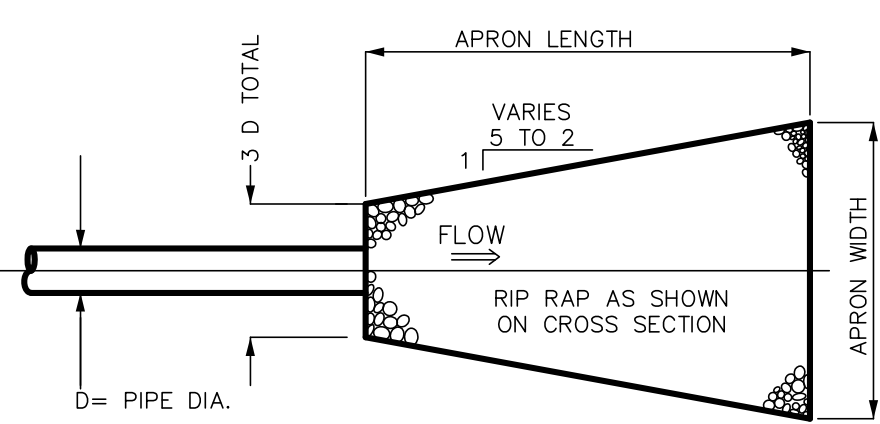
MIN. RIP RAP DIMENSIONS

PIPE DIAMETER (inch)	APRON LENGTH (feet)	(1) APRON WIDTH (feet)	(2) ALTERNATE APRON WIDTH (feet)
12	12	8	16
15	15	10	20
18	18	12	24
21	21	14	28
24	24	16	32
30	30	20	40
36	36	24	48
42	42	28	56

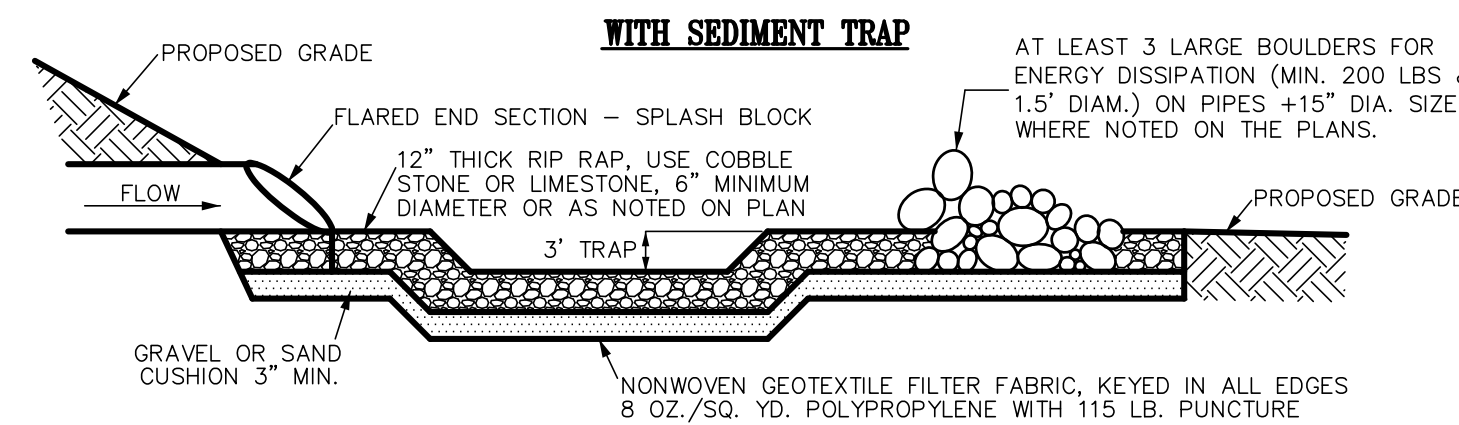
UNLESS SHOWN OTHERWISE ON PLANS, MAY BE VARIED TO MATCH NATURAL FEATURES; IE WHEN MEETING EX. DITCH, APRON WIDTH TO MATCH CHANNEL BOTTOM EXTENDING UP SIDES TO A DEPTH OF 1/2 PIPE DIA.

(1) APRON WIDTH FOR USE IN DITCHES AND SWALES

(2) APRON WIDTH FOR USE IN FLAT AREAS WHERE SHEET FLOW DESIRED



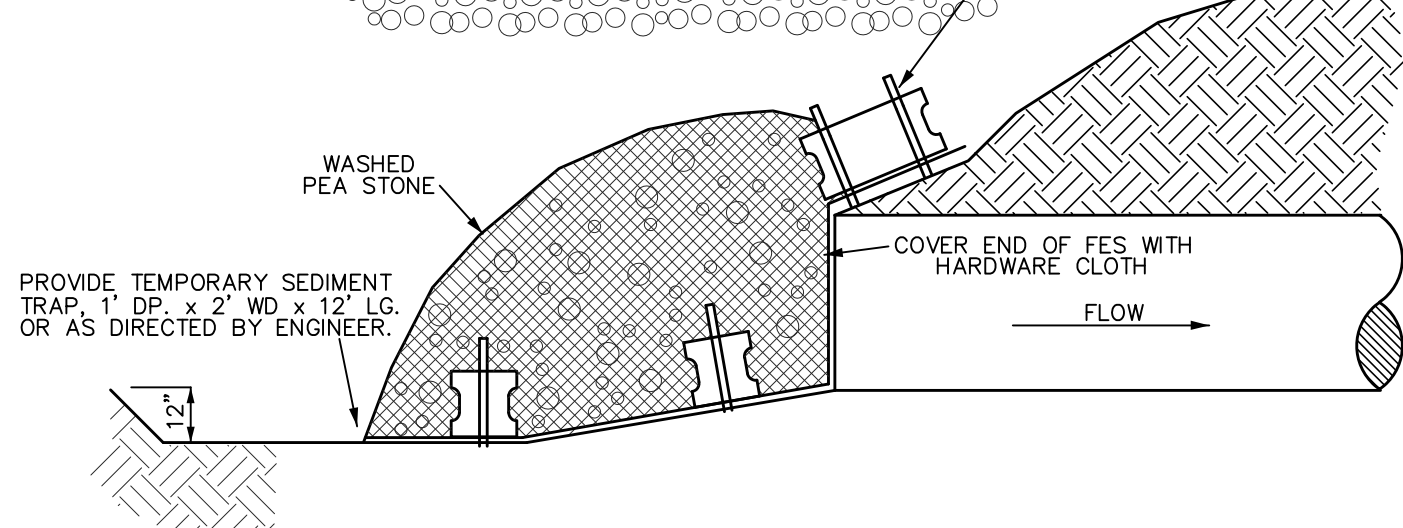
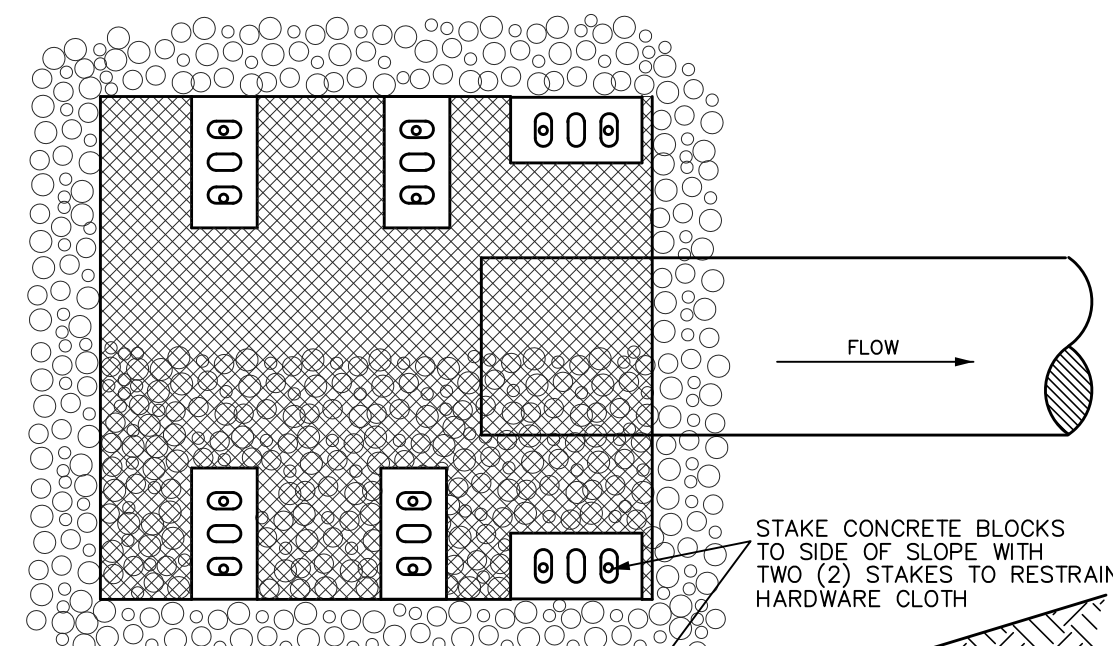
13 RIP RAP PLAN
NOT TO SCALE



13 RIP RAP CROSS SECTION
NOT TO SCALE

NOTES:

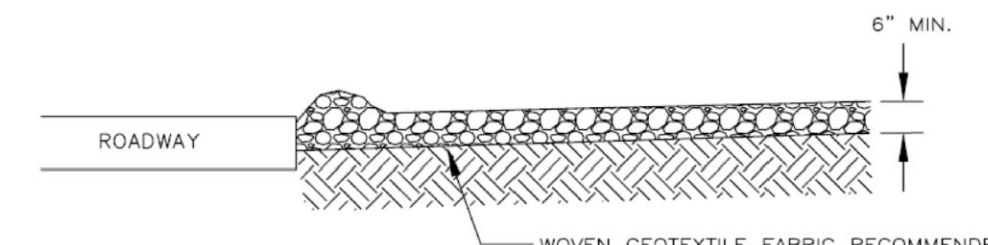
1. GROUT RIP-RAP WITH A 6" THICK CEMENT SLURRY FOR SLOPES STEEPER THAN 20%; 5 ON 1.
2. PROVIDE ANIMAL GUARDS ON ALL STORM SEWER 15" DIA. OR GREATER, INCIDENTAL TO FES PIPE.
3. STORM DRAIN OUTLETS THAT DO NOT EMPTY INTO THE DETENTION BASIN SHALL HAVE INSTALLED A TEMPORARY SEDIMENT TRAP AT THE TERMINATION OF THE STORM SEWER (5'x10'x3' TYP.). UPON COMPLETION OF THE STABILIZATION WORK, THE SUMP AREA SHALL BE FILLED AND RIP-RAPPED.



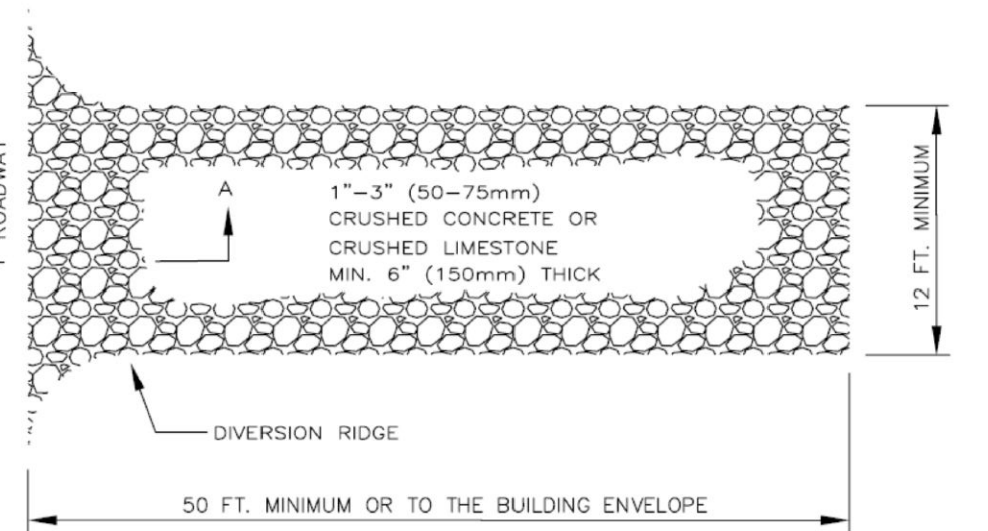
43 TEMPORARY GRAVEL FILTER BOX DETAIL
NOT TO SCALE

NOTE: UPON STABILIZATION OF ALL CONTRIBUTING AREA REMOVE TEMPORARY GRAVEL FILTER.

TRACKING MAT STANDARD CONTROL 14



CROSS SECTION A-A



PLAN VIEW

MAINTENANCE NOTES FOR SOIL EROSION CONTROL MEASURES:

The Construction Site and all Soil Erosion Control Measures shall be inspected periodically in accordance with the appropriate local municipality/authority and the Michigan EGLE NPDES rules and regulations. At a MINIMUM, inspections shall be performed once a week and within 24 hours following a storm event resulting in 1" of rainfall or greater. Inspections shall be performed throughout the duration of the construction process and until the site is completely stabilized. Following construction, the owner (or its assignee) shall periodically inspect all permanent soil erosion control measures to ensure proper operation.

BASIN PERFORATED STANDPIPES / CONTROL STRUCTURES: Standpipes shall be inspected for soil accumulation, soil caking and mechanical failure/damage. The filter stone around the standpipe shall be removed and replaced each time it becomes clogged with sediment. All mechanical failure/damage shall be repaired immediately.

CATCH BASINS: Catch basins shall be inspected for accumulation of solids and sediment. Solids and sediment shall be removed from the catch basins by vacuum or adductor cleaning. Cleaning should be performed before the catch basin sumps are half full.

MUD TRACKING CONTROL DEVICE / CONSTRUCTION ACCESS: Mud tracking control devices shall be inspected for significant mud accumulation and to ensure the access is not eroding into public rights of way or drainage features. Add additional layers of stone or remove and replace stone each time the stone becomes covered with mud. All sediment dropped or eroded onto public rights of way shall be removed immediately. Sweeping of the public rights of way and/or paved access route shall be performed as necessary to maintain the access route free of sediment and debris.

DETENTION BASIN (DRY BOTTOM): Dry bottom detention basins shall be inspected to ensure erosion is not occurring along the inlet locations, banks and/or bottom of the basin and for sediment accumulation. Regular maintenance of the basin includes routine mowing of the buffer/filter strip, side slopes and basin floor and removal of litter and debris accumulation. Address vegetation and/or erosion concerns as soon as weather permits. Remove sediment from basin every 5 to 10 years or sooner if sediment accumulation adversely affects the operation of the basin. Sediment that is removed shall be disposed of offsite or at an upland area and stabilized so that it does not re-enter the drainage course.

DETENTION BASIN (WET BOTTOM): Wet bottom detention basins shall be inspected to ensure erosion is not occurring along the inlet locations, banks and/or bottom of the basin and for sediment and/or algae accumulation. Regular maintenance of the basin includes routine mowing of the buffer/filter strip and side slopes and removal of litter and debris accumulation. Address vegetation and/or erosion concerns as soon as weather permits. Remove sediment from basin every 5 to 10 years or sooner if sediment accumulation adversely affects the operation of the basin. Sediment that is removed shall be disposed of offsite or at an upland area and stabilized so that it does not re-enter the drainage course. Excessive algae shall be removed as necessary to prevent odors and to maintain nutrient removal capacity.

RETENTION BASIN: Retention basins shall be inspected to ensure erosion is not occurring along the inlet locations, banks and/or bottom of the basin and for sediment accumulation. Regular maintenance of the basin includes routine mowing of the buffer/filter strip, side slopes and basin floor and removal of litter and debris accumulation. Address vegetation and/or erosion concerns as soon as weather permits. Sediment accumulation shall be removed at least once a year. Sediment shall be removed only when the surface is dry and "mud-cracked". Light equipment must be used to avoid compacting of soils. After removal of sediment, the infiltration area shall be deep tilled to restore infiltration rates. More frequent tilling may be necessary in areas where soils are only marginally permeable. Sediment that is removed shall be disposed of offsite or at an upland area and stabilized so that it does not re-enter the drainage course.

RIPRAP: Inspect riprap immediately following the first rainfall event following installation of the riprap. Continue to perform inspections of the riprap at each periodic site inspection. Riprap shall be inspected to ensure erosion is not occurring within and/or around the riprap. The discharge point shall be inspected to ensure that concentrated flows are not causing erosion downstream. Displaced riprap shall be removed from downstream locations and the riprap beds shall be repaired or replaced. Significant sediment buildup shall be removed from riprap beds. Repair or replace failing or displaced riprap immediately. Address vegetation and/or erosion concerns as soon as weather permits.

SEDIMENTATION BASINS: Sedimentation basins shall be inspected to ensure erosion is not occurring along the inlet locations, banks and/or bottom of the basin and for piping, seepage, sediment accumulation and/or other mechanical damage. Regular maintenance of the basin includes routine mowing of the buffer/filter strip, side slopes and basin floor and removal of litter and debris accumulation. Address vegetation and/or erosion concerns as soon as weather permits. Sediment shall be removed before it accumulates to 50% of the design depth of the basin. Sediment that is removed shall be disposed of offsite or at an upland area and stabilized so that it does not re-enter the drainage course.

SEEDING: Newly seeded areas shall be inspected until substantial vegetative growth is obtained. Seeded areas shall be inspected to ensure erosion is not occurring in the seeded area and vegetative growth is promoted. Eroded areas shall be finish graded as necessary to remove erosion channels or gullies and new seed placed as soon as weather permits.

SILT FENCE: Silt fencing shall be inspected for soil accumulation/clogging, undercutting, overtopping and sagging. Soil accumulation shall be removed from the face of the silt fence each time it reaches half the height of the fence. Removed sediment shall be disposed of in a stable upland site or added to a spoils stockpile. When undercutting occurs, grade out areas of concentrated flow upstream of the silt fence to remove channels and/or gullies and repair or replace silt fence ensuring proper trenching techniques are utilized. Silt fencing, which sags, falls over or is not staked in shall be repaired or replaced immediately. Silt fencing fabric, which decomposes or becomes ineffective, shall be removed and replaced with new fabric immediately. Silt fencing shall be removed once vegetation is well established and the up-slope area is fully stabilized.

SOD: Newly sodded areas shall be inspected to ensure sod is maturing. Sod shall be inspected for failure, erosion or damage. Slipping or eroding sod on steep slopes shall be immediately repaired or replaced and staked in place. Damaged or failed sod shall be immediately replaced.

SPILLWAYS: Spillways shall be inspected to ensure that erosion is not occurring within and/or around the spillway. The discharge point shall be inspected to ensure that concentrated flows are not causing erosion downstream. Repair the spillway for cracked concrete, uneven and/or excessive settling and proper function. Repair or replace failing spillways immediately. Address vegetation and/or erosion concerns as soon as weather permits.

STOCKPILES: Temporary and permanent topsoil and spoils stockpiles shall be seeded to promote vegetative growth. Stockpiles shall be inspected to ensure excessive erosion has not occurred. When runoff or wind erosion is evident, reduce the side slopes of the stockpile or stabilize the stockpile with pieces of staked sod laid perpendicular to the slope. When filter fencing is used around a stockpile, the fencing shall be inspected to ensure piping has not occurred under the fencing and to ensure the fencing has not collapsed due to soil slippage or access by construction equipment. Repair or replace damaged fencing immediately. Berms at the base of stockpiles, which become damaged, shall be replaced.

STORM STRUCTURE INLET FILTER: Inlet filters shall be inspected for sediment accumulation, clogging and damage. When stone is used in conjunction with inlet filter fabric, replace the stone each time it becomes clogged with sediment. Clean or replace the inlet filter fabric each time it becomes clogged with sediment. Reinstall or replace fallen filter fabrics immediately. Replace damaged filter fabrics immediately.

SOIL EROSION AND SEDIMENTATION CONTROL NOTES:

1. The Soil Erosion and Sedimentation Control Specifications of the appropriate Local, County and/or State Agencies are a part of this work. Refer to the General Notes on the Project Plans for additional requirements.

2. The Soil Erosion and Sedimentation Control (SESC) Permit Holder shall be responsible for compliance with the SESC Permit requirements for the duration of the project and until receipt of final approval from the Permitting Agency. For any site with an earth disturbance area of 1 acre or greater, the SESC Permit Holder shall retain a Certified Storm Water Operator in accordance with the SESC Permit requirements. The Certified Storm Water Operator shall perform routine inspections of the site and the SESC measures and file inspection reports in accordance with the SESC permit requirements. For any site with an earth disturbance area of 5 acres or greater, the SESC Permit Holder shall file a National Pollutant Discharge Elimination System (NPDES) Notice of Coverage Form with the State DEQ prior to any earth disruption.

3. The Contractor shall install the appropriate Soil Erosion Control Measures in accordance with the Project Plans prior to massive earth disruption, including but not limited to; silt fence, mud tracking control mats and sediment filters on existing storm sewer structures. Demolition work may be necessary prior to installation of some soil erosion control measures. In such cases, postpone installation of affected soil erosion control measures until immediately following demolition work. Refer to the Project Plans and the Soil Erosion Control and Construction Sequence for additional requirements.

4. The Contractor shall schedule work so as to minimize the period of time that an area is exposed and disturbed. The Contractor shall observe the grading limits and limits of disturbance in accordance with the Project Plans. The Contractor shall maintain an undisturbed vegetative buffer around the work when shown on the Project Plans.

5. The Contractor shall install and maintain Soil Erosion Control Measures in accordance with the Project Plans during the appropriate phases of construction. The Project Plans show the minimum requirements for Soil Erosion Control Measures. The Contractor shall install additional Soil Erosion Control Measures as necessary due to site conditions and as directed by the Permitting Agency and/or Engineer. The Contractor shall perform routine inspection and maintenance of all Soil Erosion Control Measures to ensure compliance with the permit requirements and proper operation of the Soil Erosion Control Measures.

6. The Contractor shall strip and stockpile topsoil from all areas of proposed disturbance. Topsoil stockpiles shall be located in accordance with the Project Plans. Topsoil stockpiles shall be stabilized with vegetative growth (or matted with straw during the non-growing season) to prevent wind and water erosion. A temporary diversion berm and/or silt fence shall encompass all earthen material stockpiles, including but not limited to topsoil, sand and gravel.

7. The Contractor shall install Soil Erosion Control Measures associated with the proposed storm sewer system during storm sewer construction. Inlet structure filters shall be installed immediately following completion of each storm inlet structure. Riprap shall be installed immediately following the installation of each flared end section with the following exception: Storm drain outlets that do NOT empty into a Retention, Detention or Sedimentation Basin shall have a temporary 5' wide x 10' long x 3' deep sump installed at the termination of the storm sewer. Upon completion of the stabilization work, the sump area shall be filled and riprap shall be installed in accordance with the Project Plans.

8. The Contractor shall install filter stone around the storm basin control structure(s) in accordance with the Project Plans immediately following installation of the control structure(s). The filter stone shall be monitored for sediment build up. The filter stone may need to be cleaned and/or replaced as site conditions require and as directed by the Permitting Agency and/or the Engineer.

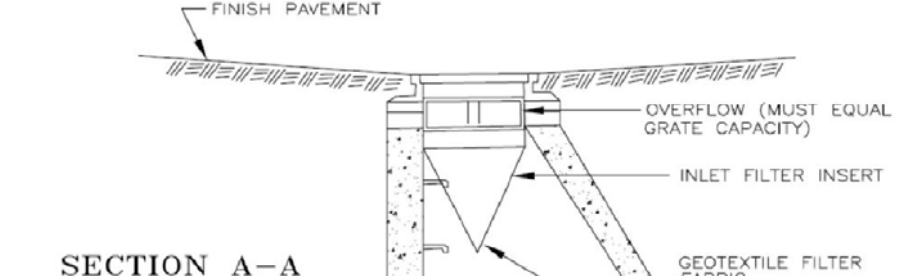
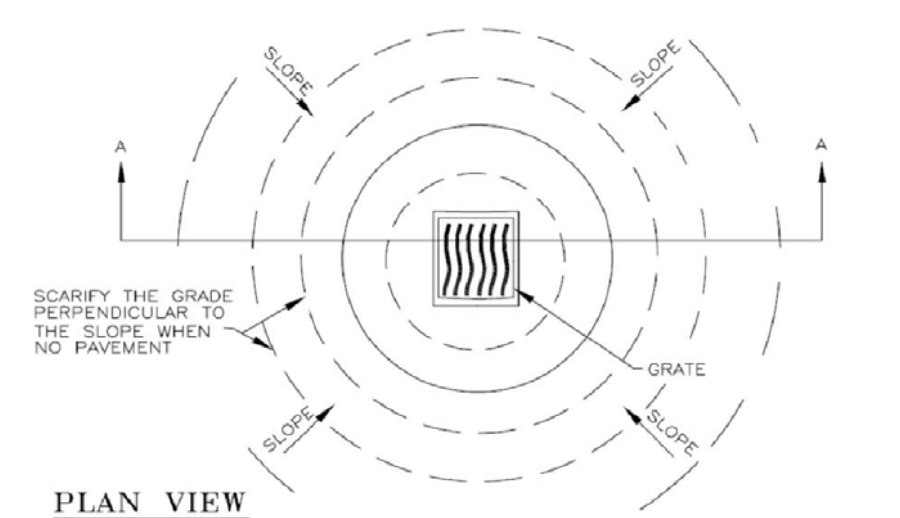
9. All disturbed areas outside of paved areas shall be restored within 15 days of finish grading. Proposed vegetative areas shall be restored with a minimum of 3-inches of topsoil, then seeded and mulched, unless noted otherwise on the Project Plans. During the non-growing season, temporary stabilization shall be provided using straw matting or as directed by the Permitting Agency and/or the Engineer.

Seeding, Fertilizer and Mulch Bare Ground Ratio:
This information is provided as minimum guidance for acceptable application rates. Actual amounts depending on soil conditions and site topography shall be detailed on the construction plans.
Top-Soil 3 inches in depth.
Grass Seed 210 lbs. per acre.
Fertilizer 150 lbs. per acre.
Straw Mulch 3" in depth 1.5 to 2 tons per acre
(All mulch must have a tie down, such as tackifier, net binding, etc.)
Hydro-Seeding: Hydro-seeding is not acceptable for slopes exceeding 1%, in such cases; stabilization shall be done with seed and straw mulch with a tackifier.

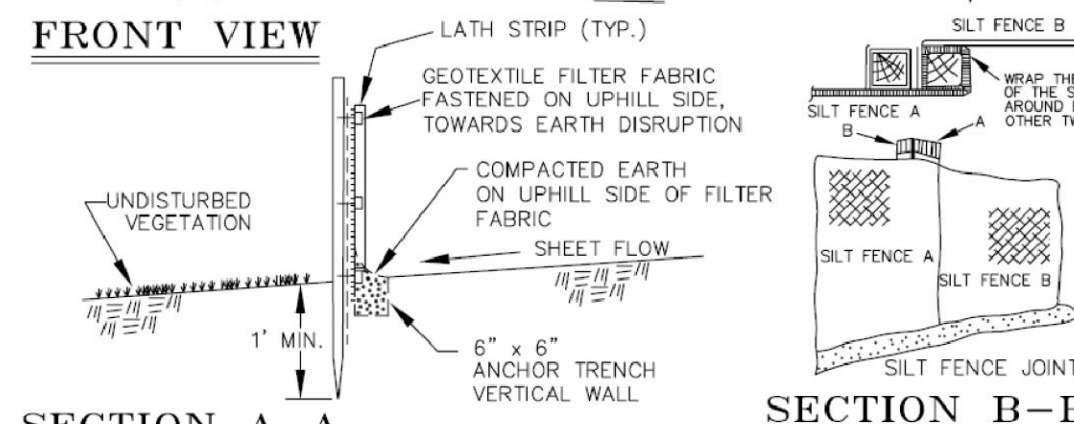
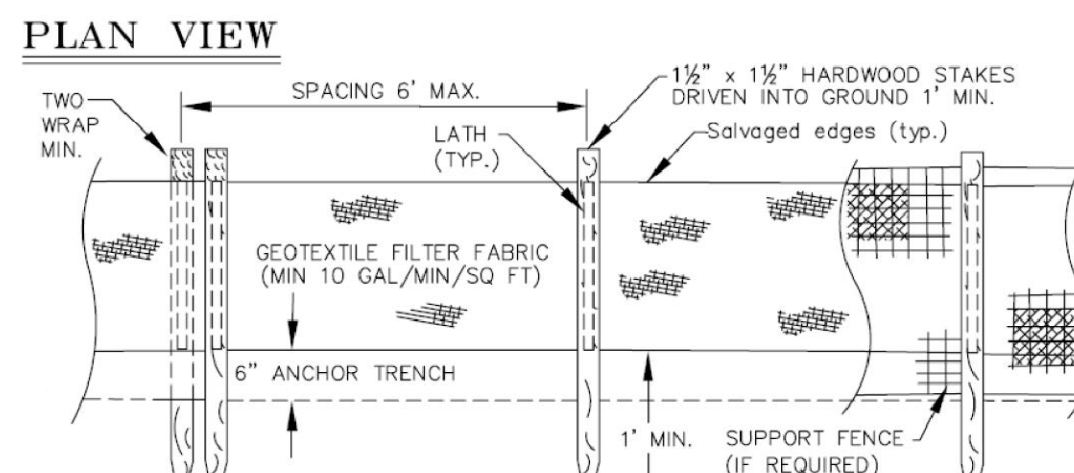
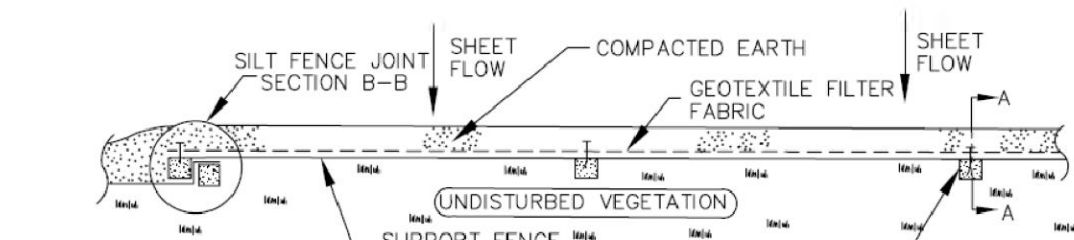
10. Following complete site restoration and stabilization; sediment shall be removed from all storm sewer structures, paved areas and storm basins. The SESC Permit Holder shall contact the Permitting Agency to request closure of the SESC Permit. For any site with an earth disturbance area of 5 acres or greater, the SESC Permit Holder shall file a NPDES Notice of Termination Form with the State DEQ.

SILT SACK OR APPROVED EQUAL LOW POINT/YARD INLET FILTER STANDARD CONTROL YEAR ROUND OR WINTER USE 58

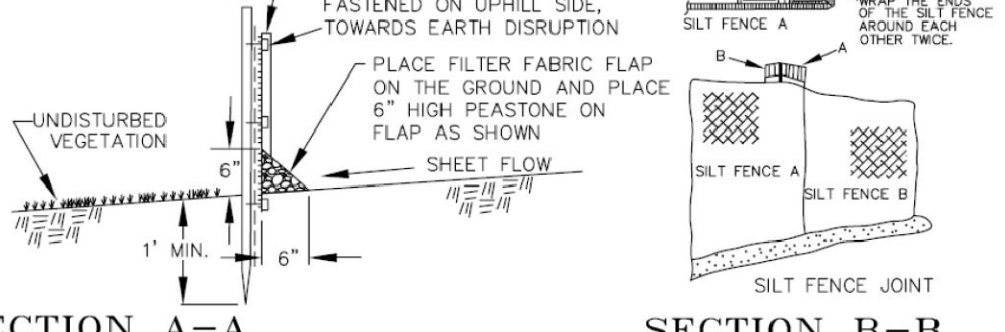
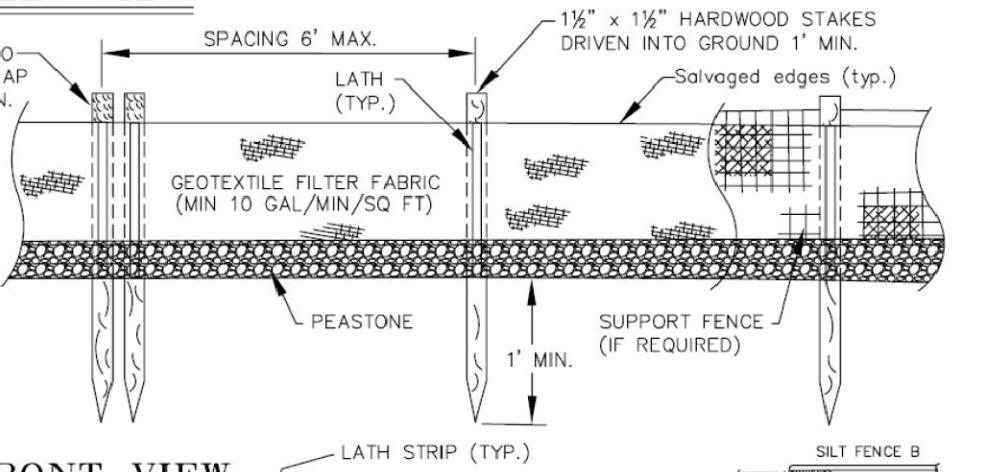
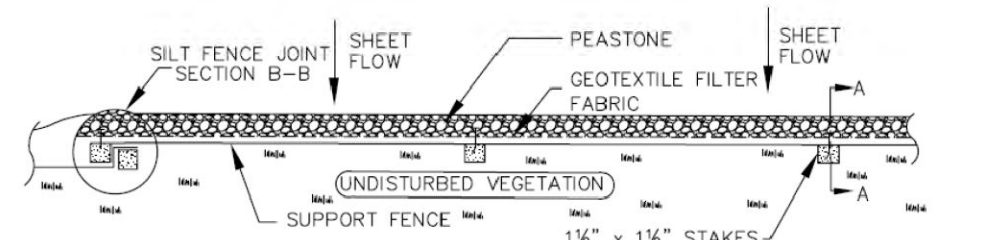
APPROVED FOR USE DURING WINTER MONTHS OR IN AREAS THAT MAY BECOME A SAFETY HAZARD DUE TO FLOODING OR FREEZING



36\"/>



36\"/>



DESIGN: FA	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: JHG						
CHECK: WMP						

**BMH - PREMIER P.U.D.
PHASE 1**

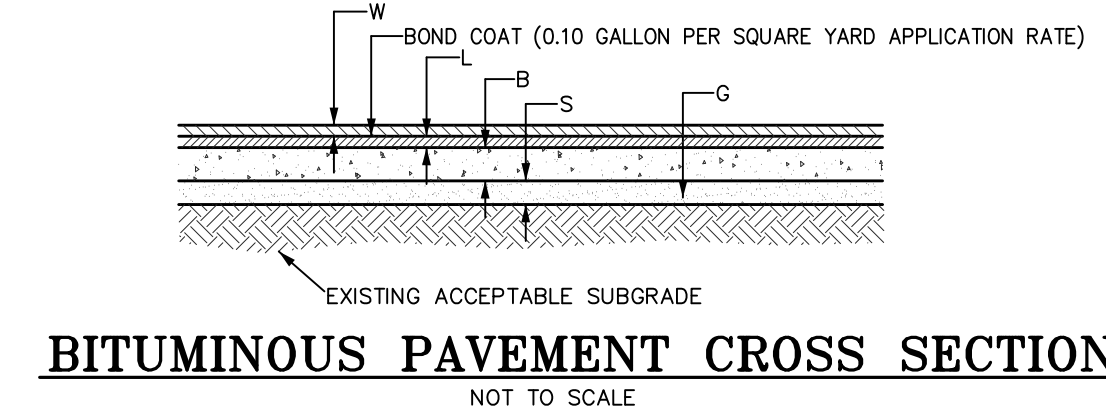
**SOIL EROSION CONTROL
NOTES & DETAILS**

CLIENT:
PREMIER GENOA, LLC
775 N. SECOND ST.
BRIGHTON, MICHIGAN 48116
810-229-6323

SCALE: AS NOTED
PROJECT No.: 183450
DWG NAME: 3450 SE
ISSUED: AUG. 5, 2020

SE2

DESIGN INC.
(810) 227-9533
CIVIL ENGINEERS
LAND SURVEYORS
2183 PLESS DRIVE
BRIGHTON, MICHIGAN 48114



TYPE "A" CROSS SECTION

KEY	DESCRIPTION	MATERIAL SPECIFICATION	MINIMUM COMPACTED THICKNESS
W	WEARING COURSE	MDOT 36A	1.5"
L	LEVELING COURSE	MDOT 13A	2.5"
B	AGGREGATE BASE	MDOT 22A	8"
S	GRANULAR SUBBASE	MDOT CLASS II	7"
G	GEOGRID	N/A	N/A

TYPE "B" CROSS SECTION

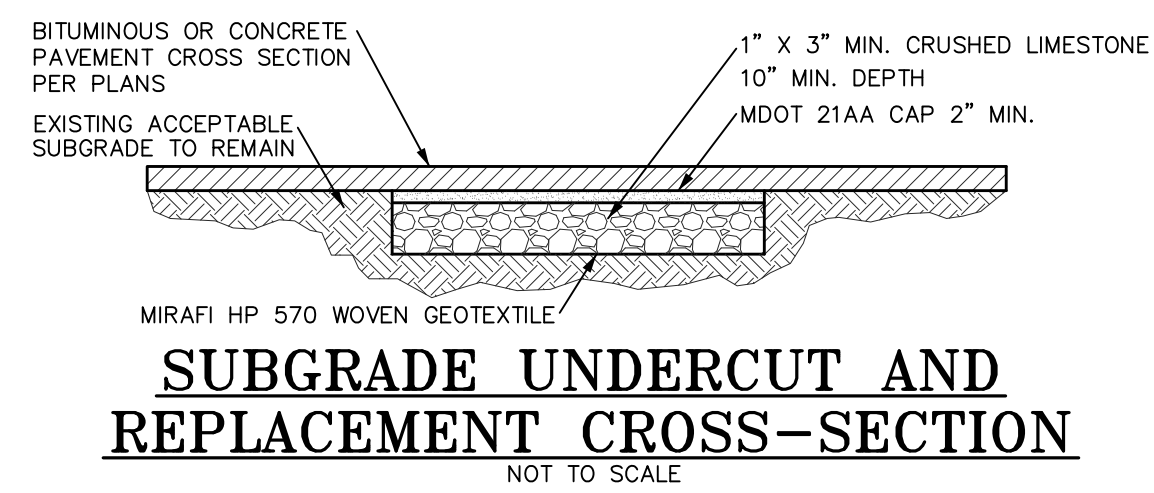
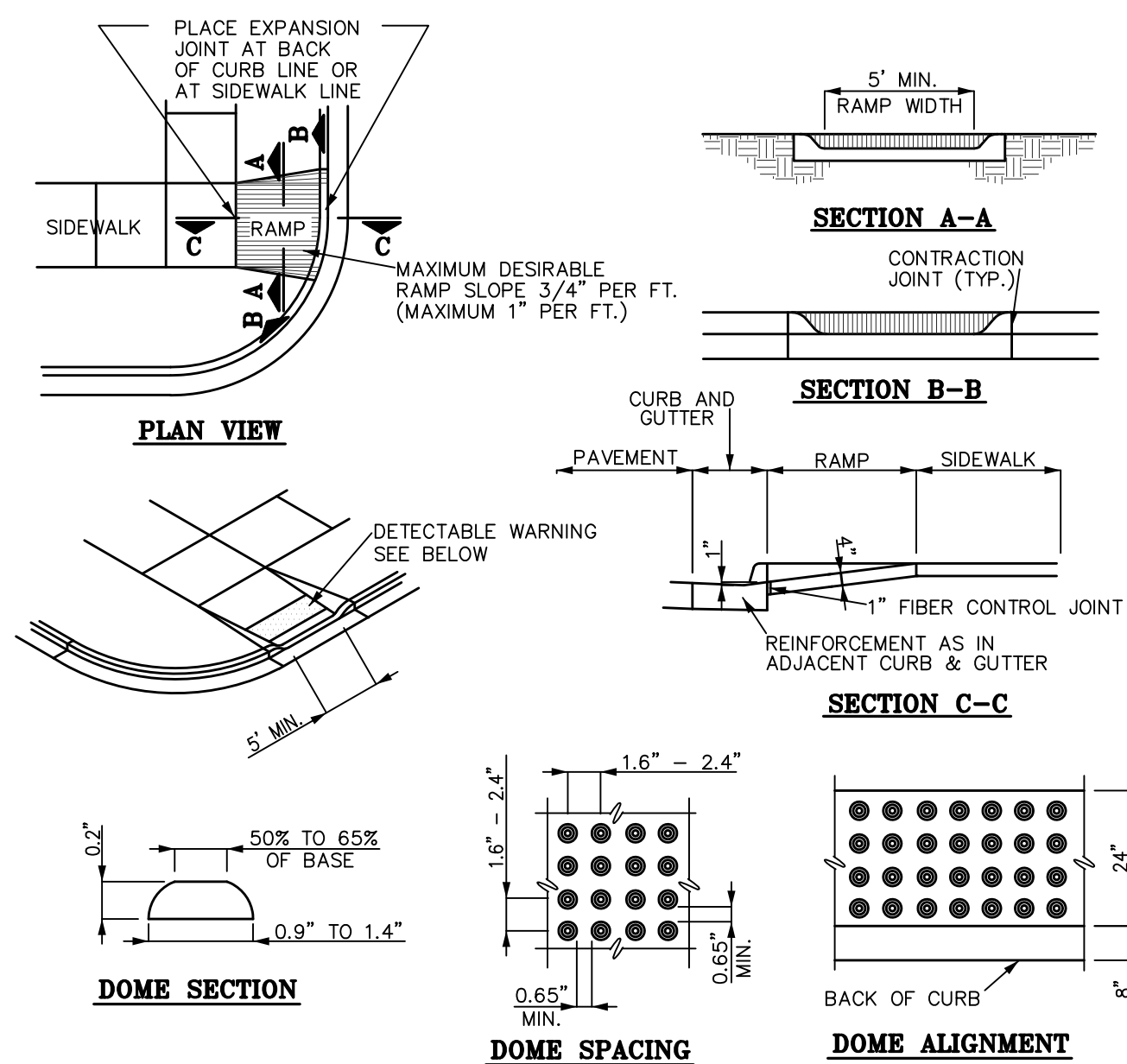
KEY	DESCRIPTION	MATERIAL SPECIFICATION	MINIMUM COMPACTED THICKNESS
W	WEARING COURSE	MDOT 36A	1.5"
L	LEVELING COURSE	MDOT 13A	1.5"
B	AGGREGATE BASE	MDOT 22A	6"
S	GRANULAR SUBBASE	MDOT CLASS II	6"
G	GEOGRID	N/A	N/A

MINIMUM TOWNSHIP CROSS SECTION

KEY	DESCRIPTION	MATERIAL SPECIFICATION	MINIMUM COMPACTED THICKNESS
W	WEARING COURSE	MDOT 36A	1.5"
L	LEVELING COURSE	MDOT 13A	1.5"
B	AGGREGATE BASE	MDOT 22A	6"
S	GRANULAR SUBBASE	MDOT CLASS II	6"
G	GEOGRID	N/A	N/A

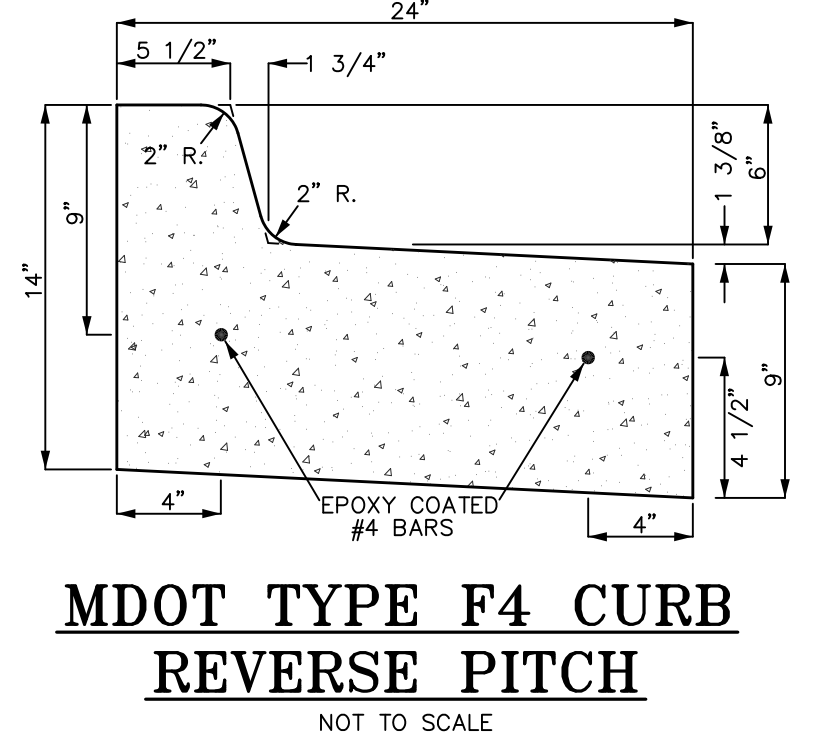
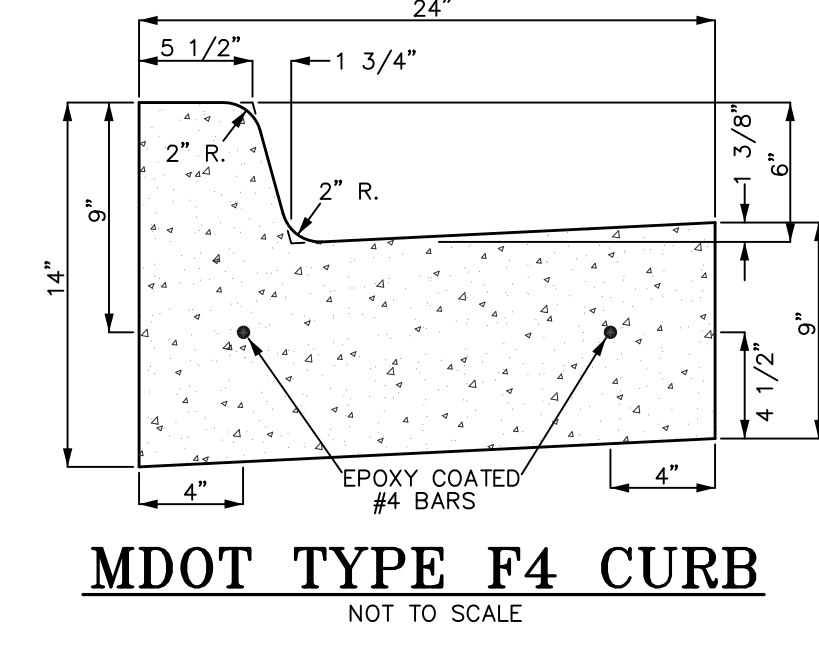
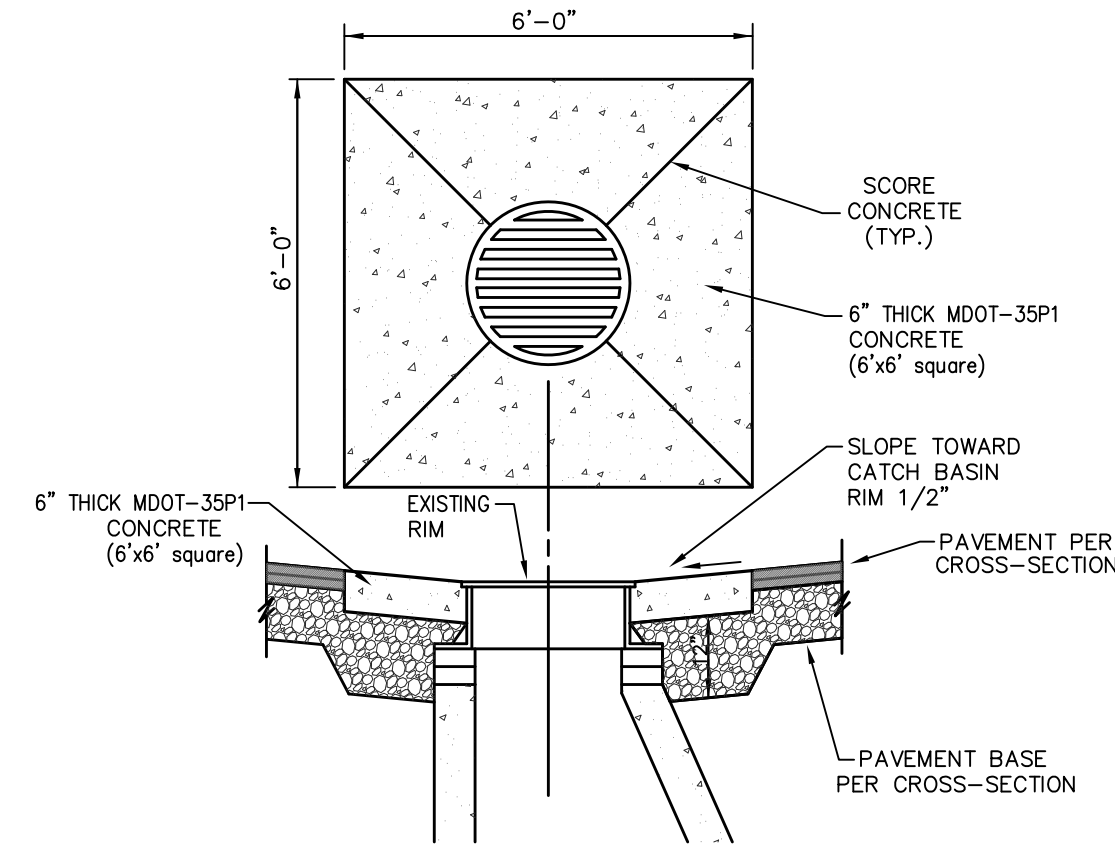
BITUMINOUS PAVEMENT NOTES:

- The construction specifications of the appropriate Local Municipality are a part of this work. Refer to the General Notes, Road and/or Driveway and Parking Lot Construction Notes and Typical Road and/or Pavement Cross Section details on the project plans for additional requirements.
- Unsuitable soils found within the 1 on 1 influence zone of the roadway, such as muck, peat, topsoil, marl, silt or other unstable materials shall be excavated and replaced up to the proposed subgrade elevation with MDOT Class III granular material compacted to 95% maximum unit weight, modified proctor.
- Contractor shall proof roll prepared subgrade as directed by Engineer. Unacceptable areas of subgrade shall be undercut and replaced as directed by Engineer.
- Owner/Developer may delay placement of the bituminous wearing course outside of the public road right of way. Repair of the bituminous leveling course may be necessary due to any delay in placement of the bituminous wearing course. Substantial repair to the bituminous leveling course may be necessary if placement of the bituminous wearing course is delayed for more than 12 months after placement of the bituminous leveling course. The bituminous leveling course shall be repaired as directed by Engineer prior to placement of the bituminous wearing course.



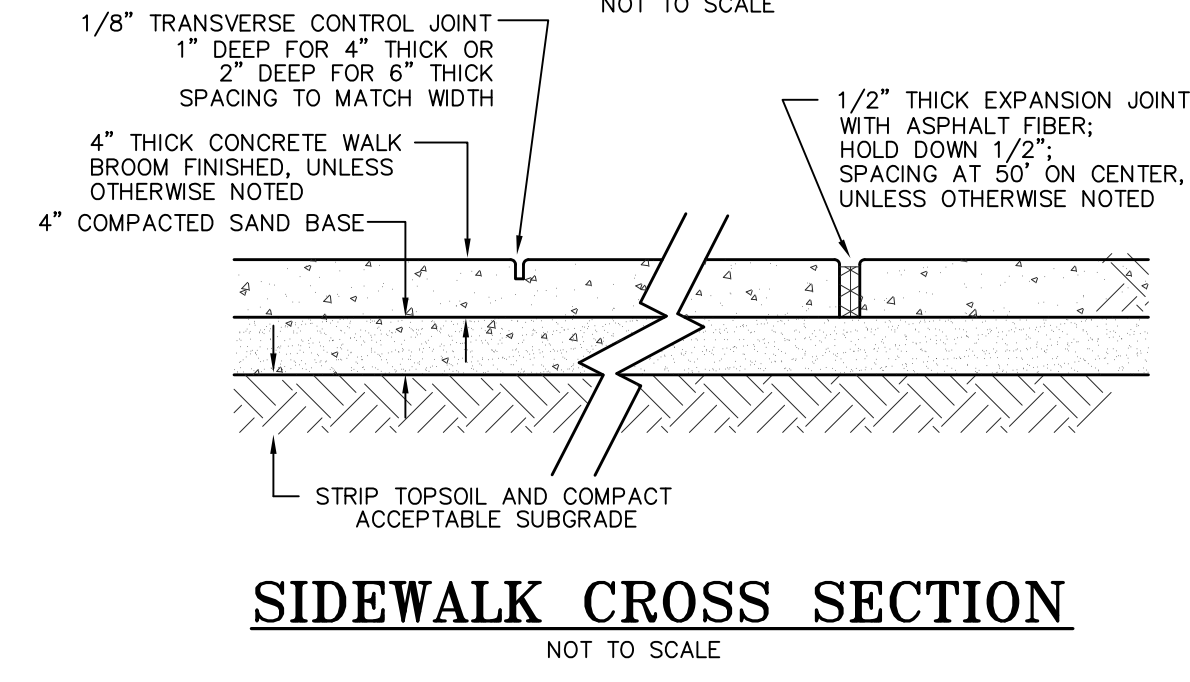
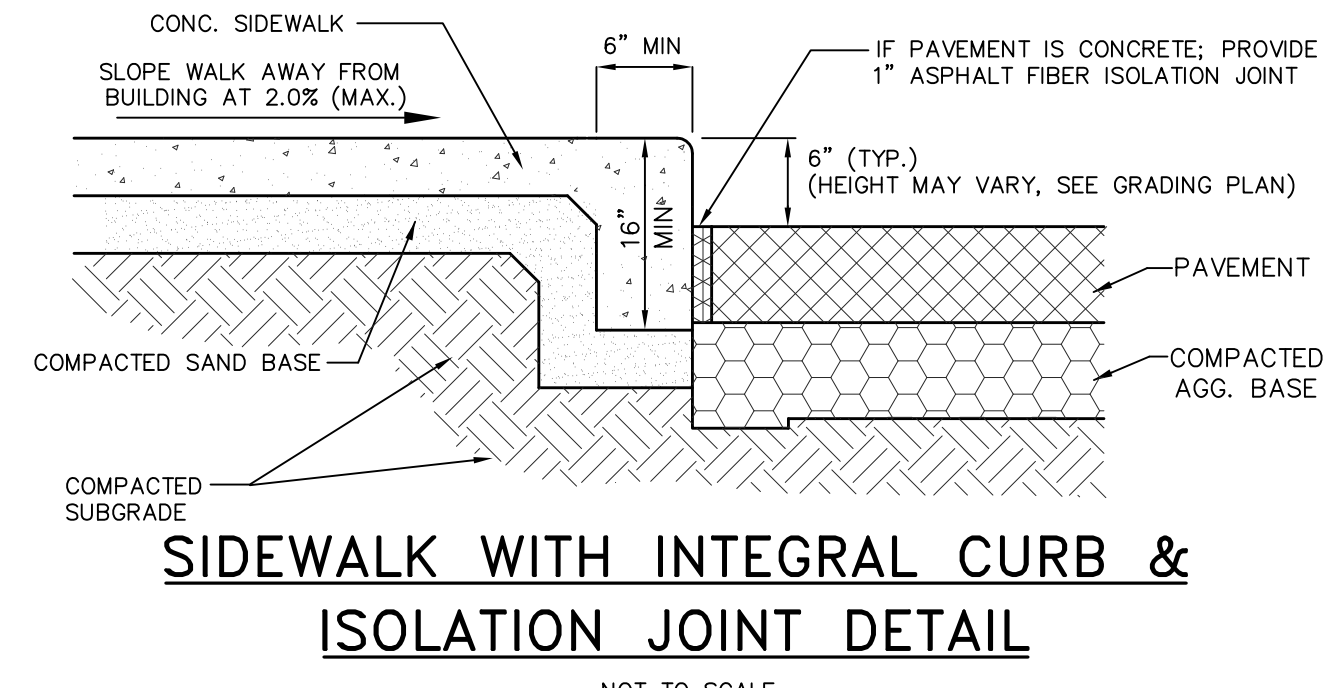
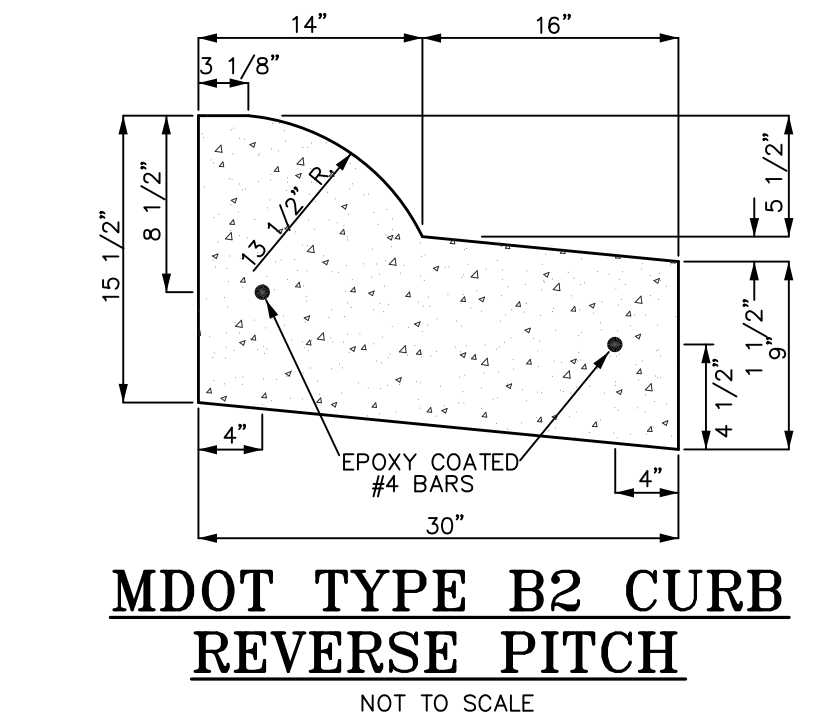
PAVEMENT SUBGRADE UNDERCUT NOTES:

- Areas of pavement subgrade that do not pass a proof roll inspection shall be undercut when directed by the Material Testing Engineer and/or Project Engineer. All undercut work shall be witnessed and field measured by the Material Testing Engineer and/or Project Engineer.
- Undercut areas shall be excavated to a depth of 12" below the proposed subgrade elevation using an Excavator or Backhoe with a Smooth Edged Ditching Bucket so as not to scarify the underlying soils. Undercut areas shall remain free of all construction traffic and equipment to avoid rutting and/or tracking of the underlying soils.
- Mirafi HP 570 Woven Geotextile Fabric (or approved equal) shall be placed over all undercut areas per the Manufacturer's specifications. Overlap all seams a minimum of 12" unless specified otherwise by the Manufacturer.
- Backfill the undercut areas with 1" x 3" minimum size crushed angular limestone up to the proposed subgrade elevation. Crushed concrete material shall NOT be substituted for crushed limestone material. The backfill material shall be spread with a Wide Track Dozer to minimize loading on the underlying soils. Static roll the backfill material with a large smooth drum roller.
- Construct the appropriate Bituminous or Concrete Pavement Cross Section over the undercut areas per the Project Plans.
- The General Contractor and/or Earthwork Subcontractor shall provide ALDI Inc with unit pricing to perform subgrade undercut work per square yard (SY) of undercut area. Undercut Unit Pricing SHALL include excavation, loading, hauling and offsite disposal of excess spoils, placement of geotextile fabric and backfill including all labor, equipment and materials necessary to complete pavement subgrade undercut work as specified on the Project Plans.



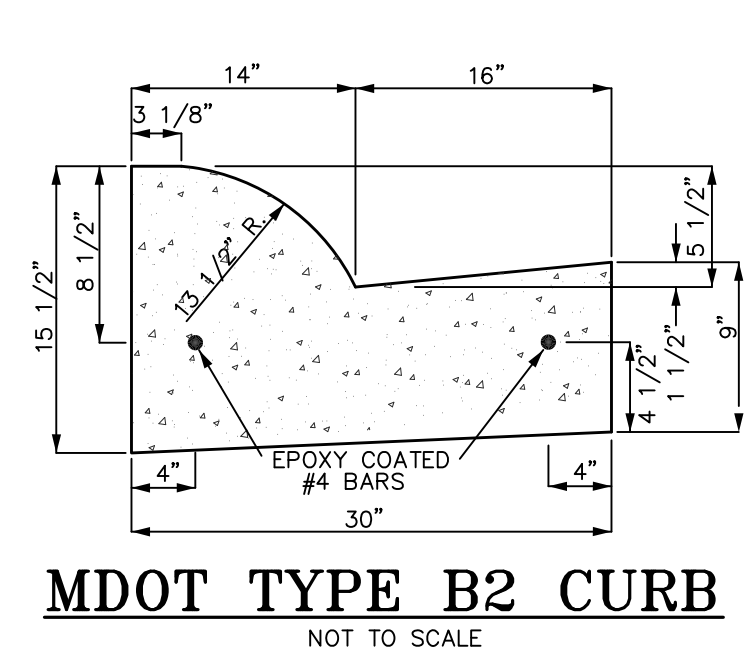
CONCRETE CURB NOTES:

- Refer to the project plans for the proposed locations of the specific curb types.
- The construction specifications of the appropriate Local Municipality are a part of this work. Refer to the General Notes and Curb Cross Section Details on the project plans for additional requirements.
- Extend the base and/or subbase material of the appropriate adjacent pavement cross-section horizontally to 1 foot behind the back of curb. Concrete curb shall be constructed on no less than 6" of combined depth of compacted base/subbase material.
- Concrete material shall meet or exceed the specification requirements of the appropriate Local Municipality. Unless specified otherwise by the Local Municipality, concrete material shall be air-entrained and shall have a minimum 28-day class design strength of 3500 psi. Contractor shall submit concrete mix design and aggregate mechanical analysis report to the Local Municipality and Engineer for review and approval prior to use.
- Install transverse contraction control joints in concrete curb with 1" minimum depth at 10' on center. Tool joints in fresh concrete or saw cut within 8 hours.
- Install transverse expansion control joints in concrete curb as follows: 400' maximum on center, at spring points of intersecting streets and within 10' on each side of catch basins. Transverse expansion control joints shall be 1" thick asphalt fiber joint filler matching entire curb cross section.
- Provide 0.5" asphalt fiber control joint between back of curb and all other concrete structures, such as concrete sidewalks and concrete driveways.
- Curb Contractor shall provide final adjustment of catch basin castings in curb line. Castings shall be tack pointed to structure water tight with concrete or mortar inside and outside of casting.
- Install curb cuts for all existing and proposed sidewalks and pedestrian ramps in accordance with the American Disabilities Act and the Barrier Free Design requirements of the appropriate Local, County and/or State Agency. Refer to MDOT Standard Plan R-28, latest revision. Install curb cuts for all existing and proposed vehicular ramps and drives as noted on the project plans.



SIDEWALK CROSS SECTION NOTES:

- The construction specifications of the Local Municipality are a part of this work. Refer to the General Notes and the Sidewalk Cross Section Details on the Project Plans for additional requirements.
- Sidewalk widths may vary. See the Project Plans for the proposed sidewalk width at each location. Increase sidewalks to 6" minimum thickness at driveways and other areas exposed to vehicular traffic.
- The existing subgrade soils shall be prepared prior to placement of the granular subbase. Unsuitable soils found within the 1 on 1 influence zone of the proposed sidewalk areas, such as muck, peat, topsoil, marl, silt or other unstable materials shall be excavated and replaced with structural fill. Structural fill shall be MDOT Class II granular material placed in accordance with the General Notes on the Project Plans.
- The sidewalk compacted subbase material shall be MDOT CL II sand. No subbase material substitutions shall be permitted without prior written approval of the Project Engineer and receipt of the Owner's Authorization. The subbase shall be compacted to a minimum of 95% of the maximum unit weight, modified proctor.
- Concrete material shall meet or exceed the specification requirements of the appropriate Local Municipality. Unless specified otherwise by the Local Municipality, concrete material shall be air-entrained and shall have a minimum 28-day class design strength of 3500 psi. Contractor shall submit concrete mix design and aggregate mechanical analysis report to the Local Municipality and Engineer for review and approval prior to use.
- Install transverse contraction control joints in accordance with the Sidewalk Cross Section Detail. Space contraction control joints to match sidewalk width, but no greater than 10' on center. Tool joints in fresh concrete or saw cut within 8 hours.
- Install transverse expansion control joints in accordance with the Sidewalk Cross Section Detail. Space expansion control joints at 50 feet on center maximum. Transverse expansion control joints shall be 1/2" thick asphalt fiber joint filler matching entire sidewalk cross section.
- Provide 0.5" asphalt fiber control joint between concrete sidewalks and all other concrete structures, such as concrete building foundations, concrete curb and concrete driveways.
- Construct all Barrier Free Sidewalk Ramps in accordance with the American Disabilities Act and the Barrier Free Design Requirements of the appropriate Local, County or State Agency with jurisdiction over the project. Refer to MDOT Standard Plan R-28, latest revision.
- The Concrete Pavement shall not be exposed to vehicular traffic until the concrete has reached at least 75 % of the design flexural strength.



GENERAL NOTES:
1. Contractor shall perform the work in accordance with the requirements of the appropriate Local, County and State Agencies and all other Government and Regulatory Agencies with jurisdiction over the project. Contractor shall notify the appropriate Agencies in advance of each stage of work in accordance with each Agency's requirements.

2. Contractor shall comply with all permit, insurance, licensing and inspection requirements associated with the work. Prior to construction, Contractor and Owner/Developer shall determine who is responsible for obtaining each required permit. Contractor shall verify that the each required permit has been obtained prior to commencement of the stage of work associated with the required permit(s).

3. Contractor shall furnish liability insurance and property damage insurance to save harmless the Owner, Developer, Architect, Engineer, Surveyor and Government Agencies for any accident occurring during the construction period. Refer to the appropriate Local, County and State Agencies for additional requirements. Copies of insurance certifications shall be made available to the Owner/Developer.

4. Contractor shall conduct and perform work in a safe and competent manner. Contractor shall perform all necessary measures to provide for traffic and pedestrian safety from the start of work and through substantial completion. Contractor shall determine procedures and provide safety equipment such as traffic controls, warning devices, temporary pavement markings and signs as needed. Contractor shall comply with the safety standards of the State Department of Labor, the occupational health standards of the State Department of Health and safety regulations of the appropriate Local, County, State and Federal Agencies. Refer to the safety specifications of the appropriate Regulatory Agencies. The Contractor shall designate a qualified employee with complete job site authority over the work and safety precautions; said designated employee shall be on site at all times during the work.

5. Contractor shall coordinate scheduling of all work in the proper sequence, including work by Subcontractors. Additional costs due to improper planning by Contractor or work done out of sequence as determined by standard acceptable construction practices, shall be Contractor's responsibility.

6. Contractor shall contact the 811 Public Underground Utility Locating System or other appropriate local underground utility locating Agency, a minimum of three (3) working days prior to construction. Existing utility information on the project plans may be from information disclosed to this firm by the Utility Companies, Local, County or State Agencies, and/or various other sources. No guarantee is given as to the completeness or accuracy thereof. Prior to construction, locations and depths of all existing utilities (in possible conflict with the proposed improvements) shall be verified in the field.

7. Contractor shall coordinate scheduling a Pre-Construction Meeting with Engineer prior to commencement of work.

8. The Local Municipality, County and/or State in which the project is located may require an Engineer's Certification of construction of the proposed site improvements. Contractor shall verify the certification requirements with Engineer prior to commencement of work. Contractor shall coordinate construction staking, testing, documentation submittal and observation with the appropriate Agency, Surveyor and/or Engineer as required for Engineer's Certification and Government Agency Acceptance. All materials used and work done shall meet or exceed the requirements of certification and acceptance, the contract documents and the material specifications noted on the project plans. Any materials used or work done that does not meet said requirements, contract documents and/or specifications shall be replaced and/or redone at Contractor's expense. The Owner/Developer may wait for test results, certifications and/or Agency reviews prior to accepting work.

9. Engineer may provide subsurface soil evaluation results, if available, to Contractor upon request. Subsurface soil evaluation results, soils maps and/or any other documentation does NOT guarantee existing soil conditions or that sufficient, acceptable on-site granular material is available for use as structural fill, pipe bedding, pipe backfill, road subbase or use as any other granular material specified on the project plans. On-site granular material that meets or exceeds the material specifications noted on the project plans may be used as structural fill, pipe bedding, pipe backfill and/or road subbase material. On-site granular material shall be stockpiled and tested as acceptable to the appropriate Agency and/or Engineer prior to use.

10. During the performance of their work, Contractor shall be solely responsible for determining soil conditions and appropriate construction methods based on the actual field conditions. Contractor shall furnish, install and maintain sheeting, shoring, bracing and/or other tools and equipment and/or construction techniques as needed for the safety and protection of the workers, pedestrians and vehicular traffic and for protection of adjacent structures and site improvements.

11. Contractor shall install temporary and permanent soil erosion and sedimentation control devices at the appropriate stages of construction in accordance with the appropriate regulatory Agencies.

12. Structural fill shall be placed as specified on the project plans and within the 1 on 1 influence zone of all structures, paved areas and other areas subject to vehicular traffic. Structural fill shall be placed using the controlled density method (12" maximum lifts, compacted to 95% maximum unit weight, modified proctor). Fill material shall meet or exceed the specifications noted on the project plans or as directed by Engineer when not specified on the project plans.

13. All existing monuments, property corners, ground control and benchmarks shall be protected and preserved; and if disturbed by Contractor, shall be restored at Contractor's expense. Contractor shall notify Surveyor of any conflicts between existing monuments, property corners, ground control and/or benchmarks and the proposed site improvements.

14. Contractor shall notify Owner/Developer and Engineer immediately upon encountering any field conditions, which are inconsistent with the project plans and/or specifications.

15. When noted on the project plans for demolition and/or removal, Contractor shall remove existing structures, building and debris and recycle and/or dispose of in accordance with Local, County, State and Federal regulations.

16. Contractor shall remove excess construction materials and debris from site and perform restoration in accordance with the project plans and specifications. Disposing of excess materials and debris shall be performed in accordance with Local, County, State and Federal regulations.

17. Construction access to the site shall be located as acceptable to the Owner/Developer and to the appropriate Local, County and/or State Agency with jurisdiction over the road(s) providing access to the site. Construction access shall be maintained and cleaned in accordance with the appropriate Local, County and/or State Agencies and as directed by Owner/Developer and/or Engineer.

18. Contractor shall take necessary precautions to protect all site improvements from heavy equipment and construction procedures. Damage resulting from Contractor actions shall be repaired at Contractor's expense.

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BRIGHTON, MICHIGAN 48114

DESIGN: FAF	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: JHG						
CHECK: WMP						

BMH - PREMIER P.U.D.
PHASE 1

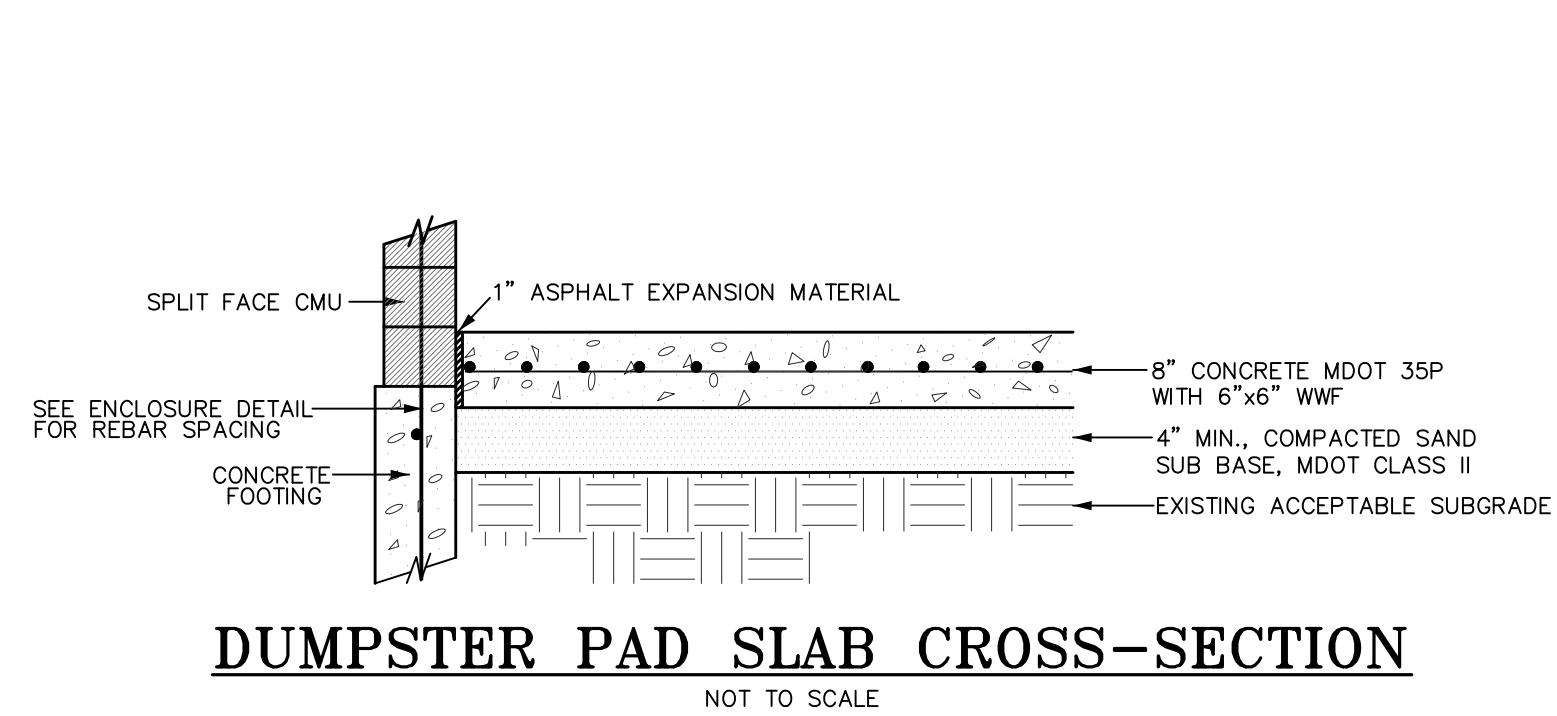
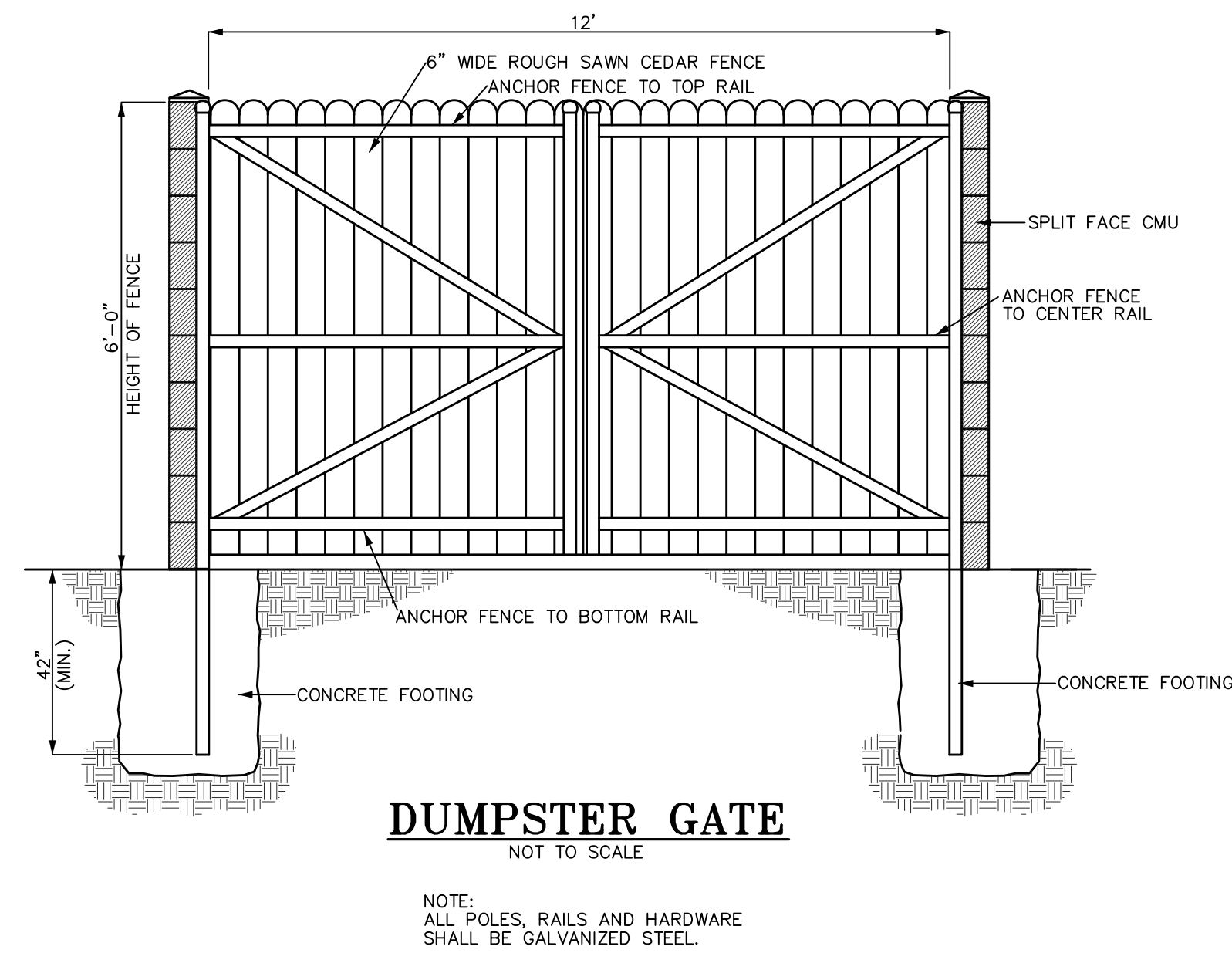
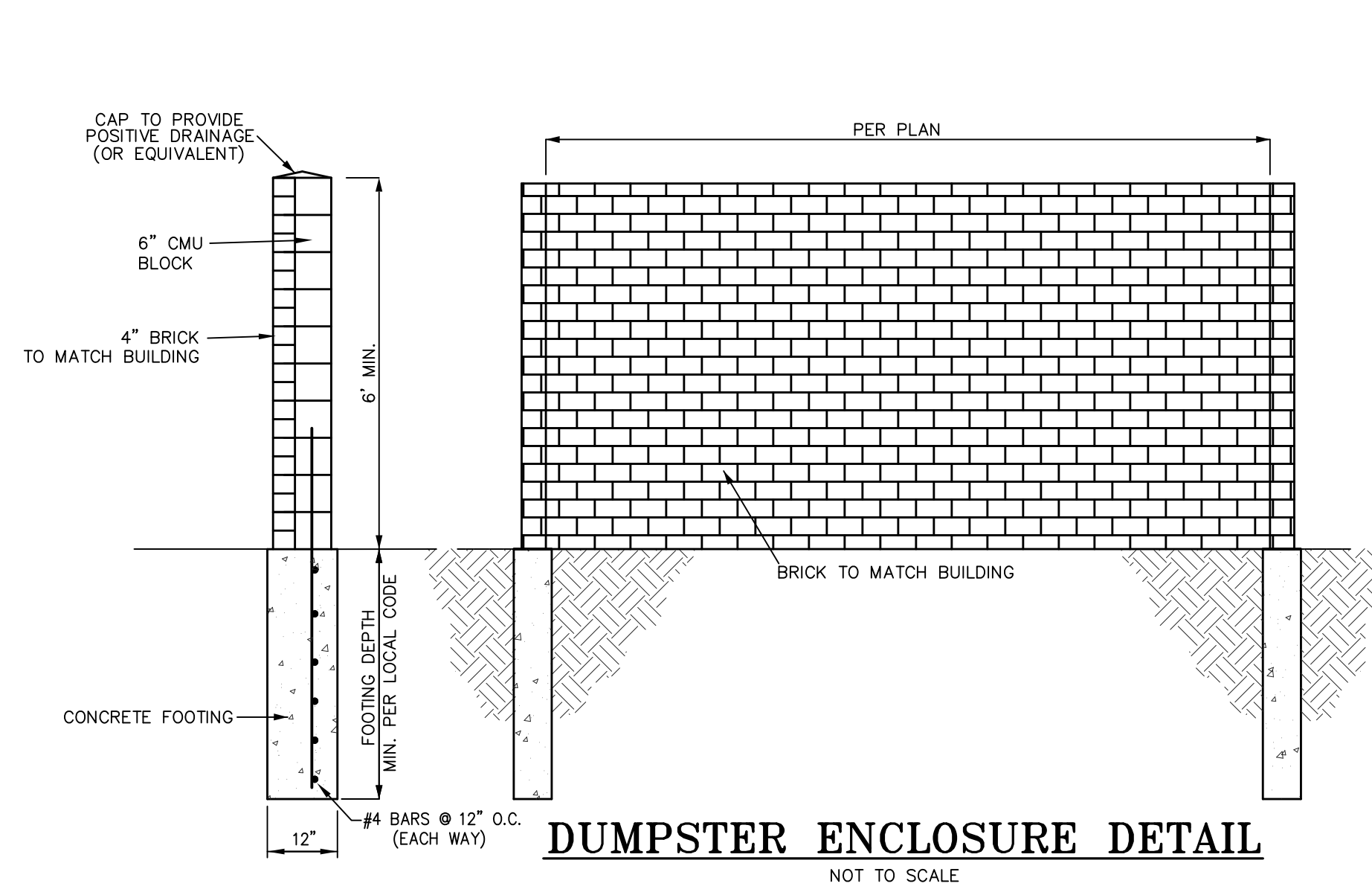
SITE PAVEMENT NOTES & DETAILS

CLIENT: PREMIER GENOA LLC 775 N. SECOND STREET BRIGHTON, MICHIGAN 48116	SCALE: NO SCALE PROJECT NO.: 183450 DWG NAME: 3450 DT ISSUED: AUG. 5, 2020
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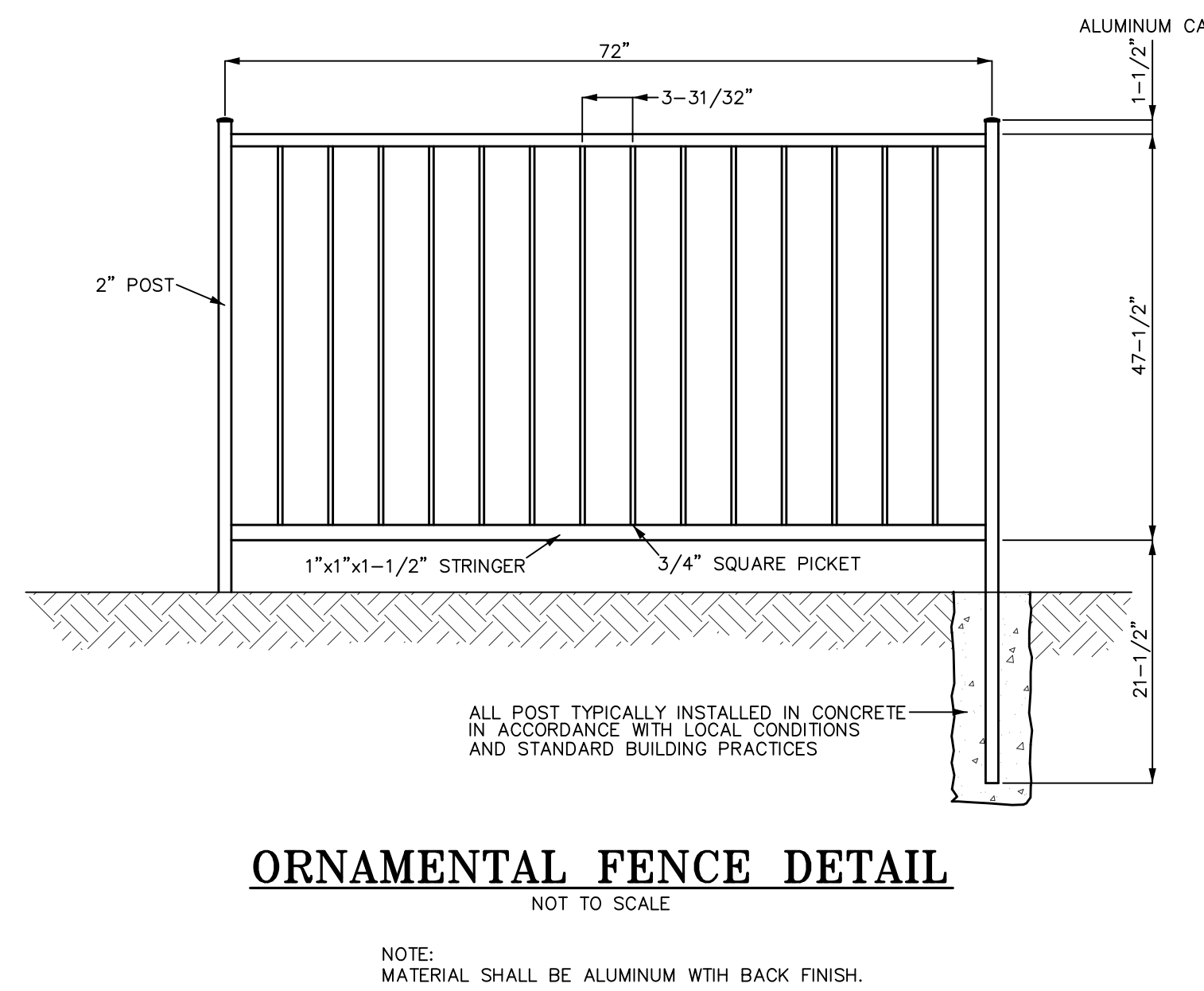
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SIGNAGE AND PAVEMENT MARKING NOTES:

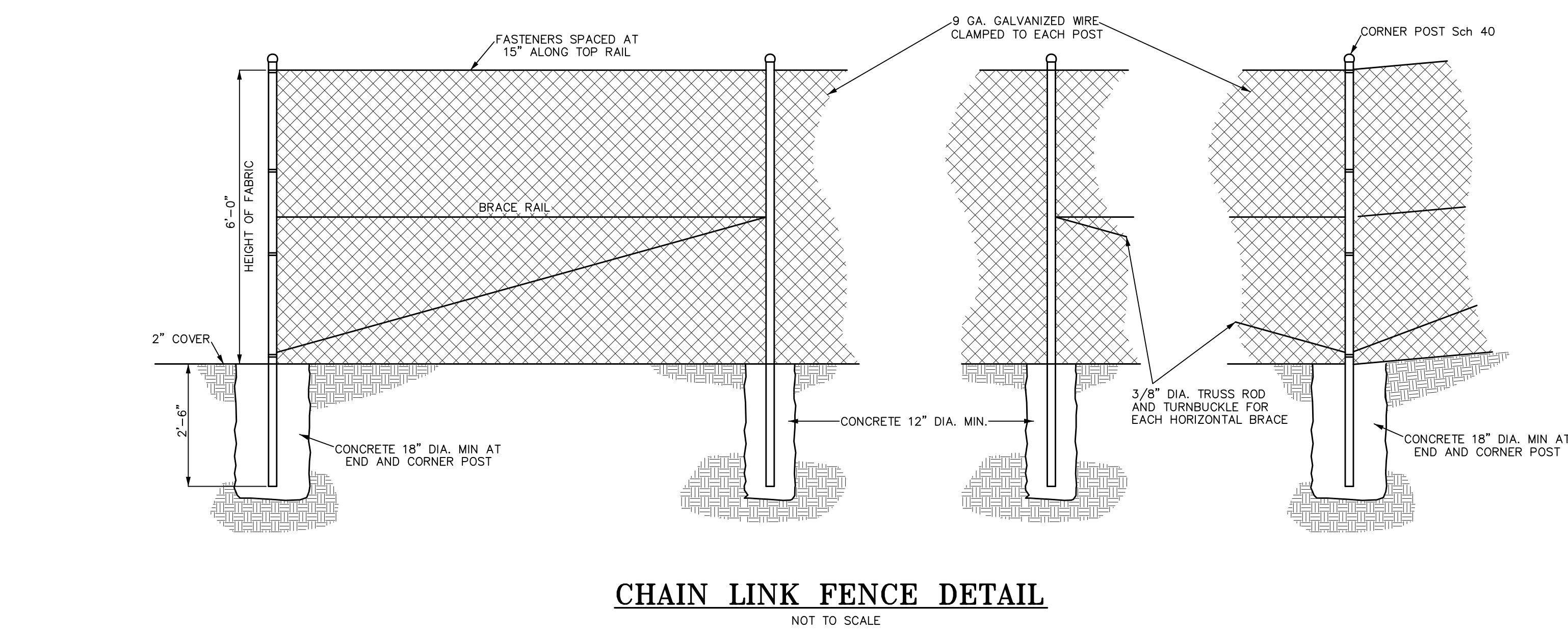
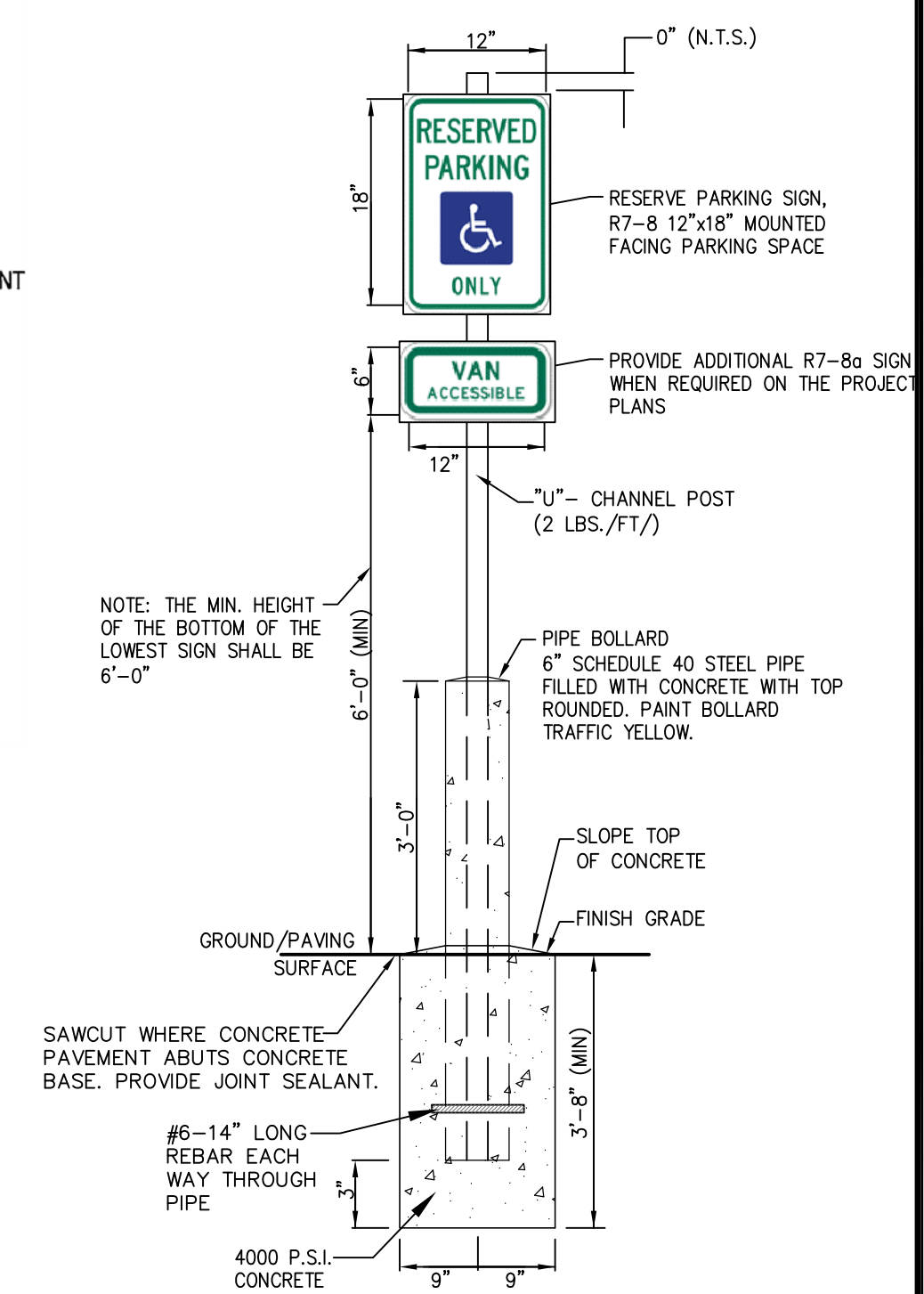
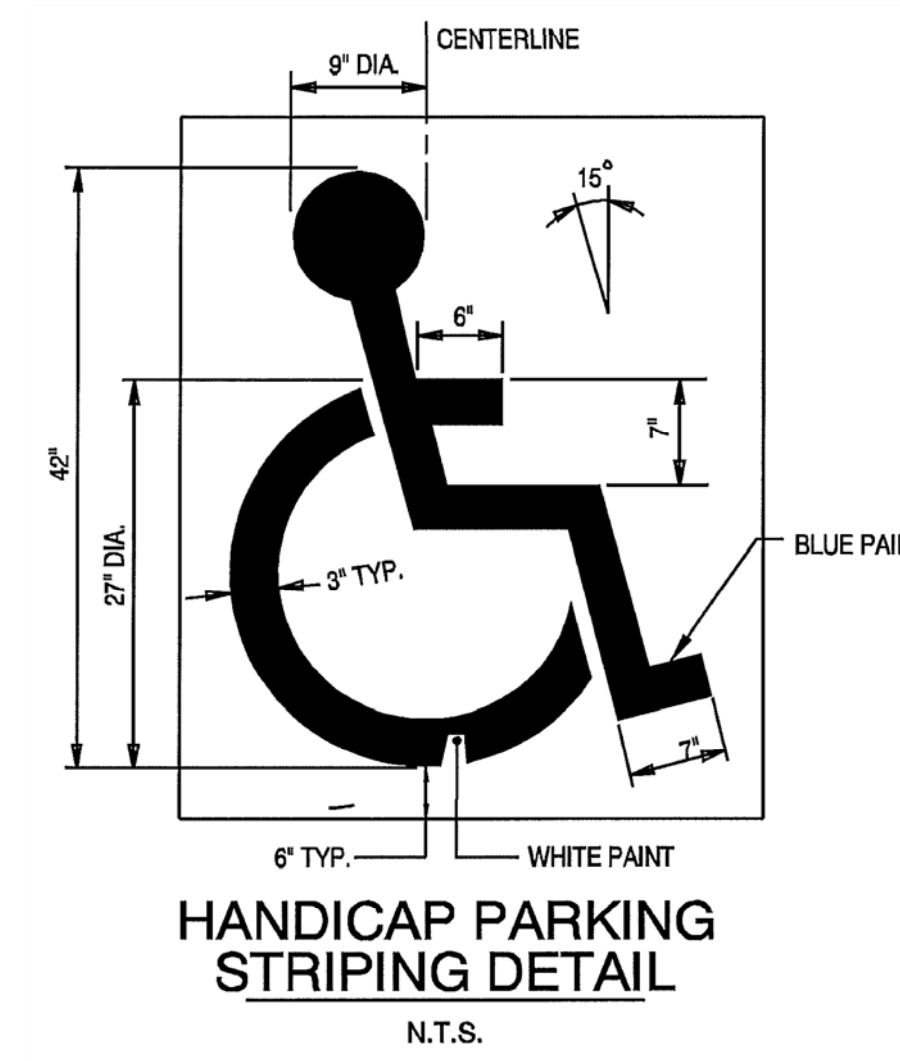
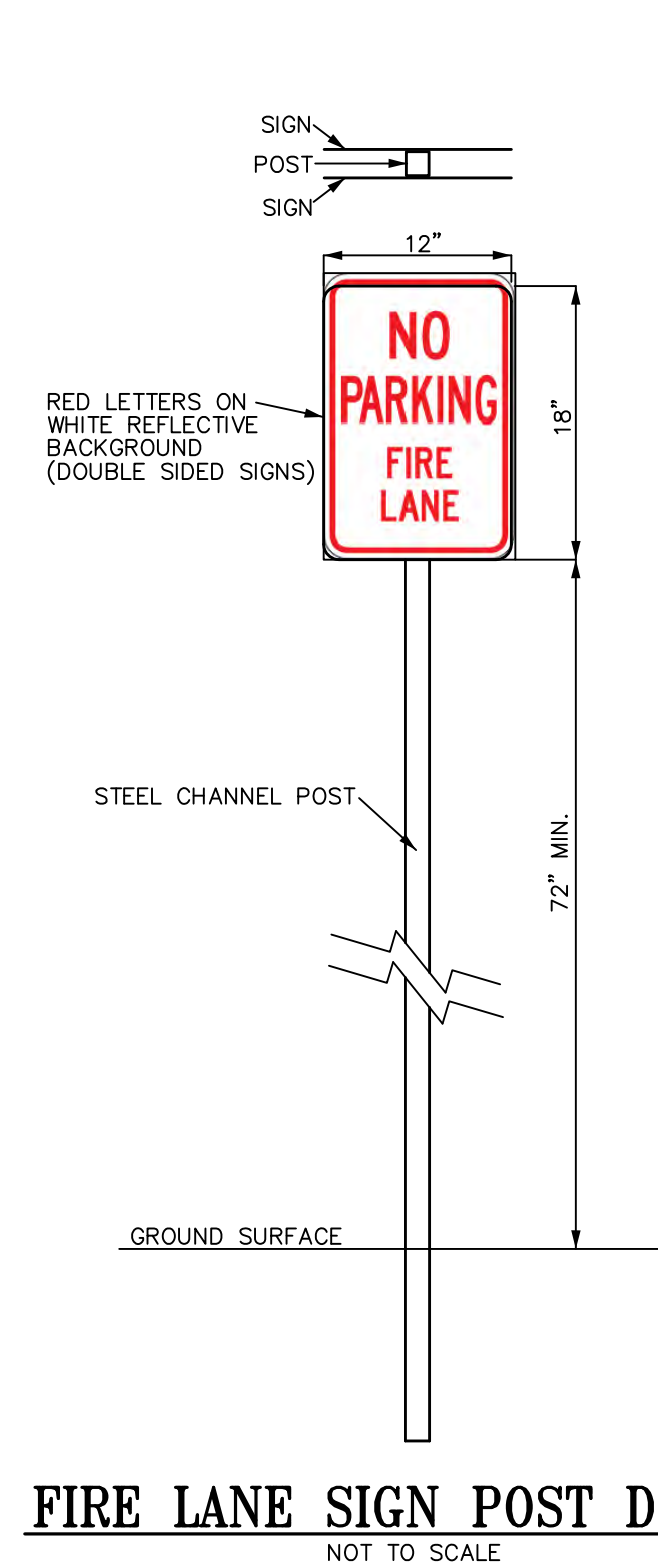
- Pavement markings shall be in accordance with the type, color, size and locations shown on the plans. If the information on the plans is not complete and the authority having jurisdiction does not have specific requirements, then use the following: Paint shall be supplied in accordance with AASHTO M 248 latest addition. Colors shall be as follows: (YELLOW - parking stalls, loading zones, parking islands, no parking zones and fire lanes) (WHITE - stop bars, pedestrian crossings, lane demarcations, directional arrows and lettering) (BLUE - handicap parking stalls and symbols). Stripe widths shall be as follows: (4" - parking spaces, driveway lanes, barrier free loading zones and no parking zones) (12" - crosswalks) (24" - stop bars).
- The pavement shall be clean and free of dirt, dust, moisture, oils and other foreign materials at time of marking application. Any old pavement markings shall be removed unless paints are compatible and overlay identically. The surface of the pavement prior to application shall be a minimum of 45 degrees F and rising unless the Manufacturer's recommendations are greater.
- The signage shall be in accordance with the type, color, size and locations shown on the plans in accordance with AASHTO M268. The signage shall be provided in accordance with the Local Municipality and the Michigan Manual of Uniform Traffic Devices latest edition.
- Posts, brackets and frames shall be steel per ASTM A-36, A-242, A-441, A-572, A588, Grade 50 and hot dip galvanized in accordance with ASTM A123. All cutting, drilling and/or other pole modifications shall be painted with galvanized paint. All mounting hardware shall be stainless steel.
- Sign post footings shall be a minimum of 3'-6" deep and 8" in diameter unless poor soils or frost conditions require greater depth and/or diameter. Sign posts shall be kept plumb, 6 inches off the bottom of footing excavation and centered as 3000-psi concrete is placed under and around the sign post. The overall sign and post system should be able to withstand 33 pounds per square foot. All signs located in paved areas or with less than 3 feet of clearance between the centerline of sign post and the back of curb and/or edge of pavement shall be installed in a pipe bollard. Pipe bollards shall be 6" diameter schedule 40 steel pipe. Pipe bollards shall be filled with concrete that is rounded at the top of the bollard. Bollards shall be painted traffic yellow. Increase the sign post footing diameter to 14" minimum for pipe bollards and embed the bollard into the concrete footing a minimum of 3 feet below proposed finish grade.
- Signs shall not be mounted on posts until after concrete has cured for a minimum of seven days or 3/4 strength is achieved.
- All barrier free striping and signage shall meet the Americans with Disabilities Act (ADA) requirements.
- All Fire Lane signs shall have a Red Border and Red Letters on White Background. All Fire Lane signs shall be Reflective. Fire lane striping and signage shall meet the requirements of the Local Building Inspector and Fire Department.
- "Mounting Height" shall be the minimum height of the bottom of the sign above finish grade. When signs are located downhill from the roadway, driveway and/or parking area, then the "Mounting Height" shall be the height of the bottom of the sign above the top of pavement finish grade at the nearest edge of pavement adjacent to the sign.
- All Traffic Control and Fire Lane signs shall be installed at 3 feet behind the back of curb (and/or edge of pavement) to the centerline of the sign post unless noted otherwise on the project plans.
- The Contractor(s) and/or Subcontractor(s) responsible for installation of the sign posts shall contact the 811 Public Underground Utility Locating System a minimum of three (3) working days prior to installation of the signposts. Install the sign posts in the locations specified on the project plans. When underground utilities conflict with the proposed sign post locations, field adjust the sign locations the minimum amount necessary to safely clear the underground utilities. Maintain a minimum of 2 feet of clearance between the edge of sign and the back of curb and/or edge of sidewalk.



- PAVEMENT NOTES:**
- UNSUITABLE SOILS, SUCH AS MUCK, PEAT, TOPSOIL, MARL, SILT OR OTHER UNSTABLE MATERIALS, SHALL BE UNDERCUT AND REPLACED WITH COMPACTED SAND SUBGRADE FILL WHERE INCIDENTAL TO ROUGH GRADING.
 - AREAS OF SUBGRADE FILL SHALL BE CONSTRUCTED USING 12" THICK LIFTS OF COMPACTED SAND, MDOT CLASS III OR EQUIVALENT ON-SITE MATERIAL; WHEN INSIDE ROAD INFLUENCE ZONE.



NOTE: MATERIAL SHALL BE ALUMINUM WITH BACK FINISH.



NOTE: ALL FENCING AND HARDWARE SHALL BE GALVANIZED STEEL.

SIGN SCHEDULE					
SIGN	KEY	SIZE (W x H)	TYPE OR MOUNT	MOUNTING HEIGHT	QUANTITY
	R7-8	12' x 18'	POST MOUNTED	7'-6"	5
			BUILDING MOUNTED	7'-6"	0
	R7-8a	12' x 6'	POST MOUNTED	7'-0"	4
	FIRE LANE	12' x 18'	POST MOUNTED	6'-0"	6

DESIGN: FAF	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
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CHECK: WMP						

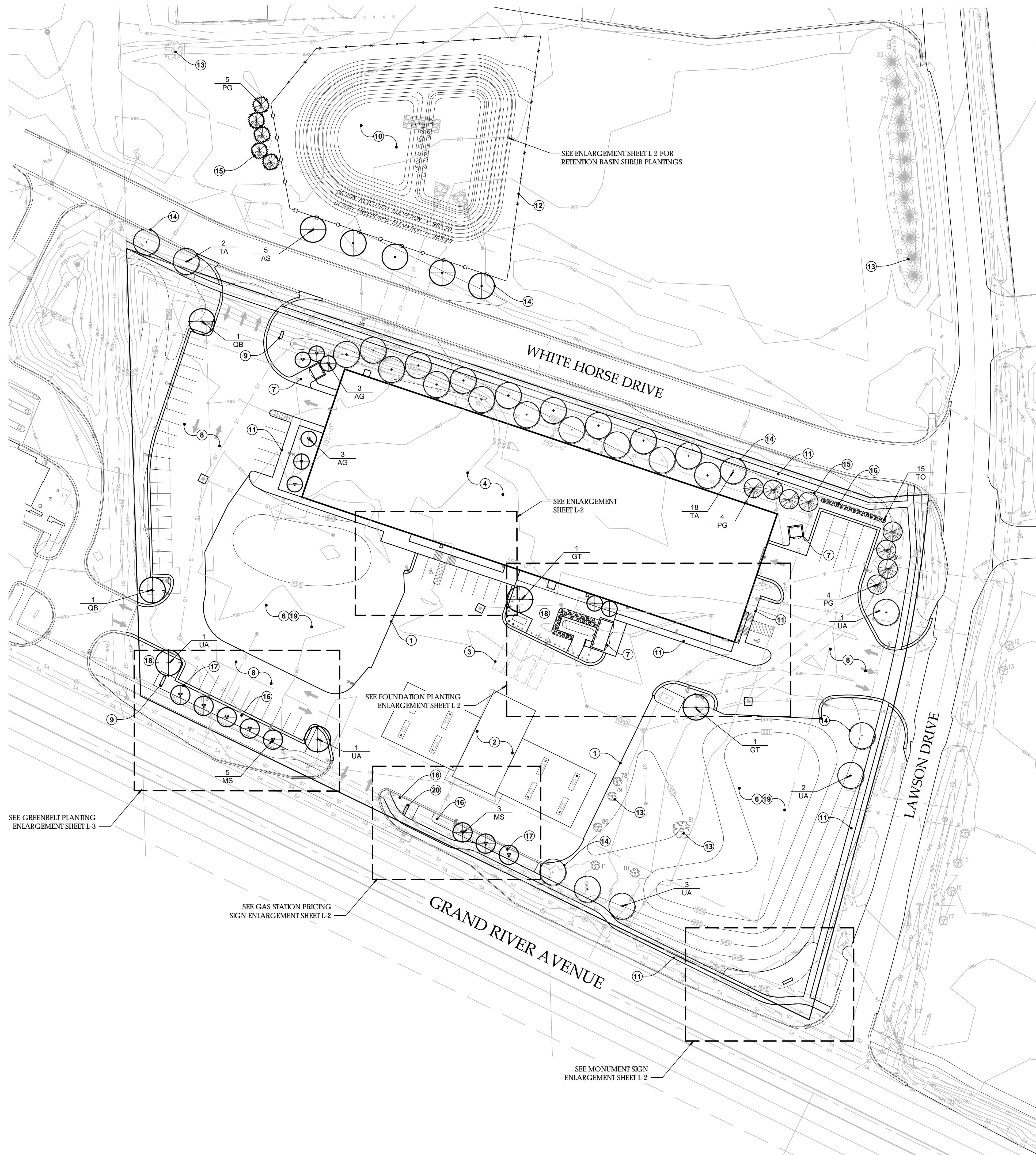
BMH - PREMIER P.U.D.
PHASE 1

SIGNAGE &
PAVEMENT MARKING
NOTES & DETAILS

CLIENT:
PREMIER GENOA LLC
775 N. SECOND STREET
WEBBERVILLE, MICHIGAN 48892
(517) 521-3907

SCALE: AS NOTED
PROJECT No.: 9183450
DWG NAME: 3450 DT
ISSUED: AUG. 5, 2020

DT2



Construction Notes:

It shall be the Contractor's responsibility to verify all existing survey information including the utility systems before any demolition or construction work occurs. Any discrepancies with the survey information shall be reported to the architect and owner's representative immediately.

Contractor shall be responsible for making himself familiar with all underground utilities, pipes and structures. Contractor shall take sole responsibility for cost incurred due to damage and replacement of said utilities.

Contractor shall not willfully proceed with construction as designed when it is obvious that unknown obstructions and / or grade differences exist that may not have been known during the design. Such conditions shall be immediately brought to the attention of the Owner's Representative. The contractor shall assume full responsibility for all necessary revisions due to lack of such notification.

Contractor shall be responsible for any coordination with subcontractors as required to accomplish operations.

Contractor shall ensure all utilities, equipment and sleeving have been placed, tested and approved prior to placement of finished surface.

Contractor is responsible for replacement of any existing materials that are damaged during construction.

See specifications for construction requirements, materials, and execution.

All property lines and lot lines shall be verified prior to commencing work.

Contractor shall submit all samples per specifications. All samples shall be approved by the architect or owner's representative prior to construction.

Dimensional flexibility shall be within plant beds only. Do not scale drawings, refer to written dimensions only.

Contractor shall coordinate all site layout with the Owner's Representative and report any dimensional discrepancies prior to construction.

GENERAL LANDSCAPE NOTES

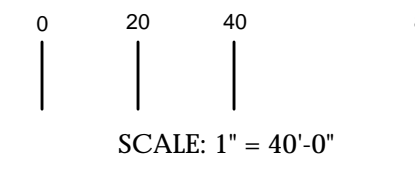
1. PLANTS SHALL BE FULL, WELL-BRANCHED, AND IN HEALTHY VIGOROUS GROWING CONDITION.
2. PLANTS SHALL BE WATERED BEFORE AND AFTER PLANTING IS COMPLETE.
3. ALL TREES MUST BE STAKED, FERTILIZED AND MULCHED AND SHALL BE GUARANTEED TO EXHIBIT A NORMAL GROWTH CYCLE FOR AT LEAST ONE (1) YEAR FOLLOWING PLANTING.
4. ALL MATERIAL SHALL CONFORM TO THE GUIDELINES ESTABLISHED IN THE MOST RECENT EDITION OF THE 'AMERICAN STANDARDS FOR NURSERY STOCK'.
5. CONTRACTOR WILL SUPPLY FINISHED GRADE AND EXCAVATE AS NECESSARY TO SUPPLY PLANT MIX DEPTH IN ALL PLANTING BEDS AS INDICATED IN PLANT DETAILS. PROVIDE CLEAN BACKFILL SOIL USING MATERIAL STOCKPILED ON-SITE. SOIL SHALL BE SCREENED AND FREE OF DEBRIS, FOREIGN MATERIAL, AND STONE.
6. SLOW-RELEASE FERTILIZER SHALL BE ADDED TO THE PLANT PITS BEFORE BEING BACKFILLED. APPLICATION SHALL BE AT THE MANUFACTURERS RECOMMENDED RATES.
7. AMENDED PLANT MIX (PREPARED TOPSOIL) SHALL CONSIST OF 1/3 SCREENED TOPSOIL, 1/3 SAND, AND 1/3 COMPOST, MIXED WELL AND SPREAD TO A DEPTH AS INDICATED IN PLANTING DETAILS.
8. ALL PLANTINGS SHALL BE MULCHED WITH DOUBLE SHREDDED HARDWOOD BARK. SPREAD TO A DEPTH OF 3" FOR TREES AND SHRUBS, AND 2" ON PERENNIALS, AND GROUNDCOVER PLANTINGS. MULCH SHALL BE FREE FROM DEBRIS AND FOREIGN MATERIAL, AND PIECES OF INCONSISTENT SIZE.
9. NO SUBSTITUTIONS OR CHANGES OF LOCATION, OR PLANT TYPE SHALL BE MADE WITHOUT THE APPROVAL OF THE LANDSCAPE ARCHITECT OR OWNERS REPRESENTATIVE.
10. ALL TREES ARE TO HAVE CLAY-LOAM OR CLAY BALLS. TREES WITH SAND BALLS WILL NOT BE ACCEPTED.
11. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL PLANT MATERIAL IN A VERTICAL CONDITION THROUGHOUT THE GUARANTEED PERIOD.
12. THE LANDSCAPE ARCHITECT OR OWNERS REPRESENTATIVE SHALL HAVE THE RIGHT TO REJECT ANY WORK OR MATERIAL THAT DOES NOT MEET THE REQUIREMENTS OF THE PLANS AND/OR SPECIFICATIONS.
13. THE LANDSCAPE CONTRACTOR SHALL SEED AND MULCH OR SOD (AS INDICATED ON PLANS) ALL AREAS DESIGNATED AS SUCH ON THE PLANS, THROUGHOUT THE CONTRACT LIMITS. FURTHER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING AREAS DISTURBED DURING CONSTRUCTION, NOT IN THE CONTRACT LIMITS, TO EQUAL OR GREATER CONDITION.
14. ALL LANDSCAPE AREAS SHALL HAVE PROPER DRAINAGE THAT PREVENTS EXCESSIVE WATER FROM PONDING ON LAWN AREAS OR AROUND TREES AND SHRUBS.
15. ALL TREES ARE TO BE APPROVED BY THE OWNER'S REPRESENTATIVE AND/OR LANDSCAPE ARCHITECT PRIOR TO DELIVERY TO THE SITE. ANY TREES DELIVERED TO THE SITE NOT PREVIOUSLY APPROVED MAY BE REJECTED AND ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

Note Key:

- ① LIMITS OF EXISTING PARKING LOT
- ② EXISTING GAS STATION
- ③ EXISTING UNDERGROUND TANKS
- ④ STORAGE FACILITY, SEE ARCHITECTURE
- ⑤ FUTURE BUILD-OUT
- ⑦ DUMPSTER ENCLOSURE, SEE CIVIL ENGINEERING
- ⑧ PROPOSED PARKING LOT, SEE CIVIL ENGINEERING DRAWINGS
- ⑨ MONUMENT SIGN, SEE ARCHITECTURAL DRAWINGS
- ⑩ STORM WATER BASIN, SEE CIVIL ENGINEERING DRAWINGS
- ⑪ CONCRETE SIDEWALK, TYPICAL
- ⑫ FENCE WITH GATE, SEE CIVIL ENGINEERING DRAWINGS
- ⑬ EXISTING TREES, TO REMAIN
- ⑭ DECIDUOUS CANOPY TREE, SEE SHEET L-3 FOR PLANT SCHEDULE AND TYPICAL DETAIL, SEE SPECS
- ⑮ EVERGREEN TREE, SEE SHEET L-3 FOR PLANT SCHEDULE AND TYPICAL DETAIL, SEE SPECS
- ⑯ SHRUB AND PERENNIAL PLANTING, SEE SHEET L-3 FOR PLANT SCHEDULE AND TYPICAL DETAIL, SEE SPECS
- ⑰ ORNAMENTAL FLOWERING TREE, SEE SHEET L-3 FOR PLANT SCHEDULE AND TYPICAL DETAIL, SEE SPECS
- ⑱ SODDED LAWN, SEE SPECS
- ⑲ SEEDED LAWN, SEE SPECS
- ⑳ EXISTING GAS STATION PRICING SIGN, PROTECT AS REQUIRED DURING CONSTRUCTION

SURVEY PROVIDED BY:

DESINE, Inc.
2183 Pless Drive
Brighton, MI 48114
810.227.9533
DESINE JOB NUMBER: 183450
DATED: July 22, 2020



Issued For:	Revision:
12.20.2018	Owner Review
01.03.2019	Revision
01.08.2019	Pre-submittal Review
12.27.2019	Conceptual PUD Submittal
02.14.2020	Revision
06.08.2020	PUD Submittal
08.07.2020	Phase I Permits/Construction

Project:
BMH – Premier PUD
 4525 East Grand River Ave.
 Genoa Township, MI

Project Sponsor:
Premier Genoa, LLC
 775 N. Second Street
 Brighton, MI 48116

Sheet Name:
Preliminary Landscape Plan

Seal:



Drawn: JG
 Checked: JG
 Date: 12.2018
 Scale: 1" = 40'-0"

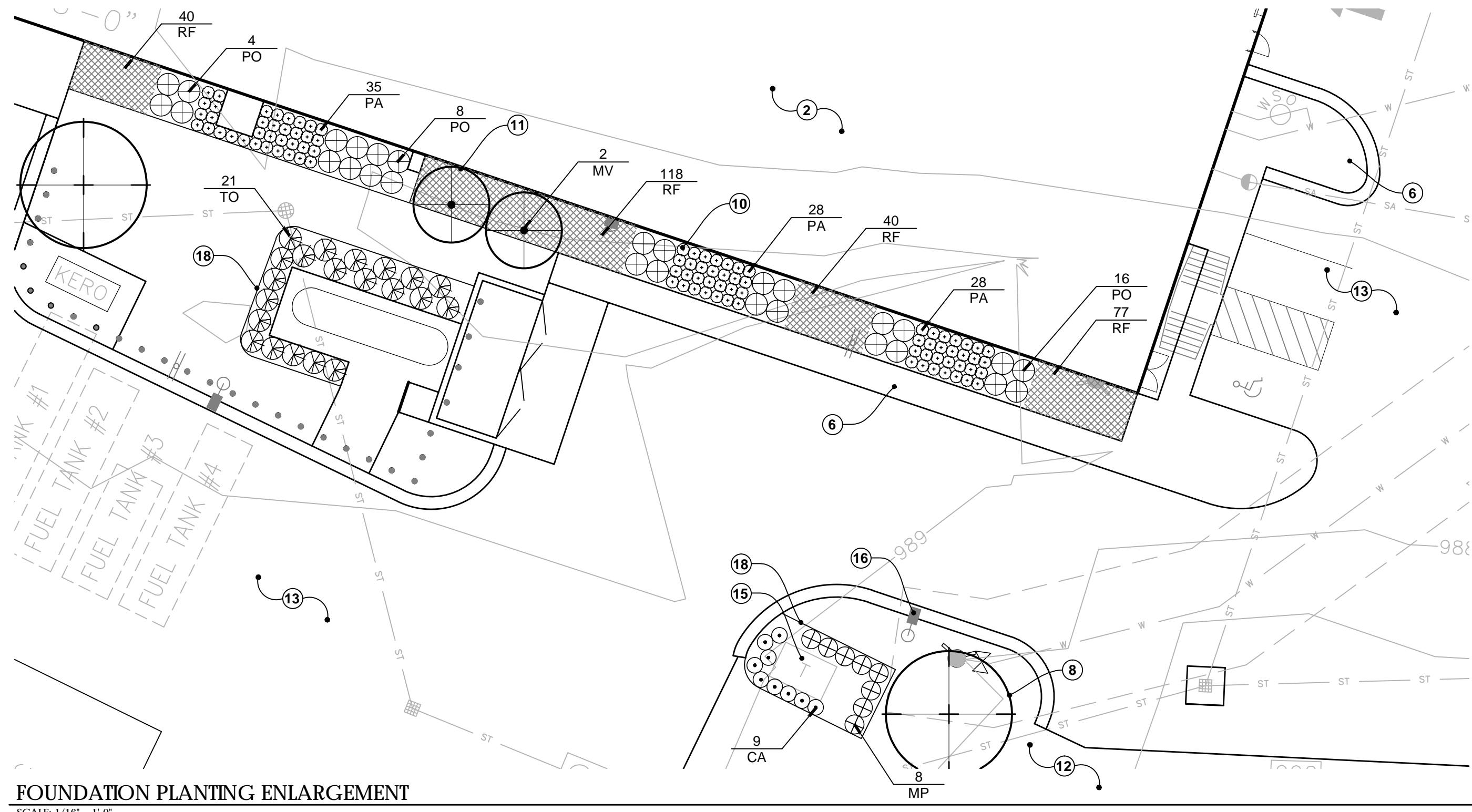
Project Number:
 20.033

Sheet Number:
 L-1



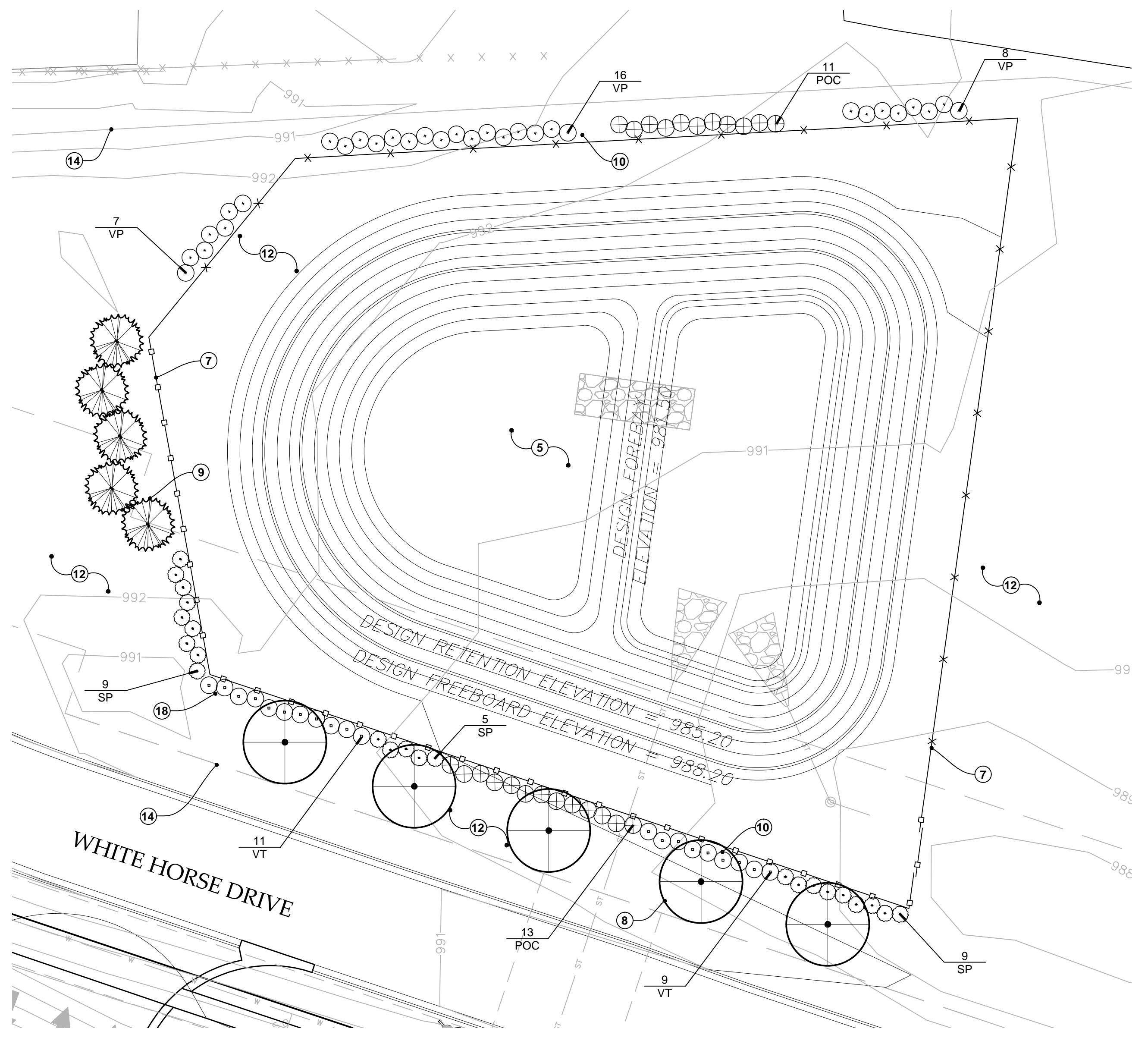
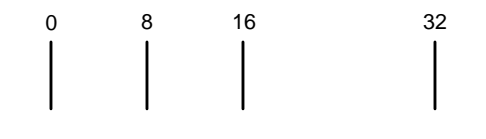


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Date: 12.2018
Scale: AS NOTED



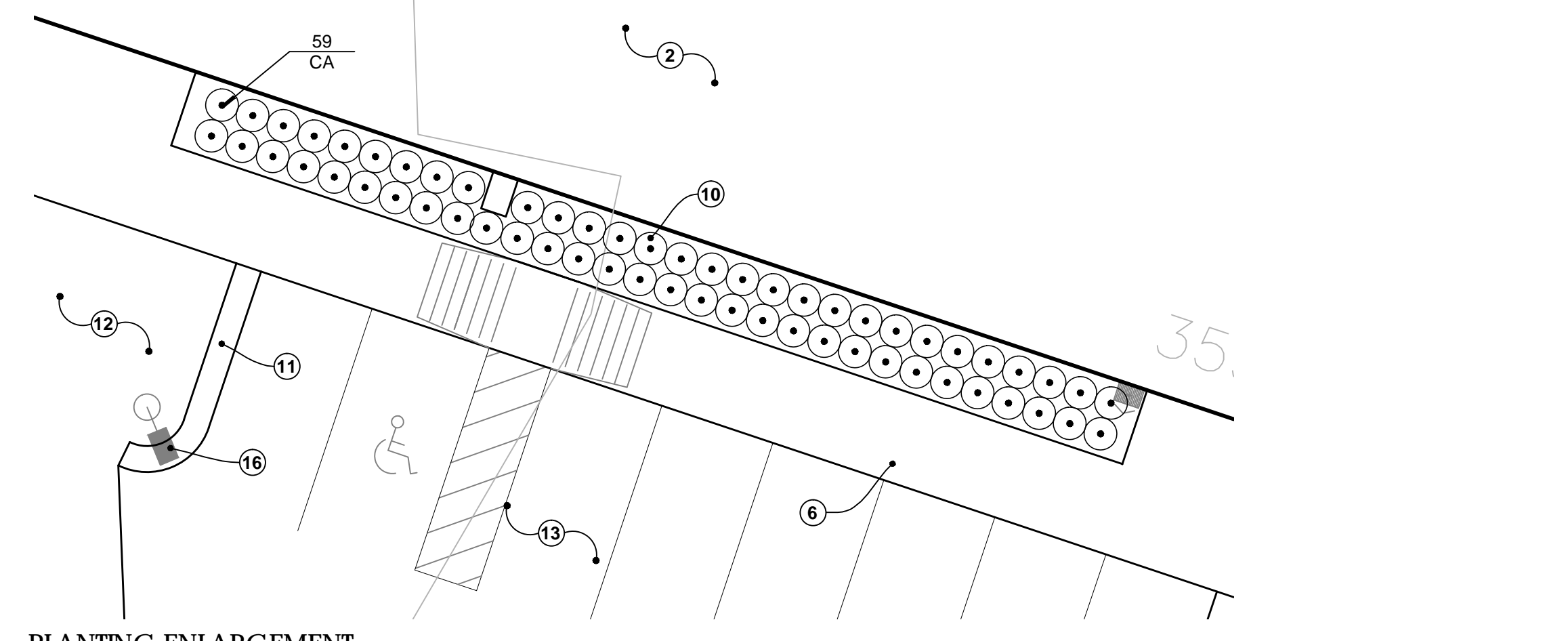
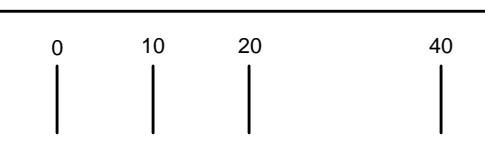
FOUNDATION PLANTING ENLARGEMENT

SCALE: 1/16" = 1'-0"



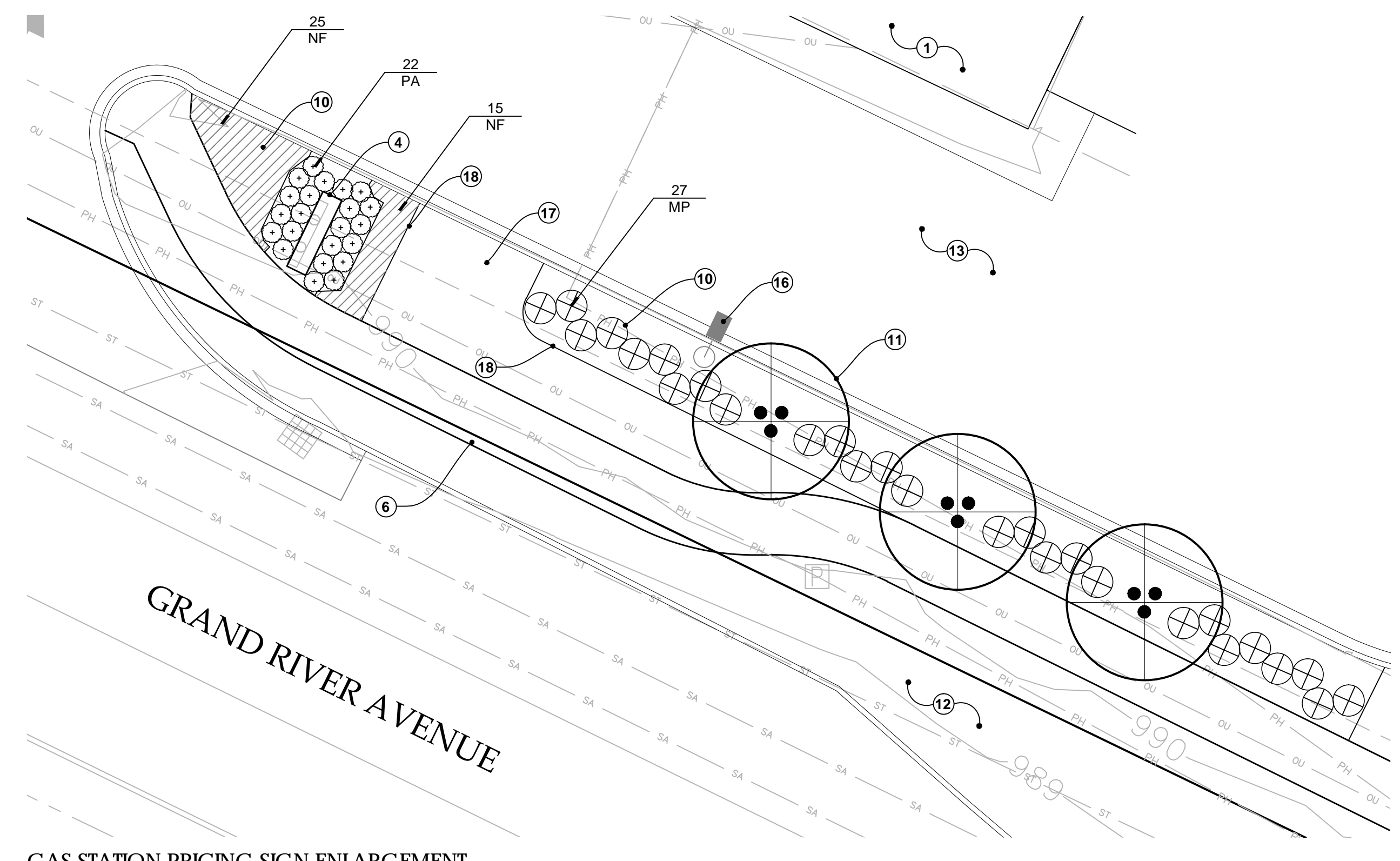
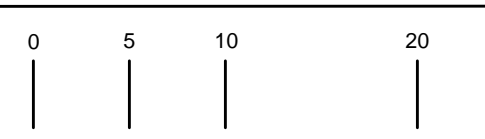
RETENTION BASIN ENLARGEMENT

SCALE: 1" = 20'-0"



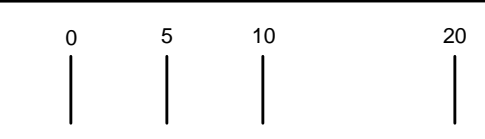
PLANTING ENLARGEMENT

SCALE: 1" = 10'-0"



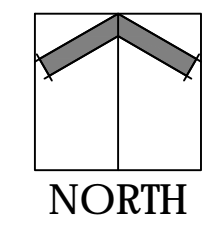
GAS STATION PRICING SIGN ENLARGEMENT

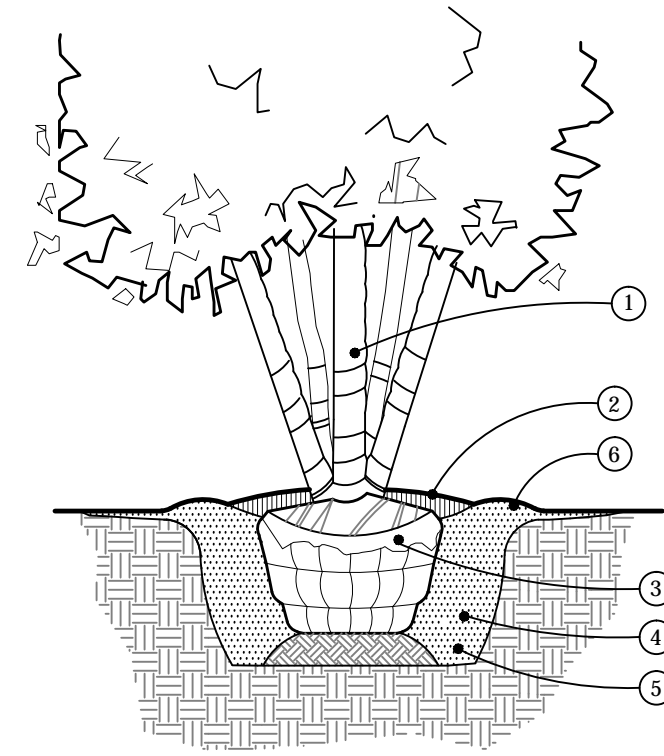
SCALE: 1" = 10'-0"



Note Key:

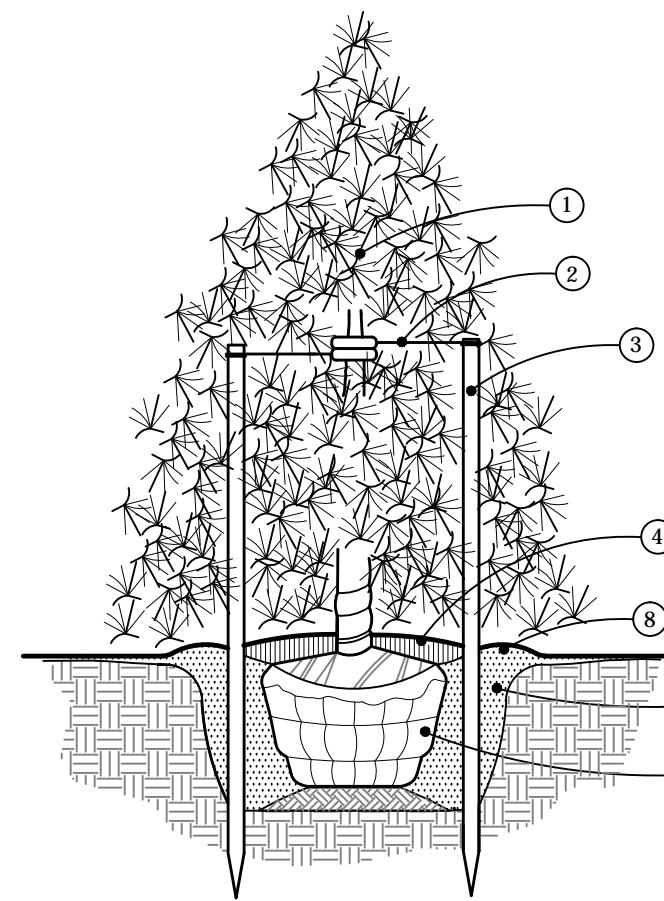
- 1 EXISTING GAS STATION
- 2 STORAGE FACILITY. SEE ARCHITECTURE
- 3 MONUMENT SIGN. SEE ARCHITECTURE
- 4 EXISTING GAS STATION PRICING SIGN
- 5 RETENTION BASIN. SEE CIVIL ENGINEERING DRAWINGS
- 6 CONCRETE SIDEWALK, TYPICAL. SEE CIVIL ENGINEERING DRAWINGS
- 7 FENCE WITH GATE. SEE CIVIL ENGINEERING DRAWINGS
- 8 DECIDUOUS CANOPY TREE. SEE SHEET L-1 FOR QUANTITY AND SPECIES. SEE SHEET L-3 FOR PLANT SCHEDULE AND TYPICAL DETAIL. SEE SPECS
- 9 EVERGREEN TREE. SEE SHEET L-1 FOR QUANTITY AND SPECIES. SEE SHEET L-3 FOR PLANT SCHEDULE AND TYPICAL DETAIL. SEE SPECS
- 10 SHRUB AND PERENNIAL PLANTING. SEE SHEET L-3 FOR PLANT SCHEDULE AND TYPICAL DETAIL. SEE SPECS
- 11 ORNAMENTAL FLOWERING TREE. SEE SHEET L-1 FOR QUANTITY AND SPECIES. SEE SHEET L-3 FOR PLANT SCHEDULE AND TYPICAL DETAIL. SEE SPECS
- 12 SEEDED LAWN. OVER MINIMUM 3" DEPTH TOPSOIL TO LIMITS OF DISTURBANCE
- 13 ASPHALT PARKING LOT
- 14 PROPOSED RETENTION BASIN EASEMENT. SEE SHEET L-1 FOR EXTENTS. SEE CIVIL ENGINEERING DRAWINGS
- 15 TRANSFORMER PAD
- 16 PROPOSED LIGHT POLE. SEE LIGHTING PLAN
- 17 SODDED LAWN. OVER MINIMUM 3" DEPTH TOPSOIL TO LIMITS OF DISTURBANCE
- 18 SHOVEL CUT EDGE BETWEEN ALL LAWN AND LANDSCAPE BEDS, TYPICAL





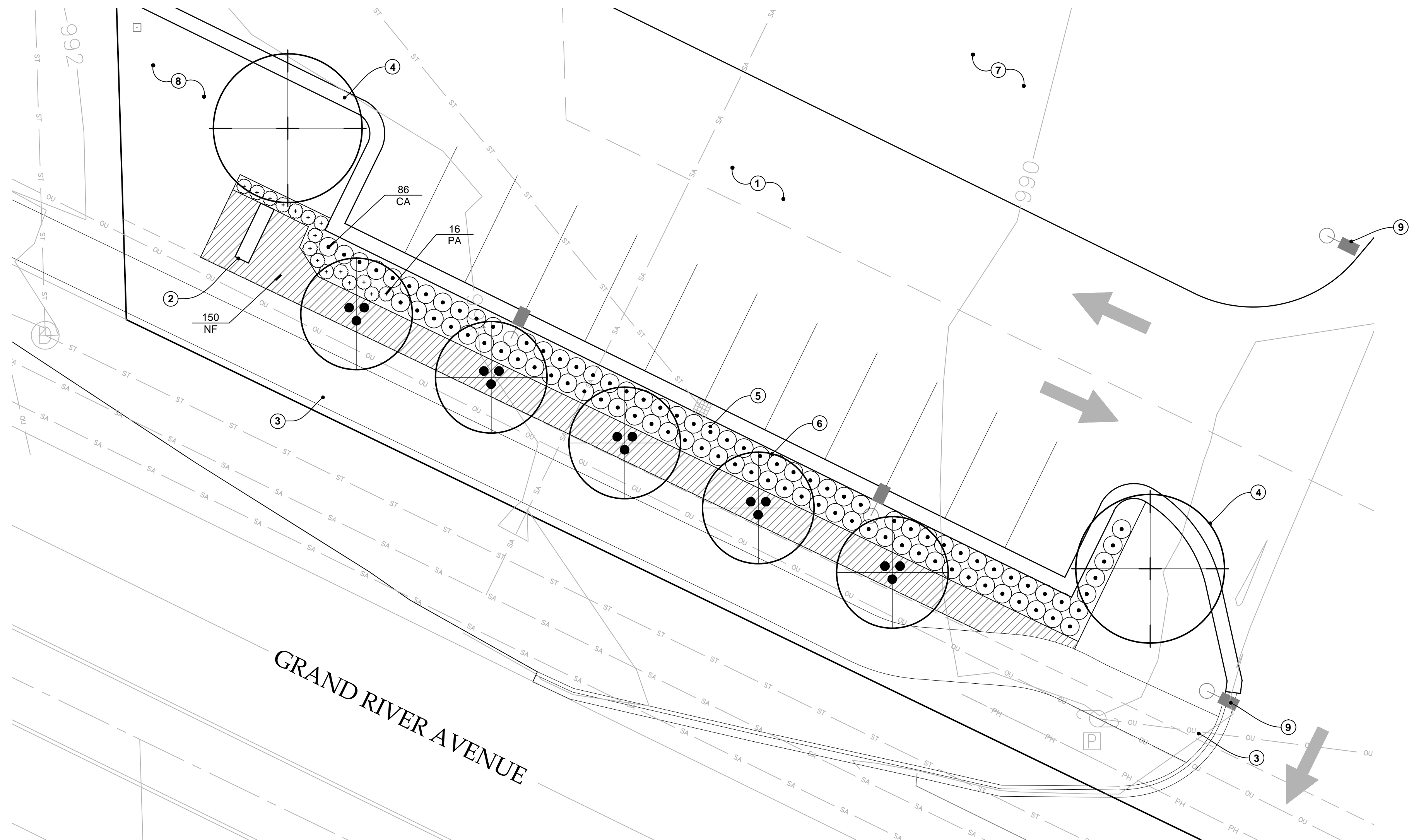
- NOTES:**
1. CONTRACTOR TO VERIFY PERCOLATION OF PLANTING PIT PRIOR TO INSTALLATION
2. SET TOP OF ROOTBALL 3" ABOVE FINISH GRADE
- REMOVE ALL TAGS, STRINGS, PLASTICS, AND ANY OTHER MATERIALS WHICH ARE UNSIGHTLY OR COULD CAUSE GIRDLING.
 - COVER PLANTING W/ 3" DOUBLE SHREDDED HARDWOOD BARK MULCH. MINIMUM 6" DIA. LEAVE 3" CIRCLE OF BARE SOIL AROUND BASE OF THE STEMS.
 - REMOVE ALL NON-BIODEGRADABLE MATERIALS FROM THE ROOTBALL. FOLD DOWN ALL BURLAP AND REMOVE WIRE BASKET FROM THE TOP 1/3 OF THE ROOTBALL.
 - PLANT MIX. SEE GENERAL LANDSCAPE NOTES SHEET L-3 AND SPECIFICATIONS
 - TREE PIT TO BE THREE TIMES WIDTH OF ROOTBALL
 - 4" TOPSOIL SAUCER

5 MULTISTEM TREE PLANTING
NOT TO SCALE
L-1



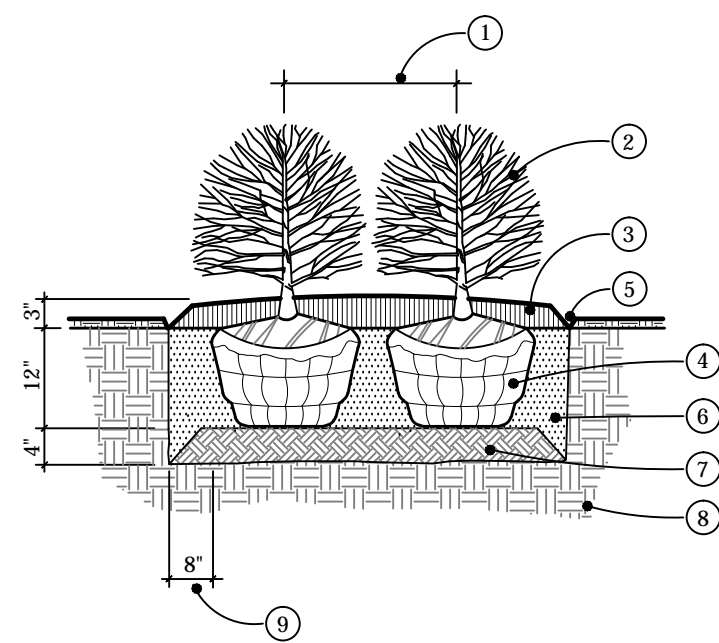
- NOTES:**
1. STAKE EVERGREENS UNDER 12' HEIGHT
2. GUY EVERGREENS 12' HEIGHT AND OVER
3. NEVER CUT OR PRUNE CENTRAL LEADER
4. SET STAKES VERTICAL AND EVENLY SPACED
5. PRUNE ONLY TO REMOVE DEAD OR BROKEN BRANCHES
- REMOVE ALL TAGS, STRINGS, PLASTICS, AND ANY OTHER MATERIALS WHICH ARE UNSIGHTLY OR COULD CAUSE GIRDLING.
 - STAKE TREES WITH 2-3" WIDE BELT-LIKE FABRIC STRAPS ONLY. ARBOR TIE OR APPROVED EQUAL. (CONNECT FROM TREE TO STAKE OPPOSITE FROM EACH OTHER, AND ALLOW FOR SOME 'FLEXING') DO NOT USE WIRE OR ROPE THROUGH A HOSE. REMOVE AFTER ONE YEAR.
 - (3) 2"x2" HARDWOOD STAKES OR EQUIVALENT DRIVEN 6-8" OUTSIDE OF ROOTBALL. REMOVE AFTER ONE YEAR.
 - COVER PLANTING W/ 3" SHREDDED HARDWOOD BARK MULCH. MINIMUM 6" DIAMETER. CONNECT EVERGREEN PLANTINGS WHERE POSSIBLE
 - REMOVE ALL NON-BIODEGRADABLE MATERIALS FROM THE ROOTBALL. FOLD DOWN ALL BURLAP AND REMOVE WIRE BASKET FROM THE TOP 1/3 OF THE ROOTBALL.
 - PLANT MIX. SEE GENERAL LANDSCAPE NOTES SHEET L-3 AND SPECIFICATIONS
 - TREE PIT TO BE 3 TIMES WIDTH OF ROOTBALL
 - 4" TOPSOIL SAUCER

4 EVERGREEN TREE PLANTING
NOT TO SCALE
L-1



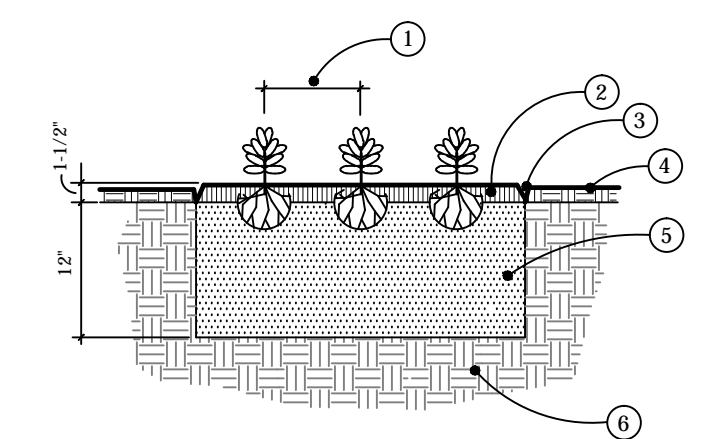
GREENBELT PLANTING ENLARGEMENT
SCALE 1" = 10'-0"

- NOTES:**
1. CONTRACTOR TO VERIFY PERCOLATION OF PLANTING PIT PRIOR TO INSTALLATION
2. SET TOP OF ROOTBALL 3" ABOVE FINISH GRADE



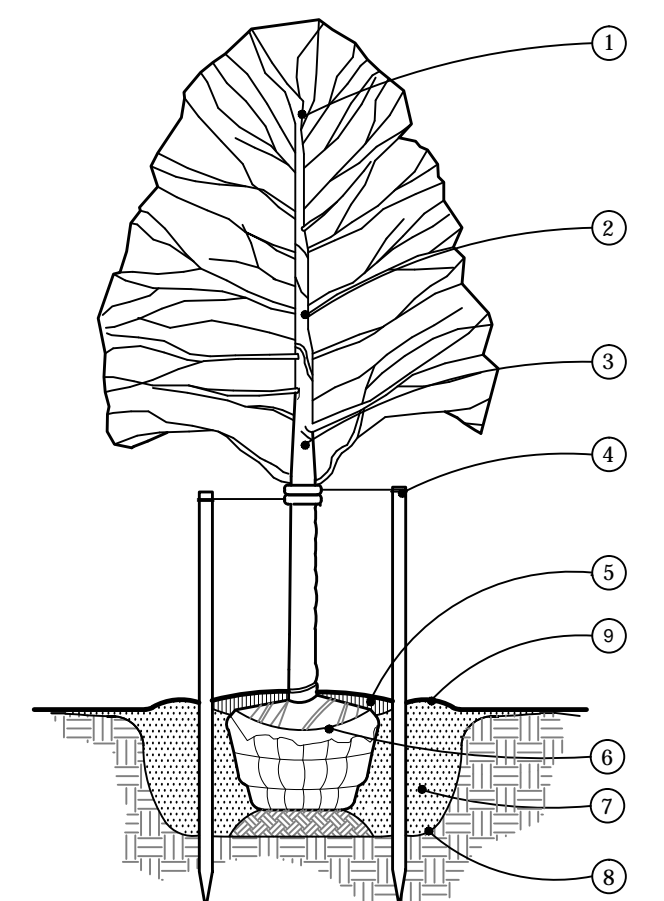
- SEE PLAN FOR SPACING
- SHRUBS, SEE PLANT SCHEDULE
- 3" DEPTH DOUBLE SHREDDED HARDWOOD MULCH, TYPICAL
- REMOVE ALL NON-BIODEGRADABLE TWINE FROM ENTIRE ROOTBALL. REMOVE BURLAP FROM TOP 1/2 OF ROOTBALL
- SHOVEL CUT OR METAL EDGE. SEE PLAN
- EXCAVATE EXISTING SOIL TO 12" DEPTH. REPLACE WITH PLANT MIX. SEE GENERAL LANDSCAPE NOTES SHEET L-3 AND SPECIFICATIONS
- SCARIFY TO 4" DEPTH AND RECOMPACT
- UNDISTURBED SUBGRADE
- MINIMUM 8" BETWEEN ROOTBALL AND EDGE OF PLANTING PIT

2 SHRUB PLANTING
NOT TO SCALE
L-1



- NOTES:**
1. CONTRACTOR TO VERIFY PERCOLATION OF PLANTING PIT PRIOR TO INSTALLATION
- SEE PLANT SCHEDULE FOR SPACING
 - 2" DEPTH CANADIAN PEAT TOP DRESSING OR 2" DEPTH DOUBLE SHREDDED HARDWOOD MULCH
 - SHOVEL CUT OR METAL EDGE. SEE PLAN
 - FINISH GRADE
 - EXCAVATE EXISTING SOIL TO 12" DEPTH. REPLACE WITH PLANT MIX. SEE GENERAL LANDSCAPE NOTES SHEET L-3 AND SPECIFICATIONS
 - UNDISTURBED SUBGRADE

1 PERENNIAL / GROUNDCOVER PLANTING
NOT TO SCALE
L-2



- NOTES:**
1. STAKE TREES 3" - 5" CALIPER ONLY
2. GUY TREES 6" CALIPER AND OVER
3. CONTRACTOR TO VERIFY PERCOLATION OF PLANTING PIT PRIOR TO INSTALLATION
4. SET STAKES VERTICAL AND EVENLY SPACED
5. STAYS OR GUYS TO BE SET ABOVE FIRST BRANCH
- REMOVE SECONDARY LEADERS. DO NOT PRUNE TERMINAL LEADER OR BRANCH TOPS. PRUNE ALL DEAD AND BROKEN BRANCHES.
 - REMOVE ALL TAGS, STRINGS, PLASTICS, AND ANY OTHER MATERIALS WHICH ARE UNSIGHTLY OR COULD CAUSE GIRDLING.
 - STAKE TREES JUST BELOW FIRST BRANCH W/ 2-3" WIDE BELT-LIKE FABRIC STRAPS ONLY. ARBOR TIE OR APPROVED EQUAL. (CONNECT FROM TREE TO STAKE OPPOSITE FROM EACH OTHER, AND ALLOW FOR SOME 'FLEXING') DO NOT USE WIRE OR ROPE THROUGH A HOSE. REMOVE AFTER ONE YEAR.
 - (2) 2"x2" HARDWOOD STAKES OR EQUIVALENT DRIVEN 6-8" OUTSIDE OF ROOTBALL. REMOVE AFTER ONE YEAR.
 - COVER PLANTING W/ 3" DOUBLE SHREDDED HARDWOOD BARK MULCH. MINIMUM 6" DIA. LEAVE 3" CIRCLE OF BARE SOIL AROUND THE BASE OF THE TRUNK.
 - REMOVE ALL NON-BIODEGRADABLE MATERIALS FROM THE ROOTBALL. FOLD DOWN ALL BURLAP AND REMOVE WIRE BASKET FROM THE TOP 1/3 OF THE ROOTBALL.
 - PLANT MIX. SEE GENERAL LANDSCAPE NOTES SHEET L-3 AND SPECIFICATIONS
 - TREE PIT TO BE 3 TIMES WIDTH OF ROOTBALL
 - 4" TOPSOIL SAUCER
- NOTE:**
TREE 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.

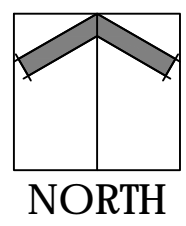
3 DECIDUOUS TREE PLANTING
NOT TO SCALE
L-1

Note Key:

- ASPHALT PARKING LOT, SEE CIVIL ENGINEERING DRAWINGS
- MONUMENT SIGN, SEE ARCHITECTURAL DRAWINGS
- EXISTING SIDEWALK TO REMAIN
- DECIDUOUS CANOPY TREE, SEE SHEET L-1 FOR QUANTITY AND SPECIES
- SHRUB AND PERENNIAL PLANTING, SEE TYPICAL DETAIL AND SPECIFICATIONS
- ORNAMENTAL FLOWERING TREE, SEE SHEET L-1 FOR QUANTITY AND SPECIES
- SEEDED LAWN OVER MINIMUM 3" DEPTH TOPSOIL
- SODDED LAWN, OVER MINIMUM 3" DEPTH TOPSOIL
- PROPOSED LIGHT POLE, SEE LIGHTING PLAN

PLANT SCHEDULE

TREES							
QTY	SYM	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	ROOT	COMMENTS
5	AS	Acer s. 'Green Mountain'	Green Mountain Sugar Maple	2.5' cal.	as shown	B&B	Single straight trunk
6	AG	Amalanchier x g. 'Autumn Brilliance'	Autumn Brilliance Serviceberry	6-7' ht.	as shown	B&B	Minimum 5 stems
2	GT	Gleditsia t. 'Skyline'	Skyline Honeylocust	2.5' cal.	as shown	B&B	Single straight trunk
13	PG	Prinos glaucus	White Spruce	6-7' ht.	as shown	B&B	Unsheared, branched to ground
2	QB	Quercus bicolor	Swamp White Oak	2.5' cal.	as shown	B&B	Single straight trunk
8	UA	Ulmus americana 'Valley Forge'	American Elm 'Valley Forge'	2.5' cal.	as shown	B&B	Single straight trunk
20	TA	Tilia americana 'Boulevard'	Boulevard American Basswood	2.5' cal.	as shown	B&B	Single straight trunk
8	MS	Malus 'Spring Snow'	Spring Snow Crabapple	6-7' ht.	as shown	B&B	Minimum 5 stems
2	MV	Malus 'Velvet Pillar'	Velvet Pillar Crabapple	2.0' cal.	as shown	B&B	Single straight trunk
SHRUBS							
23	SP	Syringa p. 'Miss Kim'	Miss Kim Dwarf Korean Lilac	30" ht.	as shown	cont.	Well rooted
31	VP	Viburnum p.t. 'Newport'	Newport American Snowball Bush	30" ht.	as shown	B&B	B&B
36	TO	Thuja occidentalis 'Nigra'	Dark Green Arborvitae	6' ht.	as shown	B&B	Trim to hedge
22	TW	Thuja o. 'Woodward Globe'	Woodward Globe Arborvitae	30" ht.	as shown	cont.	Well rooted
63	PO	Physocarpus o. 'Summer Wine'	Summer Wine Ninebark	36" ht.	as shown	cont.	Well rooted
24	POC	Physocarpus o. 'Coppertina'	Coppertina Ninebark	30" ht.	as shown	cont.	Well rooted
20	VT	Viburnum trilobum 'Compactum'	Compact American Cranberry Bush	30" ht.	as shown	cont.	Well rooted
35	MP	Myrica pennsylvanica	Northern Bayberry	30" ht.	as shown	cont.	Well rooted
52	SJ	Spirea japonica 'Neon Flash'	Neon Flash Spirea	24" ht.	as shown	cont.	Well rooted
35	RA	Rhus aromatica 'Gro-Low'	Gro-Low Sumac	18" ht.	as shown	cont.	Well rooted
PERENNIALS							
154	CA	Calamagrostis a. Karl Foerster'	Karl Foerster Feather Reed Grass	#2	as shown	cont.	Well rooted
129	PA	Pennisetum a. 'Karley Rose'	Karley Rose Dwarf Fountain Grass	#2	as shown	cont.	Well rooted
275	RF	Rudbeckia f. 'Goldstrum'	Black-eyed Susan	#1	18" o.c.	cont.	Well rooted
255	NF	Nepeta x f. 'Walkers Low'	Walkers Low Nepeta	#1	24" o.c.	cont.	Well rooted



SECTION 0220 - FINE GRADING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. Attention is directed to Bidding and Contract Requirements, and General and Supplemental Requirements, which are hereby made a part of this section.

1.02 WORK INCLUDED:

A. Provide all labor, materials, necessary equipment and services to complete the Fine Grading work, as indicated on the drawings, as specified herein or both, except as for items specifically indicated as "N.O.I.T.E.M.S."

B. Related work Specified Elsewhere:

1. Section 02933: Sodding
2. Section 02934: Seeding

1.03 SITE INSPECTION:

A. The Contractor shall visit the site and acquaint himself with all existing conditions. The Contractor shall be responsible for his own subsurface investigations, as necessary, to satisfy requirements of this Section. All subsurface investigations shall be performed only under time schedules and arrangements approved in advance by the Landscape Architect or Owner's Representative.

1.04 EXISTING CONDITIONS:

A. Obtain drawings showing proposed final grading from Civil Engineer, as indicated on drawings.

B. Major demolition, site preparation and general site establishment will be accomplished under another contract order. Verify that contours and grades established under that Contract are within one tenth (1/10) of a foot of proposed grades shown on grading plans. Make whatever corrections and/or repairs necessary to make finish grades consistent with the requirements of the grading drawings and specifications.

1.05 UTILITIES:

A. Before starting site operations, verify that the earlier Contractor has disconnected all temporary utilities that might interfere with the fine grading work.

B. Locate all existing, active utility lines covering the site and determine the requirements for their protection. Preserve in operating condition all active utilities adjacent to or traversing the site that are designated to remain.

C. Observe rules and regulations governing respective utilities in working under requirements of this section. Adequately protect utilities from damage, remove or relocate as indicated, specified or required. Remove, plug or cap inactive or abandoned utilities encountered in excavation. Record location of active utilities.

1.06 QUALITY ASSURANCE:

A. Requirements of all applicable building codes and other public agencies having jurisdiction upon the work.

B. Primary emphasis should be given to the aesthetic appearance and functioning of berming and swales, as directed by the Landscape Architect or Owner's Representative. The Contractor shall employ skilled personnel and any necessary equipment to insure that final grading is smooth, aesthetically pleasing, drains well and is ideal for receiving sod and plant materials.

C. Primary emphasis should be given to the aesthetic appearance and functioning of berming and swales, as directed by the Landscape Architect or Owner's Representative. The Contractor shall employ skilled personnel and any necessary equipment to insure that final grading is smooth, aesthetically pleasing, drains well and is ideal for receiving sod and plant materials.

PART 2 - MATERIALS

2.01 EXISTING SOIL:

A. Use on-site material, unless otherwise directed by Owner's Representative, free from debris, sods, bogs, undesirable materials and other deleterious materials. The Contractor shall insure that existing soil has sufficient percolation and surface runoff in areas to receive paving.

B. In areas to receive seeding, verify that soil is scarified to depth of 4" and that soil contains enough organic matter to suit application and soil encourage rooting.

PART 3 - EXECUTION

3.01 JOB CONDITIONS:

A. Dust control. Use all means necessary to prevent dust from construction operations from being a nuisance to adjacent property owners and from damaging finish surfaces on adjacent building, paving, etc. Methods used for dust control are subject to approval by the Landscape Architect or Owner's Representative.

B. Burning. On-site burning will not be permitted.

C. Protection. Use all means necessary to protect curbs, gutters, sprinklers, utilities and vegetation designated to remain, and, in the event of damage, immediately make all repairs, replacements and drawings to damaged plants necessary to the approval of the Landscape Architect. Contractor shall incur all cost for the replacement of damaged objects and

3.02 SCHEDULING:

A. Schedule all work in a careful manner with all necessary consideration for adjoining property owners and the public.

B. Coordinate schedule with other Contractors to avoid conflicts with their work.

3.03 EXCAVATION:

A. Excavate where necessary to obtain subgrades, percolation and surface drainage as required.

B. Materials to be excavated are unclassified.

C. Remove entirely any existing obstructions after approval by the Landscape Architects or Owner's Representative.

D. Remove from site and dispose of debris and excavated material not required.

3.04 GRADING:

A. The Contractor shall establish finished grades shown on the grading plan and as directed by the Architect, including areas where the existing grade has been disturbed by other work.

B. Finished grading shall be smooth, aesthetically pleasing, drain well and ready to receive sod and other plant material to full satisfaction of the Owner's Representative, Architect and Construction Manager.

3.05 COMPACTION:

A. Compact each layer of fill in designated areas with approved equipment to achieve a maximum density at optimum moisture, AASHTO T 180 - latest edition.

1. Under buildings, roadways, curbs, walks and other paved areas; compaction shall be to 95% of maximum density.

2. Under landscaped area, compaction shall not exceed 85% of maximum density.

B. No backfill shall be placed against any masonry or other exposed building surface until permission has been given by the Owner's Representative, and in no case until the masonry has been in place seven days.

C. Compaction in limited areas shall be obtained by the use of mechanical tampers or approved hand tampers. When hand tampers are used, the materials shall be deposited in layers not more than four inches thick. The hand tampers used shall be suitable for this purpose and shall have a face area of not more than 100 square inches. Special precautions shall be taken to prevent any wedging action against masonry or other exposed building surfaces.

3.06 CORRECTION OF GRADE:

A. Bring to required grade levels areas where settlement, erosion or other grade changes occur. Adjust grades as required to carry drainage away from buildings and to prevent ponding around the buildings and on pavements.

B. Remove all rock or objectionable material larger than 1" any direction prior to commencing landscaping.

C. Contractor shall be responsible for stabilizing grades by approved methods prior to landscaping, and shall be responsible for correction of grades as mentioned above, and clean up of any wash outs or erosion.

END OF SECTION 0220

SECTION 0221 - TOPSOIL

1.01 RELATED DOCUMENTS:

A. Attention is directed to Bidding and Contract Requirements, General and Supplemental Requirements, which are hereby made a part of this Section.

1.02 DESCRIPTION OF WORK:

A. Extent of Topsoil Work is shown on drawings and by provisions of this section.

B. Topsoil for lawn work shall be as shipped from area or provided by contractor from off-site sources free of herbicides and conforming to the specifications herein.

C. Related Work Specified Elsewhere:

1. Section 02933: Sodding
2. Section 02934: Seeding
3. Section 02950: Trees, Shrubs and Ground Covers

1.03 QUALITY ASSURANCE:

A. Testing of supplied and/or stockpiled topsoil shall be performed by a qualified independent testing laboratory normally engaged in agronomic soil testing. Each soil sample tested shall be a composite of five to seven subsamples taken to the full depth of proposed source. Discard upper 6 inches of stockpiled topsoil before collecting samples. All cores for collecting and testing of topsoil shall be borne by the Contractor.

1. Recommended testing laboratory:
A & L Great Lakes Laboratories, Inc.
3505 Conestoga Drive
Fort Wayne, IN 46808
(219) 483-4759

B. Required Topsoil Tests:

1. Chemical analysis indicating:

a. fertility: pH, nitrate nitrogen, ammonia nitrogen, phosphate phosphorous, potassium, calcium, magnesium.

b. suitability: total salinity, boron, sodium, potassium, calcium, magnesium, chloride, sulfate.

2. Physical properties including:

a. organic content

b. particle size distribution

1.04 SUBMITTALS:

A. Submit two certified copies of soil tests for approval prior to initiating work.

1.05 PROJECT CONDITIONS:

A. Know underground and surface utility lines are indicated on the civil drawings.

B. Protect existing trees, plants, lawns and other features designated to remain as part of the landscaping work.

C. Promptly repair damage to adjacent facilities caused by topsoil operations. Cost of repair at Contractor's expense.

D. Promptly notify the Landscape Architect of unexpected sub-surface conditions.

PART 2 - PRODUCTS

2.01 MATERIALS:

A. Provide topsoil as required to complete job. Topsoil must meet testing criteria results specified. All processing, cleaning and preparation of this topsoil to render it acceptable for use is the responsibility of this contractor.

B. Supplied and/or stockpiled topsoil, shall be fertile, friable sandy, sandy loam soil without admixture of silt and free of stones, stumps, root, trash, debris, and other materials deleterious to plant growth. Topsoil shall not be frozen or muddy. Ph of existing or supplied soil to range between 5.3 and not more than 7.0. Topsoil that does not meet this pH range shall be amended with approved pH adjusters. Topsoil shall contain not less than 3% and not greater than 10% organic matter determined by loss on dry ignition.

C. Gradation of Topsoil:

Percentages shall be based on dry weight of the sample.

Size Designation Percent Passing

1 inch screen	100
3/4 inch screen	97-100
No. 10 U.S.S. mesh sieve	95-100
No. 140 U.S.S.	15-35
No. 4 (4.75mm)	100
No. 10 (2.00mm)	85-100
No. 18 (1.00mm)	90-100
No. 20 (850 micron)	85-100
No. 60 (250 micron)	0-50
No. 140 (105 micron)	0-20
No. 270 (53 micron)	0-10

Percentages shall be based on dry weight of the sample.

PART 3 - EXECUTION

3.01 EXAMINATION:

A. Examine rough grades and installation conditions. Do not start topsoil work until unsatisfactory conditions are corrected.

B. Perform cleaning during installation of the work and upon completion of the work. Remove from site all excess materials, debris and equipment. Repair damage resulting from sodding operations.

END OF SECTION 0223

C. Perform cleaning during installation of the work and upon completion of the work. Remove from site all excess materials, debris and equipment. Repair damage resulting from sodding operations.

D. Perform cleaning during installation of the work and upon completion of the work. Remove from site all excess materials, debris and equipment. Repair damage resulting from sodding operations.

E. Perform cleaning during installation of the work and upon completion of the work. Remove from site all excess materials, debris and equipment. Repair damage resulting from sodding operations.

F. Perform cleaning during installation of the work and upon completion of the work. Remove from site all excess materials, debris and equipment. Repair damage resulting from sodding operations.

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H. Topsoil: Refer to Section 0221

PART 3 - EXECUTION

3.01 EXAMINATION:

A. Examine finish surfaces, grades, topsoil quality and depth. Do not start sodding work until unsatisfactory conditions are corrected.

3.02 PREPARATION:

A. Limit preparation to areas which will be immediately sodded. Spread topsoil, fine grade.

B. Treat lawn areas with "Round Up", by Monsanto, per label directions as required to kill existing vegetation prior to sodding.

C. Loosen topsoil of lawn areas to minimum depth of 3". Remove stumps over 1" in any dimension and sticks, roots, rubbish and extraneous matter.

D. Grade lawn areas to smooth, free draining and even surface with a loose, uniform fine texture. Roll and rake; remove ridges and soil depressions as required to drain.

E. Apply type A fertilizer at the rate equal to 1.0 lb. of actual nitrogen per 1,000 sq. ft. (43 lbs./acre). Apply fertilizer by mechanical rotary or drop type distributor, and evenly incorporated with the soil to a depth of 1" by discing or other approved methods. Fertilize areas inaccessible to power equipment with hand tools and incorporated it into soil.

F. Dampen dry soil prior to sodding.

G. Restore prepared area to specified condition if eroded, settled or otherwise disturbed after fine grading and prior to sodding.

H. Lay sod to form a solid mass with lightly-filled joints. Butt ends and sides of sod spots. Do not allow ridges. Stagger joints to offset joints in adjacent courses. Remove excess sod to avoid smothering of adjacent grass. Provide sod pad top flush with adjacent curbs, sidewalks, drains and seeded areas.

I. Do not lay dormant sod or install sod on saturated or frozen soil.

J. Install initial row of sod in a straight line, beginning at bottom of slopes, perpendicular to direction of the sloped area. Place subsequent rows parallel to and tightly against previously installed row.

K. Peg sod on slopes greater than 3 to 1 to prevent slippage at a rate of 2 stakes per sq. ft.

L. E. Water sod thoroughly with a fine spray immediately after laying.

M. Roll with light lawn roller to ensure contact with sub-grade.

N. Sod indicated areas within contract limits and areas adjoining contract limits disturbed as a result of construction operations.

O. Sod indicated areas within contract limits and areas adjoining contract limits disturbed as a result of construction operations.

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BI. Sod indicated areas within contract limits and areas adjoining contract limits disturbed as a result of construction operations.

BJ. Sod indicated areas within contract limits and areas adjoining contract limits disturbed as a result of construction operations.

H. Restore prepared areas to specified condition if eroded, settled or otherwise disturbed after fine grading and prior to seeding.

3.03 INSTALLATION:

A. Seed bars only between April 1 and June 1 and fall seeding between August 15 and October 15 or at such other times acceptable to Landscape Architect.

B. Seed immediately after preparation of bed. Seed indicated areas within contract limits and areas adjoining contract limits disturbed as a result of construction operations.

C. Perform seeding operations when the soil is dry and when winds do not exceed 5 miles per hour velocity.

D. Apply seed with a rotary or drop type distributor. Install seed evenly by sowing equal quantities in 2 directions, at right angles to each other.

E. Sow seed at a rate of 7 lbs/1000 sq. (300 lbs/acre).

LUM NO.	LABEL	MTG. HT.
1 - 3	A	27
4	B	18
5, 6	C	27
7 - 9	D	27
10 - 13	E	27
14	E	18
15 - 17	F	27
18 - 26	G	18
27 - 42	H	16

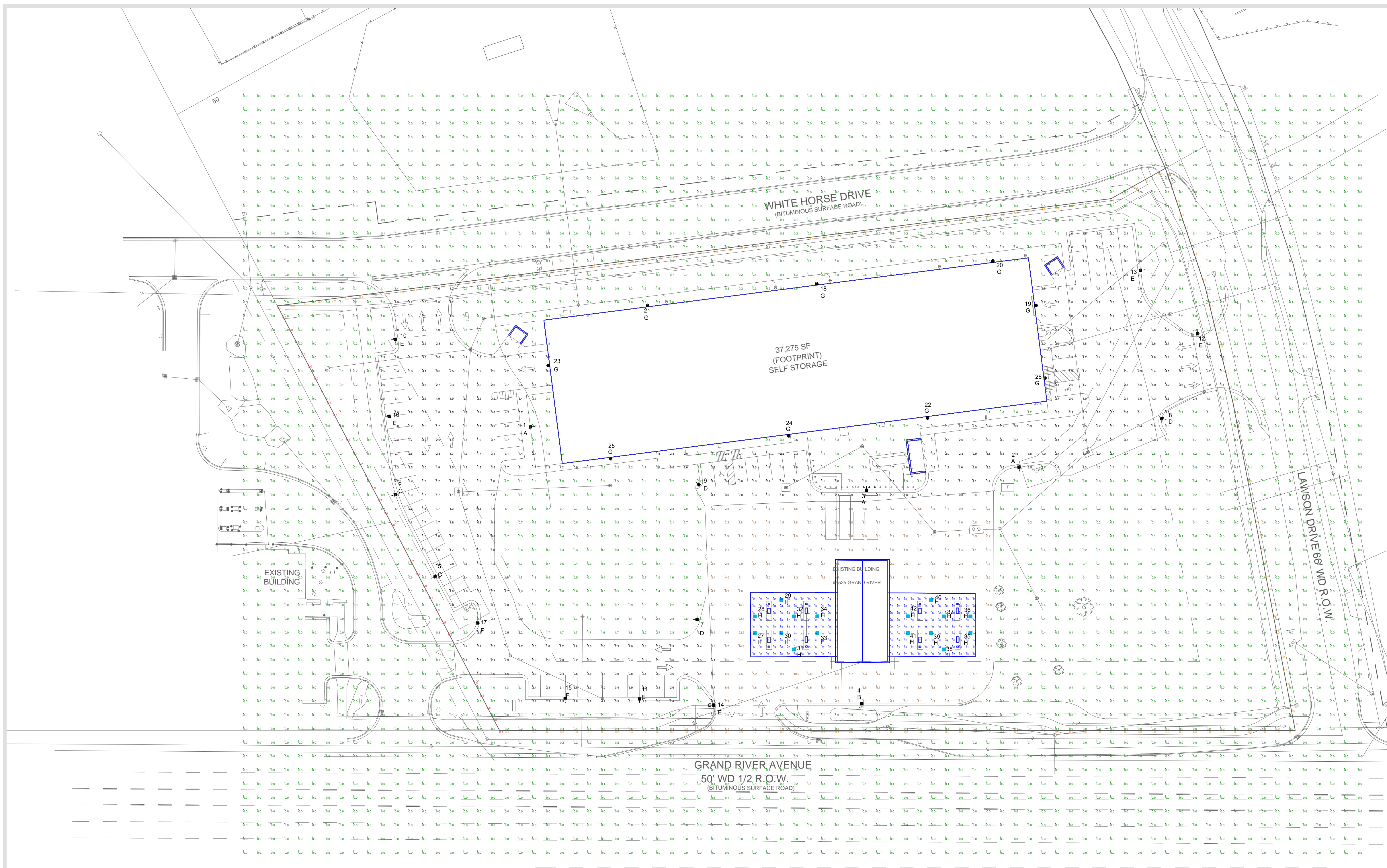
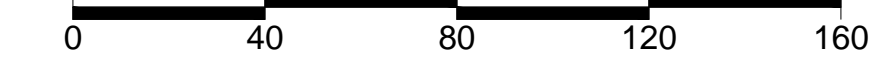
ALL NEW AREA LIGHTS SHALL BE MOUNTED TO NEW 25 FT. POLES ON NEW 2 FT. CONCRETE BASES, EXCEPT FOR NEW AREA LIGHTS LABELED 4/B & 14/E, WHICH SHALL MOUNTED TO EXISTING 16 FT. POLES ON EXISTING 2 FT. CONCRETE BASES.

LABEL	AVG	MAX	MIN	AVG/MIN	MAX/MIN
EXISTING GAS STATION CANOPY	35.81	58	11	3.26	5.27
EXISTING GAS STATION PAVED AREA	4.30	22.5	0.7	6.14	32.14
PHASE 1 DEVELOPMENT PAVED AREA	2.44	6.2	0.8	3.05	7.75
PROPERTY LINES - NONRESIDENTIAL	0.36	1.0	0.0	N.A.	N.A.
PROPERTY LINES - ROAD FRONTAGE	0.45	5.2	0.0	N.A.	N.A.
UNDEFINED	0.29	6.6	0.0	N.A.	N.A.



NORTH

GRAPHIC SCALE



SYMBOL	QTY	LABEL	ARRANGEMENT	LUMENS	DIMMING (LUMEN MULTIPLIER)	LATF	LLF	BUG RATING	WATTS/LUMINAIRE	TOTAL WATTS	MANUFACTURER	DESCRIPTION
[Symbol]	1	B	SINGLE	13650	1.000	1.040	1.040	B2-U0-G2	130	130	CREE, INC.	OSQ-DAXX + OSQ-A-NM-3ME-K-57K-UL-XX w_ OSQ-BLSMF
[Symbol]	3	D	SINGLE	17291	1.000	1.040	1.040	B3-U0-G3	130	390	CREE, INC.	OSQ-DAXX + OSQ-A-NM-4ME-K-57K-UL-XX
[Symbol]	3	F	SINGLE	13286	0.830	1.040	0.863	B2-U0-G2	110	330	CREE, INC.	OSQ-DAXX + OSQ-A-NM-4ME-K-57K-UL-XX-Q5 w_ OSQ-BLSMF
[Symbol]	16	H	SINGLE	18056	1.000	1.000	1.000	B3-U0-G1	139.6	2233.6	LSI INDUSTRIES, INC.	CRU-SC-LED-HO-CW (EXISTING TO REMAIN, SHOWN FOR CONTRIBUTION)

REV.	BY	DATE	DESCRIPTION
R1	DAR	8/4/20	REVISED PER UPDATED SITE PLAN. XSP SERIES AREA LIGHTS CHANGED TO OSQ SERIES; EXISTING CANOPY LIGHTS SHOWN FOR CONTRIBUTION.

PERSONS USING THIS PROGRAM ARE ADVISED THAT THIS PROGRAM MAY CONTAIN ERRORS. WHICH RED LEONARD ASSOCIATES, INC. OR ITS SOFTWARE PROVIDER HAVE NOT OBSERVED. IN ADDITION, THE USE OF THIS PROGRAM IS IN LAYOUT OF LIGHTING AND ESTIMATING MATERIAL QUANTITIES IS NOT WARRANTED TO REMOTE THE RESPONSIBILITY OF THE USER TO VERIFY THE COMPLETENESS OF ALL INPUT OF MATERIAL AND THAT THE LAYOUT OR USE OF LUMINAIRE IS IN FULL ACCORDANCE WITH ALL LOCAL, STATE, OR FEDERAL STATUTES, REGULATIONS OR OTHER REQUIREMENTS, OR THE REGULATIONS OR OTHER REQUIREMENTS OF THE ORGANIZATION OR OWNER REGARDING LUMINAIRE AND THEIR APPLICATION.

FOR INFORMATIONAL AND ILLUSTRATION PURPOSES ONLY. ALL PRODUCT SERVICE AND COMPACTOR NUMBERS ARE THE PROPERTY OF THEIR RESPECTIVE OWNERS. PRODUCT SPECIFICATIONS AND QUANTITIES MAY VARY. THESE DOCUMENTS ARE THE PROPERTY OF RED LEONARD ASSOCIATES, INC. ANY USE OF THESE DOCUMENTS WITHOUT THE WRITTEN CONSENT OF JAMES J. LEONARD OF RED LEONARD ASSOCIATES, INC. IS STRICTLY PROHIBITED.

ILLUMINATION RESULTS SHOWN ON THIS LIGHTING APPLICATION ARE BASED ON PROJECT PARAMETERS PROVIDED BY THE MANUFACTURER LISTED. USED IN CONJUNCTION WITH LUMINAIRE TEST PROCEDURES CONDUCTED UNDER LABORATORY CONDITIONS. ACTUAL PRODUCT CONDITIONS DIFFERING FROM THESE PARAMETERS MAY AFFECT FIELD RESULTS. THE CUSTOMER IS RESPONSIBLE FOR VERIFYING COMPLIANCE WITH ANY APPLICABLE ELECTRICAL, LIGHTING, OR ENERGY CODE.

SCALE: 1" = 40'
 LAYOUT BY: DAR
 DWG. SIZE: D
 DATE: 12/19/18

PROJECT NAME:
**BMH PREMIER
 GENOA TWP., MI**
 DRAWING NUMBER:
RL-5858-S1-R1



AREA

SYMBOL:	QTY:	LABEL:
	3	A

OSQ-DAXX + OSQ-A-NM-3ME-K-57K-UL-XX

	1	B
--	---	---

OSQ-DAXX + OSQ-A-NM-3ME-K-57K-UL-XX W_OSQ-BLSMF

	2	C
--	---	---

OSQ-DAXX + OSQ-A-NM-3ME-K-57K-UL-XX-Q1 W_OSQ-BLSMF

	3	D
--	---	---

OSQ-DAXX + OSQ-A-NM-4ME-K-57K-UL-XX

	5	E
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OSQ-DAXX + OSQ-A-NM-4ME-K-57K-UL-XX W_OSQ-BLSMF

	3	F
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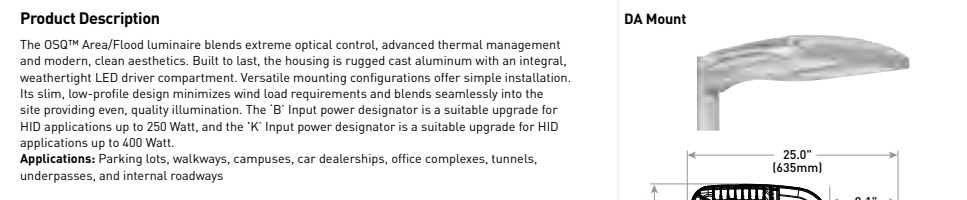
OSQ-DAXX + OSQ-A-NM-4ME-K-57K-UL-XX-Q5 W_OSQ-BLSMF

PRODUCT INFORMATION

OSQ Series

OSQ™ LED Area/Flood Luminaire featuring Cree TrueWhite™ Technology – Medium

Rev. Date: 1/26/2023 (2023)



Weight: 28.1 lbs. (12.8 kg)

Performance Summary

Utilizes Cree TrueWhite™ Technology on 5000K Luminaires

Manufacturer's Precision Delivery (PM) optic

Assembled in the U.S.A. of U.S. and imported parts

Initial Delivered Lumens (up to 17,291)

Efficiency: Up to 134 LPW

CRI: Minimum 70 CRI (2000K, 4000K & 5700K), 90 CRI (3000K)

CCT: 2000K, 4000K, 5000K, 5700K

Limited Warranty*: 10 years on luminaire/10 years on Colorfast DuraGuard™ finish/5 years on Synapse wireless control accessories/1 year on luminaire accessories

*See [www.cree.com/ledlighting](#) for warranty terms

Ordering Information

Full technical spec is composed of two components that must be ordered separately:

Example: **MOUSE-OSQ-B-660V - Luminaire OSQ-A-004-2ME-K-57K-UL-Q1**

Mount Luminaire must be ordered separately*

OSQ-B-04 Adjustable Arm

OSQ-M-02 Mount (includes steel, do not specify color)

OSQ-TM Trimless Mount

*Reference the applicable luminaire technical drawing on page 7

Luminaire Mount must be ordered separately

OSQ A W Mount

OSQ A W Mount

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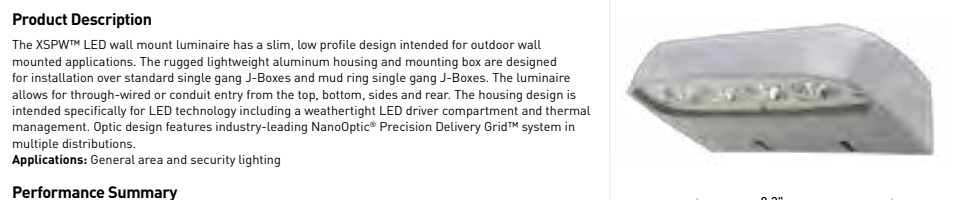
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XSPW-B-WM-3ME-4L-57K-UL-XX

XSP Series

XSP™ LED Wall Mount Luminaire featuring Cree TrueWhite™ Technology

Rev. Date: November 01/2023 (2023)



Weight: 28.1 lbs. (12.8 kg)

Performance Summary

Manufacturer's Precision Delivery (PM) optic

Assembled in the U.S.A. of U.S. and imported parts

CRI: Minimum 70 CRI (2000K, 4000K & 5700K), 90 CRI (3000K)

CCT: 2000K, 4000K, 5000K, 5700K

Limited Warranty*: 10 years on luminaire/10 years on Colorfast DuraGuard™ finish

*See [www.cree.com/ledlighting](#) for warranty terms

Accessories

Field Install Kit

Ready Pole

Mounting Hardware

Color Options

Options

Ordering Information

Example: XSPW-B-WM-3ME-4L-57K-UL-XX

XSPW B WM

XSPW B WM

XSPW B WM

XSPW B WM

XSPW B WM

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PRODUCT INFORMATION

XSP Series

XSP™ LED Wall Mount Luminaire featuring Cree TrueWhite™ Technology

Rev. Date: November 01/2023 (2023)



Weight: 28.1 lbs. (12.8 kg)

Performance Summary

Manufacturer's Precision Delivery (PM) optic

Assembled in the U.S.A. of U.S. and imported parts

CRI: Minimum 70 CRI (2000K, 4000K & 5700K), 90 CRI (3000K)

CCT: 2000K, 4000K, 5000K, 5700K

Limited Warranty*: 10 years on luminaire/10 years on Colorfast DuraGuard™ finish

*See [www.cree.com/ledlighting](#) for warranty terms

Accessories

Field Install Kit

Ready Pole

Mounting Hardware

Color Options

Options

Ordering Information

Example: XSPW-B-WM-3ME-4L-57K-UL-XX

XSPW B WM

XSPW B WM

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XSPW B WM

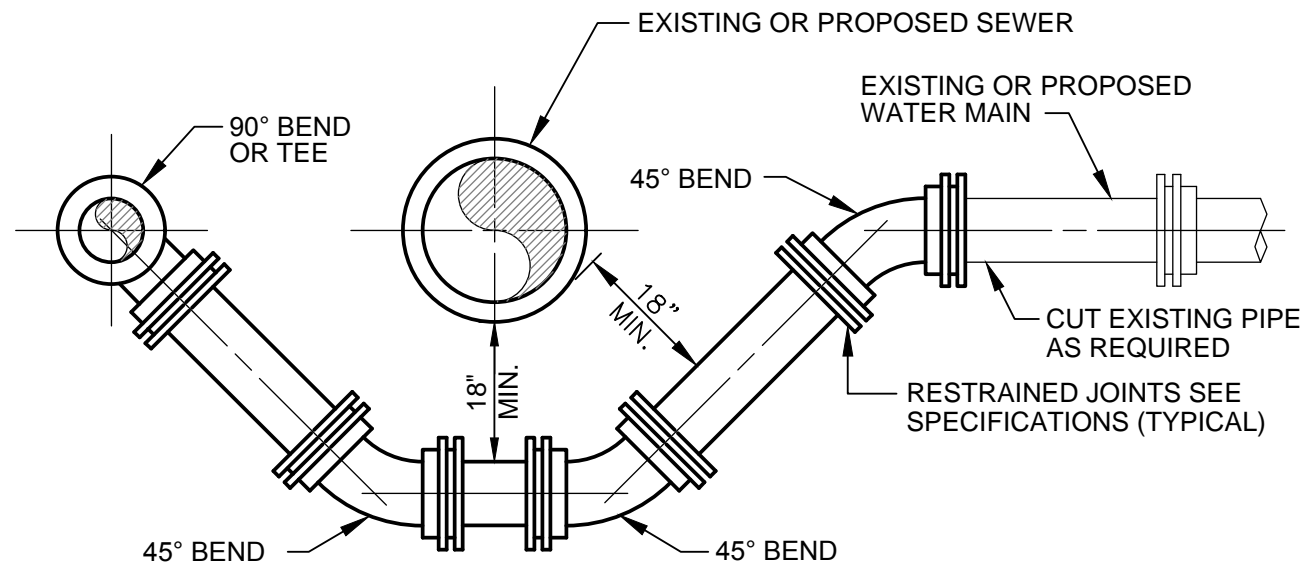
XSPW B WM

PIPE RESTRAINT SCHEDULE							
GROUND BURIED PRESSURE PIPE - POLYETHYLENE ENCASED DUCTILE IRON PIPE							
PIPE DIAMETER	TEES, 90° BENDS	45° BENDS	22-1/2° BENDS	11-1/4° BENDS	DEAD ENDS	REDUCERS (ONE SIZE REDUCTION)*	REDUCERS (TWO SIZE REDUCTION)*
4	13	5	3	1	40	--	--
6	19	8	4	2	58	31	--
8	24	10	5	2	75	30	70
12	34	14	7	3	107	57	116
16	43	18	9	4	139	59	137
20	52	22	10	5	169	59	134
24	61	25	12	6	199	60	132
30	73	30	15	7	242	85	168
36	84	35	17	8	281	84	168

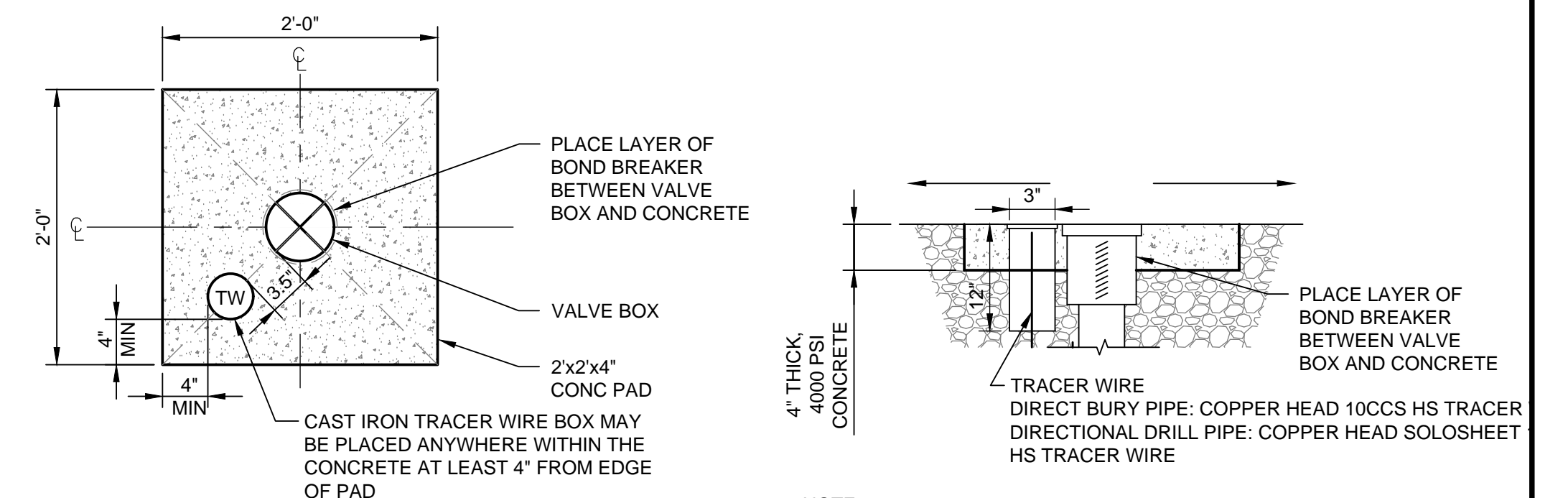
- LENGTHS OF PIPE RESTRAINT ARE GIVEN IN FEET.
- IF REQUIRED PIPE DIAMETER IS NOT LISTED IN THIS TABLE, THE NEXT LARGEST PIPE DIAMETER SHALL BE USED.
- THIS TABLE IS BASED ON A TEST PRESSURE OF 180 PSI (OPERATING PRESSURE PLUS WATER HAMMER. FOR OTHER TEST PRESSURES, ALL VALUES TO BE INCREASED OR DECREASED PROPORTIONALLY).
- THE VALUES PROVIDED OF RESTRAINT LENGTH ARE IN EACH DIRECTION FROM THE POINT OF DEFLECTION OR TERMINATION EXCEPT FOR TEES, AT WHICH ONLY THE BRANCH IN THE DIRECTION OF THE STEM.
- IF TIE RODS ARE USED, USE FOUR RODS MINIMUM AND ADD 1/8-INCH TO BAR DIAMETER AS CORROSION ALLOWANCE.
- SIZE REDUCTION IS BASED UPON THE PIPE DIAMETER SHOWN IN THIS TABLE.

BASED UPON:

INTERNAL PRESSURE:	180
PIPE DEPTH:	5
BEDDING CLASS:	TYPE 4
SOIL TYPE:	GOOD SAND
SAFETY FACTOR:	2

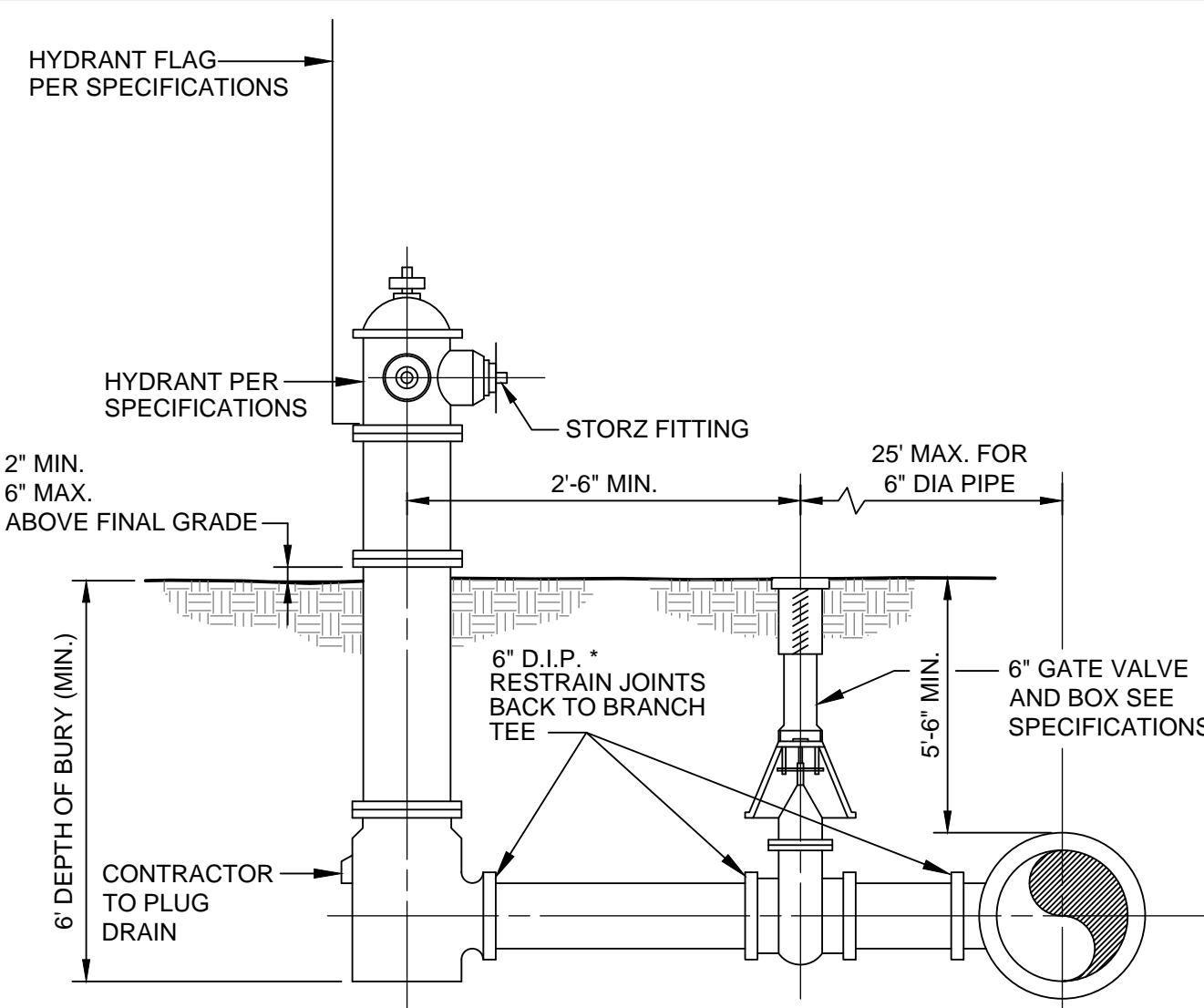


WATER MAIN UTILITY OFFSET



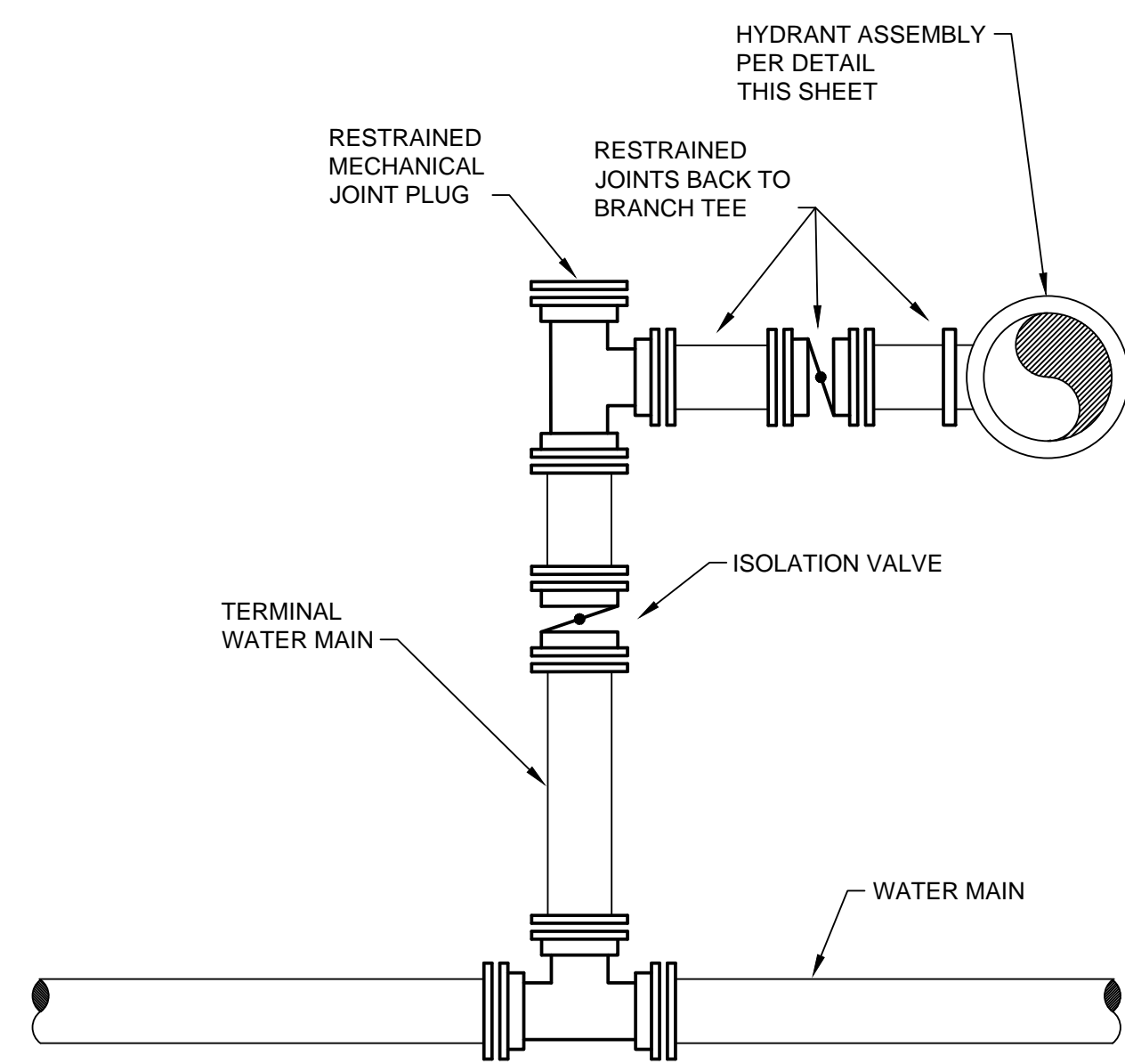
NOTE: ALL BOXES & ADJOINING TW BOXES SHALL BE ENCASED IN A CONC. PAD UNLESS OTHERWISE DETERMINED BY MHOG.

- NOTE:
- TRACER WIRE BOXES LOCATED WITHOUT A VALVE BOX ONLY REQUIRE AN 18" X 18" CONCRETE PAD.
 - TRACER WIRE BOX SHALL HAVE A LOCKING LID W/STANDARD AWWA PENTAGON KEY.
 - TRACER WIRE BOX SHALL BE COPPERHEAD RB14"TP IN ASPHALT INSTALLATIONS AND CD14"TP FOR ALL OTHER INSTALLATIONS.

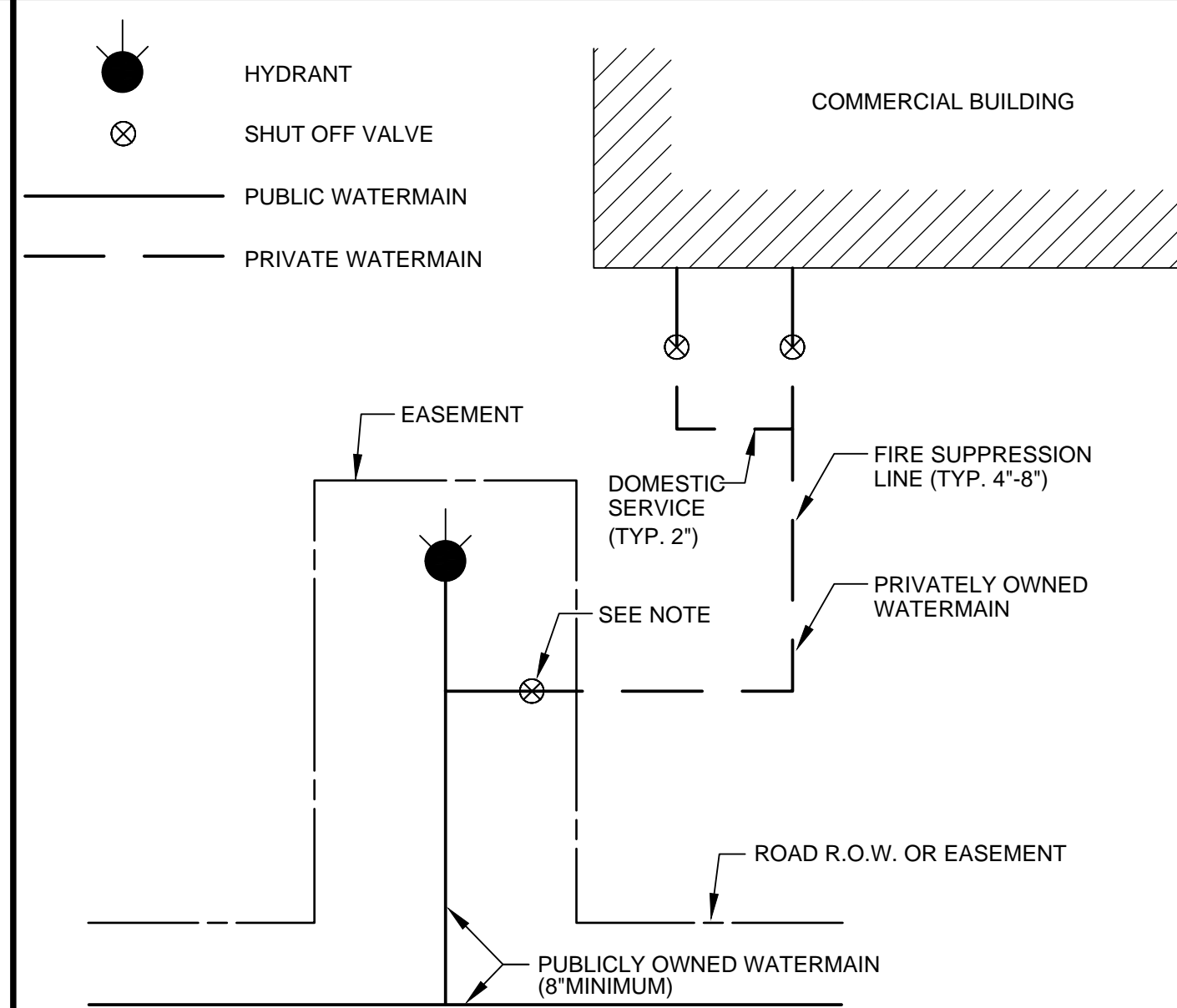


* THE LENGTH OF 6" PIPE FROM THE MAIN TO THE HYDRANT ASSEMBLY CANNOT EXCEED 25'. ANY PIPE OVER 25 FEET SHALL BE 8" DIAMETER MINIMUM AND DESIGNED PER MHOG SPECIFICATIONS.

FIRE HYDRANT ASSEMBLY

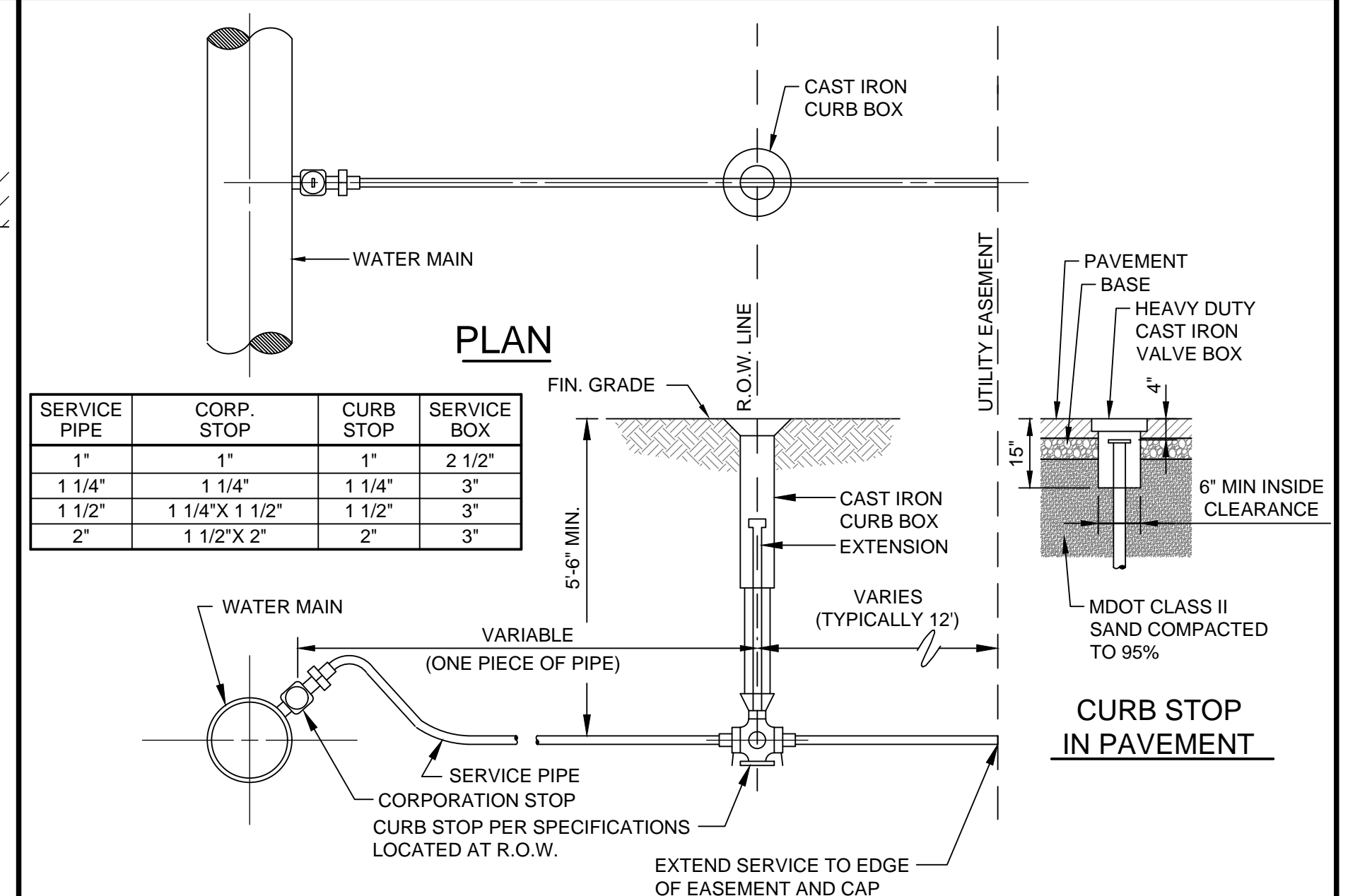


TERMINAL HYDRANT DETAIL

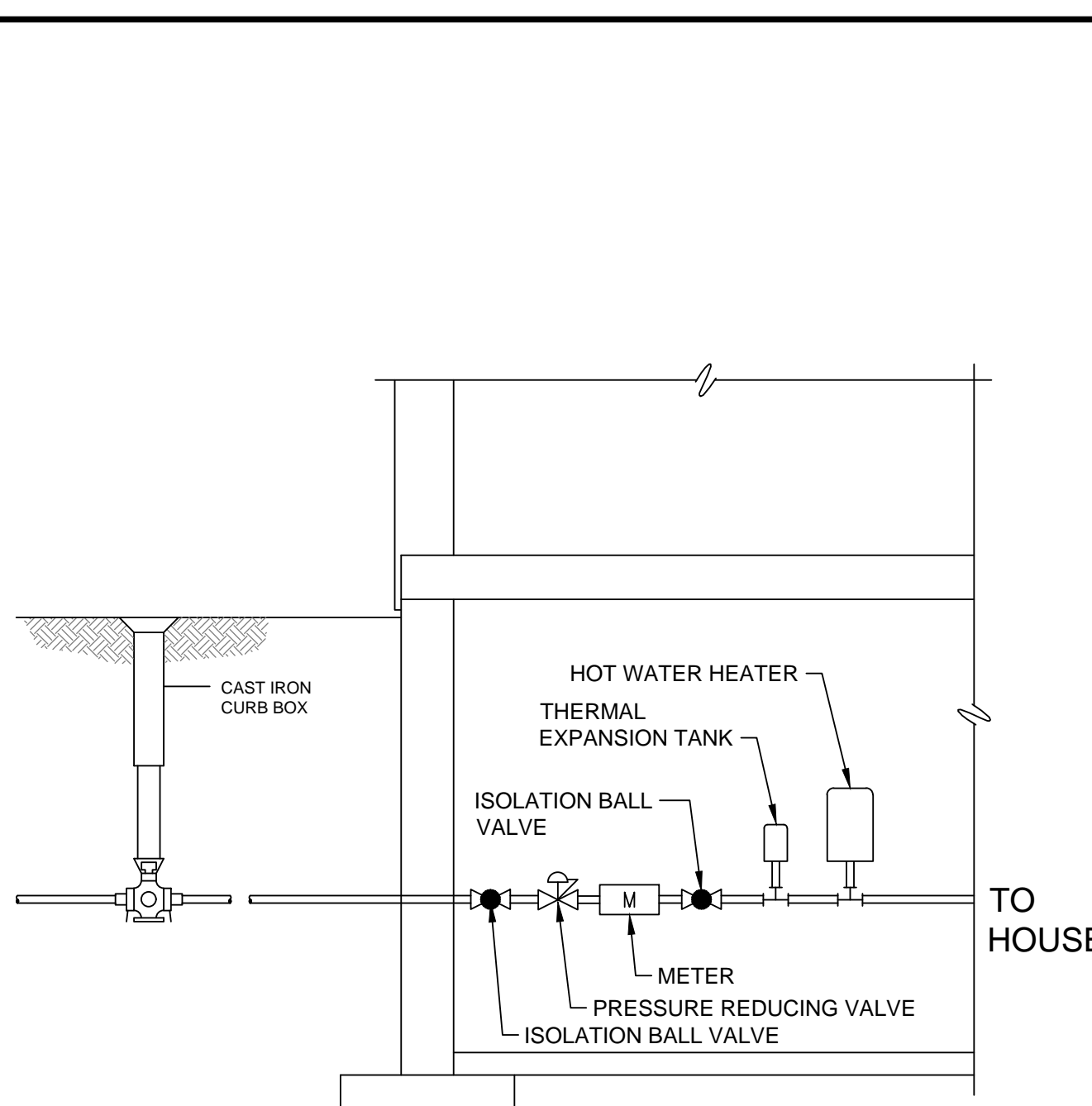


NOTE: PUBLICLY OWNED SHUT OFF VALVE TO BE LOCATED IN EASEMENT.

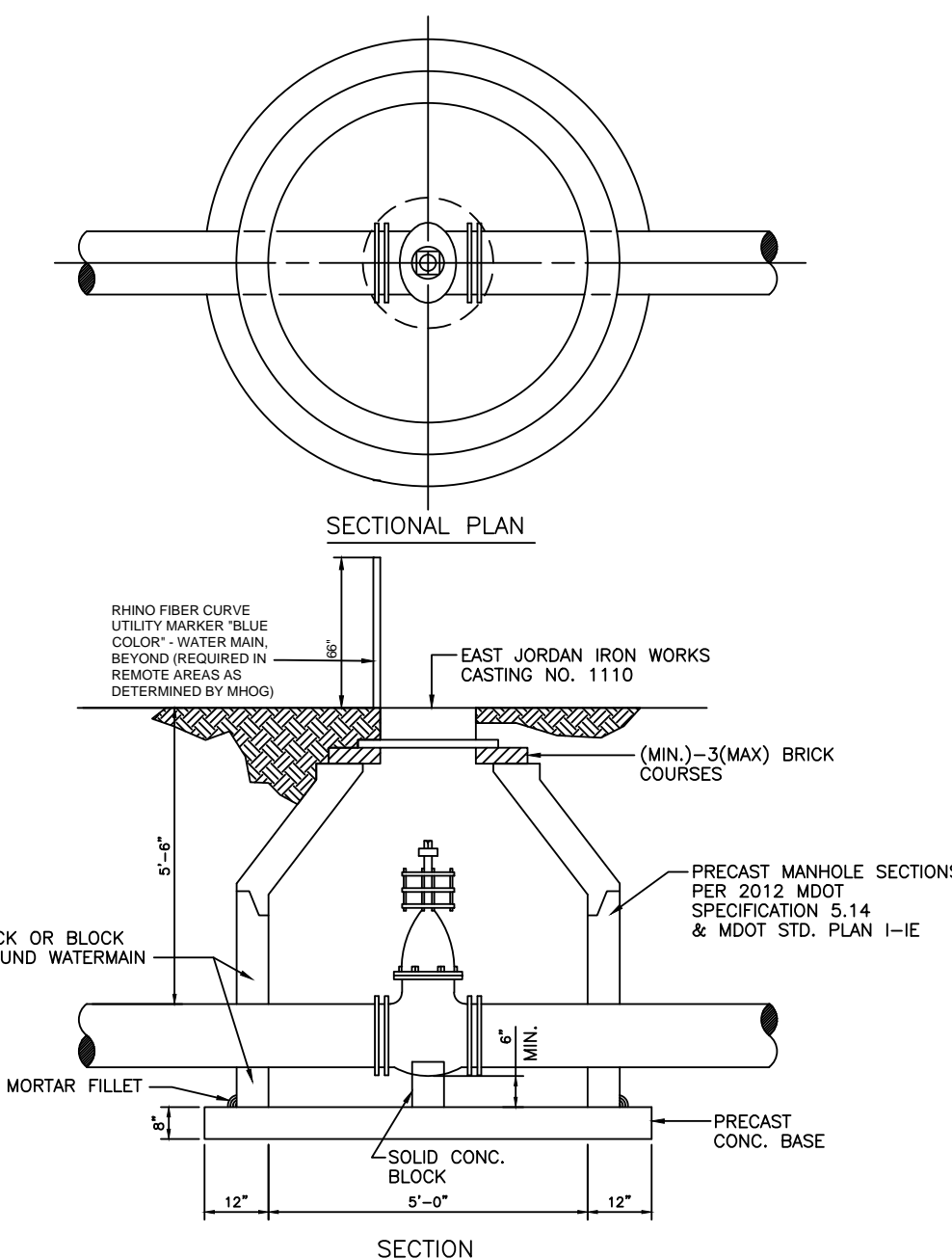
COMMERCIAL BUILDING WATER SERVICE LAYOUT



SECTION
WATER SERVICE LATERAL

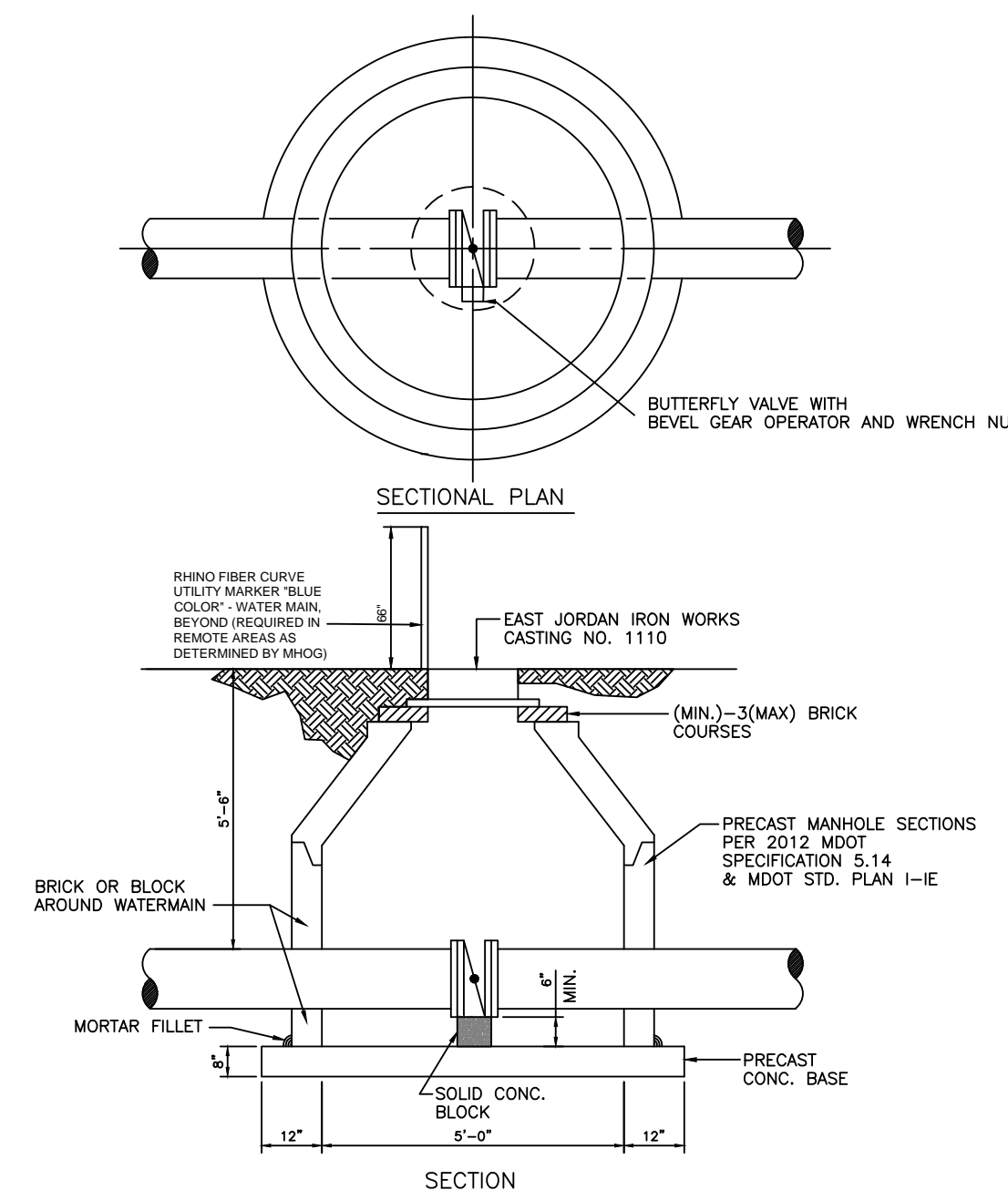


PRIVATE RESIDENCE
PRESSURE REDUCING VALVE (PRV)



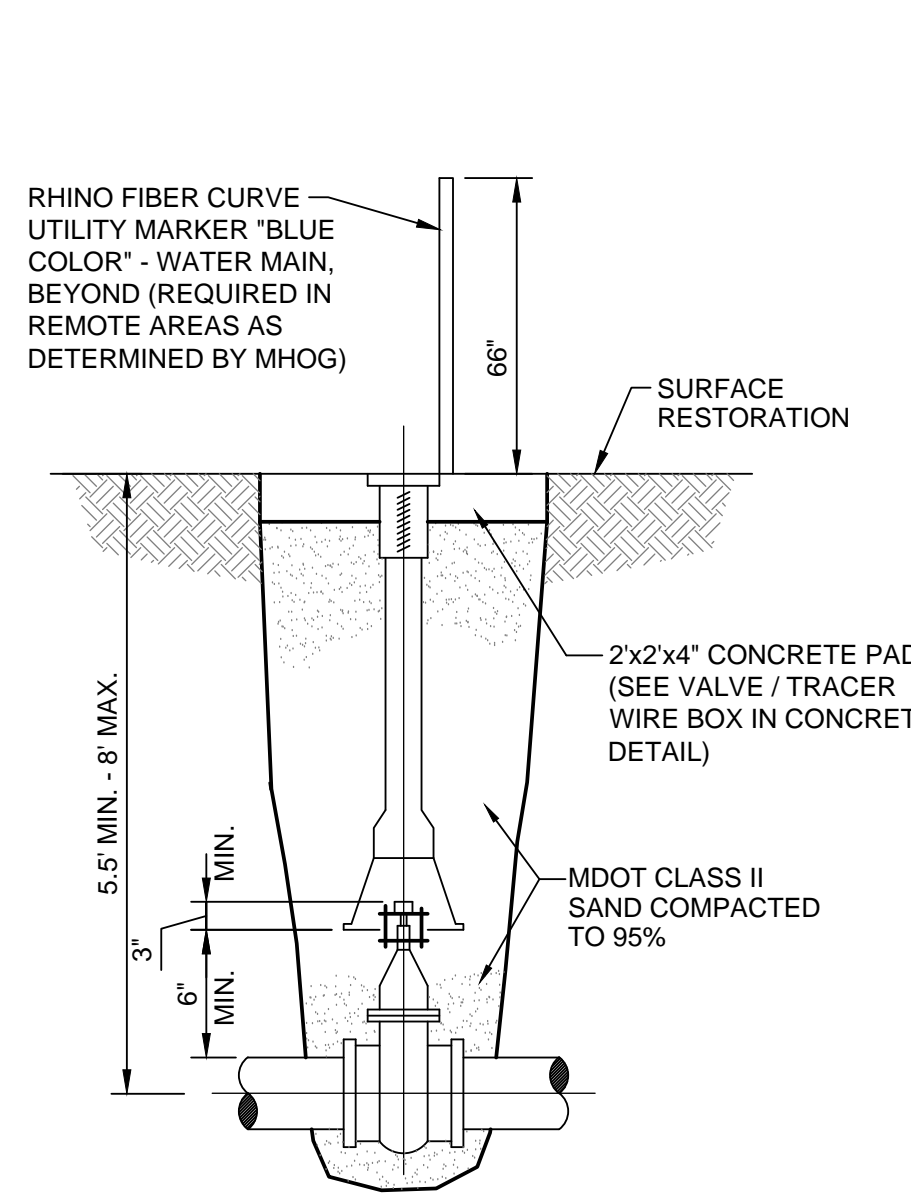
- NOTES:
- ALL LIFT HOLES AND JOINTS SHALL BE MORTARED BOTH INSIDE AND OUTSIDE.
 - BLOCK MANHOLES TO BE USED ONLY WITH ENGINEERS PERMISSION.
 - NO STEPS PERMITTED.

GATE VALVE AND WELL



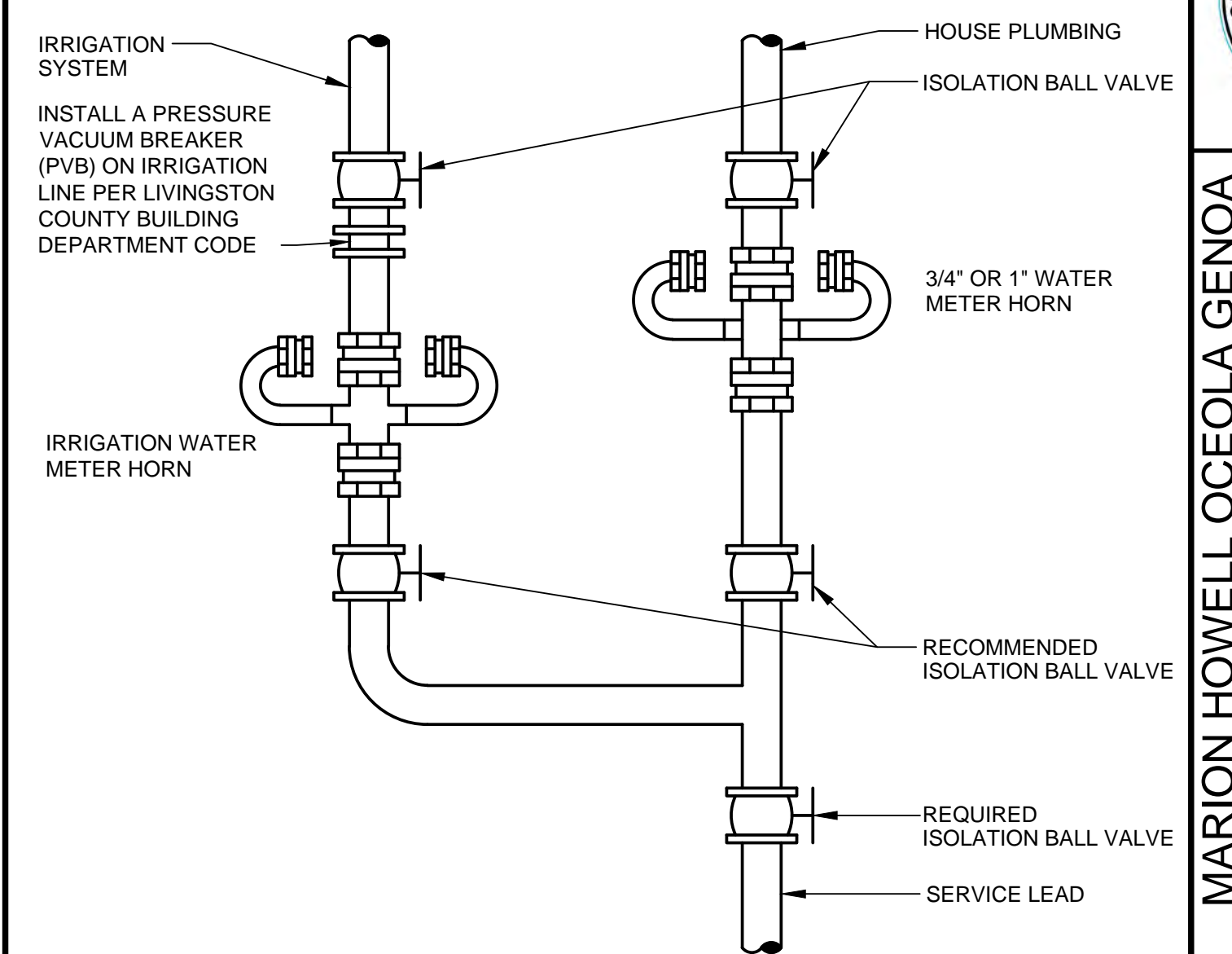
- NOTES:
- ALL LIFT HOLES AND JOINTS SHALL BE MORTARED BOTH INSIDE AND OUTSIDE.
 - BLOCK MANHOLES TO BE USED ONLY WITH ENGINEERS PERMISSION.
 - NO STEPS PERMITTED.

BUTTERFLY VALVE AND WELL



- NOTES:
- VALVE BOX SHALL NOT REST ON VALVE OR MAIN LINE PIPE.
 - A VALVE STEM EXTENSION WITH CENTERING RING IS REQUIRED FOR VALVES BURIED DEEPER THAN 6'.

GATE VALVE AND BOX



- NOTES:
- ALL METERS ARE TO BE INSTALLED HORIZONTALLY IN A DRY, CLEAN, SANITARY LOCATION THAT IS READILY ACCESSIBLE. THIS DRAWING IS NOT TO SCALE & IS ONLY A REPRESENTATION OF HOW THE METERS SHOULD BE INSTALLED. THE SECOND METER IS OPTIONAL FOR IRRIGATION USAGE. METERS SHOULD NOT BE INSTALLED IN LINE (ONE RIGHT AFTER THE OTHER).
 - PROPERTIES DESIGNATED "HIGH HAZARD" PER THE MHOG CROSS CONNECTION RULES MANUAL WILL REQUIRE THE INSTALLATION OF A REDUCED PRESSURE ZONE (RPZ) BACK FLOW PREVENTION DEVICE.

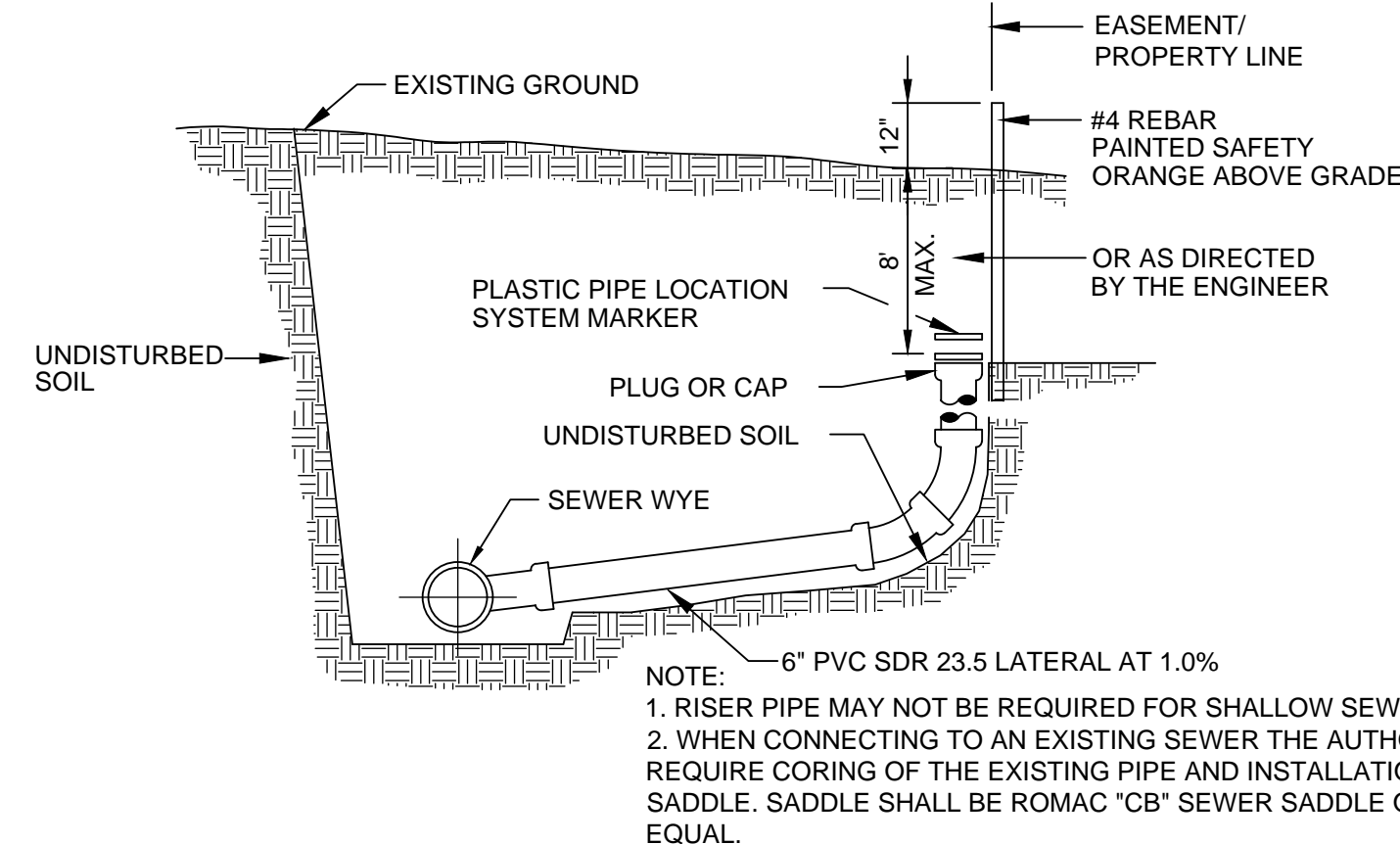
TYPICAL METER HORN INSTALLATION



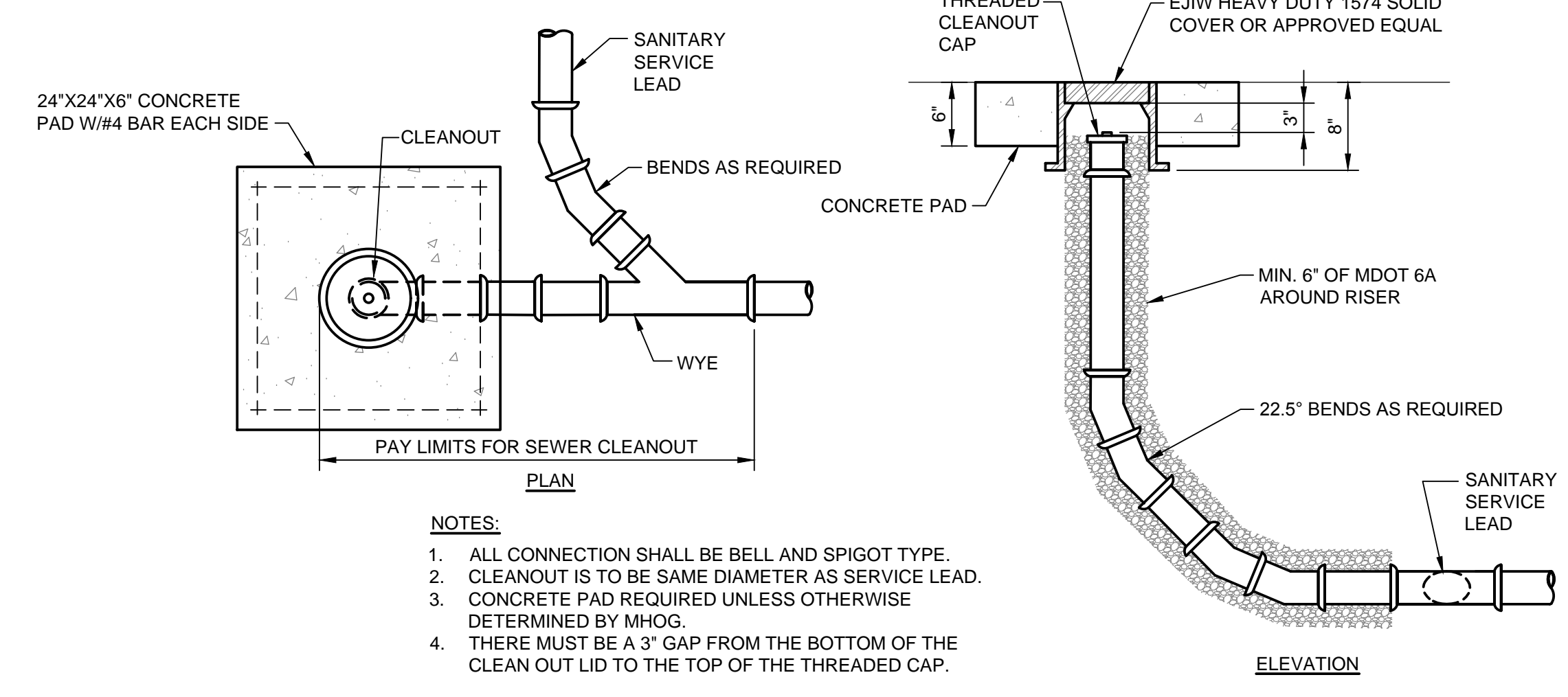
MARION HOWELL OCEOLA GENOA
Sewer and Water Authority

Scale: NONE
Issued Date: JANUARY - 2014
UPDATED: MAY 2015
UPDATED: FEBRUARY 2016
UPDATED: APRIL 2016
UPDATED: OCTOBER 2017

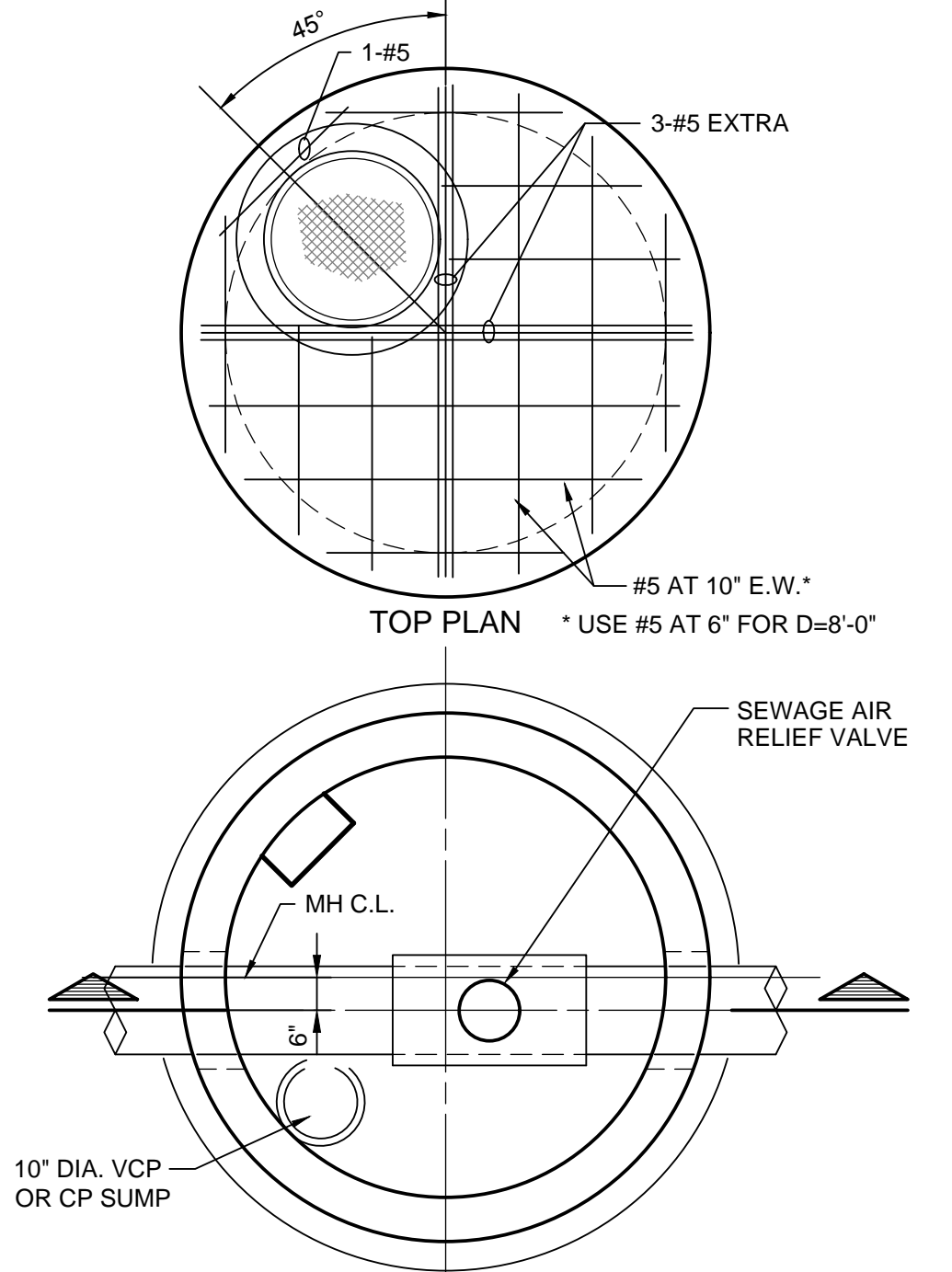
STANDARD DETAILS



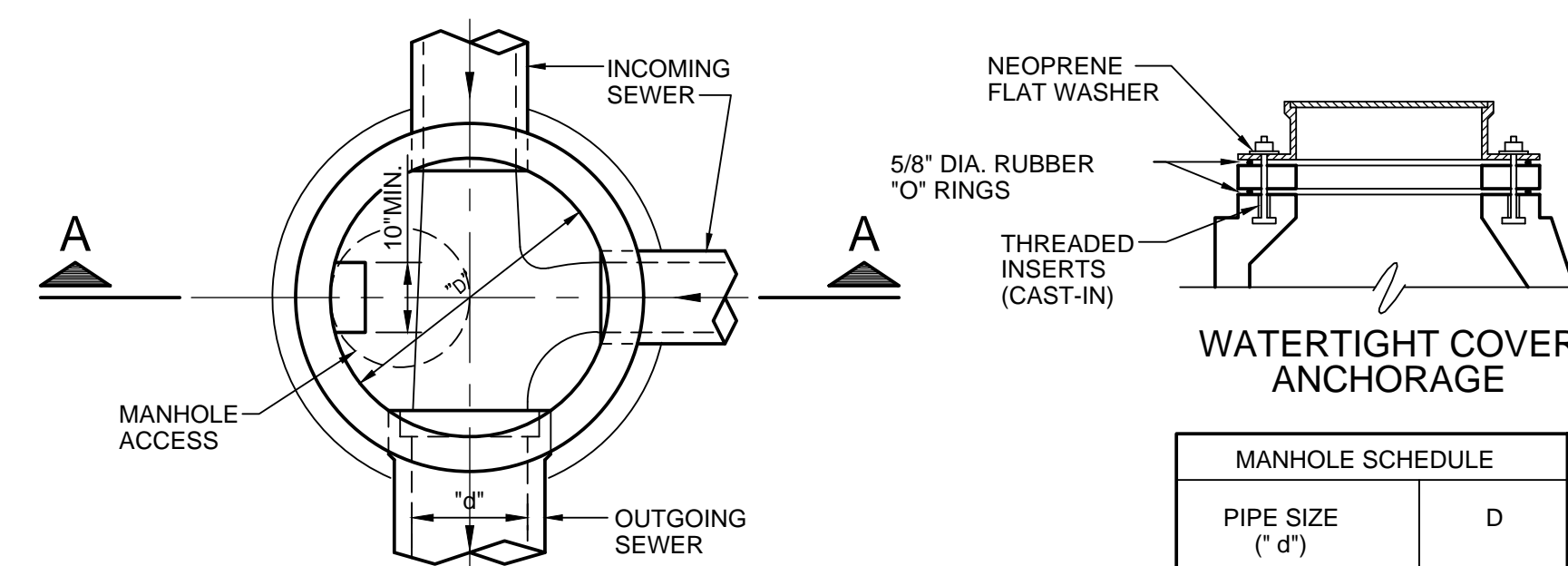
SANITARY SEWER LATERAL



SEWER CLEANOUT DETAIL

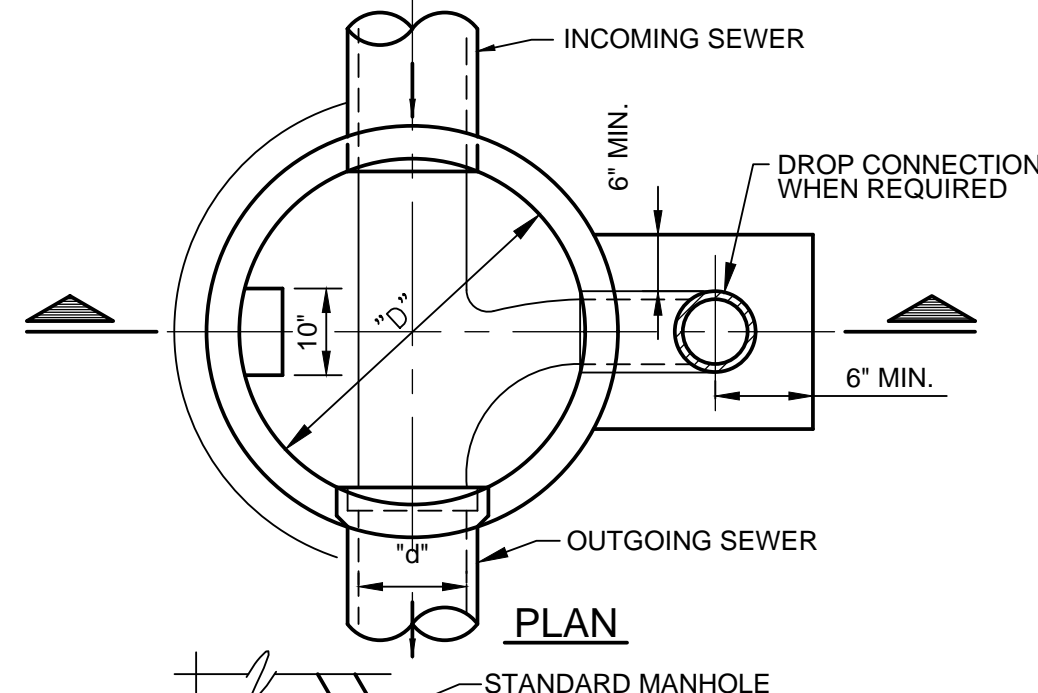


AIR RELIEF STRUCTURE

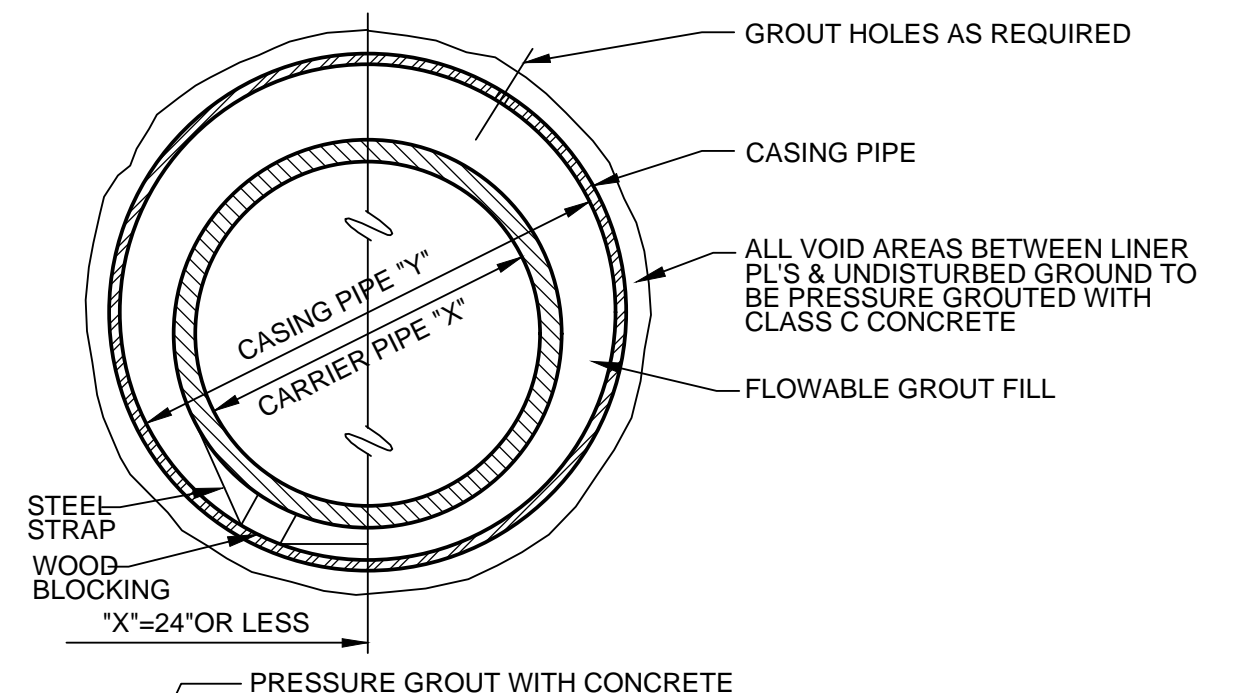


WATERTIGHT COVER ANCHORAGE

MANHOLE SCHEDULE	
PIPE SIZE ("d")	D
8"-24"	48"
27"-36"	60"
42"-48"	72"
54"	84"



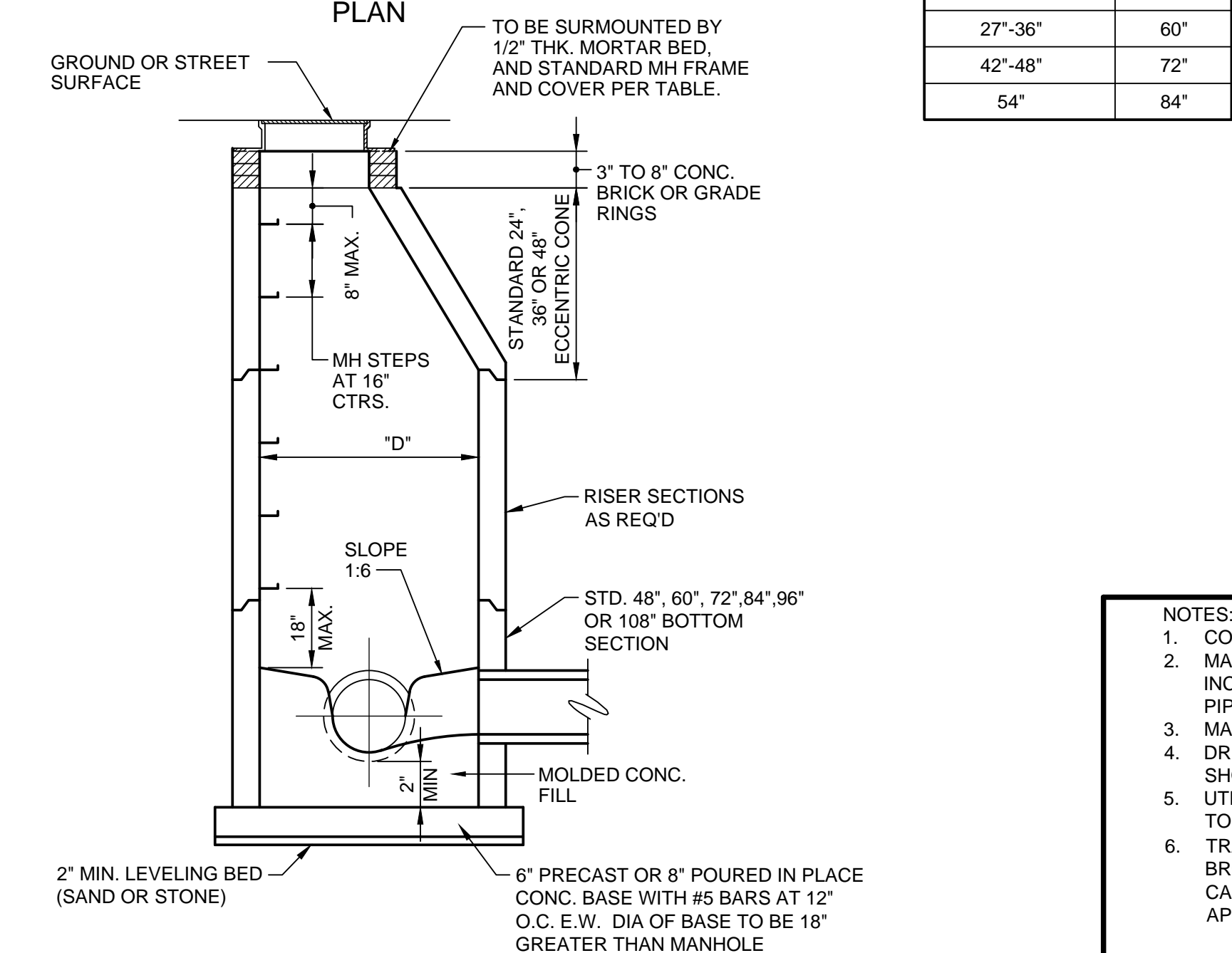
DROP CONNECTION



CASING PIPE

TABLE	
"X"	"Y"(MIN)
6"-8"	20"
10"-12"	24"
14"-15"	30"
18"-21"	36"
24"	42"

NOTE: SEE SPECIFICATIONS FOR ALTERNATE CONST. METHODS

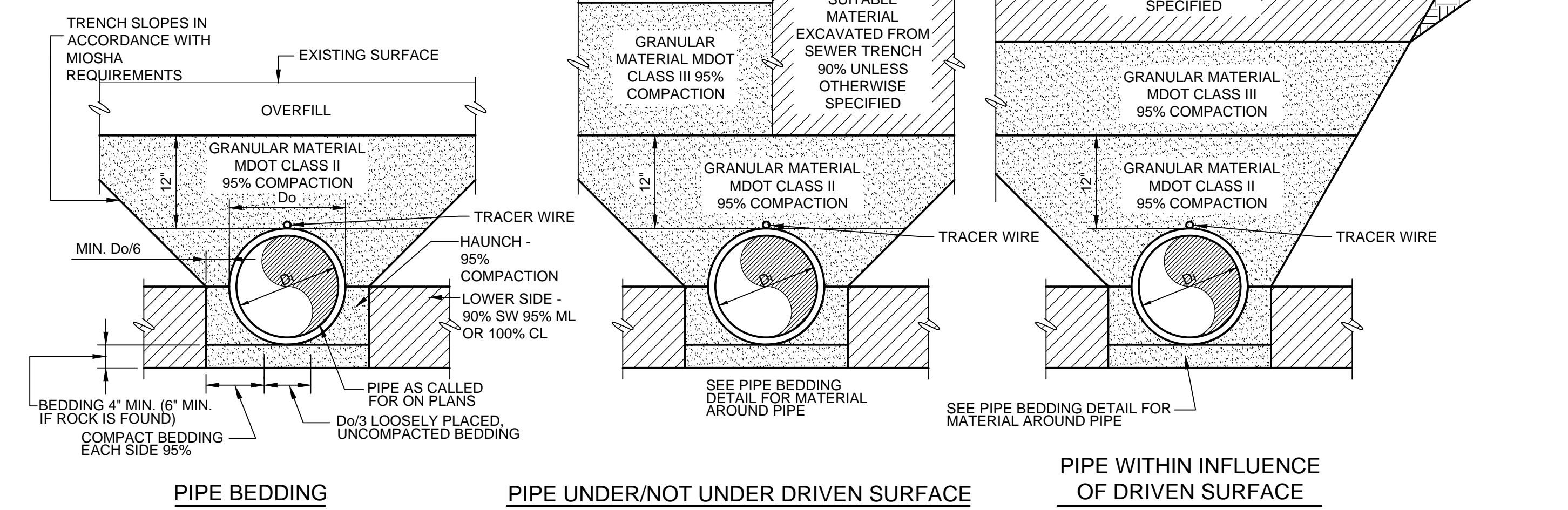


STANDARD MANHOLE

- NOTES:
- ALL SANITARY MANHOLES TO BE PRECAST REINFORCED CONCRETE WITH PREMIUM JOINTS. SEE SPECIFICATIONS FOR BASE SLAB AND PIPE OPENINGS AND CONNECTIONS.
 - MANHOLE CONES SHALL BE THE ECCENTRIC TYPE.
 - PROVIDE 6" OF COMPACTED GRANULAR MATERIAL UNDER ALL PRECAST CONCRETE BASE SLVPC.
 - FORCE MAINS CONNECT DIRECTLY TO A MANHOLE SHALL BE INSTALLED SO THAT THE ELEVATION OF THE PIPE CROWNS MATCH. THE FORCE MAIN SHALL BE DIRECTED DOWNWARD INTO THE FLOW CHANNEL.
 - FOR SANITARY SEWERS ALL PIPES SHALL ENTER MANHOLE THROUGH RUBBER BOOTED CONNECTION.

FRAME & COVER FOR SANITARY SEWER MANHOLES				
TYPE	TYPE OF COVER	MANUFACTURER OR EQUAL		
		EAST JORDAN	NEENAH	
MH	SANITARY - SOLID SELF-SEALING	1040.0000	R-1642	
MH	SANITARY - SOLID WATERTIGHT	1040-APT	R-1916-F	
CO	SOLID	1574A	R-1973-A	

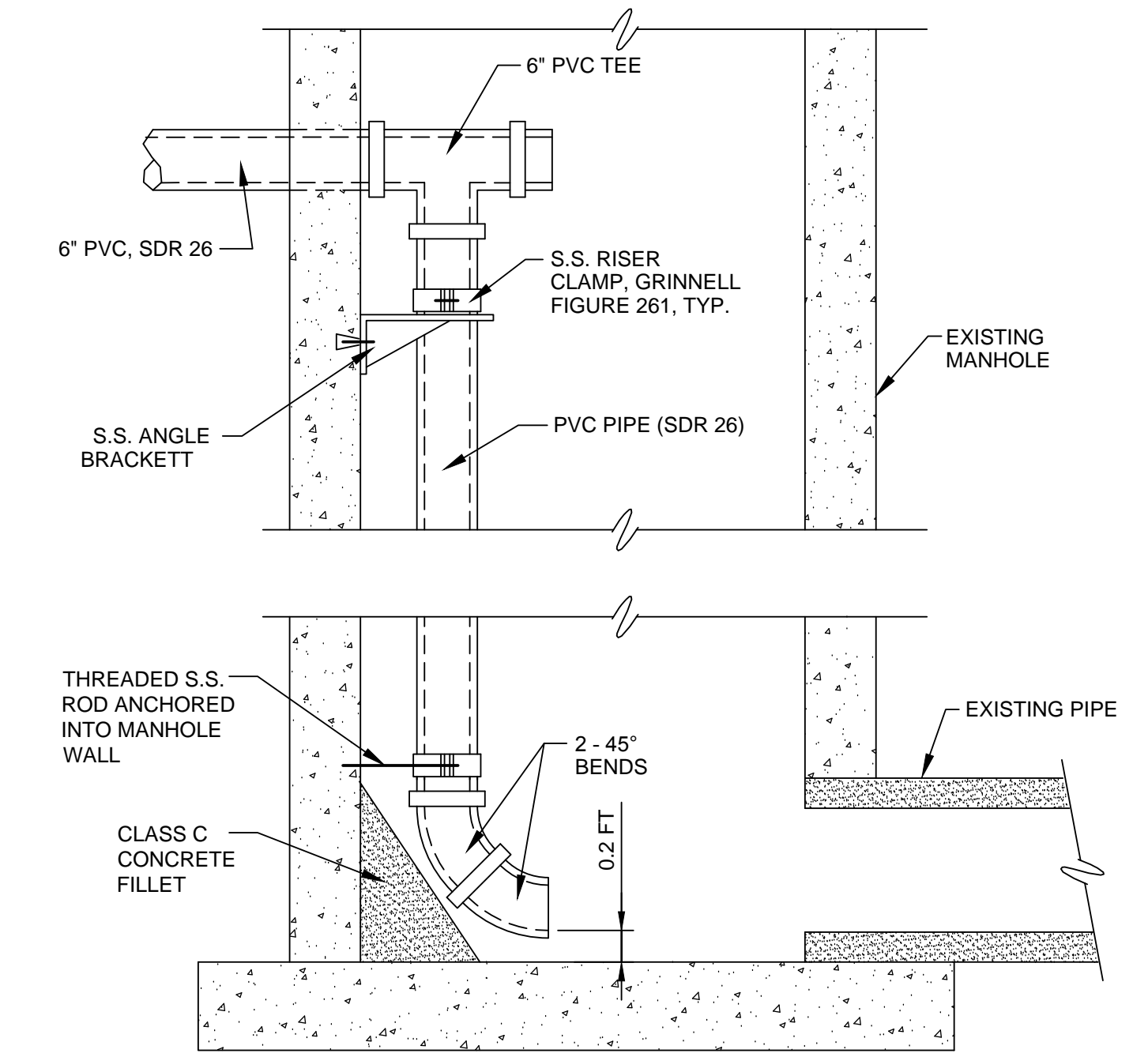
- NOTES:
- COMPACTION PRESENTED AS MINIMUM STANDARD PROCTOR VALUES.
 - MATERIALS AROUND THERMOPLASTIC PIPE WITH DIAMETER < 6 INCHES SHALL PASS 0.5 INCH SIEVE, MATERIALS AROUND OTHER PIPES SHALL PASS 1.5 INCH SIEVE.
 - MATERIALS AROUND HDPE PIPE TO BE MDOT 6A OR 21AA.
 - DRIVEN SURFACE IS DRIVEWAY, PARKING AREA, ROAD BED OR SHOULDER.
 - UTILITY TRENCHES LOCATED WITHIN A MDOT ROW SHALL CONFORM TO MDOT STANDARD DETAIL R-83.
 - TRACER WIRE IS REQUIRED ON FORCE MAIN ONLY AND SHALL BE BROUGHT TO GRADE AT A MINIMUM EVERY 1000 FEET IN A APPROVED CAST IRON TRACER WIRE BOX ENCASED IN CONCRETE OR WITH AN APPROVED GREEN MARKER POST.



PIPE BEDDING

PIPE UNDER/NOT UNDER DRIVEN SURFACE TRENCH EXCAVATION & PIPE BEDDING

PIPE WITHIN INFLUENCE OF DRIVEN SURFACE



INTERIOR SEWER LATERAL DROP CONNECTION

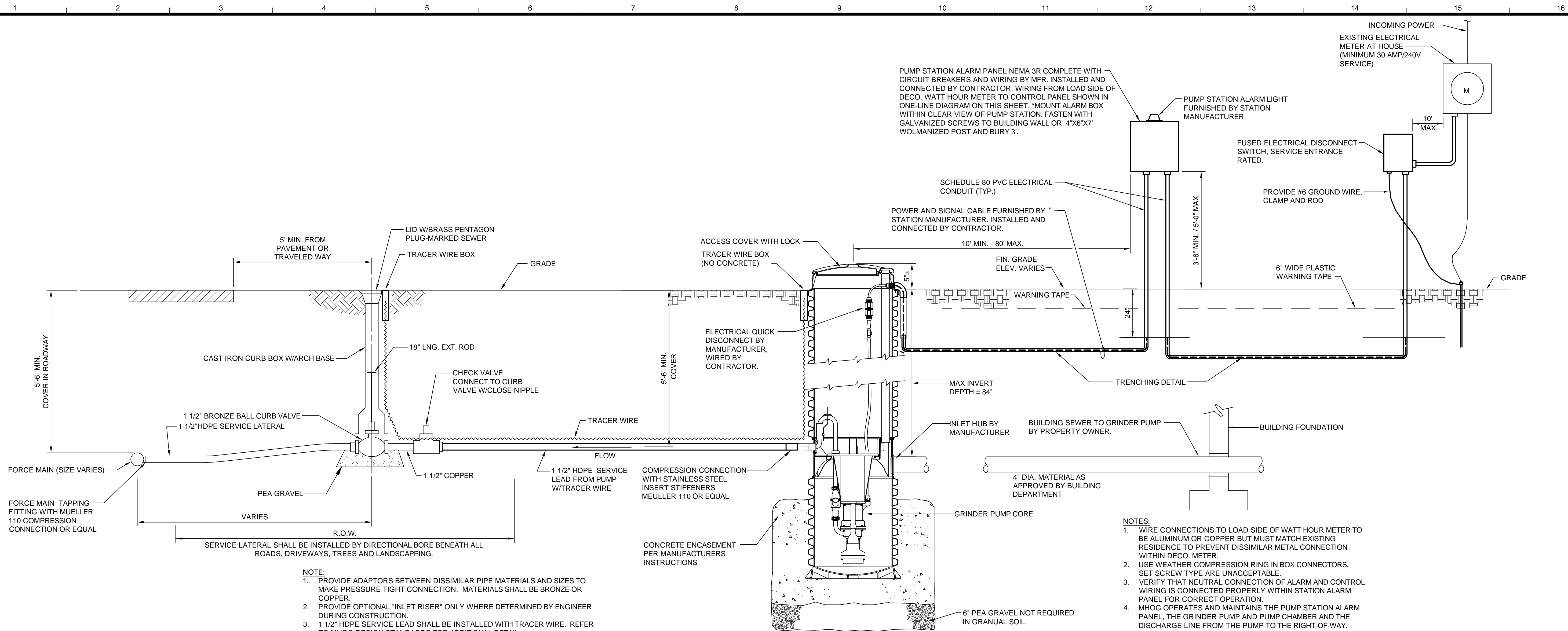


MARION HOWELL OCEOLA GENOA Sewer and Water Authority

STANDARD DETAILS

Scale: NONE
 Issued Date: JANUARY - 2014
 UPDATED MAY 2015
 UPDATED APRIL 2016
 UPDATED OCTOBER 2017

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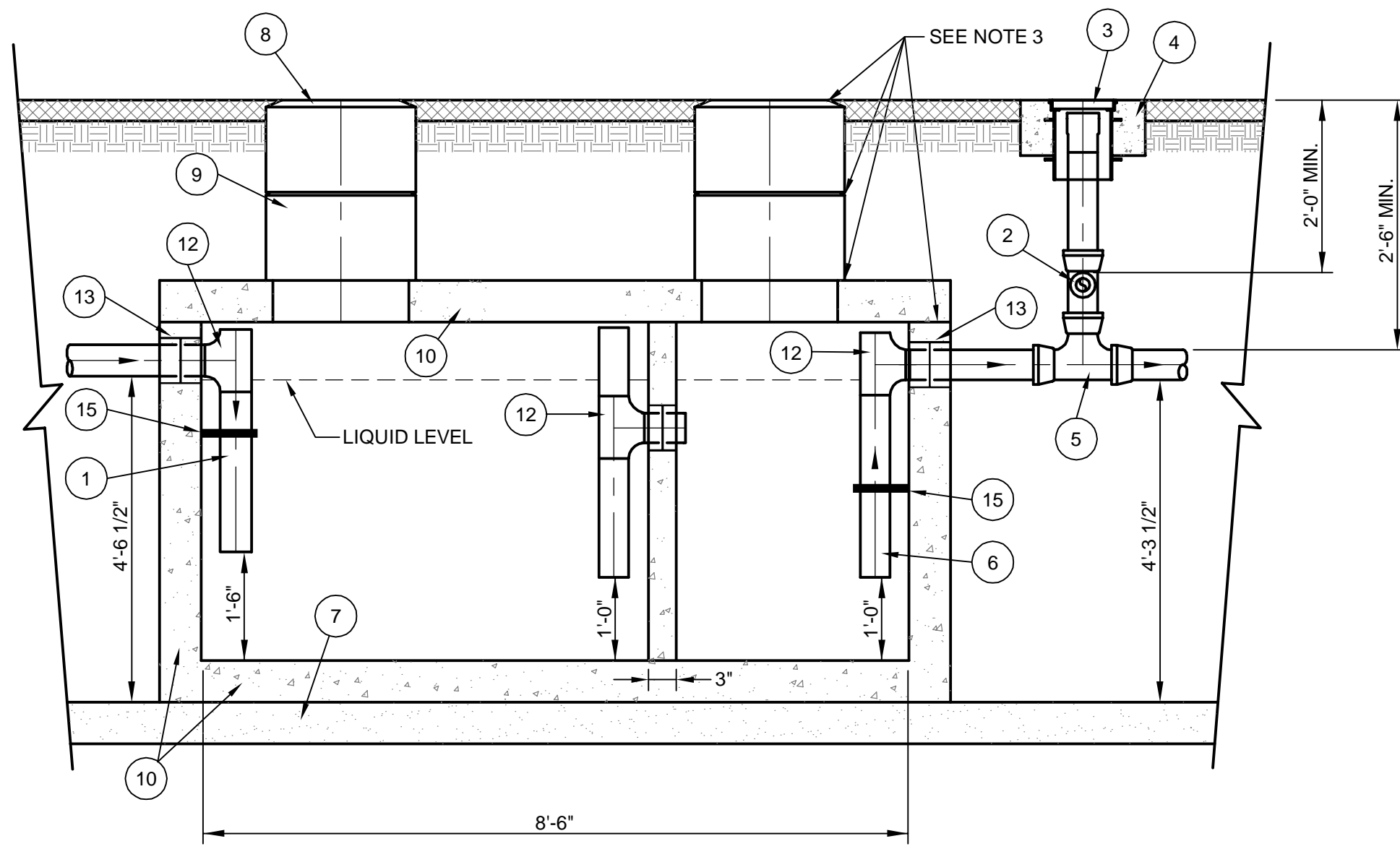
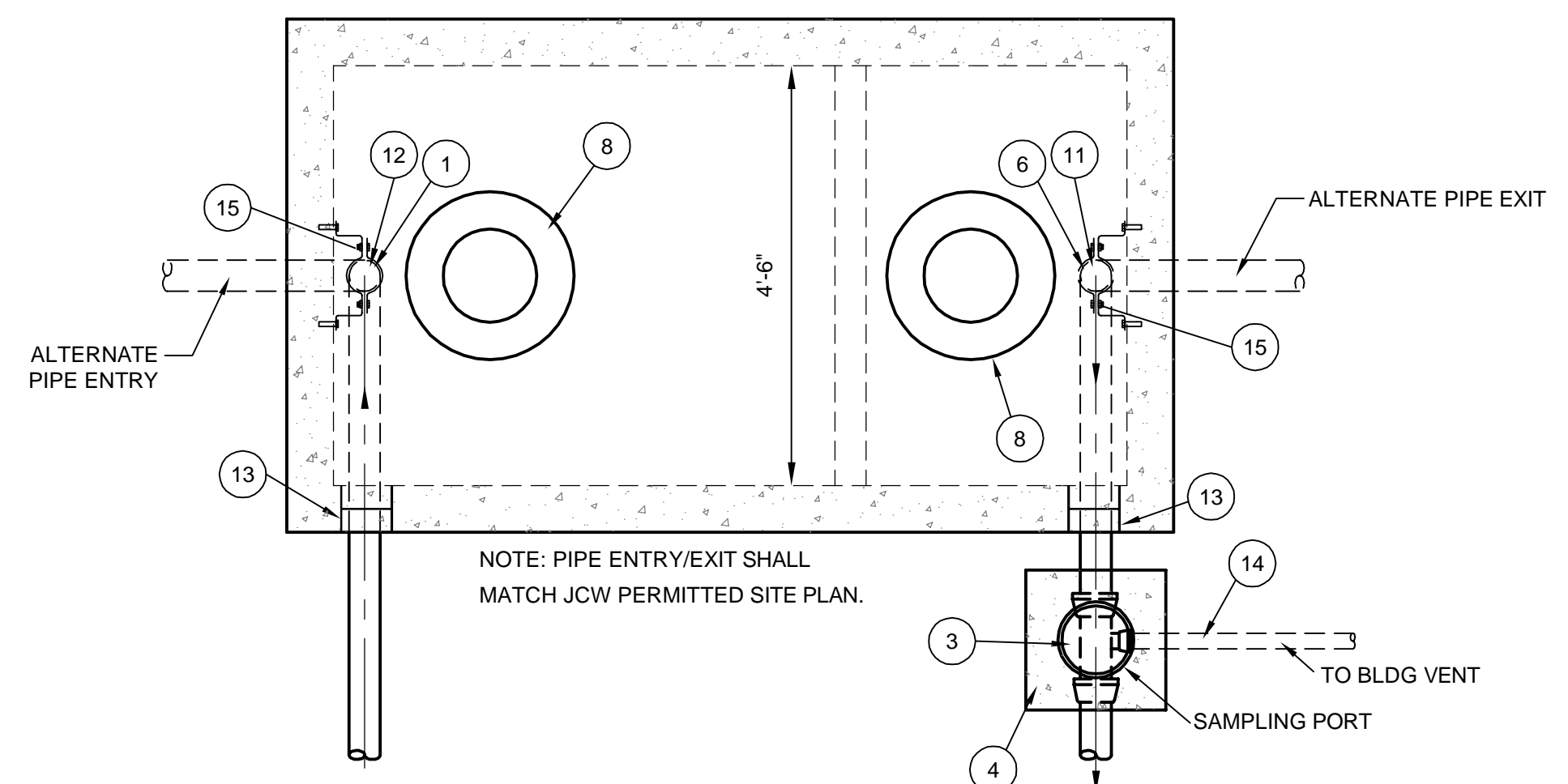


SIMPLEX/DUPLEX GRINDER PUMPING STATION

NO SCALE

- NOTE:
1. PROVIDE ADAPTORS BETWEEN DISSIMILAR PIPE MATERIALS AND SIZES TO MAKE PRESSURE TIGHT CONNECTION. MATERIALS SHALL BE BRONZE OR COPPER.
 2. PROVIDE OPTIONAL "INLET RISER" ONLY WHERE DETERMINED BY ENGINEER DURING CONSTRUCTION.
 3. 1 1/2" HDPE SERVICE LEAD SHALL BE INSTALLED WITH TRACER WIRE. REFER TO MHOG DESIGN STANDARDS FOR ADDITIONAL DETAIL.

- NOTES:
1. WIRE CONNECTIONS TO LOAD SIDE OF WATT HOUR METER TO BE ALUMINUM OR COPPER BUT MUST MATCH EXISTING RESIDENCE TO PREVENT DISSIMILAR METAL CONNECTION WITHIN DECO. METER.
 2. USE WEATHER COMPRESSION RING IN BOX CONNECTORS. SET SCREW TYPE ARE UNACCEPTABLE.
 3. VERIFY THAT NEUTRAL CONNECTION OF ALARM AND CONTROL WIRING IS CONNECTED PROPERLY WITHIN STATION ALARM PANEL FOR CORRECT OPERATION.
 4. MHOG OPERATES AND MAINTAINS THE PUMP STATION ALARM PANEL, THE GRINDER PUMP AND PUMP CHAMBER AND THE DISCHARGE LINE FROM THE PUMP TO THE RIGHT-OF-WAY. THE LOCATION OF THE GRINDER PUMP MUST BE APPROVED BY MHOG PRIOR TO INSTALLATION. THE GRINDER PUMP MUST BE SERVICEABLE (ACCESSIBLE BY TRUCK) AND FREE FROM OBSTRUCTION.
 5. MHOG MUST BE ONSITE FOR STARTUP OF ALL NEW GRINDER PUMPS.



ITEM	DESCRIPTION
1	4" PVC INLET PIPE*
2	4"x4"x2" TEE WITH 2" PIPE TO BUILDING VENT*
3	THREADED C/O CAP JOSAM 58860 OR APP EQUAL**
4	CONCRETE PAD
5	4"x4"x4" TWO-WAY CLEANOUT TEE*
6	4" PVC OUTLET*
7	4" - 6" GRAVEL BEDDING
8	HEAVY-DUTY CAST IRON FRAME AND COVER ***
9	CONCRETE ADJUSTMENT RINGS
10	REINFORCE AS REQUIRED FOR SERVICE CONDITIONS
11	4" PVC 90° ELBOW*
12	4" PVC TEE*
13	A-LOK OR PRESS SEAL PSX PIPE/WALL CONNECTOR
14	2" VENT PIPE (IDENTIFY PIPE TYPE, CLASS & JOINT AS REQUIRED FOR PROJECT)
15	STAINLESS STEEL PIPE SUPPORT CLAMP ****

* 6" PIPE MAY BE SUBSTITUTED TO MATCH UPSTREAM PIPE DIAMETER.
 ** REFER TO CLEAN OUT DETAIL(S) ON STANDARD DETAIL SHEET.
 *** CLAY & BAILEY 2008 BV OR EQUAL (FROST PROOF COVERS OPTIONAL)
 **** FM STAINLESS FASTENERS #63 OR EQUAL. 1/2"x2-1/2" SS BRACKET W/ 1/2"x1-1/2" FULLY THREADED SS HEX BOLT WITH 1/2" SS WASHER AND 1/2"x1-3/4" SS ANCHORS. CLAMP TO BE FACTORY INSTALLED.

- NOTES:
1. THREE COVERS AND RISERS SHOWN. TWO COVERS AND RISERS CENTERED OVER UPPER TWO BAFFLES ARE OPTIONAL.
 2. INTERCEPTOR SIZE - 1000 GAL MINIMUM (REVISE THE SIZE DIMENSIONS, AS NEEDED, FOR LARGER CAPACITY INTERCEPTORS)
 3. ALL JOINTS AT THE FRAME & COVER, CONCRETE ADJUSTMENT RINGS AND THE LID OF THE INTERCEPTOR SHALL BE SEALED WITH A MINIMUM OF TWO (2) ROWS OF 3/4 TO 1 INCH PREFORMED BUTYL JOINT SEALER AND A 6" BUTYL JOINT WRAP AROUND SLEEVE (EZ WRAP). THE ENDS OF THE 6" EZ WRAP SHALL OVERLAP BY 12".
 4. PIPING ON THE INTERIOR OF THE INTERCEPTOR SHALL BE PVC WITH SOLVENT-CEMENTED JOINTS.
 5. GREASE INTERCEPTOR INCLUDING ADJUSTMENT RINGS AND CASTINGS SHALL BE WATER TESTED FOR WATER TIGHTNESS AFTER THE BACKFILL OPERATIONS HAVE BEEN COMPLETED. WATER TESTING SHALL CONSIST OF THE FOLLOWING: 1. SEAL THE TANK, 2. FILL WITH WATER, 3. LET STAND FOR 24 HOURS, 4. REFILL TANK, 5. TANK IS APPROVED IF WATER LEVEL IS HELD FOR 1 HOUR.
 6. ONLY KITCHEN WASTE SHALL BE DIVERTED TO THE GREASE TRAP.

GREASE INTERCEPTOR 1000 GALLON

NO SCALE

Tuesday, November 15, 2016 9:35:32 AM DRAWING: P:\H12719\200-12719-00\CAD\SheetFiles\Hog-std.DWG

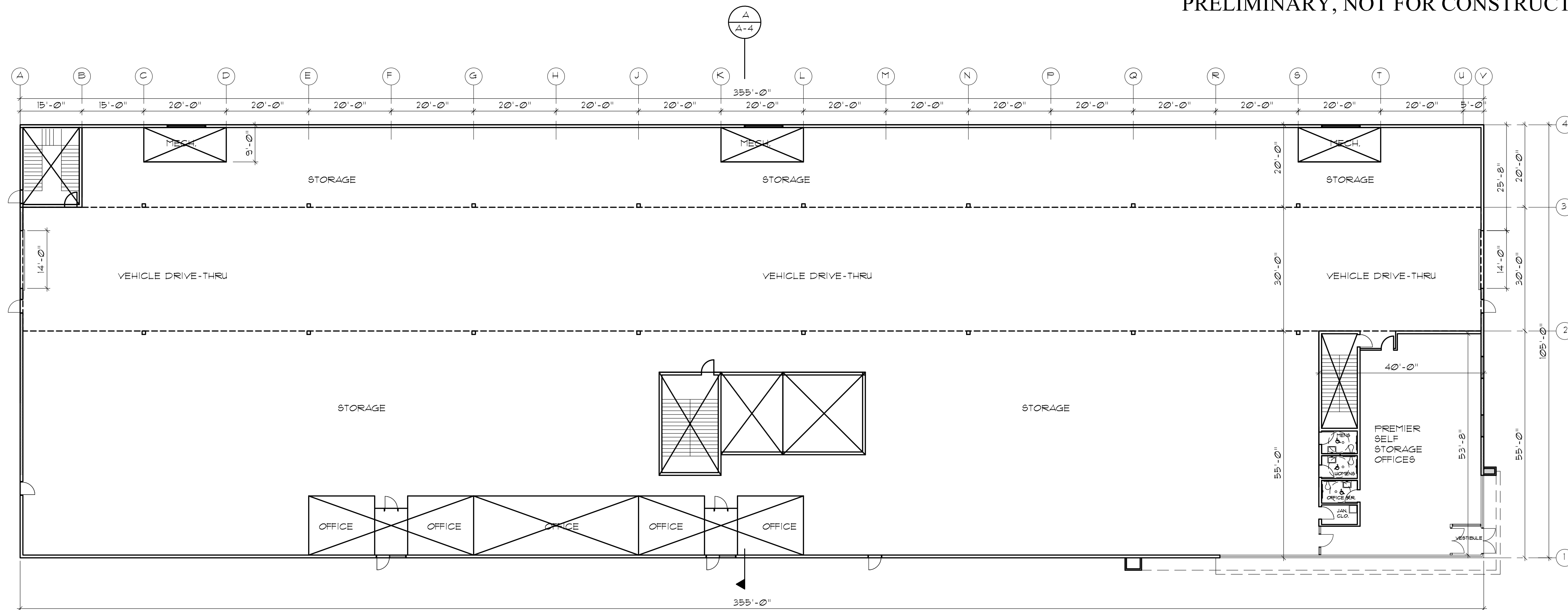


MARION HOWELL OCEOLA GENOA
Sewer and Water Authority

STANDARD DETAILS

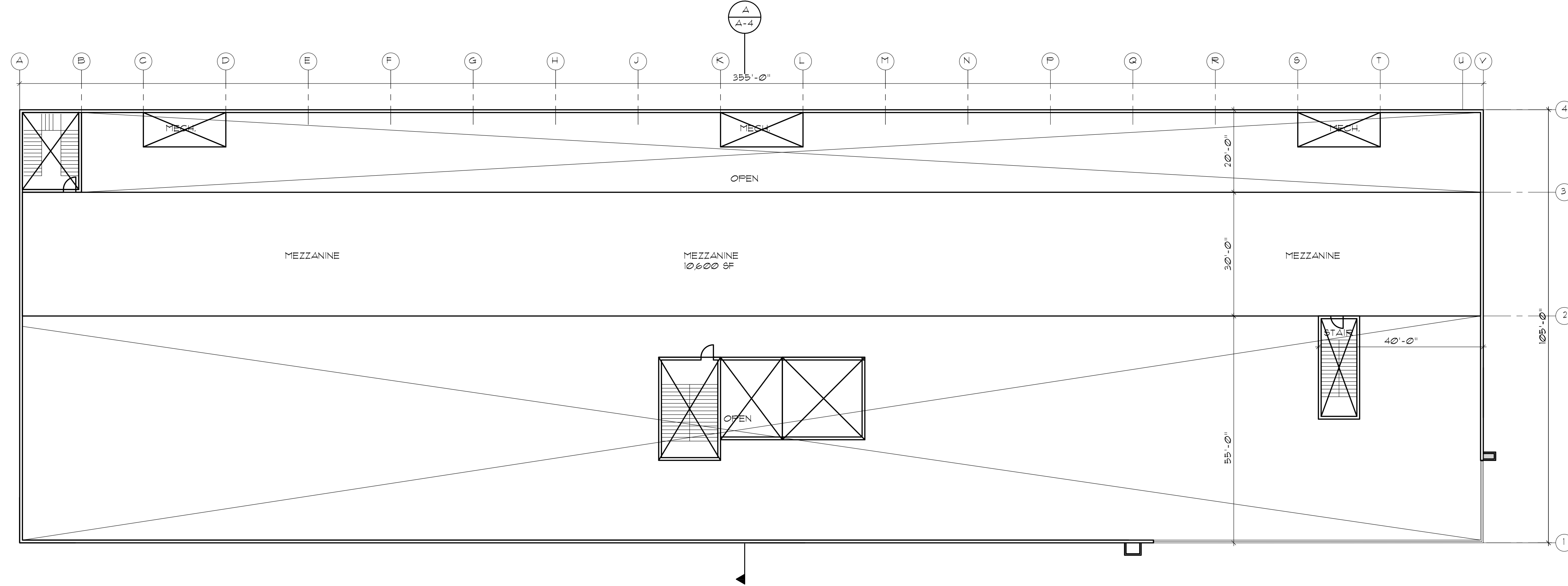
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Issued Date	JANUARY - 2014
Updated	APRIL - 2015
Updated	APRIL - 2016
Updated	JUNE - 2016
Updated	NOV - 2016



GROUND LEVEL, USE GROUP S-1 & B
37,275 SF GROSS
NET RENTABLE AREA = 19,120 SF

GROUND LEVEL PLAN
SCALE: 1/16" = 1'-0"



UPPER LEVEL, USE GROUP S-1
37,275 SF GROSS (10,600 SF PERMANENT MEZZANINE)
NET RENTABLE AREA = 27,225 SF

UPPER LEVEL PLAN
SCALE: 1/16" = 1'-0"

Revisions:

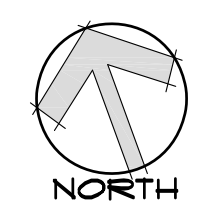
BMH-PREMIER P.U.D.
HOWELL, MI

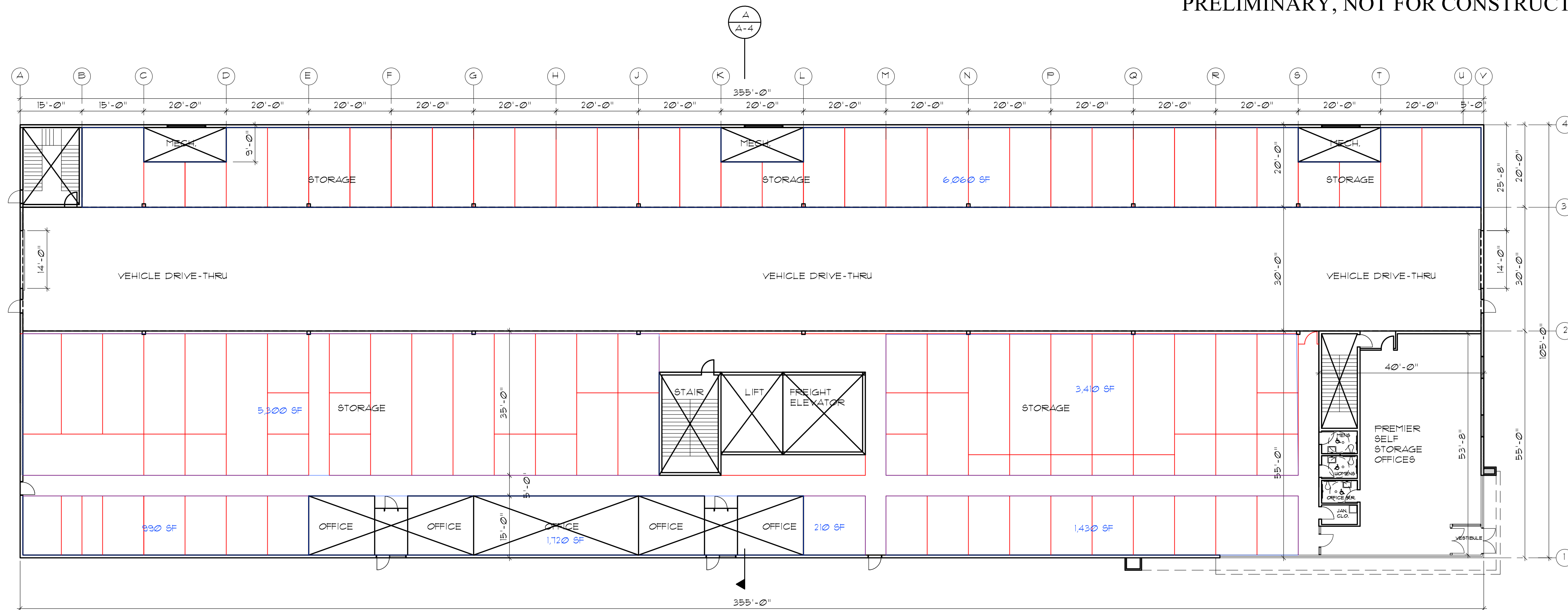
BUILDING ENVELOPE
FLOOR PLAN

Scale
1/16" = 1'-0"

Date
2/24/20

Sht. No.
A-1



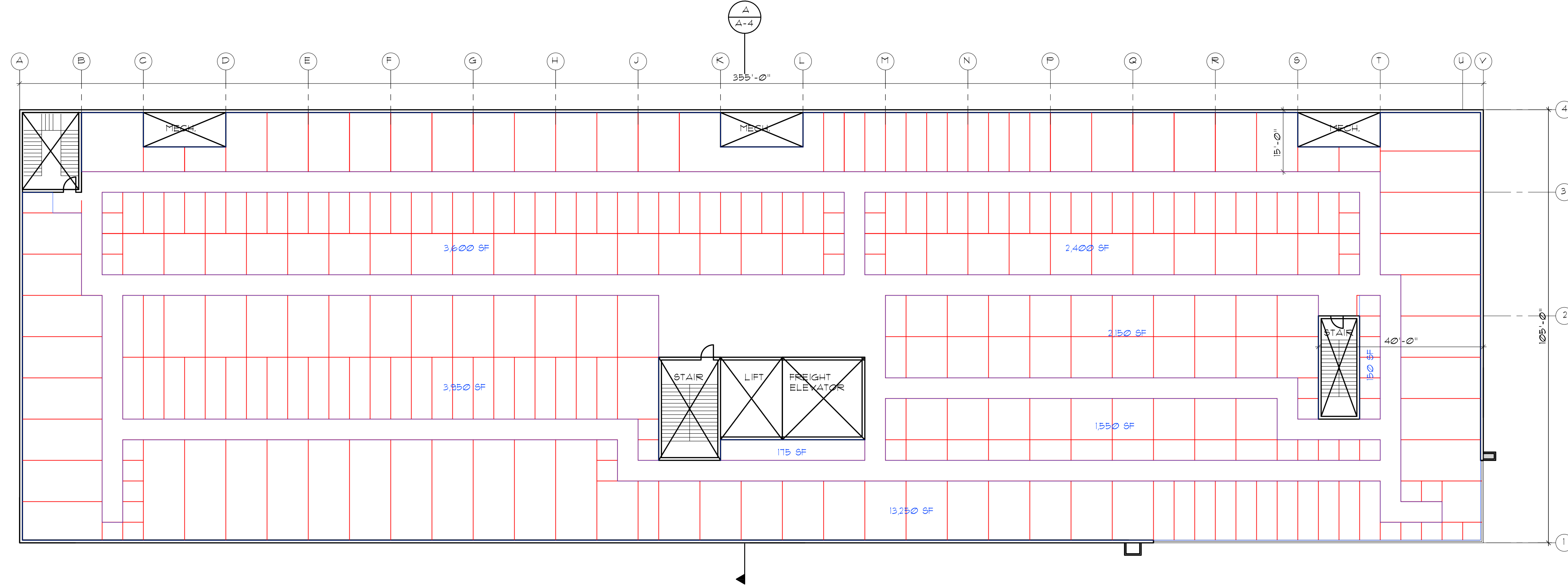


GROUND LEVEL, USE GROUP S-1 & B
37,275 SF GROSS
NET RENTABLE AREA = 19,120 SF

SYMBOL KEY
 STORAGE SYSTEM CONSISTS OF PARTITIONS, 2ND FLOOR DECK, AND STORAGE UNIT DOORS. THESE COMPONENTS ARE SEPARATELY ENGINEERED AND INSTALLED WITHIN THE PERMANENT STRUCTURE.
 PROPOSED NEW CONSTRUCTION, PERMANENT BUILDING ELEMENT

SELF STORAGE SYSTEM - GROUND LEVEL PLAN
SCALE: 1/16"=1'-0"

TL RENTABLE AREA
STORAGE 17,400 SF
OFFICE 1,720 SF



UPPER LEVEL, USE GROUP S-1
37,275 SF GROSS (10,600 SF PERMANENT MEZZANINE)
NET RENTABLE AREA = 27,225 SF

SELF STORAGE SYSTEM - UPPER LEVEL
SCALE: 1/16"=1'-0"

TOTAL RENTABLE AREA
STORAGE 27,225 SF

Revisions:

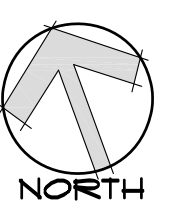
BMH-PREMIER P.U.D.
HOWELL, MI

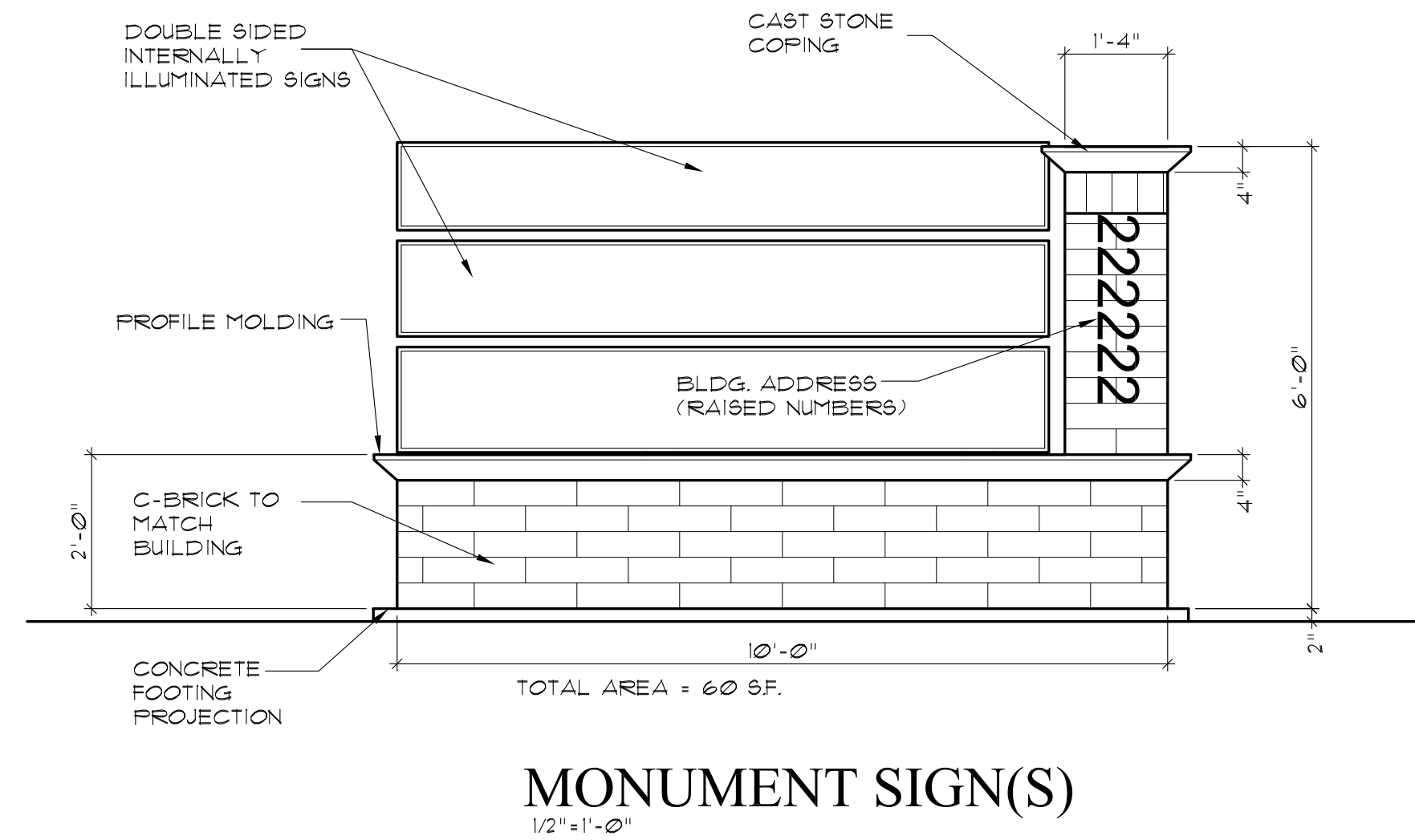
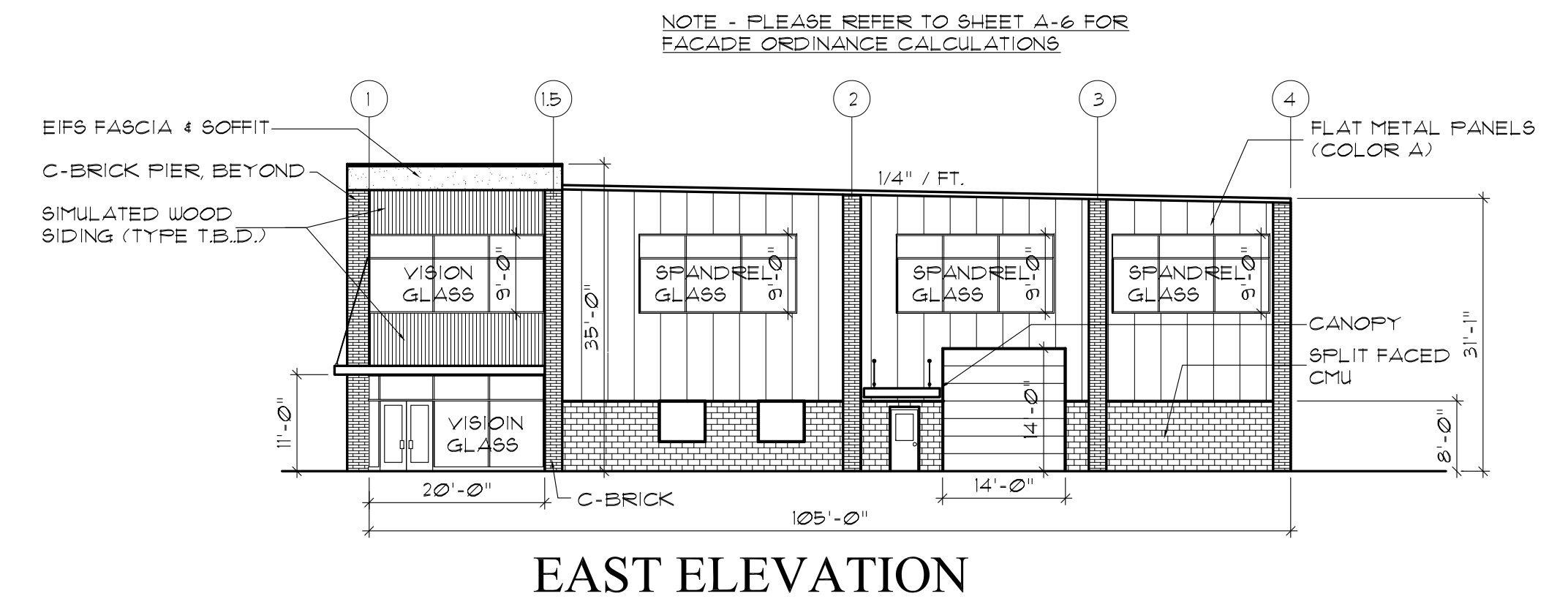
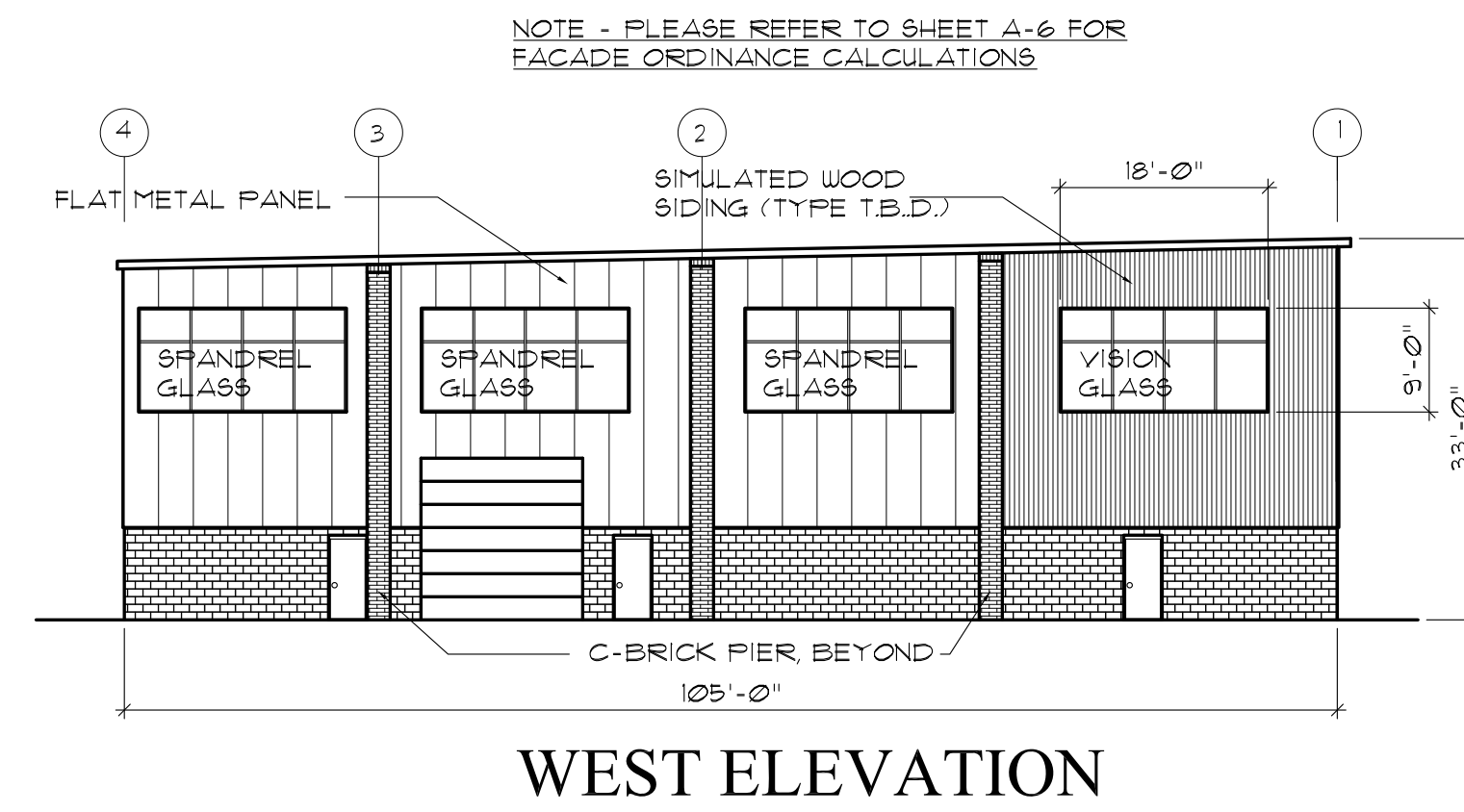
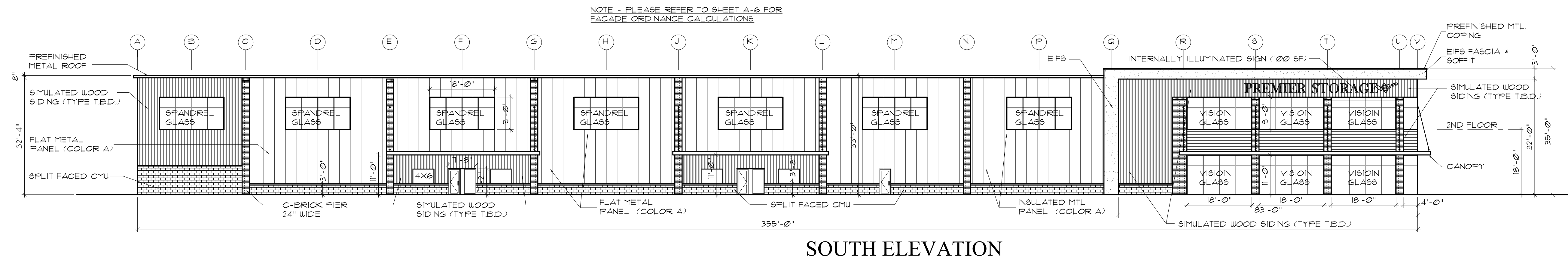
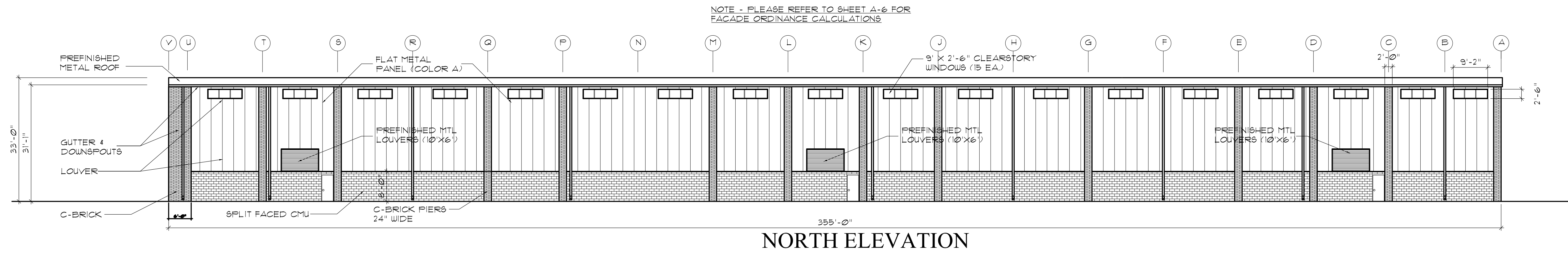
STORAGE SYSTEM
FLOOR PLAN

Scale
1/16"=1'-0"

Date
2/24/20

Sht. No.
A-1.1



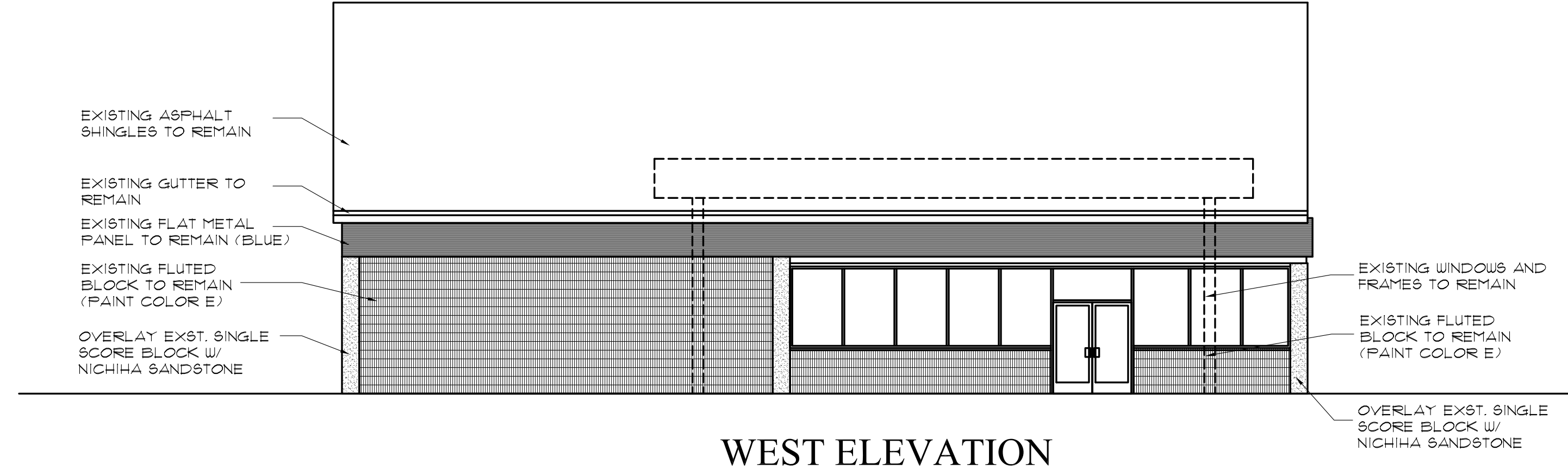


Revisions:
BMH-PREMIER P.U.D.
HOWELL, MI

SELF STORAGE
BLDG. ELEVATIONS

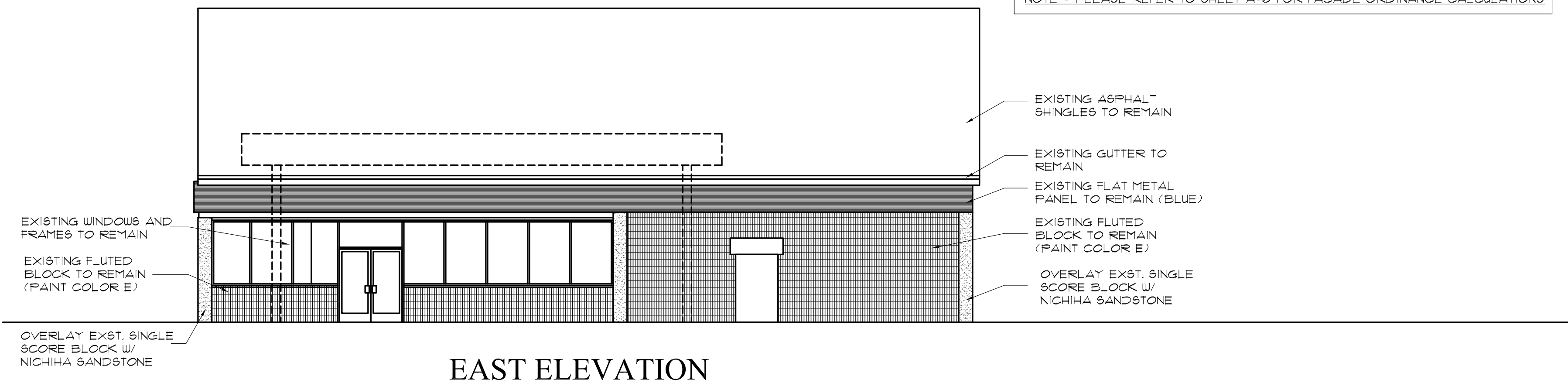
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Date
2/24/20
Sht. No.
A-2

NOTE - PLEASE REFER TO SHEET A-6 FOR FACADE ORDINANCE CALCULATIONS



WEST ELEVATION

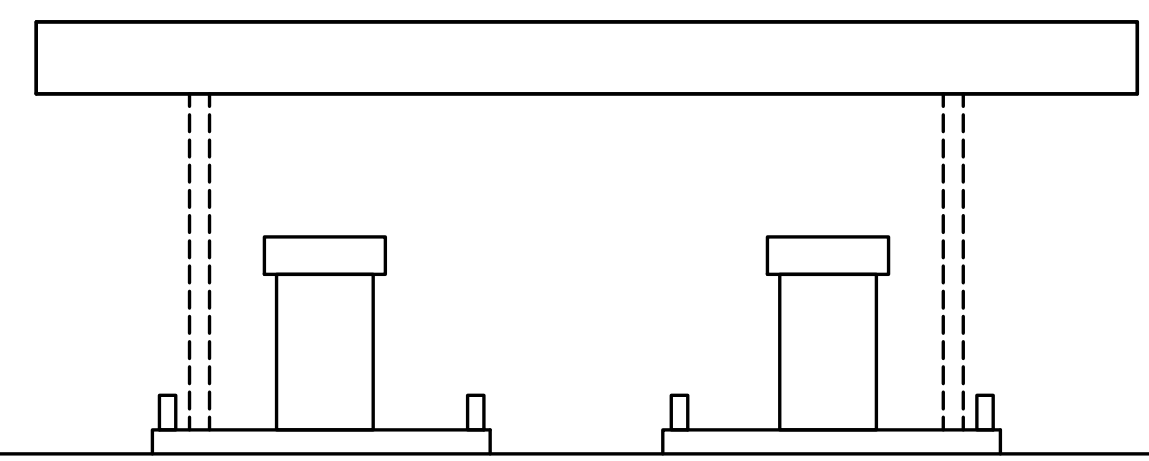
NOTE - PLEASE REFER TO SHEET A-6 FOR FACADE ORDINANCE CALCULATIONS



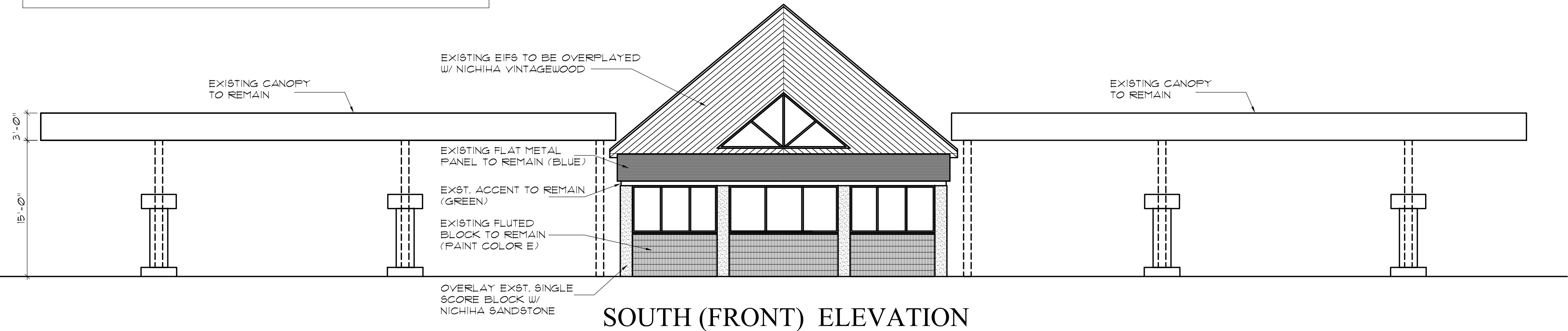
EAST ELEVATION

FACADE AREAS, CANOPY, EAST ELEVATION UNALTERED
FACADE AREAS, CANOPY, WEST ELEVATION UNALTERED

NOTE - PLEASE REFER TO SHEET A-6 FOR FACADE ORDINANCE CALCULATIONS

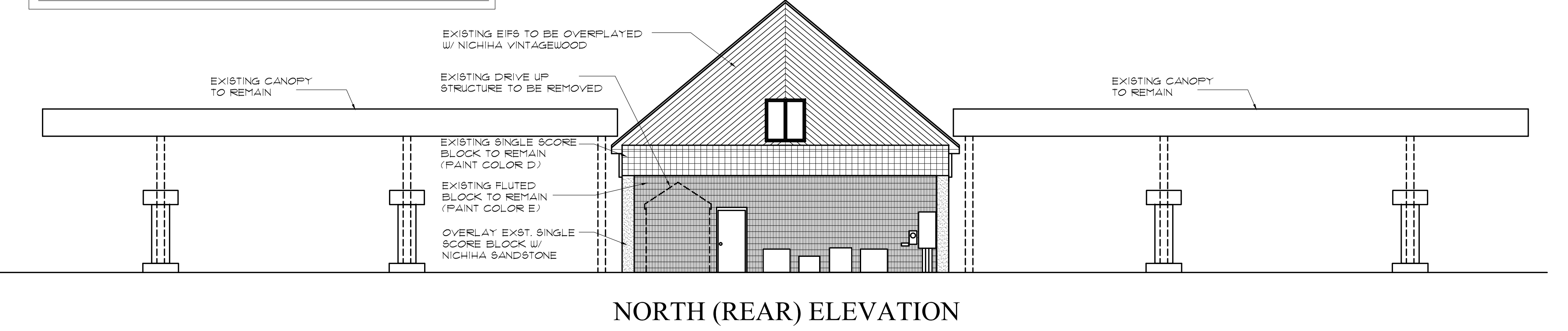


CANOPY EAST & WEST ELEVATION



SOUTH (FRONT) ELEVATION

NOTE - PLEASE REFER TO SHEET A-6 FOR FACADE ORDINANCE CALCULATIONS



NORTH (REAR) ELEVATION

**GENOA CHARTER TOWNSHIP
PLANNING COMMISSION
PUBLIC HEARING
OCTOBER 13, 2020
6:30 P.M.
MINUTES**

CALL TO ORDER: Chairman Grajek called the meeting of the Genoa Charter Township Planning Commission to order at 6:31 p.m. Present were Marianne McCreary, Chris Grajek, Eric Rauch, Jim Mortensen, Jeff Dhaenens, and Glynis McBain. Absent was Jill Rickard. Also present were Kelly VanMarter, Community Development Director/Assistant Township Manager, and Brian Borden of Safebuilt Studio. There were six audience members present.

PLEDGE OF ALLEGIANCE: The pledge of allegiance was recited.

APPROVAL OF AGENDA:

Moved by Commissioner Dhaenens, seconded by Commissioner McCreary, to approve the agenda as presented. **The motion carried unanimously.**

CALL TO THE PUBLIC: The call to the public was made at 6:32 pm with no response.

OPEN PUBLIC HEARING # 1...Review of a rezoning application and impact assessment to rezone approximately 4.34 acres from Office Service District (OSD) to High Density Residential (HDR) for Parcel# 11-06-200-101. The parcel in question is located on an undeveloped 4.34 acre site on the north side of Grand River, west of Char Ann Drive. The request is petitioned by Kevin Irish.

- A. Recommendation of Rezoning Application
- B. Recommendation of Environmental Impact Assessment (8-31-2020)

Mr. Brent LaVanway from Boss Engineering was present to represent the applicant. This property is bordered on the west side by general commercial, the north by low density residential, and the east side has an existing office building that is zoned office service. Mr. Irish has owned this property for approximately 18 years and it has been for sale for almost as long. He has done market research and the property is most viable as high density residential. It has Grand River frontage and public utilities. There are two other apartment complexes in this area.

Mr. Borden reviewed his letter from September 14, 2020.

- 1. This request will need to go to the County Planning Commission for review and recommendation prior to it being sent to the Township Board.
- 2. The request is not consistent with the Township Master Plan Future Land Use classification of office; however, the Township may find that there has been a change in conditions since the Master Plan was adopted.

3. The Township is beginning the process of updating the Master Plan. If this rezoning is granted, then this change will need to be made.
4. Provided the Township finds that there has been a change in conditions since the Master Plan was adopted, high density residential zoning is generally consistent with the rezoning criteria of Section 22.04.
5. The request is anticipated to be compatible with the surrounding area.
6. The host of uses permitted in high density residential are generally compatible with existing and planned uses in the surrounding area.
7. Consideration must be given to any technical comments provided by the Township Engineer, Utilities Director and/or Fire Authority with respect to infrastructure, utilities, and services.

Ms. VanMarter reviewed Mr. Markstrom's letter September 16.

1. The high density zoning requires no more than 8 units per acre. The Petitioner is proposing 32 units on the 4.34 acre site which complies with this density requirement.
2. The parcel has access to the municipal water and sanitary sewer utilities. The utilities have capacity for the proposed development density of HDR.
3. If the rezoning is approved, the proposed apartment community will require its own site plan for review and site plan approval. At that time the proposed facilities for management of the storm water and traffic will be reviewed.
4. The petitioner has presented a plan indicating how the proposed zoning would be interpreted on the parcel. From an engineering viewpoint. He has no objections to the parcel being rezoned to HDR. Once more detailed site plans are submitted, he may have additional comments regarding the layout, road, drainage and utility plans.

Chairman Grajek asked Mr. LaVanway if he has received the letter from Rick Boisevert, the Fire Marshall, dated September 11. Mr. LaVanway stated he has received the letter and his comments are primarily site plan issues.

Commissioner Mortensen stated this appears to be a case of spot zoning.

Commissioner Rauch noted that it is not consistent with the Master Plan; however, there have been changes since the last Master Plan was adopted, specifically in the last several months on how people interact, live, and work. Eight or nine months ago, he would not have considered this, but things have changed. He questioned if this will set a precedent for other like-minded developers in the community and further, is that good or bad? He does not believe that the examples of high density residential given by Mr. LaVanway are the same as this proposal. One of those has their clubhouse on Grand River frontage and the other has a long roadway or driveway to the apartments.

Commissioner Mortensen agrees with Commissioner Rauch; however, he questioned if it is too soon. Commissioner Rauch agrees that it is premature, but will there be a time when it is too

late and then the Township will be behind? Commissioner Mortensen would like these changes to be discussed during the Master Plan review process.

Commissioner Dhaenens agrees that it could be considered spot zoning, but does understand that many people are working from home now.

Commissioner Rauch asked how long Mr. Irish has owned the property and why is this being requested now.

Mr. Kevin Irish of 4205 Faussett Road, Howell stated he has owned the property since 2000 and has tried to sell it, after it was improved, since that time. With the advent of technology people can do business anywhere. There is no demand, nor has there been for almost a decade, for office buildings. The property has been listed for less than its appraised value. People always need housing and in speaking with developers, residential is a viable option for this property. There is also no interest in this property for retail use. He noted there are many vacancy signs along Grand River in the Township.

Commissioner McBain does not feel that it is dense enough and recommends more units that are truly affordable. She would like this to be considered when updating the Master Plan.

The call to the public was made at 7:04 pm.

Mr. Michael Trepanier, owner of Hidden Ridge Lot 4, which is on Turning Leaf Drive and north of the subject property. He was planning to build a house on his property next spring. He purchased this lot last year, did his due diligence and checked the surrounding zoning. If he had known this was zoned for high density residential, he would not have purchased this property. Approving this rezoning will negatively impact the property values of the homes on this street. There are five vacant properties on this street that may not be sold and developed if the apartments are built. He reviewed sections of the ordinance regarding setbacks and what is being proposed is not within the requirements. This building is proposed to be 30 feet high and the berm is proposed to be only 4 feet high. He would like the Planning Commission to consider how this will affect the expensive homes that are on Turning Leaf Drive.

Commissioner Rauch advised Mr. Trepanier that there are many uses that are allowed in the current zoning, which are bars, restaurants, adult care facilities, financial institutions, and many more. This zoning also allowed for buildings up to three stories. Mr. Trepanier noted that many of those uses require a special land use.

Mr. Borden advised the Commission and the public that only the zoning is being discussed this evening, not the site plan. The Planning Commission cannot place conditions on a rezoning and they cannot consider any proposed site plan when making a decision.

Mr. Chris Mammoser of 2757 Turning Leaf Drive was present to represent the homeowners association. In his business, he knows that there is demand for office space. Many companies who have their headquarters in large cities are interested in building satellite offices close to where people live. He does not agree that office space is not going to be needed. He understands reviewing and changing the Master Plan, but does not agree with changing this zoning at this time.

Mr. Dan Hassett of 2955 Turning Leaf Lane is a veteran, a retired firefighter, and a volunteer for Habitat for Humanity. He asked the Planning Commission if they would like a 32-unit apartment complex 200 feet from their home. He built his home because the Master Plan assured that there would not be high density residential zoning on this property. His property value is going to go down.

Mr. Scott Runyan of 3141 Char Ann Drive questioned what the zoning is to the east and the west of this property. Ms. VanMarter stated the zoning to the east is office and the west is general commercial district. He would like the Planning Commission to consider the residents of Char Ann Drive. If there are 32 apartments built on this property, there will be people walking on their road, which is private, and the residents pay to maintain. He owns a nine unit office building and eight of those units are occupied. He disagrees that there is no need for office space.

The call to the public was closed at 7:36 pm.

Move by Commissioner Mortensen, seconded by Commissioner Dhaenens, to recommend to the Township Board denial of the Rezoning Application for the property on the north side of Grand River, west of Char Ann Drive, from OSD to HDR because the Planning Commission finds that it is inconsistent with the rezoning criteria of 22.04 of the Township Zoning Ordinance. **The motion carried unanimously.**

Move by Commissioner Mortensen, seconded by Commissioner Dhaenens, to recommend to the Township Board denial of the Environmental Impact Assessment or the property on the north side of Grand River, west of Char Ann Drive because the Planning Commission finds it is inconsistent with the rezoning criteria of 22.04 of the Township Zoning Ordinance. **The motion carried unanimously.**

Chairman Grajek called for a five minute break.

OPEN PUBLIC HEARING # 2...Review of a site plan and environmental impact assessment for a proposed parking lot at 1183 Fendt Drive to be used in conjunction with the existing UPS Facility on the west of Fendt Drive. The request is petitioned by Hugo Ceron, SME.

- A. Recommendation of Environmental Impact Assessment (9-2-2020)
- B. Disposition of Site Plan (9-23-2020)

The applicant was not present this evening.

Ms. VanMarter provided a review of the request. UPS has been using their undeveloped lot across the street from their facility for parking. The Township has been allowing this but advised that they need to pave this area and install a parking lot.

Mr. Borden reviewed his letter dated October 6, 2020.

1. He recommends the Commission require the applicant to provide and record an agreement stating that the two properties are tied together, and that a shared parking easement must be provided and recorded should either property be sold separately
2. The applicant will need to obtain a variance from the ZBA to exceed the 300-foot spacing between the nearest parking space and public building entrance (Section 14.02.03).
3. The landscape plan is deficient in parking lot landscaping. The applicant requests that the Township waive these requirements, per Section 12.02.13.
4. If signage is proposed in the future, a sign permit must be obtained from the Township prior to installation.

There was a discussion regarding the shared parking easement recommended by Mr. Borden. All Commissioners agree that since the applicant has not officially agreed to this, then this item should be tabled this evening so they can be made aware of it and advise if they are in agreement with the recommendation.

Move by Commissioner Dhaenens, seconded by Commissioner Rauch, to table the public hearing for a site plan and environmental impact assessment for a proposed parking lot at 1183 Fendt Drive to be used in conjunction with the existing UPS Facility on the west of Fendt Drive until the next Planning Commission meeting giving the applicant an opportunity to address the items in the review letters. **The motion carried unanimously.**

ADMINISTRATIVE BUSINESS

Staff Report

Ms. VanMarter stated that changes made to the sign ordinance will be before the Township Board for their review, with additional changes that needed to be made to the off premise signs section due to a recent court ruling.

The Township is hoping to purchase property contiguous to the Township Hall and apply for a grant. Staff is currently working on a Recreation Plan as part of this process. After that is complete, they will again work on the Master Plan revisions. She anticipates the joining meeting between the Planning Commission, ZBA, and Township Board to be held later this year or early next year.

Approval of the September 14, 2020 Planning Commission meeting minutes

Needed changes were noted.

Moved by Commissioner McCreary, seconded by Commissioner Dhaenens, to approve the minutes of the September 14, 2020 Planning Commission Meeting as amended. **The motion carried unanimously.**

Member Discussion

Chairman Grajek has learned that while many people will be working from home, there will be people who will be going back to work and those people will need to be distanced from each other, office spaces will be needed.

Adjournment

Moved by Commissioner Mortensen, seconded by Commissioner Rauch, to adjourn the meeting at 8:23 pm. **The motion carried unanimously.**

Respectfully Submitted,

Patty Thomas, Recording Secretary