

**GENOA CHARTER TOWNSHIP
PLANNING COMMISSION
PUBLIC HEARING
MARCH 14, 2022
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... Consideration of a sketch plan for a proposed project gateway sign as part of the Versa Development (Latson Road) PUD. The proposed sign is located on vacant land (4711-09-300-040) on the south side of 1-96 at mile marker 140.2. The request is petitioned by Covenant of Faith, LLC.

- A. Disposition of Sketch Plan (1-27-22)

OPEN PUBLIC HEARING #2... Consideration of a special use application, environmental impact assessment and site plan for a proposed 3,750 sq. ft. office building with outdoor storage located at 1247 Fendt Drive, north of Grand Oaks Drive. The request is petitioned by Al Halliday, A & J Cartage.

- A. Recommendation of Special Use Application
- B. Recommendation of Environmental Impact Assessment (2-23-22)
- C. Recommendation of Site Plan (2-23-22)

OPEN PUBLIC HEARING #3... Consideration of a special use application, environmental impact assessment and site plan for a proposed climate-controlled indoor commercial storage business located at 2630 E. Grand River Avenue, south side of Grand River, east of Chilson Road. The request is petitioned by Schafer Construction, Inc.

- A. Recommendation of Special Use Application
- B. Recommendation of Environmental Impact Assessment (2-24-22)
- C. Recommendation of Site Plan (2-24-22)

OPEN PUBLIC HEARING #4... Consideration of a special use application, environmental impact assessment and site plan for a proposed 19,843 sq. ft. church and sports field located at 3850 Golf Club Road, southwest corner of Golf Club Road and Latson Road. The request is petitioned by Bible Baptist Church.

- A. Recommendation of Special Use Application
- B. Recommendation of Environmental Impact Assessment (2-23-22)
- C. Recommendation of Site Plan (2-23-22)

OPEN PUBLIC HEARING # 5... Consideration of a request for approval of the 2022-2027 Capital Improvement Program as submitted by the Township Manager.

ADMINISTRATIVE BUSINESS:

- *Staff Report*
- *Approval of February 14, 2022 Planning Commission meeting minutes*
- *Member discussion*
- *Adjournment*



GENOA CHARTER TOWNSHIP APPLICATION

Sketch Plan Review

TO THE GENOA TOWNSHIP PLANNING COMMISSION:

APPLICANT NAME & ADDRESS: Covenant of Faith, LLC

If applicant is not the owner, a letter of Authorization from Property Owner is needed.

OWNER'S NAME & ADDRESS: Covenant of Faith, LLC, 326 E 4th St #200, Royal Oak, MI 48067

SITE ADDRESS: Property located north of Beck and south of I96, east of Latson PARCEL #(s): 4711-09-300-040

APPLICANT PHONE: 248, 770-8484 OWNER PHONE: ()

LOCATION AND BRIEF DESCRIPTION OF SITE: site adjacent to I96 (south side)

BRIEF STATEMENT OF PROPOSED USE: monument sign for industrial/innovation park

THE FOLLOWING IMPROVEMENTS ARE PROPOSED: monument sign with landscpaing

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: 326 E 4th St #200, Royal Oak, MI 48067

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

1.) _____ of _____ at _____
Name Business Affiliation Email Address

FEE EXCEEDANCE AGREEMENT

All sketch plans are allocated one (1) consultant review 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 for a Land Use Permit. By signing below, applicant indicates agreement and full understanding of this policy.

SIGNATURE:  DATE: 2/2/22
PRINT NAME: TODD WETZ PHONE: 248 770 8484

March 9, 2022

Planning Commission
Genoa Township
2911 Dorr Road
Brighton, Michigan 48116

Attention:	Kelly Van Marter, AICP Planning Director and Assistant Township Manager
Subject:	Innovation Interchange PUD – Highway Sign Review #1

Dear Commissioners:

At the Township’s request, we have reviewed the proposal to construct a project gateway sign for the Innovation Interchange PUD.

The approved PUD Agreement for the project allows a “project gateway” sign in the northerly portion of the PUD (north end of the Beck Road property, near I-96).

The sign is to include reference to the Township and its logo and be of sufficient height to be visible from I-96.

Exhibit 7 of the Agreement includes a graphic depiction of the intended sign design and materials.

Procedurally, the Agreement provides the Planning Commission with review/approval authority.

Though a site location map is not provided, it appears that the proposed location is at the northerly end of the Beck Road property, near I-96, per the PUD Agreement. The Commission may wish to request a site location map that identifies the property boundary and indicates the proposed location of the work/setbacks for the sign structure.

The submittal identifies tree removal and berm construction to aid in sign visibility of the proposed 30’-5” sign structure.

Additionally, the proposal matches the design and materials (stone and metal) depicted in Exhibit 7 of the PUD Agreement, and includes the Township name and logo, as required.

The submittal also depicts landscaping on the berm around the base of the sign, though details are not provided. As such, the Commission may wish to request details in terms of landscaping types and quantities.

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

Respectfully,
SAFEBUILT



Brian V. Borden, AICP
Michigan Planning Manager



March 9, 2022

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

**Re: Innovation Interchange
Sketch Plan Review No. 1**

Dear Ms. Van Marter:

Tetra Tech conducted a review of the proposed Innovation Interchange sketch plan materials last dated January 27, 2022. The plans were prepared by Johnson Sign Company on behalf of Covenant of Faith, LLC. The Petitioner is proposing a 30-foot-tall sign on the south side of the I-96 eastbound entrance ramp off Latson Road for the future Innovation Park. After reviewing the provided sketch plan, we have found no engineering related concerns to the proposed monument sign.

Please call or email if you have any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Gary Markstrom'.

Gary J. Markstrom, P.E.
Vice President

A handwritten signature in blue ink, appearing to read 'Shelby Byrne'.

Shelby Byrne
Project Engineer

The following 3 pages are an excerpt from the PUD Agreement showing the related sections. The entire PUD Agreement can be downloaded by clicking [here](#).

Zoning Ordinance in effect at the time of executing this Agreement. Excerpts from the Zoning Ordinance are attached hereto as **Exhibit 12**.

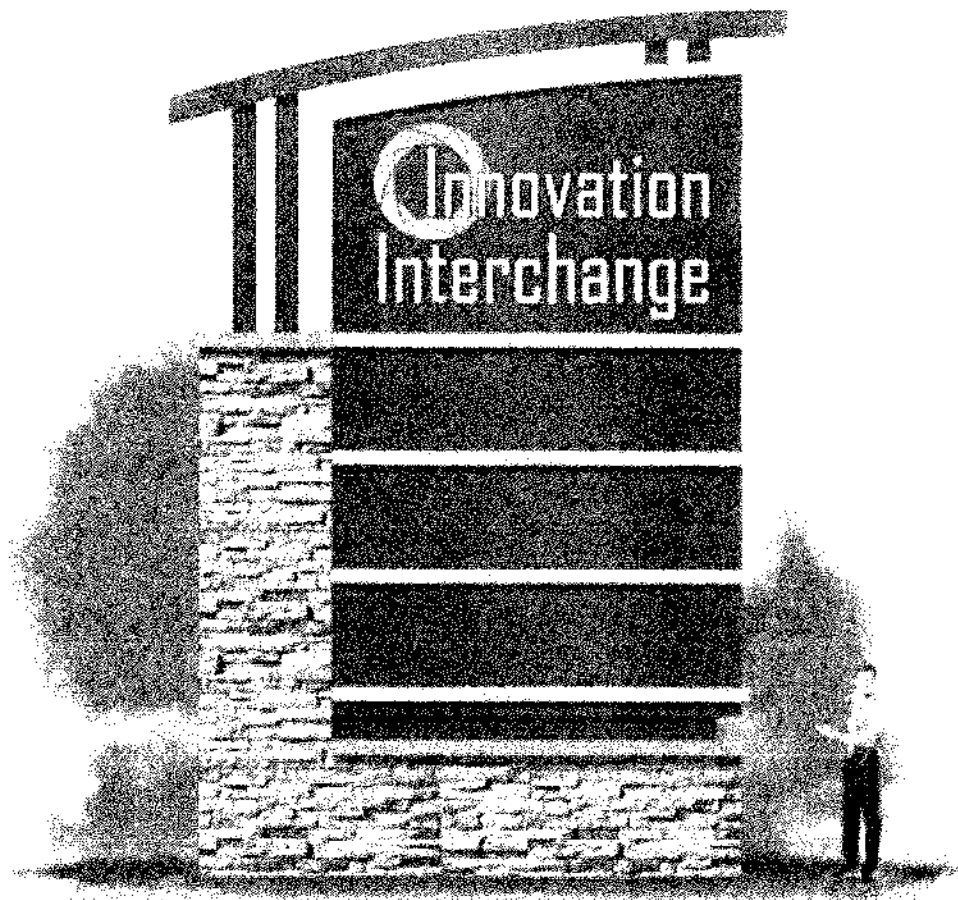
6. **Prohibited Uses**. The land uses identified in **Exhibit 6** hereto are prohibited from being located within the Project Area.

7. **Project Gateway and Area Entry Signage**. A concept plan for a Project gateway sign to be located north of Beck Road in the North Area is attached as **Exhibit 7** hereto. The final Project gateway sign shall be subject to Planning Commission review and shall be approved if it contains the same quality and nature of materials and contains the Genoa Township gateway messaging in the same general character and design shown in **Exhibit 7**, and is otherwise in compliance with all applicable Federal, State and County laws. In addition, Developer shall be permitted to install a Project sign at each entrance to any part of the Project Area. A detailed signage plan for each Area of the Project shall be submitted with the first application for site plan approval for each such Development Area.

8. **Development Standards**. The Project is intended to be a focal point of interchange oriented high-tech, office, light industrial, commercial and other business activity in the community and to attract various high tech, office, light industrial and commercial businesses that would take advantage of synergy of location and the expressway access and desire to be a part of a high quality, integrated business development plan. Individual buildings and site amenities and landscaping are intended to be of high quality and design and include diverse building materials. All development within the Project Area shall adhere to the PUD Design Guidelines set forth in the **Exhibit 8** hereto. No single building may be in excess of 200,000 square feet on the first floor except that the Township Board may grant special land use approval for a larger building as previously provided.

EXHIBIT 7

(Highway Project Sign)



FREEWAY/ENTRY MONUMENT SIGN

New Custom Highway Sign



2240 Lansing Ave, Jackson, MI 49202
 1800 S. Cedar St., Lansing, MI 48910
 663 S. Mansfield, Ypsilanti, MI 48198
 517 784 3720 | www.johnsonsign.com



FLAG TEST - CURRENT CONDITION - EASTBOUND ENTRANCE RAMP



FLAG TEST - TREE REMOVAL - ADD NEW 12'-6" HIGH BERM



FLAG TEST - EAST BOUND VIEW



FLAG TEST - WESTBOUND VIEW



INTERNATIONAL SIGN ASSOCIATION



THIS SIGN IS INTENDED TO BE MANUFACTURED IN ACCORDANCE WITH ARTICLE 600 OF THE NATIONAL ELECTRICAL CODE AND/OR OTHER APPLICABLE LOCAL CODES. THIS INCLUDES PROPER GROUNDING & BONDING OF THE SIGN. SIGN WILL BEAR UL LABEL(S).
 -SUITABLE FOR WET LOCATIONS- IN ACCORDANCE WITH NEC 600

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# OF SETS	1	RETURN DEPTH	32"	RACEWAY COLOR	N.A.	DESIGNER	S WILKIE
FACE COLOR	DARK BRONZE	TYPE OF INSTALL	GROUND MONUMENT	TRANSFORMER	N.A.	DATE	01/27/22
RETURN COLOR	TO MATCH	TYPE OF FACE	ALUMINUM	BALLAST	N.A.	JOB NO.	
RETAINER COLOR	N.A. (BLIND)	RACEWAY D. H.	L. N.A.	COMMENTS:		JOB NAME	GENO-INOV-012722-5
LED COLOR	WHITE	HOUSINGS	N.A.	SALESPERSON:	JIM JOHNSON	ADDRESS:	I-96 & LATSON GENOA TWP., MI

APPROVED BY:

DATE: _____

New Custom Highway Sign



AS SEEN FROM EASTBOUND ENTRANCE RAMP



EASTBOUND VIEW



WESTBOUND VIEW



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HIGHWAY SIGN

SCALE 1/4" = 1'

*SHOWN WITH GENOA COLOR STANDARDS - SEE DAY / NIGHT VIEW FOR RECOMMENDED COLORS

Click Here!



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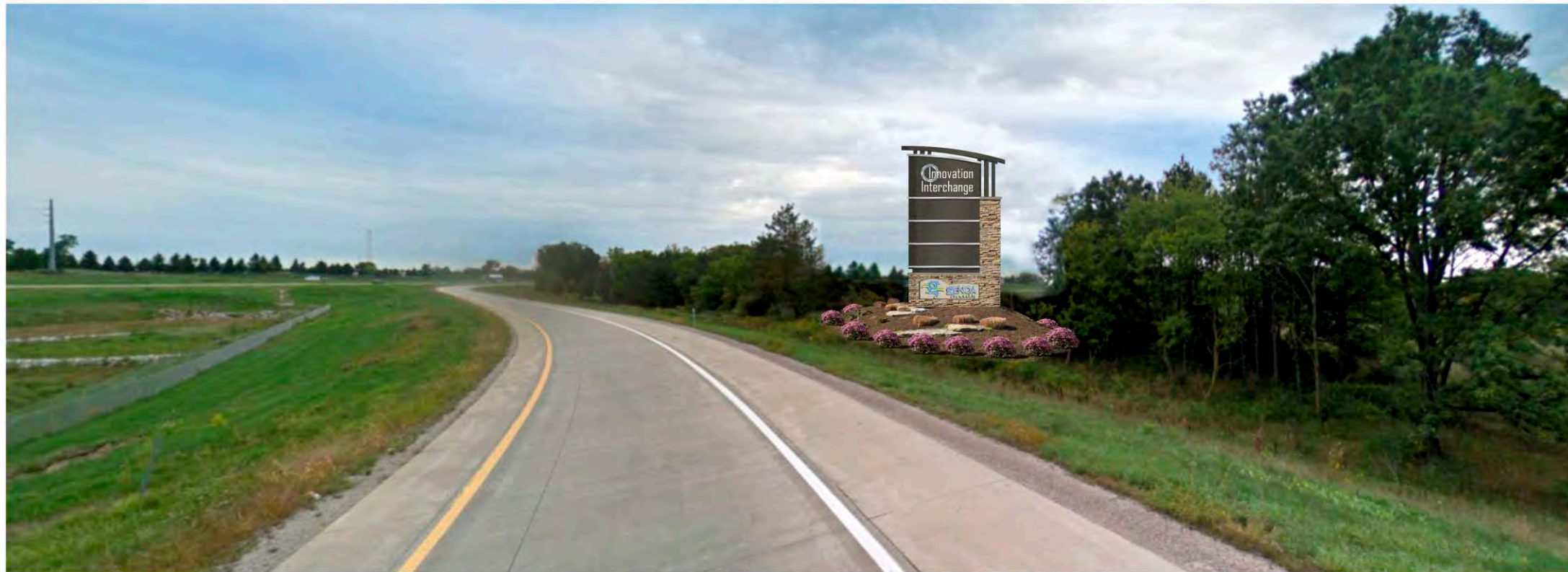
APPROVED BY:

DATE: _____

New Custom Highway Sign



SUMMER VIEW - CURRENT CONDITION



SUMMER VIEW - PROPOSED IMPROVEMENTS WITH LANDSCAPED BERM (BY OTHERS)



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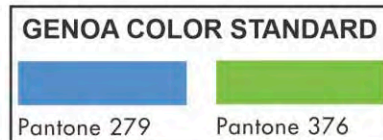
APPROVED BY:

DATE: _____

New Custom Highway Sign



HIGHWAY SIGN - DAY TIME VIEW - LOGO SHOWN WITH RECOMMENDED COLOR CHANGE



HIGHWAY SIGN - NIGHT TIME VIEW
FACES ARE ROUTED ALUMINUM WITH LIGHTED GRAPHICS - GENOA LOGO INTERNAL LED ILLUMINATED CHANNEL LETTERS.



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LED COLOR	WHITE	HOUSINGS	N.A.	SALESPERSON:	JIM JOHNSON	ADDRESS:	I-96 & LATSON GENOA TWP., MI

APPROVED BY:

DATE: _____



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: Al Halliday 1247 Fendt Dr. Howell, MI
Submit a letter of Authorization from Property Owner if application is signed by Acting Agent.

APPLICANT PHONE: (517) 861-0515 EMAIL: ajcartage@msn.com

OWNER NAME & ADDRESS: Same As Above

SITE ADDRESS: 1247 Fendt Dr. Howell, MI PARCEL #(s): 4711-08-201-010

OWNER PHONE: () Same As Above EMAIL: Same As Above

Location and brief description of site and surroundings:

Located within GenTech industrial development off Grand Oaks Dr. in Howell, MI. The site is currently used for outdoor storage of 4-6 tractor trailers.

Proposed Use:

Contractors yard with outdoor storage

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.

This use is compatible with adjacent uses - tractor trailer storage and daily use by (2) trucks only.

- 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.

Only thing changing on this parcel from existing use is the construction of the ordinance - required office bldg 3,750gsf.

- 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?

Storm, ^{Electric} Sanitary, and water are existing in the Gen Tech development running adjacent to Fendt Drive which are the essential public facilities required by this project. Electric enters the site at the northeast corner of the parcel

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?

approved The proposed use will not add any detrimental nuisance to the area

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.

Driveway entrances are proposed as concrete. No stock piles of materials are expected/depicted. Gravel surface of outdoor storage is proposed due to low intensity of activities, no outdoor storage will be in any required setback, an office building is proposed. All loading/unloading will be on skids, berms are located on 3 sides of property with woodlands to east which will all screen outdoor storage.

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

BY: A. Marek

ADDRESS: 1247 Fendt Dr. Howell, MI

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

Name: Jennifer Austin of Business Affiliation: Boss Engineering at Email: jennifer@bosseng.com

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: A. Marek DATE: 1-6-22

PRINT NAME: AL HALLIDAY PHONE: 517-861-0515



GENOA CHARTER TOWNSHIP
Application for Site Plan Review

TO THE GENOA TOWNSHIP PLANNING COMMISSION AND TOWNSHIP BOARD:

APPLICANT NAME & ADDRESS: Al Halliday 1247 Fendt Dr. Howell, MI
If applicant is not the owner, a letter of Authorization from Property Owner is needed.

OWNER'S NAME & ADDRESS: Same as Above

SITE ADDRESS: 1247 Fendt Dr. Howell, MI PARCEL #(s): 4711-08-201-010

APPLICANT PHONE: (517) 861-0515 OWNER PHONE: () Same

OWNER EMAIL: ajcartage@msm.com

LOCATION AND BRIEF DESCRIPTION OF SITE: site is located within Ben Tech, an industrial development of Grand Oaks Drive in Howell, MI. The site is currently used for outdoor storage of 4-6 tractor trailers.

BRIEF STATEMENT OF PROPOSED USE: Proposed contractors yard with outdoor storage. A building (3,750 gsf) is also proposed as required by ordinance which will contain office space and intermittent storage of (1) tractor trailer, approx. 20 gal. of motor oil and related truck

THE FOLLOWING BUILDINGS ARE PROPOSED: maintenance equipment and (1) 3,750 gsf building materials. Outdoor storage of 4-6 trailers is also planned.

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: Al Halliday

ADDRESS: 1247 Fendt Dr. Howell, MI 4



March 8, 2022

Planning Commission
Genoa Township
2911 Dorr Road
Brighton, Michigan 48116

Attention:	Kelly Van Marter, AICP Planning Director and Assistant Township Manager
Subject:	A&J Cartage – Special Land Use and Site Plan Review #2
Location:	1247 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 A&J Cartage for a contractor’s yard with outdoor storage on a vacant 2-acre lot within the GenTech Industrial Park (plans dated 2/23/22).

A. Summary

1. Section 19.03 General Special Land Use Standards:
 - a. If the Commission feels the project conveys “a high-quality image,” then it may be viewed as compatible with the Research and Development category of the Master Plan.
 - b. In order to make favorable findings related to compatibility and impacts, the use conditions of Section 8.02.02(b) need to be met to the Commission’s satisfaction.
 - c. The applicant must address any comments provided by the Township Engineer or Brighton Area Fire Authority regarding public facilities and services.
2. Section 8.02.02(b) Use Conditions:
 - a. The Commission may allow gravel surfacing of the outdoor storage yard, pending a recommendation from the Township Engineer.
 - b. It is not clear that the height of materials stored outdoors (13.5’) will fully screened along the southerly side lot line.
3. Site Plan Review:
 - a. Building materials and colors are subject to Planning Commission review, and the applicant is to present samples for the Commission’s consideration.
 - b. Gravel surfacing for part of the driveway requires Planning Commission approval based on input from the Township Engineer.
 - c. The Commission may allow existing plantings to remain in lieu of new; however, the site is deficient in terms of the required buffer zones along the side lot lines.
 - d. There is sufficient area for additional plantings along the southerly lot line.
 - e. We suggest the greenbelt plantings be extended to the south (given the removal of a curb cut).

B. Proposal/Process

The applicant proposes development of a 2-acre site as a contractor’s yard with outdoor storage, which is a special land use in the IND (Table 8.02). The Impact Assessment notes that the storage area is intended to accommodate 4-6 trailers.

Contractor’s yards with outdoor storage are also subject to the use conditions of Section 8.02.02(b).

Procedurally, the Planning Commission is to review the special land use, site plan, and Environmental Impact Assessment, and put forth a recommendation on each to the Township Board following a public hearing.



Aerial view of site and surroundings (looking east)

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 Research and Development, which is intended to “be developed as a light industrial/R&D/office park.” This classification also states that “high quality building architecture should be utilized to convey a high-quality image.”

Fendt Drive has been developed more as a light industrial park than what would be viewed as an R&D/office park, and we view the proposal as similar to the existing development of this area.

The revised plan provides for an improved building and some additional landscaping that will help enhance the property and area. If the Commission feels the project conveys “a high-quality image,” then it may be viewed as compatible with the Research and Development category.

- 2. Compatibility.** Fendt Drive is developed with light industrial uses, some of which have accessory outdoor storage.

The use conditions of Section 8.02.02(b) are intended to help ensure compatibility. Provided these conditions are met to the Commission’s satisfaction, the proposal is generally expected to be compatible with the surrounding area.

- 3. Public Facilities and Services.** Given that the majority of Fendt Drive is already developed with light industrial uses, we anticipate that necessary public facilities and services are already in place.

However, the applicant must address any comments provided by the Township Engineer and/or Brighton Area Fire Authority related to this criterion.

- 4. Impacts.** Similar to the comment above, the use conditions of Section 8.02.02(b) are intended to limit impacts of the proposal upon the site and surrounding properties.

Provided these conditions are met, surrounding properties are not expected to be adversely impacted by the proposal.

- 5. Mitigation.** If further comments/concerns arise as part of the review process, the Township may require additional efforts to mitigate potential adverse impacts.

D. Use Conditions

Contractor's yards with outdoor storage are subject to the use conditions of Section 8.02.02(b), as follows:

1. Minimum lot area shall be one (1) acre.

The subject site contains 2.02 acres of lot area.

2. Any stockpiles of soils, fertilizer or similar loosely packaged materials shall be sufficiently covered or contained to prevent dust or blowing of materials.

Given the nature of the use and the information contained in the revised submittal, we do not believe the project includes stockpiles of loosely packaged materials.

If these items are included in the future, they must be covered/contained, per this condition.

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.

The applicant proposes to utilize the existing gravel surfacing for the outdoor storage area.

The Commission may use its discretion to permit such, pending a recommendation from the Township Engineer.

4. No outdoor storage shall be permitted in any required yard (setback) of buildings for the district in which the outdoor display, sales or storage use is located. Any approved outdoor sales or display with a parking lot shall meet the required parking lot setback; provided the Planning Commission may require additional landscaping screening or ornamental fencing.

The revised submittal depicts and notes that no items will be stored within a required rear or side yard.

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.

The proposed development includes construction of a 3,750 square foot building.

6. All loading and truck maneuvering shall be accommodated on-site.

Sheet 6 of the revised site plan includes a truck turning template, depicting on-site maneuvering between the driveway and outdoor storage area.

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.

The property is not adjacent to a residential district; therefore, a buffer zone B is required along the rear and both sides.

As outlined in our site plan review below, new plantings are proposed along the northerly side yard, while the remainder of the 3 buffer zones are proposed to remain as-is with established vegetation (though the south side entails off-site vegetation as the buffer).

- 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 or face an expressway, and such storage is confined to within twenty (20) feet of the building.**

The revised submittal states that the trailers stored outdoors are approximately 13.5 feet tall.

This condition is likely met for the north side (existing berm, evergreen trees, and proposed shrubs) and rear (80-foot wide existing wooded area); however, since the screening noted along the south side is on the adjacent property, we do not believe this condition is fully met.

E. Site Plan Review

- 1. Dimensional Requirements.** The project complies with the dimensional requirements of the IND, as noted below:

	Min. Lot Req.		Minimum Yard Setbacks (feet)				Max. Lot Coverage (%)	Max. Height (feet)
	Area (acres)	Width (feet)	Front Yard	Side Yard	Rear Yard	Parking Lot		
IND	1	150	50	25	40	20 front 10 side/rear	40% building 85% impervious	30
Proposal	2	281	74	99 (N) 98 (S)	180	74 front 31 side	4.2% building 31% impervious	18.2

- 2. Building.** Building materials and colors are subject to review and approval by the Planning Commission.

In accordance with the standards of Section 12.01, the revised submittal depicts a building constructed of split-faced concrete block with horizontal bands of smooth-faced block in an earth-toned color palette.

The applicant has also indicated that material and color samples will be presented to the Commission for their consideration.

- 3. Pedestrian Circulation.** Per Section 12.05 and the Township’s Pathway Plan, neither a walk nor path is required along Fendt Drive.

The site plan does include a 5-foot wide concrete sidewalk between the barrier-free parking space and building entrance.

- 4. Vehicular Circulation.** The site currently contains 2 curb cuts to/from Fendt Drive, though the southerly cut will be removed as part of the project.

The area between Fendt Drive and the parking lot will be surfaced with concrete, while the drive in front of the building extending to the outdoor storage area will be gravel.

Proposed dimensions, parking lot striping, and main driveway surfacing all comply with Ordinance standards; however, the gravel drive and storage area are subject to Planning Commission approval, based on a recommendation from the Township Engineer.

The applicant must address any additional comments provided by the Township Engineer and/or the Brighton Area Fire Authority with respect to vehicular circulation.

5. **Parking.** The revised plan provides the 6 spaces required by Ordinance, including 1 barrier-free space. A detail on Sheet 7 depicts double striped spaces, per Ordinance standards.
6. **Landscaping.** The revised landscape plan has been reviewed for compliance with the standards of Section 12.02, as shown in the following table:

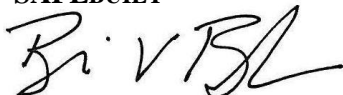
Standard	Required	Proposed	Notes
Front yard greenbelt (project area only)	20' width 7 canopy trees	40' width 3 existing deciduous trees 12 existing evergreen trees	PC may allow existing plantings to serve as greenbelt.
Buffer Zone "B" (north)	20' width 11 canopy trees 11 evergreen trees 42 shrubs 6' wall OR 3' berm	25' width 16 evergreen trees (existing) 3-4' berm (existing) 32 shrubs (proposed)	Deficient by canopy tree and shrub plantings.
Buffer Zone "B" (south)	20' width 11 canopy trees 11 evergreen trees 44 shrubs 6' wall OR 3' berm	25' width	Deficient in terms of plantings and wall/berm. The new lawn area allows for additional plantings. Applicant notes that adjacent property has a landscaped berm.
Buffer Zone "B" (east)	20' width 10 canopy trees 10 evergreen trees 37 shrubs 6' wall OR 3' berm	80' width Existing vegetation	PC may allow existing plantings to serve as buffer.

Given the removal of a curb cut, we suggest that the greenbelt plantings be extended to the southerly lot line. This will help to offset at least some of the deficient plantings elsewhere on the site.

7. **Exterior Lighting.** Sheet 6 includes fixture details and a photometric plan. The plan includes 3 wall mounted light fixtures that are fully cut off, downward directed LEDs. Mounting heights, fixture types, and light intensities all comply with the requirements of Section 12.03.
8. **Waste Receptacle/Enclosure.** The revised submittal states that the minimal waste generated will be disposed of off-site by the owner, and that, if necessary, curbside pickup will be utilized.
9. **Impact Assessment.** The revised Impact Assessment (dated February 23, 2022) notes 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,
SAFE BUILT


 Brian V. Borden, AICP
 Michigan Planning Manager



March 8, 2022

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

**Re: A&J Cartage
Site Plan Review No. 2**

Dear Ms. Van Marter:

Tetra Tech conducted a second review of the proposed A&J Cartage site plan last dated February 23, 2022. The plans and impact assessment were submitted by Boss Engineering on behalf of A&J Cartage. The site is on a 2-acre parcel located on the east side of Fendt Drive. The site includes an existing gravel drive and truck parking area, and the Petitioner is proposing a 3,750 square foot building and drive improvements. We offer the following comments:

1. The Livingston County Drain Commission is in the process of updating their design standards. The proposed detention basin is sized correctly per the current standards but should be updated to the new standard so that it is in compliance at the time of construction. More detail needs to be provided on the proposed detention basin and structures. A draft version of the new standards is attached separately for reference.
2. The Petitioner is proposing to pave the proposed parking spaces and a portion of the drive. Township standards require that the drive and parking be paved with concrete curb and gutter. The remaining drive should be paved, but we have no objections to using gravel for the truck storage area.
3. General notes for the water improvements should be provided on the notes page. A note should be included to indicate that MHOG Sewer and Water Authority be contacted to coordinate the water service connection.
4. Note 37 under "Sanitary Sewers" refers to county storm drains, not sanitary sewer. Note 36 should refer to the GO Sewer and Water Authority rather than MHOG.

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

Sincerely,

A handwritten signature in blue ink, appearing to read 'Gary Markstrom'.

Gary J. Markstrom, P.E.
Vice President

A handwritten signature in blue ink, appearing to read 'Shelby Byrne'.

Shelby Byrne
Project Engineer

Attachment



BRIGHTON AREA FIRE AUTHORITY

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

March 9, 2022

Kelly VanMarter
Genoa Township
2911 Dorr Road
Brighton, MI 48116

RE: A & J Cartage
1247 Fendt Dr.
Genoa Twp., MI

Dear Kelly:

The Brighton Area Fire Department has reviewed the above-mentioned site plan. The plans were received for review on March 2, 2022 and the drawings are dated January 6, 2022 with latest revisions dated February 23, 2022. The project is based on an existing 2.02-acre parcel currently used for outside storage and the proposed construction of a 3,750 square foot, Type IIB mixed-use Business and Storage Building and associated access drive. The plan review is based on the requirements of the International Fire Code (IFC) 2021 edition.

All previous comments and revisions have been addressed.

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

**IMPACT ASSESSMENT
For
A & J Cartage
GENOA TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN**

Prepared for:

**Applicant
A & J Cartage
1247 Fendt Rd.
Howell, Michigan 48843**

**Owner:
Mr. Al Halliday
1247 Fendt Rd.
Howell, MI, 48843**

Prepared by:



3121 E. Grand River Howell, MI 48843
517.546.4836 fax 517.548.1670
www.bosseng.com

**Jennifer M. Austin, PLA
Boss Engineering
3121 E Grand River
Howell, MI 48843**

Revised February 23, 2022
(January 6, 2022 original submittal)

DISCUSSION ITEMS

A. Name(s) and address(es) of person(s) responsible for preparation of the Impact Assessment and a brief statement of their qualifications.

Prepared by:

Jennifer M. Austin, PLA
Boss Engineering
3121 E Grand River
Howell, MI 48843

Prepared for:

Applicant & Owner:
Al Halliday
1247 Fendt Dr.
Howell, MI 48843

B. Description of the site, including existing structures, man-made facilities, and natural features, all-inclusive to within 10' of the property boundary.

The subject property is part of Tax ID # 4711-08-201-010 in the NW ¼ of Section 8, Genoa Township, Livingston County, MI, and is Unit 10 of the GenTech Industrial Park on Fendt Drive, just off Grand Oaks Drive.

The subject site is bordered:

- North by a parcel occupied by Crash Tool zoned IND, East by a vacant parcel zoned NRPUD, West by UPS zoned IND and South by another parcel zoned IND.

Current zoning of the subject site is IND (Industrial) and has two gravel driveway entrances, and parking for 4-6 tractor trailers. The parcel is wooded along the east property line and has planted berms along the north and west property lines. A screening berm is located along the property line on the adjacent parcel to the south. See Existing Conditions Sheet 2 for an aerial of the parcel with these features noted.

C. Impact on natural features: A written description of the environmental characteristics of the site prior to development, i.e., topography, soils, vegetative cover, drainage, streams, creeks or ponds.

Topography of the parcel is generally flat, soils are classified as loam by the USDA Natural Resources Conservation Service map and is depicted on Sheet 2. The parcel is mostly grass with a wooded area along the east property line that is predominantly Boxelder trees, Ash trees and understory/brush screening. Berms have been constructed previously on the north and west property lines and are planted with various deciduous and evergreen trees ranging in height from 8-20'. A lower area can be found on the east property line at the edge of the woodland.

SPECIFIC OVERVIEW

The soils and natural features throughout the site are specified on the Existing Conditions Sheet 2.

D. Impact on storm water management: description of soil erosion control measures during construction.

A detention basin and forebay have been designed to manage on-site drainage. Sheet flow from the west side of the building and the concrete and gravel surfaces will be directed to the forebay in the front of the site. The remaining parcel drainage will flow to the detention basin on the north side of the site. Discharge from the basin will outlet to the Fendt Drive R.O.W. which then flows north to the 36" storm sewer at the north line of Gen Tech Industrial Park and the regional detention basin.

E. Impact on surrounding land use: Description of proposed usage and other man-made facilities; how it conforms to existing and potential development patterns. Effects of added lighting, noise or air pollution which could negatively impact adjacent properties.

This use is compatible with surrounding Industrial uses as only 4-6 trailers will be stored on site. The project proposes the construction of an office building with intermittent indoor parking/storage of a tractor trailer and related maintenance material/equipment. The south driveway gravel entrance will be removed and restored as grass. The north driveway entrance is proposed as concrete that continues to the parking area. No new impacts to the area are proposed.

F. Impact on public facilities and services: Description of number of residents, employees, patrons, and impact on general services, i.e., schools, police, fire.

A total of two employees use the site currently and are expected to continue. The impact on existing public facilities and services will have a marginal impact.

Normal police and fire protection services should remain unchanged.

G. Impact on public utilities: description of public utilities serving the project, i.e., water, sanitary sewer, and storm drainage system. Expected flows projected in residential units.

The office building will need to be connected to public sanitary and MHOG water which both run along Fendt Drive at the front of the site.

A total of two employees are planned and impact on existing public facilities and services will have a marginal impact.

H. Storage or handling of any hazardous materials: Description of any hazardous materials used, stored, or disposed of on-site.

Approximately 20 gallons of motor oil for routine maintenance of a tractor trailer will be stored in the proposed building, in addition to typical tractor trailer maintenance materials and equipment.

No outdoor storage will be located within the required 25-foot side yard setbacks nor any other required yard setback.

I. Impact on traffic and pedestrians: Description of traffic volumes to be generated and their effect on the area.

Current traffic volume to the site is minimal with two tractor trailers leaving the site Monday through Friday from 6:00-8:00 a.m. and returning to the site between 6:00-7:00 p.m. No increase in this traffic volume is planned.

J. Special provisions: Deed restrictions, protective covenants, etc.

None.

K. Description of all sources:

- Genoa Township Zoning Ordinance
- Natural Resources Soil Conservation Services, USDA

SITE PLAN FOR A & J CARTAGE

PART OF NW QUARTER, SECTION 8 GENOA TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN

PROPERTY DESCRIPTION:

PROPERTY DESCRIPTION AS SUPPLIED BY LIVINGSTON COUNTY GIS:
SEC 8 T2N R5E GENTECH INDUSTRIAL PARK SITE CONDOMINIUM SITE 10

CONSTRUCTION NOTES

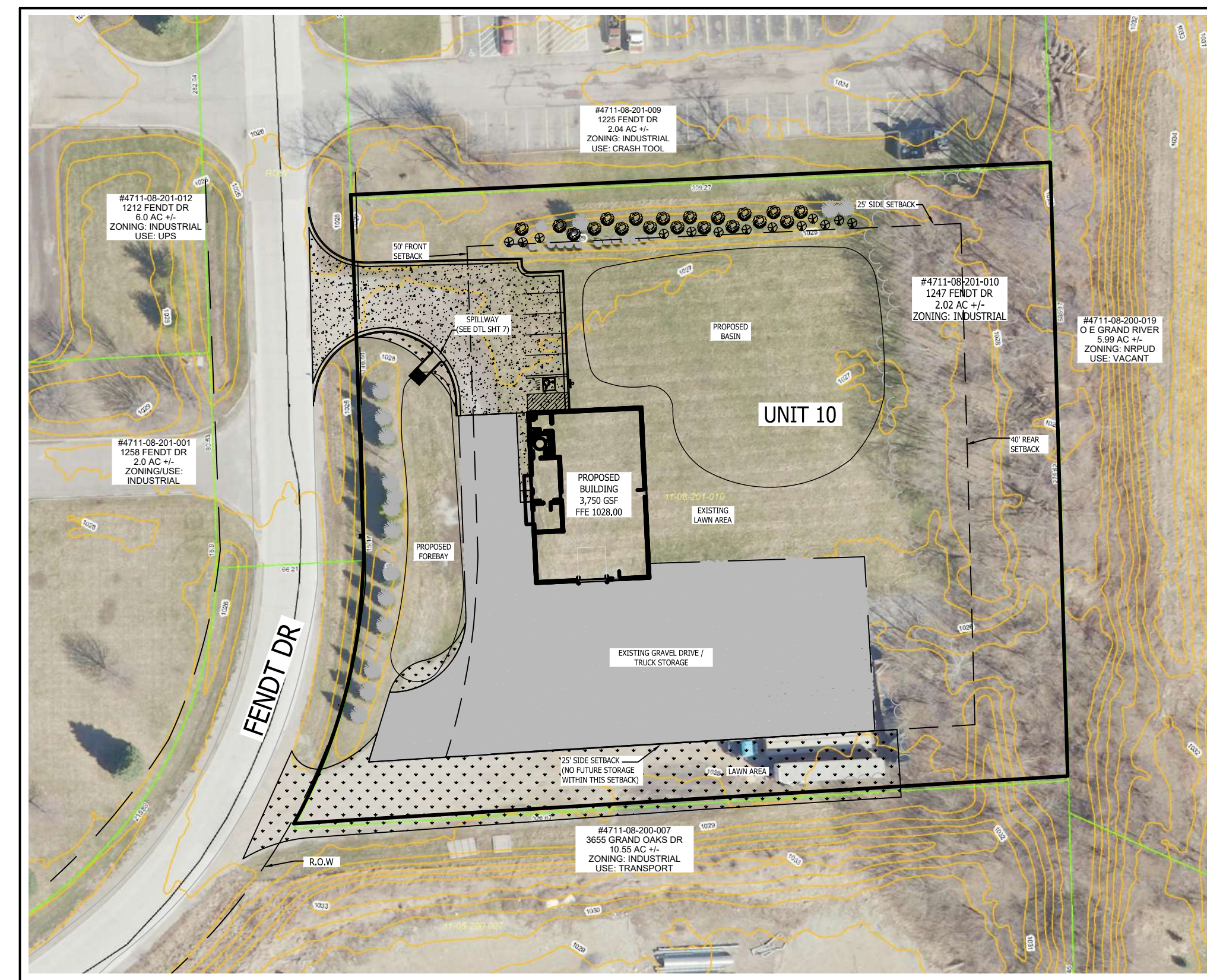
THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING NOTES AND ANY WORK INVOLVED SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.

1. THE CONTRACTOR SHALL HOLD HARMLESS THE DESIGN PROFESSIONAL, MUNICIPALITY, COUNTY, STATE AND ALL OF ITS SUB CONSULTANTS, PUBLIC AND PRIVATE UTILITY COMPANIES, AND LANDOWNERS FOR DAMAGES TO INDIVIDUALS AND PROPERTY, REAL OR OTHERWISE, DUE TO THE OPERATIONS OF THE CONTRACTOR AND/OR THEIR SUBCONTRACTORS.
2. DO NOT SCALE THESE DRAWINGS AS IT IS A REPRODUCTION AND SUBJECT TO DISTORTION.
3. A GRADING PERMIT FOR SOIL EROSION-SEDIMENTATION CONTROL SHALL BE OBTAINED FROM THE GOVERNING AGENCY PRIOR TO THE START OF CONSTRUCTION.
4. IF DUST PROBLEM OCCURS DURING CONSTRUCTION, CONTROL WILL BE PROVIDED BY AN APPLICATION OF WATER, EITHER BY SPRINKLER OR TANK TRUCK.
5. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH LOCAL MUNICIPAL STANDARDS AND SPECIFICATIONS.
6. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED TOWNSHIP, COUNTY, AND STATE OF MICHIGAN PERMITS.
7. PAVED SURFACES, WALKWAYS, SIGNS, LIGHTING AND OTHER STRUCTURES SHALL BE MAINTAINED IN A SAFE, ATTRACTIVE CONDITION AS ORIGINALLY DESIGNED AND CONSTRUCTED.
8. ALL BARRIER-FREE FEATURES SHALL BE CONSTRUCTED TO MEET ALL LOCAL, STATE AND A.D.A. REQUIREMENTS.
9. ANY DISCREPANCY IN THIS PLAN AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE DESIGN ENGINEER PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL SETBACKS, EASEMENTS AND DIMENSIONS SHOWN HEREON BEFORE BEGINNING CONSTRUCTION.
10. THE CONTRACTOR SHALL CONTACT ALL OWNERS OF EASEMENTS, UTILITIES AND RIGHTS-OF-WAY, PUBLIC OR PRIVATE, PRIOR TO THE START OF CONSTRUCTION.
11. THE CONTRACTOR SHALL COORDINATE WITH ALL OWNERS TO DETERMINE THE LOCATION OF EXISTING LANDSCAPING, IRRIGATION LINES & PRIVATE UTILITY LINES. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING LANDSCAPING, IRRIGATION LINES, AND PRIVATE UTILITY LINES.
12. THE CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE UPON COMPLETION OF THE PROJECT.
13. THE CONTRACTOR SHALL MAINTAIN THE SITE IN A MANNER SO THAT WORKMEN AND PUBLIC SHALL BE PROTECTED FROM INJURY, AND ADJOINING PROPERTY PROTECTED FROM DAMAGE.
14. THE CONTRACTOR SHALL KEEP THE AREA OUTSIDE THE "CONSTRUCTION LIMITS" BROOM CLEAN AT ALL TIMES.
15. THE CONTRACTOR SHALL CALL MISS DIG A MINIMUM OF 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
16. ALL EXCAVATION UNDER OR WITHIN 3 FEET OF PUBLIC PAVEMENT, EXISTING OR PROPOSED SHALL BE BACKFILLED AND COMPACTED WITH SAND (MDOT CLASS II).
17. ALL PAVEMENT REPLACEMENT AND OTHER WORKS COVERED BY THESE PLANS SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE TOWNSHIP, INCLUDING THE LATEST MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
18. THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE TO EXISTING UTILITIES.
19. NO ADDITIONAL COMPENSATION WILL BE PAID TO THE CONTRACTOR FOR ANY DELAY OR INCONVENIENCE DUE TO THE MATERIAL SHORTAGES OR RESPONSIBLE DELAYS DUE TO THE OPERATIONS OF SUCH OTHER PARTIES DOING WORK INDICATED OR SHOWN ON THE PLANS OR IN THE SPECIFICATION OR FOR ANY REASONABLE DELAYS IN CONSTRUCTION DUE TO THE ENCOUNTERING OR EXISTING UTILITIES THAT MAY OR MAY NOT BE SHOWN ON THE PLANS.
20. DURING THE CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL NOT PERFORM WORK BY PRIVATE AGREEMENT WITH PROPERTY OWNERS ADJACENT TO THE PROJECT.
21. IF WORK EXTENDS BEYOND NOVEMBER 15, NO COMPENSATION WILL BE DUE TO THE CONTRACTOR FOR ANY WINTER PROTECTION MEASURES THAT MAY BE REQUIRED BY THE ENGINEER.
22. NO TREES ARE TO BE REMOVED UNTIL MARKED IN THE FIELD BY THE ENGINEER.
23. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE PROPERTY BEYOND THE CONSTRUCTION LIMITS INCLUDING BUT NOT LIMITED TO EXISTING FENCE, LAWN, TREES AND SHRUBBERY.
24. ALL AREAS DISTURBED BY THE CONTRACTOR BEYOND THE NORMAL CONSTRUCTION LIMITS OF THE PROJECT SHALL BE SODDER OR SEEDED AS SPECIFIED OR DIRECTED BY THE ENGINEER.
25. ALL ROOTS, STUMPS AND OTHER OBJECTIONABLE MATERIALS SHALL BE REMOVED AND THE HOLE BACKFILLED WITH SUITABLE MATERIAL. WHERE GRADE CORRECTION IS REQUIRED, THE SUBGRADE SHALL BE CUT TO CONFORM TO THE CROSS-SECTION AS SHOWN IN THE PLANS.
26. TRAFFIC SHALL BE MAINTAINED DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL SIGNS AND TRAFFIC CONTROL DEVICES. FLAG PERSONS SHALL BE PROVIDED BY THE CONTRACTOR IF DETERMINED NECESSARY BY THE ENGINEER. ALL SIGNS SHALL CONFORM TO THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AT NO COST TO THE TOWNSHIP. NO WORK SHALL BE DONE UNLESS THE APPROPRIATE TRAFFIC CONTROL DEVICES ARE IN PLACE.
27. ALL DEMOLISHED MATERIALS AND SOIL SPOILS SHALL BE REMOVED FROM THE SITE AT NO ADDITIONAL COST, AND DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
28. AFTER REMOVAL OF TOPSOIL, THE SUBGRADE SHALL BE COMPACTED TO 95% OF ITS UNIT WEIGHT.
29. ALL GRADING IN THE PLANS SHALL BE DONE AS PART OF THIS CONTRACT. ALL DELETERIOUS MATERIAL SHALL BE REMOVED FROM THE SUBGRADE PRIOR TO COMPACTING.
30. NO SEEDING SHALL BE DONE AFTER OCTOBER 15 WITHOUT APPROVAL OF THE ENGINEER.
31. ANY EXISTING APPURTENANCES SUCH AS MANHOLES, GATE VALVES, ETC. SHALL BE ADJUSTED TO THE PROPOSED GRADE AND SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
32. SOIL EROSION MEASURES SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL VEGETATION HAS BEEN RE-ESTABLISHED.
33. ALL PERMANENT SIGNS AND PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST REVISION OF THE MICHIGAN MUTCD MANUAL AND SHALL BE INCIDENTAL TO THE CONTRACT.



LOCATION MAP

NO SCALE



OVERALL SITE MAP

NO SCALE

SHEET INDEX

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	EXISTING CONDITIONS & DEMOLITION PLAN
3	SITE PLAN / LANDSCAPE PLAN
4	GRADING, DRAINAGE AND SESC PLAN
5	UTILITY PLAN
6	LARGE VEHICLE CIRCULATION PLANS / LIGHTING PLAN
7	CONSTRUCTION DETAILS
8	MHOG WATER AND SEWER DETAILS
SHEET NO.	DRAWINGS BY PUCCI + VOLLMAR ARCHITECTS, PC
A1	FLOOR PLAN
A2	COLOR EXTERIOR ELEVATIONS

PREPARED FOR:

A & J CARTAGE
1247 FENDT DRIVE
HOWELL, MI 48843
CONTACT: MR. AL HALLIDAY
517-861-0515

PREPARED BY:

BEBOSS
Engineering
Engineers Surveyors Planners Landscape Architects
3121 E. GRAND RIVER AVE.
HOWELL, MI. 48843
517.546.4836 FAX 517.548.1670

ARCHITECT:

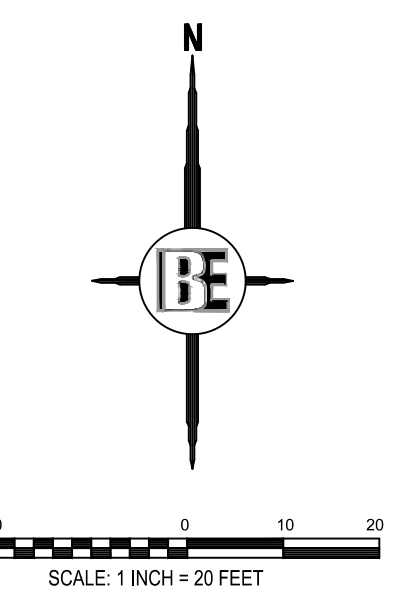
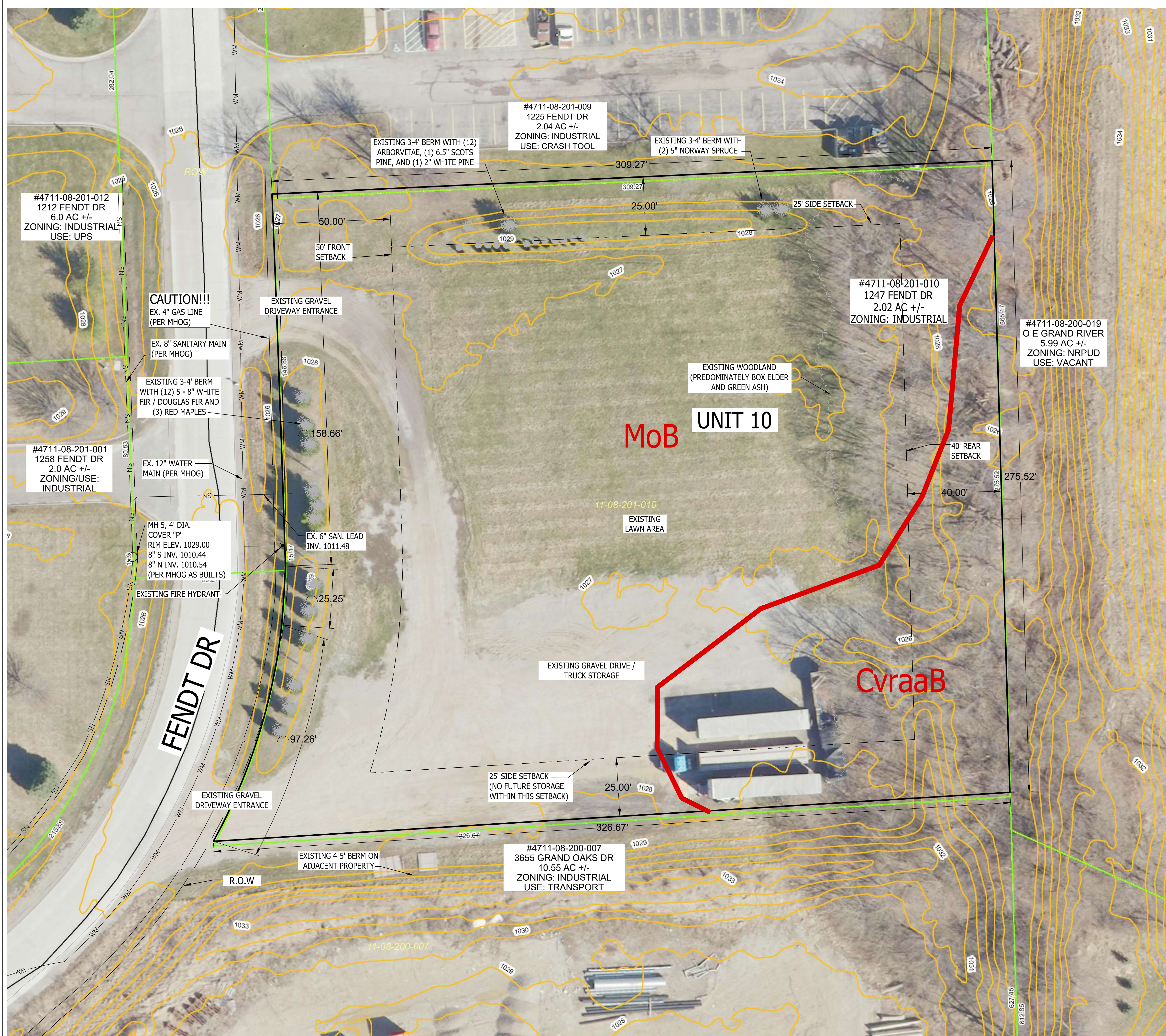
PUCCI + VOLLMAR ARCHITECTS, PC
508 E GRAND RIVER AVE, SUITE 100B
BRIGHTON, MI 48116
CONTACT: MR. KARL VOLLMAR
810-225-2930

INDEMNIFICATION STATEMENT

THE CONTRACTOR SHALL HOLD HARMLESS THE DESIGN PROFESSIONAL, MUNICIPALITY, COUNTY, STATE AND ALL OF ITS SUB CONSULTANTS, PUBLIC AND PRIVATE UTILITY COMPANIES, AND LANDOWNERS FOR DAMAGES TO INDIVIDUALS AND PROPERTY, REAL OR OTHERWISE, DUE TO THE OPERATIONS OF THE CONTRACTOR AND/OR THEIR SUBCONTRACTORS.

FOR SITE PLAN APPROVAL ONLY!
NOT FOR CONSTRUCTION

				1
1	JA	BL	PER TWP REVIEW	02/23/22
	NO	BY	CK REVISION	DATE
				ISSUE DATE: 01/06/22
				JOB NO: 21-581

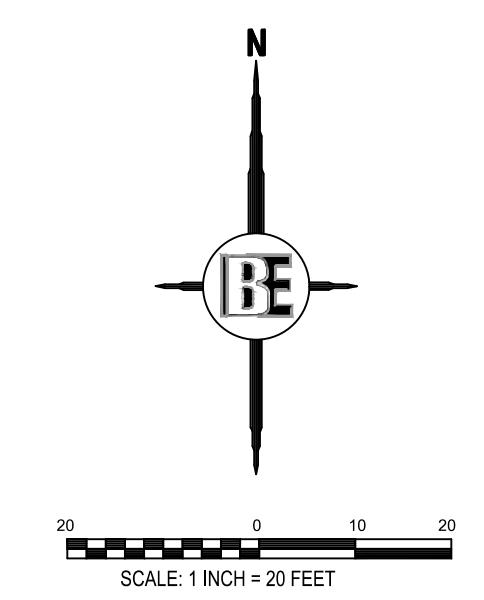
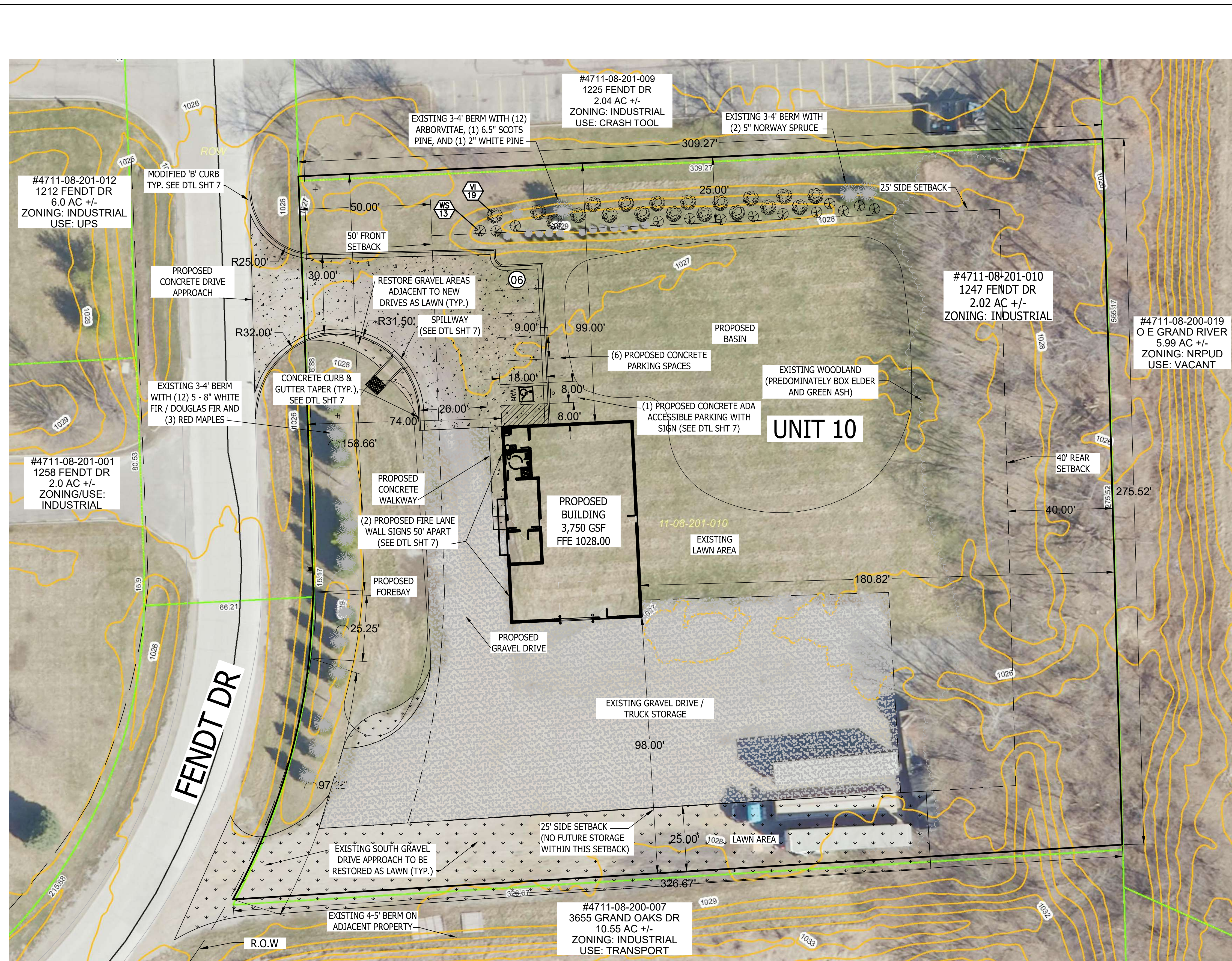


LEGEND	
PROPOSED (PR)	EXISTING (EX)
FF	FF
FG	FG
T/A	T/A
T/W	T/W
F/L	F/L
T/P	T/P
B/P	B/P
RM	RM
INV	INV
MH	MH
IN	IN
CB	CB
RY	RY
ES	ES
OV	OV
HY	HY
UP	UP
SL	SL
FM	FM
PS	PS
ST	ST
WM	WM
WL	WL
FO	FO
OH	OH
C	C
E	E
T	T
F	F
D	D
SB	SB
NS	NS
TBR	TBR
SM	SM
SD	SD
SAT	SAT
CON	CON
ASP	ASP
MOD	MOD
SC	SC

SOIL NOTES:
 THE PROJECT SITE IS COMPRISED OF THE FOLLOWING SOIL TYPE ACCORDING TO THE USDA NATURAL RESOURCES CONSERVATION SERVICE:
 CvraaB -- CONOVER LOAM, 0 TO 4 % SLOPES
 MoB -- WAWASEE LOAM, 2 TO 6 % SLOPES

BEBOSS Engineering
 Engineers Surveyors Planners Landscape Architects
 3121 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 517.546.4836 FAX 517.548.1670

PROJECT	A & J CARTAGE PROPOSED BUILDING
PREPARED FOR	A & J CARTAGE 1247 FENDT DRIVE HOWELL, MI. 48843 517-981-0515
TITLE	EXISTING CONDITIONS & DEMOLITION PLAN
DATE	2/23/2022
REVISION PER	
REVISION PER	
DESIGNED BY:	JA
DRAWN BY:	JA
CHECKED BY:	BL
SCALE:	1" = 30'
JOB NO:	21-581
DATE:	01/06/2022
SHEET NO.	2



LEGEND

PROPOSED (PR)	EXISTING (EX)	DESCRIPTION
FF	FF	FINISHED FLOOR ELEVATION
FG	FG	FINISHED GRADE ELEVATION
T/A	T/A	TOP OF ASPHALT
T/C	T/C	TOP OF CURB / CONCRETE
T/W	T/W	TOP OF WALK
F/L	F/L	FLOW LINE
T/P	T/P	TOP OF PIPE
B/P	B/P	BOTTOM OF PIPE
RM	RM	RIM ELEVATION
INV	INV	INVERT ELEVATION
MH	MH	MANHOLE STRUCTURE
IN	IN	INLET STRUCTURE
CB	CB	CATCHBASIN STRUCTURE
RY	RY	REAR YARD STRUCTURE
ES	ES	END-SECTION
OV	OV	GATE VALVE STRUCTURE
HY	HY	HYDRANT
UP	UP	UTILITY POLE
SN	SN	SANITARY SEWER
SL	SL	SANITARY LEAD
FM	FM	FORCE MAIN
PS	PS	PRESSURE SEWER
ST	ST	STORM SEWER
WM	WM	WATER MAIN
WL	WL	WATER LEAD
FO	FO	FIBER OPTIC
OH	OH	OVERHEAD WIRE
C	C	CABLE
E	E	ELECTRIC
G	G	GAS
T	T	TELEPHONE
F	F	FENCE
D	D	SILT FENCE
W	W	WETLAND BOUNDARY
SO	SO	SOIL EROSION CONTROL MEASURE (P=PERMANENT, T=TEMPORARY)
CON	CON	CONCRETE
ASP	ASP	ASPHALT
MOC	MOC	MODIFIED CURB

LANDSCAPE LEGEND

	EXISTING DECIDUOUS TREE
	PROPOSED DECIDUOUS TREE
	PROPOSED CONIFER TREE
	PROPOSED LARGE DECIDUOUS SHRUB
	PROPOSED DECIDUOUS SHRUB

SITE DATA:

GENOA TOWNSHIP
 PARCEL # 4711-08-201-010
 1247 FENDT DR
 HOWELL, MI 48843
 2.02 AC +/-

ZONING: INDUSTRIAL
 USE: CONTRACTORS YARD WITH OUTDOOR STORAGE
 BUILDING SQUARE FOOTAGE (FOOTPRINT): 3,750 GSF
 MIN. LOT AREA REQUIRED FOR ZONING: 1 ACRE
 TOTAL EX. LOT AREA: 2.02 AC +/- (-87,991.00 SQ. FT.)
 MIN. LOT WIDTH: 150 FT
 TOTAL EX. LOT WIDTH: 281.17 FT
 MAX. LOT COVERAGE: 40% BLDG, 85% IMPERVIOUS
 PROPOSED LOT COVERAGE: 4.2% BLDG, 31% IMPERVIOUS
 (IMPERVIOUS=EXISTING AND PROPOSED GRAVEL,
 PROPOSED CONCRETE PARKING AND SIDEWALK AND
 PROPOSED BUILDING)

MIN. SETBACKS REQUIRED:
 FRONT: 50-FT IF NO PARKING IN FRONT YARD
 REAR: 40-FT
 SIDES: 25-FT

PROPOSED SETBACKS:
 FRONT (WEST): 74 FT
 SIDE (NORTH): 99 FT
 SIDE (SOUTH): 98 FT
 REAR (EAST): 180 FT

PARKING CALCULATION:
 LIGHT INDUSTRIAL = 1.5 SPACE PER EACH 1,000 SF OF
 GROSS FLOOR AREA
 3,750 GSF / 1,000 SF = 3.75 * 1.5 = 5.625 SPACES

SPACES REQUIRED: 6 SPACES
 PROVIDED: 6 SPACES INCLUDING 1 ADA SPACE

SITE PLAN NOTES

- ALL GRAVEL AREAS ADJACENT TO THE NEW CONCRETE DRIVE SHOULD BE RESTORED AS LAWN WITH TOPSOIL, SEED AND MULCH FOR STABILIZATION.
- BUILDING ADDRESS SHALL CONSIST OF A MINIMUM OF 6" HIGH CHARACTERS OF CONTRASTING COLOR AND BE CLEARLY VISIBLE FROM THE STREET. THE FINAL SIZE AND LOCATION OF CHARACTERS SHALL BE VERIFIED WITH THE FIRE MARSHALL PRIOR TO INSTALLATION.
- A KEY BOX/KNOX BOX SHALL BE LOCATED NEAR THE FRONT ENTRY (FINAL LOCATION TO BE DETERMINED BETWEEN THE OWNER & FIRE MARSHALL).
- A MINIMUM VERTICAL CLEARANCE OF 13.5' SHALL BE MAINTAINED THROUGHOUT THE SITE FOR EMERGENCY VEHICLE ACCESS.
- ALL DRIVEWAYS AND PARKING LOT AISLES SHALL BE ACCESSIBLE AT ALL TIMES FOR EMERGENCY VEHICLES - REGULAR SNOW REMOVAL.
- THE HEIGHT OF SEMI-TRAILERS TO BE STORED OUTDOORS ARE TYPICALLY 13.5'.

IMPACT STATEMENT NOTES

- THIS USE IS COMPATIBLE WITH SURROUNDING INDUSTRIAL USES AS ONLY 4-6 TRAILERS WILL BE STORED ON SITE. THE PROJECT PROPOSES THE CONSTRUCTION OF AN OFFICE BUILDING WITH INTERMITTENT INDOOR PARKING/STORAGE OF A TRACTOR TRAILER AND RELATED MAINTENANCE MATERIAL/EQUIPMENT. THE SOUTH DRIVEWAY ENTRANCE WILL BE REMOVED AND REPLACED BY TOPSOIL AND GRASS SEED. THE NORTH DRIVEWAY ENTRANCE IS PROPOSED AS CONCRETE WITH CURB AND GUTTER TO INCLUDE NEW PARKING SPACES. NO NEW IMPACTS TO THE AREA ARE PROPOSED.
- TWO TOTAL EMPLOYEES ARE PLANNED AND IMPACT ON EXISTING PUBLIC FACILITIES AND SERVICES WILL HAVE A MARGINAL IMPACT. NORMAL POLICE AND FIRE PROTECTION SERVICES SHOULD REMAIN UNCHANGED.
- THE OFFICE BUILDING WILL NEED TO BE CONNECTED TO PUBLIC SANITARY AND MHOG WATER WHICH BOTH RUN ALONG THE FRONT OF THE SITE. TWO TOTAL EMPLOYEES ARE PLANNED AND IMPACT ON EXISTING PUBLIC FACILITIES AND SERVICES WILL BE MARGINAL.
- APPROXIMATELY 20 GALLONS OF MOTOR OIL FOR ROUTINE MAINTENANCE OF A TRACTOR TRAILER WILL BE STORED IN THE PROPOSED BUILDING. IN ADDITION TO TYPICAL TRACTOR TRAILER MAINTENANCE MATERIALS AND EQUIPMENT, NO OUTDOOR STORAGE WILL BE WITHIN THE REQUIRED 25-FOOT SIDE YARD SETBACKS NOR ANY OTHER REQUIRED YARD SETBACK.

GENOA TOWNSHIP LANDSCAPE REQUIREMENTS PER ARTICLE 12:

- GREENBELT: 20 FT WIDE GREENBELT ALONG PUBLIC STREET ROW INCLUDING (1) CANOPY TREE FOR EVERY FORTY LINEAR FEET OF FRONTAGE. OR SUBSTITUTE EVERGREEN TREES FOR 50% OF REQUIRED TREES.
 REQUIRED: 7 CANOPY TREES (281 LF /40 LF)
 PROVIDED: BERM WITH 3 CANOPY TREES AND 12 EVERGREEN TREES -- (3) RED MAPLE, (10) WHITE FIR TREES AND (2) DOUGLAS FIR.
- BUFFER: BUFFER ZONE B REQUIRED PER ORDINANCE (3 FOOT HIGH BERM, 20 FT WIDE) ALONG NORTH, EAST AND SOUTH PROPERTY LINES WITH 1 CANOPY TREE, 1 EVERGREEN AND 4 SHRUBS PER EACH 30 LF
 REQUIRED: (NORTH, SOUTH) 309.27 LF - 70' FOR EXISTING WOODLAND = 239.27 LF / 30 = 7.976 TREES
 8 CANOPY TREES, 8 EVERGREEN TREES AND 32 SHRUBS (EAST) 275.52 LF / 30 = 9.184 TREES
 PROVIDED: (NORTH) BERM WITH (16) EXISTING EVERGREENS INCLUDING ARBORVITAE, WHITE PINE, SCOTS PINE AND NORWAY SPRUCE AND (32) SHRUBS. AN EXISTING WOODLAND BUFFER SCREENS 70 LF OF THE EAST END OF THIS PROPERTY LINE.
 (SOUTH) AN EXISTING TALL BERM ON THE ADJACENT PARCEL PROVIDES COMPLETE SCREENING.
 (EAST) THE APPROX. 70' DEEP EXISTING WOODLAND (PREDOMINATELY BOXELDER TREES AND UNDERSTORY/BRUSH THAT PROVIDES SCREENING) ALONG EAST PROPERTY LINE TO BE PRESERVED.
- PARKING LOT: (N/A)

PLANT LIST

KEY	QUAN.	BOTANICAL NAME	COMMON NAME	SIZE	REMARK
DECIDUOUS SHRUBS					
VB	19	Viburnum lantana 'Mohican'	Mohican Viburnum	36" ht./#5	Cont.
WS	13	Weigela x 'Strobe'	Strobe Weigela	24" ht./#3	Cont.

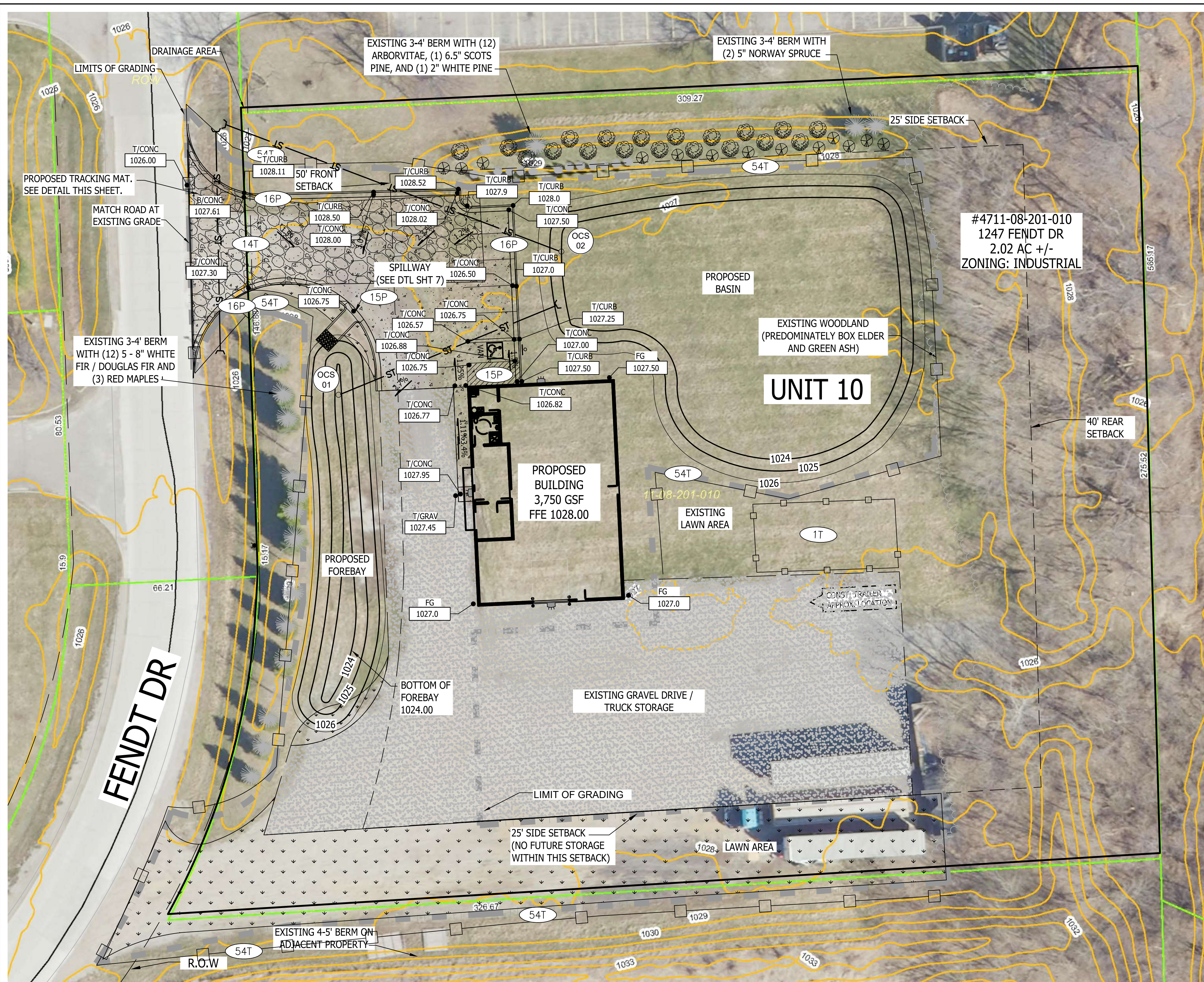
BEBOSS Engineering
 Engineers Surveyors Planners Landscape Architects
 3121 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 517.546.4836 FAX 517.548.1670

PROJECT: A & J CARTAGE PROPOSED BUILDING
PREPARED FOR: A & J CARTAGE
 1247 FENDT DRIVE
 HOWELL, MI. 48843
 517-981-0515

TITLE: SITE PLAN & LANDSCAPE PLAN

REVISION PER	DATE	BY
1	2/23/2022	JA

DESIGNED BY: JA
 DRAWN BY: JA
 CHECKED BY: BL
 SCALE: 1" = 20'
 JOB NO: 21-581
 DATE: 01/06/2022
 SHEET NO. **3**



#4711-08-201-010
1247 FENDT DR
2.02 AC +/-
ZONING: INDUSTRIAL

STORMWATER NARRATIVE:
A DETENTION BASIN AND FOREBAY HAVE BEEN ADDED TO MANAGE ON-SITE DRAINAGE. SHEET FLOW FROM THE WEST SIDE OF THE BUILDING AND THE CONCRETE AND GRAVEL SURFACES WILL BE DIRECTED TO A FOREBAY AT THE FRONT OF THE SITE. THE REST OF THE PARCEL DRAINAGE WILL FLOW TO THE DETENTION BASIN ON THE NORTH SIDE OF THE SITE. DISCHARGE FROM THE BASIN WILL OUTLET TO THE FENDT DRIVE R.O.W. WHICH THEN FLOWS NORTH TO THE 36" STORM SEWER AT THE NORTH LINE OF GEN TECH INDUSTRIAL PARK AND THE REGIONAL DETENTION BASIN.

DISTANCE FROM PROJECT SITE TO THE NEAREST...

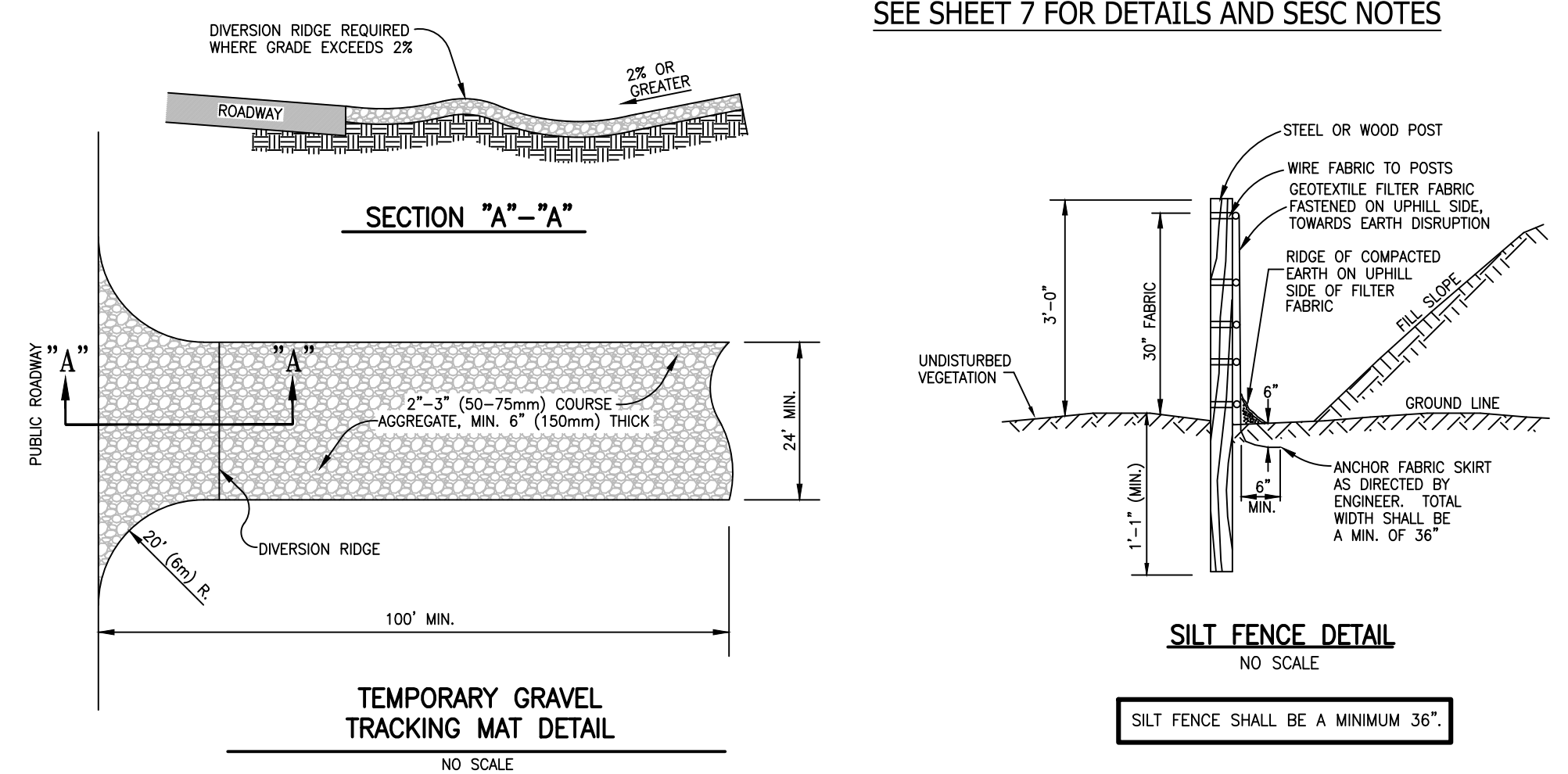
- COUNTY DRAIN (MARIAN GENOA COUNTY DRAIN S/E SIDE OF GRAND OAKS DR.) IS APPROXIMATELY 1,144 FT TO THE NORTHWEST.
- BASIN IS APPROXIMATELY 565 FEET TO NORTHEAST (AT WALMART/LOWES).
- LAKE CHEMUNG IS APPROXIMATELY 1.00 MILE TO THE NORTHEAST
- WETLAND IS APPROXIMATELY 0.37 MILES NORTHEAST AT PRENTIS ESTATES APARTMENTS, (ACCORDING TO NATIONAL WETLANDS INVENTORY WETLANDS MAPPER), AND
- RIVER (SOUTH BRANCH OF SHIWAASSEE RIVER) IS APPROXIMATELY 4.00 MILES TO THE WEST.

PROPOSED CONST. SCHEDULE FOR THE YEAR 2022

ACTIVITY	JUN	JUL	AUG
CLEAR, GRUB	█		
MASS GRADING	█		
UNDERGROUND UTILITY	█		
FINAL GRADING		█	
CURB & GUTTER		█	
PAVING		█	
SEED & MULCH		█	

NOTES

- ACCESS ROAD TO THE SITE SHALL BE PROVIDED AND MAINTAINED DURING CONSTRUCTION AND SHALL BE CONSTRUCTED TO BE CAPABLE OF SUPPORTING THE IMPOSED LOAD OF FIRE APPARATUS WEIGHING AT LEAST 84,000 POUNDS.
- SOILS DATA CAN BE FOUND ON EXISTING CONDITIONS SHEET 2.



CONSTRUCTION SEQUENCE

THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT EROSION IS MINIMIZED AND THAT COMPLIANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS, REGULATIONS, AND ORDINANCES IS MAINTAINED THROUGHOUT EXECUTION OF THIS PROJECT.

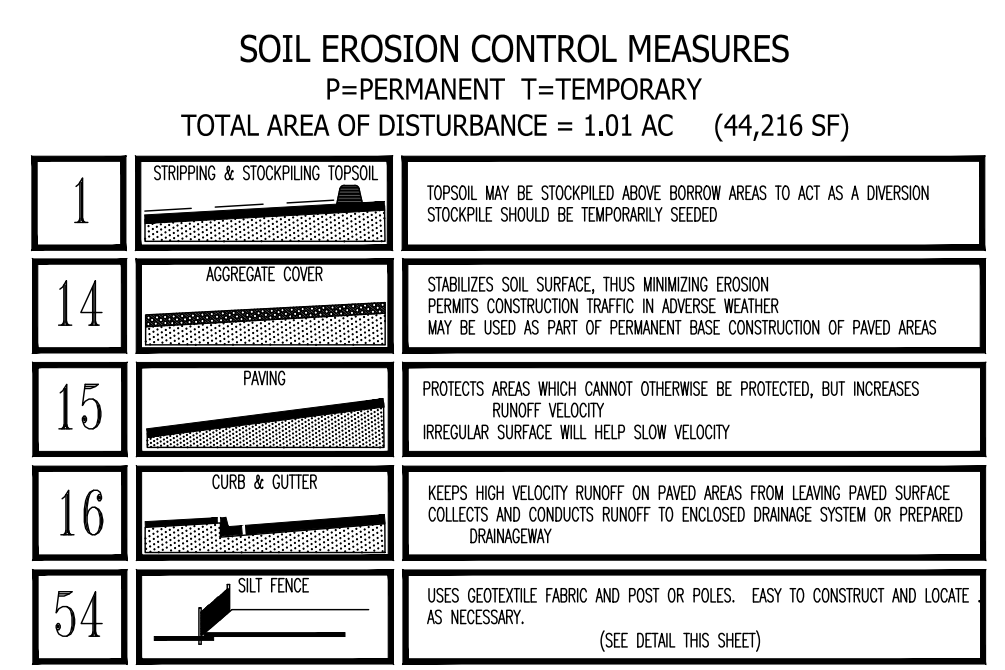
1 DAYS	1. INSTALL SILT FENCE AS SHOWN ON PLANS.
10 DAYS	2. ROUGH GRADE AND INSTALL BIOTENTION BASIN.
3 DAYS	3. INSTALL UTILITY SERVICES.
60 DAYS	4. BEGIN BUILDING CONSTRUCTION
7 DAYS	5. GRADE AND EXCAVATE FOR RAMP, PARKING AND DRIVEWAY.
14 DAYS	6. INSTALL PAVEMENT AND CURBING
7 DAYS	7. FINE GRADE, SPREAD TOPSOIL, SEED OR SOD AS APPLICABLE, INSTALL PLANTS.
3 DAYS	8. REMOVE ALL EROSION CONTROL STRUCTURES AND ACCUMULATED SILT FROM STRUCTURES.

CONTROLS & MEASURES POST CONSTRUCTION SEQUENCE

ACTIVITY	WEEKLY	MONTHLY	AS REQUIRED
MAINTAIN LANDSCAPING, REPLACE MULCH	X	X	X
CLEAN INLETS		X	X
CLEAN LITTER	X		X
SWEEP PARKING LOT			X

CONTROLS & MEASURES NARRATIVE

ACTIVITY	DESCRIPTION
MAINTAIN LANDSCAPING, REPLACE MULCH	COLLECT GRASS, TREE, AND SHRUB CLIPPINGS; DISPOSE IN APPROVED CONTAINER; REPLACE DEAD SOD, TREES AND SHRUBS.
CLEAN INLETS	REMOVE LITTER, SEDIMENT, AND DEBRIS; DISPOSE OF IN APPROVED LANDFILL.
COLLECT LITTER	
SWEEP PARKING LOT	REMOVE MUD, DIRT, GREASE AND OIL WITH PERIODIC SWEEPING
BUST CONTROL	SPRINKLE WATER AS NEEDED



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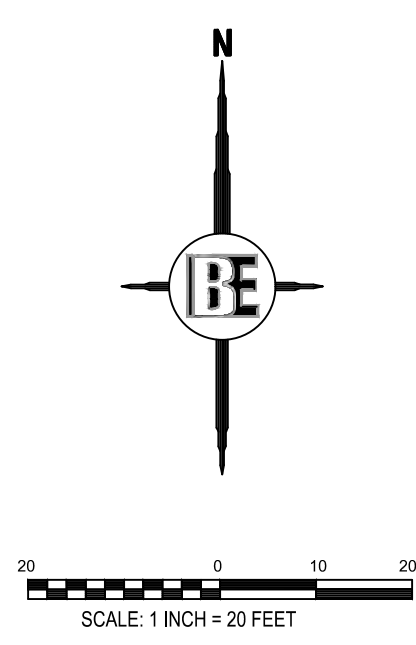
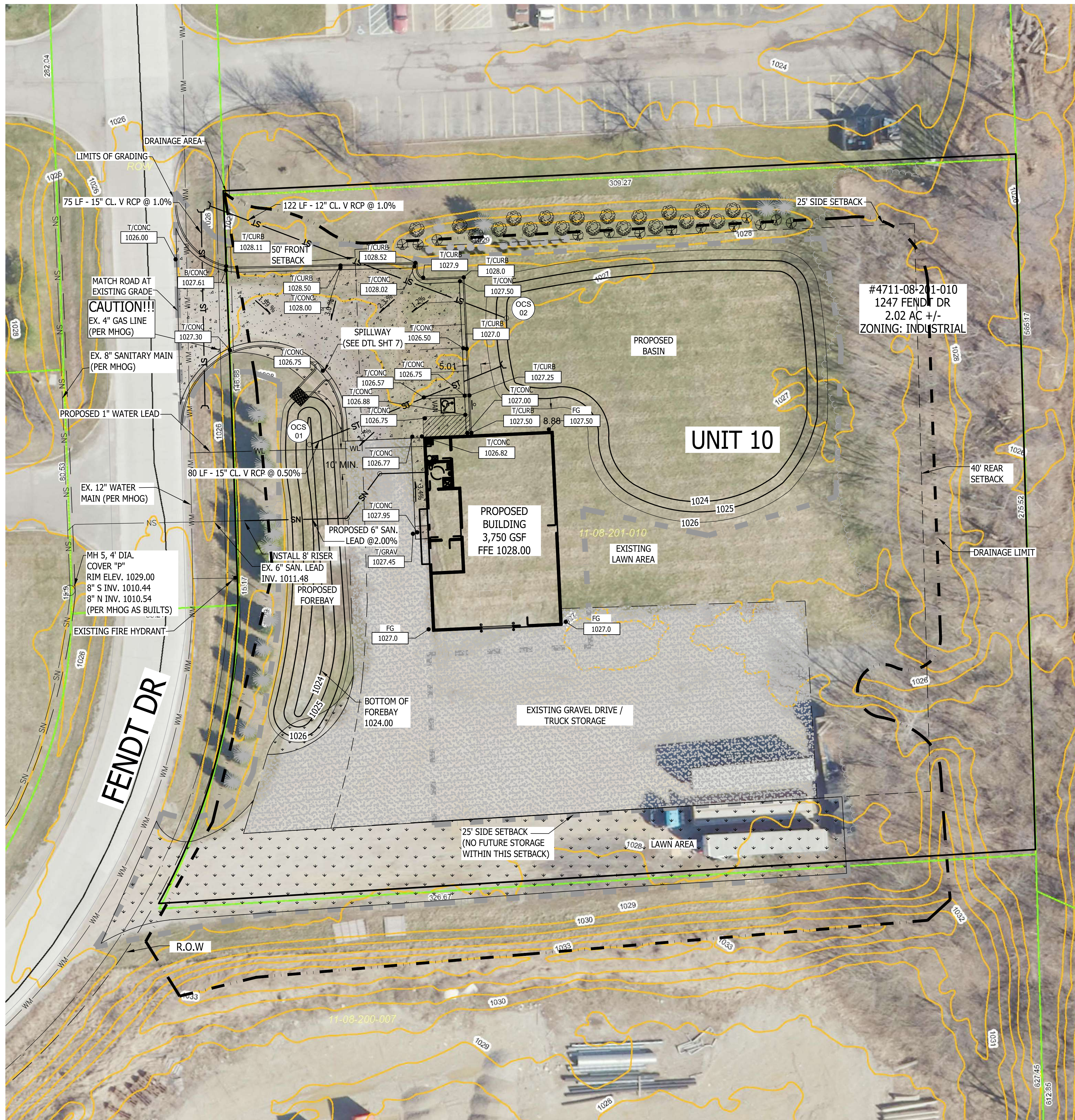
A & J CARTAGE PROPOSED BUILDING

PROJECT: A & J CARTAGE
PREPARED FOR: 1247 FENDT DRIVE
HOWELL, MI. 48843
517-981-10515

TITLE: GRADING, DRAINAGE, & SESC PLAN

REVISION PER	DATE	BY
1	2/23/2022	JA

DESIGNED BY: JA
DRAWN BY: JA
CHECKED BY: BL
SCALE: 1" = 20'
JOB NO: 21-581
DATE: 01/06/2022
SHEET NO: 4



PROPOSED (PR)	EXISTING (EX)	
FF	FF	FINISHED FLOOR ELEVATION
FG	FG	FINISHED GRADE ELEVATION
T/A	T/A	TOP OF ASPHALT
T/C	T/C	TOP OF CURB / CONCRETE
T/W	T/W	TOP OF WALK
F/L	F/L	FLOW LINE
T/P	T/P	TOP OF PIPE
B/P	B/P	BOTTOM OF PIPE
RM	RM	RIM ELEVATION
INV	INV	INVERT ELEVATION
MH	MH	MANHOLE STRUCTURE
IN	IN	INLET STRUCTURE
CB	CB	CATCHBASIN STRUCTURE
RY	RY	REARWARD STRUCTURE
ES	ES	END-SECTION
OV	OV	GATEVALVE STRUCTURE
HY	HY	HYDRANT
UP	UP	UTILITY POLE
SN	SN	SANITARY SEWER
SL	SL	SANITARY LEAD
FM	FM	FORCE MAIN
PS	PS	PRESSURE SEWER
ST	ST	STORM SEWER
WM	WM	WATER MAIN
WL	WL	WATER LEAD
FO	FO	FIBER OPTIC
OH	OH	OVERHEAD WIRE
C	C	CABLE
E	E	ELECTRIC
G	G	GAS
T	T	TELEPHONE
S	S	SIGN
L	L	NOT FIELD VERIFIED
D	D	TO BE REMOVED
SS	SS	SANITARY SEWER LABEL
SS	SS	STORM SEWER LABEL
WM	WM	WATER MAIN LABEL
SE	SE	SOIL EROSION CONTROL MEASURE
P	P	PERMANENT
T	T	TEMPORARY
CONC	CONC	CONCRETE
ASPH	ASPH	ASPHALT
MOD CURB	MOD CURB	MODIFIED CURB

THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS ARE ONLY APPROXIMATE. NO ASSURANCE IS MADE THAT THE UTILITIES SHOWN ARE COMPLETELY ACCURATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION AND ELEVATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OR DEPTH DIFFERS SIGNIFICANTLY FROM THE PLANS.

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 1-800-482-7171

LIVINGSTON COUNTY DETENTION BASIN CALCULATIONS

AREA (ACRES)	IMPERVIOUS FACTOR	ACRE IMPERVIOUS
0.23	0.9	0.21
0.39	0.7	0.27
1.15	0.2	0.23

COMPOUND C: 0.40
 TOTAL DRAINAGE AREA: 1.77 ACRES

K1 = Ax C (Design Constant) 0.708
 Qa = MAX ALLOW OUTFLOW (0.10 CFS / ACRE) 0.177 CFS

DURATION MINUTES	DURATION SECONDS	INTENSITY (IN/HR)	INCHES	INFLOW VOLUME IN RUNOFF x Ax C	OUTFLOW DURATION x Qa	STORAGE VOLUME INFLOW - OUTFLOW
5	300	9.17	2750	1947	53	1894
10	600	7.86	4714	3338	106	3232
15	900	6.88	6188	4381	159	4221
20	1200	6.11	7333	5192	212	4980
30	1800	5.00	9000	6372	319	6053
60	3600	3.24	11647	8246	637	7609
90	5400	2.39	12913	9142	956	8187
120	7200	1.90	13655	9668	1274	8393
180	10800	1.34	14488	10257	1912	8346

REQUIRED 100 YEAR DETENTION VOLUME = 8393 CF

FOREBAY VOLUME
 V(F) = 5% OF THE 100-YEAR STORM VOLUME BASED ON THE AREA TRIBUTARY TO THE INLET
 V(F) = (.05)(V100) = 420 CF
FOREBAY STORAGE VOLUME REQUIRED: 420 CF

FOREBAY STORAGE VOLUME PROVIDED:

ELEV	AREA	VOLUME	CUMMULATIVE VOLUME
1026	2508	1959	2664
1025	1410	705	705
1024			
1023			

2-FT SUMP

BANKFULL FLOOD VOLUME
 V_{BF} = 5160 x A x C = 3653 CF

FIRST FLUSH VOLUME
 V_{FF} = 1815 x A x C = 1285 CF

BASIN STORAGE PROVIDED

ELEV.	AREA (FT ²)	DEPTH (FT)	VOLUME (FT ³)	TOTAL VOLUME (FT ³)
1026	10855.04	1	10,072	18,629
1025	9289.39	1	8,557	8,557
1024	7824.15	0	0	0

FREEBOARD ELEVATION
DESIGN HIGHWATER ELEVATION

BOTTOM OF BASIN = 1024.00

FIRST FLUSH X_{FF} = 1024.15

BANKFULL X_{BF} = 1024.43

100 YEAR X₁₀₀ = 1024.98

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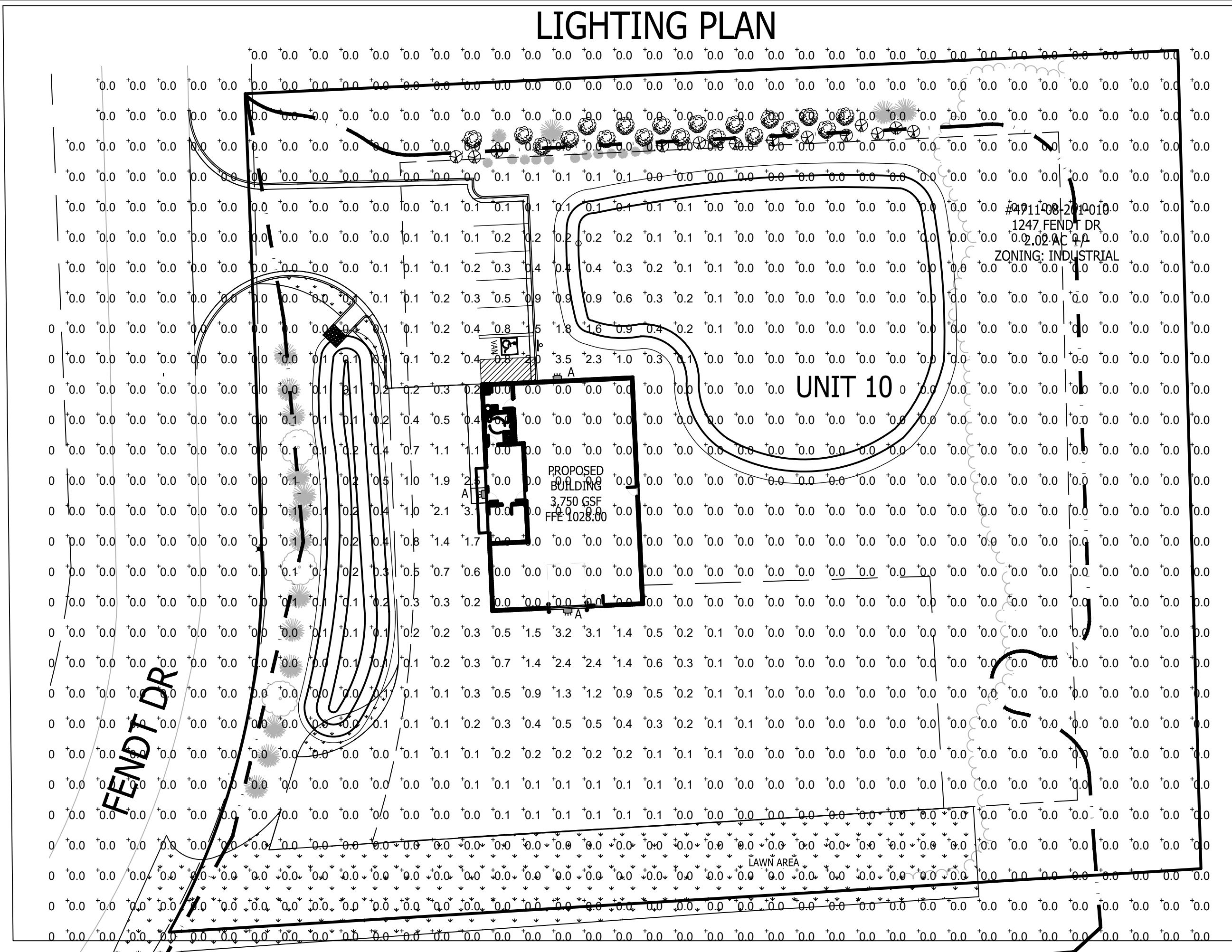
PROJECT: **A & J CARTAGE PROPOSED BUILDING**

PREPARED FOR: **A & J CARTAGE**
 1247 FENDT DRIVE
 HOWELL, MI. 48843
 517.981.5015

TITLE: **UTILITY PLAN**

REVISION PER	DATE
1	2/23/2022

DESIGNED BY: JA
 DRAWN BY: JA
 CHECKED BY: BL
 SCALE: 1" = 20'
 JOB NO: 21-581
 DATE: 01/06/2022
 SHEET NO. **5**



SITE LIGHTING REQUIREMENTS FOR GENOA TOWNSHIP
 LIGHT LEVELS NO MORE THAN 0.5 FC AT A RESIDENTIAL LOT LINE AND 1.0 AT NON-RESIDENTIAL LOT LINE. MAXIMUM LIGHT LEVEL ON THE SITE IS 10 FC
 LIGHTS TO BE DOWNWARD DIRECTED AND SHIELDED.

GENERAL LIGHTING NOTES

- THE LIGHTING PATTERN REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, AND OTHER VARIABLE FIELD CONDITIONS.

SITE LIGHTING SUMMARY

AVERAGE LIGHTING LEVEL: 0.1 FC
 MAXIMUM LIGHT LEVEL: 3.5 FC
 MINIMUM LIGHT LEVEL: 0.0 FC

SYMBOL	LABEL	QTY.	DESCRIPTION	CATALOG NUMBER	LAMP	LUMENS	LLF	POLE HGT
	A	03	LITHONIA LIGHTING 11W 50K LED WALL PACK, FULL CUT OFF	WPX1 LED P1 50K DDB	LED	ABSOLUTE	.93	15' WALL MOUNTED

ALL LIES FILES PROVIDED BY MANUFACTURER FOR CALCULATION OF LIGHTING LEVEL.

WPX LED Wall Packs

Specifications

- Input Voltage: 120VAC
- Output Voltage: 12VDC
- Power: 11W
- Current: 0.917A
- Life Span: 50,000 Hours
- Temperature: -40°C to 60°C
- Dimensions: 4.5" x 3.5" x 1.5"

Introduction

The WPX LED wall packs are energy-efficient, cost-effective, and environmentally responsible lighting solutions for your facility. Available in three sizes, the WPX LED wall packs feature 120VAC input with a wide, uniform distribution.

The WPX LED wall packs are designed to provide the benefits of the LED glow wall packs that they contain, providing better protection and an improved appearance. Suitable for construction and industrial LED lighting applications, a long service life. Photo and an emergency glow feature enhance WPX LED for emergency and outdoor lighting application.

Model	Power (W)	Current (A)	Life (Hrs)	Temp. (°C)	Dim. (LxWxH)
WPX1	11	0.917	50,000	-40 to 60	4.5 x 3.5 x 1.5
WPX2	22	1.834	50,000	-40 to 60	4.5 x 3.5 x 1.5
WPX3	33	2.751	50,000	-40 to 60	4.5 x 3.5 x 1.5

LEGEND

PROPOSED (PR)

- FF
- FF
- T/A
- T/A
- T/W
- F/L
- T/P
- B/P
- RM
- INV
- MH
- IN
- CB
- RY
- ES
- OV
- HY
- UP
- SN
- SL
- FM
- PS
- ST
- WM
- WL
- FO
- OH
- C
- G
- T
- F
- D
- S
- TBR
- SW
- OV
- SAT

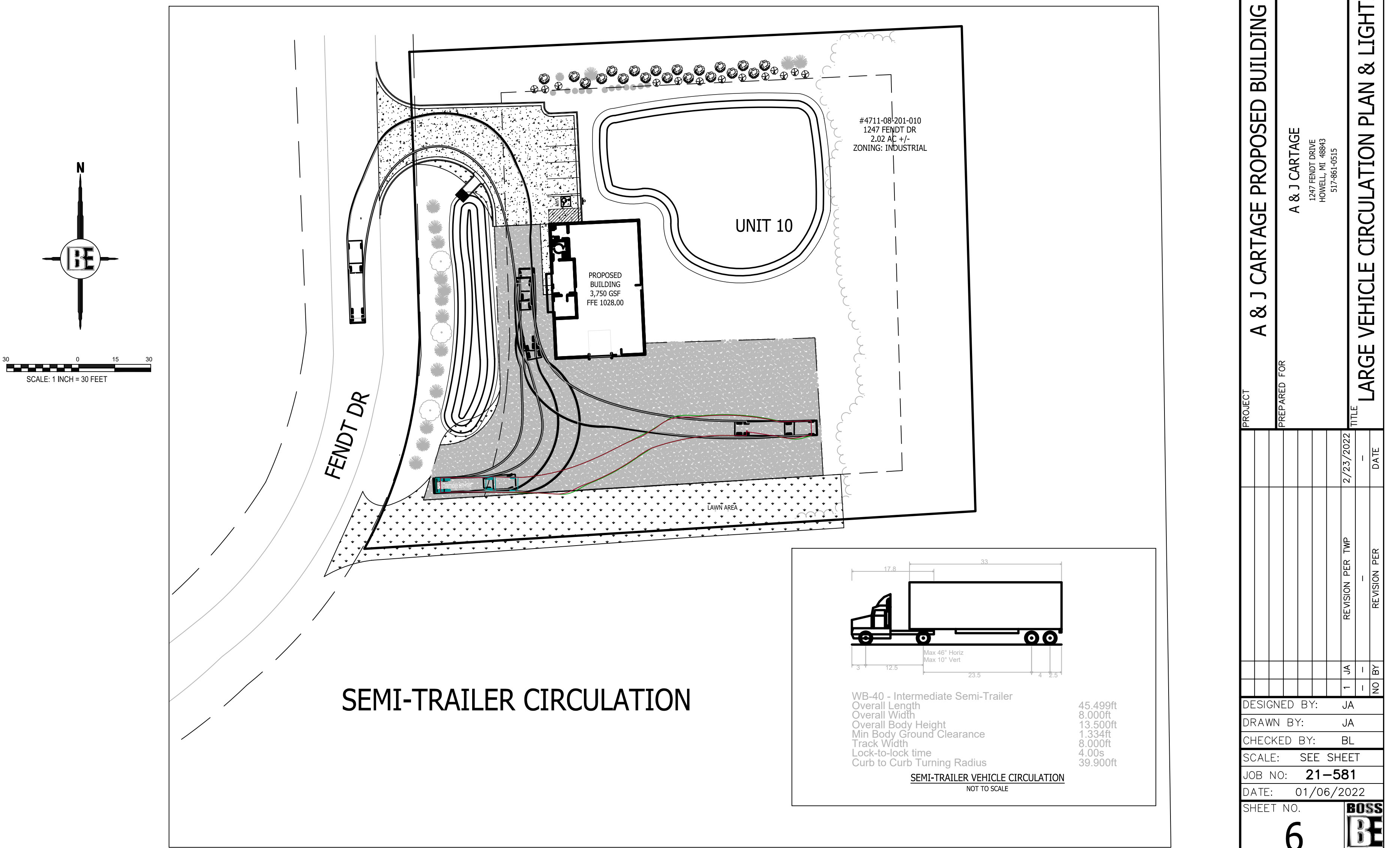
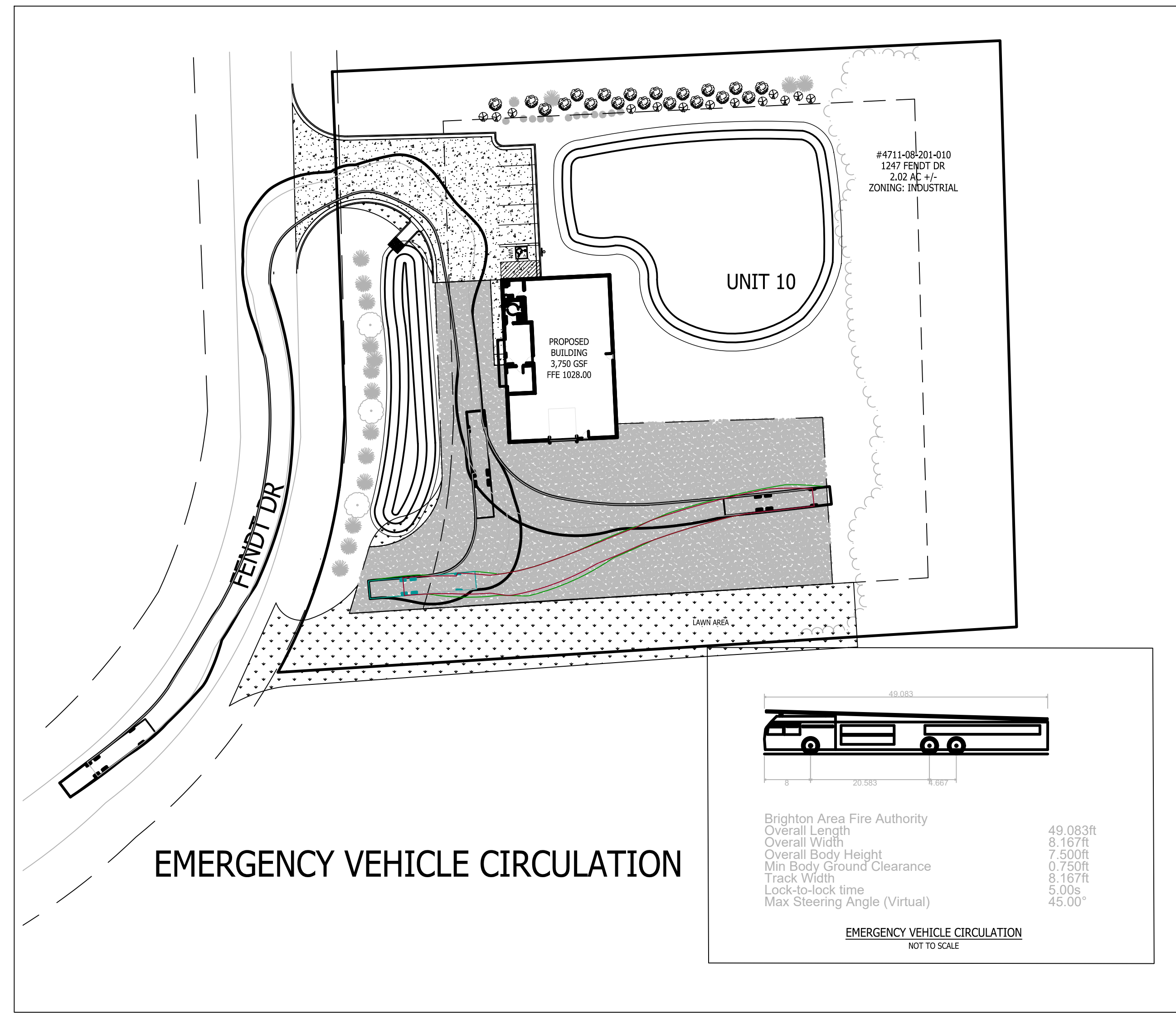
EXISTING (EX)

- 900
- +922.08
- CONTOUR
- SPOT ELEVATION
- FINISHED FLOOR ELEVATION
- FINISHED GRADE ELEVATION
- TOP OF ASPHALT
- TOP OF CURB / CONCRETE
- TOP OF WALK
- FLOW LINE
- TOP OF PIPE
- RIM ELEVATION
- INVERT ELEVATION
- MANHOLE STRUCTURE
- INLET STRUCTURE
- CATCHBASIN STRUCTURE
- REARWARD STRUCTURE
- END-SECTION
- GATEVALVE STRUCTURE
- HYDRANT
- UTILITY POLE
- SANITARY SEWER
- SANITARY LEAD
- FORCE MAIN
- PRESSURE SEWER
- STORM SEWER
- WATER MAIN
- WATER LEAD
- FIBER OPTIC
- OVERHEAD WIRE
- CABLE
- ELECTRIC
- GAS
- TELEPHONE
- FENCE
- SILT FENCE
- WETLAND BOUNDARY
- LIMITS OF GRADING/CLEARING
- MANHOLE
- INLET / CATCHBASIN
- FLARED END-SECTION
- GATE VALVE
- HYDRANT
- UTILITY POLE
- SIGN
- NOT FIELD VERIFIED
- TO BE REMOVED
- SANITARY SEWER LABEL
- STORM SEWER LABEL
- WATER MAIN LABEL
- SOIL EROSION CONTROL MEASURE (P=PERMANENT, T=TEMPORARY)
- CONCRETE
- ASPHALT
- MODIFIED CURB

THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS ARE ONLY APPROXIMATE. NO ASSURANCE IS MADE BY THE CONTRACTOR THAT THE UTILITIES SHOWN ARE COMPLETELY ACCURATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OR DEPTH DIFFERS SIGNIFICANTLY FROM THE PLANS.

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PROJECT: A & J CARTAGE PROPOSED BUILDING

PREPARED FOR: A & J CARTAGE
 1247 FENDT DRIVE
 HOWELL, MI. 48843
 517-981-1515

TITLE: LARGE VEHICLE CIRCULATION PLAN & LIGHTING PLAN

NO.	REVISION PER TWP	DATE	BY
1		2/23/2022	JA
2			JA
3			BL

DESIGNED BY: JA
 DRAWN BY: JA
 CHECKED BY: BL
 SCALE: SEE SHEET
 JOB NO: 21-581
 DATE: 01/06/2022
 SHEET NO. 6

LIVINGSTON COUNTY SOIL EROSION PERMIT TEMPLATE
TEMPORARY CONTROLS AND SEQUENCE

- NOTIFY LIVINGSTON COUNTY DRAIN COMMISSIONER'S OFFICE 24 HOURS PRIOR TO START OF GRADE WORK.
- IN ACCORDANCE WITH PUBLIC ACT NO. 53, OF 1974 THE PERMIT HOLDER SHALL CALL MISS DIG FOR STAKING AND LOCATING OF UTILITIES, AT LEAST 72 HOURS IN ADVANCE OF THE START OF ANY WORK.
- (IMPORTANT NOTICE) RETENTION/DETENTION PONDS SHALL BE EXCAVATED, TOPSOILED, SEEDED, MULCHED AND TACKED PRIOR TO THE START OF MASSIVE EARTH DISRUPTION. INGRESS/EGRESS MUST HAVE LARGE CRUSHED ROCK TO REDUCE THE TRACKING OF SOIL ONTO THE PUBLIC TRAFFIC AREAS. SEE DETAIL ITEMS BELOW.
- 36" M.D.O.T SPECIFICATION TYPE SILT FABRIC FENCE AS SHOWN ON PLANS SHALL BE PLACED AND MAINTAINED ALONG PERIMETER ON ALL LOW LYING AREAS OF THE CONSTRUCTION SITE TO FILTER RUNOFF BEFORE LEAVING PROJECT SITE.
- ALL TEMPORARY EROSION CONTROL DEVICES AS NOTED ON PLANS SHALL BE INSTALLED PRIOR TO THE START OF MASSIVE EARTH DISTRIBUTION.
- PLAN DOES DENOTE A DETAILED EROSION CONTROL DEVICE TO RESTRICT TRACKING OF MATERIAL ONTO THE HIGHWAY. STONE DIAPERS SHALL BE INSTALLED AT ALL INGRESS/EGRESS AREAS OF THE SITE PRIOR TO THE START OF MASSIVE EARTH DISRUPTION. DIAPERS SHALL BE OF CRUSHED STONE AND SHALL HAVE A MINIMUM LENGTH OF 100' LINEAL FEET.
- RETENTION PONDS
 - RETENTION/DETENTION/SEDIMENTATION PONDS SHALL BE EXCAVATED, TOPSOILED, SEEDED, MULCHED AND TACKED PRIOR TO THE START OF MASSIVE EARTH DISRUPTION.
 - DETENTION POND OUTLETS SHALL BE OF THE STANDPIPE AND STONE FILTER SYSTEM, WITH TRASH SCREEN. OUTLET FLOW SHALL NOT EXCEED 0.20 CUBIC FEET OF WATER PER SECOND/PER ACRE. POND DIKES SHALL HAVE A MINIMUM OF ONE (1) FOOT OF FREEBOARD. AN EMERGENCY SPILLWAY SHALL BE CONSTRUCTED WITHIN THE FREEBOARD LEVEL.
 - THE EMERGENCY SPILLWAY FROM THE DETENTION POND SHALL BE SODDED AND PEGGED, OR RIP RAPPED, 15 FEET PAST THE TOE OF THE SLOPE OF THE BERM.
 - DIKES AND BERMS SHALL BE FREE OF ALL ORGANIC MATTER.
 - RETENTION/DETENTION PONDS SHALL BE FENCED WITH A 4' CHAIN LINK FENCE, INCLUDING A 12' ACCESS GATE FOR MAINTENANCE UNLESS MINIMUM 5 FT. HORIZONTAL TO 1 FT. VERTICAL SIDE SLOPES ARE PROVIDED. THE FENCE SHALL BE INSTALLED AT THE OUTER PORTION OF THE BERM, TO ALLOW FOR MAINTENANCE WORK TO BE DONE INSIDE THE FENCE.
 - ALL UNIMPROVED DISTURBED AREAS SHALL BE STRIPPED OF TOPSOIL WHICH WILL BE STORED ONSITE DURING THE EXCAVATING STAGE. TOPSOIL PILES SHALL BE SEED AND MULCHED, OR MATTED WITH STRAW IN THE NON-GROWING SEASON, IMMEDIATELY AFTER THE STRIPPING PROCESS IS COMPLETED, TO PREVENT WIND AND WATER EROSION.
 - SOIL EROSION CONTROLS SHALL BE MONITORED DAILY BY THE ON-SITE ENGINEER, OR CONTRACTOR, WHICHEVER CASE APPLIES.
- SLOPES AND DITCHES
 - ON SITE DITCHES SHALL BE OF THE FLAT BOTTOM TYPE MINIMUM WIDTH OF 2' WITH A MINIMUM OF 3 HORIZONTAL TO 1 VERTICAL SIDE SLOPES, 3:1.
 - DITCHES WITH STEEP SLOPES WILL NEED FLOW CHECKS TO PREVENT SCOURING OF THE DITCH BOTTOM. THESE SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER OR INSPECTOR.
 - SLOPES IN EXCESS OF 3 HORIZONTAL TO 1 VERTICAL SHALL NOT BE USED EXCEPT WITH A MECHANICAL DEVICE SUCH AS A RETAINING WALL, TERRACING, OR OTHER PRIOR APPROVED DEVICE.
 - STORM DRAINS
 - ALL STORM WATER STRUCTURES, CATCH BASINS AND/OR MANHOLES, IF BLOCK, SHALL BE PLASTERED ON BOTH THE INSIDE AND OUTSIDE OF THE STRUCTURES. GROUTING AND POINTING WILL BE NECESSARY AT THE CASTING AND STRUCTURE JOINT TO PREVENT LEAKAGE AND THE RESULTING SOIL MOVEMENT, AROUND THE STRUCTURE.
 - STORM WATER INLETS SHALL HAVE AS A TEMPORARY CONTROL A STRAW BALE BARRIER AND STONE FILTER INSTALLED AROUND THE INLET DURING CONSTRUCTION. AS AN ALTERNATIVE TO THE STRAW BALE BARRIER, A BURLAP AND PEA STONE FILTER MAY BE USED. THREE LAYERS OF BURLAP FIBER AND A FILTER OF PEA STONE MINIMUM 1 FT. IN DEPTH CAN BE USED. DUE TO THE POROSITY OF THE BURLAP FILTER THE MINIMUM OF 1 FT. OF STONE IS VERY IMPORTANT. THE CONTROL SHALL BE INSTALLED AS SOON AS THE STRUCTURE IS BUILT AND INSPECTED DAILY.
 - BURLAP AND PEA STONE FILTERS WILL NEED TO BE CHANGED AFTER EACH RAINFALL.
 - COUNTY CODE REQUIRES A MINIMUM PIPE SIZE OF 12" IN DIAMETER. IF SMALLER PIPE IS NEEDED FOR OUTLET PURPOSES THE 12" CAN BE BAFFLED TO THE CORRECT SIZE. ALL PIPE SHALL MEET THE 12" DIAMETER CODE SIZE.
 - ALL STORM DRAIN OUTLETS 15" IN DIAMETER OR LARGER SHALL HAVE ANIMAL GUARDS INSTALLED TO PREVENT ENTRANCE TO THE SYSTEM.

- ALL STORM DRAIN PIPE 30" IN DIAMETER OR LARGER SHALL BE POINTED, AT THE JOINTS ON THE INSIDE WITH MORTAR, AFTER BACKFILLING.
- ALL STORM DRAIN OUTLETS THAT DO NOT EMPTY INTO THE RETENTION/DETENTION POND SHALL HAVE A TEMPORARY 5'X10'X3' SUMP INSTALLED AT THE TERMINATION OF THE STORM SEWER. UPON COMPLETION OF THE STABILIZATION WORK THE SUMP AREA SHALL BE FILLED AND RIP RAPPED WITH COBBLE STONE. SILT TRAPS SHALL BE INSPECTED AFTER EACH STORM.
- STORM WATER OUTLETS DO DENOTE RIP RAP. ALL OUTLETS SHALL BE RIP RAPPED OVER KEYED FILTER FABRIC WITH A MINIMUM OF 15 SQ. YARDS OF 6" OR LARGER COBBLE STONE.
- RIP RAP AS NOTED ON THE PLAN SHALL BE OF A FUNNEL SHAPE CONSTRUCTION, WIDTH SHALL INCREASE AS DISTANCE FROM THE OUTLET POINT INCREASES AT A 3:1 RATIO.
- RIP RAP SHALL BE OF COBBLE STONE, 6" IN DIAMETER OR LARGER. GROUTING MAY BE NECESSARY, AND SHALL BE A MINIMUM OF 6" IN DEPTH WITH THE COBBLE SET IN THE CEMENT SLURRY.
- STORM WATER OUTLET IS IN NEED OF A SPLASH BLOCK WHICH IS NOT NOTED ON THE PLAN. INSTALL SPLASH BLOCK IF SLOPE OF THE PIPE IS 4% OR GREATER.
- IT WILL BE NECESSARY FOR THE DEVELOPER TO HAVE THE STORM DRAINAGE LINES CLEANED PRIOR TO FINAL INSPECTION BY THE LIVINGSTON COUNTY DRAIN COMMISSIONER'S OFFICE. IF REQUIRED, THIS WORK SHALL BE DONE BY A PROFESSIONAL SEWER CLEANING FIRM AND CERTIFIED IN WRITING BY THE PROJECT ENGINEER. ALL SUMPS AND TEMPORARY SILT TRAPS SHALL ALSO BE CLEANED AT THIS TIME.
- STABILIZATION
 - ALL UNIMPROVED DISTURBED AREAS SHALL BE RE-TOP SOILED, WITH A MINIMUM OF 3" OF MATERIAL, SEEDED, MULCHED AND TACKED WITHIN 15 DAYS OF THE COMPLETION OF THE MASSIVE EARTH DISRUPTION. IN THE NON-GROWING SEASON STRAW MATTING WILL SUFFICE. HYDROSEEDING WILL BE AN ACCEPTABLE ALTERNATE FOR MULCHING. EXTREME CARE SHOULD BE EXERCISED IN SPRING AND FALL PERIODS AS A FROST WILL BREAK THE BIND OF THE HYDROSEEDING, WHICH WILL AFFECT THE EFFECTIVENESS OF THIS PROCEDURE.
 - IN THE NON-GROWING SEASON, TEMPORARY STABILIZATION OF MASSIVELY EXPOSED AREAS FOR WINTER STABILIZATION SHALL BE DONE WITH STRAW MATTING.
 - PERMIT FEES DURING THE WINTER PERIOD OF NON-CONSTRUCTION, (DECEMBER 1 THROUGH MARCH 31), SHALL NOT BE IMPOSED IF THE PERMIT HOLDER TEMPORARILY STABILIZES THE EXPOSED AREAS WITH STRAW MATTING, AND OTHER APPROVED CONTROLS, AND OBTAINS A WINTER STABILIZATION CERTIFICATE FROM THIS OFFICE.
 - PERIODIC INSPECTIONS WILL BE MADE THROUGHOUT THE COURSE OF THE PROJECT. IT WILL BE THE RESPONSIBILITY OF THE MANAGERS OF THE PROJECT TO CONTACT THIS OFFICE FOR THE FINAL INSPECTION AT THE END OF THE PROJECT.
 - THIS COMMERCIAL PERMIT IS VALID FOR THE MASS EARTH MOVEMENT, THE INSTALLATION OF ROADS, DRAINS, AND UTILITIES AND IS NOT FOR ANY SINGLE FAMILY RESIDENCE. ALL RESIDENTIAL BUILDERS WILL NEED TO SECURE WAIVERS AND OR PERMITS AS NECESSARY FOR EACH LOT IN THIS DEVELOPMENT AT THE TIME APPLICATION FOR SINGLE FAMILY RESIDENCE IS MADE.
 - THE ISSUING BUILDING DEPARTMENT SHALL NOT ISSUE THE CERTIFICATE OF OCCUPANCY UNTIL THE FINAL INSPECTION LETTER FROM THE LIVINGSTON COUNTY DRAIN COMMISSIONER'S OFFICE HAS BEEN OBTAINED.
 - PER THE LIVINGSTON COUNTY DRAIN COMMISSIONER THE SEEDING, FERTILIZER AND MULCH MINIMUM QUANTITIES SHALL BE AS FOLLOWS:
 TOP-SOIL 3" 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 MULCHING MUST HAVE A TIE DOWN, SUCH AS TACKIFIER, NET BINDING, ETC.)
 HYDRO-SEEDING IS NOT ACCEPTABLE FOR SLOPES EXCEEDING 1%, IN SUCH CASES STABILIZATION SHALL BE DONE WITH SEED AND STRAW MULCH WITH A TACKIFIER.

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 HYDRO-SEEDING IS NOT ACCEPTABLE FOR SLOPES EXCEEDING 1%, IN SUCH CASES STABILIZATION SHALL BE DONE WITH SEED AND STRAW MULCH WITH A TACKIFIER.
- SANITARY SEWERS
 - SANITARY SEWER TAP TO THE MHOG SANITARY SEWER SYSTEM, SHALL ONLY BE MADE AFTER SECURING IN WRITING CLEARANCE FROM GENOA TOWNSHIP AND A SEWER TAP PERMIT FROM THE LIVINGSTON COUNTY DEPARTMENT OF BUILDING & SAFETY.
 - A TAP PERMIT WILL BE NEEDED BY THE OWNER/DEVELOPER OF THIS PROJECT TO TAP TO THE LEGALLY ESTABLISHED COUNTY STORM DRAIN. THE OWNER/DEVELOPER SHALL MAKE A WRITTEN REQUEST TO THE DRAIN COMMISSIONER TO REQUEST THE TAP TO THE STORM SEWER. THE FEES FOR SUCH TAP ARE AS FOLLOWS:
 A. NON REFUNDABLE ADMINISTRATIVE FEE OF \$50.00, TO BE PAID AT THE TIME OF APPLICATION.
 B. INSPECTION FEES ARE BASED ON TIME AND MATERIAL BASIS FROM PORT TO PORT FOR THE ON-SITE INSPECTOR. INSPECTOR'S RATE, VEHICLE MILEAGE, AND 0.5 HOURS OF REPORT PREPARATION TIME WILL BE CHARGED, AS WELL AS ANY NECESSARY MATERIALS. TIME AND MATERIAL FEES ARE PAID AT THE COMPLETION OF THE TAP INSTALLATION.

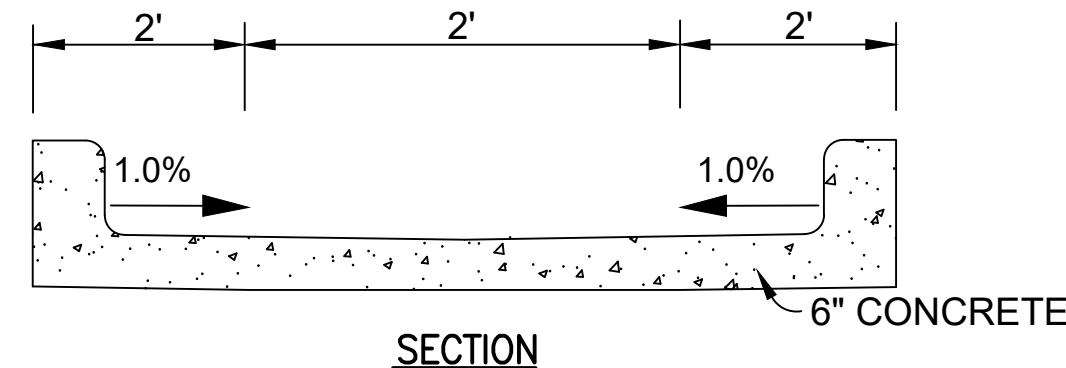
- SINGLE FAMILY RESIDENCE CONSTRUCTION
- PRIOR TO THE START OF SINGLE FAMILY RESIDENCES, THE BUILDER OR HOMEOWNER SHALL INSTALL A STRAW BALE BARRIER AND/OR SILT FENCE BEHIND THE CURB, OR BEHIND THE CROWN OF THE ROAD DITCH BACK SLOPE. PRIOR TO THE START OF THE DWELLING, THE HOMEOWNER OR BUILDER SHALL INSTALL THE DRIVEWAY CULVERT AND AGGREGATE MATERIAL TO ALLOW FOR ENTRANCE TO THE LOT.
 - IF THE LIVINGSTON COUNTY HEALTH DEPARTMENT REQUIRES A MOUNDED SEPTIC FIELD, THE HOMEOWNER/BUILDER SHALL INSTALL POSITIVE DRAINAGE FROM THE MOUNDED AREA SO AS NOT TO ALLOW EXCESSIVE FLOW ONTO ADJACENT LOTS.
 - DRAINAGE EASEMENTS WITHIN THE SUBDIVISION SHALL NOT BE ENCROACHED UPON. OPEN SWALES SHALL NOT BE FILLED OR ENCROACHED UPON. STRAW BALE BARRIERS OR SILT FENCES SHALL BE INSTALLED BETWEEN THE CONSTRUCTION AND THE OPEN DRAIN TO PREVENT SILTATION OF THE SYSTEM. ENCLOSED DRAINS WILL HAVE PERIODIC CATCH BASINS OR MANHOLES, LOT GRADES SHALL NOT BE RAISED OVER THE ESTABLISHED STRUCTURE TOPS.

MAINTENANCE SCHEDULE FOR SOIL EROSION CONTROLS

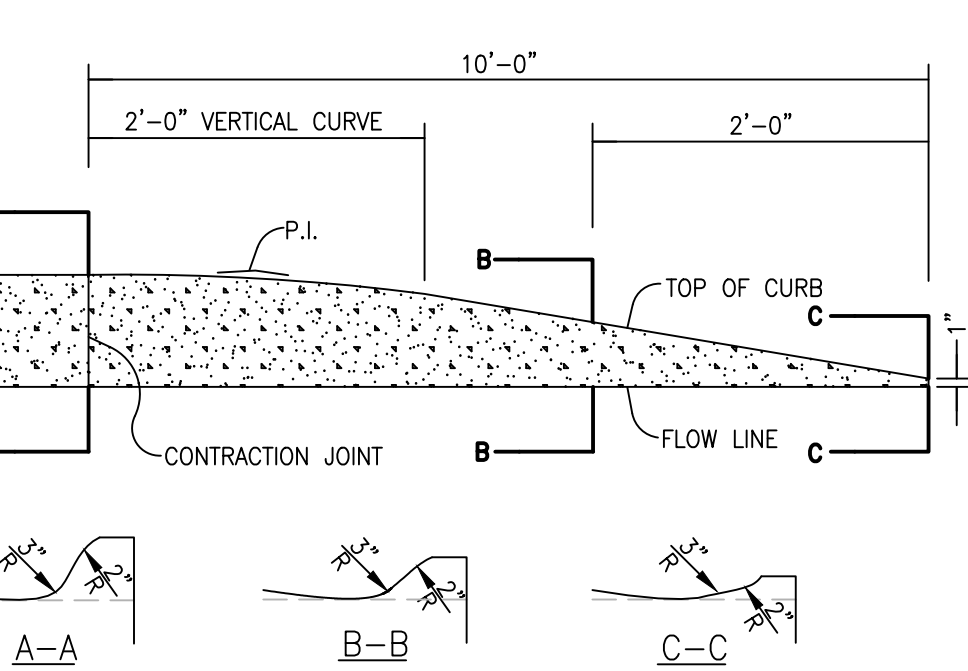
- SILT FENCE SHALL BE INSPECTED WEEKLY AND AFTER EACH MAJOR STORM EVENT. MAINTENANCE SHALL INCLUDE REMOVAL OF ACCUMULATED SILT AND REPLACEMENT OF TORN SECTIONS. SILT FENCE SHALL BE REMOVED WHEN ALL CONTRIBUTING AREAS HAVE BEEN STABILIZED.
- TRACKING PAD SHALL BE INSPECTED MONTHLY FOR ACCUMULATED DIRT. TRACKING PAD SHALL BE REPLACED WHEN THE STONES ARE CHOKED WITH DIRT. TRACKING PAD SHALL BE REMOVED IMMEDIATELY PRIOR TO THE FIRST COURSE OF ASPHALT BEING LAID.
- DETENTION/RETENTION POND SHALL BE INSPECTED QUARTERLY ON A PERMANENT BASIS. MAINTENANCE SHALL INCLUDE SEDIMENT REMOVAL, EMBANKMENT STABILIZATION AND MAINTAINING THE OUTLET STRUCTURE IN GOOD CONDITION. NO TREES SHALL BE ALLOWED TO GROW ON THE EMBANKMENT.
- CATCH BASINS SHALL BE INSPECTED ANNUALLY FOR ACCUMULATION OF SEDIMENT. ALL SEDIMENT MUST BE REMOVED AND DISPOSED OF PROPERLY WHEN THE SUMP IS FULL.
- COMMON AREAS SHALL BE STABILIZED NO LATER THAN 15 DAYS AFTER GRADE WORK, PURSUANT TO RULE 1709 (5).



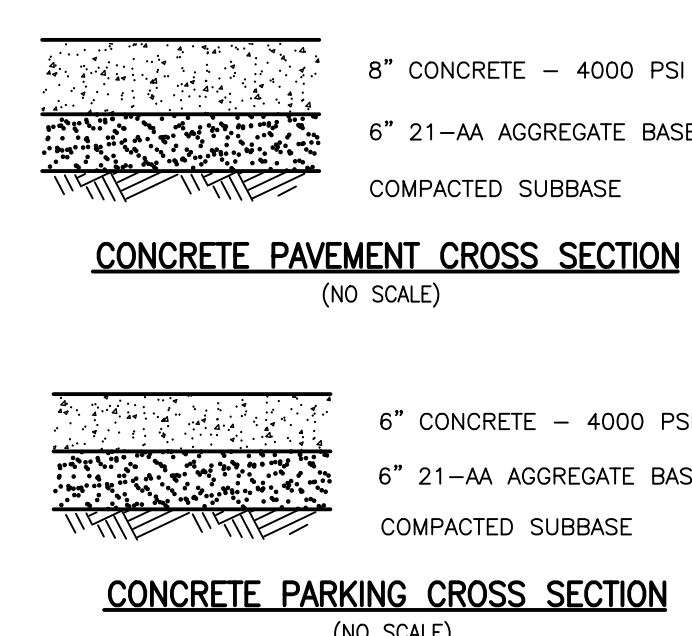
SPILLWAY DETAIL
(NO SCALE)



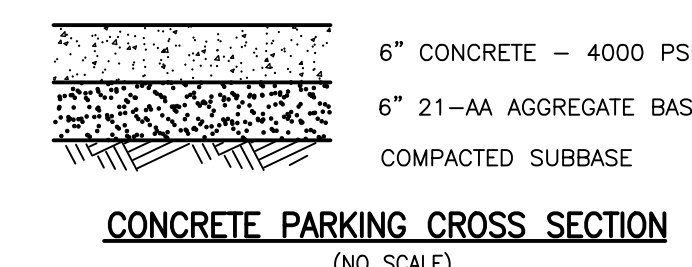
SECTION
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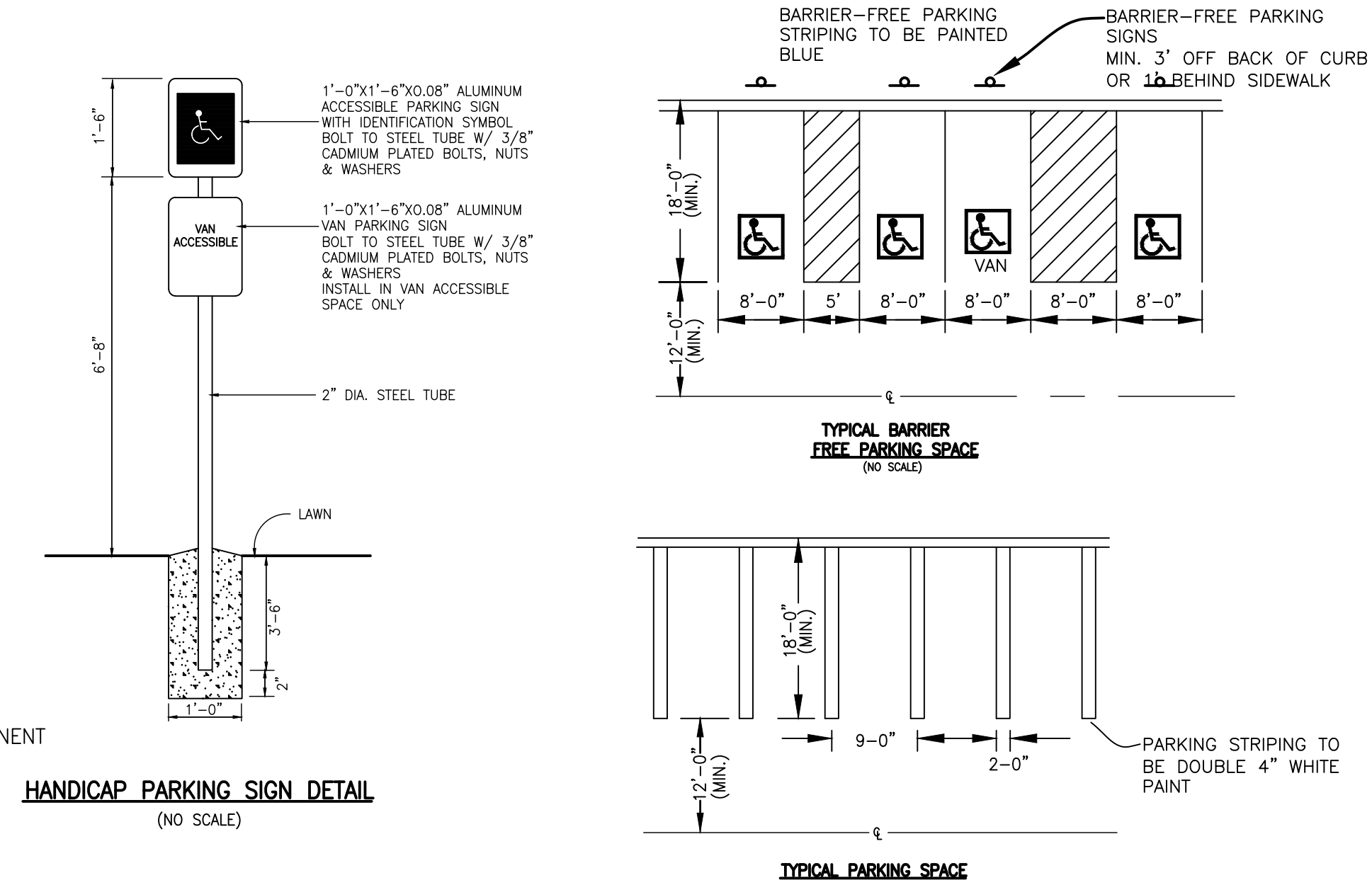
CONCRETE CURB AND GUTTER TAPER
(NO SCALE)



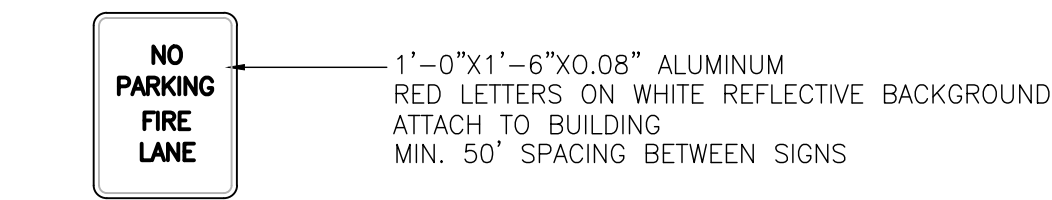
CONCRETE PAVEMENT CROSS SECTION
(NO SCALE)



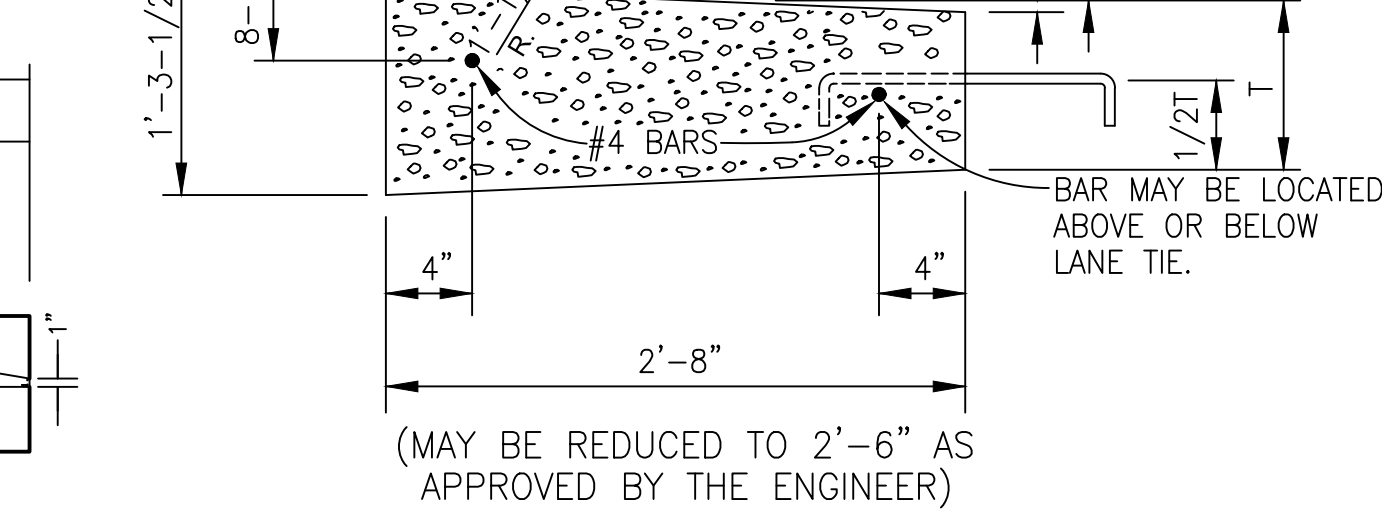
CONCRETE PARKING CROSS SECTION
(NO SCALE)



HANDICAP PARKING SIGN DETAIL
(NO SCALE)

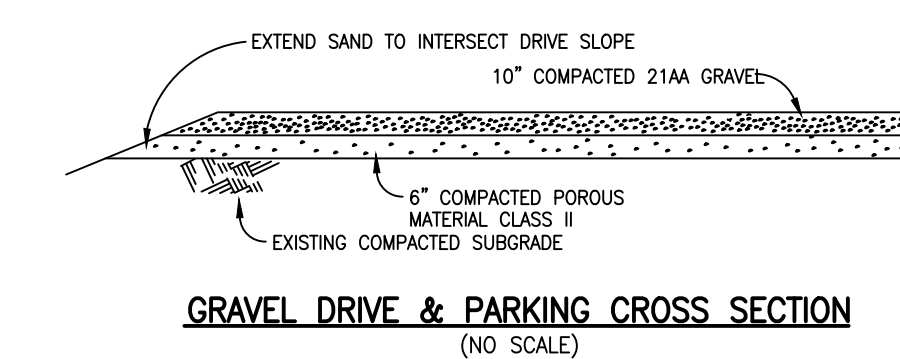


NO PARKING SIGN DETAIL
(NO SCALE)



MODIFIED B-2 CURB DETAIL
(NO SCALE)

DETAIL	DIMEN. T	LANE TIES	CONCRETE CU.YD./LIN.FT.
B1	9"	AS SHOWN	0.0900
B2	9"	OMITTED	0.0900
B3	10"	AS SHOWN	0.0941



GRAVEL DRIVE & PARKING CROSS SECTION
(NO SCALE)

BEBOSS Engineering

Engineers Surveyors Planners Landscape Architects

3121 E. GRAND RIVER AVE.
HOWELL, MI. 48843
517.546.4836 FAX 517.548.1670

BEBOSS
Engineering

PROJ. A & J CARTAGE PROPOSED BUILDING

PREPARED FOR A & J CARTAGE
1247 FENOT DRIVE
HOWELL, MI. 48843
517-981-0515

TITLE CONSTRUCTION DETAIL

NO.	REVISION	PER	DATE
1	1	JA	2/21/2022

DESIGNED BY: JA

DRAWN BY: JA

CHECKED BY: BL

SCALE: NTS

JOB NO: 21-581

DATE: 01/06/2022

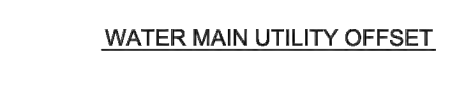
SHEET NO. 7

BOSS
Engineering

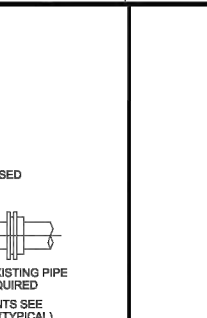
32

PIPE RESTRAINT SCHEDULE									
GROUND BURIED PRESSURE PIPE - POLYETHYLENE ENCASED DUCTILE IRON PIPE									
PIPE DIAMETER	TEEL BENDS	45° BENDS	22.5° BENDS	15.75° BENDS	REDUCERS (ONE SIDE REDUCTION)	REDUCERS (TWO SIDE REDUCTION)			
4	15	6	3	1	40	31			
6	15	6	3	1	40	31			
8	24	10	5	2	70	50			
12	34	14	7	3	100	67			
18	42	18	9	4	130	89			
24	52	22	11	5	160	108			
30	62	27	14	6	190	128			
36	72	33	17	7	220	148			
42	84	39	20	8	250	168			

1. LENGTH OF PIPE RESTRAINT ARE GIVEN IN FEET.
 2. REQUIRED PERCENTAGE IS NOT LISTED IN THIS TABLE, THE NEXT LARGEST PIPE DIAMETER SHALL BE USED.
 3. THIS TABLE IS BASED ON A 100' LENGTH OF PIPE.
 4. THE VALUES PROVIDED FOR EACH PIPE SIZE ARE BASED ON THE DIRECTION OF REDUCTION OR DIMENSIONAL EXPERT FOR TRENCH AT WHICH ONLY THE BRANCH IN THE DIRECTION OF THE SYSTEM.
 5. TO KNOW THE USE OF FOUR TRENCH MANHOLES IN EACH SECTION FROM THE DIRECTION OF REDUCTION OR DIMENSIONAL EXPERT FOR TRENCH AT WHICH ONLY THE BRANCH IN THE DIRECTION OF THE SYSTEM.
 6. SIZE REDUCTION IS BASED UPON THE PIPE DIAMETER SHOWN IN THIS TABLE.
 7. RESTRAINT JOINTS USE SPECIFICATIONS (TYPICAL)



WATER MAIN UTILITY OFFSET



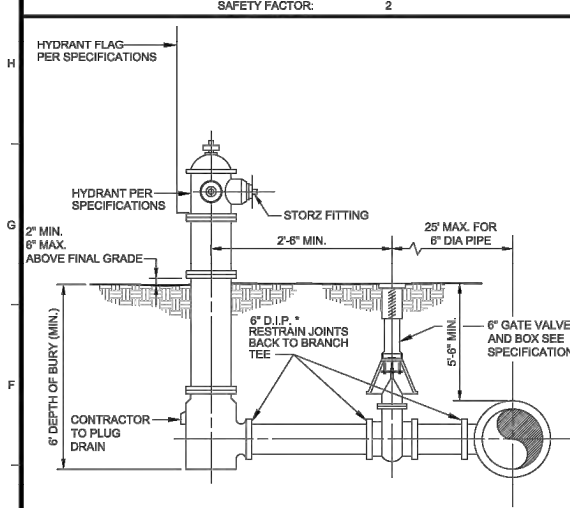
PLAN VALVE/TRACER WIRE BOX IN CONCRETE DETAIL

NOTE: ALL BOXES & JOINTS MUST BE CAST IN PLACE CONCRETE. TRACER WIRE SHALL BE PLACED AT LEAST 1" FROM EDGE OF BOX. TRACER WIRE SHALL BE PLACED AT LEAST 1" FROM EDGE OF PAD.

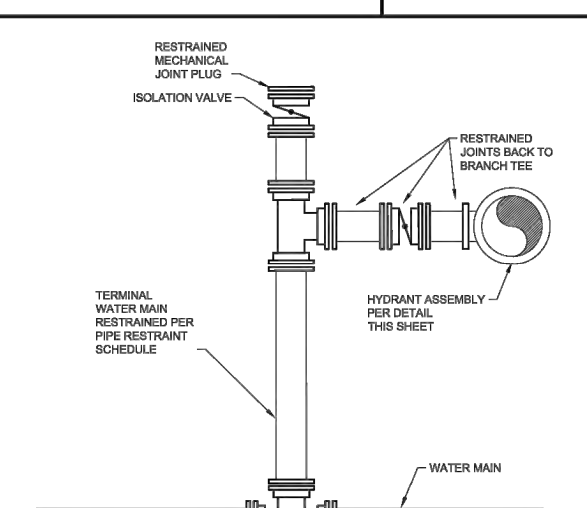


SECTION VALVE/TRACER WIRE BOX IN CONCRETE DETAIL

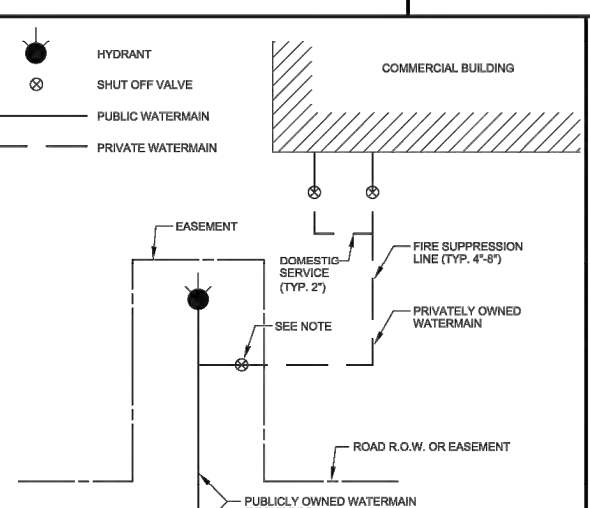
NOTE: TRACER WIRE SHALL BE PLACED AT LEAST 1" FROM EDGE OF BOX. TRACER WIRE SHALL BE PLACED AT LEAST 1" FROM EDGE OF PAD.



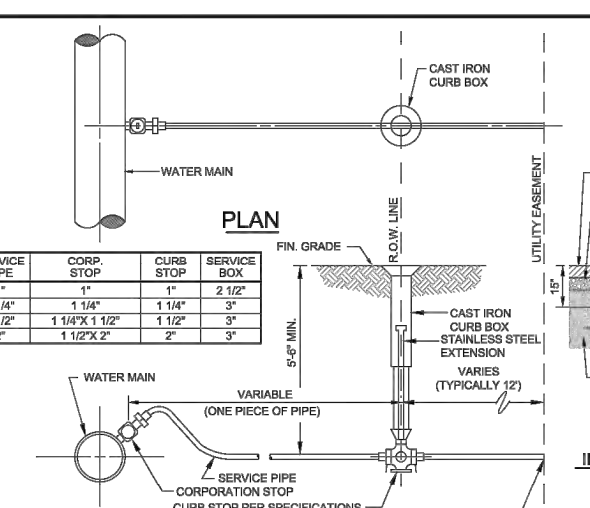
FIRE HYDRANT ASSEMBLY



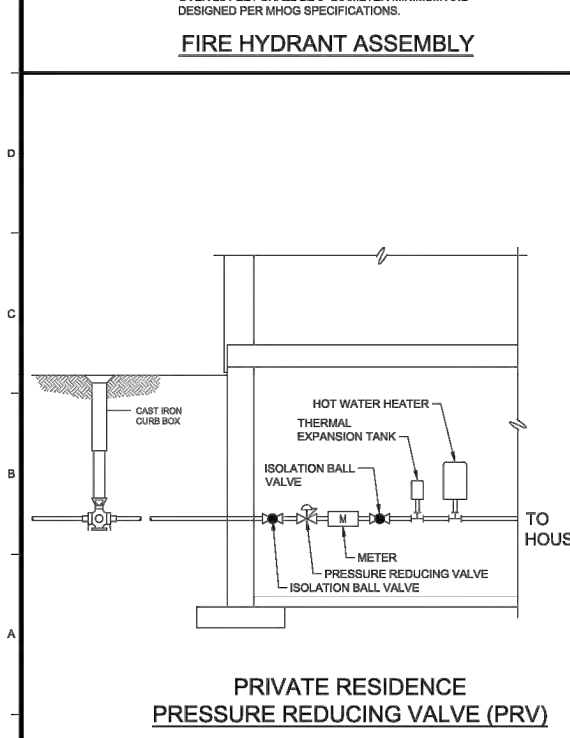
TERMINAL HYDRANT DETAIL



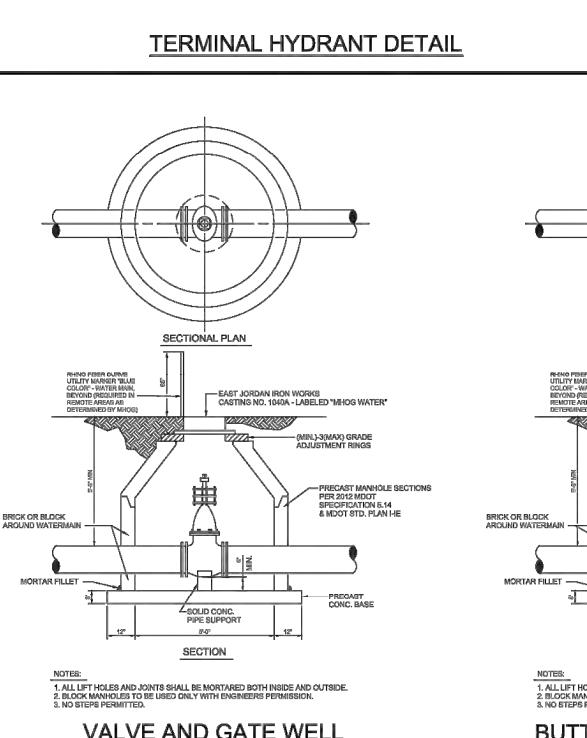
COMMERCIAL BUILDING WATER SERVICE LAYOUT



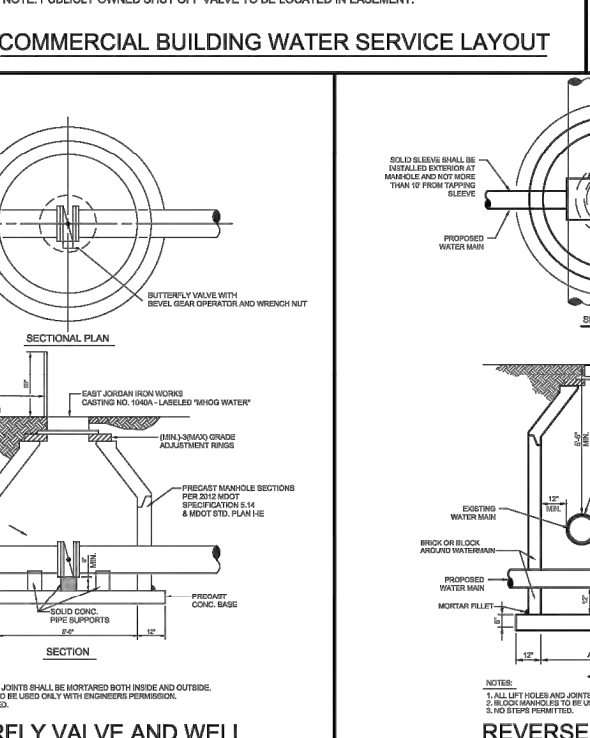
SECTION WATER SERVICE LATERAL



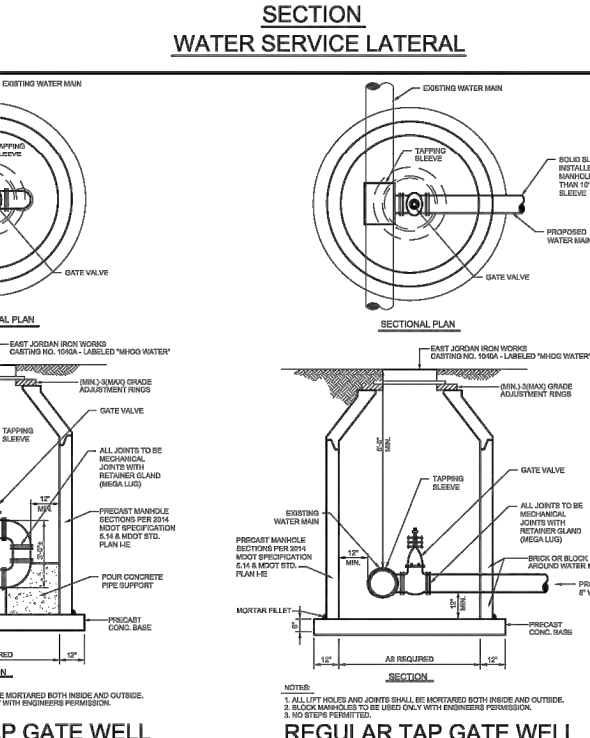
PRIVATE RESIDENCE PRESSURE REDUCING VALVE (PRV)



VALVE AND GATE WELL



BUTTERFLY VALVE AND WELL

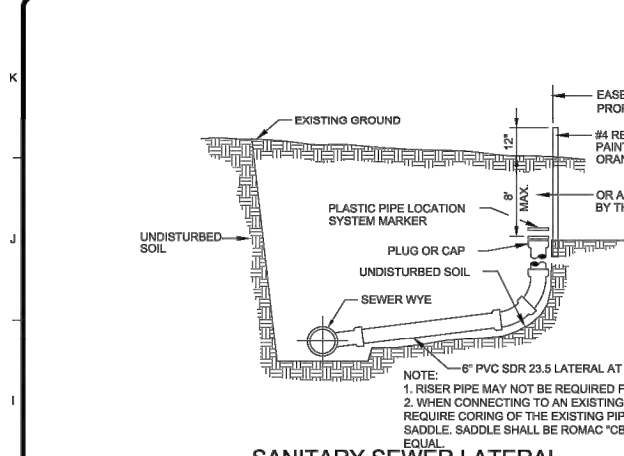


REVERSE TAP GATE WELL

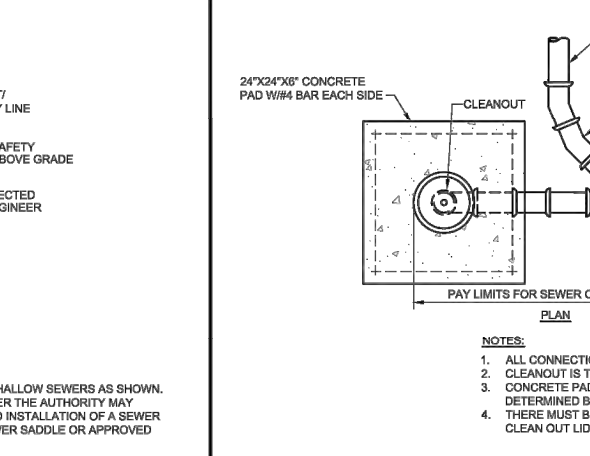


REGULAR TAP GATE WELL

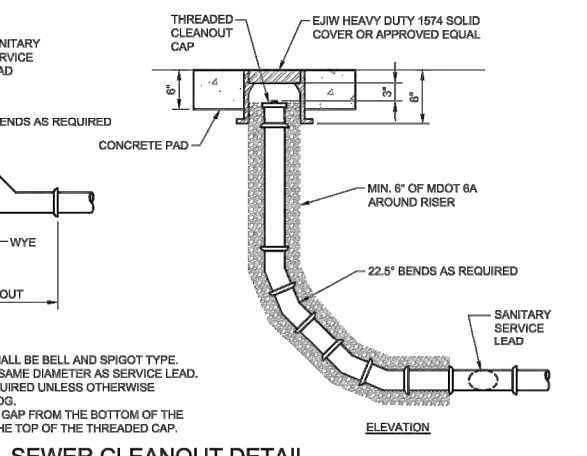
MARION HOWELL OCEOLA GEORGIA
 Survey and Water Authority
 STANDARD DETAILS



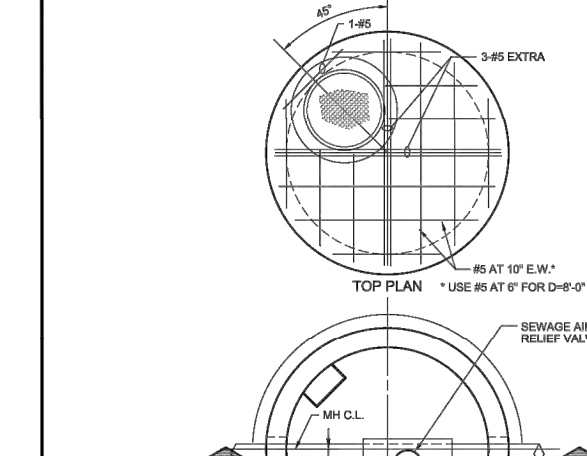
SANITARY SEWER LATERAL



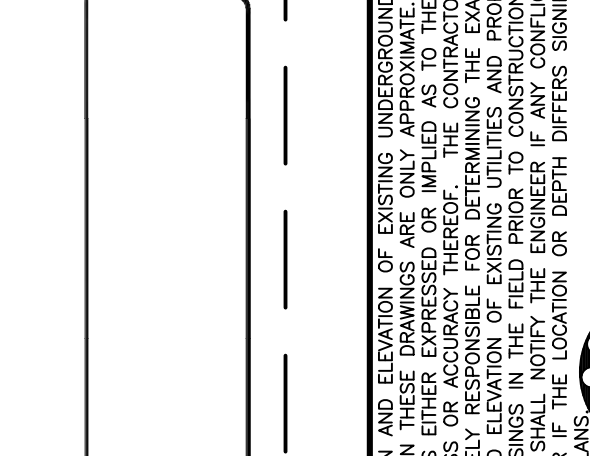
SEWER CLEANOUT DETAIL



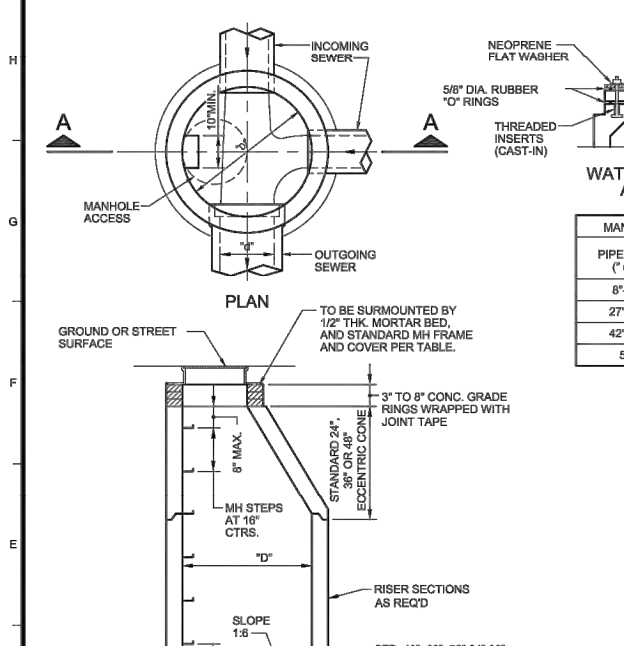
DROP CONNECTION



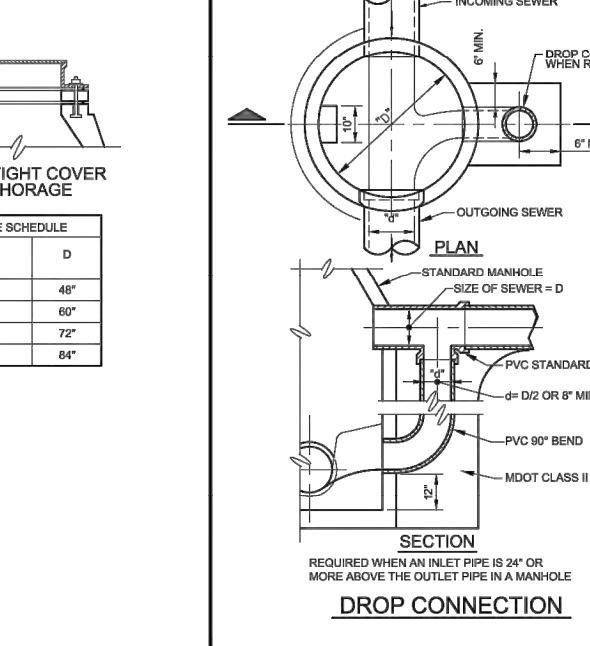
CASING PIPE



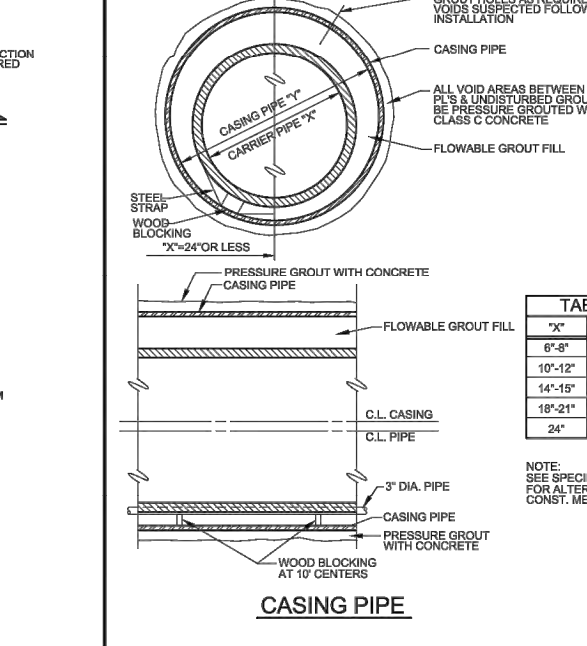
AIR RELIEF STRUCTURE



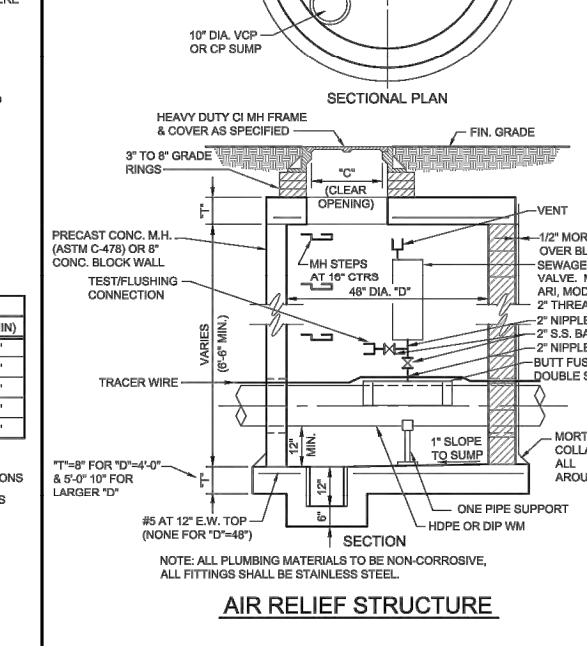
MANHOLE SCHEDULE



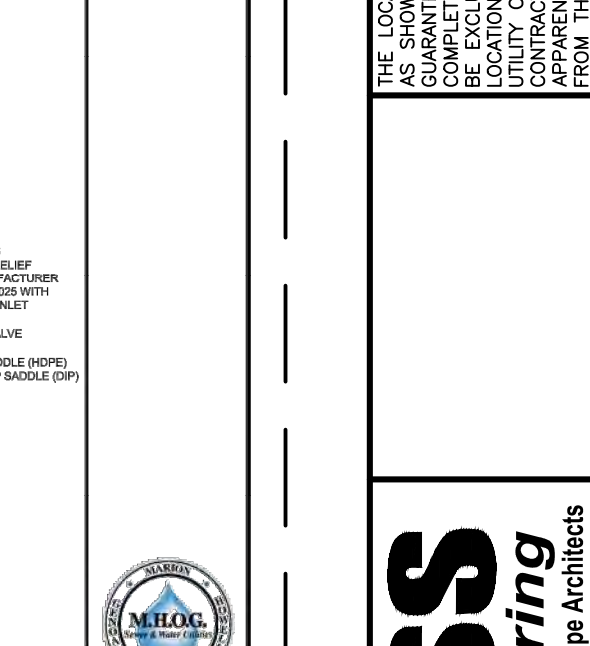
PIPE BEDDING



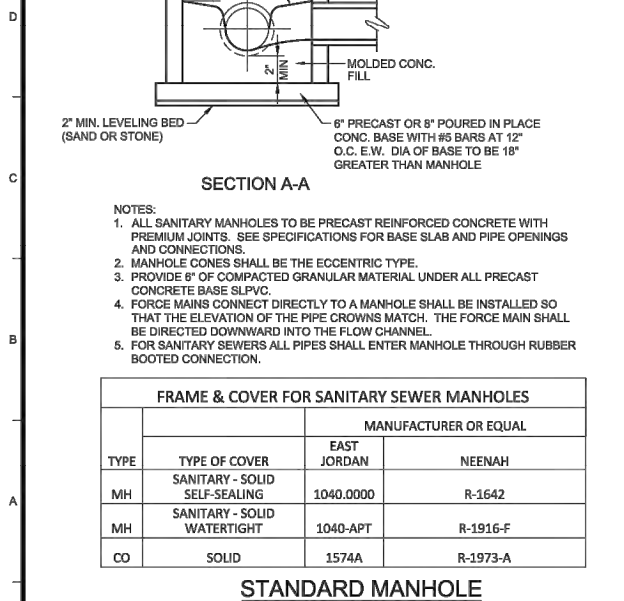
TRENCH EXCAVATION & PIPE BEDDING



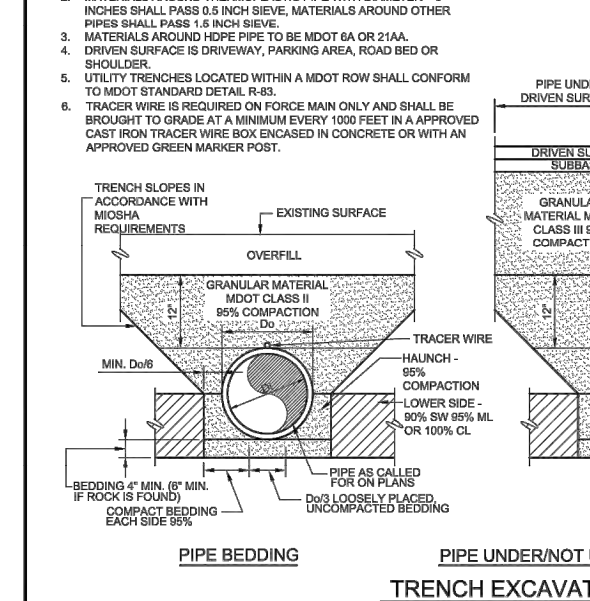
PIPE WITHIN INFLUENCE OF DRIVEN SURFACE



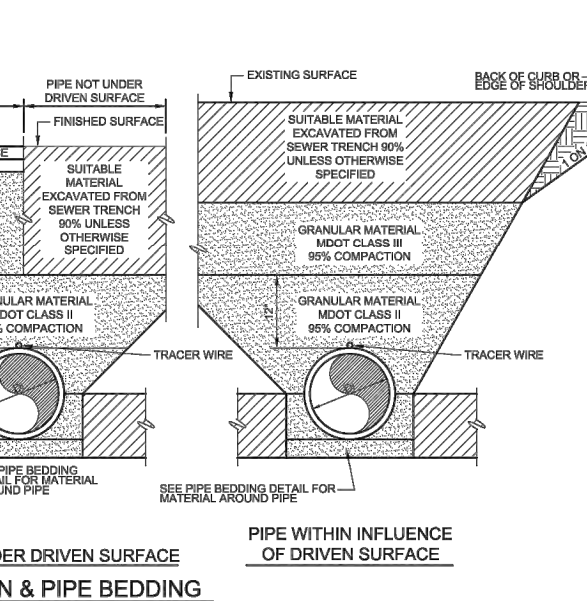
INTERIOR SEWER LATERAL DROP CONNECTION



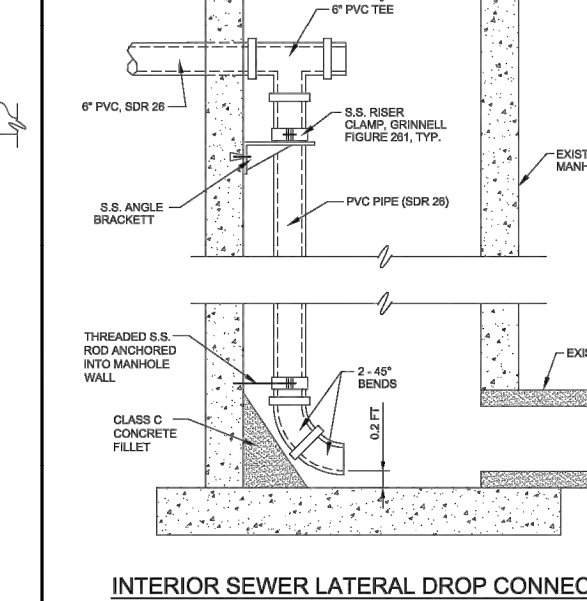
FRAME & COVER FOR SANITARY SEWER MANHOLES



PIPE UNDERFOOT UNDER DRIVEN SURFACE



PIPE WITHIN INFLUENCE OF DRIVEN SURFACE



INTERIOR SEWER LATERAL DROP CONNECTION

MARION HOWELL OCEOLA GEORGIA
 Survey and Water Authority
 STANDARD DETAILS

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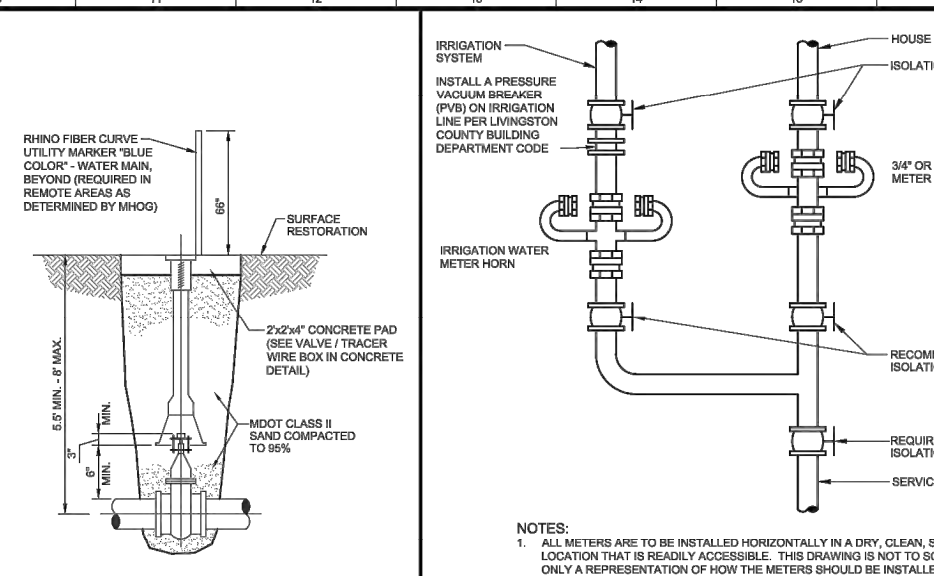
A & J CARTAGE PROPOSED BUILDING
 PREPARED FOR: A & J CARTAGE
 1247 FENOT DRIVE
 HOWELL, MI. 48843
 517.981.0515

MHOG WATER AND SEWER DETAILS

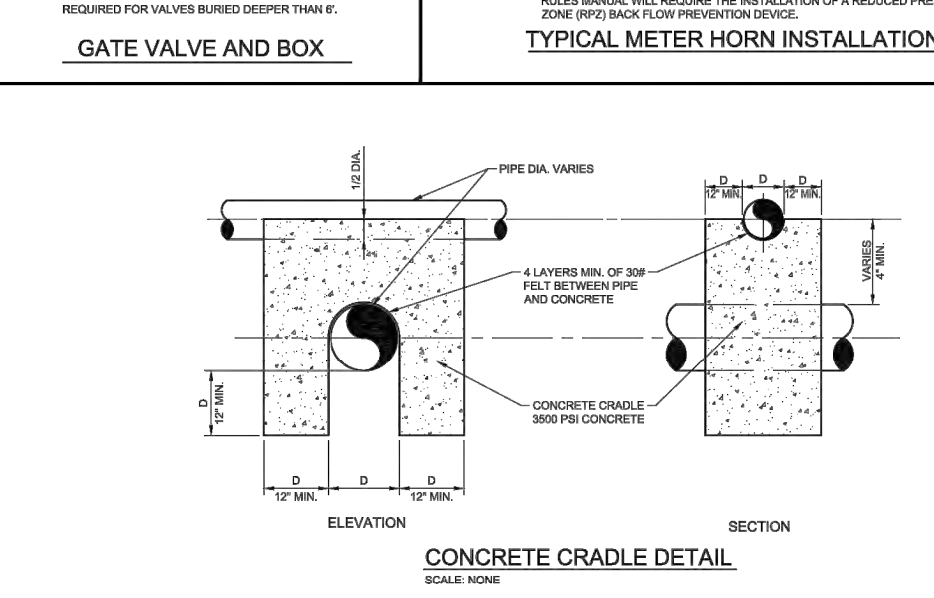
DESIGNED BY: JA
 DRAWN BY: JA
 CHECKED BY: BL
 SCALE: NTS
 JOB NO: 21-581
 DATE: 01/06/2022
 SHEET NO. 8



GATE VALVE AND BOX



TYPICAL METER HORN INSTALLATION

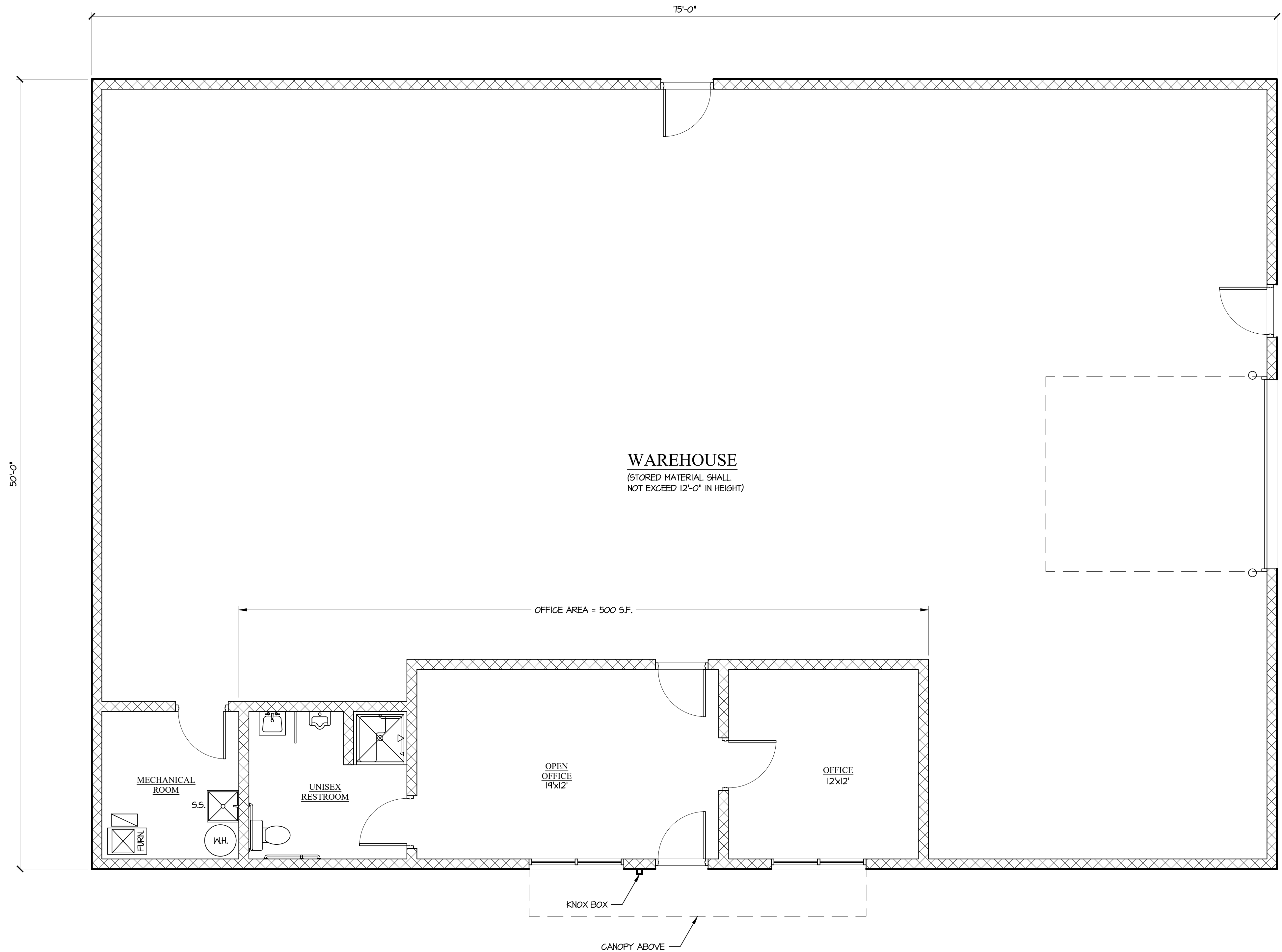


CONCRETE CRADLE DETAIL



MHOG CASTING DETAIL

MARION HOWELL OCEOLA GEORGIA
 Survey and Water Authority
 STANDARD DETAILS



FLOOR PLAN
 SCALE: 1/4" = 1'-0"
 3,750 GSF



PUCCI + VOLLMAR ARCHITECTS, PC
 ARCHITECTURE + DESIGN + PLANNING
 508 E. GRAND RIVER AVE., SUITE 100B, BRIGHTON, MI 48116-1566
 PHONE (810) 225-2930
 www.pv-a.com



PROJECT	SHEET TITLE
A+J CARTAGE 1247 FENDT DRIVE GENOA TOWNSHIP, MICHIGAN	FLOOR PLAN

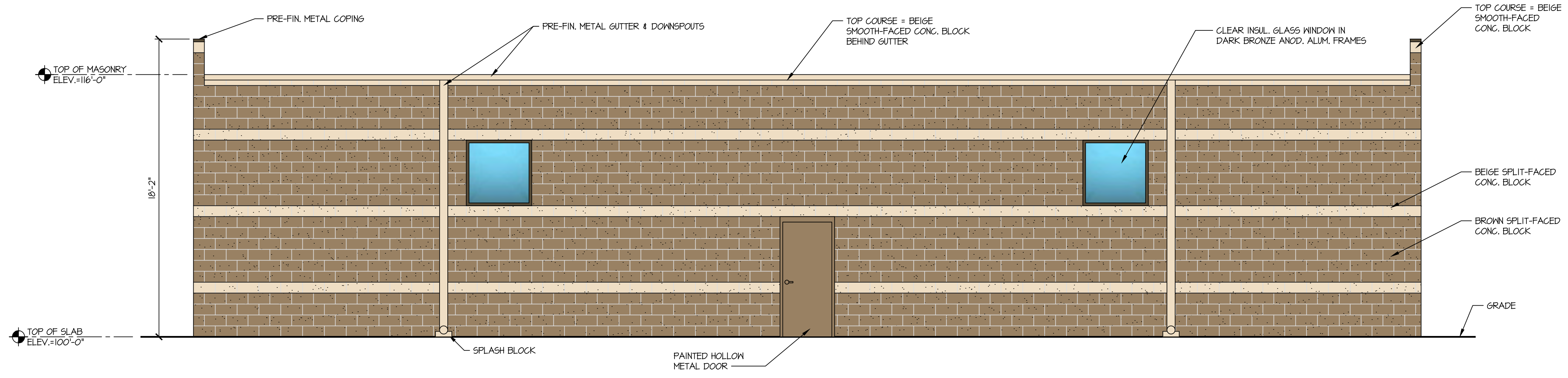
DATE	ISSUED FOR
2-14-2022	REVISED PER TOWNSHIP REVIEW
1-6-2022	SITE PLAN SUBMITTAL
1-9-2022	PER OWNER REVIEW
12-11-2021	OWNER REVIEW

DO NOT SCALE THIS PRINT,
 USE DIMENSIONS SHOWN ONLY

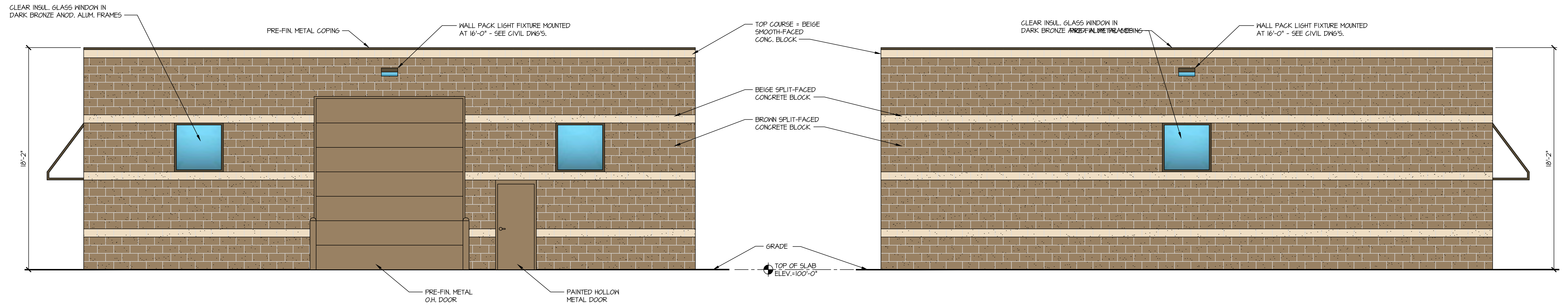
DRAWN BY: KY
 APPROVED BY: KY

PROJECT: 2144

SHEET:
A1

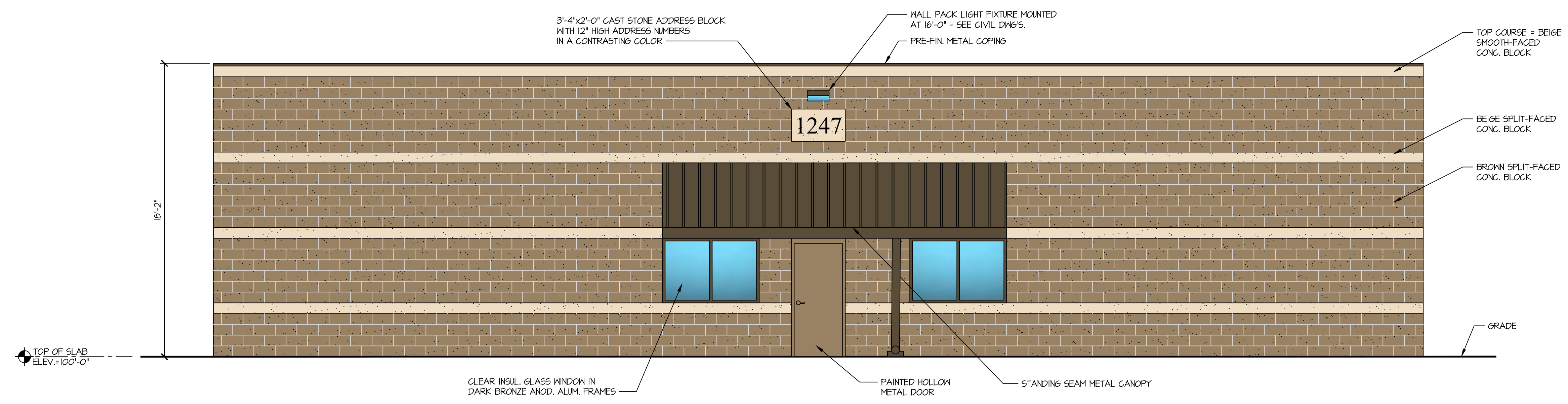


EAST (REAR) ELEVATION
SCALE: 1/4" = 1'-0"



SOUTH (SIDE) ELEVATION
SCALE: 1/4" = 1'-0"

NORTH (SIDE) ELEVATION
SCALE: 1/4" = 1'-0"



WEST (FRONT) ELEVATION
SCALE: 1/4" = 1'-0"

TOWNSHIP REQMT'S.
ZONED: IND
MAX. HEIGHT: 30 FT./2 STORIES
PROPOSED = 18'-2" / 1 STORY
MATERIALS: SPLIT FACED CONCRETE BLOCK
PERCENTAGE = 100% MAX. (COMPLIES)

NOTES
1) THERE WILL NOT BE ANY ROOF TOP MECHANICAL EQUIPMENT.
2) THERE WILL NOT BE ANY SIGNAGE.
3) ALL LIGHTING SHALL BE DIRECTED DOWNWARD AND SHIELDED.



PUCCI + VOLLMAR ARCHITECTS, PC
ARCHITECTURE + DESIGN + PLANNING
508 E. GRAND RIVER AVE., SUITE 100B, BRIGHTON, MI 48116-1566
PHONE: (810) 225-2930
www.pv-a.com



PROJECT: A+J CARTAGE 1247 FENDT DRIVE GENOA TOWNSHIP, MICHIGAN
SHEET TITLE: COLOR EXTERIOR ELEVATIONS

REVISION	DATE	BY	DESCRIPTION
1	2-14-2022	KV	REVISED PER TOWNSHIP REVIEW
2	1-6-2022	KV	SITE PLAN SUBMITTAL
3	1-9-2022	KV	PER OWNER REVIEW
4	12-11-2021	KV	OWNER REVIEW
5			ISSUED FOR

DO NOT SCALE THIS PRINT, USE DIMENSIONS SHOWN ONLY
DRAWN BY: KV
APPROVED BY: KV
PROJECT: 2144
SHEET: **A2**



**GENOA CHARTER TOWNSHIP
Special Land Use Application**

RECEIVED
By Kelly VanMarter at 11:37 am, Jan 25, 2022

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: Matt Vetter, Schafer Construction, Inc. 150 N First St, Ste 100, Brighton, MI 48116
Submit a letter of Authorization from Property Owner if application is signed by Acting Agent.

APPLICANT PHONE: (248) 767-0512 EMAIL: mvetter@schaferconstruction.net

OWNER NAME & ADDRESS: Overtime Enterprises, LLC: 2424 E Coon Lake Trail, Howell, MI 48843

SITE ADDRESS: 2630 E Grand River Ave, Howell, MI 48843 PARCEL #(s): 4711-06-200-061

OWNER PHONE: (517) 540-0400 EMAIL: blythepatterson@asichuck.com

Location and brief description of site and surroundings:

Existing site and building - formerly "Great Escape" facility. South of Grand River and partially behind "Classic Carpet"; East of Bob Maxey Ford; West of "Auto Zone" and "Newtowne Center".

Proposed Use:

Indoor climate controlled storage along with accessory buildings for indoor non-climate controlled indoor storage of vehicles.

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.

Proposed use will breathe life into a currently dilapidated and run-down eyesore in the community. The indoor storage concept is compatible with almost all surrounding uses due to its very low impact and low nuisance level.

- 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.

Existing building shall be cleaned up and beautified. Exterior shall be entirely re-painted. Front entrance glazing system shall be replaced with new. New business and grounds shall be maintained in accordance with standard building maintenance norms and regulations. Operations will be quiet and self-contained and will be very compatible with general vicinity.

- 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?

All essential public utilities are existing and shall be reused. Refuse disposal shall be contracted by Owner through a local carrier. Police and Fire Protection are existing - no encumbrances shall be introduced that would alter or limit their ability to keep the area safe and protected.

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?

None. Other than standard traffic circulation, all operations are self-contained inside the building/s. Building/s shall be utilized for storage of common household and/or business/commercial goods; hazardous materials shall not be allowed. Existing residential units to the South are screened by a large existing buffer of trees and natural vegetation.

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.

Property is currently zoned GCD; per 7.02.02 Climate-controlled indoor commercial storage is granted as a special land use.

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 Matt Vetter, as Acting Agent STATES THAT THEY ARE THE FREE OWNER OF THE PROPERTY OF PROPERTIES DESCRIBED ABOVE AND MAKES APPLICATION FOR THIS SPECIAL LAND USE PERMIT.

BY: _____

ADDRESS: 150 N First Street, Ste 100, Brighton, MI 48116

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

Matt Vetter of Schafer Construction, Inc. at mvetter@schaferconstruction.net
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: 1/17/22

PRINT NAME: Matt Vetter PHONE: 248-767-0512



GENOA CHARTER TOWNSHIP

Application for Site Plan Review

TO THE GENOA TOWNSHIP PLANNING COMMISSION AND TOWNSHIP BOARD:

Matt Vetter, Schafer Construction, Inc.

APPLICANT NAME & ADDRESS: 150 N First St, Ste 100, Brighton, MI 48116

If applicant is not the owner, a letter of Authorization from Property Owner is needed.

OWNER'S NAME & ADDRESS: Overtime Enterprises, LLC: 2424 E. Coon Lake Trail, Howell, MI 48843

SITE ADDRESS: 2630 E Grand River Ave, Howell, MI 48843 PARCEL #(s): 4711-06-200-061

APPLICANT PHONE: (248) 767-0512 OWNER PHONE: (517) 540-0400

OWNER EMAIL: blythepatterson@asichuck.com


LOCATION AND BRIEF DESCRIPTION OF SITE: Existing, vacant building/site - formerly "Great Escape" facility.

BRIEF STATEMENT OF PROPOSED USE: Indoor climate controlled storage along with accessory buildings for indoor non-climate controlled storage of vehicles.

THE FOLLOWING BUILDINGS ARE PROPOSED: Existing building to be renovated (minor) to fit new use.

Accessory buildings are proposed to be located in the secluded area behind "Classic Carpet", flanked on the West by the subject building and on the East by the natural tree/vegetation buffer between Bob Maxey and on the South by the natural tree/vegetation buffer between the Chilson Road residential units.

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: Matt Vetter, Vice President, Schafer Construction, Inc. 


ADDRESS: 150 N First Street, Ste 100, Brighton, MI 48116

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

1.) Matt Vetter of Schafer Construction, Inc. mvetter@schaferconstruction.net
Name Business Affiliation at 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: 1/17/2022
PRINT NAME: Matt Vetter PHONE: 248-767-0512
ADDRESS: 150 N First St, Ste 100, Brighton, MI 48116

March 8, 2022

Planning Commission
 Genoa Township
 2911 Dorr Road
 Brighton, Michigan 48116

Attention:	Kelly Van Marter, AICP Planning Director and Assistant Township Manager
Subject:	Grand River Self Storage – Special Land Use and Site Plan Review #2
Location:	2630 East Grand River Avenue – south side of Grand River, east of Chilson Road
Zoning:	GCD General Commercial District

Dear Commissioners:

At the Township’s request, we have reviewed the revised request for special land use and site plan review of a climate-controlled indoor commercial storage business at 2630 East Grand River Avenue (site plan dated 2/24/22).

A. Summary

1. Section 19.03 General Special Land Use Standards:
 - a. In order to make favorable findings related to compatibility and impacts, the use conditions of Section 7.02.02(z) need to be met to the Commission’s satisfaction.
 - b. The applicant must address any comments provided by the Township Engineer or Brighton Area Fire Authority regarding public facilities and services.
2. Section 7.02.02(z) Use Conditions:
 - a. The existing building does not meet the material requirements of Section 12.01; however, Planning Commission may modify these requirements in accordance with Section 12.01.04.
 - b. The applicant should be prepared to present material and color samples and/or a color rendering to the Commission as part of their review.
3. Site Plan Review:
 - a. An 8-foot wide bike path is required along Grand River. The applicant requests to provide a performance guarantee in lieu of pathway construction at this time.
 - b. Given the amount of parking provided versus that proposed, Planning Commission approval is necessary, per Section 14.02.06.
 - c. Maximum light pole height is 20 feet, while the plan notes 40 feet.
 - d. The landscape plan is deficient in greenbelt and buffer zone plantings; however, existing conditions restrict opportunities for full compliance, and the rear of the site contains an existing wooded area.
 - e. Planning Commission has the authority to modify landscaping requirements.
 - f. The landscape plan depicting mini-storage buildings must be removed from the submittal.

B. Proposal/Process

The applicant proposes conversion of an existing 43,555 square foot building into a climate-controlled indoor commercial storage business with 325 storage units of varying sizes (from 25 SF to 221 SF).

Table 7.02 lists climate-controlled indoor commercial storage as a special land use within the GCD. Such uses are also subject to the use conditions of Section 7.02.02(z).

Procedurally, the Planning Commission is to review the special land use, site plan, and Environmental Impact Assessment, and put forth a recommendation on each to the Township Board following a public hearing.



Aerial view of site and surroundings (looking south)

C. Special Land Use Review

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

1. **Master Plan.** The Township Master Plan identifies the subject site as General Commercial, which is described as follows:

Businesses which serve the requirements of the community at large including Genoa Township, Howell, Brighton, and pass-by traffic along Grand River Avenue are designated by this category. The large size and variety of permitted commercial uses generate significant volumes of vehicular and pedestrian traffic. There may be some outdoor sales or display areas.

The proposal for climate-controlled indoor commercial storage generally aligns with this category.

2. **Compatibility.** Grand River is the main arterial through the Township, and includes a variety of commercial and service uses. The proposed use is generally compatible with the character of Grand River.

The primary concern under this criterion is related to the presence of residential adjacent to the south, though the use conditions of Section 7.02.02(z) and buffer zone requirements of Section 12.02 are intended to help ensure compatibility.

Provided these conditions are met to the Commission's satisfaction, the proposal is generally expected to be compatible with the surrounding area.

3. **Public Facilities and Services.** Given that the site is already developed and has frontage along Grand River, we anticipate that necessary public facilities and services are in place.

However, the applicant must address any comments provided by the Township Engineer and/or Brighton Area Fire Authority related to this criterion.

4. **Impacts.** Similar to the comment above, the use conditions of Section 7.02.02(z) are intended to limit impacts of the proposal upon the site and surrounding properties.

Provided these conditions are met, surrounding properties are not expected to be adversely impacted by the proposal.

5. **Mitigation.** If further concerns arise as part of the review process, the Township may require additional efforts to mitigate potential adverse impacts.

D. Use Conditions

Climate-controlled indoor commercial storage facilities are subject to the use conditions of Section 7.02.02(z), as follows:

1. **All buildings shall conform to the design and material standards of Section 12.01 and shall include a minimum of 25% window space (including spandrel or tinted glass) on all building elevations visible from a public or private road and the parking lot. The Planning Commission may modify this requirement in accordance with Section 12.01.04.**

The existing building appears to be comprised entirely of CMU, which exceeds the material allowance of Section 12.01.03; however, this is an existing condition that is not being altered as part of the proposal.

Improvements to the existing building include removal of truck docks, overhead doors, and one set of entrance doors, and replacement with a matching CMU product and painting of the existing CMU.

The Commission may allow modifications to this criterion and Section 12.01 based on existing conditions (Section 12.01.04).

The applicant should be prepared to present material and color samples and/or a color rendering to the Commission as part of their review.

2. **Any internal overhead doors visible through the windows shall be a natural earth tone color that is harmonious with the interior wall color and design of the building, unless otherwise approved by the Planning Commission.**

The building elevation drawings do not identify any visible internal overhead doors.

3. **Exterior overhead doors for vehicular access 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;**
 - c. **Where the Planning Commission determines that a rear garage would have a negative impact on an abutting residential district; and,**
 - d. **Under these circumstances the Planning Commission may require additional landscape screening above and beyond what is required for street frontage landscaping.**

Three existing exterior overhead doors will be removed as part of the proposal. The resulting building elevations do not include any exterior overhead doors.

E. Site Plan Review

- 1. Dimensional Requirements.** The existing site conditions are outlined in comparison to the dimensional requirements of the GCD, as follows:

	Min. Lot Req.		Minimum Yard Setbacks (feet)				Max. Lot Coverage (%)	Max. Height (feet)
	Area (acres)	Width (feet)	Front Yard	Side Yard	Rear Yard	Parking Lot		
GCD	1	150	70	10	40	20 front 10 side/rear	35% building 75% impervious	35
Proposed	4.2	215	254	1.5 (W) 176 (E)	67	14 front 0 side (W) 5 side (E)	23.7% building 74.2% impervious	26.5

The side building and side parking lot setbacks are existing conditions that are not being impacted.

Additionally, the side parking setbacks can be reduced or modified by the Planning Commission given the presence of connected parking lots (Section 14.06.11).

- 2. Pedestrian Circulation.** Per Section 12.05 and the Township’s Pathway Plan, an 8-foot wide bike path is required along Grand River.

Neither the subject site nor the adjacent properties along Grand River currently have a public pathway, and the site plan does not include one as part of the project.

The Township may require installation of the required bike path, or collect a performance guarantee for its construction at a later date. (The applicant has requested the latter.)

- 3. Vehicular Circulation.** The developed site has an existing full turning movement driveway to/from Grand River Avenue, and no changes are proposed. The site also has connected parking with the properties to the east and west.

The applicant must address any comments provided by the Township Engineer and/or the Brighton Area Fire Authority with respect to vehicular circulation.

- 4. Parking.** The site plan depicts 101 parking spaces in the front parking lot. There are an additional 6 spaces noted on the east side of the building. The remainder of the spaces in the large parking lot on the east side of the site are not depicted.

Section 14.04 does not provide a parking requirement for climate-controlled indoor commercial storage. As such, the Township must determine a similar use for the purpose of establishing a parking requirement. For a previous similar project, the warehousing requirement was used. In this instance, the warehousing standard results in the need for 30 parking spaces.

Given the amount of parking provided versus that proposed, the applicant requests Planning Commission approval of excess parking/to retain the existing parking lot, per Section 14.02.06.

The applicant has noted that pavement and striping improvements are proposed as part of the proposal.

- 5. Exterior Lighting.** The revised lighting plan identifies 4 light poles (2 of which have double fixtures) and 3 wall mounted fixtures.

Details include the use of downward directed LED fixtures, and lighting intensities (on-site and along property lines) meet the standards of Section 12.03.

Our only concern is that the notes appear to indicate that the pole fixtures are mounted at a height of 40 feet. The maximum mounting height allowed for this site is 20 feet since it is adjacent to a residential district.

- 6. Landscaping.** The revised landscape plan has been reviewed for compliance with the standards of Section 12.02, as shown in the following table:

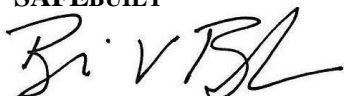
Standard	Required	Proposed	Notes
Front yard greenbelt	20' width 6 canopy trees	14' width 2 canopy trees	Width is an existing condition. Sanitary sewer runs through the majority of the greenbelt, which restricts planting. PC may modify requirements based on existing conditions.
Parking lot	9 canopy trees 840 SF landscaped area	8 existing trees 2 proposed trees Approx. 1,800 SF	Requirements met
Buffer Zone "B" (south)	20' width 14 canopy trees 14 evergreen trees 56 shrubs 6' wall OR 3' berm	50' width Existing wooded area	PC may allow existing wooded area in lieu of new plantings and wall/berm requirement.
Buffer Zone "C" (east)	10' width 40 canopy trees OR 40 evergreen trees OR 160 shrubs	0' to 10' width 8 existing shrubs	Width and plantings are restricted by existing conditions. PC may modify requirements based on existing conditions.
Buffer Zone "C" (west)	10' width 30 canopy trees OR 30 evergreen trees OR 117 shrubs	0' to 1' width Existing vegetation south of the building	Width and plantings are restricted by existing conditions. PC may modify requirements based on existing conditions.

The revised submittal includes two nearly identical versions of the landscape plan. The plan depicting mini-storage buildings in the easterly parking lot must be removed from the submittal.

- 7. Waste Receptacle/Enclosure.** The site plan identifies a new waste receptacle and enclosure in the rear yard on the east side of the building. Details include the required concrete base pad and masonry enclosure.
- 8. Impact Assessment.** The revised Impact Assessment (dated February 24, 2022) notes 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,
SAFE BUILT



Brian V. Borden, AICP
 Michigan Planning Manager

March 7, 2022

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

**Re: Grand River Self Storage
Site Plan Review No. 2**

Dear Ms. Van Marter:

Tetra Tech conducted a second review of the proposed Grand River Self Storage site plan last dated February 24, 2022. The plans were prepared by Greentech Engineering, Inc. on behalf of Schafer Construction. The site is located on the south side of Grand River Avenue, east of Chilson Road. The Petitioner is proposing to improve an existing building (formerly “Great Escape”) to be used as indoor storage. The proposed improvements include updates to the existing building and minimal improvement to the existing parking lot. We offer the following comments:

GENERAL

1. Approval should be obtained by the Brighton Area Fire Authority prior to site plan approval. As indicated in their review letter dated February 16, 2022, the existing building may not have adequate hydrant coverage. Drawings that show the existing water main layout are attached for reference. The closest hydrant is in front of 2650 East Grand River Avenue. If an additional fire hydrant is required, water main construction plans will need to be submitted to MHOG Sewer and Water Authority for review and permitting after site plan approval has been obtained from the Township.
2. The proposed access to the existing southeast parking area is over a cross access easement on the adjacent property. This area is proposed to be fenced, thereby eliminating the cross access to the adjacent parcel. A new easement must be obtained consenting to the elimination of the cross access and for the construction of the drive, fencing, and curbing on the adjacent parcel.
3. The Livingston County Health Department has indicated that the existing well on site should be properly abandoned by a registered water well driller. This should be shown on the site plan.
4. Details for the proposed curb and gutter and the proposed asphalt section should be shown on the site plan and should match the details provided in the Genoa Township Engineering Standards.

Ms. Kelly Van Marter
Re: Grand River Self Storage
Site Plan Review No. 2
March 7, 2022
Page 2

DRAINAGE AND GRADING

1. The proposed improvements slightly decrease the impervious surface of the site, and no additional detention should need to be provided as part of the improvements.

We recommend the petitioner address the above comments prior to approval.

Sincerely,



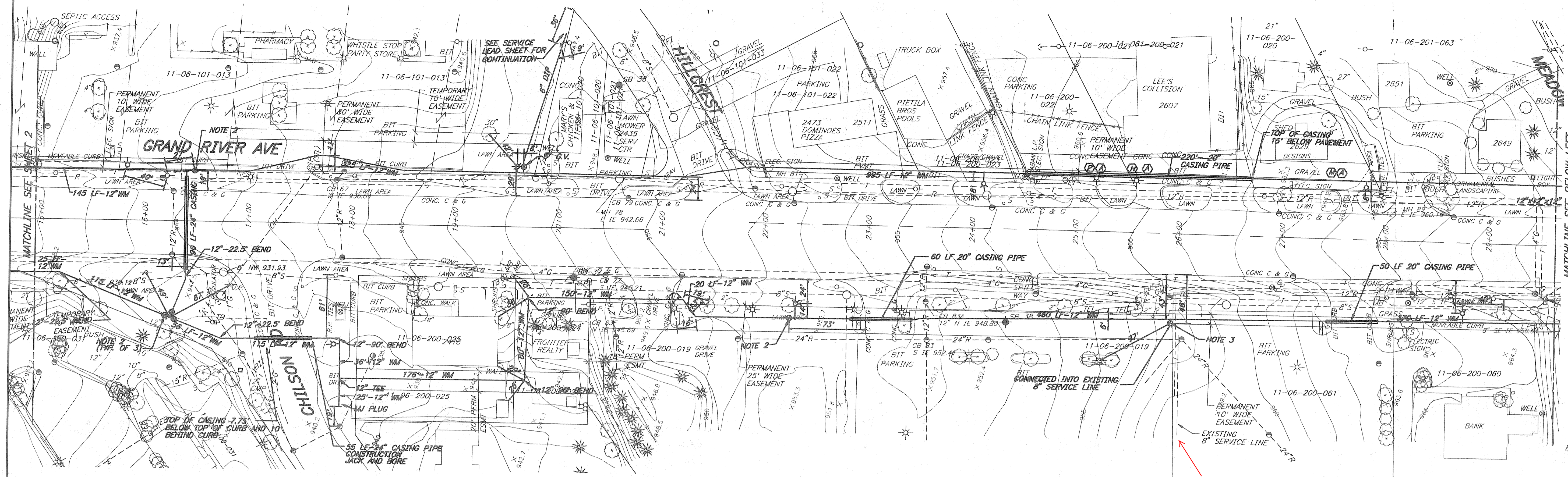
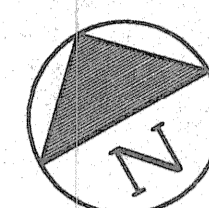
Gary J. Markstrom, P.E.
Vice President



Shelby Byrne
Project Engineer

Attachment

REV	DESCRIPTION	BY	DATE	CHKD
△	ISSUED FOR BIDS		02/94	
△	CHANGE ORDER NO.1	JBM	04-94	GJM
△	CONFORMING TO CONSTRUCTION RECORDS	JJB	11/94	
△				

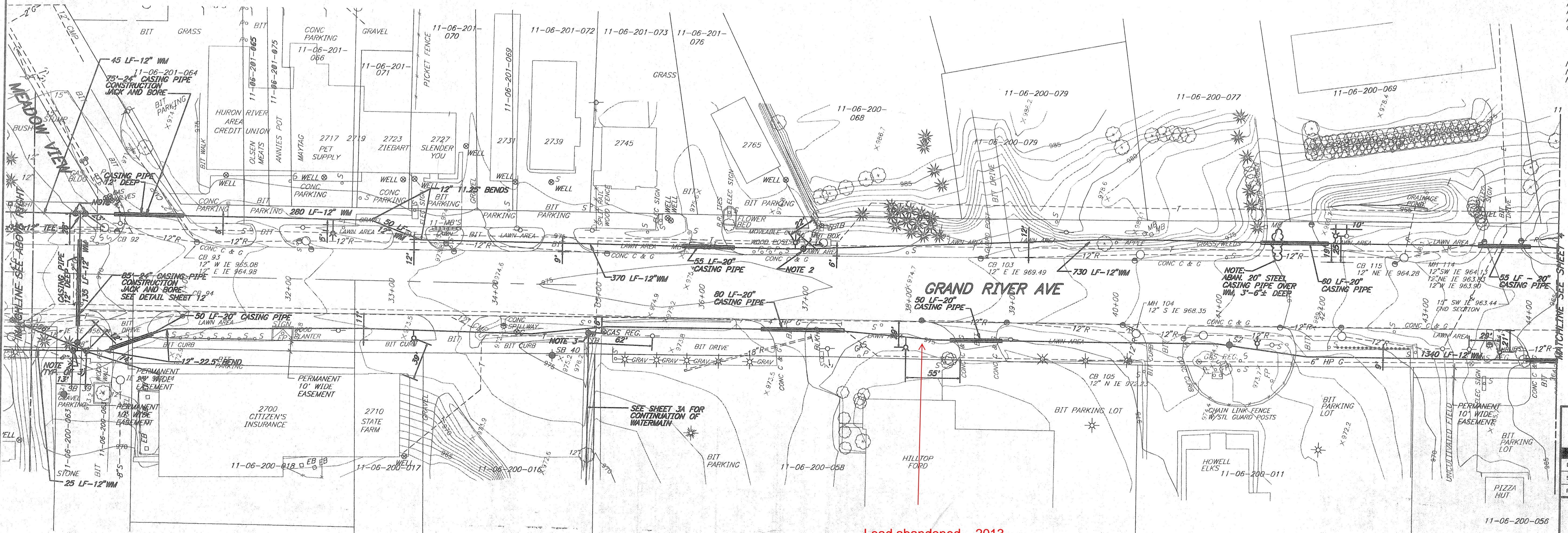


GM 168 R.R. SPIKE IN POWER POLE AT N.W. CORNER OF GRAND RIVER & MEADOWVIEW ELEV. 972.11

To Great Escape 2630 E. Grand River

- RESTORATION NOTES (X) UNIT
- A GRANULAR BACKFILL LF
 - E GRAVEL ROAD REPLACEMENT SYD
 - H GRAVEL SHOULDER REPLACEMENT SYD
 - L CONCRETE CURB & GUTTER REPLACEMENT LF
 - M GRAVEL DRIVEWAY REPLACEMENT SF
 - N BITUMINOUS DRIVEWAY REPLACEMENT TONS
 - P CONCRETE DRIVEWAY REPLACEMENT SF
 - Q CONCRETE SIDEWALK REPLACEMENT SF

- STANDARD NOTES
- NOTE 1 16" GATE VALVE WITH BOX
 - NOTE 2 12" GATE VALVE WITH BOX
 - NOTE 3 8" GATE VALVE WITH BOX



Lead abandoned ~ 2013

3131 South State Street
Ann Arbor MI 48108

MONAHAN, PORTER & SEELEY INC.
ENGINEERING ESTABLISHED SINCE 1914

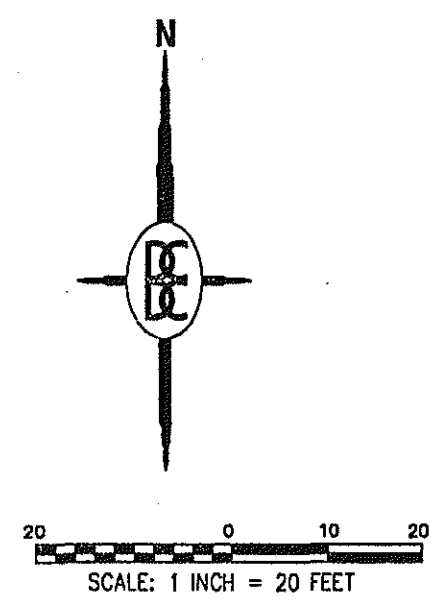
DESIGNED A. KOBERSTEIN CHECKED B. LYONS
SCALE 1"=50' CHD DATE 02-22-93 MSF 13
PART 1/19/93/0114/063300/8/SITE-B1 AC

GENDA TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN
WEST GRAND RIVER WATER IMPROVEMENTS

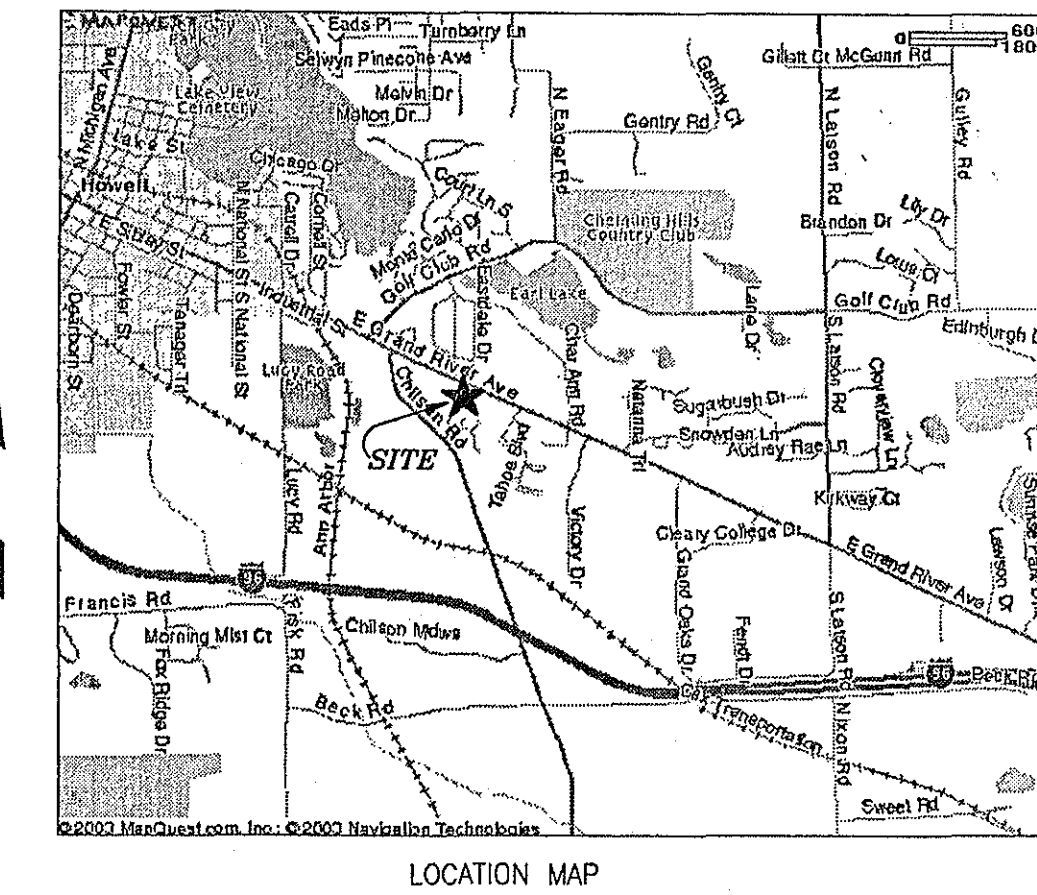
**GRAND RIVER AVENUE
STATION 15+00 - 44+00**

DIVISION A	CONTRACT 144.63-W-1	SHEET J OF 29
---------------	------------------------	---------------------

ALTA/ACSM LAND TITLE SURVEY



CURVE	RADIUS	CENTRAL ANGLE	ARC LENGTH	CHORD LENGTH	BEARING DIRECTION
C1	86013.70	0°07'00"	175.00	175.00	S60°10'24"E
C2	86028.70	0°07'00"	175.00	175.00	S60°10'24"E
C3	86038.70	0°07'00"	175.00	175.00	S60°10'24"E
C4	85993.70	0°07'00"	3.60	3.60	S60°06'50"E



LEGAL DESCRIPTION
 METROPOLITAN TITLE COMPANY
 COMMITMENT #CM-463969
 EFFECTIVE DATE: JANUARY 23, 2003 AT 8:00 A.M.

Land in the Township of Genoa, Livingston County, Michigan, described as follows:
 Part of the Northeast fractional 1/4 of Section 6, Town 2 North, Range 5 East, Genoa Township, Livingston County, Michigan, described as follows: Commencing at the East 1/4 corner of said Section 6; thence North 02 degrees 17 minutes 07 seconds East along the East line of said Section, 594.63 feet to the centerline of Grand River Avenue; thence North 60 degrees 39 minutes 00 seconds West, along said centerline 2391.67 feet to the P.I. of said centerline; thence continuing along said centerline North 60 degrees 06 minutes 45 seconds West 224.71 feet; thence South 29 degrees 41 minutes 36 seconds West 49.82 feet to the Southern right of way line of said Grand River and the point of beginning of the parcel to be described; thence South 29 degrees 41 minutes 36 seconds West 250.00 feet; thence North 60 degrees 10 minutes 24 seconds West 175.00 feet; thence North 29 degrees 41 minutes 36 seconds East 250.00 feet to the Southern right of way line of Grand River Avenue; thence Southeasterly along said line on an arc left, having a length of 175.00 feet, a radius of 85993.7 feet, a central angle of 00 degrees 06 minutes 59 seconds, and a chord which bears South 60 degrees 10 minutes 24 seconds East 175.00 feet to the point of beginning, EXCEPTING therefrom the Northerly 20 feet (measured at right angles) and parallel to Grand River Avenue (I-96BL) as set forth in Warranty Deed to Michigan Department of Transportation recorded in Liber 1147, page 939.

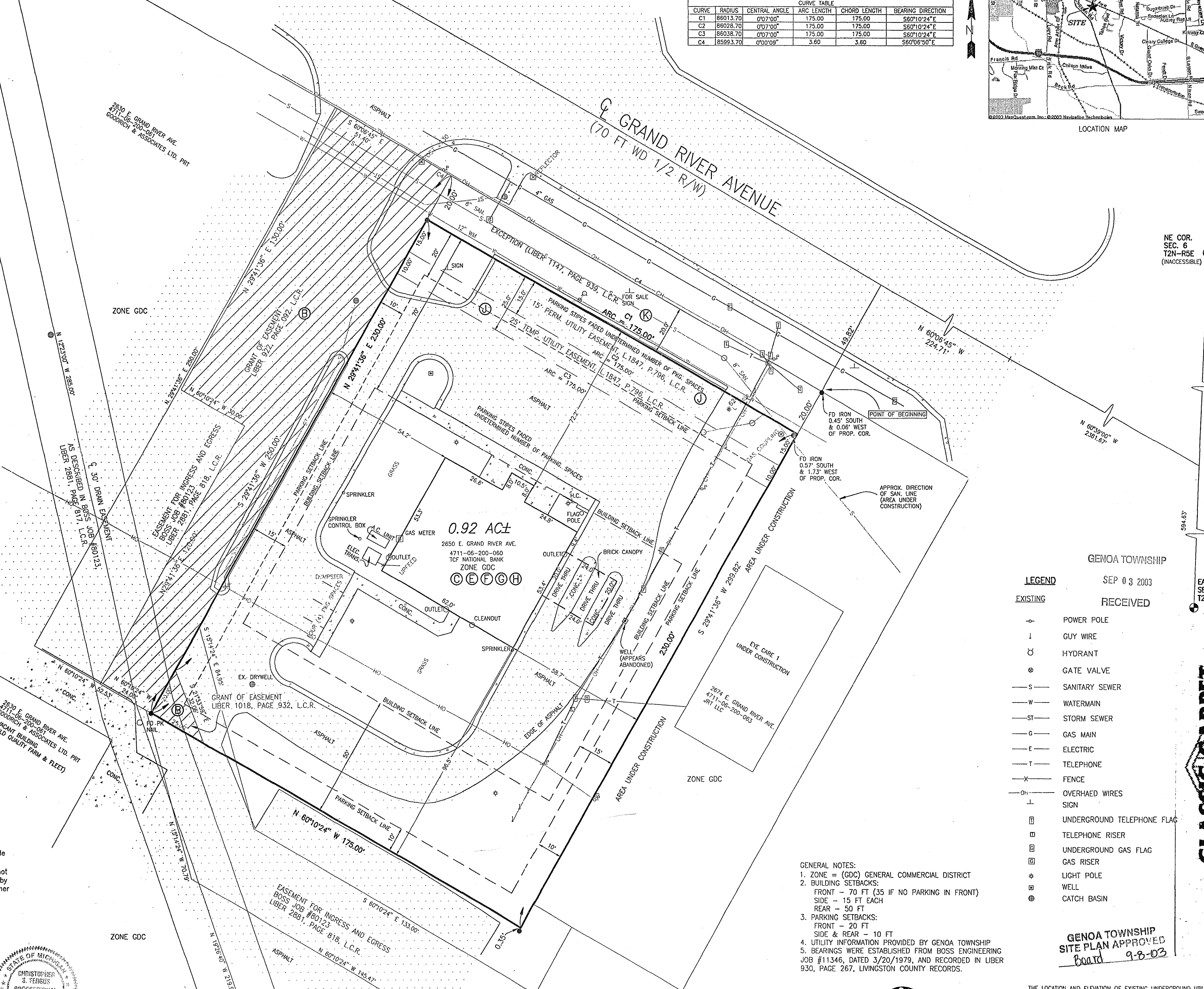
- Tax Item No.: 11-06-200-060-201-47070
- SCHEDULE "B" ITEMS**
 METROPOLITAN TITLE COMPANY
 COMMITMENT #CM-463969
 EFFECTIVE DATE: JANUARY 23, 2003 AT 8:00 A.M.
- 1 Terms and Conditions contained in Grant of Easement, as disclosed by instrument recorded in Liber 922, page 092 and Liber 1018, page 932. AS SHOWN
 - 2 Terms and Conditions of Gas Storage Agreement and Oil and Gas Lease in favor of Panhandle Eastern Pipeline Company as disclosed by instrument recorded in Liber 338, page 440. Affidavit of Notice of Intention to Retain Mineral Rights, as recorded in Liber 778, page 188. EFFECTS ENTIRE PROPERTY
 - 3 Terms and Conditions of Gas Storage Agreement and Oil and Gas Lease in favor of Panhandle Eastern Pipeline Company as disclosed by instrument recorded in Liber 338, page 434. Affidavit of Notice of Intention to Retain Mineral Rights, as recorded in Liber 778, page 228. DOES NOT EFFECT SUBJECT PROPERTY
 - 4 Natural Gas Conveyance to Panhandle Eastern Pipeline Company, as disclosed by instrument recorded in Liber 341, page 18 and Liber 341, page 22. Affidavit of Notice to Retain Mineral Rights recorded in Liber 778, page 188. EFFECTS ENTIRE PROPERTY
 - 5 Terms and Conditions contained in Notice of Option to Purchase Natural Gas in Place and to Acquire Storage Rights to Panhandle Eastern Pipeline Company, as disclosed by instrument recorded in Liber 334, page 346. EFFECTS ENTIRE PROPERTY
 - 6 Right of Panhandle Eastern Pipeline Company, as set forth in Community Gas Agreement, as disclosed by instrument recorded in Liber 243, page 450. EFFECTS ENTIRE PROPERTY
 - 7 Affidavit of Pipeline Location recorded in Liber 594, page 537 and Liber 1598, page 437. EFFECTS ENTIRE PROPERTY
 - 8 Right of Way in favor of The Detroit Edison Company and the Covenants, Conditions and Restrictions contained in instrument(s) recorded in Liber 960, page 257. DOES NOT EFFECT SUBJECT PROPERTY
 - 9 Easement in favor of Township of Genoa and the Covenants, Conditions and Restrictions contained in instrument(s) recorded in Liber 1847, page 796. AS SHOWN
 - 10 Any rights, title interest or claim thereof to that portion of the land taken, used or granted for Grand River. AS SHOWN
- Note: Survey recorded in Liber 930, page 267.

TO:
 HENRY T. KUDERKO AND KATHERINE L. KUDERKO, HUSBAND AND WIFE
 FIRST NATIONAL BANK OF HOWELL
 METROPOLITAN TITLE COMPANY
 TICOR TITLE INSURANCE COMPANY

This is to certify that this map or plot and the survey on which it is based were made in accordance with "Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys" jointly established and adopted by ALTA, ACSM and NSPS in 1999 and does not include any items of Table A thereof. Pursuant to the Accuracy Standards as adopted by ALTA, NSPS, and ACSM and in effect on the date of this certification, undersigned further certifies that the survey measurements were made in accordance with the "Minimum Angle, Distance and Closure Requirements for Survey Measurements Which Control Land Boundaries for ALTA/ACSM Land Title Surveys"

Date: May 23, 2003

 CHRISTOPHER S. FERGUSON
 PROFESSIONAL SURVEYOR LICENSE #47055



GENOA TOWNSHIP
 SEP 03 2003
 RECEIVED

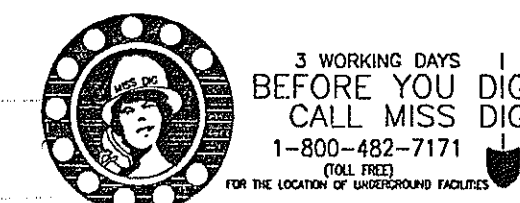
LEGEND

—	POWER POLE
—	GUY WIRE
—	HYDRANT
—	GATE VALVE
—	SANITARY SEWER
—	WATERMAIN
—	STORM SEWER
—	GAS MAIN
—	ELECTRIC
—	TELEPHONE
—	FENCE
—	OVERHAED WIRES
+	SIGN
⊠	UNDERGROUND TELEPHONE FLAG
⊠	TELEPHONE RISER
⊠	UNDERGROUND GAS FLAG
⊠	GAS RISER
+	LIGHT POLE
+	WELL
+	CATCH BASIN

- GENERAL NOTES:**
- ZONE = (GDC) GENERAL COMMERCIAL DISTRICT
 - BUILDING SETBACKS:
 FRONT - 70 FT (35 IF NO PARKING IN FRONT)
 SIDE - 15 FT EACH
 REAR - 50 FT
 - PARKING SETBACKS:
 FRONT - 20 FT
 SIDE & REAR - 10 FT
 - UTILITY INFORMATION PROVIDED BY GENOA TOWNSHIP
 - BEARINGS WERE ESTABLISHED FROM BOSS ENGINEERING JOB #11346, DATED 3/20/1979, AND RECORDED IN LIBER 930, PAGE 267, LIVINGSTON COUNTY RECORDS.

GENOA TOWNSHIP
 SITE PLAN APPROVED
 Board 9-8-03

COVER SHEET & EXISTING CONDITIONS



THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS 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 LOCATION AND ELEVATION OF EXISTING UTILITIES AND PROPOSED UTILITY CROSSINGS IN THE FIELD PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY CONFLICTS ARE APPARENT OR IF THE LOCATION OR DEPTH DIFFERS SIGNIFICANTLY FROM THE PLANS.

3 WORKING DAYS BEFORE YOU DIG CALL MISS DIG
 1-800-482-7171
 (MI 192)
 FOR THE LOCATION OF UNDERGROUND UTILITIES

BOSS ENGINEERING
 ENGINEERS • SURVEYORS • PLANNERS
 LANDSCAPE ARCHITECTS
 (E-MAIL: bosseng.com)

LIVINGSTON COUNTY: 3127 E. GRAND RIVER AVE. (800) 446-6255 FAX (517) 548-1670
 MACOMB COUNTY: 124 W. CALES SUITE 40 (800) 376-5181 FAX (517) 752-4473
 OAKLAND COUNTY: 7125 ORCHARD LAKE RD. SUITE 108 (800) 763-0300 FAX (517) 626-4880

CLIENT	TCF BANK
PROJECT	Part of the Northeast fractional 1/4 of Section 6, T2N-R5E, Genoa Township, Livingston County, Michigan.
TITLE	ALTA/ACSM LAND TITLE SURVEY

NO.	REVISION	DATE
1	REV. PRESIDENT BRK PLM/CON	7/25/03
2	REV. PRESIDENT BRK THM/BR	4/29/03

DESIGNED BY:	
DRAWN BY:	WP
CHECKED BY:	CSF
SCALE	1" = 20'
JOB NO.	03189
DATE	05-22-2003
PLOTTING INFORMATION	
SHEET NO.	1 OF 4

CLASSIC CARPET AND FLOOR COVERING

ST-1.1



BRIGHTON AREA FIRE AUTHORITY

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

March 9, 2022

Kelly VanMarter
Genoa Township
2911 Dorr Road
Brighton, MI 48116

RE: Grand River Self Storage
2630 E. Grand River
Genoa Twp., MI

Dear Kelly:

The Brighton Area Fire Department has reviewed the above-mentioned site plan. The plans were received for review on March 2, 2022 and the drawings are dated February 24, 2022. The project is based on redevelopment of an existing construction Type IIB, 43,555 square foot Assembly building that will be renovated to a S-1 Indoor storage facility. The side yard parking lot will be converted to self-storage units. The plan review is based on the requirements of the International Fire Code (IFC) 2021 edition.

1. Two-way emergency vehicle access roads shall be a minimum of 26-feet wide. With a width of 26-feet. The perimeter drive around the outside self-storage units shall be a minimum of 26-feet wide. The drive width from the front parking to the side storage lot is not indicated at 26-feet as required. Fire lane signage shall be provided along the building front. Provide a detail of the fire lane sign in the submittal. Access roads to the site shall be provided and maintained during construction. Access roads shall be constructed to be capable of supporting the imposed load of fire apparatus weighing at least 84,000 pounds. **(The 26-foot width is the minimum required for two-way access. The access drive width to the storage yard can be accommodated by modification to the existing canopy on the Northeast corner of the building.)**

IFC D 103.6
IFC D 103.1
IFC D 102.1
IFC D 103.3

2. Access around the building and storage unit yard shall provide emergency vehicles with a turning radius of 50-feet outside and 30-feet inside. Vehicle circulation shall account for non-emergency traffic and maintain the vehicle within the boundary of lanes of travel. **(Provide an emergency vehicle turning template for the storage yard and the front entry parking lot and drives utilizing the apparatus and details at the end of this letter. Entrance drive to the storage area does not meet width and radius requirements.)**

IFC 503.2.4

3. The location of a Knox Box shall be indicated on future submittals. The Knox box shall be located adjacent to the main entrance of the structure, in a location coordinated with the fire authority. The gate to the rear storage yard shall be provided with a Knox Key Switch for control and bypass of the access control of the gate. **(The knox box is**



March 9, 2022

Page 2

Grand River Self Storage

2630 E. Grand River

Site Plan Review

reflected on the main building above the FDC, however no detail or acknowledgement is provided for the storage yard access gate as required)

IFC 506.1

4. During the construction process, the building will be evaluated for emergency responder radio signal strength. If coverage is found to be questionable or inadequate; the contractor or the building owner shall hire an approved contractor to conduct a grid test of the facility. If the signal strength coverage is found to be non-compliant, an approved emergency responder radio coverage system shall be provided in the building.

IFC 510

5. Provide names, addresses, phone numbers, emails of owner or owner's agent, contractor, architect, on-site project supervisor.

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,

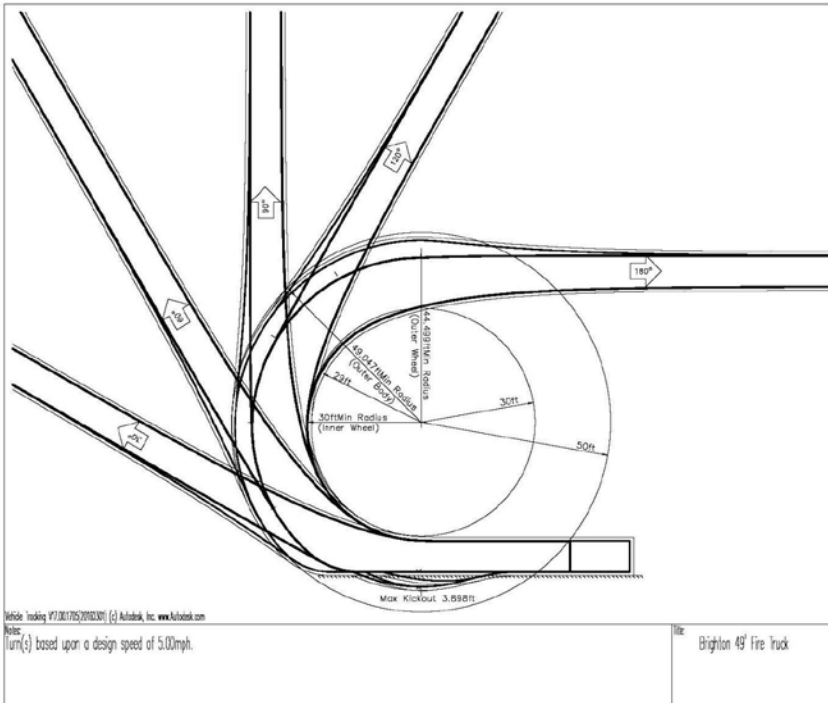
A handwritten signature in black ink, appearing to read "R. Boisvert".

Rick Boisvert, CFPS
Fire Marshal

cc:Amy Ruthig amy@genoa.org

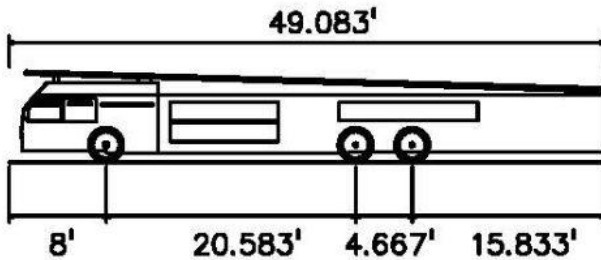


March 9, 2022
Page 3
Grand River Self Storage
2630 E. Grand River
Site Plan Review



FIRE TRUCK TURNING RADII

1"=30'



Brighton 49' Fire Truck	
Overall Length	49.083ft
Overall Width	8.167ft
Overall Body Height	7.500ft
Min Body Ground Clearance	0.750ft
Track Width	8.167ft
Lock-to-lock time	5.00s
Max Steering Angle (Virtual)	45.00°

FIRE TRUCK DETAIL
NOT TO SCALE

From: [Mati Bolang](#)
To: [Amy Ruthig](#)
Cc: [Aaron Aumock](#)
Subject: RE: Grand River Self Storage (Old Great Escape Building)
Date: Monday, February 7, 2022 3:43:53 PM
Attachments: [image002.png](#)
[image003.png](#)
[image004.png](#)
[image005.png](#)
[image006.png](#)
[image009.png](#)
[image001.png](#)

Hi Amy,

There is still an old well at this property. We would require that the existing well be properly plugged by a registered water well driller. One of my staff took the photos below. The well is located on the east side of the building. Prior to a demo waiver being issued by our department, this well needs to be plugged. Ideally, it would be great if the township would require prior to land use being issued so there is not an oversight.







Matt Bolang, MSA, REHS
Deputy Health Officer
Director of Environmental Health
Livingston County Health Department
2300 East Grand River
Howell, MI 48843

517-552-6870 | www.lchd.org

Impact Assessment for

Grand River Self Storage

2650 Grand River

Howell, MI 48843

Prepared by:



Date:

January 21, 2022

Revised February 24, 2022

Grand River Self Storage

Impact Assessment Statement

Preparer (18.07.01)

This Impact Assessment was prepared under the direction of Daniel LeClair, PE. PS and GreenTech Engineering, Inc. 51147 W Pontiac Trail, Wixom, MI 48393. Mr. LeClair is a licensed Civil Engineer and Land Surveyor and is a professional engineering consultant offering services throughout all of Michigan and the Midwest since 1993. GreenTech Engineering offers consulting services to private land development clients including residential, commercial and industrial projects.

Location (18.07.02)

The site is located at 2630 Grand River Avenue which is located along the south side of Grand River Avenue east of Chilson Road. The site includes a vacant 43,555 square foot building that was formerly used as a retail store and an indoor recreation facility. The parcel identification number for this site is 4711-06-200-061. See exhibit 'A' attached for a location map. The site is adjoining a shopping center on the west, a retail store and car dealership to the east, and single family residential to the south.

Impact on natural features (18.07.03)

The subject site has been previously developed including the existing 43,555 square foot building along with parking lots located along the northerly and easterly portion of the site. The proposed re-use of the property is contemplating very limited re-configuration of the existing site as part of the re-use of the site. There is an existing wooded natural area along the southerly portion of the site that will remain unchanged as part of this development.

Soils: The native soils on the subject property consist of loamy sands as indicated on the USDA soils map attached as Exhibit 'B'. The rear (southerly) portion of the site appears to remain in its native state, however the surface soils have been altered as part of the previous development of the property.

Topography: The existing site topography consists of two separate drainage areas. The area north (front) of the existing building surface slopes downward in a northwesterly direction, while the area east of the building slopes downward in a southerly direction. The area immediately south of the building slopes downward toward a drop off in the rear yard near the southerly property line. The proposed development plan includes only a small amount of grading immediately northeast of the building to create adequate traffic configuration for a gated entrance and a vehicle turn around area. The remainder of the site remains unchanged as part of this development proposal.

Vegetation: The development plan includes a new landscape plan that illustrates new plantings along the Grand River frontage and the parking lot islands as the existing vegetation in these areas remains overgrown and unmaintained. The existed wooded area along the southerly portion of the site will remain unchanged as part of this development plan. There are several trees 8" diameter and larger in the southerly portion of the property, however since there is no plan to remove these trees as part of the development, these trees were not tied in and made part of this plan.

A wetland study was not performed as part of this application as there are no changes to the site other than minor modification to the existing paved areas.

Impact on stormwater management (18.07.04)

The existing site drainage patterns consists of two separate drainage areas. The area north (front) of the existing building surface slopes downward in a northwesterly direction, while the area east of the building slopes downward in a southerly direction. The area immediately south of the building slopes downward toward a drop off in the rear yard near the southerly property line.

The proposed development plan includes a reduction of pavement area of approximately 633 square feet via an increased greenbelt area near the northeast corner of the building as a result of the construction of the fence/gate and turn around area as shown on the site plan. The remainder of the site remains unchanged as part of this development proposal.

With a net reduction in the impervious area, we anticipate no negative impact to the existing stormwater management system from the proposed development.

Prior to the limited proposed construction, the detailed construction plans will include the installation of silt fence around any proposed disturbance areas and inlet filters on all on-site catch basins. In addition, all disturbed areas will be vegetated utilizing seed and mulch.

Impact on surrounding land uses (18.07.05)

Description of Proposed Uses: The proposed re-utilization of the existing building includes the interior buildout as in-door climate controlled storage. The existing parking lot along the easterly side of the building will be fenced in. No permanent foundation, grade changes and/or repaving of the existing easterly parking area will be required.

Hours of Operation: The hours of operation will include will include office hours from 8 am until 8 pm Monday through Friday and 8 am until 5 pm on Saturday and Sundays. Access to the interior and exterior storage units will be 24 hours to customers with valid access codes.

The typical customer will rent a unit either on-line or in person at the office during scheduled office hours. Customers will access their units through one of the easterly entrance areas. Carts will be provided to customers to carry larger items from the building entrance to their respective units. Access to all units will be via access code only.

Phasing: The proposed improvements will be constructed in one phase.

Light, Noise & Air Pollution: The proposed development plan includes a use that generates significantly less noise and air pollution than the previous uses within the building due to the number of anticipated trips to the site based on the proposed use. The proposed development plan utilizes the existing parking light and building mounted lights, however all lighting fixtures will be updated to modern LED light fixtures.

In summary, the subject site has been vacant for several years. With the lack of use, came the introduction of graffiti to the buildings exterior and break in attempts. See Exhibit 'C' for photos. The re-development of this site will include an on-site office attendant who will also act as an on-site caretaker in addition to the new fencing around the easterly parking lot. It is anticipated that the new use alone will discourage the unsightly activities that are currently taking place on the site.

Impact on public facilities and services (18.07.06)

The proposed re-development of the subject site is anticipated to reduce the impact to the public facilities and services. We anticipate one to two full time employees during the business day along with random customer visits to the site. The traffic impact to the adjoining streets and neighborhood is anticipated to be significantly less than the previous use as an indoor amusement park.

The proposed use is also expected to be of less impact to municipal services such as police and fire departments.

Impact on public utilities (18.07.07)

The building is currently serviced by public sanitary sewer and public domestic water. With only one or two employees, the burden to public utilities is anticipated to be significantly reduced from the previous indoor amusement park use due to the reduced number of visitors.

Storage and handling of hazardous materials (18.07.08)

Per the terms of the rental contracts, no hazardous materials will be allowed to be stored or handled on site. There are no known underground tanks on the subject property.

Traffic Impact Study (18.07.09)

Based on review of the institute of Transportation Engineers Trip Generation Manual and related studies and reports, a detailed traffic impact study is not warranted. Typical days, as noted above, will generate fewer than 30 visitors throughout the course of the day, falling far below the 100 directional trips during the peak hour of traffic.

Historic and Cultural Resources (18.07.10)

The existing building does not have any historic or cultural significance, and is less than 50 years old.

Special Provision (18.07.11)

There are no deed restrictions, protective covenants, master deed or association bylaws encumbering the subject property.

List of Sources (18.07.12)

The sources utilized in preparing report include personal knowledge of the subject property by the applicant/owner, aerial photography and partial topographic survey as prepared by GreenTech Engineering, and the Genoa Township ordinance.

EXHIBIT 'A'



LOCATION MAP

EXHIBIT 'B'

Livingston County, Michigan (MI093)			
Livingston County, Michigan (MI093)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
FrB	Fox-Boyer complex, 2 to 6 percent slopes	0.5	11.9%
MoB	Wawasee loam, 2 to 6 percent slopes	4.0	88.1%
Totals for Area of Interest		4.5	100.0%



SOILS MAP

EXHIBIT 'C'





BENCHMARKS:

SITE BM #1
RAILROAD SPIKE, SOUTH FACE OF UTILITY POLE ALONG THE EAST PROPERTY LINE OF #2630 E. GRAND RIVER AVENUE, 192± SOUTHWEST OF THE NORTHEAST PROPERTY CORNER. ELEVATION: 963.72 N.A.V.D.88

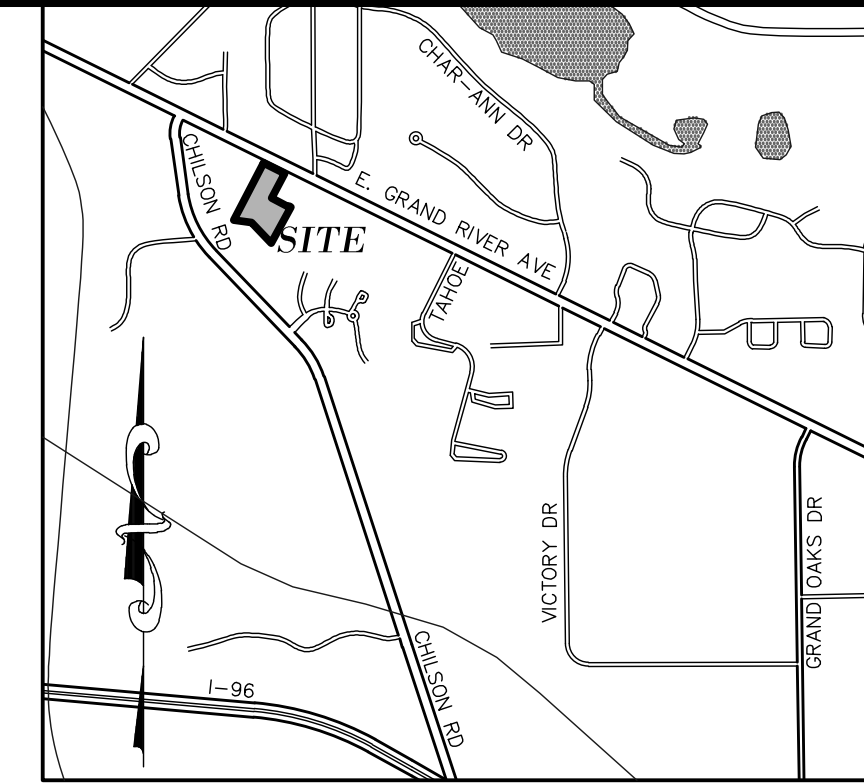
SITE PLAN

for

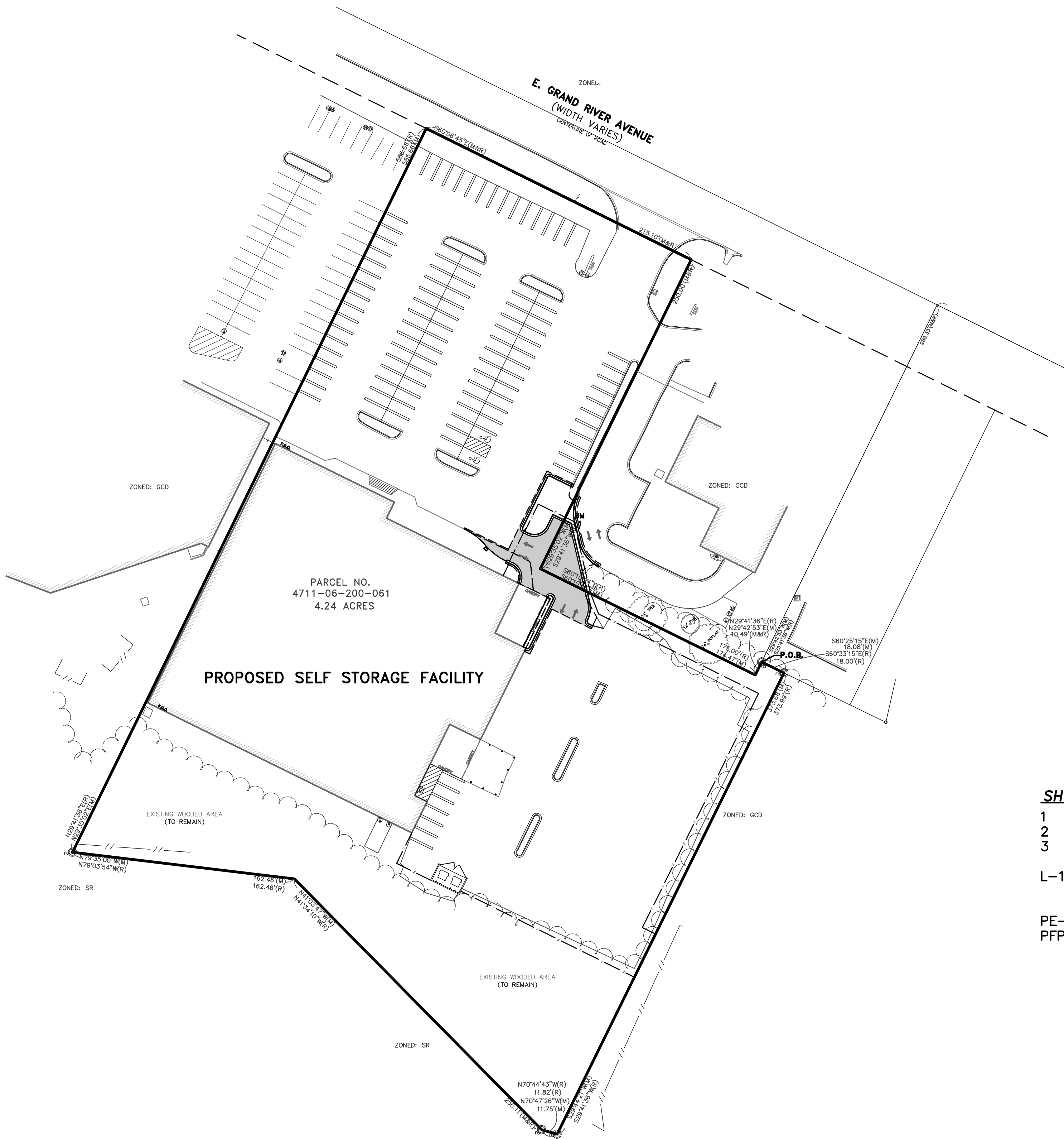
GRAND RIVER SELF STORAGE

2630 GRAND RIVER AVENUE

GENOA TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN



GREENTECH ENGINEERING, INC.
 CIVIL ENGINEERS & LAND SURVEYORS
 51147 Pontiac Trail, Wixom, MI 48393
 Phone: (248) 668-0700 Fax: (248) 668-0701



GENERAL NOTES:

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF GENOA TOWNSHIP.
2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY AND/OR OBTAIN ANY INFORMATION NECESSARY REGARDING THE PRESENCE OF UNDERGROUND UTILITIES WHICH MIGHT AFFECT THIS JOB.
3. EXISTING EASEMENTS WILL BE SHOWN PER TITLE WORK, ONCE RECEIVED.
4. CONTRACTOR TO OBTAIN ALL REQUIRED APPROVALS AND PERMITS PRIOR TO THE START OF CONSTRUCTION.

DESCRIPTION: PARCEL #4711-06-200-061 (BY OTHERS)

PART OF THE NORTHEAST 1/4 OF SECTION 6, T2N-R5E, GENOA TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE EAST 1/4 CORNER OF SAID SECTION 6; THENCE N02°17'07"E 594.63 FEET TO THE CENTERLINE OF GRAND RIVER AVENUE THENCE N60°39'00"W ALONG SAID CENTERLINE 2381.67 FEET; THENCE CONTINUING ALONG SAID CENTERLINE N60°06'45"W 224.71 FEET; THENCE S29°41'36"W 289.33 FEET TO THE POINT OF BEGINNING; THENCE S60°33'15"E 18.00 FEET; THENCE S29°41'36"W 373.99 FEET; THENCE N70°44'43"W 11.82 FEET; THENCE N41°34'10"W 256.11 FEET; THENCE N79°03'54"W 162.46 FEET; THENCE N29°41'36"E 586.88 FEET TO THE SOUTHERLY RIGHT-OF-WAY OF GRAND RIVER AVENUE; THENCE ALONG SAID RIGHT-OF-WAY S60°06'45"E 211.40 FEET; THENCE CONTINUING ALONG RIGHT-OF-WAY ALONG THE ARC OF A CURVE LEFT CHORD BEARING S60°06'50"E 3.60 FEET; THENCE S29°41'36"W 250.00 FEET; THENCE S60°10'24"E 175.00 FEET; THENCE N29°41'36"E 10.49 FEET TO THE POINT OF BEGINNING, CONTAINING 4.24 ACRES, MORE OR LESS, AND SUBJECT TO ANY EASEMENTS OR RESTRICTIONS OF RECORD. SPLIT FROM 019 EXCEPTING THE NORTHEASTERLY 20 FEET AND PARALLEL TO GRAND RIVER, AS DEEDED TO THE MICHIGAN DEPARTMENT OF TRANSPORTATION CORR 3/2014.

NOTE:

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE MANNER 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.

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.



SHEET INDEX:

- 1 COVER SHEET
- 2 DIMENSION & PAVING PLAN
- 3 EXISTING CONDITIONS & DEMOLITION PLAN
- L-1 LANDSCAPE PLAN
- PHOTOMETRIC PLAN
- PE-2 EXTERIOR ELEVATIONS
- PFP-3 FLOOR PLAN

OWNER:

APPLICANT:
SCHAFER CONSTRUCTION
150 N. FIRST STREET, SUITE 100
BRIGHTON, MI 48393
CONTACT: MATT VETTER
PHONE: (810) 220-0296

ENGINEER/SURVEYOR:
GREENTECH ENGINEERING, INC.
51147 PONTIAC TRAIL
WIXOM, MI 48393
CONTACT: DAN LECLAIR, P.E.
(248) 668-0700

CLIENT: SCHAFER CONSTRUCTION
COVER SHEET
 2630 GRAND RIVER AVE - PARCEL NO 4711-06-200-061
 SECTION: 6 TOWNSHIP: 2 N RANGE: 5 E.
 CHARTER TOWNSHIP OF GENOA
 LIVINGSTON COUNTY
 MICHIGAN

REVISED

DATE: 2-24-2022
 DRAWN BY: RMS
 CHECKED BY: DJL

0 25 50

FBK: ---
 CHF: MM
 SCALE: HOR 1"=50 FT.
 VER 1"=-- FT.

1

21-315

BENCHMARKS:

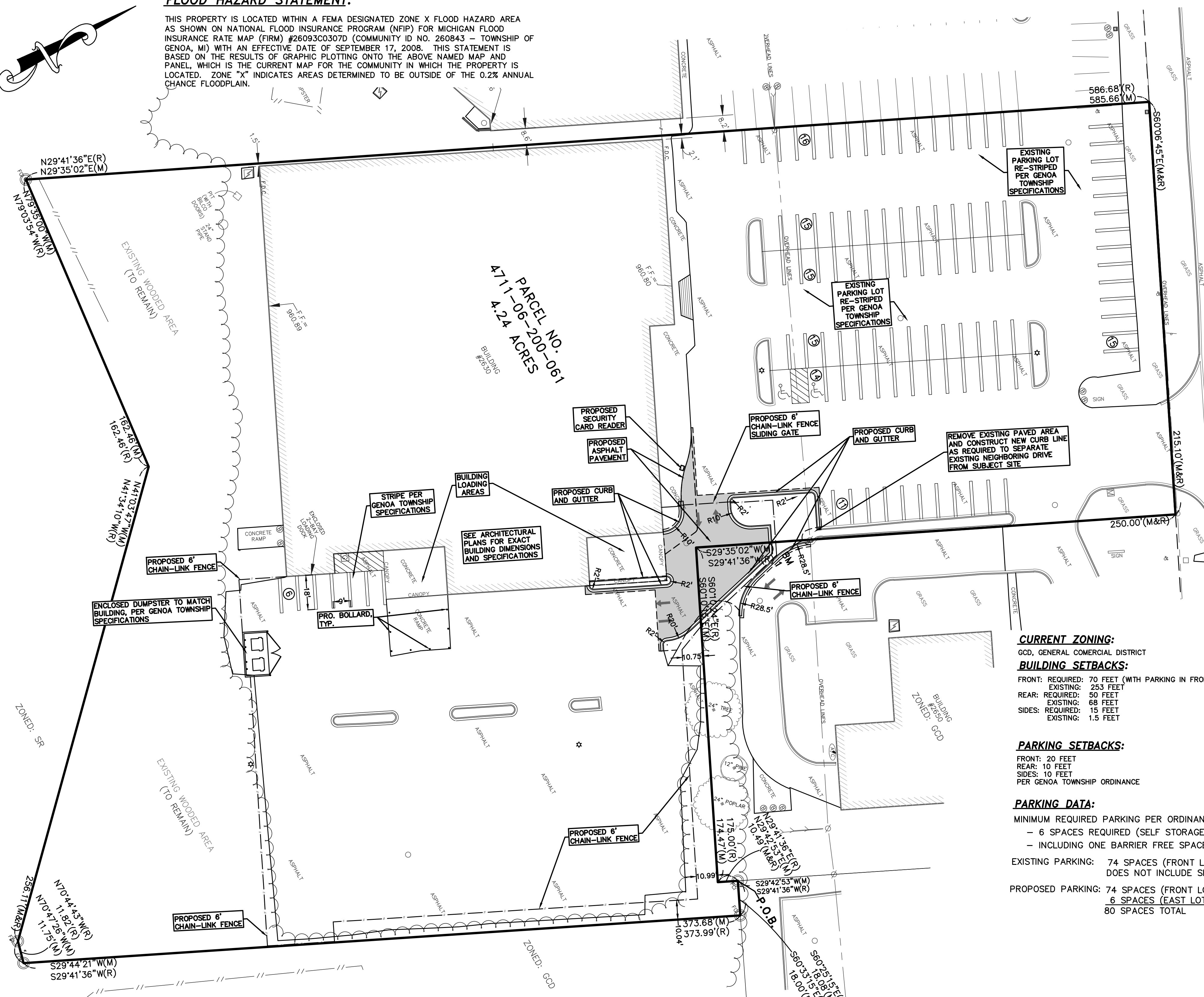
SITE BM #1
RAILROAD SPIKE, SOUTH FACE OF UTILITY POLE ALONG THE EAST PROPERTY LINE OF #2630 E. GRAND RIVER AVENUE, 192± SOUTHWEST OF THE NORTHEAST PROPERTY CORNER. ELEVATION: 963.72 N.A.V.D.88

GENERAL NOTES:

- 1) ALL CONSTRUCTION SHALL BE CONFORMING TO THE CURRENT STANDARDS AND SPECIFICATIONS ADOPTED BY GENOA TOWNSHIP AND LIVINGSTON COUNTY.
- 2) ALL SIDEWALK, RAMPS, LANDINGS, AND RAILINGS MUST MEET THE AMERICAN WITH DISABILITIES ACT (ADA) REQUIREMENTS.
- 3) DISPOSE OF ALL TREES TO BE REMOVED, BRUSH AND MISCELLANEOUS DEBRIS LEGALLY OFF SITE.
- 4) THE CONTRACTOR SHALL PAY FOR, OBTAIN AND COMPLY WITH ALL PERMITS NECESSARY FROM PUBLIC AGENCIES INCLUDING BUT NOT LIMITED TO GENOA TOWNSHIP, LIVINGSTON COUNTY, AND THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY.
- 5) ALL PAVEMENT, DRIVEWAYS, SHOULDERS, LANDSCAPING, DRAINAGE PIPES, MAILBOXES, SIGNS, ETC. DAMAGED DURING CONSTRUCTION SHALL BE RESTORED BY THE CONTRACTOR TO EQUAL OR BETTER CONDITION.
- 6) EXISTING MONUMENTS AND PROPERTY CORNERS SHALL BE PRESERVED AND PROTECTED, AND RESTORED IF DISTURBED, AT CONTRACTOR'S EXPENSE.
- 7) DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE WATCHMAN AND FLAGMEN AS MAY BE REQUIRED FOR THE SAFETY AND CONVENIENCE OF THE PUBLIC. THEY SHALL FURNISH ALL BARRICADES, SIGNS AND LIGHTS NECESSARY TO PROTECT THE PUBLIC. TRAFFIC SHALL BE MAINTAINED AT ALL TIMES UNLESS OTHERWISE AUTHORIZED BY GENOA TOWNSHIP, OR LIVINGSTON COUNTY. TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE MICHIGAN MANUAL OF UNIFORM TRAFFIC DEVICES, LATEST EDITION, BY THE MICHIGAN DEPARTMENT OF STATE HIGHWAYS.
- 8) THE CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN, PRIOR TO CONSTRUCTION.
- 9) IN THE EVENT OF ANY DISCREPANCY OR DUAL STANDARD SET FORTH IN THE SPECIFICATIONS CONTAINED IN THESE PLANS, THE STRICTER SHALL APPLY.
- 10) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY AND/OR OBTAIN ANY INFORMATION NECESSARY REGARDING THE PRESENCE OF UNDERGROUND UTILITIES WHICH MIGHT AFFECT THIS JOB.
- 11) ALL GROUND, BUILDING, AND ROOF MOUNTED MECHANICAL EQUIPMENT SHALL BE SCREENED FROM PUBLIC VIEW IN A MANNER PRACTICAL OF THE SITE.
- 12) "NO SIGNAGE WILL BE APPROVED AS PART OF THIS SITE PLAN APPROVAL, AND PRIOR TO ERECTING A SIGN AN APPLICATION AND APPROPRIATE SUBMISSIONS SHALL BE MADE TO THE BUILDING DEPARTMENT FOR REVIEW, APPROVAL AND ISSUANCE OF A SIGN PERMIT." ALL SIGNS SHALL CONFORM TO THE TOWNSHIP'S SIGN ORDINANCE.
- 13) STATE REQUIREMENTS FOR BARRIER FREE PARKING SPACES SUPERSEDE ANY TOWNSHIP REQUIREMENTS.
- 14) ALL DIMENSIONS SHOWN ARE TO EDGE OF PAVEMENT, FACE OF SIDEWALK, OUTSIDE FACE OF BUILDING, PROPERTY LINE, CENTER OF MANHOLE/CATCH BASIN OR CENTERLINE OF PIPE UNLESS OTHERWISE NOTED.
- 15) ALL WORK SHALL BE COMPLETED IN ONE PHASE.
- 16) THE ADDRESS OF THE BUILDING WILL BE DISPLAYED ON THE BUILDING AND A MINIMUM OF 6" HIGH LETTERS OF CONTRASTING COLORS AND BE CLEARLY VISIBLE FROM THE STREET. THE LOCATION AND SIZE SHALL BE VERIFIED PRIOR TO INSTALLATION.
- 17) A KNOW BOX SHALL BE INSTALLED AT THE MAIN GATE AND KNOX PADLOCKS AT OTHER ENTRY POINTS SHALL BE INSTALLED PER BRIGHTON AREA FIRE AUTHORITY.
- 18) THE MONUMENT SIGN WILL MEET ALL APPLICABLE SETBACKS AND SHALL BE APPLIED FOR UNDER A SEPARATE PERMIT.
- 19) ALL LOADING AND UNLOADING SHALL TAKE PLACE DURING TYPICAL BUSINESS HOURS. NO LOADING OR UNLOADING SHALL TAKE PLACE OUTSIDE OF THE GATED AREAS.
- 20) NO LOOSE STORAGE OUTSIDE OF BUILDING.
- 21) NO STORAGE ABOVE FENCE.

FLOOD HAZARD STATEMENT:

THIS PROPERTY IS LOCATED WITHIN A FEMA DESIGNATED ZONE X FLOOD HAZARD AREA AS SHOWN ON NATIONAL FLOOD INSURANCE PROGRAM (NFIP) FOR MICHIGAN FLOOD INSURANCE RATE MAP (FIRM) #26093C0307D (COMMUNITY ID NO. 260843 - TOWNSHIP OF GENOA, MI) WITH AN EFFECTIVE DATE OF SEPTEMBER 17, 2008. THIS STATEMENT IS BASED ON THE RESULTS OF GRAPHIC PLOTTING ONTO THE ABOVE NAMED MAP AND PANEL, WHICH IS THE CURRENT MAP FOR THE COMMUNITY IN WHICH THE PROPERTY IS LOCATED. "ZONE X" INDICATES AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN.



HATCH LEGEND

- ASPHALT
- CONCRETE
- PROPOSED BUILDING
- EXISTING BUILDING

UTILITY NOTE
NO CHANGES TO THE EXISTING SANITARY SEWER, STORM SEWER OR WATER MAIN INFRASTRUCTURE ARE ANTICIPATED AS PART OF THE PROPOSED DEVELOPMENT.

SIGNAGE NOTE
MONUMENT SIGN AND BUILDING SIGNAGE WILL BE REQUESTED VIA A SEPARATE SIGNAGE APPLICATION AND PER THE GENOA TOWNSHIP SIGN ORDINANCE.

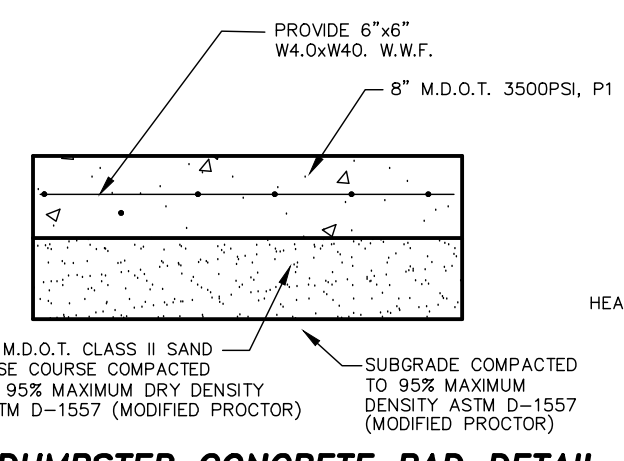


NO PARKING SIGN DETAIL
NOT TO SCALE

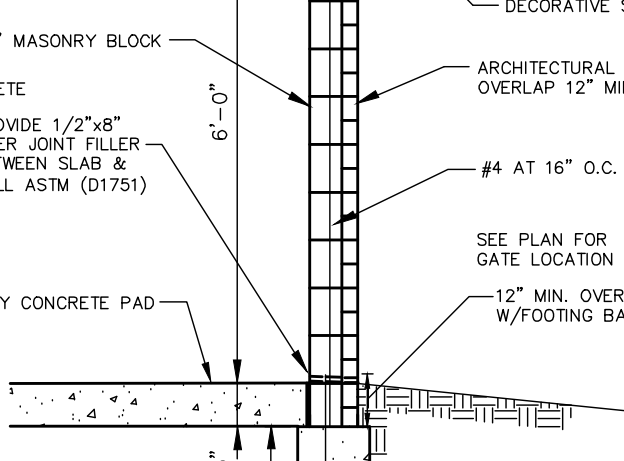


BARRIER FREE PARKING SIGN DETAIL
NOT TO SCALE

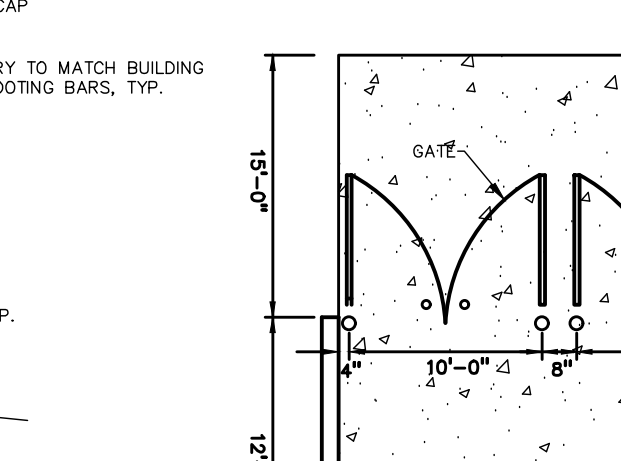
DUMPSTER CONCRETE PAD DETAIL



DUMPSTER ENCLOSURE WALL CROSS SECTION



DOUBLE DUMPSTER ENCLOSURE DETAIL



CURRENT ZONING:

GCD, GENERAL COMERCIAL DISTRICT

BUILDING SETBACKS:

FRONT: REQUIRED: 70 FEET (WITH PARKING IN FRONT)
EXISTING: 253 FEET
REAR: REQUIRED: 50 FEET
EXISTING: 68 FEET
SIDES: REQUIRED: 15 FEET
EXISTING: 1.5 FEET

PARKING SETBACKS:

FRONT: 20 FEET
REAR: 10 FEET
SIDES: 10 FEET
PER GENOA TOWNSHIP ORDINANCE

PARKING DATA:

MINIMUM REQUIRED PARKING PER ORDINANCE:
- 6 SPACES REQUIRED (SELF STORAGE)
- INCLUDING ONE BARRIER FREE SPACE

EXISTING PARKING: 74 SPACES (FRONT LOT ONLY)
DOES NOT INCLUDE SIDE LOT

PROPOSED PARKING: 74 SPACES (FRONT LOT)
6 SPACES (EAST LOT)
80 SPACES TOTAL

LOT COVERAGE CALCULATION

EXISTING BUILDING AREA: 43,555 SF
TOTAL BUILDING AREA: 43,555 SF
TOTAL SITE AREA: 183,844 SF
EXISTING LOT COVERAGE AREA: 43,555 / 183,844 = 23.7 %
MAXIMUM LOT COVERAGE AREA ALLOWED: 35%

IMPERVIOUS CALCULATION

EXISTING BUILDING AREA: 43,555 SF
SIDEWALK & PARKING AREA: 93,181 SF
TOTAL EXISTING IMPERVIOUS AREA: 136,736 SF
TOTAL SITE AREA: 183,844 SF
EXISTING IMPERVIOUS AREA: 136,736 / 183,844 = 74.5 %
MAXIMUM IMPERVIOUS AREA ALLOWED: 75%

PROPOSED BUILDING AREA: 43,555 SF
SIDEWALK & PARKING AREA: 92,833 SF
TOTAL EXISTING IMPERVIOUS AREA: 136,388 SF
TOTAL SITE AREA: 183,844 SF
EXISTING IMPERVIOUS AREA: 136,388 / 183,844 = 74.2 %

GREENTECH ENGINEERING, INC.
CIVIL ENGINEERS & LAND SURVEYORS
51147 Portage Trail, Wixom, MI 48393
Phone: (248) 668-0700 Fax: (248) 668-0701

811
Know what's below
Call before you dig.

SCHAFFER CONSTRUCTION

DIMENSION & PAVING PLAN

CLIENT: SCHAFER CONSTRUCTION

2630 GRAND RIVER AVE - PARCEL NO 4711-06-200-061
SECTION: 6 TOWNSHIP: 2 N RANGE: 5 E.
CHARTER TOWNSHIP OF GENOA
LIVINGSTON COUNTY MICHIGAN

REVISED

DATE: 2-24-2022
DRAWN BY: RMS
CHECKED BY: DJL

FBK: ---
CHF: MM
SCALE: HOR 1"=30 FT.
VER 1"= 10 FT.

21-315

BENCHMARKS:

SITE BM #1
RAILROAD SPIKE, SOUTH FACE OF UTILITY POLE ALONG THE EAST PROPERTY LINE OF #2630 E. GRAND RIVER AVENUE, 192± SOUTHWEST OF THE NORTHEAST PROPERTY CORNER. ELEVATION: 963.72 N.A.V.D.88

SURVEY LEGEND

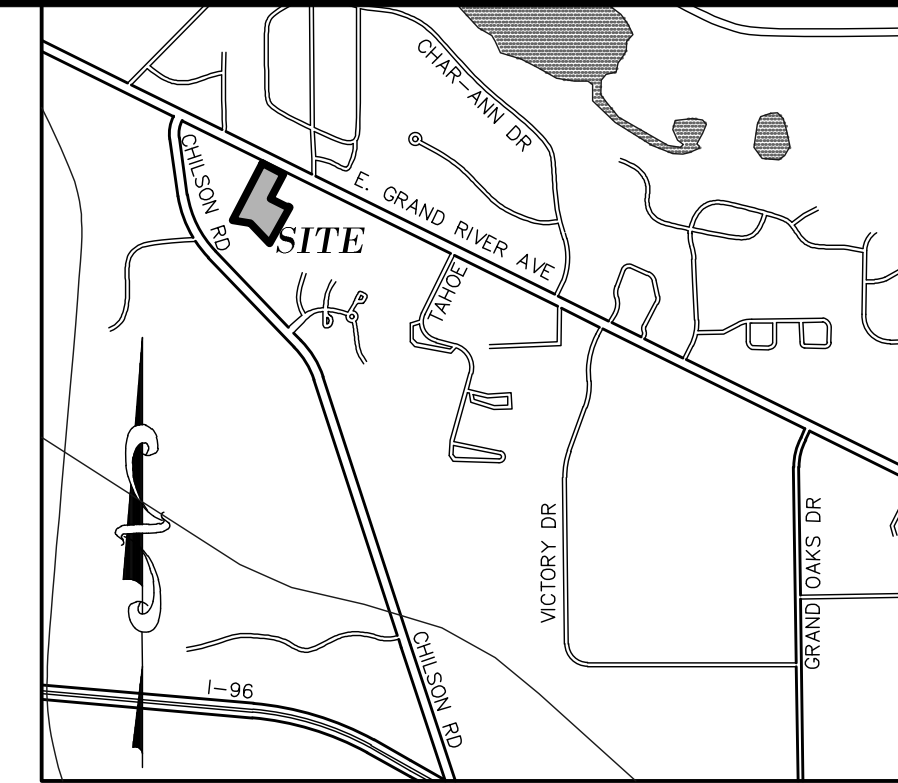
- EX. SECTION CORNER
- FIB/FCI/FIP/MON
- EX. MAILBOX
- EX. SOIL BORE
- EX. SIGN
- EX. FIBER MARKER
- EX. SANITARY MANHOLE
- EX. CATCH BASIN
- EX. STORM MANHOLE
- EX. HYDRANT
- EX. GATE VALVE & WELL
- EX. WATER SHUT-OFF
- EX. LIGHT POLE
- EX. UTILITY POLE
- EX. PEDISTAL
- EX. HAND HOLE
- EX. UTILITY FLAG
- EX. COMMUNICATIONS
- EX. SANITARY SEWER
- EX. GAS LINE
- EX. WATER MAIN
- EX. OVERHEAD UTILITIES
- EX. FENCE
- EX. SWALE
- WETLAND BOUNDARY
- 590- CONTOUR MAJOR
- 591- CONTOUR MINOR
- EX. ZONING
- EX. TREELINE
- EX. CONIFEROUS
- EX. DECIDUOUS

FLOOD HAZARD STATEMENT:

THIS PROPERTY IS LOCATED WITHIN A FEMA DESIGNATED ZONE X FLOOD HAZARD AREA AS SHOWN ON NATIONAL FLOOD INSURANCE PROGRAM (NFIP) FOR MICHIGAN FLOOD INSURANCE RATE MAP (FIRM) #26093C0307D (COMMUNITY ID NO. 260843 - TOWNSHIP OF GENOA, MI) WITH AN EFFECTIVE DATE OF SEPTEMBER 17, 2008. THIS STATEMENT IS BASED ON THE RESULTS OF GRAPHIC PLOTTING ONTO THE ABOVE NAMED MAP AND PANEL, WHICH IS THE CURRENT MAP FOR THE COMMUNITY IN WHICH THE PROPERTY IS LOCATED. ZONE "X" INDICATES AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN.

DEMOLITION LEGEND:

- CURB REMOVAL
- ASPHALT REMOVAL
- CONCRETE PAVEMENT AND SIDEWALK/BRICK REMOVAL



E. GRAND RIVER AVENUE
(WIDTH VARIES)
CENTERLINE OF ROAD

DESCRIPTION: PARCEL #4711-06-200-061 (BY OTHERS)
PART OF THE NORTHEAST 1/4 OF SECTION 6, T2N-R5E, GENOA TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE EAST 1/4 CORNER OF SAID SECTION 6; THENCE N02°17'07"E 594.63 FEET TO THE CENTERLINE OF GRAND RIVER AVENUE THENCE N60°39'00"W ALONG SAID CENTERLINE 2381.67 FEET; THENCE CONTINUING ALONG SAID CENTERLINE N60°06'45"W 224.71 FEET; THENCE S29°41'36"W 289.33 FEET TO THE POINT OF BEGINNING; THENCE S60°33'15"E 18.00 FEET; THENCE S29°41'36"W 373.99 FEET; THENCE N70°44'43"W 11.82 FEET; THENCE N41°34'10"W 256.11 FEET; THENCE N79°03'54"W 162.46 FEET; THENCE N29°41'36"E 586.68 FEET TO THE SOUTHERLY RIGHT-OF-WAY OF GRAND RIVER AVENUE; THENCE ALONG SAID RIGHT-OF-WAY S60°09'45"E 211.40 FEET; THENCE CONTINUING ALONG RIGHT-OF-WAY ALONG THE ARC OF A CURVE LEFT CHORD BEARING S60°06'50"E 3.60 FEET; THENCE S29°41'36"W 250.00 FEET; THENCE S60°10'24"E 175.00 FEET; THENCE N29°41'36"E 10.49 FEET TO THE POINT OF BEGINNING, CONTAINING 4.24 ACRES, MORE OR LESS, AND SUBJECT TO ANY EASEMENTS OR RESTRICTIONS OF RECORD. SPLIT FROM 019 EXCEPTING THE NORTHEASTERLY 20 FEET AND PARALLEL TO GRAND RIVER, AS DEEDED TO THE MICHIGAN DEPARTMENT OF TRANSPORTATION CORR 3/2014.

CURRENT ZONING:
GCD, GENERAL COMMERCIAL DISTRICT

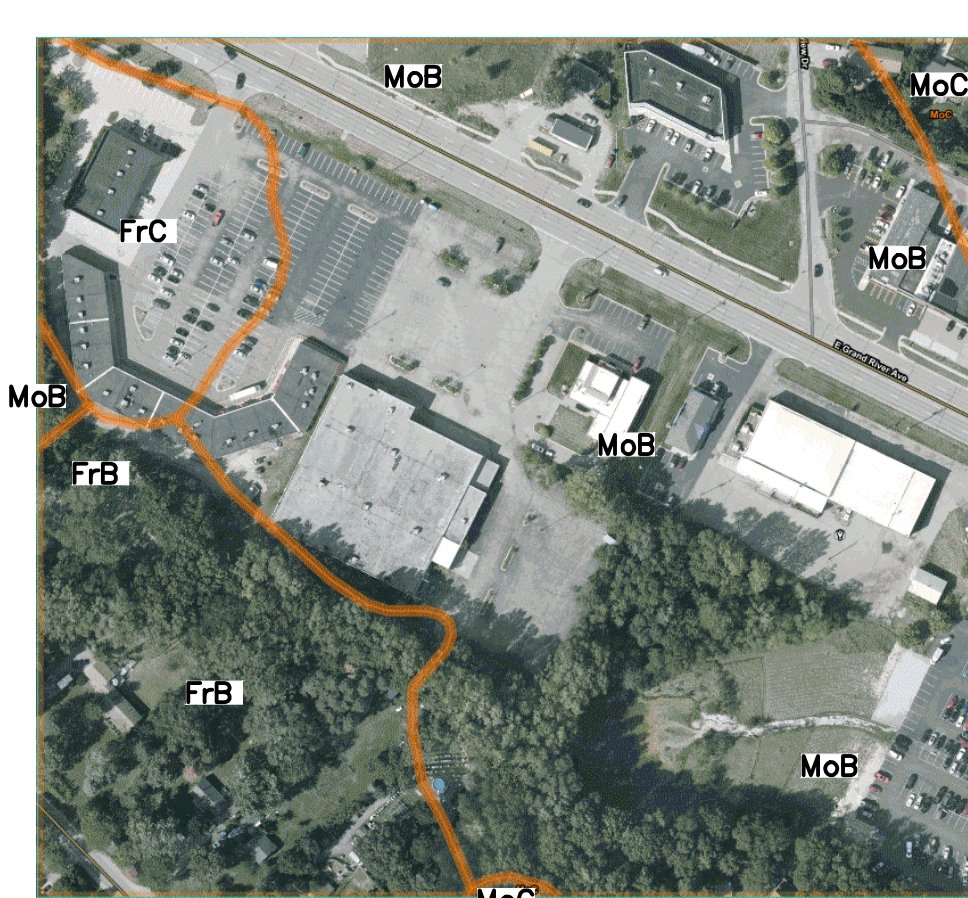
BUILDING SETBACKS:
FRONT: REQUIRED: 70 FEET (WITH PARKING IN FRONT)
EXISTING: 253 FEET
REAR: REQUIRED: 50 FEET
EXISTING: 68 FEET
SIDES: REQUIRED: 15 FEET
EXISTING: 1.5 FEET

PARKING SETBACKS:
FRONT: 20 FEET
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MINIMUM REQUIRED PARKING PER ORDINANCE:
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- INCLUDING ONE BARRIER FREE SPACE

EXISTING PARKING: 74 SPACES (FRONT LOT ONLY)
DOES NOT INCLUDE SIDE LOT

PROPOSED PARKING: 74 SPACES (FRONT LOT)
6 SPACES (EAST LOT)
80 SPACES TOTAL



Livingston County, Michigan (MI093)			
Livingston County, Michigan (MI093)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
FrB	Fox-Boyer complex, 2 to 6 percent slopes	5.7	19.4%
FrC	Fox-Boyer complex, 6 to 12 percent slopes	2.6	8.9%
MoB	Wawasee loam, 2 to 6 percent slopes	20.6	70.0%
MoC	Wawasee loam, 6 to 12 percent slopes	0.5	1.8%
Totals for Area of Interest		29.5	100.0%

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.

GREENTECH
ENGINEERING, INC.
CIVIL ENGINEERS & LAND SURVEYORS

51147 Perlic Trail, Genoa, MI 48833
Phone: (248) 668-0700 Fax: (248) 668-0701

CLIENT: SCHAFFER CONSTRUCTION

EXISTING CONDITIONS & DEMOLITION PLAN

2630 GRAND RIVER AVE - PARCEL NO 4711-06-200-061
SECTION: 6 TOWNSHIP: 2 N RANGE: 5 E.
CHARTER TOWNSHIP OF GENOA
LIVINGSTON COUNTY MICHIGAN

REVISED

DATE: 2-24-2022

DRAWN BY: RMS

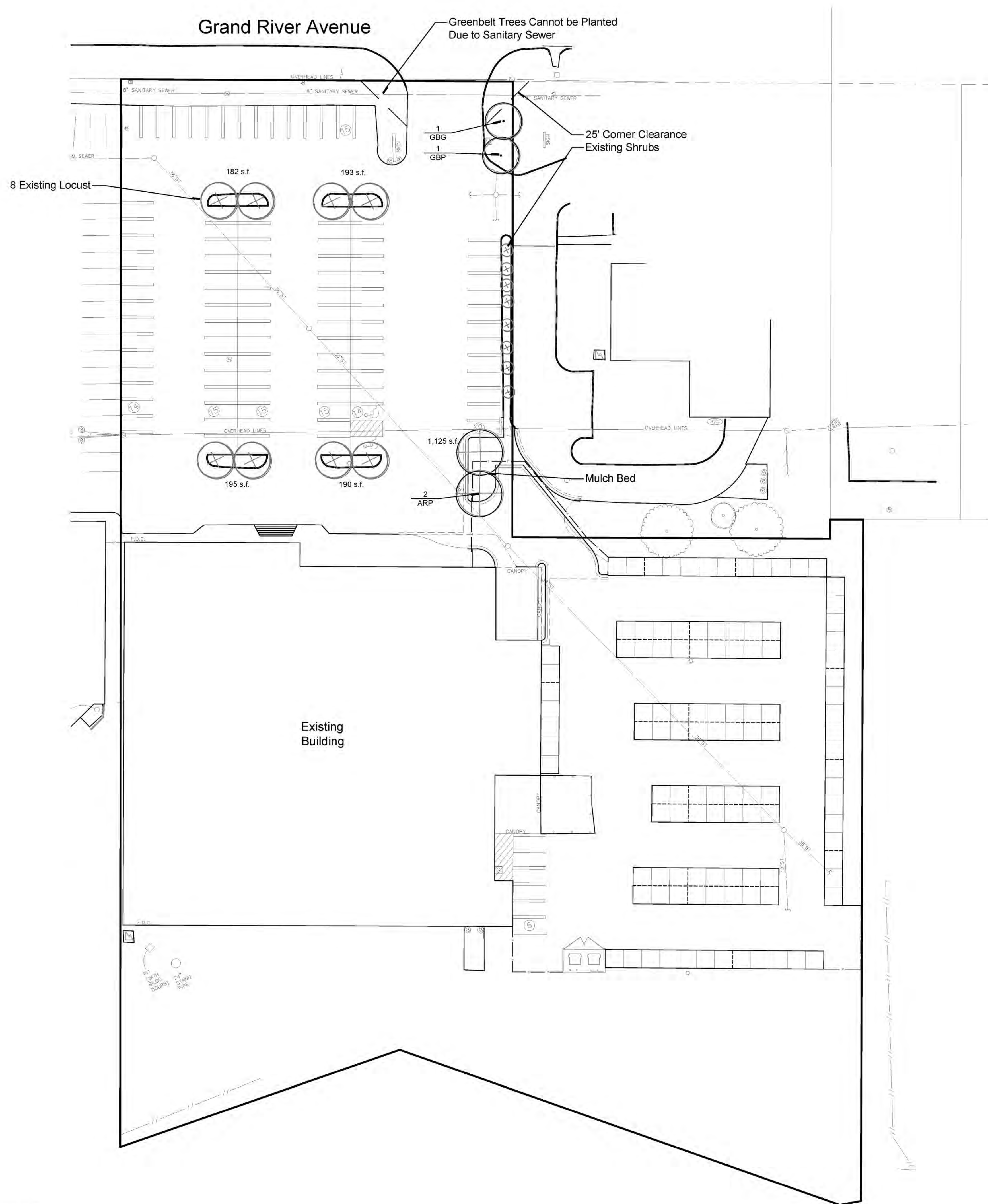
CHECKED BY: DJL

FBK: ---

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

21-315

3



Landscape Summary

Greenbelt	
Greenbelt Length	215'
Trees Required	5.3 Trees (215' / 40')
Trees Provided	1 Tree
Parking Lot Landscaping	
Total Proposed Spaces	106 Spaces
Landscape Area Required	1,060 s.f. (106 / 10) x 100
Landscape Area Proposed	1,885 s.f.
Trees Required	10.6 Trees (106 / 10)
Trees Provided	11 Trees (8 Existing)

Plant List

sym.	qty.	botanical name	common name	caliper	spacing	root
Greenbelt Trees						
GBG	1	Ginkgo biloba 'Fastigiata'	Upright Ginkgo			
Parking Lot Trees						
ARP	2	Acer x freemanii 'Armstrong'	Armstrong Maple	2.5"	as shown	B&B
GBP	1	Ginkgo biloba 'Fastigiata'	Upright Ginkgo			

Note:
 All Landscaped Areas Shall be Provided with an Automatic Underground Irrigation System

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.

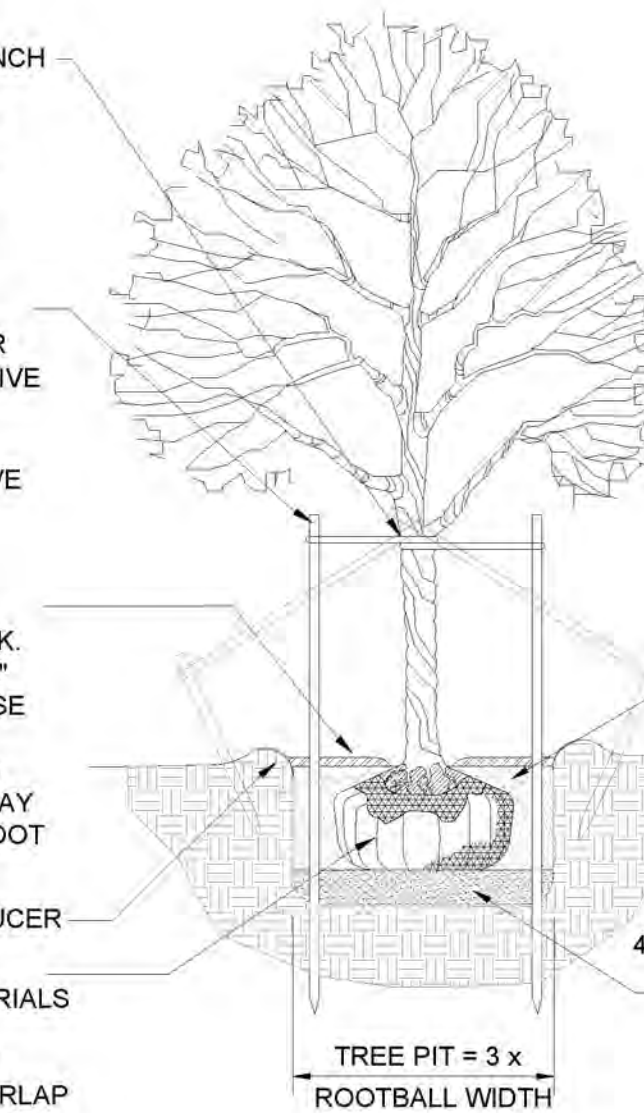
2" X 2" HARDWOOD STAKES, MIN. 36" ABOVE GROUND FOR UPRIGHT, 18" IF ANGLED. DRIVE STAKES A MIN. 18" INTO UNDISTURBED GROUND OUTSIDE ROOTBALL. REMOVE AFTER ONE YEAR.

MULCH 4" DEPTH WITH SHREDDED HARDWOOD BARK. NATURAL IN COLOR. LEAVE 3" CIRCLE OF BARE SOIL AT BASE OF TREE TRUNK. PULL ANY ROOT BALL DIRT EXTENDING ABOVE THE ROOT FLARE AWAY FROM THE TRUNK SO THE ROOT FLARE IS EXPOSED TO AIR.

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

DECIDUOUS TREE PLANTING DETAIL

Seal:



Title:

Landscape Plan

Project:

**Grand River Storage
 Genoa Township, Michigan**

Prepared for:

Greentech Engineering
 51147 Pontiac Trail
 Wixom, Michigan 48393
 248.668.0700

Revision:

Submission

Issued:

January 25, 2022

Job Number:

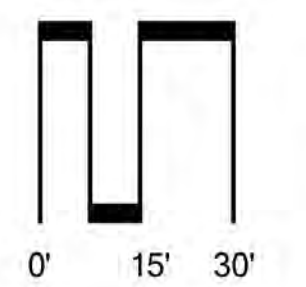
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Drawn By:

jca

Checked By:

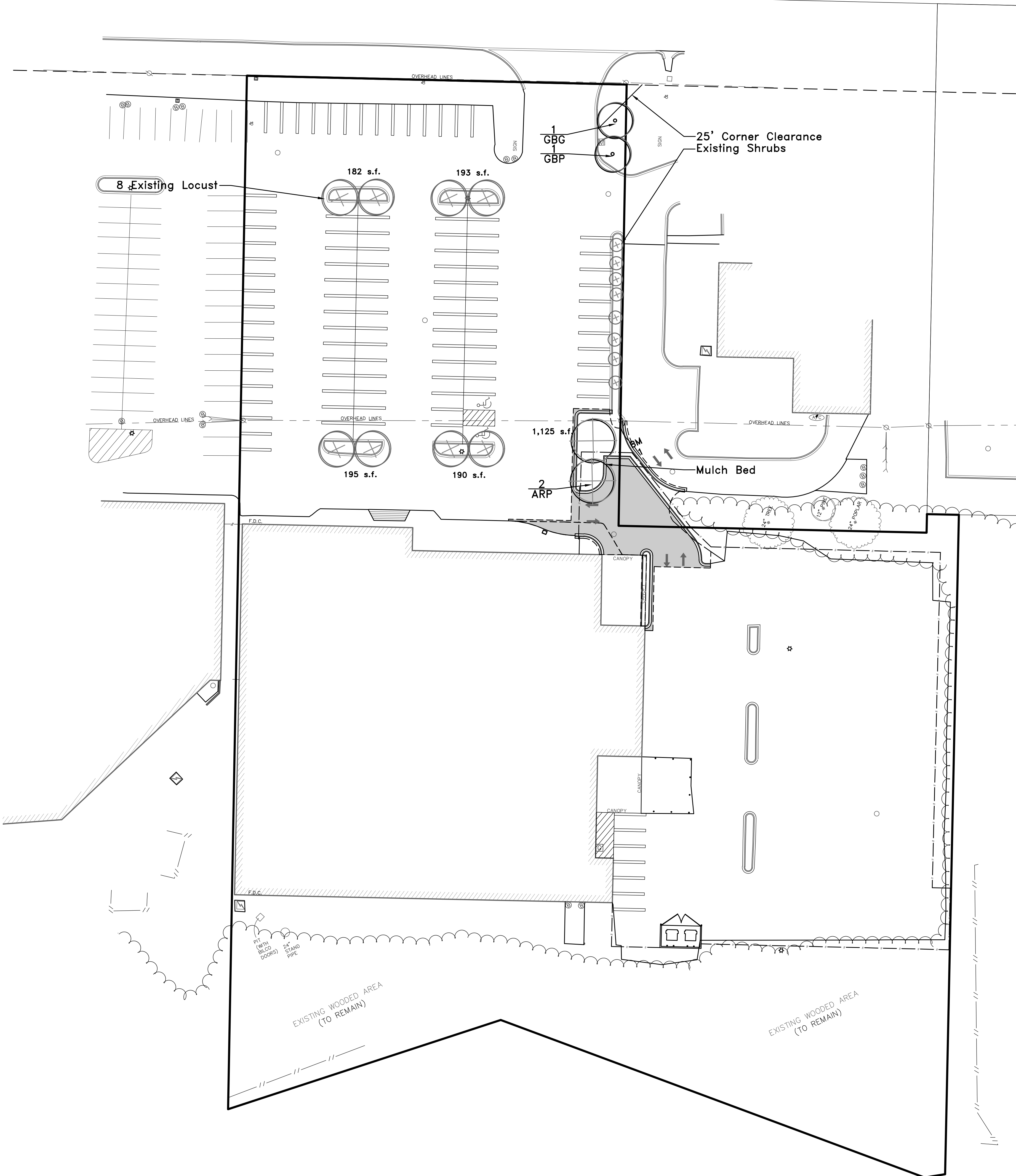
jca



Sheet No.

L-1





Landscape Summary

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Greenbelt Length	215'
Trees Required	5.3 Trees (215' / 40')
Trees Provided	1 Tree
Parking Lot Landscaping	
Total Proposed Spaces	106 Spaces
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Landscape Area Proposed	1,885 s.f.
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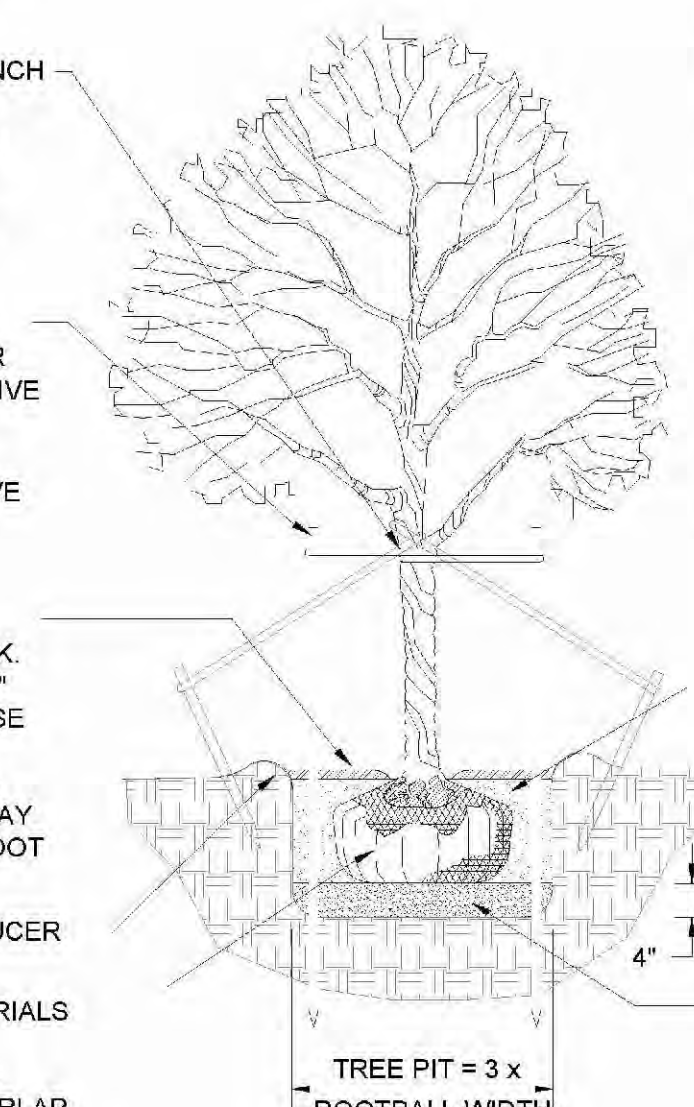
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NOTE:
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DO NOT PRUNE TERMINAL LEADER. PRUNE ONLY DEAD OR BROKEN BRANCHES.

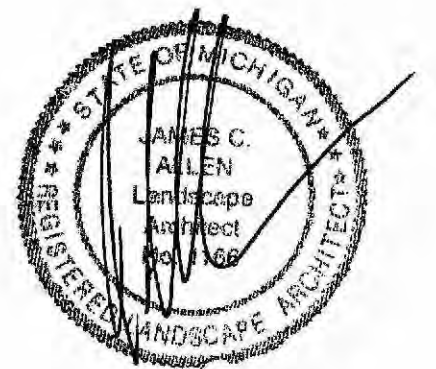
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PLANTING MIXTURE: AMEND SOILS PER SITE CONDITIONS AND REQUIREMENTS OF THE PLANT MATERIAL.



DECIDUOUS TREE PLANTING DETAIL

Seal:



Title:

Landscape Plan

Project:

Grand River Storage
Genoa Township, Michigan

Prepared for:

Greentech Engineering
51147 Pontiac Trail
Wixom, Michigan 48393
248.668.0700

Revision:

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Submission

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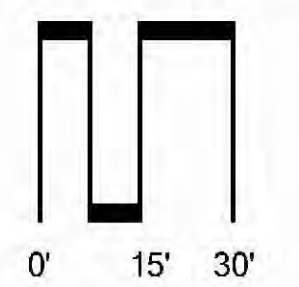
22-008

Drawn By:

jca

Checked By:

jca

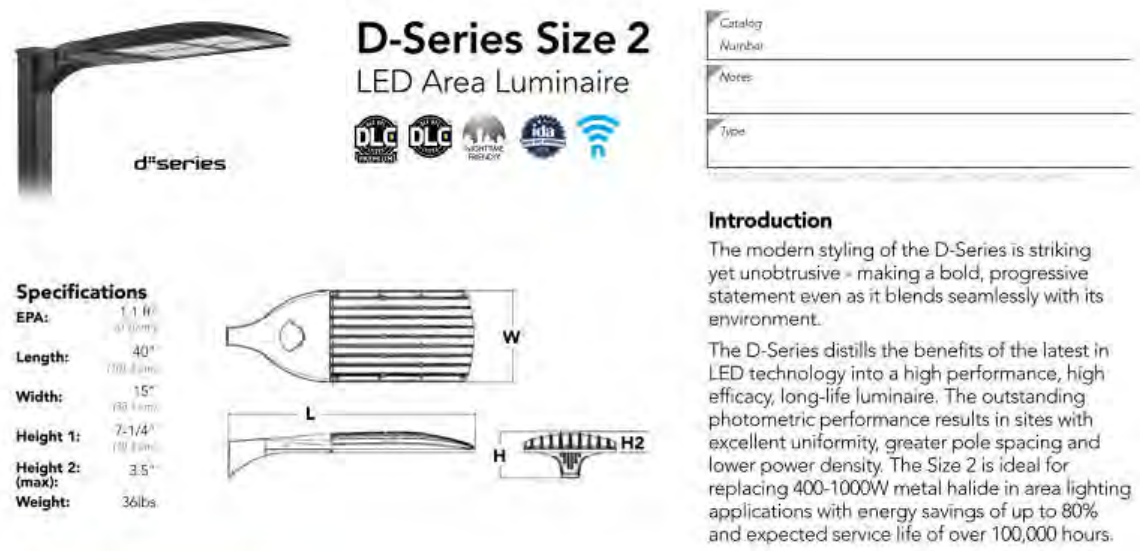


Sheet No.

L-1



D-Series Size 2 LED Area Luminaire



Specifications

Length: 18" (457 mm)
 Width: 18" (457 mm)
 Height 1: 3.5" (89 mm)
 Height 2: 3.5" (89 mm)
 Weight: 3.6 lbs (1.6 kg)

Introduction

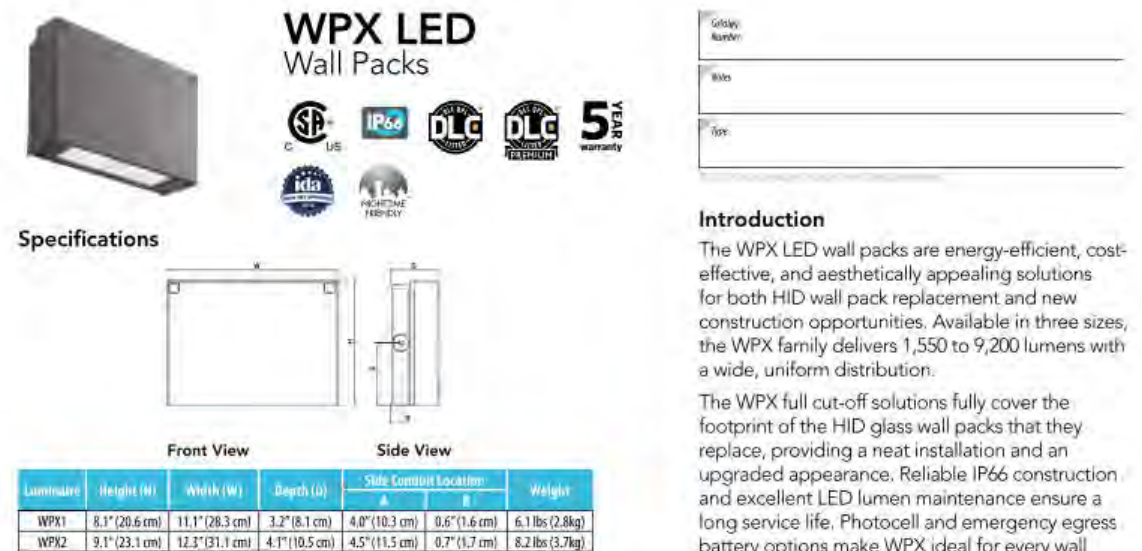
The modern styling of the D-Series is striking yet understated - making a bold, progressive statement even as it blends seamlessly with its environment.

The D-Series distills the benefits of the latest in LED technology into a high performance, high efficiency, long-life luminaire. The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. The Size 2 is ideal for replacing 400-1000W metal halide in area lighting applications with energy savings of up to 80% and expected service life of over 100,000 hours.

Ordering Information EXAMPLE: DSX2 LED P7 40K 3TM MVOLT SPA NLTARIZ2 PIRHN DBDXB

Order	Qty	Lead	Manufacturer	Supplier	Notes	Comments
DSX2LED	1	300	400K	T55	Spot 5000	WSP1
P1	2	400	300K	T55	Spot 5000	WSP1
P2	1	300	300K	T55	Spot 5000	WSP1
P3	1	300	300K	T55	Spot 5000	WSP1
W2	3	300	400K	T55	Spot 5000	WSP1

WPX LED Wall Packs



Specifications

Front View: 18" x 18" x 3.5"
 Side View: 18" x 18" x 3.5"

Introduction

The WPX LED wall packs are energy-efficient, cost-effective, and aesthetically appealing solutions for both HD wall pack replacement and new construction opportunities. Available in three sizes, the WPX family delivers 1,500 to 3,000 lumens with a wide, uniform distribution.

The WPX full cut-off solutions fully cover the footprint of the HD glass wall packs that they replace, providing a neat installation and an upgraded appearance. Reliable IP66 construction and excellent LED lumen maintenance ensure a long service life. Photocell and emergency egress battery options make WPX ideal for every wall mounted lighting application.

Ordering Information EXAMPLE: WPX2 LED 40K MVOLT DBDXB

Order	Qty	Lead	Manufacturer	Supplier	Notes	Comments
WPX2LED	1	300	400K	T55	Spot 5000	WSP1
WPX1LED	1	300	400K	T55	Spot 5000	WSP1
WPX3LED	1	300	400K	T55	Spot 5000	WSP1

LITHONIA LIGHTING
 One Lithonia Way • Smyrna, Georgia 30077 • Phone: 1-800-735-5289
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LITHONIA LIGHTING
 One Lithonia Way • Smyrna, Georgia 30077 • Phone: 1-800-735-5289
 © 2013 Lithonia Lighting. All rights reserved.

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min	Avg/Max
Grade @ 0'	+	0.5 fc	6.2 fc	0.0 fc	N/A	N/A	0.1:1
Parking	X	1.6 fc	4.2 fc	0.2 fc	21.0:1	8.0:1	0.4:1
Property Line	+	0.3 fc	1.0 fc	0.0 fc	N/A	N/A	0.3:1
EAST PARKING LOT	X	0.9 fc	3.9 fc	0.3 fc	13.0:1	3.0:1	0.2:1

Schedule

Symbol	Label	Quantity	Manufacturer	Catalog Number	Lamp	Light Loss Factor
P1	P1	2	Lithonia Lighting	[...]	[...]	0.9
P2	P2	1	Lithonia Lighting	DSX2 LED 40K MVOLT	LED	0.9
P3	P3	1	Lithonia Lighting	DSX2 LED 40K MVOLT	LED	0.9
W2	W2	3	Lithonia Lighting	WPX2 LED 40K Mvolt	LED	0.9

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

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

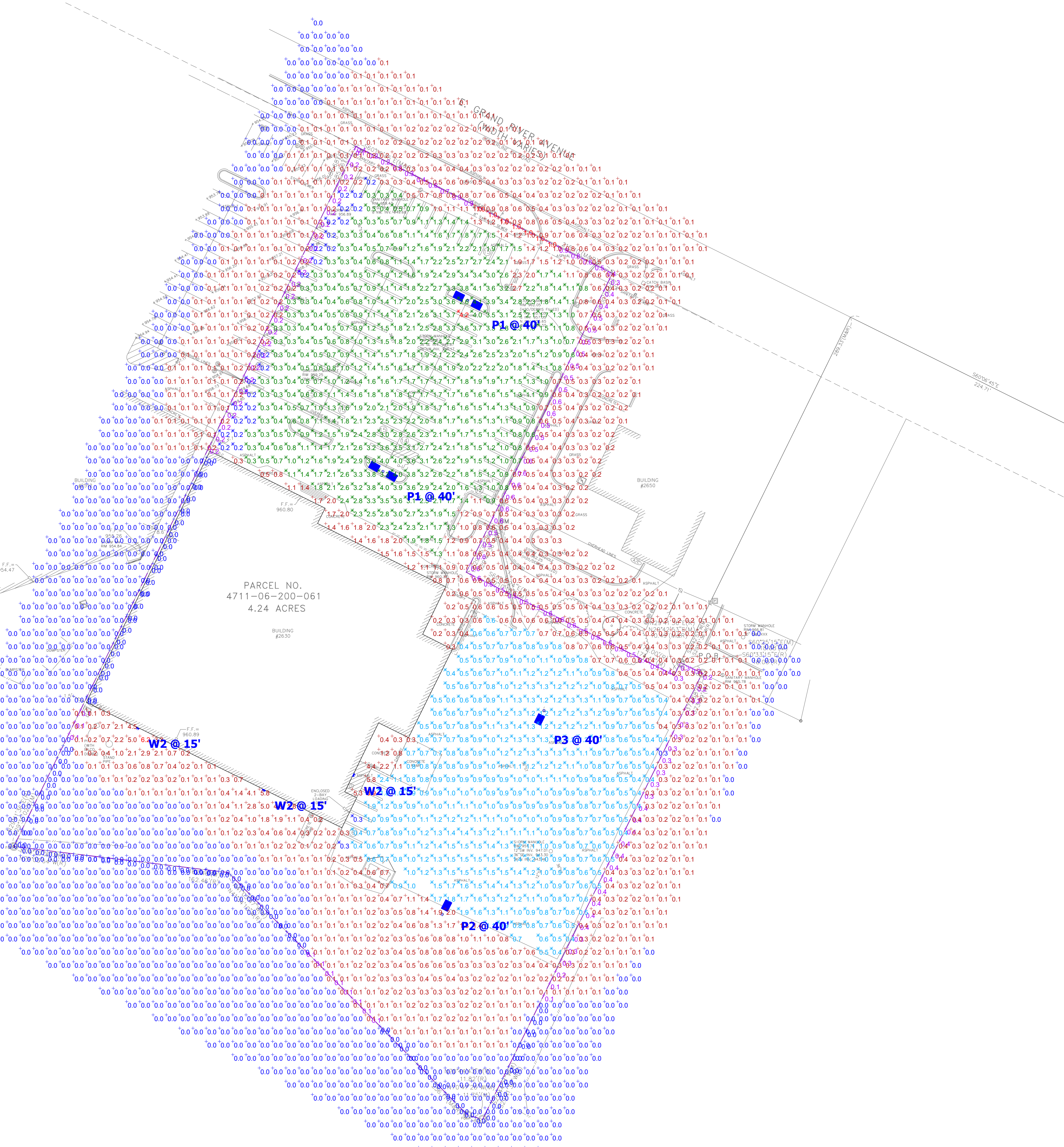
THESE LIGHTING CALCULATIONS ARE NOT A SUBSTITUTE FOR INDEPENDENT ENGINEERING ANALYSIS OF LIGHTING SYSTEM SUITABILITY AND SAFETY. THE ENGINEER AND/OR ARCHITECT IS RESPONSIBLE TO REVIEW FOR MICHIGAN ENERGY CODE AND LIGHTING QUALITY COMPLIANCE.

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

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

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

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

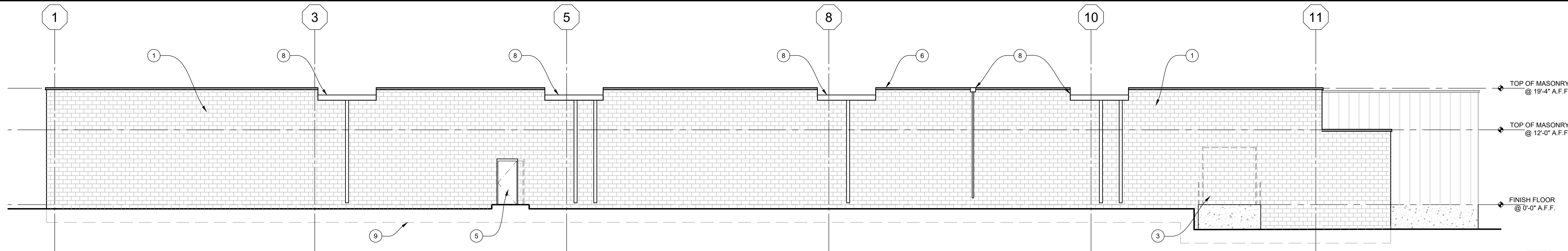


Plan View
 Scale - 1" = 40ft



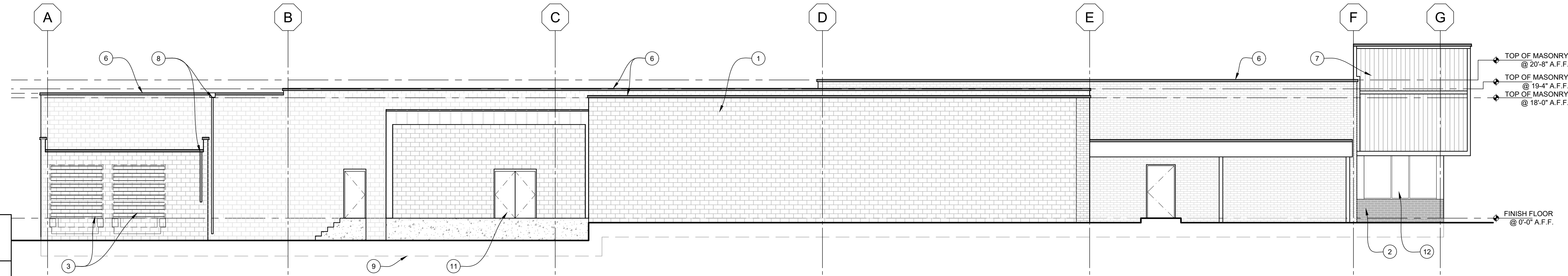
2630 GRAND RIVER AVE
 PHOTOMETRIC PLAN
 PREPARED FOR: GREENTECH
 GASSER BUSH ASSOCIATES
 WWW.GASSERBUSH.COM

Designer
 TV/DS/KB
 Date
 01/27/2022
 Rev
 2/24/2022
 Scale
 Not to Scale
 Drawing No.
 #22-71398 V2



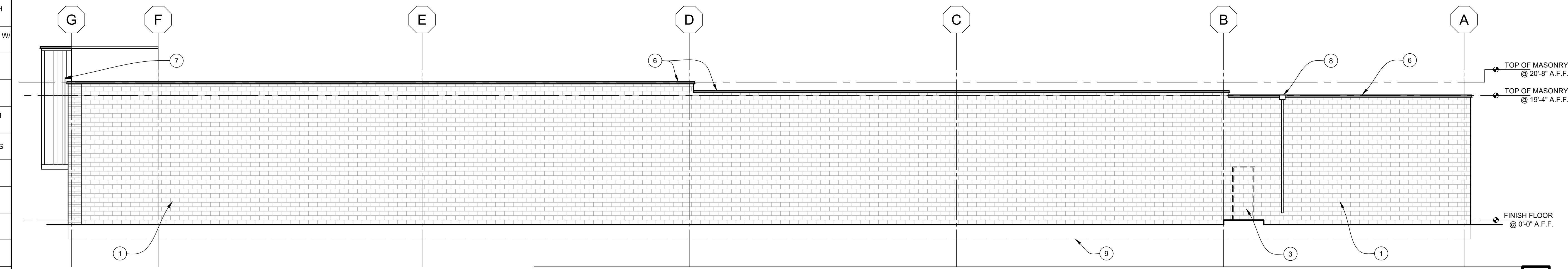
SOUTH ELEVATION
SCALE: 1/8" = 1'-0"

4



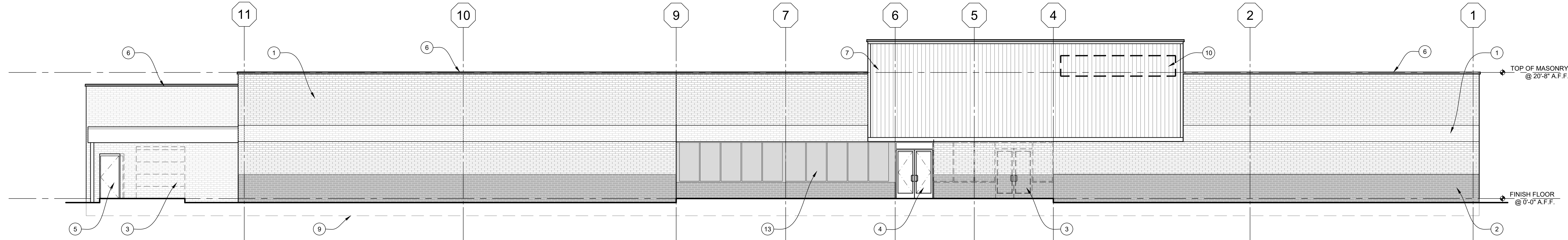
EAST ELEVATION
SCALE: 1/8" = 1'-0"

3



WEST ELEVATION
SCALE: 1/8" = 1'-0"

2



NORTH ELEVATION
SCALE: 1/8" = 1'-0"

1

EXTERIOR MATERIAL SCHEDULE	
1	PAINTED EXISTING CMU BLOCK
2	PAINTED ACCENT BAND
3	INFILL EXISTING OPENING W/ CMU BLOCK TO MATCH EXISTING.
4	NEW 6'X8' ANOD. ALUM. STOREFRONT ENTRY DOOR W/ TINTED TEMPERED GLASS.
5	NEW 3'X7' H.M. DOOR & FRAME
6	NEW PRE-FINISHED METAL COPING
7	PATCH & REPAIR EXIST. WOOD SIDING & PAINT TRIM AS REQUIRED
8	NEW PRE-FINISHED METAL GUTTER & DOWNSPOUTS
9	DASHED LINE DENOTES EXISTING CONC. TRENCH FOOTING BELOW.
10	BUILDING SIGNAGE BY OWNER
11	NEW 6'X7' H.M. DOOR & FRAME
12	1" TINTED LOW 'E' INSUL. VISION GLAZING IN ANOD. ALUM. BREAK FRAME
13	1" TINTED LOW 'E' INSUL. SPANDREL GLAZING IN ANOD. ALUM. BREAK FRAME

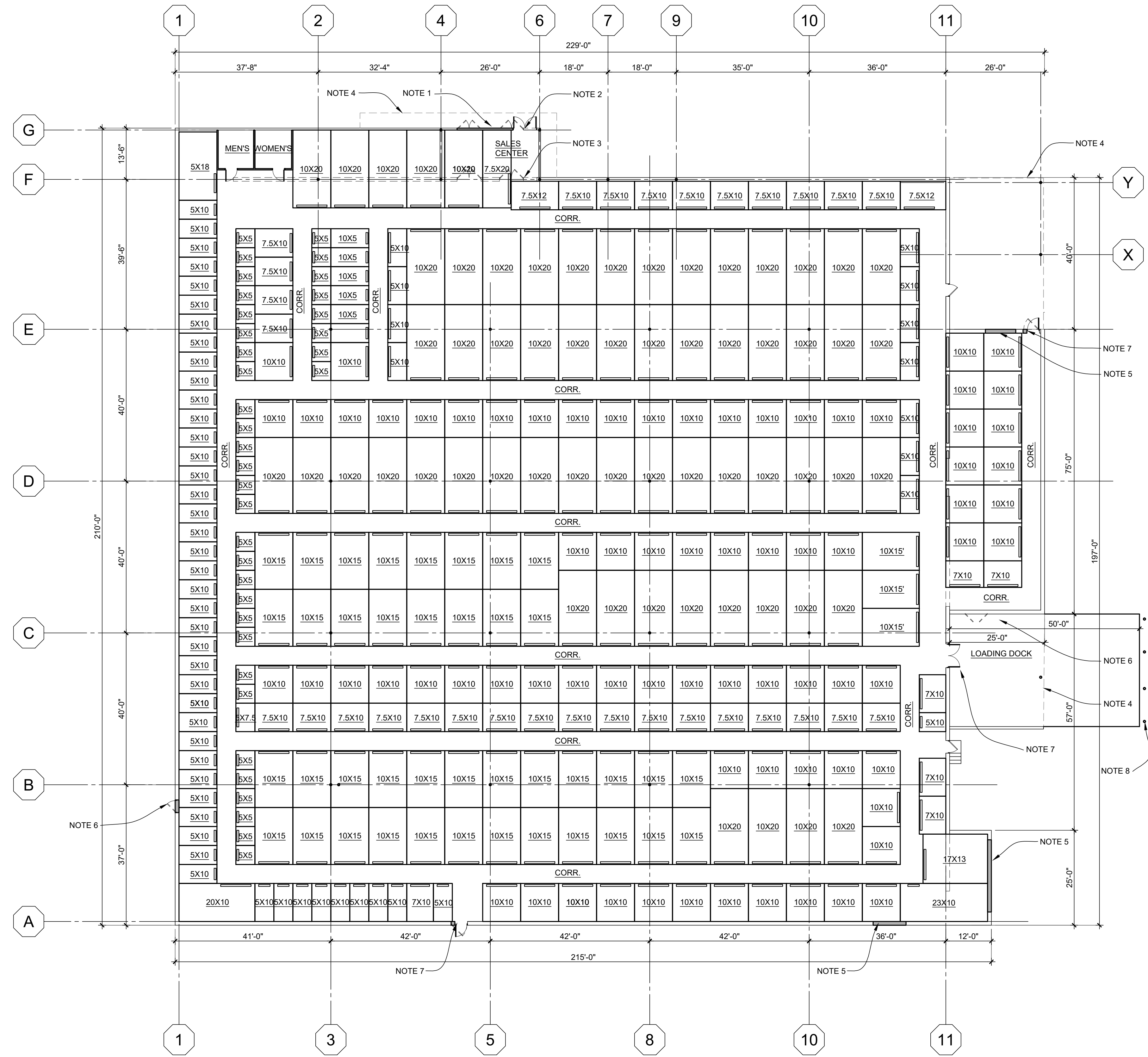
FLOOR PLAN KEYED NOTES

1. REMOVE EXISTING STOREFRONT SYSTEM. INFILL WITH CMU BLOCK TO MATCH EXISTING.
2. NEW ANOD. ALUM. ENTRY DOOR.
3. EXISTING INTERIOR WALLS TO BE REMOVED.
4. DASHED LINE DENOTES OUTLINE OF CANOPY/ OVERHANG ABOVE.
5. REMOVE EXISTING O.H. DOOR & INFILL WITH CMU BLOCK TO MATCH EXISTING.
6. REMOVE EXISTING H.M. DOOR & FRAME AND INFILL W/ CMU BLOCK TO MATCH EXISTING.
7. NEW H.M. DOOR & FRAME.
8. CONC. FILLED STEEL PIPE BOLLARD

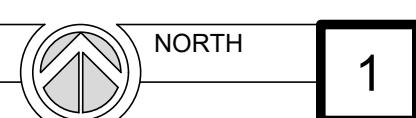
UNIT SCHEDULES

Unit Mix				Total SF
Quantity	Name	Unit SF	Location	
37	5X5	23		925
1	5X7.5	38		38
63	5X10	50		3150
6	7X10	70		420
30	7.5X10	75		2250
2	7.5X12	90		180
1	7.5X20	150		150
78	10X10	100	Int. Access	7800
43	10X15	150		6450
1	10X18	180		180
61	10X20	200		12200
1	10X23	230		230
1	13X17	221		221
325				34194

Door Count				Total Doors
Roll Doors	Swing Doors	Admitt. Door	Location	
3	5	10	12	7
-	X	-	-	223
-	X	-	-	325
X	-	-	-	94
				324



PRELIMINARY FLOOR PLAN
SCALE: 1/16" = 1'-0"



DATE:	ISSUED FOR:
DRAWING DATE:	PROJECT NUMBER:
01-17-22	21093
SHEET NUMBER:	
PFP-3	



**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: Bible Baptist Church c/o Pastor Tim Christoson 2258 E. Highland Rd. Howell, MI 48843
Submit a letter of Authorization from Property Owner if application is signed by Acting Agent.

APPLICANT PHONE: (517) 715-9223 EMAIL: tim.christoson@howellchurch.org

OWNER NAME & ADDRESS: Same as Above

SITE ADDRESS: 3850 Golf Club Rd Howell, MI PARCEL #(s): 4711-05-200-002

OWNER PHONE: () SAME AS ABOVE EMAIL: TIM.CHRISTOSON@HOWELLCHURCH.ORG

Location and brief description of site and surroundings:

Site is located on the southwest corner of Latson Road and Golf Club Road and is zoned LDR. The north side of the site contains a 3 acre +/- pond and single-family residence (circa 1928);The south side of the site contains steep topography and vegetation. The northern property line is the northern limits of Genoa Township. On the east by Latson Road is RR and RPUD zoning; to the south is an existing subdivision in MPUD zoning; and on the west are single family residences in RR zoning.

Proposed Use:

This site plan is for a phase 1 of Bible Baptist Church' campus. The Phase 1 church campus contains a 506-seat church sanctuary with associated site access, parking, a soccer field (for church recreation use), and utility infrastructure to support the facility.

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.

This use is compatible with the development pattern proposed in the Township Master Plan. This development is aiming to preserve the natural resources on the site by removing only that which is necessary to construct the site. The construction of this church results in minimal impact to the existing utility infrastructure.

- 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.

Phase I will include a driveway off Golf Club Road proceeding southerly to the church campus at the southeast corner of the parcel. Trees and shrubs within the site will only be removed in proposed construction areas while maintaining existing woodland buffers at all adjacent property boundaries. This development will preserve much of the natural features and topographical features of the site as well as maintain existing drainage patterns.

- 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 church will require connecting to public sanitary and MHOG water supply along Latson Road. Normal Police and fire protection services should not be affected by this development. Storm water is being managed on-site with ultimate discharge to the ponds and wetlands on-site. Refuse will be handled via a dumpster near the building. The church construction does not impact schools. The approach on Golf Club Road along with any Road improvements will be designed per LCRC standards.

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?

No. A traffic impact study is being conducted to determine the traffic impact on Golf Club Road to determine any necessary road improvements needed to support this development. The site will not generate smoke, odor, fumes, or glare that are detrimental to the environment, public health, safety or welfare of the community or natural resources. Traffic will be at the level of a typical church operation.

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.

3.03.02 (L) Requires minimum lot are of 3 acres with additional acreage per 100 seats. This site is 46.5 ac +/-; Max building height is 35 ft or 2 stories, this building does not exceed that; Off-street parking adjacent to residential districts requires minimum parking lot setback of 50 feet with a continuous obscuring wall/fence/landscape area at least 4 ft in height. A 4 ft tall hedge is provided at the south end of the parking lot in addition to existing mature vegetation.

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

BY: TIM CHRISTOPSON, PASTOR OF BIRCH BAPTIST CHURCH

ADDRESS: 2258 E. HIGHLAND RD., HOWELL, MI 48843

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

Scott Tousignant, P.E. of Boss Engineering at scottt@bosseng.com
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: TIM CLEM DATE: 1/28/2022

PRINT NAME: TIM CHRISTOPSON PHONE: 517-715-9233



GENOA CHARTER TOWNSHIP
Application for Site Plan Review

TO THE GENOA TOWNSHIP PLANNING COMMISSION AND TOWNSHIP BOARD:

APPLICANT NAME & ADDRESS: Bible Baptist Church 2258 E. Highland Rd. Howell, MI 48843

If applicant is not the owner, a letter of Authorization from Property Owner is needed.

OWNER'S NAME & ADDRESS: Bible Baptist Church c/o Pastor Tim Christoson, address same as above

SITE ADDRESS: 3850 Golf Club Road Howell, MI PARCEL #(s): 4711-05-200-002

APPLICANT PHONE: (517) 715-9223 OWNER PHONE: () SAME

OWNER EMAIL: tim.christoson@howellchurch.org

LOCATION AND BRIEF DESCRIPTION OF SITE: Site is located on the SW corner of Latson Rd & Golf Club Rd.

The north side of the site contains a 3+/- acre pond and single-family residence. The site is zoned LDR. The south side of the site contains steep topography and vegetation. The northern property line is the northern limits of Genoa Township. To the east of the site is Latson Rd and RR/RPUD zoning. To the south is an existing subdivision with MPUD zoning. To the west is single family homes in RR zoning.

BRIEF STATEMENT OF PROPOSED USE: This site plan is for a Phase 1 of Bible Baptist Church's campus. The Phase 1 church campus contains a 506-seat church sanctuary with associated site access, parking, a soccer field (for church recreation use), and utility infrastructure to support the facility.

THE FOLLOWING BUILDINGS ARE PROPOSED: The proposed building is a church building approximately 19,843 square feet in size.

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: TIM CHRISTOSON

ADDRESS: TIM CHRISTOSON, BEC, 2258 E. HIGHLAND RD., HOWELL, MI 48843

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

1.) Scott Tousignant, P. E. of Boss Engineering at scottt@bosseng.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: T. Christenson DATE: 1/28/2022
PRINT NAME: TIM CHRISTENSON PHONE: 517-715-9233
ADDRESS: 2258 E. HIGHLAND RD, HOWELL, MI 48843

March 9, 2022

Planning Commission
 Genoa Township
 2911 Dorr Road
 Brighton, Michigan 48116

Attention:	Kelly Van Marter, AICP Planning Director and Assistant Township Manager
Subject:	Bible Baptist Church – Special Land Use and Site Plan Review #2
Location:	3850 Golf Club Road – southwest corner of Latson and Golf Club Roads
Zoning:	LDR Low Density Residential District

Dear Commissioners:

At the Township’s request, we have reviewed the revised submittal from Bible Baptist Church requesting special land use and site plan review/approval for a new church (site plan dated 2/23/22).

A. Summary

1. Special Land Use standards of Section 19.03:

- a. In order to find that the proposal is compatible with the Master Plan, the Township needs to find that the project is consistent with the goals of the Plan.
- b. We request the applicant provide an indication of how the existing residence and large accessory building will be used.
- c. We request the applicant provide operational information for the proposed church.
- d. The applicant must demonstrate that the recommended left turn lane is provided at the driveway’s intersection with Golf Club Road. Signage and/or pavement markings should also be provided.
- e. The project includes grading and structures (drive, retaining wall, parking lot, and softball/baseball field) that encroach into the 25-foot natural feature setback. As such, a separate special land use review/approval is needed.
- f. The Township may wish to withhold a finding related to the impact criterion until such time as the natural feature setback encroachments can be fully evaluated.
- g. We are concerned that one of the wetland areas will be completely surrounded by pavement, and that future plans call for filling of this wetland.
- h. The applicant must address any comments provided by the Township Engineer and Brighton Area Fire Authority.

2. Use Requirements of Section 3.03.02(1):

- a. The use requirements are met.

3. Site Plan Review:

- a. The façade facing Latson Road is comprised simply of vertical metal siding with no windows or architectural accents.
- b. In terms of design and materials, the rear façade is not “comparable to the front façade.”
- c. The applicant should be prepared to present building material and color samples (and/or a color rendering) to the Commission.
- d. The Township may allow a performance guarantee in lieu of pathway construction at this time.
- e. The curb adjustments along the southerly driveway must prevent vehicles from disturbing lawn/landscaped areas.
- f. The landscape plan is deficient by 10 detention pond shrubs.
- g. The Planning Commission may allow existing vegetation in lieu of new greenbelt plantings.
- h. Site lighting should be placed on timers, so they are turned off when there are no activities.
- i. Findings from the traffic study need to be incorporated into the Impact Assessment.



Aerial view of site and surroundings (looking north)

B. Proposal/Process

The applicant proposes to develop the 46.5-acre site with a 19,843 square foot church building with 506 seats in the main auditorium. It is important to note that the site plan identifies elements for a future Phase 2, though these elements are not part of this review.

The plans also note a soccer field north of the church building, while there appears to be a softball/baseball field northeast of the soccer field. However, the latter is not identified and there is no reference to it in any of the submittal materials.

If this field is proposed as part of this project, it must be identified as such. Furthermore, a portion of the field encroaches into the 25-foot natural feature setback.

Churches, temples, and similar places of worship are allowed with special land use approval in the LDR District. Such uses are also subject to the requirements of Section 3.03.02(1).

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

The Township Board has final review/approval authority over each aspect.

C. Special Land Use Review

Section 19.03 of the Zoning Ordinance identifies the review criteria for all special land uses, as follows:

- 1. Master Plan.** The Township Master Plan and Future Land Use Map identify the site and properties to the east and west as Low Density Residential.

This category is intended for “single family residential use, located on the fringe between the rural residential and the more urbanized areas of the Township.” However, there is no reference institutional uses, such as churches, temples, and similar places of worship.

As such, the Township will need to find that the proposal aligns with the Plan's goals, which include the following:

- Accommodate a variety of land uses that are located in a logical pattern and complement community goals, the surrounding land uses, environment, capacity of roads and the sanitary sewer, and public water system capabilities.
- Provide land owners with reasonable use of their land in a manner that is compatible with adjacent uses and the overall land use plan for the Township and the capacity of infrastructure.
- Promote harmonious and organized development consistent with adjacent land uses.
- Achieve high quality site and building design that contributes to strong neighborhoods, vital shopping districts, and desirable employment centers.
- Preserve the "quality of life" in Genoa Township by retaining significant, sensitive natural amenities such as water bodies, wetlands, slopes, mature trees and natural ecosystem.
- Encourage integration of natural features such as woodlands and wetlands into site development as aesthetic and functional features.

- 2. Compatibility.** There is an existing residence and a large accessory building on the property (to the northwest along Golf Club Road), though the subject site is otherwise undeveloped.

We request the applicant indicate how these structures will be used (i.e., will they be used for private residential purposes, or will they be used as part of the proposed church).

The surrounding area includes single-family residences at various densities.

The submittal materials reference preservation of existing wooded areas to the south and west to provide buffering from residential uses.

Sheet 2 of the revised submittal identifies 6 large trees in these areas (5 to the south and 1 to the west) that will be protected. The revised submittal materials also include photos of the wooded area to the south.

Based on the limits of disturbance (depicted on Sheet 3), the westerly 450 feet of the property will remain undisturbed.

Lastly, we request the applicant provide operational information for the proposed church. Specifically, hours/days of operation and an indication of exterior noise control from the main auditorium.

- 3. Public Facilities and Services.** Vehicular access will be provided to/from Golf Club Road, while utility connections are proposed via the Latson Road right-of-way.

The applicant must address any comments provided by the Township Engineer and/or Brighton Area Fire Authority with respect to this criterion.

- 4. Impacts.** The primary concerns under this criterion are related to traffic and sensitive natural features (wetlands).

The revised submittal includes a traffic impact study (dated March 2022), though it is important to note that the document was received late in the second review cycle.

We defer full technical review of the study to the Township Engineer (provided they have had sufficient time to review).

However, we provide the following excerpts from the summary/conclusions of the study for the Commission's consideration:

- Currently, approaches and movements operate at a Level of Service (LOS) D or better.
- As a result of the project, approaches and movements will continue to operate at a LOS D or better.
- No off-site roadway or traffic control improvements are required.
- A left turn lane and right turn taper are warranted at the driveway's intersection with Golf Club Road.

The site plan includes a deceleration lane and right turn taper; however, there are no details depicting the left turn lane. A detail must be provided confirming the presence of a left turn lane, and signage and/or pavement markings should be included to guide drivers.

The site contains open water and wetland areas, and several aspects of the project (site grading, a retaining wall, driveways, and a ball field) encroach into the 25-foot natural feature setback from the edges of wetlands.

These encroachments require a separate special land use review, and the Township may wish to withhold a finding under this criterion until such time as these encroachments can be fully evaluated via that review process.

We also suggest that note be added to the plan stating that all other natural feature setback areas are to remain undisturbed.

Lastly, we remain concerned with the fact that one of the wetland areas will be entirely surrounded by pavement, and that future expansion plans call for filling of this wetland.

- 5. Mitigation.** Should additional concerns arise as part of the review process, the Township may require additional efforts/improvements to mitigate potential adverse impacts.

D. Use Requirements

Section 3.03.02(l) identifies the use requirements applicable to churches, temples, and similar places of worship, as follows:

- 1. Minimum lot area shall be three (3) acres plus an additional fifteen thousand (15,000) square feet for each one hundred (100) persons of seating capacity.**

The notes on Sheet 4 identify a seating capacity of 506, which results in a minimum lot area requirement of 4 to 5 acres. The 46.5-acre site easily exceeds the minimum lot area required by this criterion.

- 2. Buildings of greater than the maximum height allowed in Section 3.04, Dimensional Standards, may be allowed provided front, side and rear yards are increased above the minimum required yards by one foot for each foot of building height that exceeds the maximum height allowed. The maximum height of a steeple shall be sixty (60) feet.**

The proposed building has a maximum height of 28'-6", which is within the maximum allowed in the LDR (35').

- 3. Wherever an off-street parking area is adjacent to a residential district, there shall be a minimum parking lot setback of fifty (50) feet with a continuous obscuring wall, fence and/or landscaped area at least four (4) feet in height shall be provided. The Township Board may reduce this buffer based on the provision of landscaping, the presence of existing trees or in consideration of topographic conditions.**

The drive aisle around the southerly point of the parking lot provides a 52-foot setback from the residential district adjacent to the south.

The revised landscape plan includes 40 tightly spaced Arborvitae (4-foot tall at time of planting) immediately south of this drive aisle. The plans also note an “existing vegetative buffer” in this area.

- 4. Private schools and child day care centers may be allowed as an accessory use to churches, temples and similar places of worship where the site has access to a paved public roadway.**

The revised submittal materials note that neither a private school nor child care center are proposed as part of this project.

E. Site Plan Review

- 1. Dimensional Requirements.** The location of the proposed building and parking lots comply with the applicable dimensional requirements of the LDR District.

As previously noted, grading and structures are proposed within 25 feet of wetlands. These aspects of the proposal require a separate special land use review, per Section 13.02.04.

The applicant should also be aware that such activities may not occur within 10 feet of the wetland, unless otherwise approved by the Planning Commission.

- 2. Building Materials and Design.** Building materials include a stone veneer at the building entrance, wood (or wood-grain) siding, and 3 types of metal siding (2 with vertical alignment and 1 with horizontal).

Though the material standards of Section 12.01 do not apply to single-family residential districts, the remaining design standards do. This includes a requirement that “building walls over 100 feet in length shall be broken up with varying building lines, windows, architectural accents and trees.”

Additionally, “building rear facades shall be constructed to a finished quality comparable to the front façade.”

Each building face is at least 100 feet in length, though the façade facing Latson Road is comprised simply of vertical metal siding. Meanwhile, the rear façade is entirely metal, the larger portion having only vertical siding, and is not “comparable to the front façade.”

The applicant should be prepared to present material and color samples (and/or a color rendering) to the Commission for their review.

- 3. Pedestrian Circulation.** In accordance with Section 12.05, an 8-foot wide bike path is required along county primary roads, as designated on the Pathways Plan (which also notes a planned path along this portion of Latson Road).

In response, the applicant has indicated that the Road Commission has future right-of-way improvements planned, which will impact construct at this time. As such, the Township may allow a performance guarantee in lieu of pathway construction.

- 4. Vehicular Circulation.** Vehicular access is proposed to/from Golf Club Road. The driveway includes deceleration and acceleration lanes for eastbound traffic.

The circulation pattern includes two-way travel, with sufficient drive aisle widths provided throughout the site.

A truck turning template is included on Sheet 4. As previously noted, the template indicates that large vehicles will cross over curbs in the southerly portion of the site.

In response, the applicant has indicated that “the curb radii have been enlarged to soften turning movements for fire trucks.” Provided this will prevent such vehicles from disturbing lawn/landscaped areas, this should be an adequate response.

The applicant must address any comments provided by the Township Engineer or Brighton Area Fire Authority with respect to vehicular circulation.

- 5. Parking.** Based on the number of seats noted in the main unit of worship (506), Section 14.04 requires a total of 169 parking spaces.

The proposed site plan provides 186 spaces, including the required number of barrier-free spaces (6 required; 8 provided).

Proper dimensions are provided, and details note the use of looped striping (as required).

- 6. Landscaping.** The revised landscape plan has been reviewed for compliance with the standards of Section 12.02, as shown in the following table:

Standard	Required	Proposed	Notes
Front yard greenbelt (Golf Club)	20' width 27 canopy trees	+20' width Existing vegetation	Notes state that presence of wetland precludes new plantings.
Front yard greenbelt (Latson)	20' width 40 canopy trees	+20' width Existing vegetation	Notes state existing woodland buffer to remain in lieu of new plantings.
Parking lot	16 canopy trees 1550 SF internal landscaped area	16 canopy trees 5,145 SF internal landscaped area	Requirements met
Detention pond (north)	4 trees 39 shrubs	4 trees 29 shrubs	Deficient by 10 shrubs

Calculation note 2 states that 39 detention pond shrubs are provided, though the plan depicts only 29, while note 4 states that 36 shrubs are provided, though the plan depicts 40.

The Planning Commission may allow existing vegetation to remain in lieu of new plantings, per Section 12.02.13.

- 7. Exterior Lighting.** The revised lighting plan includes 19 light poles along the driveway and throughout the parking lot, along with 2 wall mounted fixtures on the rear of the building.

Details note the use of downward-directed LED fixtures. Pole fixtures are mounted at a height of 20 feet, while the wall sconces are mounted at 15 feet.

Maximum photometric readings on-site (7.3) and along property lines (0.0) comply with Ordinance standards.

In response to comments from our initial review letter, the applicant has confirmed that appropriate shielding will be provided and that the soccer field will not be illuminated.

Our only additional comment is that the lighting should be placed on timers, such that they shut off when there are no activities on site.

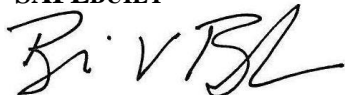
8. Impact Assessment. The submittal includes a revised Impact Assessment (dated February 23, 2022).

In summary, the Assessment notes that the proposed project is not expected to have an adverse impact upon natural features, stormwater, surrounding land uses, public services/utilities, or traffic and pedestrians; however, findings from the traffic study need to be incorporated into the document.

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

Respectfully,

SAFEBUILT



Brian V. Borden, AICP
Michigan Planning Manager



March 9, 2022

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

**Re: Bible Baptist
Site Plan Review No. 2**

Dear Ms. Van Marter:

Tetra Tech conducted a second review of the proposed Bible Baptist site plan last dated February 23, 2022. The plans were prepared by Boss Engineering on behalf of Bible Baptist Church. The development is located on 46.5 acres in the southwest quadrant of the Golf Club Road and Latson Road intersection. The Petitioner is proposing a 19,843 square foot church in the southeast corner of the property. The proposed site includes a 1,400-foot driveway, onsite storm sewer and storage, parking improvements, and municipal water main and sanitary sewer improvements. We offer the following comments:

GENERAL

1. Approval should be obtained by the Brighton Area Fire Authority prior to site plan approval.
2. The proposed entrance on Golf Club Road will need to be approved by the Livingston County Road Commission and approval should be provided to the Township prior to site plan approval.
3. The Petitioner provided a traffic impact study for the proposed development. The traffic impact study recommended that a left-turn lane and right-turn taper be constructed on Golf Club Road at the proposed driveway, and the site plan correctly includes the recommendations of the study.
4. The plan proposes a commercial drive with a dead-end that is approximately 1,400 feet long. If the property is further developed in the future, the Petitioner will need to work with the Township to determine if the driveway will need to be considered a private road.
5. The concrete sidewalk detail should be shown with 6 inches of Class II sand per the Township's Design Standards.

SANITARY AND WATER SERVICES

1. The proposed 19,843 square foot church will be 2.58 REUs per the Township REU table that assigns 0.13 REU per 1,000 square feet for churches. This number of REUs should be used to determine the tap fee required for the proposed development. In the future, if the church is expanded, additional tap fees will be required.
2. After final site plan approval, the Petitioner will be required to submit construction plans to MHOG Sewer and Water Authority for review and approval.

3. The petitioner is proposing a dead-end water main with a stub to the south for potential future connection to the existing 8-inch water main on Sugarbush Drive. The petitioner has included a 25-foot utility easement to the edge of the property to facilitate this future connection.
4. The Petitioner is proposing an onsite lift station and force main that will discharge to the existing 8-inch HDPE force main on the west side of Latson Road. Addition detail should be provided for the lift station during the construction plan review process and the lift station and force main connection will need to be coordinated with MHOG Sewer and Water Authority.

DRAINAGE AND GRADING

1. The Livingston County Drain Commission is in the process of updating their design standards. The proposed storm sewers, forebays, and detention will need to be updated to the new standard. The Petitioner has updated their storm calculations to match the new standard. Most of the site is shown draining to a mechanical pre-treatment structure prior to being discharged to the existing ponds on site. Additional detail needs to be provided for the proposed mechanical pretreatment structure including elevations and flow rate it is designed for.
2. The proposed pipe sizes and manhole sizes should be provided on the final site plan, as the Township does not conduct a separate construction plan review.
3. The Petitioner has noted that they have received approval from MDEGLE for their proposed discharge to the existing pond on site. This permit should be provided to the Township for their records.

We recommend the petitioner address the above comments prior to approval.

Sincerely,



Gary J. Markstrom, P.E.
Vice President



Shelby Byrne
Project Engineer



BRIGHTON AREA FIRE AUTHORITY

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

March 9, 2022

Kelly VanMarter
Genoa Township
2911 Dorr Road
Brighton, MI 48116

RE: Bible Baptist Church Special Use
3850 Golf Club Rd.
Genoa Twp., MI

Dear Kelly:

The Brighton Area Fire Department has reviewed the above-mentioned site plan. The plans were received for review on March 2, 2022 and the drawings are dated February 1, 2022 with latest revisions dated February 23, 2022.. The project is based on the redevelopment of an existing vacant parcel to a new A-3 19,843 square foot church facility. The plan review is based on the requirements of the International Fire Code (IFC) 2021 edition.

All previous comments have been corrected or acknowledged in this submission.

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

From: [Patricia Murphy](#)
To: [Kelly VanMarter](#)
Subject: Hearing re Bible Baptist on Latson and Golf Club, please add my concerns
Date: Tuesday, March 8, 2022 9:38:53 AM

to Planning Director Kelly VanMarter and Planning Commission:

My name is Patricia Murphy, 139 Lakeshore Vista, Howell. I reside in the Lakeshore Pointe sub. The sub has one and only exit/entrance road is Golf Club. I am out of town, unable to attend the March 14 hearing, so am sending this email so that my concerns can be heard. I am a Christian myself, but my concerns are about the proposal, not the church.

Lakeshore Pointe sub has **248** homes, most with **two** vehicles. Our only way to enter and exit is Golf Club. Exiting, particularly, is **extremely dangerous**. **Golf Club traffic does not slow down and cannot be seen** coming down from Latson at **50+MPH**. We cannot see them nor they us. Exiting at present onto Golf Club from our sub takes courage, a fast step on the gas and a prayer.

The increased traffic from the Bible Baptist project will two will gravely increase the danger. It will make entering and exiting from our sub even more dangerous. It will be impossible to safely exit our sub.

GPS and WAZE etc routes Golf Club to Latson to the freeway 96, Meijer's, Walmart, Kohl's etc. It is the route residents use. Once again **more traffic on this stretch of Golf Club, from Latson to Grand River, will make exiting and entering our sub hazardous, if not impossible.**

Golf Club is two lanes and not able to accommodate heavy traffic. **Bible Baptist project phase one alone, will not only host Sunday and Wednesday services (186 parking spots, 500 seat auditorium) but large gatherings, events etc)** Golf Club was not created to handle such heavy traffic! It will not be safe.

So I ask the planning commission:

??Has an outside consulting unbiased Firm, not linked in any relationship to Boss engineering, been hired to study and report on the total impact of this project on the community?

??Has a thorough traffic study been done, not only on the Latson/Golf Club corner but on the stretch of Golf Club from Latson down to Grand River? From Chemung Hills golf course, Eager Rd, and our Lakeshore Pointe sub in both North and South directions?

If a **complete study** has not yet been done and made available to the commission and to residents, no action can be taken on this project proposal. **The safety of the community and impact on its residents is paramount. My concerns are not about religion. My concerns are about lives and safe roads.**

And although Bible Baptist submits this phase one, its label "phase one" demands that future development plans already written and posted on their website also be given some weight in the decision of the planning commission. the sake and safety, of the community and present residents, voters and taxpayers needs to be insured.

Thank you for taking time to consider my concerns.
Sincerely, Patricia Murphy
139 Lakeshore Vista, Howell
C248.770.3552

Sent from Patricia Murphy's I pad

GENOA TOWNSHIP IMPACT ASSESSMENT

Prepared for:

**Owner / Applicant
Bible Baptist Church
2258 E. Highland Rd.
Howell, Michigan 48843**

Prepared by:

Jennifer M. Austin, PLA



3121 E. Grand River Howell, MI 48843
517.546.4836 fax 517.548.1670
www.bosseng.com

February 1, 2022

Revised: February 23, 2022

INTRODUCTION

The purpose of this Impact Assessment (IA) Report is to show the effect that the proposed church campus development has on various factors in the general vicinity of the use. The format used for presentation of this report conforms to the Submittal Requirements for Impact Assessment/Impact Statement Guidelines in accordance with Section 13.05 of the published Zoning Ordinance for Genoa Township, Livingston County, Michigan.

DISCUSSION ITEMS

- A. Name(s) and address(es) of person(s) responsible for preparation of the Impact Assessment and a brief statement of their qualifications.

Prepared by:

Jennifer M. Austin, PLA
Professional Landscape Architect and Project Manager
Boss Engineering
3121 E Grand River
Howell, MI 48843

Prepared for:

Owner/Applicant:
Bible Baptist Church
2258 E. Highland Rd.
Howell, MI 48843

- B. Description of the site, including existing structures, man-made facilities, and natural features, all-inclusive to within 10' of the property boundary.***

The project site is on parcel # 4711-05-200-002 in the NE ¼ of Section 5, Genoa Township, Livingston County, MI, and which the parcel at the southwest corner of Golf Club Road and Latson Road.

The subject site is bordered:

- To the north is the Genoa Township-Oceola Township line along Golf Club Road. The northern half of the subject property contains a 3+/- acre pond, a wetland and single family residence.
- To the east are RR and RPUD zoning on the opposite side of Latson Road.
- To the south is MUPUD zoning which contains the Rolling Ridge site condominium.
- To the west is RR zoning with single family residences.

Current zoning of the subject site is Low Density Residential (LDR), 1 unit/acre. This new zoning designation was approved by the Genoa Township Planning Commission at the July 20, 2020 meeting. Sewer and Water are along entire the Easterly line (Latson Road) of the subject parcel and accessible at the Southerly property line at Sugarbush Drive.

- C. *Impact on natural features: A written description of the environmental characteristics of the site prior to development, i.e., topography, soils, vegetative cover, drainage, streams, creeks or ponds.***

GENERAL OVERVIEW

AREA 1

The Northwesterly 10 acres of the site are the location of the existing residence. This area consists of two parts: The House, located on the top of a gently rolling hill, and the pond adjacent to the house along the southerly and westerly portions. The private entrance road to the proposed church campus will cross the easterly portion of this area.

AREA 2

The Northeasterly 10 acres of the site are relatively flat of which approximately 5 acres is a wetland. There are 2 man-made ditches within this wetland that flow northerly under Golf Club Road into a small wetland in Oceola Township. Stormwater management for this project will mostly be managed in this area by forebays to filter stormwater before discharge into the wetlands and/or pond.

AREA 3

The Southerly 26+ acres are gently sloped to moderately steep slopes. The entire area is heavily wooded with a mixture of evergreens and hardwoods. The northerly portion of Area 3 flows naturally north to the existing lake and/or the existing wetland. The southerly portion of Area 3 flows generally southeast into an existing drainage area along Latson Road.

The church campus and a portion of the driveway will be located in this area. Clearing of trees will be kept to a minimum by use of curb and gutter for the commercial drive.

WETLAND SETBACKS

The regulated wetlands on-site contain a 25 foot wetland setback per Township Ordinance. The proposed development includes grading within the 25 foot wetland setback at the east wetland, the open water pond as well as for the eastern of the two upland wetland pockets. The areas of disturbance within the setback on the east wetland and the open water pond will have no impact on the wetlands. Currently, the land is maintained up to the wetland limits in these areas with grass, in which the 25' is open. The disturbance will not disrupt crucial vegetation in this instance. Given the location of the wetlands and their proximity to each other, as well as their proximity to other existing structures on site, in order for the commercial drive to run southerly to access the developable portion of the parcel, work within the setback will be required.

There are two upland pocket wetlands near the proposed church and parking lots. No disturbance is proposed within the western upland pocket wetland. Disturbance is proposed to occur within the 25' wetland setback on the eastern upland wetland. Based on the topography and visual inspection, this wetland has very minimal water ponding as water typically flows through this area to ultimately pond at the western upland wetland pocket. The wetland vegetation quality is low, and the minimal trees within the wetland limits are dead. The wetland is of low quality and grading within the setback of this wetland does not impact the overall stormwater management on the site. Water is continuing to be directed to the western of the two wetland pockets.

SPECIFIC OVERVIEW

The soils and natural features throughout the site are specified on the Existing Conditions and Natural Features Sheets 2 and 3.

D. Impact on storm water management: description of soil erosion control measures during construction.

The preliminary site plan indicates stormwater management forebays and mechanical pretreatment units to be constructed during the infrastructure construction. These forebays and mechanical pretreatment units will pre-treat the stormwater prior to discharge to the pond and wetland at the north half of the site. The discharges and pond storage is permitted in MDEGLE permit WRP026826. The detailed construction plans will be reviewed by the Township Engineer and the Soil Erosion Control permit will be reviewed and issued by the Livingston County Drain Commissioner.

E. Impact on surrounding land use: Description of proposed usage and other man-made facilities; how it conforms to existing and potential development patterns. Effects of added lighting, noise or air pollution which could negatively impact adjacent properties.

Phase I of this project will include a commercial drive approach on Golf Club Road, proceeding southerly to the church campus at the southeast corner of the parcel. This development will have little, if any, impact on the northerly 15 acres of the site. The development will require maintaining a significant portion of the existing forested property along the west, east and south property lines. These natural buffers will minimize lighting and noise to existing developed, adjacent properties. The low-density residential development will have no air pollution impact.

F. Impact on public facilities and services: Description of number of residents, employees, patrons, and impact on general services, i.e., schools, police, fire.

The Site Plan for this phased development is for a 506-seat church sanctuary and associated parking, a new commercial driveway, a soccer field, and stormwater forebay in Phase I. Phase II will allow for an expansion of the church with approximately 500 more seats and associated parking, a potential new access drive off Latson Road, and potentially five single-family low-density residential lots.

The church will require connecting to water and sewer along Latson Road. Police and fire protection services, and schools should not be impacted by this church project.

G. Impact on public utilities: description of public utilities serving the project, i.e., water, sanitary sewer, and storm drainage system. Expected flows projected in residential units.

As noted above, the church will need to connect to the public sanitary and MHOG water along Latson Road for Phase I. A watermain easement will be provided to the southern property line for potential future looping with the existing Rolling Ridge development.

The stormwater management plan utilizes enclosed pipe and open swales to transmit water to either a mechanical pretreatment unit (for the primary stormwater management treating the majority of the developed site) and a forebay for the remainder of the storm water runoff on the north end of the site. The forebay and mechanical pretreatment unit filter runoff prior to release into the existing pond and wetlands that are on site.

H. Storage or handling of any hazardous materials: Description of any hazardous materials used, stored, or disposed of on-site.

No storing or handling of any hazardous materials is expected for this church campus.

I. Impact on traffic and pedestrians: Description of traffic volumes to be generated and their effect on the area.

A traffic study has been initiated. It will be prepared under separate cover and submitted to the Township and Livingston County Road Commission once completed.

The Livingston County Road Commission will be required to review and approve the commercial driveway approach at Golf Club Road as it relates to their standards and findings within the traffic study. At this time, it is anticipated that the traffic study may warrant the center left turn lane to be extended through the proposed Golf Club Road approach to serve the left hand turns to the church. The proposed plan currently shows this center turn lane extension. Ultimately, the traffic study will need to be reviewed and considered as part of the approval for the proposed drive approach. The Livingston County Road Commission will require any necessary Golf Club Road improvements be done as part of the approval and permitting.

J. Special provisions: Deed restrictions, protective covenants, etc.

There is a document addressing shared maintenance and access to the existing pond on the subject property between Bible Baptist Church and the adjacent owner to the northwest.

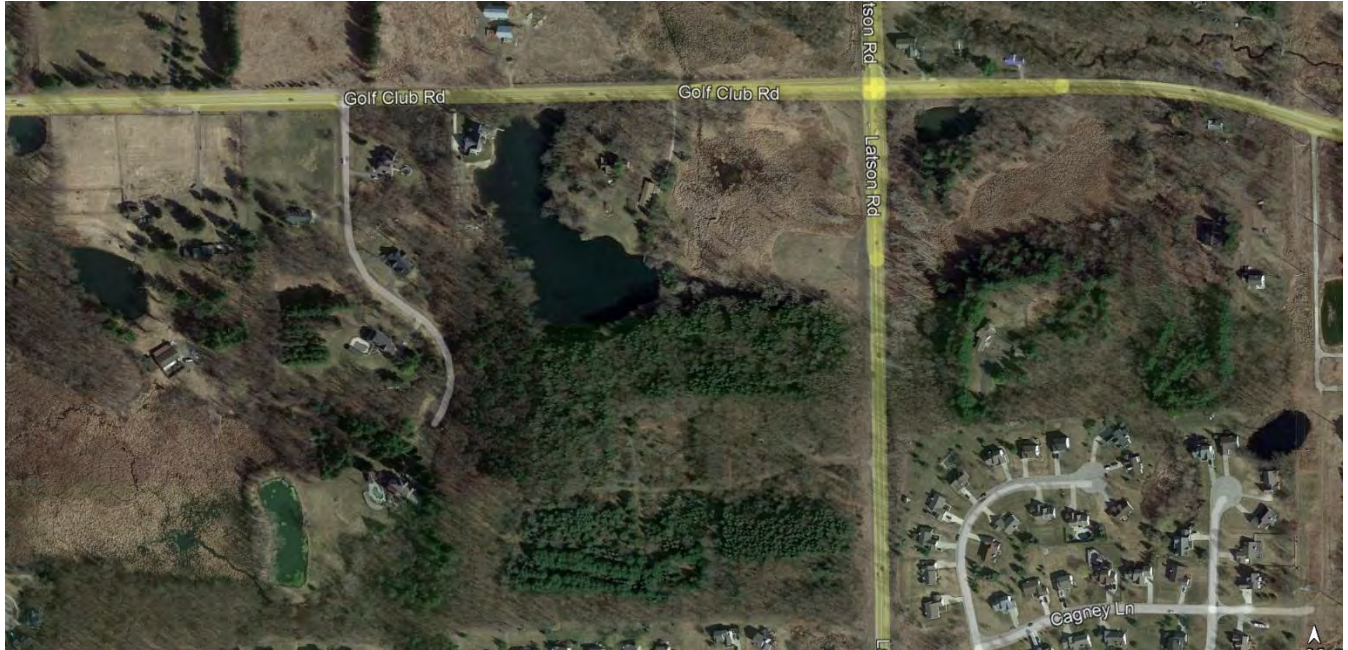
K. Description of all sources:

- Genoa Township Zoning Ordinance
- "Soil Survey of Livingston County Michigan" Soil Conservation Services, USDA



BIBLE BAPTIST CHURCH TRAFFIC IMPACT STUDY

Genoa Township, Michigan



Bergmann

Office: Midwest (Southfield)
29777 Telegraph Road, Suite 1640
Southfield, MI 48034

Phone: 248.663.1289

Email: srusso@bergmannpc.com
www.bergmannpc.com

March, 2022



BIBLE BAPTIST
C H U R C H



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KV - The Appendix documents were left out of the packet due to the number of pages. Please let staff know if you want to see the full document and it will be provided.



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1.0 Executive Summary

This report presents the methodologies, analyses, results, and recommendations of a Traffic Impact Study (TIS) for the proposed Bible Baptist Church in Genoa Township, Livingston County, Michigan. The project site is located in the southwest quadrant of the Latson Road & Golf Club Road intersection and is currently vacant. The proposed development plans include construction of a new church over two phases. Phase I would construct a 506-seat church with site access provided via a single driveway to Golf Club Road. Phase II would include an approximately 500-seat expansion with potential for a new right-in-right-out driveway to Latson Road.

The purpose of this study is to identify the traffic related impacts, if any, of the proposed project on the adjacent road network. This study was conducted in accordance with accepted traffic engineering practice and guidelines published by the Institute of Transportation Engineers (ITE) and applicable agency standards. Analysis of existing conditions indicate that all approaches and movements at the signalized intersection of Latson Road & Golf Club Road currently operate acceptably at a LOS D or better during the peak hours and will continue to operate acceptably in 2023 and 2026 no-build conditions.

Traffic volumes that are expected to be generated by the development for Phase I and Phase II were forecast based on the rates and equations published by ITE in *Trip Generation* as summarized in the table below. These trips were assigned to the study road network based on existing peak hour traffic patterns, zip code data provided by the Church for existing members, and ITE methodologies. These trips were added to the no-build traffic volumes to calculate the future build traffic volumes with the proposed development for each Phase.

Phase	ITE Code	Amount	Units	Average Daily Traffic	AM Peak Hour			PM Peak Hour			SUN IN Peak			SUN OUT Peak		
					In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Phase I	560	506	Seats	454	21	14	35	23	28	51	121	25	146	24	125	149
Phase II	560	1,000	Seats	913	42	28	70	45	55	100	249	52	301	50	259	309

The Conclusions related to this Traffic Impact Study and relative analyses are as follows:

1. At the time of this study, traffic volumes throughout the State of Michigan were impacted by restrictions in place associated with the COVID pandemic. Therefore, historic turning movement count data collected in April, 2019 was utilized to validate baseline traffic volumes for this study.
2. All approaches and movements at the study intersection of Latson Road & Golf Club Road currently operate acceptably at a LOS D or better during all peak hours.
3. Church time-of-day patterns and traffic volumes indicate approximately 80% of outbound traffic occurs in the first 30-minutes after service ends while approximately 85% of inbound traffic occurs in the 30-minutes prior to the service start time. Therefore, separate inbound and outbound analysis scenarios were completed as there will be minimal overlap between inbound and outbound traffic based on the one-hour separation between services.
4. All approaches and movements at the study intersection of Latson Road & Golf Club Road would continue to operate acceptably in the 2023 and 2026 no-build scenarios during all peak hours.
5. In accordance with LCRC standards, a left-turn lane and right-turn taper are warranted at the proposed site driveway to Golf Club Road under Phase I build conditions.
6. The 2023 Phase I build conditions analysis indicate that the proposed development will not have a significant impact on the adjacent road network. All approaches and movements at the intersection of Latson Road & Golf Club Road will continue to operate at a LOS D or better during all peak hours and minor increases in delay will not be discernable. Additionally, all approaches and movements at the proposed site driveway to Golf Club Road will operate acceptably. Therefore, the proposed development does not require any off-site roadway or traffic control improvements under Phase I build conditions.



7. In accordance with LCRC standards, a right-turn lane would be warranted at the proposed site driveway to Golf Club Road under Phase II build conditions.
8. The 2026 Phase II Alternative A build conditions analysis indicate the EB through/right-turn movement and WB left-turn movement at the signalized intersection of Latson Road & Golf Club Road would be reduced to a LOS F during the Sunday outbound peak 15-minute period. Additionally, the STOP controlled egress site driveway approach to Golf Club Road will operate at a LOS E or F during both the Sunday inbound and outbound peak 15-minute periods.
9. In order to improve traffic operations in the 2026 Phase II Alternative A build conditions, special Sunday timing plans during service times should be provided at the intersection of Latson Road & Golf Club Road.
10. In accordance with LCRC standards, a right-turn taper would be warranted at the proposed site driveway to Latson Road under Phase II Alternative B build conditions.
11. The 2026 Phase II Alternative B build conditions analysis indicate all approaches and movements at the intersection of Latson Road & Golf Club Road will continue to operate at a LOS D or better during all peak hours. At the proposed site driveways to Golf Club Road and Latson Road all approaches, and movements will operate acceptably at a LOS C or better during the weekday peak hours; however, the STOP controlled egress site driveway approaches to Golf Club Road and Latson Road will operate at a LOS F during the outbound peak 15-minute period.
12. Review of network simulations indicate a long vehicle queue on the site driveway approach to Golf Club Road during the outbound peak 15-minute period; however, the duration and length of this queue is reduced as compared to Alternative A. On the site driveway approach to Latson Road, the 95th percentile queue length is calculated to be 152 feet (six vehicles), which is not significant given the intensity of traffic utilizing this approach over a short duration of time. Therefore, the proposed development does not require any off-site roadway or traffic control improvements under Phase II Alternative B build conditions.
13. Queues from the signalized intersection of Latson Road & Golf Club Road would not block the site driveways to Golf Club Road or Latson Road under either Phase I or Phase II build conditions. Additionally, there will be no left-turn conflict along Golf Club Road between EB left turns at Latson Road and WB left turns at the proposed site driveway.
14. Site access Alternative B is recommended under Phase II build conditions as it would provide improved traffic operations for egress traffic from the site and reduce traffic impacts to the Latson Road & Golf Club Road intersection.

Based on the results of this study, the following improvements are recommended:

2023 Phase I Conditions

1. Construct left-turn lane and right-turn taper at proposed driveway to Golf Club Road.

2026 Phase II Alternative A Conditions

1. Construct right-turn lane at proposed driveway to Golf Club Road.
2. Install special timing plans at intersection of Latson Road & Golf Club Road associated with Sunday service times.

2026 Phase II Alternative B Conditions

1. Construct right-turn lane at proposed driveway to Golf Club Road.
2. Construct right-turn taper at proposed driveway to Latson Road.



2.0 Project Overview

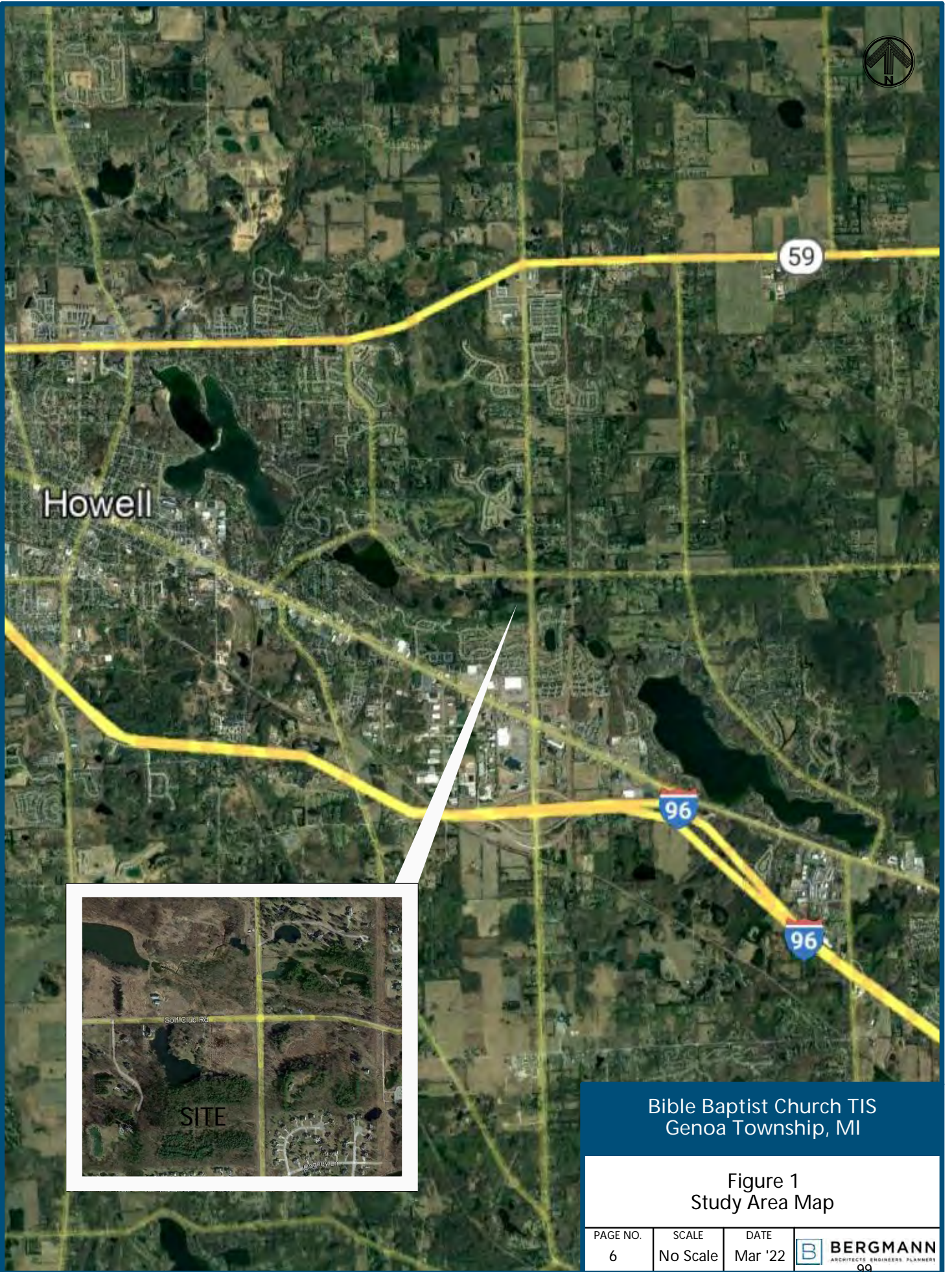
This report presents the methodologies, analyses, results, and recommendations of a Traffic Impact Study (TIS) for the proposed Bible Baptist Church in Genoa Township, Livingston County, Michigan. The project site is located in the southwest quadrant of the Latson Road & Golf Club Road intersection as shown on **Figure 1**, and is currently vacant. The proposed development plans include construction of a new church over two phases. Phase I would construct a 506-seat church with site access provided via a single driveway to Golf Club Road. Phase II would include an approximately 500-seat expansion with potential for a new right-in-right-out driveway to Latson Road.

Proposed Phase I site operations will include Sunday Church services beginning at 9:00 AM and 11:00 AM in addition to children's activities, small groups, youth ministry, and other meetings occurring during the week. Upon completion of Phase II only one Sunday service is planned to be held at 10:30 AM with no changes to weekday activities. No weekday childcare or school is planned as part of the proposed Church. This TIS will address existing and future traffic conditions during the weekday AM (7:00 AM to 9:00 AM) and PM (4:00 PM to 6:00 PM) peak hours as well as the peak hour during Sunday service times.

Latson Road and Golf Club Road are under jurisdiction of the Livingston County Road Commission (LCRC); whereby access permitting will be subject to LCRC review and standards. Additionally, the project is subject to Township review and standards through the site plan approval process. In accordance with Township and LCRC standards a Traffic Impact Study (TIS) has been required for the project.

The purpose of this study is to identify the traffic related impacts, if any, of the proposed project on the adjacent road network. This study therefore includes analysis of the site access points as well as key off-site intersections surrounding the site. Analysis of the site access points will determine appropriate lane configurations as well as traffic control to process site traffic safely and efficiently. Key off-site intersections are analyzed to determine if new site-generated traffic passing through these locations would require improvements to mitigate any impacted traffic operations.

The scope of this study was developed based on Bergmann's knowledge of the study area, understanding of the development program, accepted traffic engineering practice and information published by the Institute of Transportation Engineers (ITE). Additionally, Bergmann solicited input regarding the proposed scope of work from LCRC. The study analyses were completed using Synchro and SimTraffic, Version 11 traffic analysis software and in accordance with the methodologies and practices published by ITE and the applicable requirements of LCRC. This report is intended for use by LCRC and the Township to guide decisions related to development project approvals, access permitting, and identifying future roadway improvement needs.



Howell

59

96


96



SITE

Bible Baptist Church TIS
Genoa Township, MI

Figure 1
Study Area Map

PAGE NO. 6	SCALE No Scale	DATE Mar '22	 BERGMANN ARCHITECTS ENGINEERS PLANNERS
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3.0 Roadway Data

3.1 EXISTING ROAD NETWORK

The study intersections are identified below, and the existing lane use, and traffic control is shown on **Figure 2**. Further details on the study roadways are summarized in **Table 1**.

3.1.1 Study Intersections

- Latson Road & Golf Club Road (signalized); and
- The proposed site access drive(s) (unsignalized).

Table 1: Roadway Summary

Roadway Data	Latson Road	Golf Club Road
Functional Class	Minor Arterial	Major Collector
Direction	N - S	E - W
Speed Limit (mph)	55	55
Jurisdiction	LCRC	LCRC
Cross Section	2-Lane	2-Lane
AADT	22,300	7,400
AM Peak Hour Volume	1,400	555
PM Peak Hour Volume	1,915	820

At the intersection of Latson Road & Golf Club Road, a left-turn lane, through lane, and right-turn lane are provided on the NB and SB Latson Road approaches. On the EB and WB Golf Club Road approaches a left-turn lane and shared through / right-turn lane are provided. The intersection is traffic signal controlled with permissive-protected left-turn phasing provided for the NB approach. Vehicle actuation is provided for all movements at the intersection. No marked crosswalks or pedestrian signals are provided for any legs of the intersection.

3.1.2 Existing Traffic Data

Historic 24-hour turning movement volumes at the intersection of Latson Road & Golf Club Road were obtained from LCRC for all days between November 11th and December 9th, 2021. During this time period, traffic volumes throughout the State of Michigan were impacted by restrictions in place associated with the COVID pandemic. Therefore, historic turning movement count data collected at the intersection on April 2nd, 2019 was also provided by LCRC. Traffic volume data are included in **Appendix A** and baseline traffic volumes were established as detailed in the subsequent sections.

Peak Hour Factors

All data were aggregated in 15-minute intervals to establish the current peak hour traffic volumes and peak hour factors (PHFs). Weekday PHFs at the study intersections were calculated by approach based on the requirements of MDOT's *Electronic Traffic Control Device Guidelines*. However, given the strong peaking characteristics of churches associated with service start and end times, PHFs were calculated by movement during the Sunday analysis periods. In order to determine the PHFs at the proposed site driveways, traffic volumes collected at three existing churches in southeast Michigan were reviewed and indicate an average PHF of 0.45 and 0.40 for entering and exiting traffic, respectively. Therefore, these PHFs were utilized for entering and exiting traffic movements at the site driveways for the Sunday analysis periods. For the weekday analysis periods, a PHF of 0.92 was utilized as traffic associated with weekday uses is less concentrated and more spread-out throughout the hour. For the Sunday build analysis scenarios, PHFs at the intersection of Latson Road & Golf Club Road were recalculated for movements to



and from the site by conservatively assuming the peak 15-minutes associated with Church traffic would coincide with the existing peak 15-minutes at the intersection.

Heavy Vehicle Percentage

Commercial truck percentages from the April, 2019 turning movement count were utilized during the weekday AM and PM peak hour and calculated by approach. For the Sunday analysis periods a default commercial truck percentage of 2% was utilized as truck data was not available.

Weekday Volumes

Weekday (Monday – Friday) AM and PM peak hour volumes were calculated for all days between November 11th and December 9th. This data was reviewed and any days which did not represent normal travel volumes and conditions were removed. The remaining days were averaged together to establish 2021 peak hour volumes. The 2021 peak hour volume was then compared to the pre-COVID 2019 turning movement count to determine if any volume adjustments were necessary. This comparison indicates similar overall traffic volumes at the intersection; however, some of the turning movement patterns have changed, particularly along the NB approach during the PM peak hour.

Commuting patterns through this area favor traffic traveling to the south and east during the morning peak hour and traffic traveling to the north and west during the afternoon peak hour. In mid to late 2019 improvements were made at the M-59 & Eager Road intersection which included widening of the Eager Road approaches to provide left turn lanes and installation of a traffic signal. This improved operations and safety for left turns at the intersection and made the shorter route of Golf Club Road to Eager Road more viable for traffic traveling from Latson Road south of Golf Club Road wishing to travel west on M-59. As such the shift in traffic patterns along the NB approach during the PM peak hour is likely attributed to these improvements.

Therefore, baseline traffic volumes for this study were established by taking the higher of the two volumes between the 2021 average and April, 2019 count for all turning movements during the peak hours with the exception of the NB approach during the PM peak hour. For this approach, the higher 2019 total approach volume was utilized and applied to the 2021 turning movement proportions along the approach. The resulting baseline weekday peak hour volumes are summarized on **Figure 3**.

Sunday Volumes

For Phase I, the peak hour will occur between services from 10:00 AM to 11:00 AM when vehicles from the first service are leaving and vehicles for the second service are arriving. For Phase II, the peak hour will occur after the lone service from 11:30 AM to 12:30 PM. Therefore, Sunday traffic volume data between 9:45 AM and 11:45 AM was utilized to establish Phase I peak hour volumes and traffic volume data between 11:30 AM and 1:00 PM was utilized to establish Phase II peak hour volumes and account for any potential shifts of service times in the future.

Peak hour volumes for each phase were calculated for all Sundays between November 11th and December 9th. Data was reviewed and any days which did not represent normal travel volumes and conditions were removed. Baseline traffic volumes were then conservatively established by taking the highest volume amongst all Sundays for each turning movement at the intersection. The resulting baseline Sunday peak hour volumes are summarized on **Figure 4**.

3.1.3 Analysis Methodologies

The performance of the study intersections was evaluated through a qualitative measure of operating conditions called Levels of Service (LOS). Six LOS are defined with letter designations from A to F with LOS A representing minimal delay, and LOS F indicating failing conditions. Typically, LOS D is considered acceptable in suburban/urban areas.



The LOS measurement for both signalized and unsignalized intersections is average control delay, which is quantified in terms of seconds of delay per vehicle. Control delay includes deceleration delay, stopped delay, queue move-up delay, and acceleration delay. The LOS criteria for unsignalized and signalized intersections taken from the HCM are included in **Appendix B**.

The operational analyses of all study intersections were performed using Synchro, Version 11 traffic analysis software. Synchro 11 is a software package used for modeling, optimizing, and simulating traffic systems. The LOS and delay calculations are based on the procedures and methodologies outlined in the Transportation Research Board’s *Highway Capacity Manual, 6th Edition* (HCM6) which sets forth nationally accepted standards regarding traffic operations and capacity analysis.

In accordance with the HCM6, the capacity analysis is based on an evaluation of the peak 15-min period during the hour. Church time-of-day patterns and traffic volumes from three churches in southeast Michigan are summarized in **Chart 1** and indicate approximately 80% of outbound traffic occurs in the first 30-minutes after service has ended while approximately 85% of inbound traffic occurs in the 30-minutes prior to the service start time. Based on the proposed one-hour separation between the end of the first service and beginning of the second service, there will be minimal overlap between entering and exiting traffic volumes in the peak 15-minutes associated with each service. As such, analysis of a single time period with all forecast inbound and outbound traffic and application of PHFs previously identified would provide an overprediction of demand and delay.

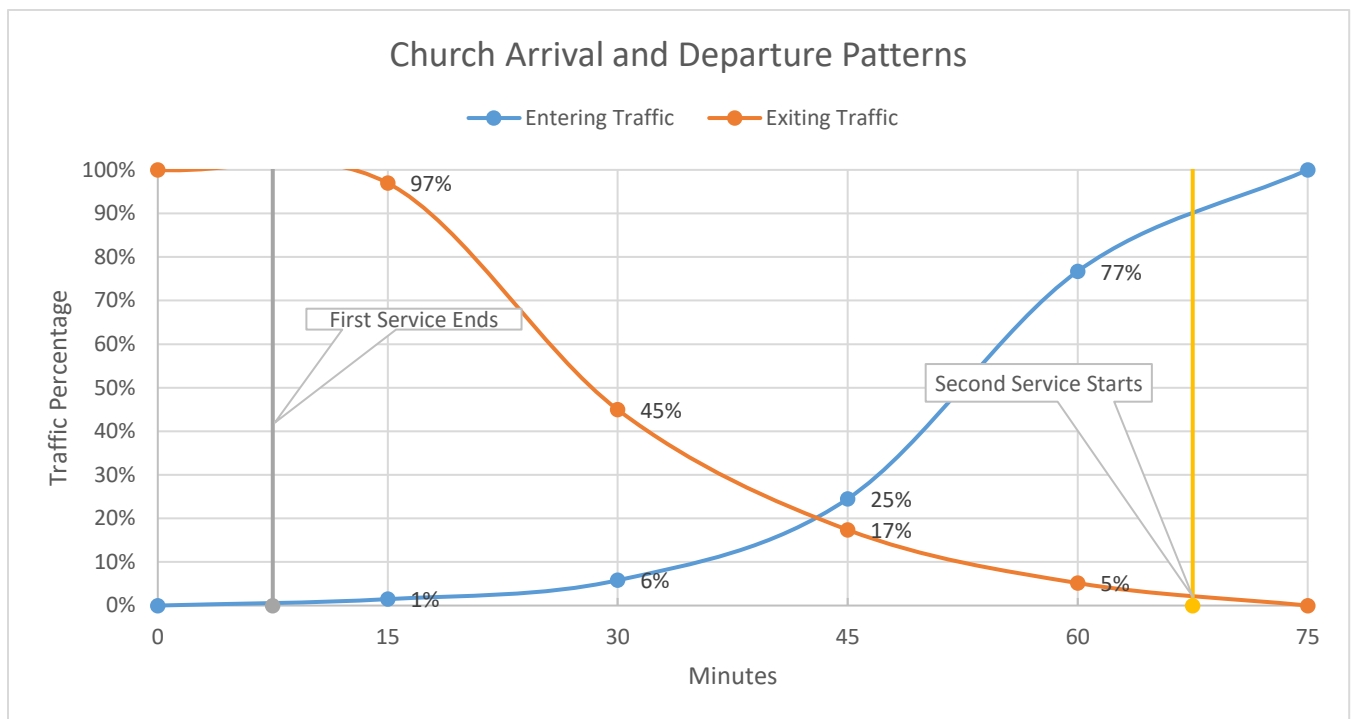
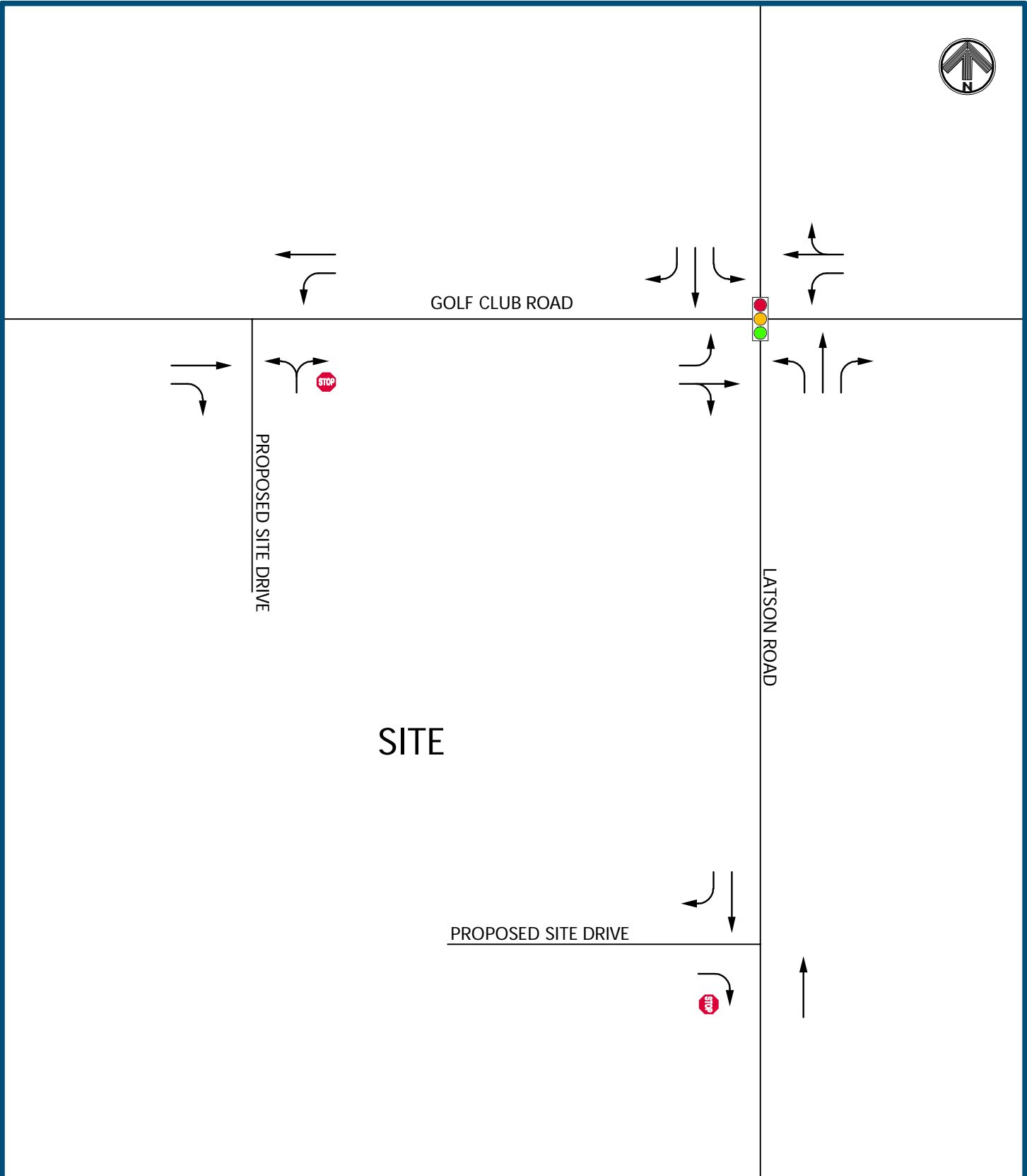


Chart 1: Church Arrival and Departure Patterns

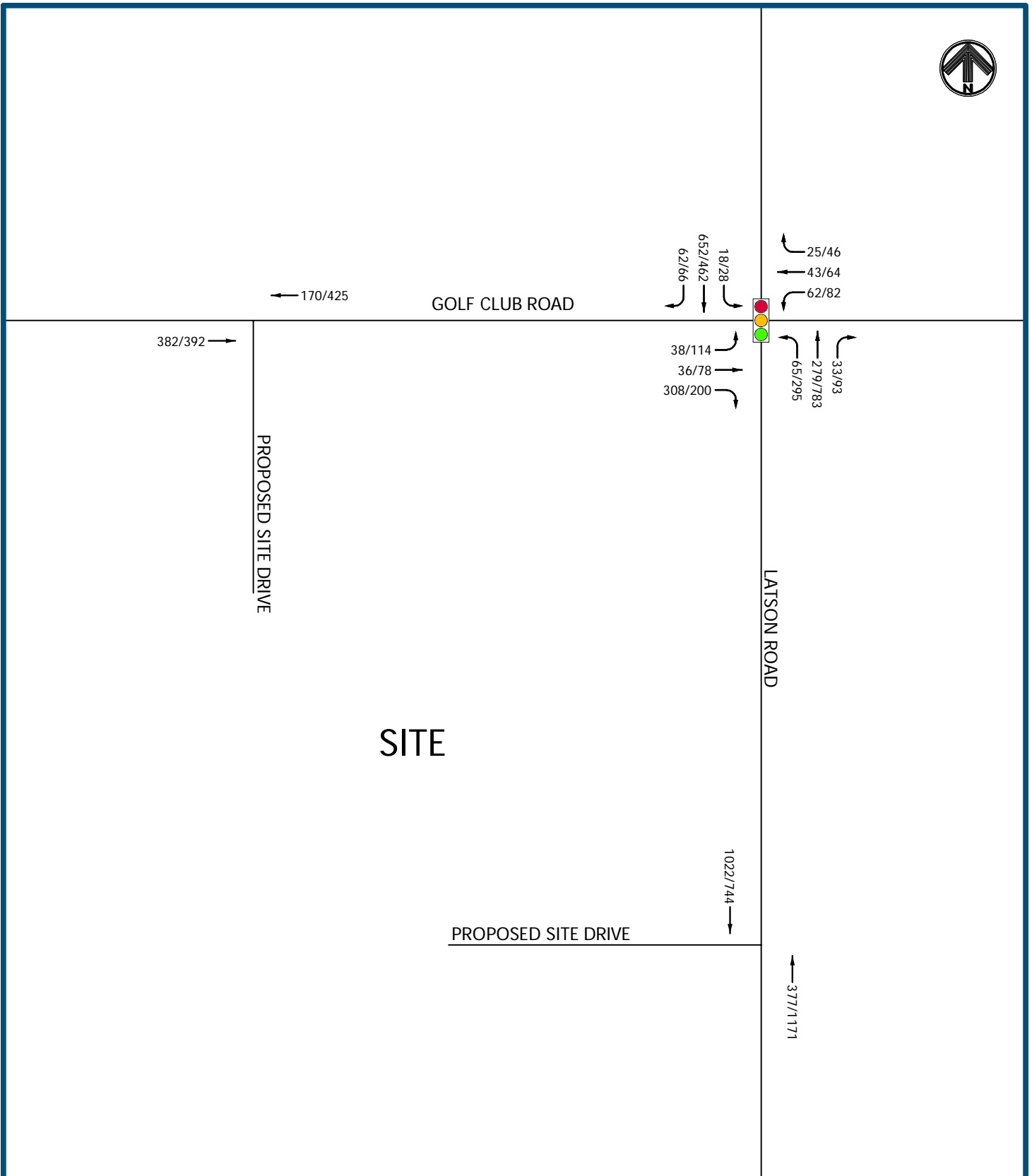
In order to analyze two different 15-minute intervals, a separate inbound and outbound analysis scenario was completed for Phase I. For each scenario, only 20% of traffic in the non-peak direction was assumed to overlap with the peak direction being analyzed. This same approach was utilized for the Phase II analysis and accounts for a second Phase II service in the future should one ever be added.

Queue length calculations were conducted using SimTraffic, Version 11 software. The existing conditions SimTraffic models were calibrated in accordance with the procedures outlined in the MDOT *Electronic Traffic Control Device Guidelines*.



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Figure 2
Lane Use and Traffic Control

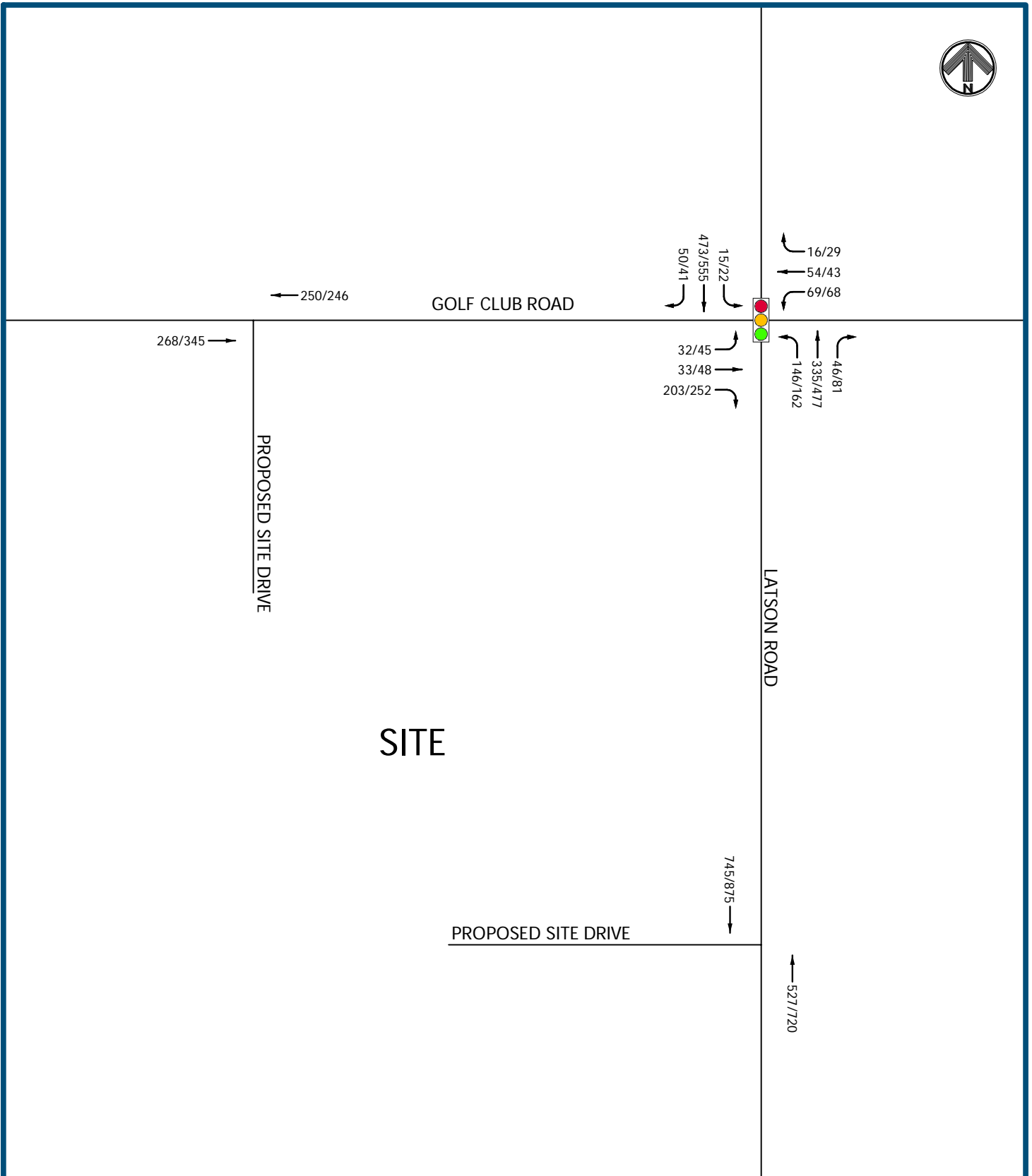


###/### AM/PM PEAK HOUR VOLUME

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Figure 3
Existing Weekday Traffic Volumes

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Figure 4
Existing Sunday Traffic Volumes

###/### SUN PHASE I/SUN PHASE II PEAK HOUR VOLUME

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4.0 Existing Traffic Conditions Analysis

4.1 EXISTING TRAFFIC CONDITIONS

Existing peak hour vehicle delays and LOS were calculated at the study intersections based on the existing lane configurations and traffic control shown on **Figure 2**, the existing traffic volumes shown on **Figure 3**, and the methodologies presented in the HCM6.

The HCM6 methodology conservatively assumes a right-turn-on-red flow rate of zero vehicles in cases where it is not explicitly known from field data. As the EB Golf Club Road approach has a high-volume of right-turning vehicles and low volume of through vehicles, field reviews were conducted to determine a right-turn-on-red flow rate. During field reviews, between two and three vehicles per cycle were observed turning right on red for this approach during the AM and SUN peak hour and between one and two vehicles per cycle were observed turning right on red during the PM peak hour. Therefore, based on the field observations and the intersection cycle length currently in operation during the peak periods, a right-turn-on-red flow rate of 75 vehicles per hour was utilized for the AM and SUN peak hour and 50 vehicles per hour was utilized during the PM peak hour.

Simulations of the study network were also observed using SimTraffic, in order to identify potential issues related to vehicle queuing, traffic flow between intersections, and the overall study network. The results of the analysis of existing conditions are presented in **Appendix B**, summarized in **Table 2** and described in further detail below.

Table 2: Existing 2021 Traffic Conditions

Intersection	Control	Approach	Movement	Existing Conditions									
				AM Peak		PM Peak		SUN Phase I		SUN Phase II			
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS		
Latson Road & Golf Club Road	Signal	EB	Left	23.0	C	26.4	C	20.9	C	22.6	C		
			Thru/Right	30.2	C	26.4	C	21.1	C	23.5	C		
		WB	Left	34.6	C	32.6	C	25.2	C	29.0	C		
			Thru/Right	21.2	C	21.3	C	19.1	B	20.3	C		
		NB	Left	16.0	B	22.4	C	12.8	B	15.1	B		
			Thru	9.1	A	14.5	B	7.4	A	9.2	A		
			Right	7.7	A	8.0	A	6.0	A	7.0	A		
		SB	Left	13.3	B	24.7	C	12.6	B	14.1	B		
			Thru	24.7	C	25.8	C	19.0	C	21.6	C		
			Right	13.6	B	17.8	B	12.9	B	14.0	B		
		Overall				21.9	C	20.8	C	15.5	B	17.1	B

The results of the existing conditions analysis indicate that all approaches and movements at the intersection of Latson Road & Golf Club Road currently operate acceptably at a LOS C or better during the peak hours. Observation of peak hour simulations also indicate acceptable traffic operations during the peak hours with vehicles processed during each signal cycle and significant vehicle queues are not observed. Furthermore, SimTraffic vehicle delays for the EB shared through/right-turn lane are calculated to be 20.6, 27.0, 13.1, and 17.9 seconds per vehicle during the AM, PM, SUN Phase I, and SUN Phase II peak hours, respectively, validating the field reviews and right-turn-on-red flow rates utilized for this approach.

5.0 No-Build Traffic Conditions Analysis

Traffic impact studies typically include an evaluation of traffic operations in the future as they would be without the proposed development. This no-build condition serves to identify any mitigation that may be required, regardless of the project, and as a baseline for comparison of future buildout conditions. This scenario is comprised of existing traffic conditions, plus ambient traffic growth, plus traffic from approved developments in the study area that have



yet to be constructed. At the time of the 2021 traffic counts the following developments were identified within the study area and immediate vicinity that have yet to be constructed or were currently under construction:

1. Versa Mixed-Use Development
2. Westbury Phase II Residential Development

The vehicle trips that would be generated by the background developments were assigned to the study intersections based on the respective traffic study completed for each development. Where a traffic study was not completed for the development or the traffic study did not include the same intersections as this study, the number of vehicle trips was forecast based on data published by ITE in *Trip Generation, 11th Edition* and assigned to the study road network based on existing traffic patterns.

In addition to background developments, an ambient growth factor is applied to existing traffic volumes to account for future projects in the study area and population increases, as well as growth in regular traffic volumes due to development projects outside the study area. The recent construction of the I-96 & Latson Road interchange has resulted in significant changes in traffic patterns throughout the study area. As a result, historical traffic volumes do not provide an accurate representation of traffic growth in the area. Therefore, publicly available data from the Southeast Michigan Council of Governments (SEMCOG), including population and employment forecasts for Genoa Township were referenced.

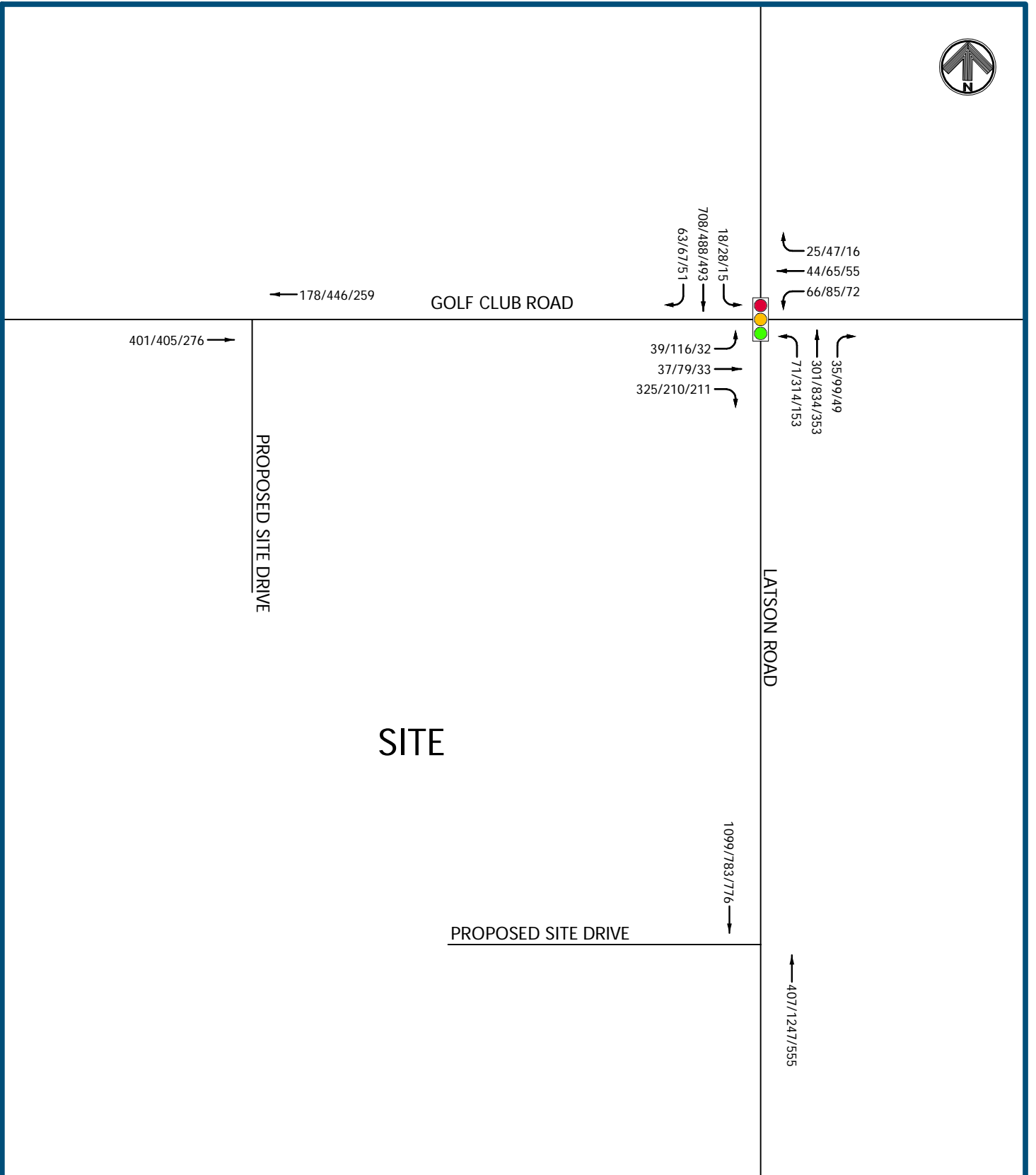
Table 3: SEMCOG Community Annual Growth Summary

Community	Measure	2015	2045	Growth
Genoa Township	Employment	12,072	13,534	0.38%
	Population	20,815	32,907	1.54%
Howell	Employment	10,365	11,527	0.35%
	Population	9,489	11,256	0.57%
Brighton	Employment	10,791	12,425	0.47%
	Population	17,791	21,883	0.69%
Brighton Township	Employment	10,772	12,986	0.63%
	Population	7,444	12,127	1.64%
AVERAGE				0.78%

The SEMCOG data indicates annual population and employment growths ranging from 0.35% to 1.64% between 2015 and 2045 as shown in **Table 3**. Therefore, an ambient background growth rate of 0.75% per year was utilized for this study. The ambient growth rate and trips from the background developments were applied to the existing 2021 traffic volumes to forecast the future 2023 and 2026 no-build traffic volumes **without the proposed development**. The resultant 2023 and 2026 no-build traffic volumes are summarized on **Figure 5** and **Figure 6**, respectively.

5.1 2023 NO-BUILD TRAFFIC CONDITIONS

2023 no-build peak hour vehicle delays and LOS were calculated at the study intersections based on the existing lane configurations and traffic control shown on **Figure 2**, the 2023 no-build traffic volumes shown on **Figure 5**, and the methodologies presented in the HCM6. The results of the analysis of 2023 no-build conditions are presented in **Appendix C**, summarized in **Table 4** and described in further detail below.



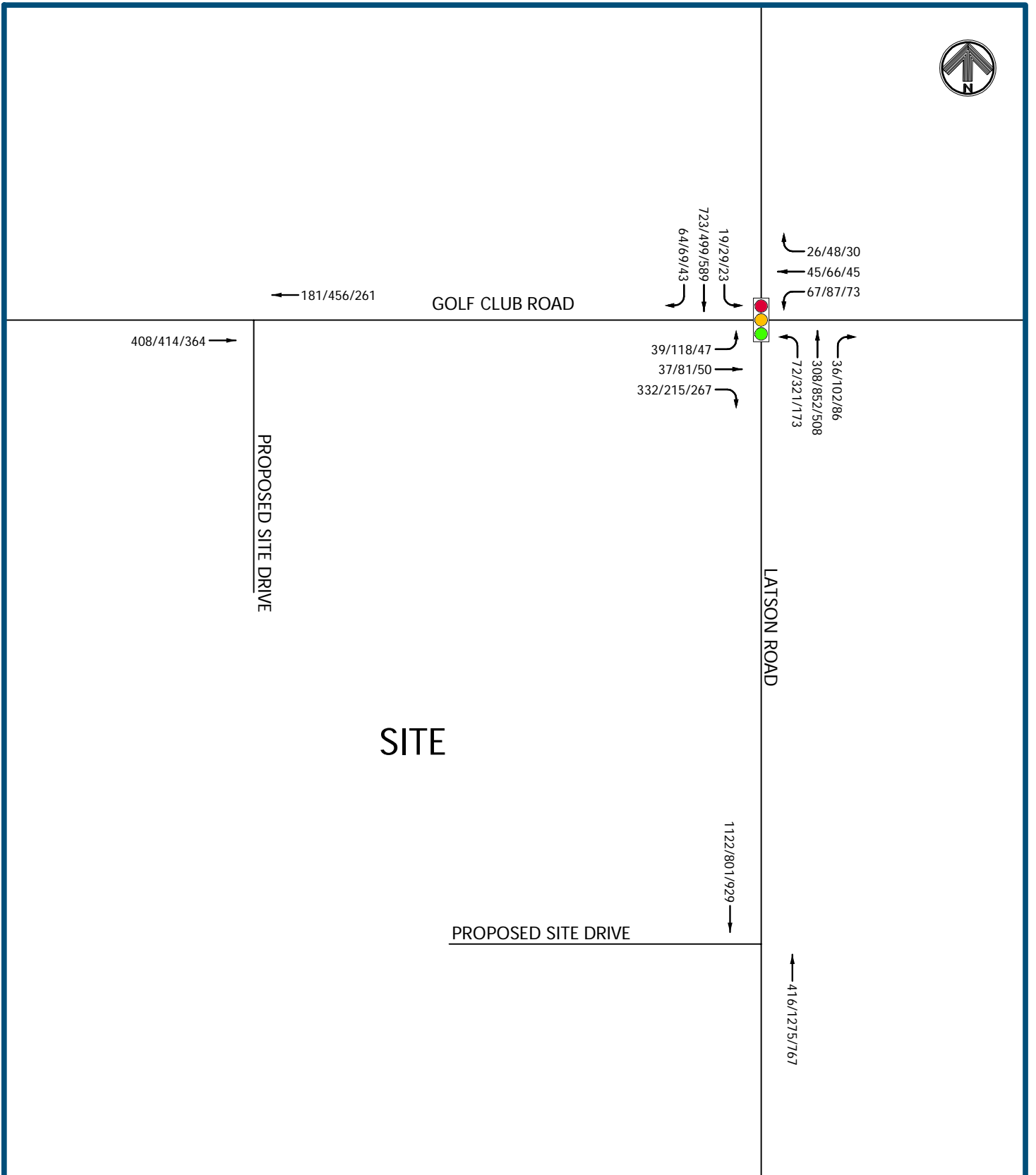
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**Figure 5
2023 Phase I No-Build Traffic Volumes**

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###/###/### AM/PM/SUN PEAK HOUR VOLUME



###/### AM/PM/SUN PEAK HOUR VOLUME

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Figure 6
2026 Phase II No-Build Traffic Volumes

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Table 4: 2023 No-Build Traffic Conditions

Intersection	Control	Approach	Movement	AM Peak				PM Peak				SUN Peak			
				Existing		No-Build		Existing		No-Build		Existing		No-Build	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Latson Road & Golf Club Road	Signal	EB	Left	23.0	C	25.2	C	26.4	C	28.1	C	20.9	C	21.4	C
			Thru/Right	30.2	C	38.5	D	26.4	C	29.4	C	21.1	C	21.7	C
		WB	Left	34.6	C	41.6	D	32.6	C	35.8	D	25.2	C	26.2	C
			Thru/Right	21.2	C	23.1	C	21.3	C	22.5	C	19.1	B	19.6	B
		NB	Left	16.0	B	17.0	B	22.4	C	26.9	C	12.8	B	13.6	B
			Thru	9.1	A	8.8	A	14.5	B	15.7	B	7.4	A	7.8	A
			Right	7.7	A	7.3	A	8.0	A	7.9	A	6.0	A	6.2	A
		SB	Left	13.3	B	12.7	B	24.7	C	27.2	C	12.6	B	13.0	B
			Thru	24.7	C	27.0	C	25.8	C	26.5	C	19.0	C	20.0	C
			Right	13.6	B	13.0	B	17.8	B	17.9	B	12.9	B	13.2	B
Overall				21.9	C	24.8	C	20.8	C	22.5	C	15.5	B	16.2	B

The results of the 2023 no-build conditions analysis indicate that all approaches and movements at the intersection of Latson Road & Golf Club Road will continue to operate acceptably at a LOS D or better during the peak hours. Observation of network simulations also indicate acceptable traffic operations during the peak hours with vehicles processed during each signal cycle and significant vehicle queues are not observed.

5.2 2026 NO-BUILD TRAFFIC CONDITIONS

2026 no-build peak hour vehicle delays and LOS were calculated at the study intersections based on the existing lane configurations and traffic control shown on Figure 2, the 2026 no-build traffic volumes shown on Figure 6, and the methodologies presented in the HCM6. The results of the analysis of 2026 no-build conditions are presented in Appendix C, summarized in Table 5 and described in further detail below.

Table 5: 2026 No-Build Traffic Conditions

Intersection	Control	Approach	Movement	AM Peak				PM Peak				SUN Peak			
				Existing		No-Build		Existing		No-Build		Existing		No-Build	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Latson Road & Golf Club Road	Signal	EB	Left	23.0	C	25.8	C	26.4	C	29.0	C	22.6	C	24.1	C
			Thru/Right	30.2	C	42.4	D	26.4	C	31.4	C	23.5	C	25.7	C
		WB	Left	34.6	C	45.6	D	32.6	C	38.5	D	29.0	C	32.0	C
			Thru/Right	21.2	C	23.7	C	21.3	C	23.1	C	20.3	C	21.6	C
		NB	Left	16.0	B	17.3	B	22.4	C	29.1	C	15.1	B	17.0	B
			Thru	9.1	A	8.7	A	14.5	B	16.1	B	9.2	A	10.0	B
			Right	7.7	A	7.2	A	8.0	A	7.8	A	7.0	A	7.5	A
		SB	Left	13.3	B	12.6	B	24.7	C	28.1	C	14.1	B	14.8	B
			Thru	24.7	C	27.6	C	25.8	C	26.6	C	21.6	C	23.4	C
			Right	13.6	B	12.9	B	17.8	B	17.8	B	14.0	B	14.7	B
Overall				21.9	C	26.0	C	20.8	C	23.4	C	17.1	B	18.6	B

The results of the 2026 no-build conditions analysis indicate that all approaches and movements at the intersection of Latson Road & Golf Club Road will continue to operate acceptably at a LOS D or better during the peak hours. Observation of network simulations also indicate acceptable traffic operations during the peak hours with vehicles processed during each signal cycle and significant vehicle queues are not observed.



6.0 2023 Phase I Build Conditions Analysis

Phase I of the development plan is proposed to include a 506-seat church with site access provided via a single driveway to Golf Club Road.

6.1 SITE TRIP GENERATION

The number of AM, PM, and SUN peak hour vehicle trips that would be generated by the proposed development was forecast based on data published by ITE in *Trip Generation, 11th Edition*. The ITE land use that most closely matches the operations of the proposed development is *Land Use #560, Church*. The ITE trip generation forecast for the Sunday peak hour indicates an almost equal number of entering and exiting trips. This indicates that the data was likely collected at churches with multiple service times where the peak hour occurs between services. The ITE trip generation forecast for Phase I is summarized in **Table 6**.

Table 6: Phase I ITE Site Trip Generation

Land Use	ITE Code	Amount	Units	Average Daily Traffic	AM Peak Hour			PM Peak Hour			SUN Peak Hour		
					In	Out	Total	In	Out	Total	In	Out	Total
Church	560	506	Seats	454	21	14	35	23	28	51	121	125	246

As Phase I is proposed to include two services, this data provides a good forecast of Phase I operations; however, as previously discussed, there will be minimal overlap between entering and exiting traffic volumes in the peak 15-minutes based on the one-hour separation between the end of the first service and beginning of the second service. Analysis of a single time period with all forecast inbound and outbound traffic and application of PHFs previously identified would provide an overprediction of demand and delay. Therefore, separate inbound and outbound analysis scenarios were analyzed. For each scenario, only 20% of traffic in the non-peak direction was assumed to overlap with the peak direction being analyzed. The resulting Phase I site trip generation forecast utilized for each Sunday analysis scenario is summarized in **Table 7**.

Table 7: Phase I Sunday Site Trip Generation

Land Use	ITE Code	Amount	Units	SUN INBOUND Peak			SUN OUTBOUND PEAK		
				In	Out	Total	In	Out	Total
Church	560	506	Seats	121	25	146	24	125	149

6.2 TRAFFIC ASSIGNMENTS

The vehicle trips that would be generated by the proposed development were assigned to the study road network based on existing peak hour traffic patterns, zip code data provided by the Church for existing members, and ITE methodologies. These methods indicate that new trips will return to their direction of origin. The zip code data was reviewed in combination with available routes to/from the proposed site. The resulting trip distribution utilized in this study is summarized in **Table 8**.

Table 8: Site Trip Distribution

To/From	Via	AM/PM/SUN
North	Latson Road	15%
South	Latson Road	30%
East	Golf Club Road	5%
West	Golf Club Road	50%
TOTAL		100%

As only one driveway is proposed for Phase I, all trips were assigned to enter and exit the site via Golf Club Road. The site-generated vehicle trips were assigned to the study network as shown on **Figure 7**. These trips were added



to the 2023 no-build traffic volumes shown on **Figure 5** to calculate the future build traffic volumes shown on **Figure 8**.

6.3 AUXILIARY LANE ANALYSIS

In order to determine the configuration of the proposed site driveway with Golf Club Road, warrants for right and left-turn lanes were evaluated in accordance with the LCRC *Specifications and Administrative Rules Regulating Driveways, Road Approaches, Banners and Parades on and Over Highways*. LCRC does not publish warranting criteria for right-turn lanes, so the MDOT right-turn lane warrant outlined in Section 1.1.4 of the *Geometric Design Guidance* was utilized. Evaluation of the forecast site traffic volume assignments versus warranting criteria indicate a left turn lane and right-turn taper only is warranted at the proposed site driveway to Golf Club Road under Phase I. Due to the required length of storage and taper, the left turn lane for the site driveway should tie in full width to the existing left turn lane at the Latson Road intersection. The applicable warrant evaluations are included in **Appendix D**.

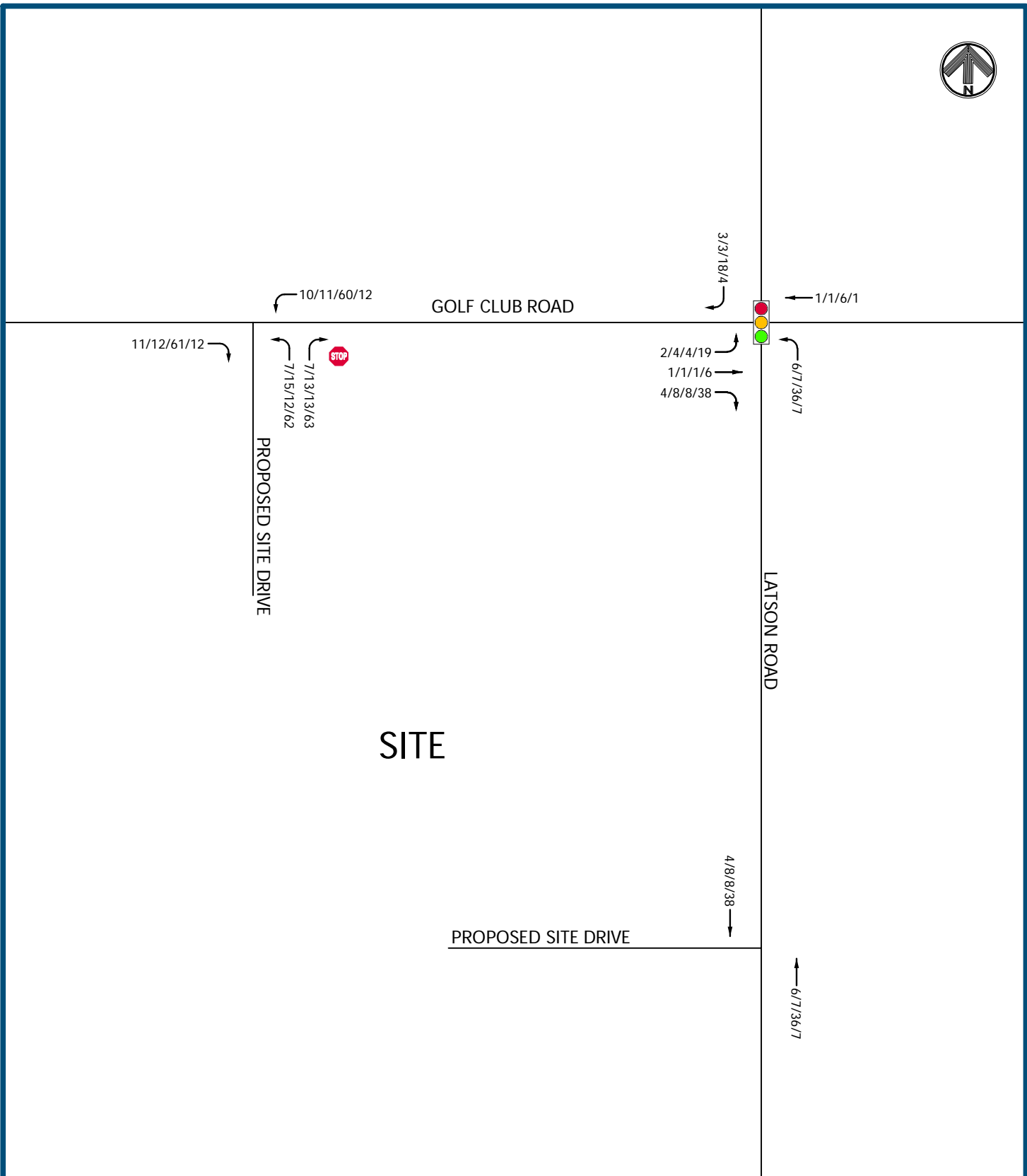
6.4 2023 PHASE I BUILD TRAFFIC CONDITIONS

Future 2023 phase I build peak hour vehicle delays and LOS *with the proposed development* were calculated based on existing lane configurations and traffic control shown on **Figure 2**, 2023 build traffic volumes shown on **Figure 8**, and HCM methodologies. SimTraffic simulations were also utilized to evaluate traffic flow and vehicle queues throughout the study network. The 2023 phase I build conditions results are included in **Appendix D** and summarized in **Table 9** and **Table 10**.

The results of the build conditions analysis indicate that the proposed development will not have a significant impact on the adjacent road network. All approaches and movements at the signalized intersection of Latson Road & Golf Club Road will continue to operate at a LOS D or better during all peak hour analysis scenarios and minor increases in delay will not be discernable. Additionally, all approaches and movements at the proposed site driveway to Golf Club Road will operate acceptably at a LOS C or better.

Table 9: 2023 Phase I Build Traffic Conditions - Weekday

Intersection	Control	Approach	Movement	AM Peak				PM Peak			
				No-Build		Phase I Build		No-Build		Phase I Build	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Latson Road & Golf Club Road	Signal	EB	Left	25.2	C	25.7	C	28.1	C	28.6	C
			Thru/Right	38.5	D	40.1	D	29.4	C	31.0	C
		WB	Left	41.6	D	43.0	D	35.8	D	37.6	D
			Thru/Right	23.1	C	23.2	C	22.5	C	22.7	C
		NB	Left	17.0	B	17.2	B	26.9	C	28.2	C
			Thru	8.8	A	8.8	A	15.7	B	15.6	B
			Right	7.3	A	7.3	A	7.9	A	7.9	A
		SB	Left	12.7	B	12.8	B	27.2	C	27.1	C
			Thru	27.0	C	27.1	C	26.5	C	26.6	C
			Right	13.0	B	13.1	B	17.9	B	18.0	B
Overall				24.8	C	25.2	C	22.5	C	23.0	C
Golf Club Road & Site Drive	STOP (Minor)	EB	Thru/Right	Free		Free		Free		Free	
		WB	Left			8.4	A			8.6	A
			Thru	Free		Free		Free		Free	
		NB	Left/Right			13.0	B			17.0	C

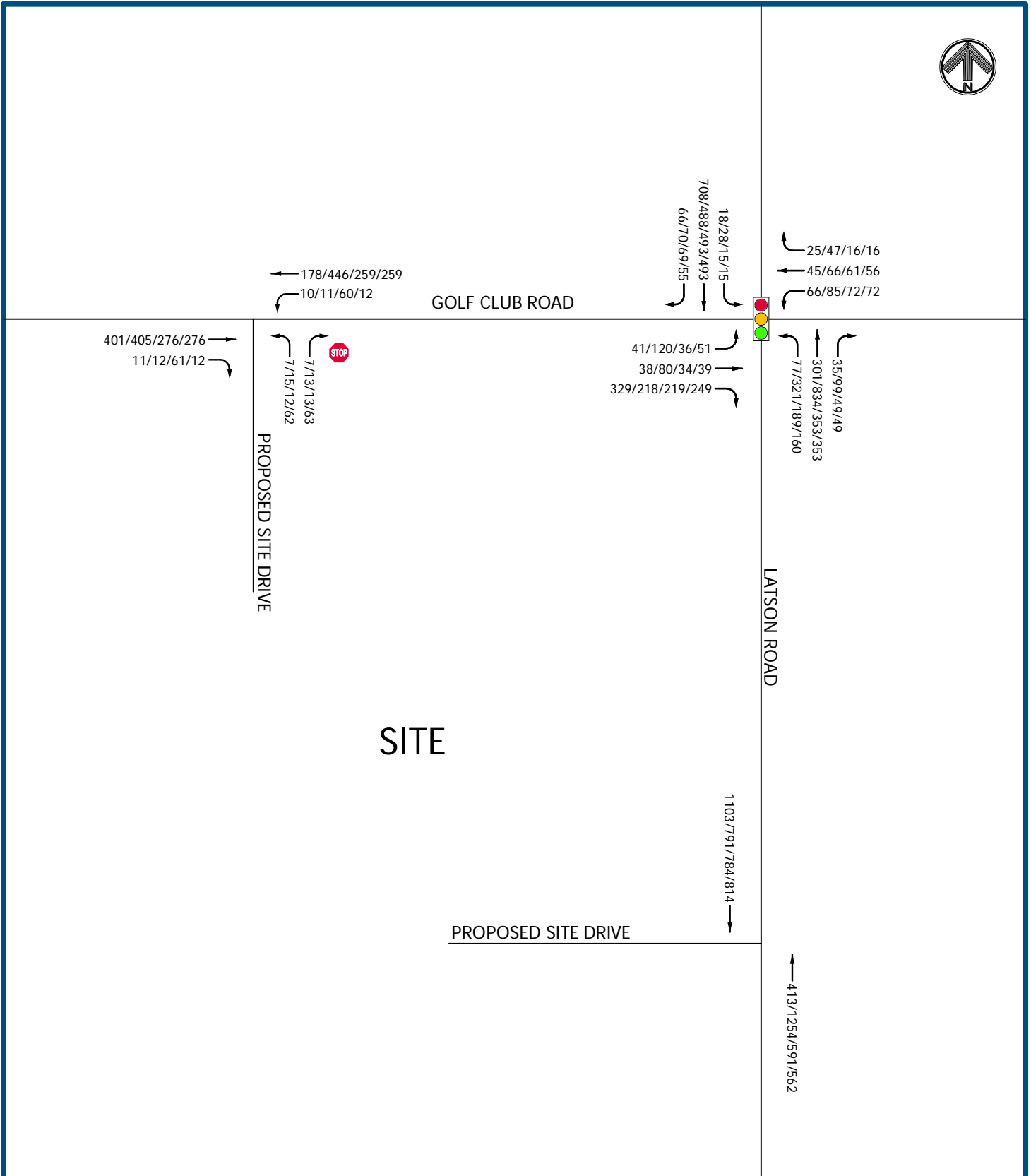


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Genoa Township, MI**

**Figure 7
Phase I Site Generated Traffic Volumes**

###/###/###/### AM/PM/SUN IN/SUN OUT PEAK HOUR VOLUME

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Figure 8
2023 Phase I Build Traffic Volumes

###/###/###/### AM/PM/SUN IN/SUN OUT PEAK HOUR VOLUME


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Table 10: 2023 Phase I Build Traffic Conditions - Sunday

Intersection	Control	Approach	Movement	SUN Peak					
				No-Build		Build INBOUND		Build OUTBOUND	
				Delay	LOS	Delay	LOS	Delay	LOS
Latson Road & Golf Club Road	Signal	EB	Left	21.4	C	24.9	C	24.1	C
			Thru/Right	21.7	C	24.7	C	26.6	C
		WB	Left	26.2	C	30.5	C	32.5	C
			Thru/Right	19.6	B	22.1	C	20.6	C
		NB	Left	13.6	B	19.5	B	18.2	B
			Thru	7.8	A	8.2	A	9.9	A
			Right	6.2	A	6.6	A	8.0	A
		SB	Left	13.0	B	15.2	B	16.3	B
			Thru	20.0	C	23.3	C	25.0	C
			Right	13.2	B	16.2	B	17.0	B
Overall			16.2	B	19.0	B	20.4	C	
Golf Club Road & Site Drive	STOP (Minor)	EB	Thru/Right	Free		Free		Free	
			Left			8.8	A	8.1	A
		WB	Thru	Free		Free		Free	
			Left/Right			16.2	C	23.4	C

Review of peak hour simulations also indicate future build traffic operations which are similar to no-build conditions with significant vehicle queues not observed. Vehicle queue lengths from the signalized intersection of Latson Road & Golf Club Road were also calculated and evaluated with respect to the proposed driveway located approximately 650 feet west of Latson Road. The results of this evaluation indicate a 95th percentile queue length of 237 feet or less during all peak hours for the EB approach which would not extend back past the proposed site driveway. Additionally, the EB left-turn movement from Golf Club Road onto Latson Road and WB left-turn movement into the proposed site driveway would experience a combined 95th percentile queue length of 161 feet or less during the peak hours which would not result in any left-turn conflict. Therefore, the proposed development does not require any off-site roadway or traffic control improvements under Phase I build conditions.

7.0 2026 Phase II Build Conditions Analysis

Phase II of the development plan is proposed to expand the church to 1,000 seats. The following two site access alternatives were analyzed for Phase II:

1. Alternative A: Site access provided via a single driveway to Golf Club Road.
2. Alternative B: Site access provided via one driveway to Golf Club Road and a right-in-right-out driveway to Latson Road.

7.1 SITE TRIP GENERATION

The number of AM, PM, and SUN peak hour vehicle trips that would be generated by the proposed development was forecast utilizing the methodologies and assumptions discussed for Phase I. The ITE trip generation forecast for Phase II is summarized in Table 11.

Table 11: Phase II ITE Site Trip Generation

Land Use	ITE Code	Amount	Units	Average Daily Traffic	AM Peak Hour			PM Peak Hour			SUN Peak Hour		
					In	Out	Total	In	Out	Total	In	Out	Total
Church	560	1,000	Seats	913	42	28	70	45	55	100	249	259	508



Phase II is planned to only include one service at this time; however, a second service may be added at some point in the future. Therefore, separate inbound and outbound analysis scenarios were once again analyzed for Phase II. For each scenario, only 20% of traffic in the non-peak direction was assumed to overlap with the peak direction being analyzed. The resulting Phase II site trip generation forecast utilized for each Sunday analysis scenario is summarized in **Table 12**.

Table 12: Phase I Sunday Site Trip Generation

Land Use	ITE Code	Amount	Units	SUN IN Peak Hour			SUN OUT Peak Hour		
				In	Out	Total	In	Out	Total
Church	560	1,000	Seats	249	52	301	50	259	309

7.2 TRAFFIC ASSIGNMENTS

The vehicle trips that would be generated by the proposed development were assigned to the study road network based on the trip distribution methodologies and assumptions developed for Phase I and summarized in **Table 8**. For Phase II Alternative A, all trips were assigned to enter and exit the site via Golf Club Road. For Phase II Alternative B, all egress traffic to the south on Latson Road was assigned to utilize the RIRO driveway. All remaining outbound traffic was assigned to the Golf Club Road driveway. For inbound, all traffic from the north was assigned to the RIRO driveway while all traffic from the south, east, and west was assigned to the Golf Club Road driveway. The site-generated vehicle trips were assigned to the study network as shown on **Figure 9** and **Figure 10**. These trips were added to the 2026 no-build traffic volumes shown on **Figure 6** to calculate the future Phase II build traffic volumes shown on **Figure 11** and **Figure 12**.

7.3 AUXILIARY LANE ANALYSIS

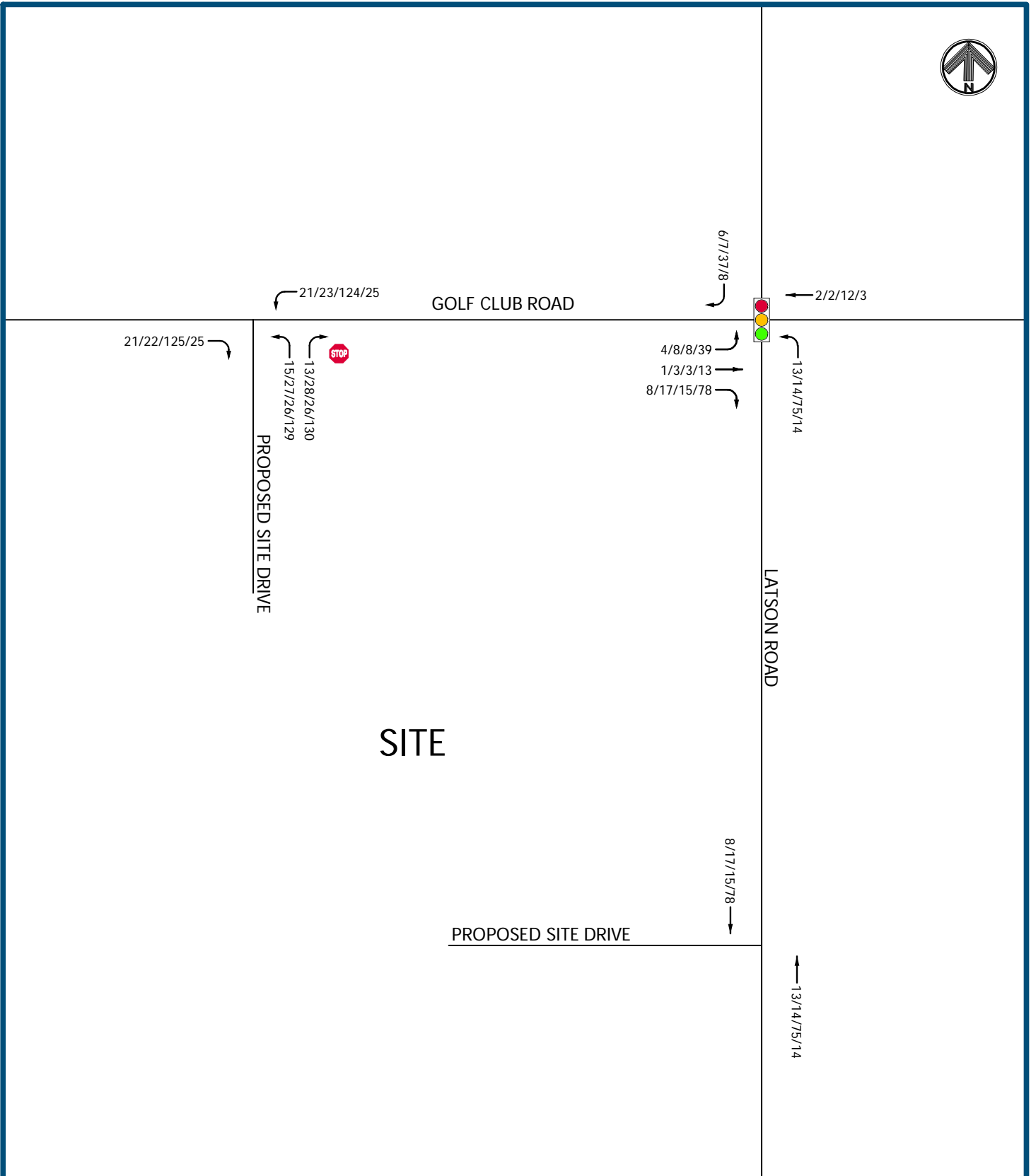
In order to determine the configuration of the proposed site driveway(s) with Golf Club Road and Latson Road, warrants for right-turn lanes were evaluated for each Phase II site access alternative in accordance with the *LCRC Specifications and Administrative Rules Regulating Driveways, Road Approaches, Banners and Parades on and Over Highways*. Evaluation of the forecast site traffic volume assignments versus warranting criteria indicate a right turn lane would be warranted at the Golf Club Road driveway under both site access alternatives. At the Latson Road driveway, a right-turn taper only would be warranted under Alternative B. The applicable warrant evaluations are included in **Appendix E**.

7.4 2026 PHASE II BUILD TRAFFIC CONDITIONS – ALTERNATIVE A

Future 2026 Phase II Alternative A build peak hour vehicle delays and LOS *with the proposed development* were calculated based on existing lane configurations and traffic control shown on **Figure 2**, 2026 build traffic volumes shown on **Figure 11**, and HCM methodologies. SimTraffic simulations were also utilized to evaluate traffic flow and vehicle queues throughout the study network. The 2026 Phase II Alternative A build conditions results are included in **Appendix E** and summarized in **Table 13** and **Table 14**.

The results of the build conditions analysis indicate that the proposed development will not have a significant impact on the adjacent road network during the weekday peak hours. All approaches and movements at the signalized intersection of Latson Road & Golf Club Road will continue to operate at a LOS D or better and minor increases in delay will not be discernable. Additionally, all approaches and movements at the proposed site driveway to Golf Club Road will operate acceptably at a LOS C or better during the weekday peak hours.

During the Sunday peak hours, the EB through/right-turn movement and WB left-turn movement at the signalized intersection of Latson Road & Golf Club Road would be reduced to a LOS F during the outbound peak 15-minute period. Additionally, the STOP controlled egress site driveway approach to Golf Club Road will operate at a LOS E or F during both the inbound and outbound peak 15-minute periods.




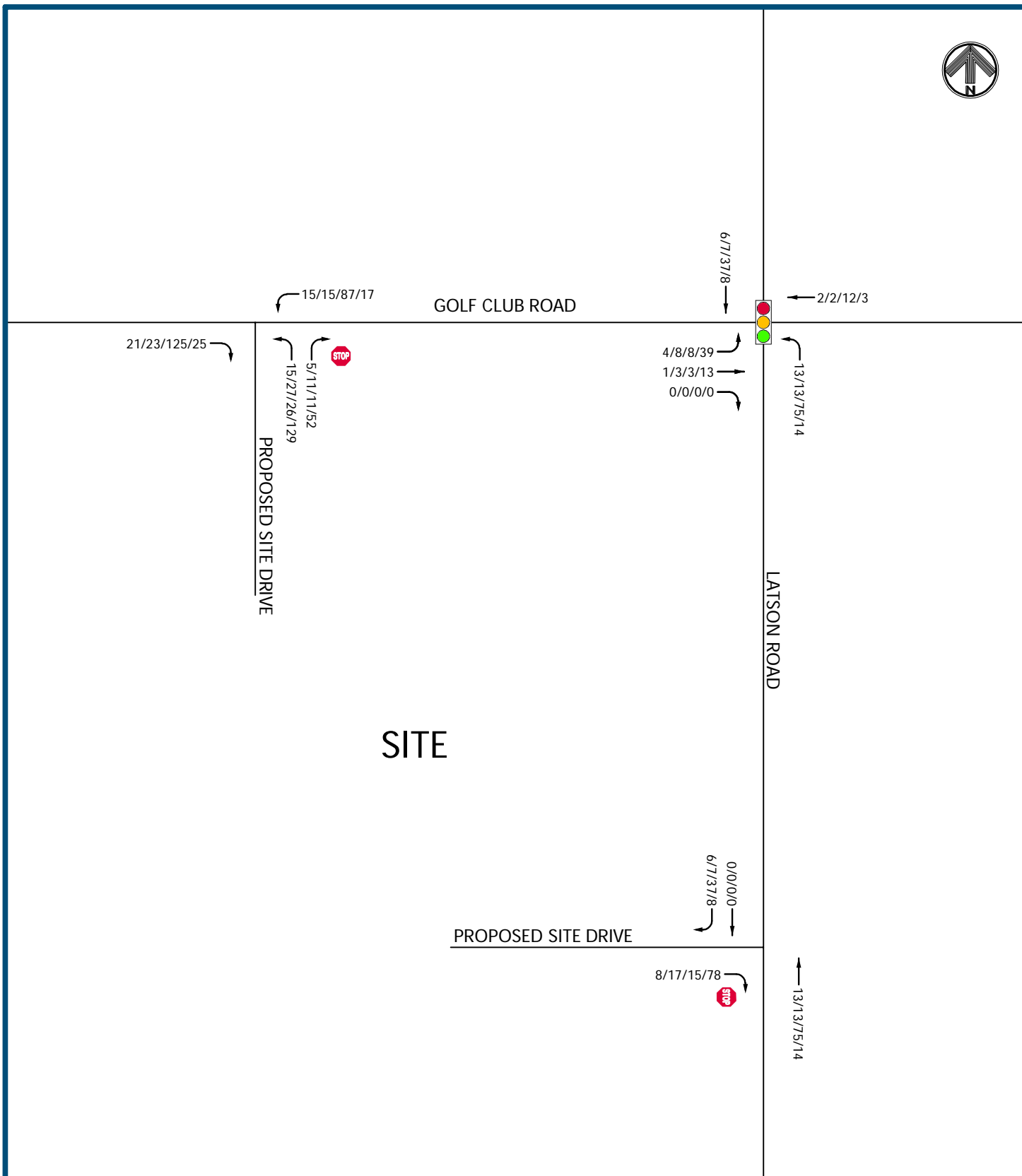
SITE

Bible Baptist Church TIS
Genoa Township, MI

Figure 9
Phase II Site Generated Traffic
Volumes - Alternative A

###/###/###/### AM/PM/SUN IN/SUN OUT PEAK HOUR VOLUME


PAGE NO. 24	SCALE No Scale	DATE Mar '22	 BERGMANN ARCHITECTS ENGINEERS PLANNERS
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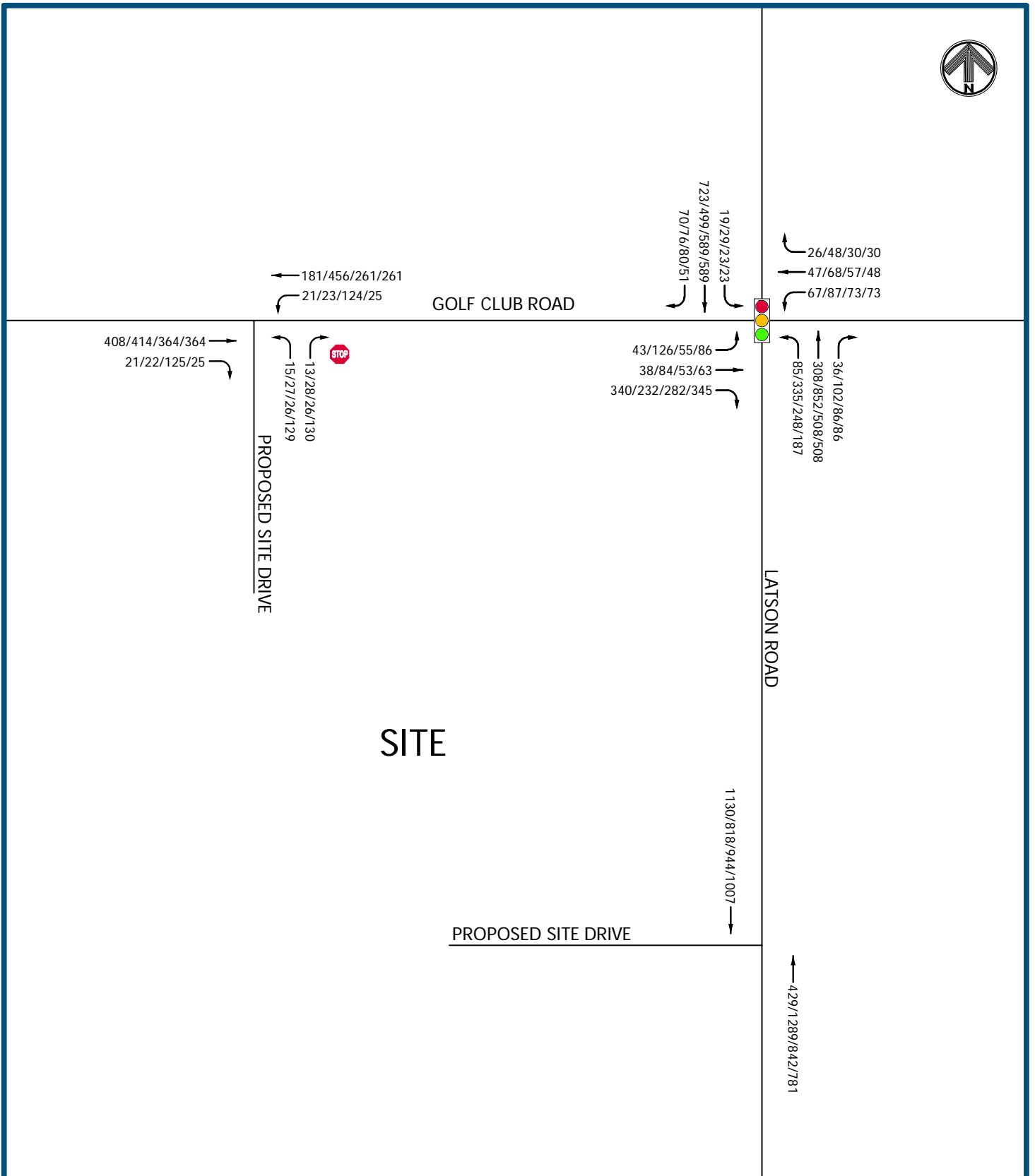


Bible Baptist Church TIS
Genoa Township, MI

Figure 10
Phase II Site Generated Traffic
Volumes - Alternative B

###/###/###/### AM/PM/SUN IN/SUN OUT PEAK HOUR VOLUME

PAGE NO.	SCALE	DATE	 BERGMANN ARCHITECTS ENGINEERS PLANNERS
25	No Scale	Mar '22	

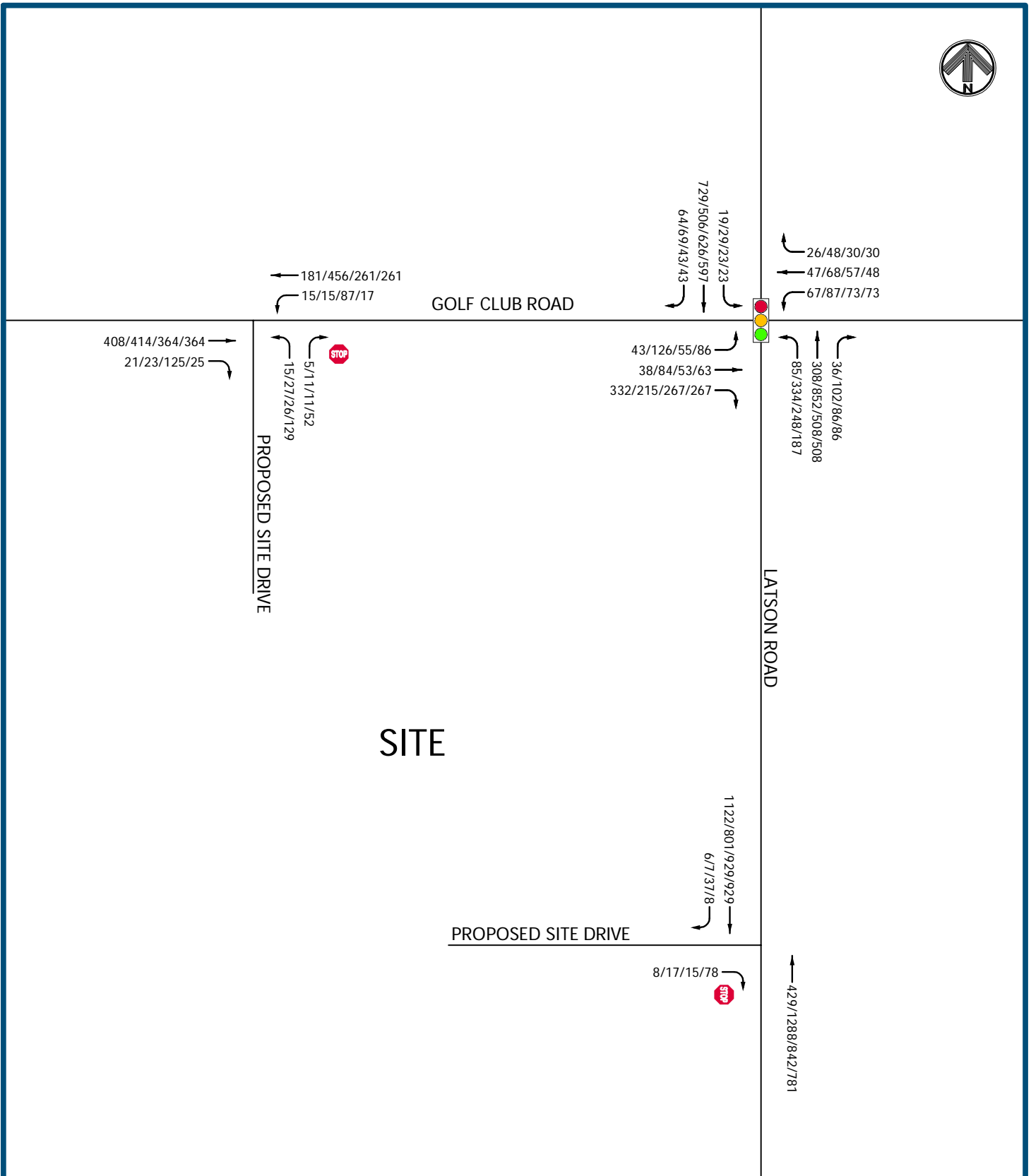


**Bible Baptist Church TIS
Genoa Township, MI**

**Figure 11
2026 Phase II Build Traffic
Volumes - Alternative A**

###/###/###/### AM/PM/SUN IN/SUN OUT PEAK HOUR VOLUME

PAGE NO. 26	SCALE No Scale	DATE Mar '22	 BERGMANN ARCHITECTS ENGINEERS PLANNERS
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###/###/###/### AM/PM/SUN IN/SUN OUT PEAK HOUR VOLUME

**Bible Baptist Church TIS
Genoa Township, MI**

**Figure 12
2026 Phase II Build Traffic
Volumes - Alternative B**


PAGE NO. 27	SCALE No Scale	DATE Mar '22	 BERGMANN ARCHITECTS ENGINEERS PLANNERS
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Table 13: 2026 Phase II Build Traffic Conditions – Alternative A – Weekday

Intersection	Control	Approach	Movement	AM Peak				PM Peak			
				No-Build		Build – ALT A		No-Build		Build – ALT A	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Latson Road & Golf Club Road	Signal	EB	Left	25.8	C	26.2	C	29.0	C	29.9	C
			Thru/Right	42.4	D	46.4	D	31.4	C	35.6	D
		WB	Left	45.6	D	50.0	D	38.5	D	43.9	D
			Thru/Right	23.7	C	23.9	C	23.1	C	23.5	C
		NB	Left	17.3	B	17.8	B	29.1	C	31.8	C
			Thru	8.7	A	8.7	A	16.1	B	16.0	B
			Right	7.2	A	7.2	A	7.8	A	7.7	A
		SB	Left	12.6	B	12.7	B	28.1	C	27.8	C
			Thru	27.6	C	27.8	C	26.6	C	26.8	C
			Right	12.9	B	13.0	B	17.8	B	18.1	B
Overall				26.0	C	27.0	C	23.4	C	24.6	C
Golf Club Road & Site Drive	STOP (Minor)	EB	Thru/Right	Free		Free		Free		Free	
			Left			8.5	A			8.7	A
		WB	Thru	Free		Free		Free		Free	
			Left/Right			13.8	B			18.8	C

Table 14: 2026 Phase II Build Traffic Conditions – Alternative A – Sunday

Intersection	Control	Approach	Movement	SUN Phase II – ALT A					
				No-Build		Build INBOUND		Build OUTBOUND	
				Delay	LOS	Delay	LOS	Delay	LOS
Latson Road & Golf Club Road	Signal	EB	Left	24.1	C	29.6	C	27.9	C
			Thru/Right	25.7	C	34.7	C	81.4	F
		WB	Left	32.0	C	41.5	D	134.7	F
			Thru/Right	21.6	C	25.5	C	22.4	C
		NB	Left	17.0	B	40.2	D	19.7	B
			Thru	10.0	B	9.9	A	10.6	B
			Right	7.5	A	7.4	A	7.9	A
		SB	Left	14.8	B	17.2	B	15.9	B
			Thru	23.4	C	28.3	C	25.6	C
			Right	14.7	B	18.1	B	16.0	B
Overall				18.6	B	25.4	C	35.1	D
Golf Club Road & Site Drive	STOP (Minor)	EB	Thru/Right	Free		Free		Free	
			Left			10.6	B	8.4	A
		WB	Thru	Free		Free		Free	
			Left/Right			48.3	E	284.6	F

Review of the peak hour simulations indicate future build traffic operations which are similar to no-build conditions during the weekday peak hours with vehicle queues processed during each signal cycle and significant vehicle queues not observed. During the Sunday peak hour, brief periods of moderate vehicle queues are observed at the signalized intersection of Latson Road & Golf Club Road for movements to and from the site; however, these queues dissipate quickly and are not present throughout the duration of the peak hour. Long delays and queues are also observed for the STOP controlled egress site driveway approach during the outbound peak 15-minute period which is typical of Churches. This queue also dissipates quickly and is not present throughout the duration of the peak hour.



Vehicle queue lengths from the signalized intersection of Latson Road & Golf Club Road were also calculated and evaluated with respect to the proposed driveway. The results of this evaluation indicate a 95th percentile queue length of 334 feet or less during all peak hours for the EB approach which would not extend back past the proposed site driveway. Additionally, the EB left-turn movement from Golf Club Road onto Latson Road and WB left-turn movement into the proposed site driveway would experience a combined 95th percentile queue length of 189 feet or less during the peak hours which would not result in any left turn conflict.

7.5 2026 PHASE II BUILD TRAFFIC CONDITIONS WITH IMPROVEMENTS – ALTERNATIVE A

In order to improve traffic operations in the Phase II Alternative A build conditions, signal cycle length and timing adjustments were investigated at the intersection of Latson Road & Golf Club Road. The results of this analysis indicate that with optimized timings at the intersection, all approaches and movements would operate acceptably at a LOS D or better during the outbound peak 15-minutes as shown in **Table 15**. Therefore, special Sunday timing plans during service times may be necessary with Phase II build conditions Alternative A and should be coordinated with LCRC.

Table 15: 2026 Phase II Build Traffic Conditions with Improvements– Alternative A

Intersection	Control	Approach	Movement	SUN Phase II – Alternative A					
				No-Build		Build Out		Build Out IMP	
				Delay	LOS	Delay	LOS	Delay	LOS
Latson Road & Golf Club Road	Signal	EB	Left	24.1	C	27.9	C	26.1	C
			Thru/Right	25.7	C	81.4	F	33.1	C
		WB	Left	32.0	C	134.7	F	44.6	D
			Thru/Right	21.6	C	22.4	C	21.1	C
		NB	Left	17.0	B	19.7	B	52.1	D
			Thru	10.0	B	10.6	B	16.9	B
			Right	7.5	A	7.9	A	12.6	B
		SB	Left	14.8	B	15.9	B	24.0	C
			Thru	23.4	C	25.6	C	44.3	D
			Right	14.7	B	16.0	B	21.3	C
		Overall				18.6	B	35.1	D

7.6 2026 PHASE II BUILD TRAFFIC CONDITIONS – ALTERNATIVE B

Future 2026 Phase II Alternative B build peak hour vehicle delays and LOS *with the proposed development* were calculated based on existing lane configurations and traffic control shown on **Figure 2**, 2026 build traffic volumes shown on **Figure 12**, and HCM methodologies. SimTraffic simulations were also utilized to evaluate traffic flow and vehicle queues throughout the study network. The 2026 Phase II Alternative B build conditions results are included in **Appendix F** and summarized in **Table 16** and **Table 17**.

The results of the Phase II Alternative B build conditions analysis indicate that the proposed development would not have a significant impact on the adjacent road network during the weekday or Sunday peak hours. All approaches and movements at the signalized intersection of Latson Road & Golf Club Road would continue to operate at a LOS D or better. At the proposed site driveways to Golf Club Road and Latson Road all approaches, and movements will operate acceptably at a LOS C or better during the weekday peak hours; however, the STOP controlled egress site driveway approaches to Golf Club Road and Latson Road will operate at a LOS F during the outbound peak 15-minute period.



Table 16: 2026 Phase II Build Traffic Conditions – Alternative B – Weekday

Intersection	Control	Approach	Movement	AM Peak				PM Peak			
				No-Build		Build – ALT B		No-Build		Build – ALT B	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Latson Road & Golf Club Road	Signal	EB	Left	25.8	C	26.4	C	29.0	C	30.2	C
			Thru/Right	42.4	D	44.1	D	31.4	C	32.8	C
		WB	Left	45.6	D	47.7	D	38.5	D	40.4	D
			Thru/Right	23.7	C	24.1	C	23.1	C	23.7	C
		NB	Left	17.3	B	17.9	B	29.1	C	32.3	C
			Thru	8.7	A	8.6	A	16.1	B	15.9	B
			Right	7.2	A	7.1	A	7.8	A	7.7	A
		SB	Left	12.6	B	12.6	B	28.1	C	27.7	C
			Thru	27.6	C	28.1	C	26.6	C	26.8	C
			Right	12.9	B	12.9	B	17.8	B	17.9	B
Overall				26.0	C	26.6	C	23.4	C	24.2	C
Golf Club Road & Site Drive	STOP (Minor)	EB	Thru/Right	Free		Free		Free		Free	
		WB	Left			8.5	A			8.7	A
			Thru	Free		Free		Free		Free	
NB	Left/Right			14.2	B			20.0	C		
Latson Road & Site Drive	STOP (Minor)	EB	Right			23.2	C			17.1	C
		NB	Thru	Free		Free		Free		Free	
		SB	Thru/Right	Free		Free		Free		Free	

Table 17: 2026 Phase II Build Traffic Conditions – Alternative B – Sunday

Intersection	Control	Approach	Movement	SUN Phase II – ALT B					
				No-Build		Build INBOUND		Build OUTBOUND	
				Delay	LOS	Delay	LOS	Delay	LOS
Latson Road & Golf Club Road	Signal	EB	Left	24.1	C	32.9	C	29.8	C
			Thru/Right	25.7	C	35.9	D	30.9	C
		WB	Left	32.0	C	43.6	D	37.2	D
			Thru/Right	21.6	C	28.3	C	23.9	C
		NB	Left	17.0	B	53.8	D	21.3	C
			Thru	10.0	B	9.3	A	10.2	B
			Right	7.5	A	6.9	A	7.6	A
		SB	Left	14.8	B	16.4	B	15.3	B
			Thru	23.4	C	32.1	C	27.2	C
			Right	14.7	B	16.2	B	15.2	B
Overall				18.6	B	29.0	C	22.0	C
Golf Club Road & Site Drive	STOP (Minor)	EB	Thru/Right	Free		Free		Free	
		WB	Left			10.0	B	8.4	A
			Thru	Free		Free		Free	
NB	Left/Right			31.9	D	136.9	F		
Latson Road & Site Drive	STOP (Minor)	EB	Right			19.5	C	54.2	F
		NB	Thru	Free		Free		Free	
		SB	Thru/Right	Free		Free		Free	

Review of the peak hour simulations indicate future build traffic operations which are similar to no-build conditions during the weekday peak hours with vehicle queues processed during each signal cycle and significant vehicle queues not observed. During the Sunday peak hour, brief periods of moderate vehicle queues are observed at the



signalized intersection of Latson Road & Golf Club Road for the NB left-turn movement; however, this queue dissipates quickly and is not present throughout the duration of the peak hour. On the site driveway approach to Golf Club Road, a long vehicle queue is observed during the outbound peak 15-minute period; however, the duration and length of this queue is reduced as compared to Alternative A. On the site driveway approach to Latson Road, the 95th percentile queue length is calculated to be 152 feet (six vehicles), which is not significant given the intensity of traffic utilizing this approach over a short duration of time.

Vehicle queue lengths from the signalized intersection of Latson Road & Golf Club Road were also calculated and evaluated with respect to the proposed driveways. The results of this evaluation indicate a 95th percentile queue length of 357 feet and 477 feet or less during all peak hours for the EB and NB approaches, respectively, which would not extend back past the proposed site driveways. Additionally, the EB left-turn movement from Golf Club Road onto Latson Road and WB left-turn movement into the proposed site driveway would experience a combined 95th percentile queue length of 221 feet or less during the peak hours which would be adequately stored in the center lane for left turns. Therefore, the proposed development does not require any off-site roadway or traffic control improvements under Phase II Alternative B build conditions.

Based on the results of the two site access alternatives, Alternative B is recommended for Phase II of the development. This alternative would provide improved traffic operations for egress traffic from the site and reduce traffic impacts to the Latson Road & Golf Club Road intersection.

8.0 Conclusions and Recommendations

The Conclusions related to this Traffic Impact Study and relative analyses are as follows:

1. At the time of this study, traffic volumes throughout the State of Michigan were impacted by restrictions in place associated with the COVID pandemic. Therefore, historic turning movement count data collected in April, 2019 was utilized to validate baseline traffic volumes for this study.
2. All approaches and movements at the study intersection of Latson Road & Golf Club Road currently operate acceptably at a LOS D or better during all peak hours.
3. Church time-of-day patterns and traffic volumes indicate approximately 80% of outbound traffic occurs in the first 30-minutes after service ends while approximately 85% of inbound traffic occurs in the 30-minutes prior to the service start time. Therefore, separate inbound and outbound analysis scenarios were completed as there will be minimal overlap between inbound and outbound traffic based on the one-hour separation between services.
4. All approaches and movements at the study intersection of Latson Road & Golf Club Road would continue to operate acceptably in the 2023 and 2026 no-build scenarios during all peak hours.
5. In accordance with LCRC standards, a left-turn lane and right-turn taper are warranted at the proposed site driveway to Golf Club Road under Phase I build conditions.
6. The 2023 Phase I build conditions analysis indicate that the proposed development will not have a significant impact on the adjacent road network. All approaches and movements at the intersection of Latson Road & Golf Club Road will continue to operate at a LOS D or better during all peak hours and minor increases in delay will not be discernable. Additionally, all approaches and movements at the proposed site driveway to Golf Club Road will operate acceptably. Therefore, the proposed development does not require any off-site roadway or traffic control improvements under Phase I build conditions.
7. In accordance with LCRC standards, a right-turn lane would be warranted at the proposed site driveway to Golf Club Road under Phase II build conditions.



8. The 2026 Phase II Alternative A build conditions analysis indicate the EB through/right-turn movement and WB left-turn movement at the signalized intersection of Latson Road & Golf Club Road would be reduced to a LOS F during the Sunday outbound peak 15-minute period. Additionally, the STOP controlled egress site driveway approach to Golf Club Road will operate at a LOS E or F during both the Sunday inbound and outbound peak 15-minute periods.
9. In order to improve traffic operations in the 2026 Phase II Alternative A build conditions, special Sunday timing plans during service times should be provided at the intersection of Latson Road & Golf Club Road.
10. In accordance with LCRC standards, a right-turn taper would be warranted at the proposed site driveway to Latson Road under Phase II Alternative B build conditions.
11. The 2026 Phase II Alternative B build conditions analysis indicate all approaches and movements at the intersection of Latson Road & Golf Club Road will continue to operate at a LOS D or better during all peak hours. At the proposed site driveways to Golf Club Road and Latson Road all approaches, and movements will operate acceptably at a LOS C or better during the weekday peak hours; however, the STOP controlled egress site driveway approaches to Golf Club Road and Latson Road will operate at a LOS F during the outbound peak 15-minute period.
12. Review of network simulations indicate a long vehicle queue on the site driveway approach to Golf Club Road during the outbound peak 15-minute period; however, the duration and length of this queue is reduced as compared to Alternative A. On the site driveway approach to Latson Road, the 95th percentile queue length is calculated to be 152 feet (six vehicles), which is not significant given the intensity of traffic utilizing this approach over a short duration of time. Therefore, the proposed development does not require any off-site roadway or traffic control improvements under Phase II Alternative B build conditions.
13. Queues from the signalized intersection of Latson Road & Golf Club Road would not block the site driveways to Golf Club Road or Latson Road under either Phase I or Phase II build conditions. Additionally, there will be no left-turn conflict along Golf Club Road between EB left turns at Latson Road and WB left turns at the proposed site driveway.
14. Site access Alternative B is recommended under Phase II build conditions as it would provide improved traffic operations for egress traffic from the site and reduce traffic impacts to the Latson Road & Golf Club Road intersection.

Based on the results of this study, the following improvements are recommended:

2023 Phase I Conditions

1. Construct left-turn lane and right-turn taper at proposed driveway to Golf Club Road.

2026 Phase II Alternative A Conditions

1. Construct right-turn lane at proposed driveway to Golf Club Road.
2. Install special timing plans at intersection of Latson Road & Golf Club Road associated with Sunday service times.

2026 Phase II Alternative B Conditions

1. Construct right-turn lane at proposed driveway to Golf Club Road.
2. Construct right-turn taper at proposed driveway to Latson Road.



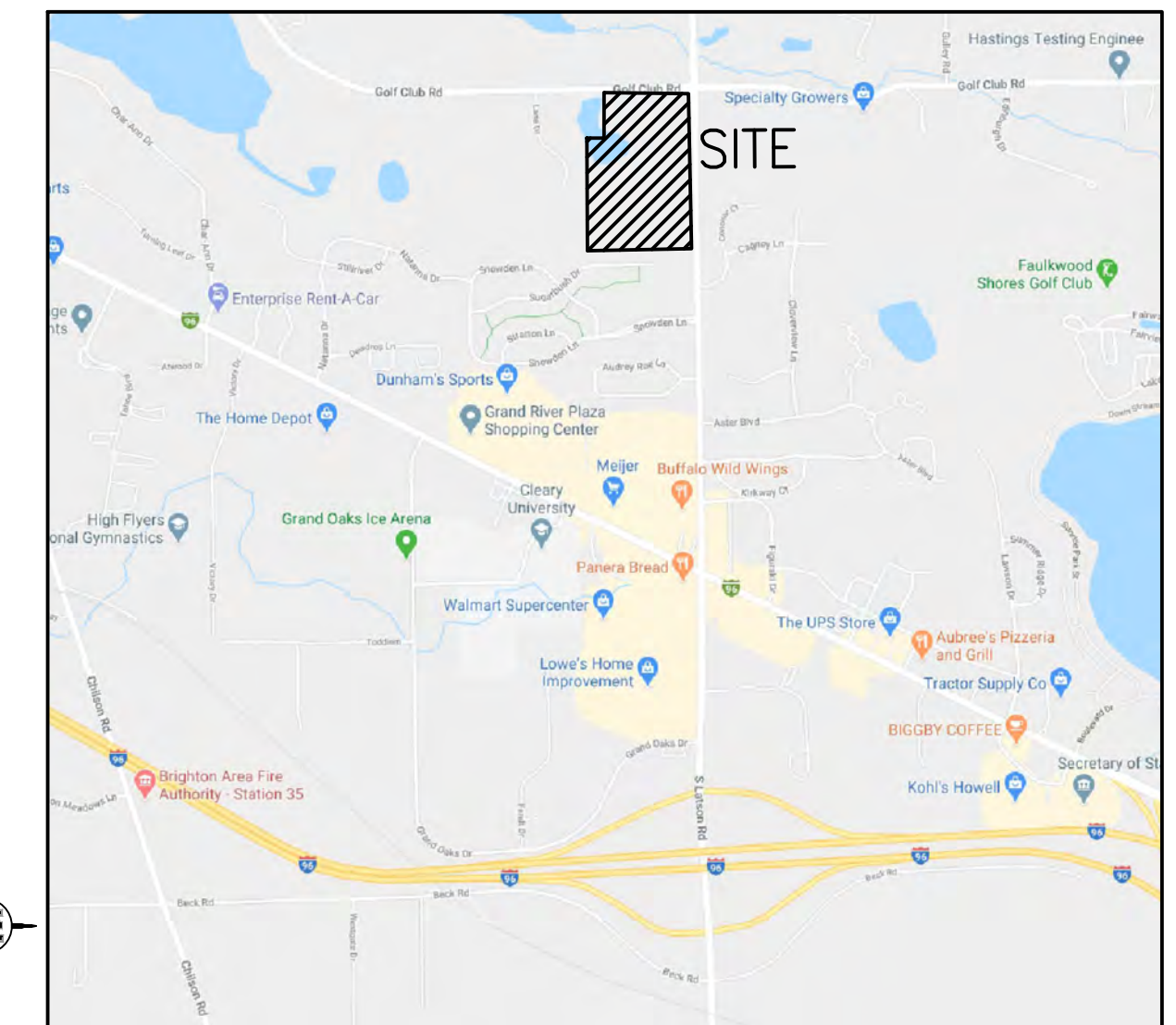
Appendix A – Traffic Count Data

THE APPENDIX DOCUMENTS ARE AVAILABLE UPON REQUEST.
Please contact Kelly VanMarter at kelly@genoa.org or 810-227-5225 to
request a copy.

SITE PLAN FOR BIBLE BAPTIST CHURCH PART OF NE QUARTER, SECTION 5 GENOA TOWNSHIP, LIVINGSTON COUNTY, MI

PROPERTY DESCRIPTION:

PARCEL: 4711-05-200-002
 Part of the Northeast 1/4 of the Northeast Fractional 1/4 of Section 5, T2N-R5E, Genoa Township, Livingston County, Michigan, more particularly described as follows: BEGINNING at the Northeast corner of Section 5; thence along the centerline of Latson Road (33 foot wide 1/2 Right of Way) and the East line of Section 5, S 01°15'41" E, 1627.92 feet; thence along the North line of "ROLLING RIDGE I", Livingston County Condominium Subdivision Plan No. 134, as recorded in Livingston County Records and the South line of the Northeast 1/4 of the Northeast fractional 1/4 of Section 5, as previously surveyed and monumented, S 87°47'59" W, 1284.34 feet; thence along the common property line per Agreement recorded in Liber 1098, Page 22, Livingston County Records, N 02°36'49" W, 1107.42 feet; thence N 88°30'30" E (recorded as East), 2000.00 feet; thence N 02°36'49" W (recorded as North), 536.70 feet; thence along the centerline of Golf Club Road (66 foot wide Right of Way) and the North line of Section 5, as previously surveyed and monumented, N 88°30'31" E, 1122.98 feet, to the POINT OF BEGINNING, containing 46.50 acres, more or less, and subject to the rights of the public over the existing Latson Road and Golf Club Road. Also subject to any other easements or restrictions of record.

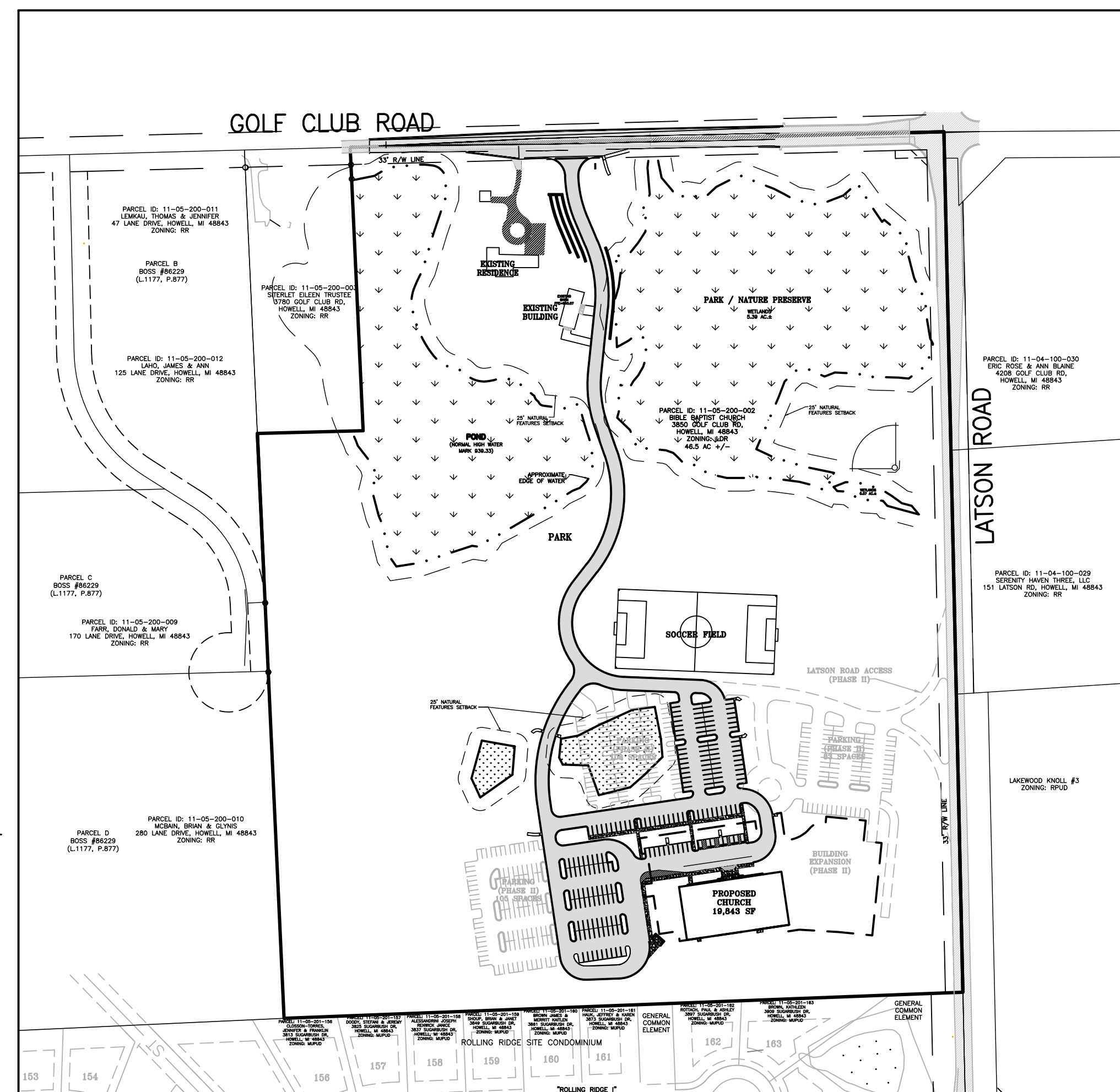


LOCATION MAP

NO SCALE

CONSTRUCTION NOTES

- THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING NOTES AND ANY WORK INVOLVED SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
1. THE CONTRACTOR SHALL HOLD HARMLESS THE DESIGN PROFESSIONAL, MUNICIPALITY, COUNTY, STATE AND ALL OF ITS SUB CONSULTANTS, PUBLIC AND PRIVATE UTILITY COMPANIES, AND LANDOWNERS FOR DAMAGES TO INDIVIDUALS AND PROPERTY, REAL OR OTHERWISE, DUE TO THE OPERATIONS OF THE CONTRACTOR AND/OR THEIR SUBCONTRACTORS.
 2. DO NOT SCALE THESE DRAWINGS AS IT IS A REPRODUCTION AND SUBJECT TO DISTORTION.
 3. A GRADING PERMIT FOR SOIL EROSION-SEDIMENTATION CONTROL SHALL BE OBTAINED FROM THE GOVERNING AGENCY PRIOR TO THE START OF CONSTRUCTION.
 4. IF DUST PROBLEM OCCURS DURING CONSTRUCTION, CONTROL WILL BE PROVIDED BY AN APPLICATION OF WATER, EITHER BY SPRINKLER OR TANK TRUCK.
 5. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH LOCAL MUNICIPAL STANDARDS AND SPECIFICATIONS.
 6. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED TOWNSHIP, COUNTY, AND STATE OF MICHIGAN PERMITS.
 7. PAVED SURFACES, WALKWAYS, SIGNS, LIGHTING AND OTHER STRUCTURES SHALL BE MAINTAINED IN A SAFE, ATTRACTIVE CONDITION AS ORIGINALLY DESIGNED AND CONSTRUCTED.
 8. ALL BARRIER-FREE FEATURES SHALL BE CONSTRUCTED TO MEET ALL LOCAL, STATE AND A.D.A. REQUIREMENTS.
 9. ANY DISCREPANCY IN THIS PLAN AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE DESIGN ENGINEER PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL SETBACKS, EASEMENTS AND DIMENSIONS SHOWN HEREON BEFORE BEGINNING CONSTRUCTION.
 10. THE CONTRACTOR SHALL CONTACT ALL OWNERS OF EASEMENTS, UTILITIES AND RIGHTS-OF-WAY, PUBLIC OR PRIVATE, PRIOR TO THE START OF CONSTRUCTION.
 11. THE CONTRACTOR SHALL COORDINATE WITH ALL OWNERS TO DETERMINE THE LOCATION OF EXISTING LANDSCAPING, IRRIGATION LINES & PRIVATE UTILITY LINES. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING LANDSCAPING, IRRIGATION LINES, AND PRIVATE UTILITY LINES.
 12. THE CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE UPON COMPLETION OF THE PROJECT.
 13. THE CONTRACTOR SHALL MAINTAIN THE SITE IN A MANNER SO THAT WORKMEN AND PUBLIC SHALL BE PROTECTED FROM INJURY, AND ADJOINING PROPERTY PROTECTED FROM DAMAGE.
 14. THE CONTRACTOR SHALL KEEP THE AREA OUTSIDE THE "CONSTRUCTION LIMITS" BROOM CLEAN AT ALL TIMES.
 15. THE CONTRACTOR SHALL CALL MISS DIG A MINIMUM OF 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
 16. ALL EXCAVATION UNDER OR WITHIN 3 FEET OF PUBLIC PAVEMENT, EXISTING OR PROPOSED SHALL BE BACKFILLED AND COMPACTED WITH SAND (MDOT CLASS II).
 17. ALL PAVEMENT REPLACEMENT AND OTHER WORKS COVERED BY THESE PLANS SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE TOWNSHIP, INCLUDING THE LATEST MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
 18. THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE TO EXISTING UTILITIES.
 19. NO ADDITIONAL COMPENSATION WILL BE PAID TO THE CONTRACTOR FOR ANY DELAY OR INCONVENIENCE DUE TO THE MATERIAL SHORTAGES OR RESPONSIBLE DELAYS DUE TO THE OPERATIONS OF SUCH OTHER PARTIES DOING WORK INDICATED OR SHOWN ON THE PLANS OR IN THE SPECIFICATION OR FOR ANY REASONABLE DELAYS IN CONSTRUCTION DUE TO THE ENCOUNTERING OR EXISTING UTILITIES THAT MAY OR MAY NOT BE SHOWN ON THE PLANS.
 20. DURING THE CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL NOT PERFORM WORK BY PRIVATE AGREEMENT WITH PROPERTY OWNERS ADJACENT TO THE PROJECT.
 21. IF WORK EXTENDS BEYOND NOVEMBER 15, NO COMPENSATION WILL BE DUE TO THE CONTRACTOR FOR ANY WINTER PROTECTION MEASURES THAT MAY BE REQUIRED BY THE ENGINEER.
 22. NO TREES ARE TO BE REMOVED UNTIL MARKED IN THE FIELD BY THE ENGINEER.
 23. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE PROPERTY BEYOND THE CONSTRUCTION LIMITS INCLUDING BUT NOT LIMITED TO EXISTING FENCE, LAWN, TREES AND SHRUBBERY.
 24. ALL AREAS DISTURBED BY THE CONTRACTOR BEYOND THE NORMAL CONSTRUCTION LIMITS OF THE PROJECT SHALL BE SODDED OR SEEDED AS SPECIFIED OR DIRECTED BY THE ENGINEER.
 25. ALL ROOTS, STUMPS AND OTHER OBJECTIONABLE MATERIALS SHALL BE REMOVED AND THE HOLE BACKFILLED WITH SUITABLE MATERIAL. WHERE GRADE CORRECTION IS REQUIRED, THE SUBGRADE SHALL BE CUT TO CONFORM TO THE CROSS-SECTION AS SHOWN IN THE PLANS.
 26. TRAFFIC SHALL BE MAINTAINED DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL SIGNS AND TRAFFIC CONTROL DEVICES. FLAG PERSONS SHALL BE PROVIDED BY THE CONTRACTOR IF DETERMINED NECESSARY BY THE ENGINEER. ALL SIGNS SHALL CONFORM TO THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AT NO COST TO THE TOWNSHIP. NO WORK SHALL BE DONE UNLESS THE APPROPRIATE TRAFFIC CONTROL DEVICES ARE IN PLACE.
 27. ALL DEMOLISHED MATERIALS AND SOIL SPOILS SHALL BE REMOVED FROM THE SITE AT NO ADDITIONAL COST, AND DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
 28. AFTER REMOVAL OF TOPSOIL, THE SUBGRADE SHALL BE COMPACTED TO 95% OF ITS UNIT WEIGHT.
 29. ALL GRADING IN THE PLANS SHALL BE DONE AS PART OF THIS CONTRACT. ALL DELETERIOUS MATERIAL SHALL BE REMOVED FROM THE SUBGRADE PRIOR TO COMPACTING.
 30. NO SEEDING SHALL BE DONE AFTER OCTOBER 15 WITHOUT APPROVAL OF THE ENGINEER.
 31. ANY EXISTING APPURTENANCES SUCH AS MANHOLES, GATE VALVES, ETC. SHALL BE ADJUSTED TO THE PROPOSED GRADE AND SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
 32. SOIL EROSION MEASURES SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL VEGETATION HAS BEEN RE-ESTABLISHED.
 33. ALL PERMANENT SIGNS AND PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST REVISION OF THE MICHIGAN MUTCD MANUAL AND SHALL BE INCIDENTAL TO THE CONTRACT.
 34. ACCESS ROADS TO THE SITE SHALL BE MAINTAINED DURING CONSTRUCTION AND SHALL BE CONSTRUCTED TO BE CAPABLE OF SUPPORTING THE IMPOSED LOAD OF FIRE APPARATUS WEIGHING AT LEAST 75,000 POUNDS.



OVERALL SITE MAP

NO SCALE

APPLICANT/OWNER:

**BIBLE BAPTIST CHURCH
 2258 EAST HIGHLAND ROAD
 HOWELL, MI 48843
 CONTACT: MR. TIM CHRISTOSON
 PHONE: 517-715-9223**

PREPARED BY:

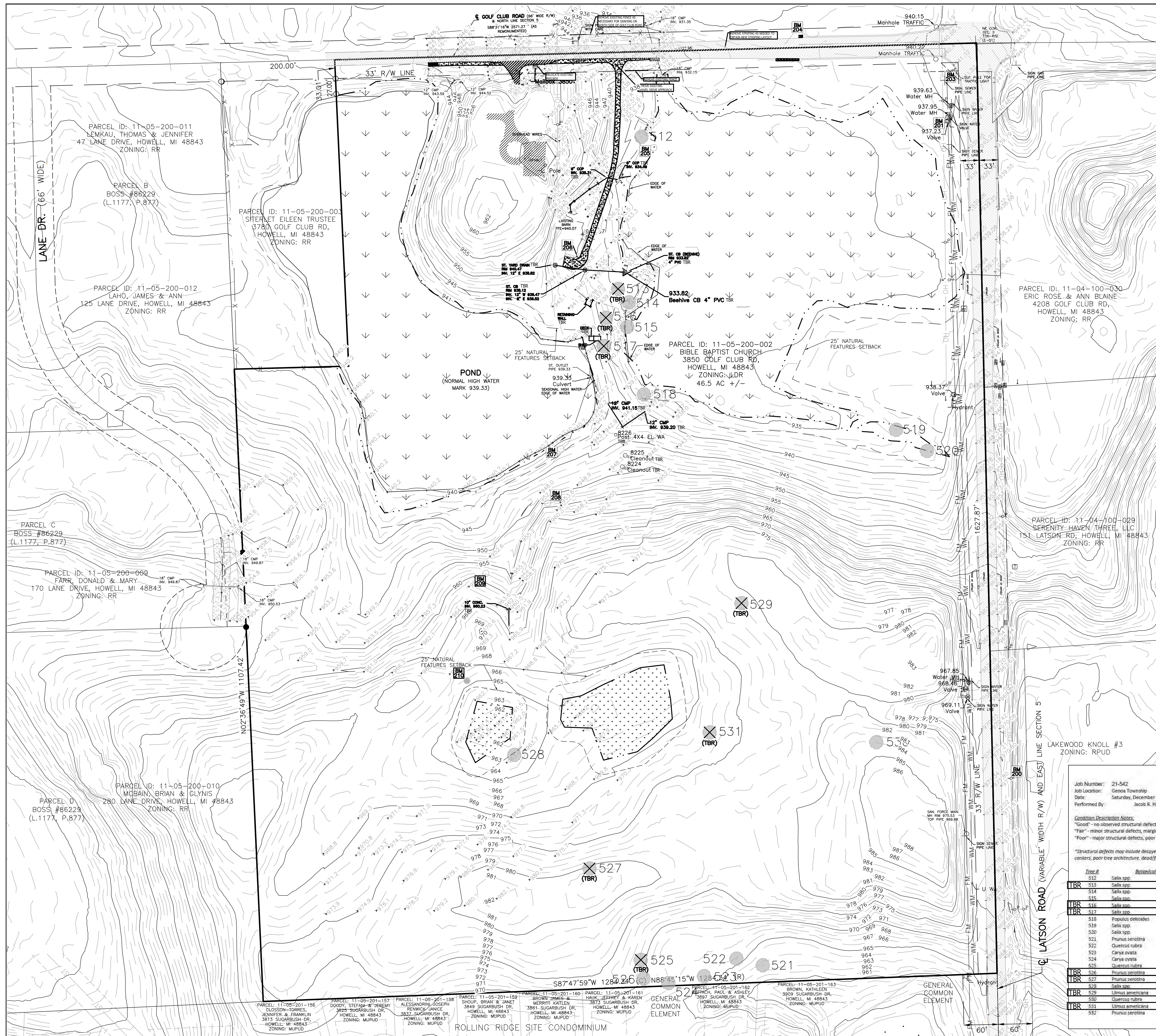
BEBOSS
Engineering
 Engineers Surveyors Planners Landscape Architects
 3121 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 517.546.4836 FAX 517.548.1670

INDEMNIFICATION STATEMENT

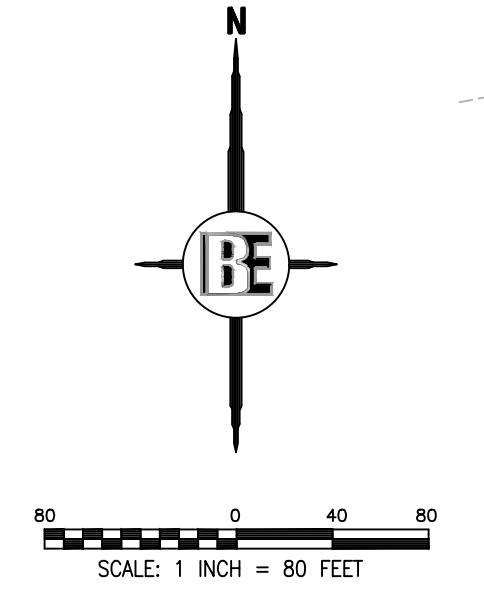
THE CONTRACTOR SHALL HOLD HARMLESS THE DESIGN PROFESSIONAL, MUNICIPALITY, COUNTY, STATE AND ALL OF ITS SUB CONSULTANTS, PUBLIC AND PRIVATE UTILITY COMPANIES, AND LANDOWNERS FOR DAMAGES TO INDIVIDUALS AND PROPERTY, REAL OR OTHERWISE, DUE TO THE OPERATIONS OF THE CONTRACTOR AND/OR THEIR SUBCONTRACTORS.

FOR SITE PLAN APPROVAL ONLY!
 NOT TO BE USED AS
 CONSTRUCTION DRAWINGS

				1
1	ST	PER TOWNSHIP REVIEW	2/23/22	ISSUE DATE: 2/1/2022
NO	BY	CK	REVISION	DATE



- LEGEND**
- 900 EXISTING CONTOUR
 - EXISTING SPOT ELEVATION
 - POWER POLE
 - GUY WIRE
 - LIGHT POLE
 - HYDRANT
 - WATER GATE VALVE
 - WATER MANHOLE
 - MANHOLE
 - STORM CATCH BASIN (SQUARE)
 - STORM INVERT
 - TELEPHONE RISER
 - CABLE TV RISER
 - U.G. CABLE TV MARKER
 - MAILBOX
 - SIGN
 - DECIDUOUS TREE
 - CONIFEROUS TREE
 - STEEL ROD OR PIPE FOUND
 - WOOD LATH SET
 - SECTION CORNER
 - TO BE REMOVED



GENERAL SURVEY NOTES:

1. WETLANDS FLAGGED AND TIED OUT BY BOSS ENGINEERING SPRING 2019.
2. BEARINGS ARE BASED ON MICHIGAN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE.
3. SUBSURFACE UTILITIES NOT LOCATED FOR THIS SURVEY MAY EXIST. IT IS THE RESPONSIBILITY OF THE OWNER OF THE RESPECTIVE UTILITY TO ACCURATELY LOCATE SUCH UTILITIES.
4. EASEMENTS OR RESTRICTIONS OF RECORD NOT DEPICTED ON THIS DRAWING MAY EXIST.
5. ELEVATIONS WERE ESTABLISHED FROM GPS OBSERVATION, AND USING OPUS POST-PROCESS SYSTEM. (NAVD88 DATUM)
6. CONTOURS ARE SHOWN AT 1 FOOT INTERVALS.
7. THE LOCATIONS OF STORM SEWER, SANITARY SEWER & WATERMAIN, AS SHOWN ON THIS DRAWING ARE APPROXIMATE. THE LOCATIONS ARE BASED ON PHYSICAL FIELD LOCATIONS OF STRUCTURES.
8. ALL WORK SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE MUNICIPALITY, THE COUNTY, AND THE STATE OF MICHIGAN.
9. ALLOW THREE WORKING DAYS BEFORE YOU DIG, CALL MISS DIG TOLL FREE 1-800-482-7171.

SITE BENCHMARKS (NAVD88 DATUM):

- BM #200 = NAIL/TAG W/S P.POLE E/S LASTON RD. 785'± NORTH OF CONVER CT.. ELEV.=971.41
- BM #201 = ARROW ON HYD W/S OF LASTON RD. 135'± SOUTH OF GOLF CLUB RD.. ELEV.=939.50
- BM #203 = FD. R.R. E/S OF GUY POLE W/S OF LASTON RD. 44'± SOUTH OF GOLF CLUB RD.. ELEV.=942.12
- BM #205 = PK NAIL/TAG W/S 40" WILLOW TREE 170'± SOUTH OF GOLF CLUB RD. & 160'± NORTH OF BARN. ELEV.=935.10
- BM #206 = LANDSCAPE SPIKE SET S/E CORNER OF POLE BARN. ELEV.=940.32
- BM #207 = PK NAIL/TAG S/S 12" MAPLE TREE S/S OF POND. ELEV.=945.31
- BM #208 = PK NAIL/TAG SET 10" PINE TREE 50'± EAST OF TWO TRACK RUNNING N&S & 150'± SOUTH OF POND, N/S OF TWO TRACK RUNNING E&W. ELEV.=954.73
- BM #209 = PK NAIL/TAG S/S 12" ELM TREE 142'± SOUTH OF POND. ELEV.=959.69
- BM #210 = PK NAIL/TAG E/S 8" PINE TREE 330'± SOUTH OF POND. ELEV.=966.83

TOPOGRAPHIC SURVEY NOTE:

TOPOGRAPHIC SURVEY OF GOLF CLUB ROAD AND LATSON ROAD PREPARED BY BOSS ENGINEERING. TOPOGRAPHY FOR THE SUBJECT SITE IS GENERATED FROM THE LIVINGSTON COUNTY GIS TOPO.

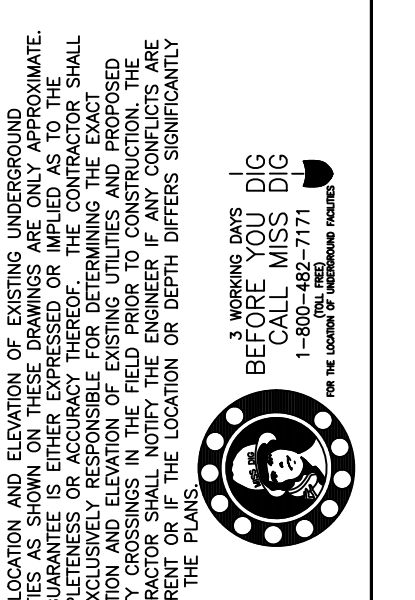
Inventory of Significant Trees within Project Area

Job Number: 21-542 Bible Baptist Church
 Job Location: Genoa Township
 Date: Saturday, December 11, 2021
 Performed By: Jacob R. Hamilton Forestry Registration No. 46119

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 infestation

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

Tree #	Botanical Name	Common Name	Dia.	Type	Other Dia.	Condition	Comments
TBR 512	Salix spp.	Willow Sp.	53			Good	
TBR 513	Salix spp.	Willow Sp.	37			Poor	Major lean, cankers, epicormic branching
TBR 514	Salix spp.	Willow Sp.	41			Fair	Leaning
TBR 515	Salix spp.	Willow Sp.	36	Twin	20	Good	Leaning
TBR 516	Salix spp.	Willow Sp.	36			Good	
TBR 517	Salix spp.	Willow Sp.	37			Fair	Lost large twin, canker
TBR 518	Populus deltoides	Eastern Cottonwood	24			Good	
TBR 519	Salix spp.	Willow Sp.	38			Good	
TBR 520	Salix spp.	Willow Sp.	25			Good	
TBR 521	Prunus serotina	Black Cherry	35			Good	
TBR 522	Quercus rubra	Red Oak	26			Good	
TBR 523	Carya ovata	Shagbark Hickory	25			Good	
TBR 524	Carya ovata	Shagbark Hickory	32			Good	
TBR 525	Quercus rubra	Red Oak	24			Good	
TBR 526	Prunus serotina	Black Cherry	34			Poor	Major canker, dieback
TBR 527	Prunus serotina	Black Cherry	26			Good	
TBR 528	Salix spp.	Willow Sp.	38			Good	
TBR 529	Ulmus americana	American Elm	24			Good	
TBR 530	Quercus rubra	Red Oak	26			Good	
TBR 531	Ulmus americana	American Elm	27			Good	
TBR 532	Prunus serotina	Black Cherry	31			Poor	Major dieback, canker rot, lost limbs



BESS Engineering
 Engineers Surveyors Planners Landscape Architects
 3121 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 517.546.4836 FAX 517.548.1670

BIBLE BAPTIST CHURCH
BIBLE BAPTIST CHURCH
 2258 EAST HIGHLAND ROAD
 HOWELL, MI 48843
 517-715-9223

EXISTING CONDITIONS & DEMOLITION PLAN

PROJECT	DATE
BIBLE BAPTIST CHURCH	2/23/22

DESIGNED BY: ST
 DRAWN BY: JS
 CHECKED BY:

SCALE 1" = 80'
 JOB NO. 21-542
 DATE 2/1/2022
 SHEET NO. 2

NATURAL FEATURES NARRATIVE:

SEVERAL NATURAL FEATURES WERE IDENTIFIED DURING AN ON-SITE VISIT TO THE PROPERTY ON AUGUST 23, 2019 THAT INCLUDE WETLANDS AND A VARIETY OF WOODLAND STANDS. BELOW IS A BRIEF DESCRIPTION OF EACH NATURAL FEATURE, LABELED AS ZONES "A" THROUGH "V". ALTHOUGH THE TOTAL SITE IS MEASURED AT 46.88 ACRES, THE ZONES DESCRIBED BELOW ARE APPROXIMATELY 41.11 ACRES WHEN ADDED TOGETHER. NOTE THAT EACH ZONE IS MEASURED TO AN APPROXIMATE SIZE AND THAT ZONES ARE SEPARATED BY A PATH THAT IS ROUGHLY 1/2" WIDE AND IS NOT ACCOUNTED FOR IN THE CALCULATIONS.

ZONE "A"
AN ESTIMATED 4.62 ACRE "FRESHWATER POND" AS DESCRIBED BY THE NATIONAL WETLANDS INVENTORY, IS POSITIONED ON SITE AND CONTIGUES ONTO THE NEIGHBORING LOT TO THE WEST. THE ON-SITE ACREAGE IS ESTIMATED TO BE 3.88 ACRES. THE POND EDGE IS MOWN LAWN AND HAS A SOUTHERN BORDER OF NORWAY MAPLE TREES, AND A WESTERN BORDER OF BLACK CHERRY, AMERICAN ELM, VARIOUS OAKS AND SPRUCE TREES. SIZES RANGING FROM 4-18" AT DBH WITH TREES BEING SPACED AN AVERAGE OF 12' APART. THE POND COLLECTS STORMWATER FROM ROUGHLY 9 ACRES OF LAND FROM THE WEST AND SOUTH, WITH SLOPES RANGING FROM 10-20%.

ZONE "B"
AT APPROXIMATELY 0.9 ACRES IN SIZE, THIS ZONE IS COMPOSED OF WAWASEE LOAM SOILS WITH SLOPES BETWEEN 6-12%. TREE SPECIES INCLUDE AN EQUAL MIX OF BLACK WALNUT, BLACK CHERRY, AMERICAN ELM, COTTONWOOD, AND BITTERNUT HICKORY SIZES RANGING FROM 6"-30" AND AVERAGING ABOUT 10" DBH. THE UNDERSTORY IS MOSTLY NON-EXISTENT BUT CONTAINS A SCATTERING OF HONEYSUCKLE AND VARIOUS PATCHES OF HERBACEOUS MATERIAL. AN ADDITIONAL AND APPROXIMATE 2.17 ACRES OF MANAGED PRIVATE PROPERTY IS FOUND TO THE WEST AND SOUTH OF THIS ZONE AND CONTAINS WAWASEE LOAM SOIL THAT SLOPES AT 6-12% TOWARDS THE POND IN ZONE "A". A PORTION OF VEGETATION IN THIS AREA WILL BE REMOVED FOR THE DRIVEWAY AND/OR RETAINING WALLS.

ZONE "C"
ZONE "C" IS A SMALL WOODLAND POCKET APPROXIMATELY 0.17 ACRES IN SIZE IS COMPOSED OF BLACK LOCUST, VARIOUS LARGE WILLOWS, AND BOXELDERS. TREES RANGE FROM 4-22" AT DBH. THIS POCKET IS IN A FLAT AREA THAT BORDERS FRESHWATER EMERGENT WETLANDS TO THE EAST, AND CONTAINS CARLSLE MUCK SOILS, WHICH ARE HYDRIC IN NATURE.

ZONE "D"
ZONE "D" IS SET WITHIN A MANAGED SPACE NEXT TO AN OUTBUILDING, IS APPROXIMATELY 0.13 ACRES IN SIZE, AND HAS MOWN LAWN AS AN UNDERSTORY. SOILS ARE COMPOSED OF WAWASEE LOAMS AND THERE IS A STAND OF MATURE NORWAY SPRUCE TREES THAT ARE ROUGHLY 12" AT DBH AND SPACED OUT ABOUT 10-15' APART. A PORTION OF VEGETATION IN THIS AREA WILL BE REMOVED FOR THE DRIVEWAY AND/OR RETAINING WALLS.

ZONE "E"
A FRESHWATER EMERGENT WETLAND THAT IS APPROXIMATELY 5.45 ACRES IN SIZE WAS IDENTIFIED IN ZONE "E". THE AREA IS COMPOSED OF CARLSLE MUCK SOILS AND IS DOMINATED BY REED CANARY GRASS, PHRAGMITES, BROADLEAF CATTAIL, AND A VARIETY OF FORBES AND RUSHES. THIS WETLAND COLLECTS A LARGE AMOUNT OF STORMWATER RUNOFF FROM THE CONIFER STAND TO THE SOUTH, AND FROM THE ADJACENT ROAD SYSTEMS, MANICURED LAWN, BORDERS THE NORTHERN AND EASTERN EDGES OF THIS ZONE AND MAKE UP APPROXIMATELY 1.22 ACRES.

ZONE "F"
ZONE "F" IS ANOTHER MANAGED AREA WITH MANICURED LAWN THAT IS APPROXIMATELY 0.43 ACRES IN SIZE AND HAS A SERIES OF NORWAY SPRUCE TREES PLANTED IN A DOUBLE ROW. THE TREES ARE ROUGHLY 12" AT DBH AND SPACED ROUGHLY 15' APART. SOILS ARE WAWASEE LOAMS AND SLOPING EAST TOWARDS THE WETLAND IN ZONE "E". AT THE EASTERN EDGE OF THIS ZONE, THERE ARE SEVERAL LARGE WILLOW TREES AND BLACK WALNUTS, SOME OF WHICH MAY QUALIFY AS LANDMARK TREES. A PORTION OF VEGETATION IN THIS AREA WILL BE REMOVED FOR THE DRIVEWAY AND/OR RETAINING WALLS.

ZONE "G"
ZONE "G" IS A FILL AREA OF APPROXIMATELY 1.16 ACRES THAT WAS FORMERLY USED AS A SPORTS FIELD. IT HAS SINCE BECOME OVERGROWN WITH A VARIETY OF MEADOW FORBES AND GRASSES.

ZONE "H"
ZONE "H" IS AN APPROXIMATELY 0.07 ACRE FRESHWATER EMERGENT FORESTED WETLAND, THERE ARE POCKETS OF LARGE COTTONWOOD TREES AND WILLOWS WITH SOME SEDGES AND WETLAND FORBES WITHIN THE DELINEATED AREA. THIS ZONE COLLECTS STORMWATER RUNOFF FROM THE SOUTHERN HILLSIDE OF THE PROPERTY AND SLOWLY DRAINS WATER TO THE WEST INTO THE LARGER WETLAND IN ZONE "E".

ZONE "I"
ZONE "I" IS A LARGE AREA, APPROXIMATELY 7.63 ACRES IN SIZE, AND COMPOSED ALMOST ENTIRELY OF NORWAY SPRUCE TREES RANGING FROM 5-18" AT DBH, SPACED 10-15' APART, AND MAKE UP ROUGHLY 90% OF THE TREE POPULATION. THE REMAINING 10% OF TREE COVER IS COMPOSED OF BLACK CHERRY, BLACK LOCUST, RED OAK, AND AMERICAN ELM. ALL OF WHICH ARE BETWEEN 6-18" AT DBH. THE UNDERSTORY IS ALMOST NON-EXISTENT. THE EASTERN 75% OF THIS ZONE IS COMPOSED OF MIAMI LOAM SOILS WITH SLOPES RANGING FROM 25-35%, AND THE WESTERN 25% IS A FOX-BOYER COMPLEX WITH SLOPES RANGING FROM 12-18%. A PORTION OF VEGETATION IN THIS AREA WILL BE REMOVED FOR THE DRIVEWAY AND/OR SOCCER FIELD.

ZONE "J"
ZONE "J" IS APPROXIMATELY 2.38 ACRES IN SIZE AND IS A SLIGHT TRANSITION FROM THE ZONE "I" CONIFEROUS COMMUNITY TO A MORE DECIDUOUS FOREST STAND. THE DOMINANT SPECIES HERE ARE RED AND WHITE OAK, SHAGBARK AND BITTERNUT HICKORY, BLACK CHERRY, AND AMERICAN ELM. THERE ARE SEVERAL LARGE NORWAY SPRUCE TREES, BUT THEY ARE NO LONGER THE DOMINANT SPECIES. ALL OF THESE TREES ARE MATURE AND ARE 6-18" AT DBH AND SPACED ROUGHLY 10' APART. AN UNDERSTORY OF GREEN ASH, HICKORY, AND HONEYSUCKLE IS PRESENT, THOUGH NOT OVERBEARING. SOILS ARE A FOX-BOYER COMPLEX WITH 18-25% SLOPES THAT DRAIN TO THE LARGE POND IN ZONE "A".

ZONE "K"
ZONE "K" IS APPROXIMATELY 2.85 ACRES IN SIZE AND BORDERS MUCH OF THE SOUTHERN AND WESTERN BOUNDARIES OF THE SITE. THIS FOREST STAND IS ALMOST ENTIRELY DECIDUOUS AND CONTAINS MATURE RED OAKS, BLACK CHERRY, AMERICAN ELM, HICKORY, AND VARIOUS MAPLE TREES RANGING FROM 5-18" AT DBH. THOUGH THERE ARE SEVERAL LANDMARK TREES IN THIS ZONE THAT MUST BE NOTED. THE TREES ARE SPACED ROUGHLY 15' APART. THE SOILS ARE MIAMI LOAMS WITH 18-25% SLOPES THAT SHED WATER TOWARDS THE SOUTHERN BOUNDARIES OF THE SITE.

ZONES "L", "M", "N"
THESE THREE ZONES MAKE UP A LARGER OPEN SPACE, APPROXIMATELY 1.68 ACRES IN SIZE AND IS ALMOST ENTIRELY FREE OF TREE SPECIES. INSTEAD, THE AREA IS POPULATED WITH A DOMINANCE OF GREY DOGWOOD SHRUBS, VARIOUS MEADOW FORBES, GRASSES, AND VINES. THERE ARE A FEW LARGE BUT DEAD ELM TREES AT THE EASTERN EDGE OF ZONE "N", AND SEVERAL NORWAY MAPLE TREES AT THE NORTHERN PORTION OF ZONE "M". THE LAND IS MUCH FLATTER IN THIS AREA WHERE SOILS ARE A FOX-BOYER COMPLEX WITH SLOPES AT 2-6% THAT GENTLY DRAIN TO THE WEST. A PORTION OF VEGETATION IN THIS AREA WILL BE REMOVED FOR THE DRIVEWAY AND/OR PARKING.

ZONES "O" AND "P"
THESE ZONES MAKE UP APPROXIMATELY 1.31 ACRES OF THE SITE AND ARE LARGE STANDS OF DECIDUOUS TREES THAT INCLUDE SHAGBARK AND BITTERNUT HICKORY, AMERICAN ELM, BLACK CHERRY, AND BLACK LOCUST. THE TREES ARE SPACED ROUGHLY 15' APART AND RANGE FROM 4-12" AT DBH. THOUGH THERE ARE SEVERAL LANDMARK TREES IN THIS AREA THAT MUST BE NOTED. THESE ZONES ARE AT ONE OF THE HIGHEST POINTS OF THE SITE WITH WAWASEE LOAMS SLOPING 2-6% TO THE WEST. A PORTION OF VEGETATION IN THIS AREA WILL BE REMOVED FOR PARKING.

ZONE "Q"
THIS ZONE IS APPROXIMATELY 1.57 ACRES IN SIZE AND HAS A DOMINANCE OF BLACK LOCUST TREES THAT MAKE UP 70% OF THE FOREST STAND. THE REMAINING TREE SPECIES ARE AMERICAN ELM, BLACK CHERRY, AND HICKORY. ALL TREES ARE MATURE RANGING FROM 5-18" AT DBH AND SPACED 15' APART ON AVERAGE. THE EASTERN EDGE OF THIS ZONE IS SLOPING STEEPLY AT 25-35% TO THE EAST TOWARDS LATSON ROAD AND TO THE NORTH TOWARDS ZONE "H". THE WESTERN AND SOUTHERN PORTIONS OF ZONE "Q" ARE RELATIVELY FLAT. THE SOILS ARE A MIX OF WAWASEE LOAMS AND MIAMI LOAMS.

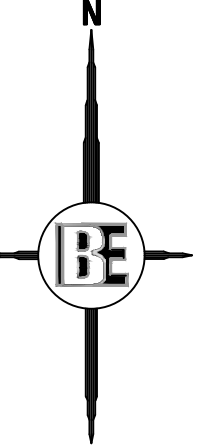
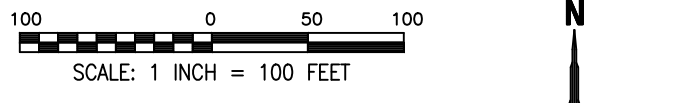
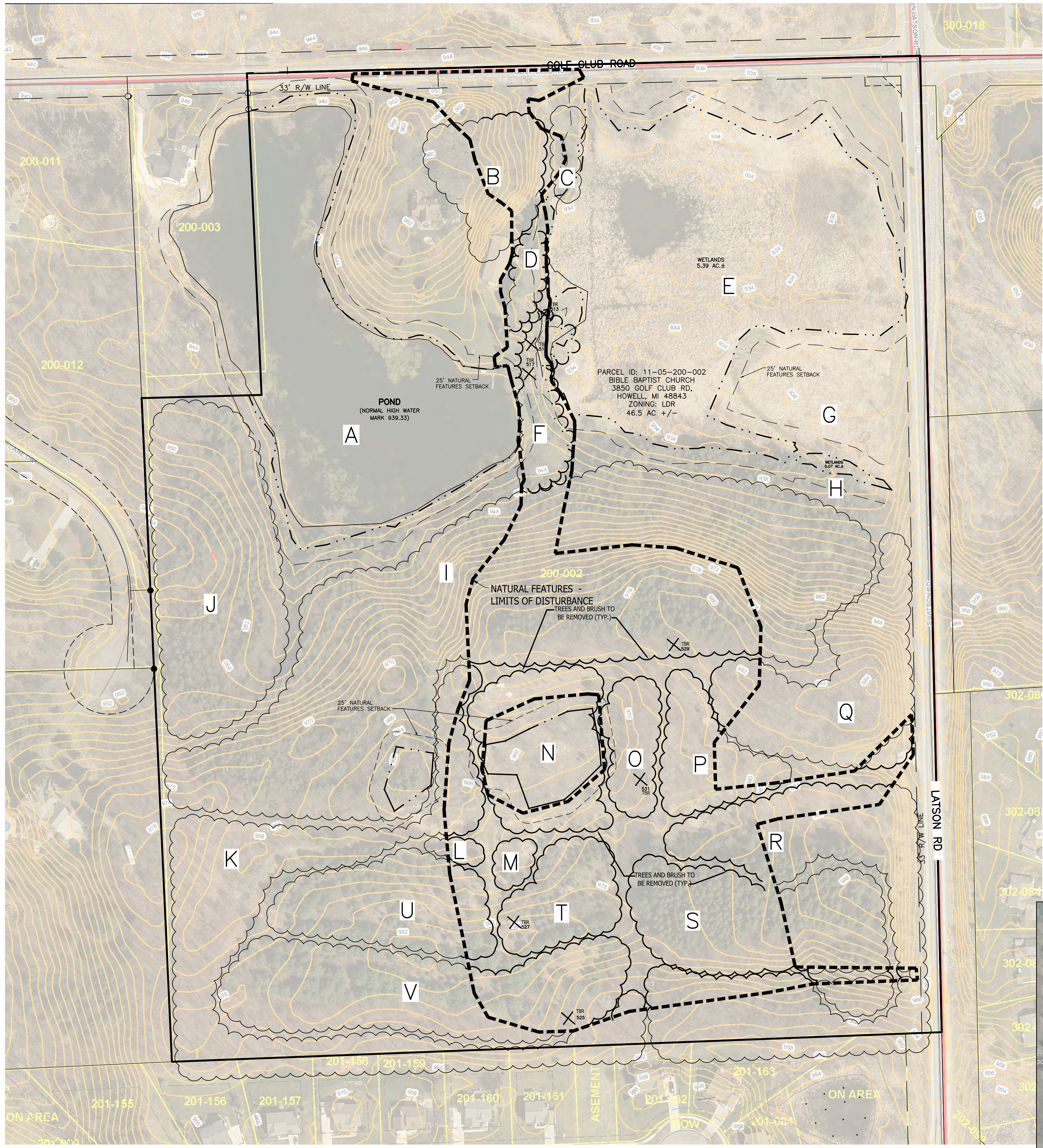
ZONE "R"
SIMILAR TO ZONE "Q", ZONE "R", WHICH IS APPROXIMATELY 2.60 ACRES IN SIZE, IS DOMINATED BY BLACK LOCUST TREES WHICH MAKE UP 70% OF THE FOREST STAND, WHILE THE REMAINING 30% COVER IS COMPOSED OF AMERICAN ELM, BLACK LOCUST, AND BLACK CHERRY TREES. ALL TREES RANGE FROM 4-18" AT DBH AND AVERAGE ABOUT 10" AT DBH SPACED ROUGHLY 15' APART. THE UNDERSTORY IS MADE UP OF SEVERAL DECIDUOUS SAPLINGS AND SOME HONEYSUCKLE, BUT OTHERWISE OPEN. STEEP SLOPES OF 25-35% RUN EAST TOWARDS LATSON ROAD, WHILE THE SOUTHERN EDGE OF THIS ZONE SLOPES MORE GENTLY TO THE SOUTH AT ROUGHLY 10%. THE SOILS ARE A MIX OF MIAMI LOAM AND WAWASEE LOAM. A PORTION OF VEGETATION IN THIS AREA WILL BE REMOVED FOR PARKING.

ZONE "S"
SIZED AT APPROXIMATELY 1.73 ACRES, ZONE "S" IS A LARGE CONIFER STAND COMPOSED MOSTLY OF NORWAY SPRUCE TREES. THE SOUTHERN PORTION OF THIS ZONE IS PLANTED WITH ROWS OF WHITE FIR TREES. ALL TREES IN THIS AREA ARE BETWEEN 4-18" AT DBH AND PLANTED BETWEEN 6-12' APART ON AVERAGE. THE LANDSCAPE SLOPES GENTLY TO THE WEST AT ROUGHLY 2-6%. THE SOILS ARE MOSTLY WAWASEE LOAMS, THOUGH THE SOUTHERN PORTION IS A FOX-BOYER COMPLEX SOIL. A PORTION OF VEGETATION IN THIS AREA WILL BE REMOVED FOR CHURCH BUILDING.

ZONE "T"
ZONE "T" IS A SMALLER AND MORE OPEN AREA THAT IS APPROXIMATELY 0.64 ACRES IN SIZE. IT IS POPULATED WITH YOUNGER FRASIER FIR AND SCOTCH PINE TREES THAT ARE NOT MUCH LARGER THAN 8" AT DBH. GRASSES AND FORBES OCCUPY THE SPACES IN BETWEEN. THIS ZONE HAS A MIX OF FOX-BOYER COMPLEX SOILS, AND WAWASEE LOAMS THAT SLOPE TO THE NORTHEAST AT ROUGHLY 2-6%. A PORTION OF VEGETATION IN THIS AREA WILL BE REMOVED FOR PARKING AND THE CHURCH BUILDING.

ZONE "U"
ZONE "U" IS APPROXIMATELY 1.10 ACRES IN SIZE AND POPULATED WITH SCOTCH PINE TREES AND SEVERAL NORWAY SPRUCE TREES THAT RANGE BETWEEN 6-12" AT DBH AND ARE SPACED ABOUT 15' APART. SOILS ARE MIAMI LOAMS AND FOX-BOYER COMPLEX SOILS THAT SLOPE TO THE NORTH AT ABOUT 12%. THE UNDERSTORY IS MINIMAL, THOUGH SOME SMALLER DECIDUOUS SPECIES ARE SPROUTING. A PORTION OF VEGETATION IN THIS AREA WILL BE REMOVED FOR PARKING.

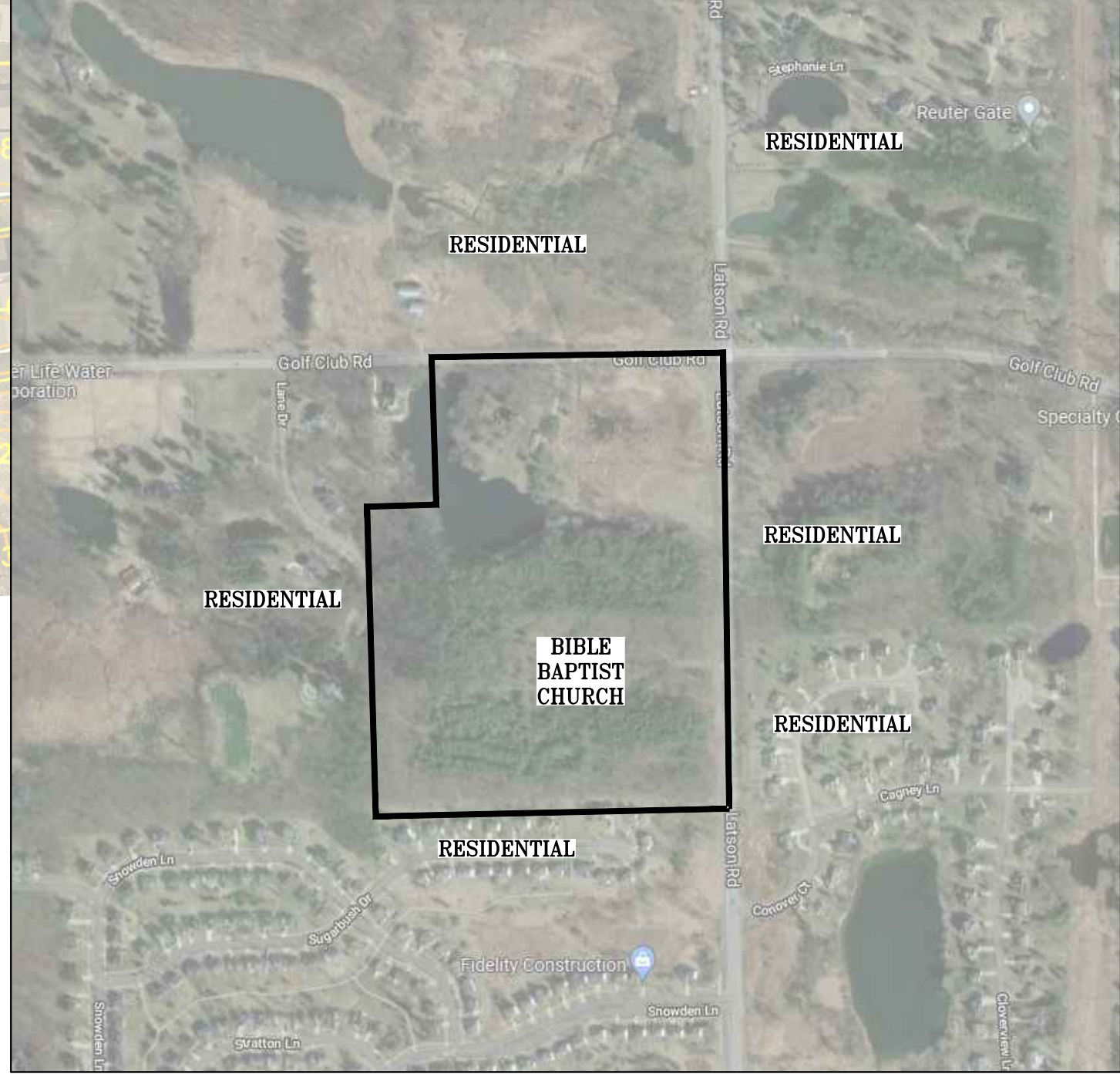
ZONE "V"
ZONE "V" IS APPROXIMATELY 2.04 ACRES IN SIZE AND POPULATED WITH WHITE PINE TREES THAT ARE PLANTED IN ROWS ON THE SOUTHERN EDGE, WITH A MIX OF SCOTCH PINE AND WHITE PINE ON THE NORTHERN PORTION. THESE TREES ARE BETWEEN 6-18" AT DBH AND SPACED 15' APART WITH NO UNDERSTORY OBSERVED. THE TREES ARE PLANTED ON A RIDGE WITH MIAMI LOAM SOILS TO THE SOUTH, AND FOX-BOYER COMPLEX SOILS TO THE NORTH WITH SLOPES RANGING FROM 2-6%. A PORTION OF VEGETATION IN THIS AREA WILL BE REMOVED FOR PARKING.



SOIL CLASSIFICATION
ACCORDING TO USDA NRCS WEB SOIL SURVEY DATA:

Map Unit Symbol	Map Unit Name
Cc	Carlsle muck, 0 to 2 percent slopes
FrD	Fox-Boyer complex, 2 to 6 percent slopes
FrE	Fox-Boyer complex, 12 to 18 percent slopes
FrE	Fox-Boyer complex, 18 to 25 percent slopes
MoB	Wawasee loam, 2 to 6 percent slopes
MoC	Wawasee loam, 6 to 12 percent slopes
MoD	Miami loam, 12 to 18 percent slopes
MoF	Miami loam, 25 to 35 percent slopes
W	Water
Totals for Area of Interest	

SURROUNDING AREAS MAP



THE USE OF THIS PLAN FOR ANY OTHER PROJECTS OR PURPOSES IS EXPRESSLY PROHIBITED. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. BEBOSS ENGINEERING AND SURVEYING, PLLC, DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THESE DRAWINGS OR THE CONFORMANCE OF THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR OBTAINING THE EXACT LOCATIONS OF ALL UTILITIES AND FOR VERIFYING THE ACCURACY OF THE DATA PROVIDED FOR THIS PROJECT. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE PUBLIC UTILITIES AND OTHER AGENCIES BEFORE ANY CONSTRUCTION BEGINS.

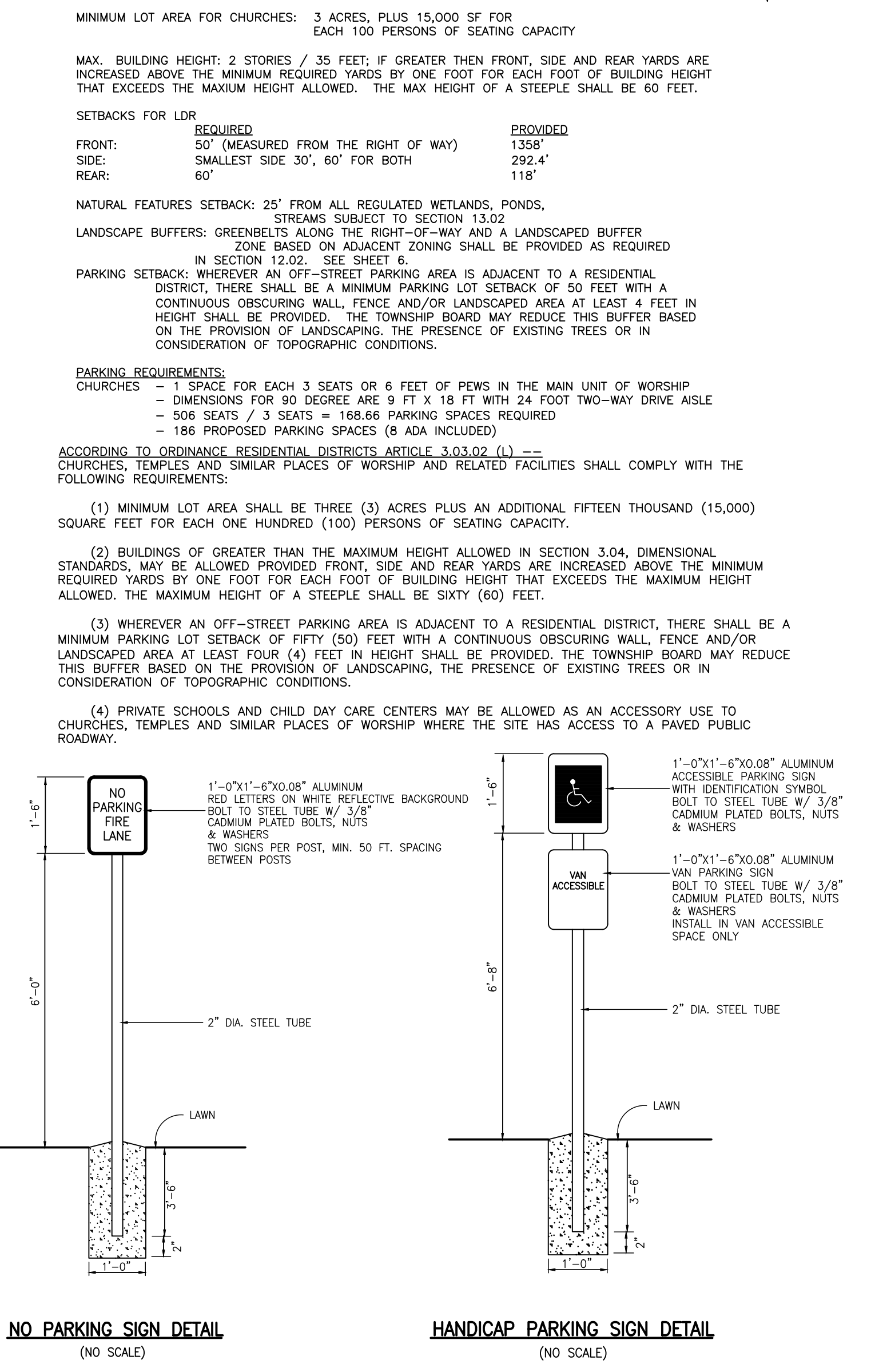
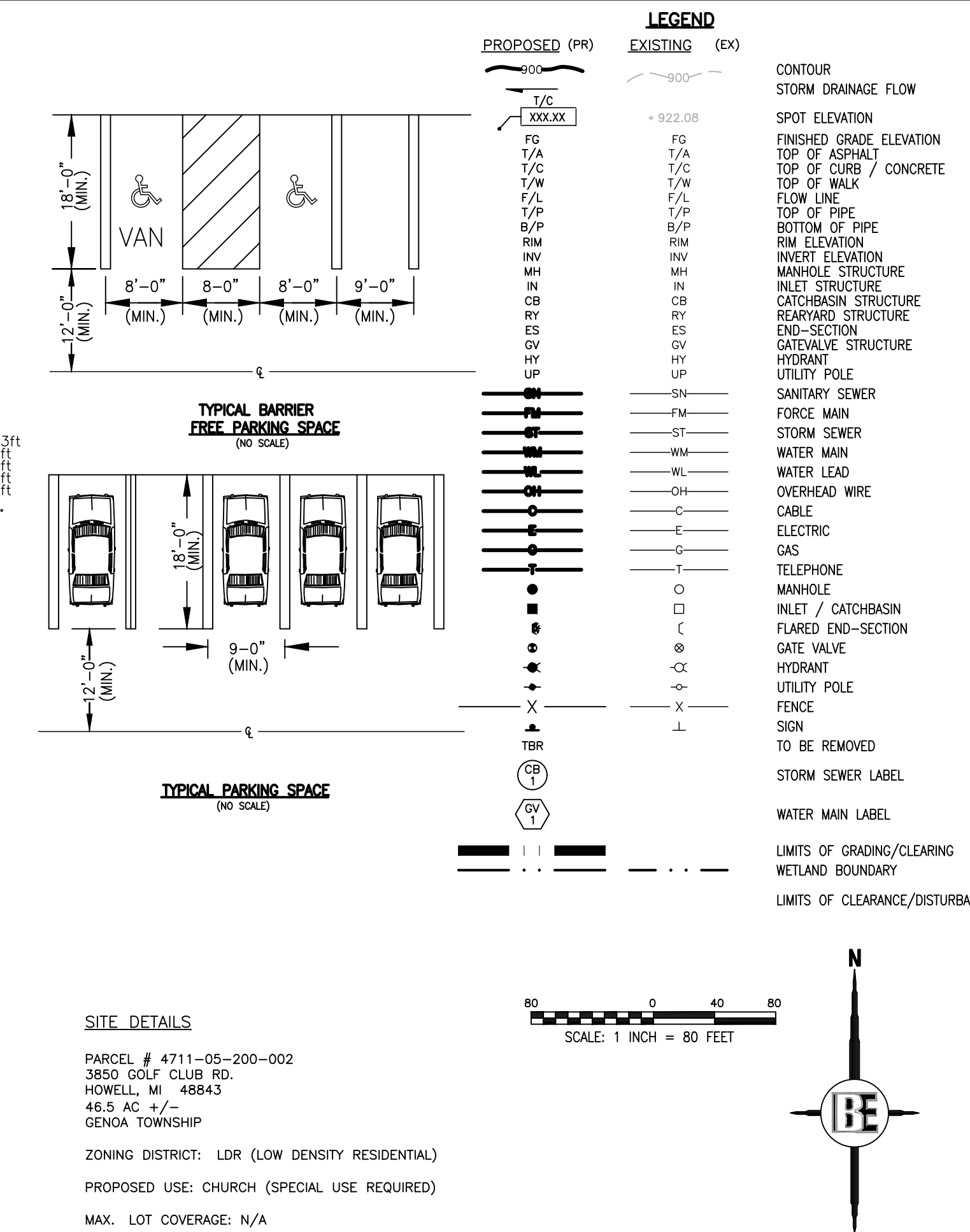
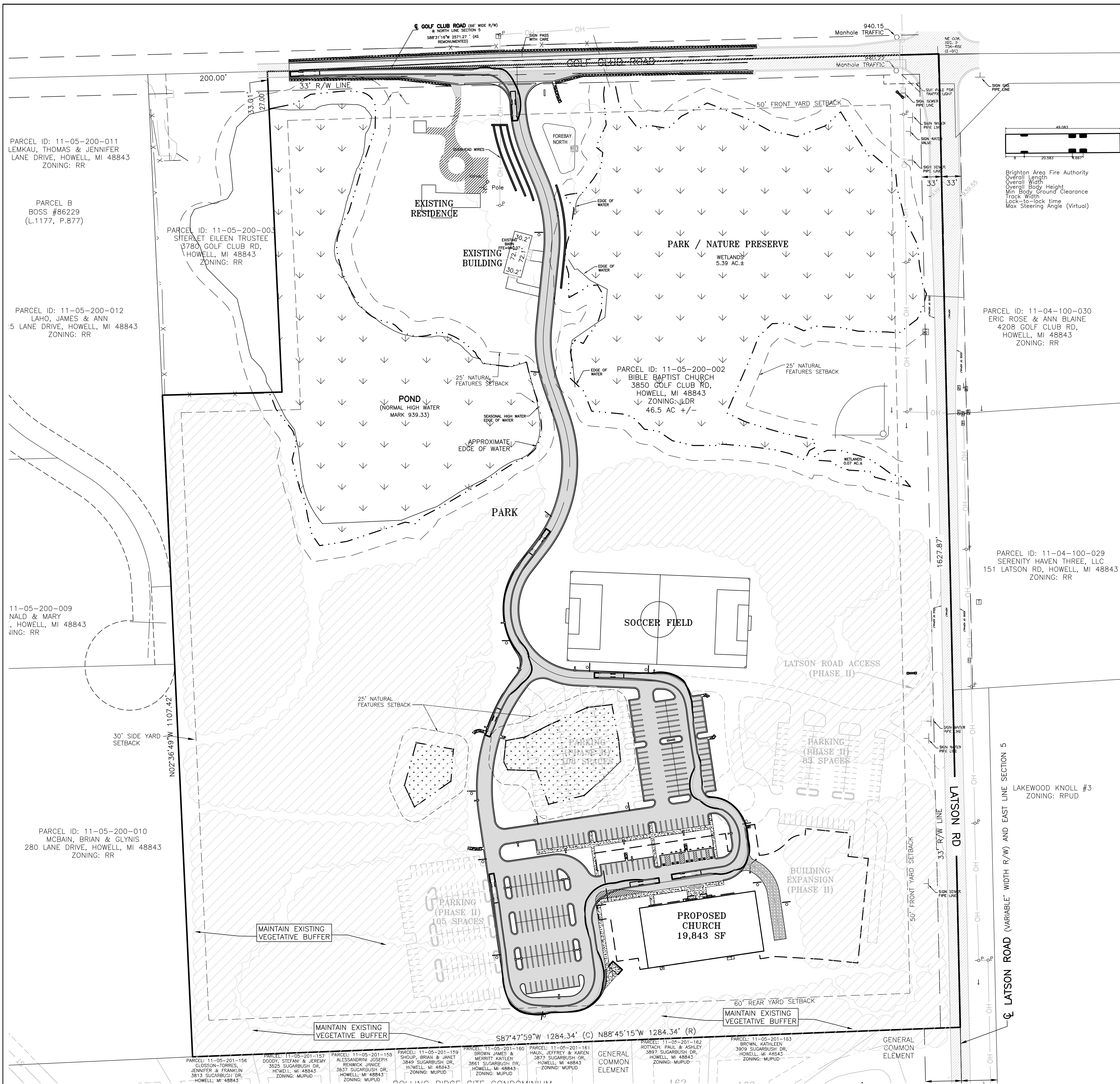
BEBOSS ENGINEERING AND SURVEYING, PLLC
3121 E. GRAND RIVER AVE.,
HOWELL, MI 48843
517-546-4836 FAX 517-548-1670

BEBOSS ENGINEERING
Engineers Surveyors Planners Landscape Architects
3121 E. GRAND RIVER AVE.,
HOWELL, MI 48843
517-546-4836 FAX 517-548-1670

BIBLE BAPTIST CHURCH
BIBLE BAPTIST CHURCH
2258 EAST HIGHLAND ROAD
HOWELL, MI 48843
517-715-9223

PROJECT: BIBLE BAPTIST CHURCH
PREPARED FOR: BIBLE BAPTIST CHURCH
TITLE: NATURAL FEATURES PLAN

DESIGNED BY:	JH
DRAWN BY:	JS
CHECKED BY:	
SCALE:	1" = 100'
JOB NO.:	21-542
DATE:	2/1/2022
SHEET NO.:	3



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 HOWELL, MI. 48843
 517.546.4836 FAX 517.548.1670

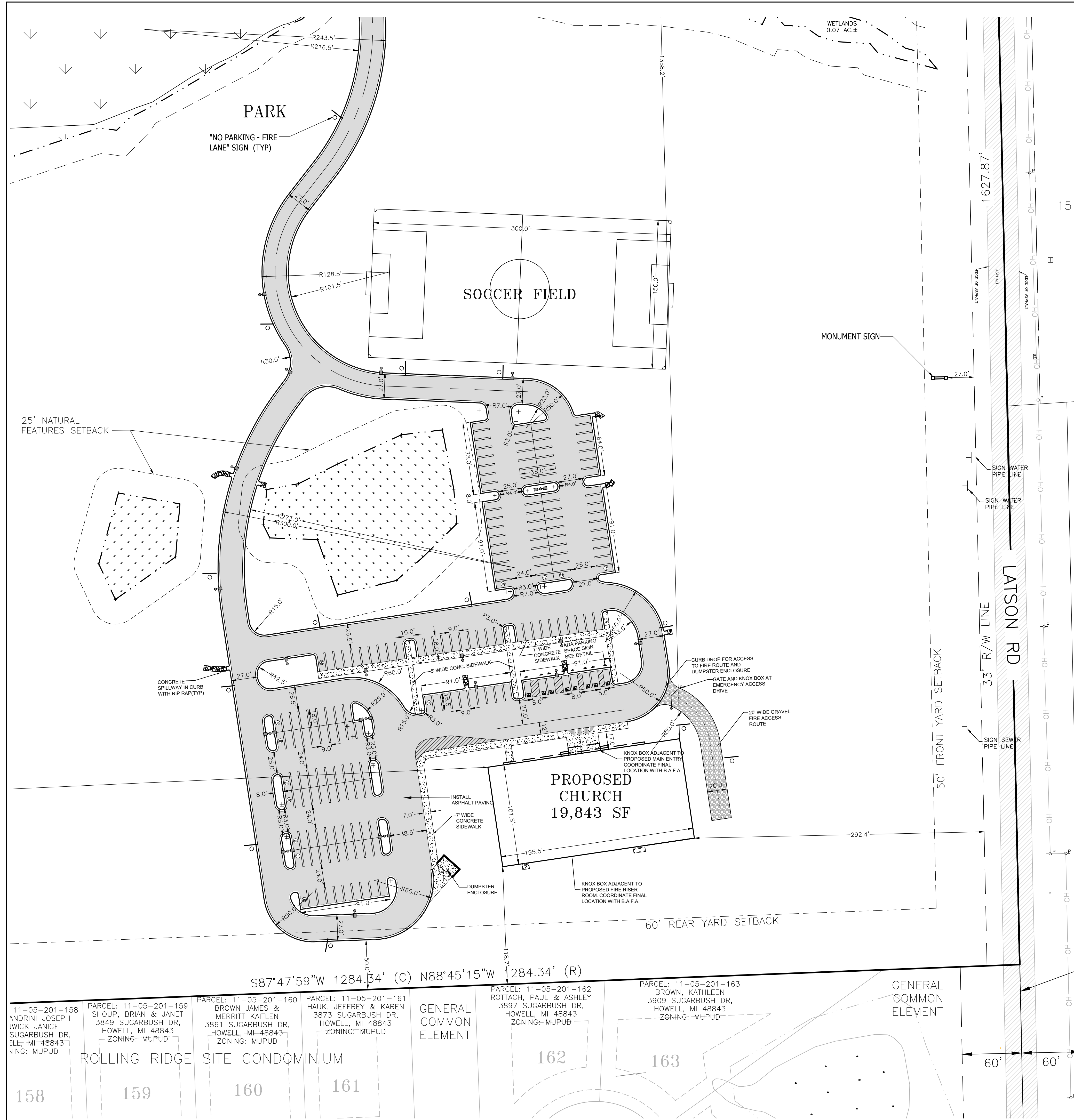
BIBLE BAPTIST CHURCH
BIBLE BAPTIST CHURCH
 2258 EAST HIGHLAND ROAD
 HOWELL, MI 48843
 517-715-9223

OVERALL SITE PLAN

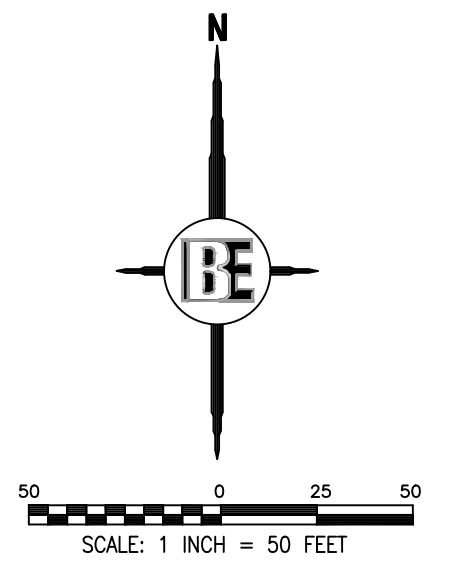
PROJECT	PREPARED FOR	TITLE	DATE
BIBLE BAPTIST CHURCH	BIBLE BAPTIST CHURCH	OVERALL SITE PLAN	2/23/22

NO	BY	PER	TWP	REVISION	PER
1	ST	JS			

DESIGNED BY: ST
 DRAWN BY: JS
 CHECKED BY:
 SCALE 1" = 80'
 JOB NO. 21-542
 DATE 2/1/2022
 SHEET NO. 4



PARCEL ID: 11-04-100-029
 SERENITY HAVEN THREE, LLC
 151 LATSON RD, HOWELL, MI 48843
 ZONING: RR



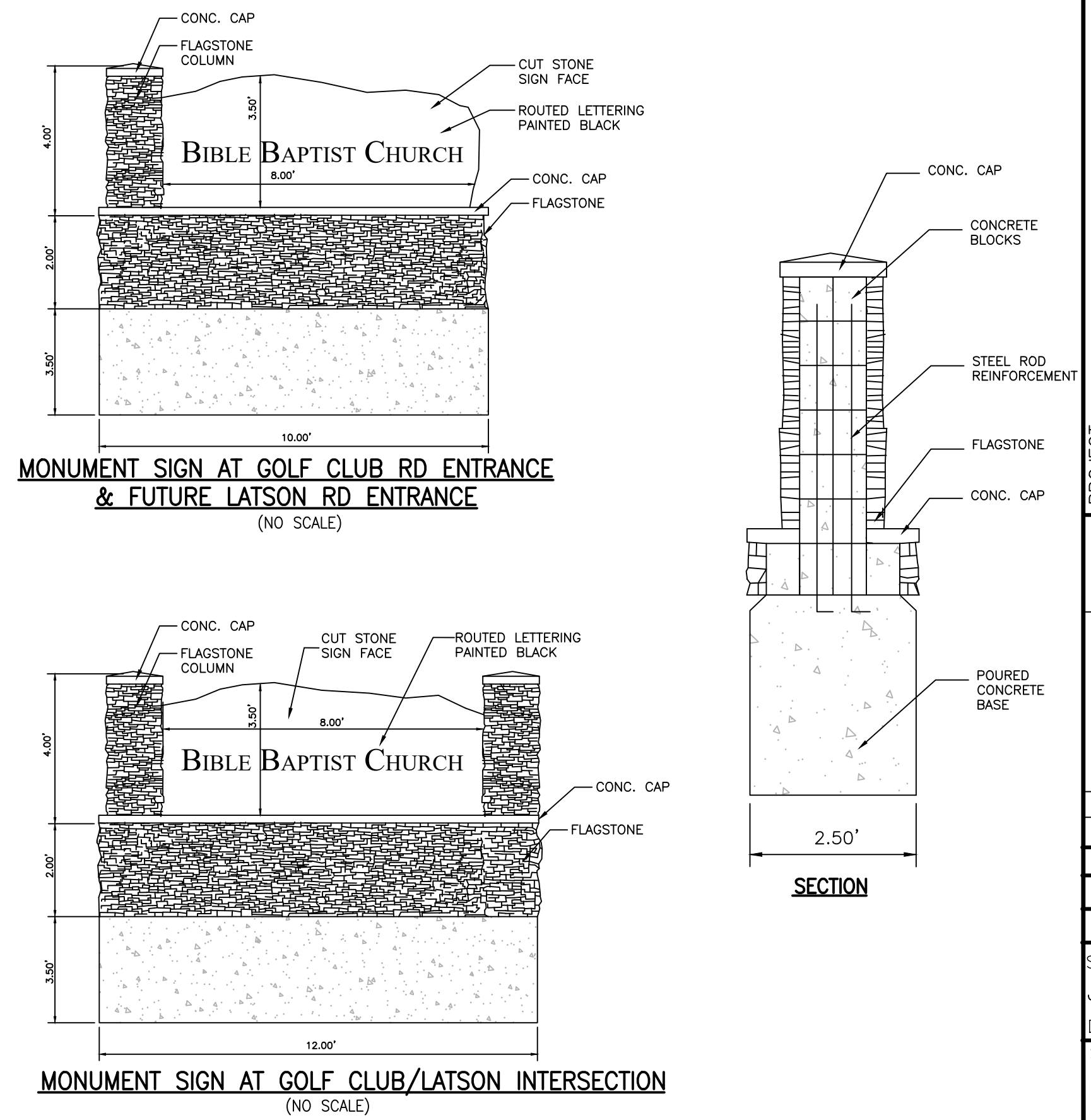
PROPOSED (PR)	EXISTING (EX)
900	900
1/2	1/2
XXXXX	XXXXX
FG	FG
T/A	T/A
T/C	T/C
T/W	T/W
F/L	F/L
T/P	T/P
B/P	B/P
RM	RM
INV	INV
MH	MH
IN	IN
CB	CB
RY	RY
ES	ES
GV	GV
HY	HY
UP	UP
SN	SN
FM	FM
ST	ST
WM	WM
WL	WL
OH	OH
C	C
E	E
G	G
T	T
O	O
□	□
○	○
●	●
⊙	⊙
⊘	⊘
⊚	⊚
X	X
+	+
⊕	⊕
⊖	⊖
⊗	⊗
⊘	⊘
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⊜	⊜
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⊨	⊨
⊩	⊩
⊪	⊪
⊫	⊫
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⊭	⊭
⊮	⊮
⊯	⊯
⊰	⊰
⊱	⊱
⊲	⊲
⊳	⊳
⊴	⊴
⊵	⊵
⊶	⊶
⊷	⊷
⊸	⊸
⊹	⊹
⊺	⊺
⊻	⊻
⊼	⊼
⊽	⊽
⊾	⊾
⊿	⊿

GENERAL NOTES

- ALL OUTDOOR LIGHTS SHALL BE SHIELDED TO REDUCE GLARE AND SHALL BE ARRANGED TO NOT INTERFERE WITH THE VISION OF PERSONS ON ADJACENT ROADWAYS OR ADJACENT PROPERTY.
- ALL SIGNS SHALL MEET LOCAL MUNICIPALITY ORDINANCE REQUIREMENTS.
- FUTURE ACCESS DRIVE FROM LATSON ROAD TO CONFORM TO BAFSA'S ACCESS STANDARDS.
- THE CHURCH SHALL INCLUDE THE BUILDING ADDRESS A MINIMUM 6" HIGH LETTERS OF CONTRASTING COLORS AND BE CLEARLY VISIBLE FROM THE STREET. THE LOCATION AND SIZE SHALL BE VERIFIED PRIOR TO INSTALLATION.
- ONE SIDE OF THE STREET SHALL BE MARKED AS A FIRE LANE AND SHALL HAVE APPROPRIATE SIGNAGE.
- ACCESS ROADS TO THE SITE SHALL BE PROVIDED AND MAINTAINED DURING CONSTRUCTION.
- ACCESS ROADS SHALL BE CONSTRUCTED TO BE CAPABLE OF SUPPORTING THE IMPOSED LOAD OF FIRE APPARATUS WEIGHING AT LEAST 84,000 POUNDS.
- A MINIMUM VERTICAL CLEARANCE OF 13.5 FEET SHALL BE MAINTAINED THROUGHOUT THE SITE. THIS INCLUDES ENCROACHMENTS FROM LARGE TREE CANOPIES, LIGHTING, ETC.
- DURING THE CONSTRUCTION PROCESS, THE BUILDING WILL BE EVALUATED FOR EMERGENCY RESPONDER RADIO SIGNAL STRENGTH. IF COVERAGE IS FOUND TO BE QUESTIONABLE OR INADEQUATE, AN APPROVED CONTRACTOR SHALL BE HIRED TO PERFORM A GRID TEST OF THE FACILITY. IF THE SIGNAL STRENGTH COVERAGE IS FOUND TO BE NON-COMPLIANT, AN APPROVED EMERGENCY RESPONDER RADIO COVERAGE SYSTEM SHALL BE PROVIDED IN THE BUILDING.

LATSON ROAD (VARIABLE WIDTH R/W) AND EAST LINE SECTION 5

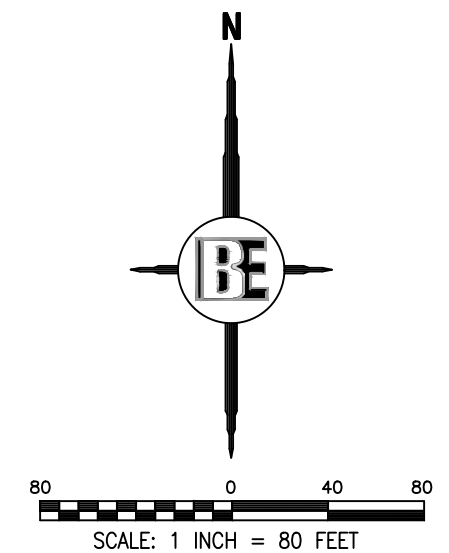
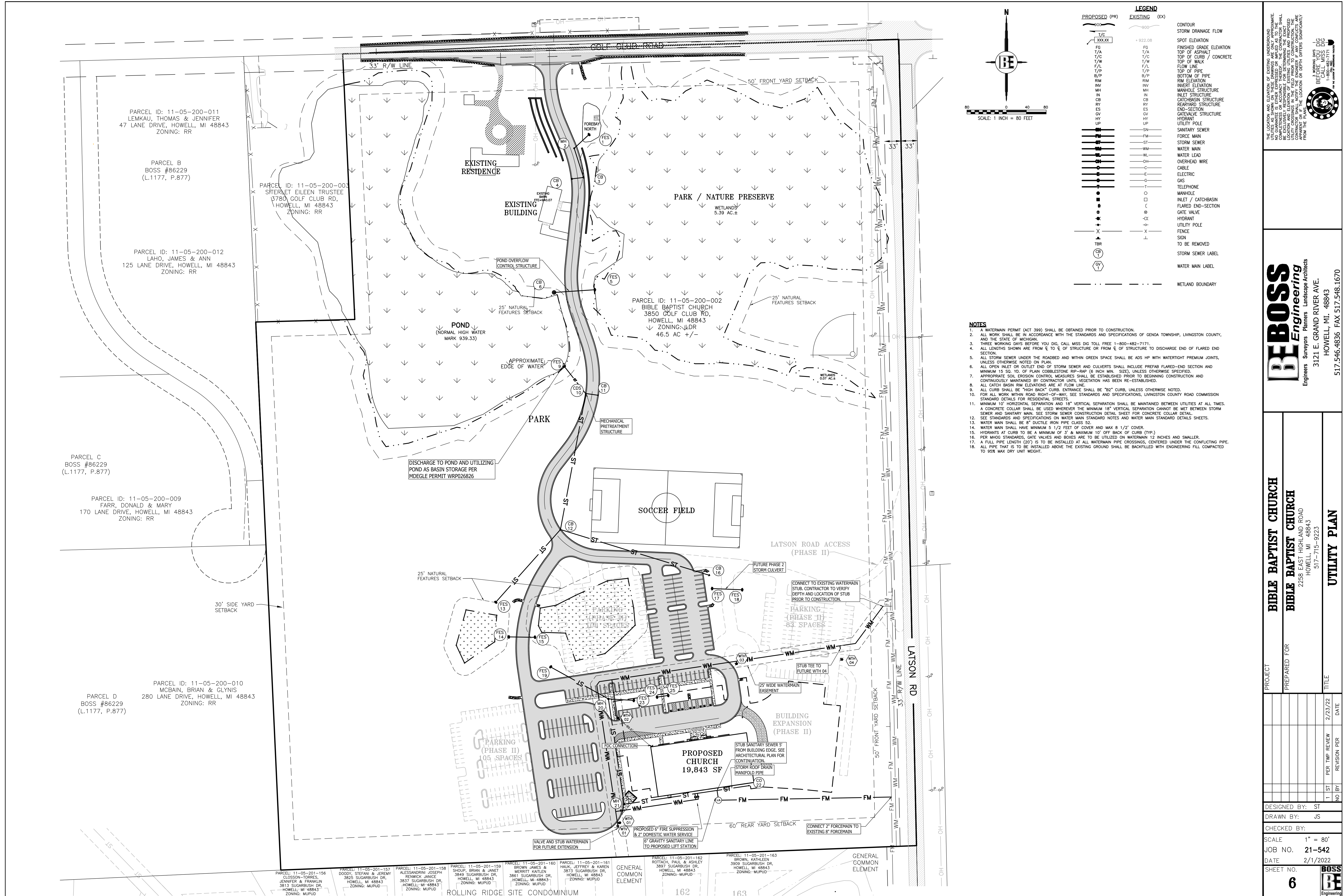
LAKWOOD KNOLL #3
 ZONING: RPUD



THE USER SHALL BE RESPONSIBLE FOR VERIFYING THE ACCURACY OF THE INFORMATION PROVIDED HEREON. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.

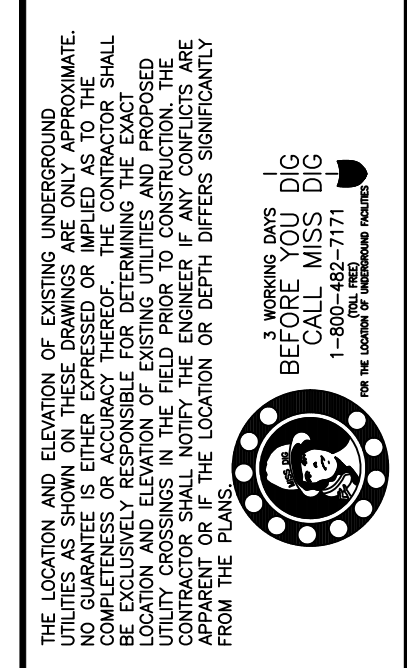
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 Engineering
 Planners Landscape Architects
 3121 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 517.546.4836 FAX 517.548.1670

PROJECT	BIBLE BAPTIST CHURCH
PREPARED FOR	BIBLE BAPTIST CHURCH 2258 EAST HIGHLAND ROAD HOWELL, MI 48843 517-715-9223
TITLE	CHURCH CAMPUS SITE PLAN
DATE	2/23/22
REVISION PER	1 ST
DESIGNED BY:	ST
DRAWN BY:	JS
CHECKED BY:	
SCALE	1" = 50'
JOB NO.	21-542
DATE	2/01/2022
SHEET NO.	5



PROPOSED (PR)	EXISTING (EX)	LEGEND
900	900	CONTOUR
1/2C	1/2C	STORM DRAINAGE FLOW
XXX.XX	923.08	SPOT ELEVATION
FG	T/A	FINISHED GRADE ELEVATION
T/A	T/A	TOP OF ASPHALT
T/W	T/W	TOP OF CURB / CONCRETE
F/L	F/L	TOP OF WALK
T/P	F/L	FLOW LINE
B/P	T/P	TOP OF PIPE
RM	B/P	BOTTOM OF PIPE
INV	RM	RM ELEVATION
MH	INV	INVERT ELEVATION
IN	MH	MANHOLE STRUCTURE
CB	IN	INLET STRUCTURE
RY	CB	CATCHBASIN STRUCTURE
ES	RY	REAR YARD STRUCTURE
OV	ES	END-SECTION
HY	OV	CATCHVALVE STRUCTURE
UP	HY	HYDRANT
	UP	UTILITY POLE
	SW	SANITARY SEWER
	ST	STORM SEWER
	WM	WATER MAIN
	WL	WATER LEAD
	EW	ELECTRIC
	GS	GAS
	T	TELEPHONE
	O	MANHOLE
	IC	INLET / CATCHBASIN
	FL	FLARED END-SECTION
	GV	GATE VALVE
	HY	HYDRANT
	UP	UTILITY POLE
	X	FENCE
	L	SIGN
		TO BE REMOVED
		STORM SEWER LABEL
		WATER MAIN LABEL
		WETLAND BOUNDARY

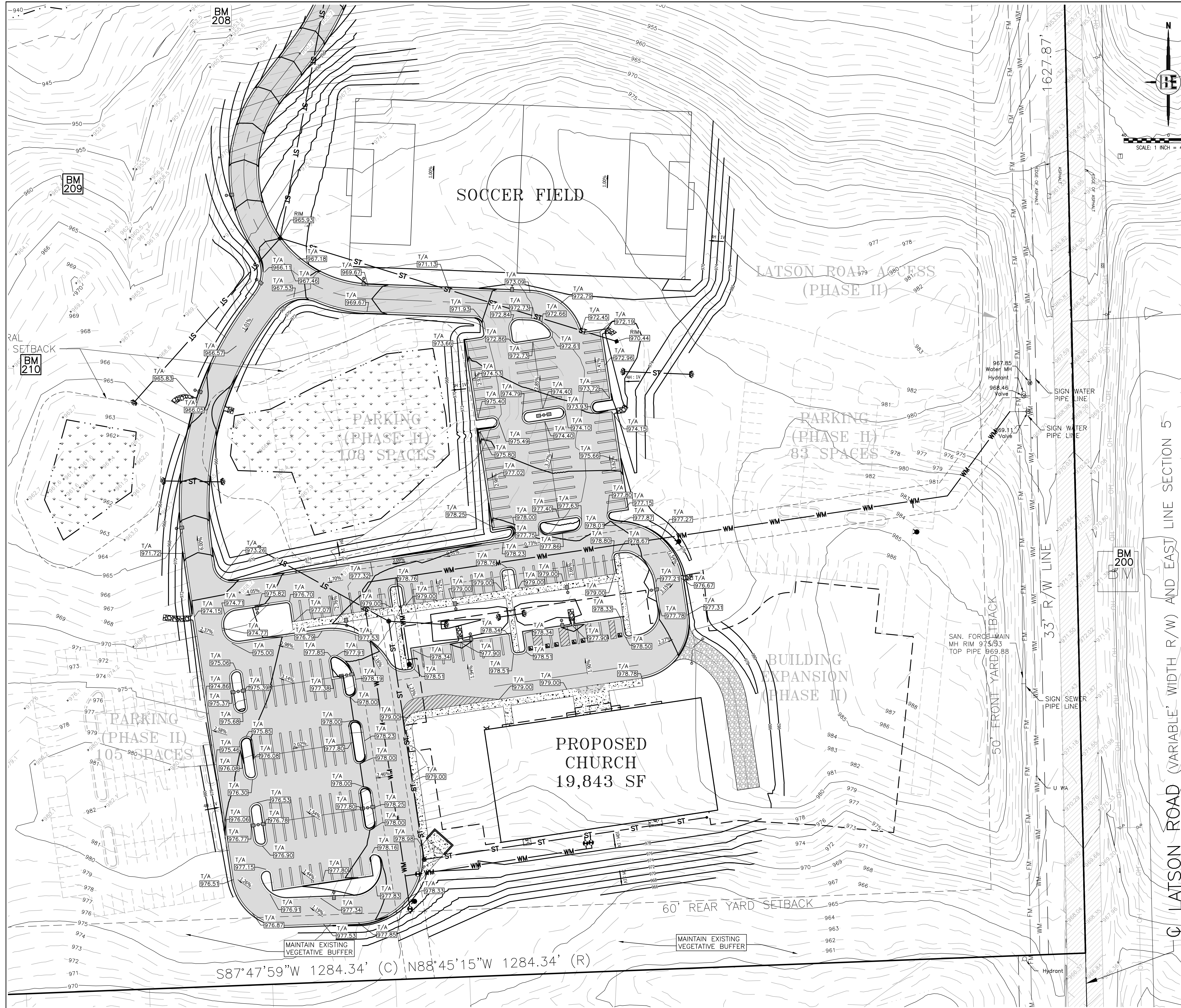
- NOTES**
1. A WATERMAIN PERMIT (ACT 399) SHALL BE OBTAINED PRIOR TO CONSTRUCTION.
 2. ALL WORK SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF GENOA TOWNSHIP, LIVINGSTON COUNTY, AND THE STATE OF MICHIGAN.
 3. THREE WORKING DAYS BEFORE YOU DIG, CALL MISS DIG TOLL FREE 1-800-482-7171.
 4. ALL LENGTHS SHOWN ARE FROM 0 TO 0 OF STRUCTURE OR FROM 0 OF STRUCTURE TO DISCHARGE END OF FLARED END SECTION.
 5. ALL STORM SEWER UNDER THE ROADBED AND WITHIN GREEN SPACE SHALL BE ADS HP WITH WATERTIGHT PREMIUM JOINTS, UNLESS OTHERWISE NOTED ON PLAN.
 6. ALL OPEN INLET OR OUTLET END OF STORM SEWER AND CULVERTS SHALL INCLUDE PREFAB FLARED-END SECTION AND MINIMUM 15 SQ. YD. OF PLAIN COBBLESTONE RIP-RAP (6 INCH MIN. SIZE), UNLESS OTHERWISE SPECIFIED.
 7. APPROPRIATE SOIL EROSION CONTROL MEASURES SHALL BE ESTABLISHED PRIOR TO BEGINNING CONSTRUCTION AND CONTINUOUSLY MAINTAINED BY CONTRACTOR UNTIL VEGETATION HAS BEEN RE-ESTABLISHED.
 8. ALL CATCH BASIN RM ELEVATIONS ARE AT FLOW LINE.
 9. ALL CURB SHALL BE "HIGH BACK" CURB. ENTRANCE SHALL BE "B2" CURB, UNLESS OTHERWISE NOTED.
 10. FOR ALL WORK WITHIN ROAD RIGHT-OF-WAY, SEE STANDARDS AND SPECIFICATIONS, LIVINGSTON COUNTY ROAD COMMISSION STANDARD DETAILS FOR RESIDENTIAL STREETS.
 11. MINIMUM 10' HORIZONTAL SEPARATION AND 18" VERTICAL SEPARATION SHALL BE MAINTAINED BETWEEN UTILITIES AT ALL TIMES. A CONCRETE COLLAR SHALL BE USED WHEREVER THE MINIMUM 18" VERTICAL SEPARATION CANNOT BE MET BETWEEN STORM SEWER AND SANITARY MAIN. SEE STORM SEWER CONSTRUCTION DETAIL SHEET FOR CONCRETE COLLAR DETAIL.
 12. SEE STANDARDS AND SPECIFICATIONS ON WATER MAIN STANDARD NOTES AND WATER MAIN STANDARD DETAILS SHEETS.
 13. WATER MAIN SHALL BE 8" DUCTILE IRON PIPE CLASS 52.
 14. WATER MAIN SHALL HAVE MINIMUM 6 1/2' FEET OF COVER AND MAX 6 1/2' COVER.
 15. HYDRANTS AT CURB TO BE A MINIMUM OF 3' & MAXIMUM 10' OFF BACK OF CURB (TYP.)
 16. PER MHQC STANDARDS, GATE VALVES AND BOXES ARE TO BE UTILIZED ON WATERMAIN 12 INCHES AND SMALLER.
 17. A FULL PIPE LENGTH (20') IS TO BE INSTALLED AT ALL WATERMAIN PIPE CROSSINGS, CENTERED UNDER THE CONFLICTING PIPE.
 18. ALL PIPE THAT IS TO BE INSTALLED ABOVE THE EXISTING GROUND SHALL BE BACKFILLED WITH ENGINEERING FILL COMPACTED TO 95% MAX DRY UNIT WEIGHT.



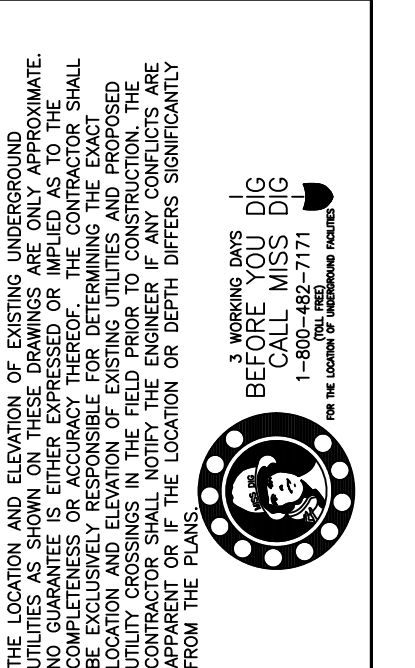
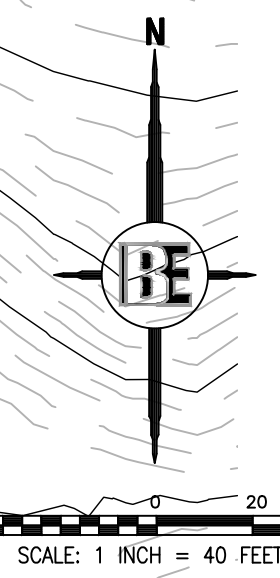
BEBOSS Engineering
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 HOWELL, MI. 48843
 517.546.4836 FAX 517.548.1670

BIBLE BAPTIST CHURCH
 PREPARED FOR
BIBLE BAPTIST CHURCH
 2258 EAST HIGHLAND ROAD
 HOWELL, MI 48843
 517-715-9223

PROJECT	TITLE
BIBLE BAPTIST CHURCH	UTILITY PLAN
DESIGNED BY: ST	DATE: 2/23/22
DRAWN BY: JS	REVISION PER
CHECKED BY:	NO BY
SCALE: 1" = 80'	DATE: 2/1/2022
JOB NO. 21-542	SHEET NO. 6



PROPOSED (PR)	EXISTING (EX)	LEGEND
---	---	CONTOUR
---	---	STORM DRAINAGE FLOW
---	---	SPOT ELEVATION
---	---	FINISHED GRADE ELEVATION
---	---	TOP OF ASPHALT
---	---	TOP OF CURB / CONCRETE
---	---	TOP OF WALK
---	---	T/W
---	---	F/L
---	---	FLOW LINE
---	---	T/P
---	---	BOTTOM OF PIPE
---	---	B/P
---	---	RIM
---	---	RIM ELEVATION
---	---	INVERT ELEVATION
---	---	MANHOLE STRUCTURE
---	---	INLET STRUCTURE
---	---	CATCHBASIN STRUCTURE
---	---	REARWARD STRUCTURE
---	---	END-SECTION
---	---	GATEVALVE STRUCTURE
---	---	HYDRANT STRUCTURE
---	---	UTILITY POLE
---	---	SN
---	---	SANITARY SEWER
---	---	FORCE MAIN
---	---	ST
---	---	STORM SEWER
---	---	WM
---	---	WATER MAIN
---	---	WL
---	---	WATER LEAD
---	---	OH
---	---	OVERHEAD WIRE
---	---	C
---	---	CABLE
---	---	E
---	---	ELECTRIC
---	---	G
---	---	GAS
---	---	T
---	---	TELEPHONE
---	---	M
---	---	MANHOLE
---	---	I / C
---	---	INLET / CATCHBASIN
---	---	FLARED END-SECTION
---	---	G
---	---	GATE VALVE
---	---	H
---	---	HYDRANT
---	---	U
---	---	UTILITY POLE
---	---	F
---	---	FENCE
---	---	S
---	---	SIGN
---	---	TO BE REMOVED
---	---	STORM SEWER LABEL
---	---	WATER MAIN LABEL
---	---	WETLAND BOUNDARY
---	---	LIMITS OF CLEARANCE/DISTURBANCE

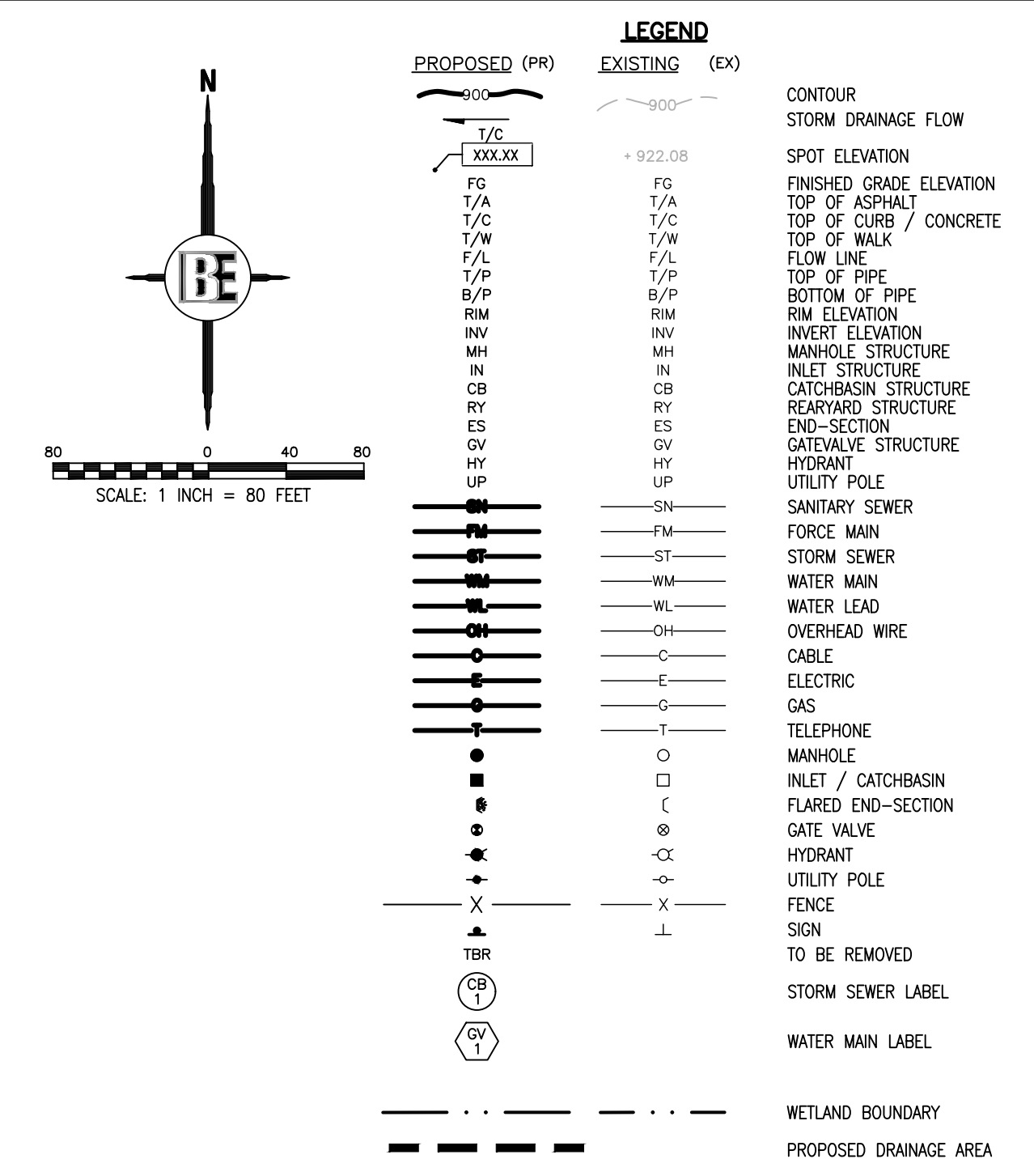
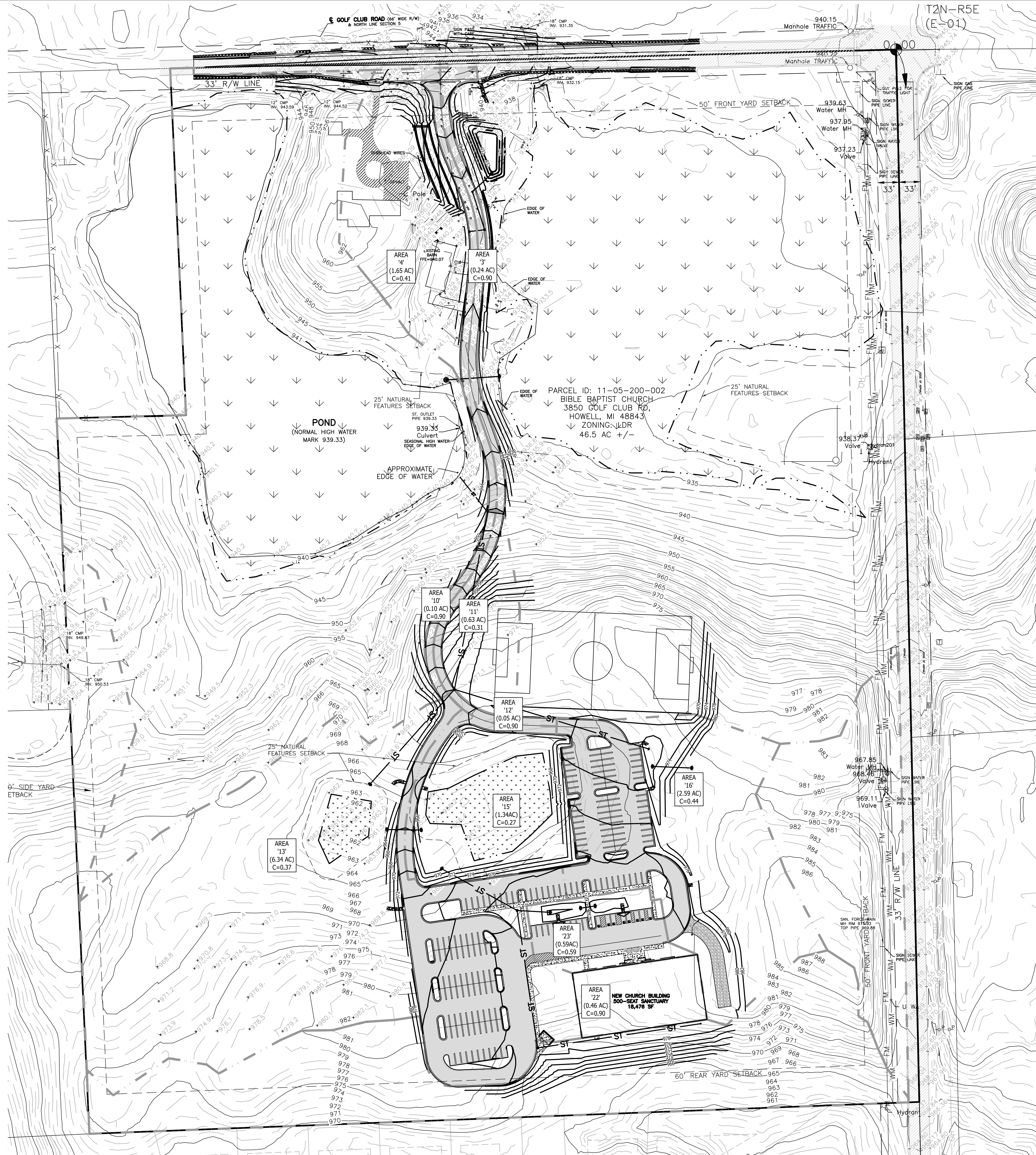


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 HOWELL, MI. 48843
 517.546.4836 FAX 517.548.1670

BIBLE BAPTIST CHURCH
BIBLE BAPTIST CHURCH
 2258 EAST HIGHLAND ROAD
 HOWELL, MI 48843
 517-715-9223

PROJECT	DATE
BIBLE BAPTIST CHURCH	2/23/22
PREPARED FOR	
BIBLE BAPTIST CHURCH	
2258 EAST HIGHLAND ROAD	
HOWELL, MI 48843	
517-715-9223	
TITLE	DATE
GRADING PLAN	
DESIGNED BY:	DATE
ST	
DRAWN BY:	DATE
JS	
CHECKED BY:	DATE
SCALE	DATE
1" = 40'	
JOB NO.	DATE
21-542	12/01/2021
DATE	DATE
SHEET NO.	DATE
7	

SITE BENCHMARKS (NAVD88 DATUM):
 -BM #200 = NAIL/TAG W/S P. POLE E/S LASTON RD. 785'± NORTH OF CONOVER CT. ELEV.=971.41
 -BM #201 = ARROW ON HYD W/S OF LASTON RD. 135'± SOUTH OF GOLF CLUB RD. ELEV.=939.50
 -BM #203 = FD. R.R. E/S OF GUY POLE W/S OF LASTON RD. 44'± SOUTH OF GOLF CLUB RD. ELEV.=942.12
 -BM #205 = PK NAIL/TAG W/S 40" WILLOW TREE 170'± SOUTH OF GOLF CLUB RD. & 160'± NORTH OF BARN. ELEV.=935.10
 -BM #206 = LANDSCAPE SPIKE SET S/E CORNER OF POLE BARN. ELEV.=940.32
 -BM #207 = PK NAIL/TAG S/S 12" MAPLE TREE S/S OF POND. ELEV.=945.31
 -BM #208 = PK NAIL/TAG SET 10" PINE TREE 50'± EAST OF TWO TRACK RUNNING M&S & 150'± SOUTH OF POND, N/S OF TWO TRACK RUNNING E&W. ELEV.=954.73
 -BM #209 = PK NAIL/TAG S/S 12" ELM TREE 142'± SOUTH OF POND. ELEV.=959.69
 -BM #210 = PK NAIL/TAG E/S 8" PINE TREE 330'± SOUTH OF POND. ELEV.=966.83



THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL, STATE, AND FEDERAL AGENCIES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL, STATE, AND FEDERAL AGENCIES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL, STATE, AND FEDERAL AGENCIES.

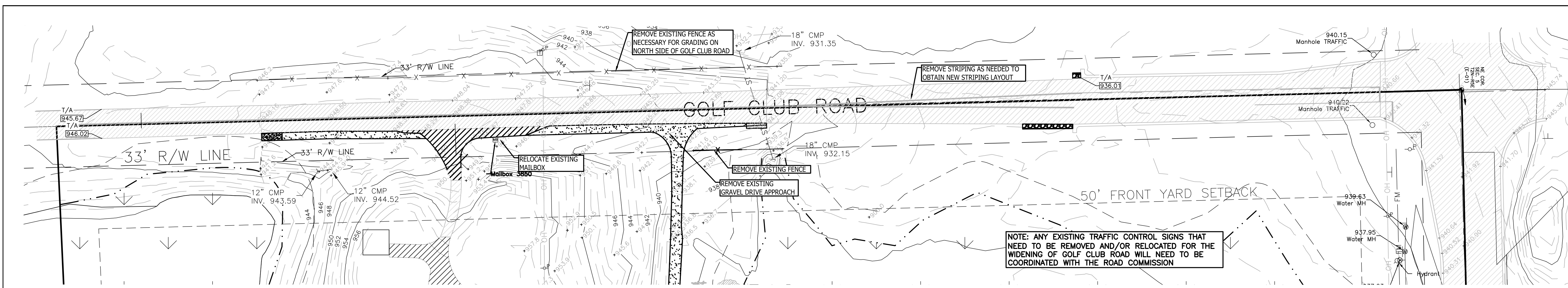
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 3121 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 517.546.4836 FAX 517.548.1670

PROJECT	BIBLE BAPTIST CHURCH
PREPARED FOR	BIBLE BAPTIST CHURCH 2258 EAST HIGHLAND ROAD HOWELL, MI 48843 517-715-9223
TITLE	DRAINAGE PLAN
DATE	2/23/22
REVISION PER	NO BY
1	ST
2	JS
CHECKED BY:	ST
SCALE	1" = 80'
JOB NO.	21-542
DATE	2/1/2022
SHEET NO.	8

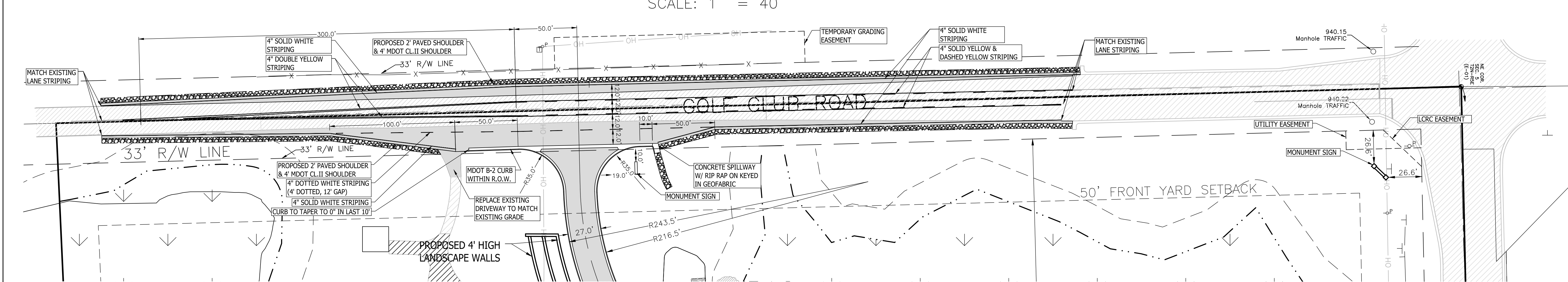
DRAINAGE NARRATIVE:
PRE-DEVELOPMENT:
 IN GENERAL, THE SITE SLOPES NORTHERLY TOWARDS AN EXISTING OPEN WATER POND AND WETLAND AT THE NORTH PORTION OF THE PROPERTY. WATER FROM THE POND AND WETLAND AT THE NORTH PORTION OF THE PROPERTY WILL DISCHARGE THROUGH AN EXISTING STORMPIPE EASTERLY TO THE EXISTING WETLAND AND THEN RUNS NORTHERLY UNDERNEATH GOLF CLUB ROAD. A SMALL PORTION OF THE PROPERTY SLOPES EASTERLY DIRECTLY TO LATSON ROAD RIGHT OF WAY AS WELL AS SOME AREA SLOPING DIRECTLY SOUTHERLY TO THE EXISTING ROLLING RIDGE SITE CONDO.

POST-DEVELOPMENT:
 THE OVERALL DRAINAGE PATTERNS ON THE SITE AFTER DEVELOPMENT REMAIN GENERALLY THE SAME. THERE WILL A REDUCTION IN DRAINAGE AREA DIRECTLY DISCHARGING TO THE ROLLING RIDGE SITE CONDO TO THE SOUTH. THE DIRECT DRAINAGE TO LATSON ROAD RIGHT OF WAY WILL REMAIN UNCHANGED. THE PROPOSED CHURCH AND ALL IMPERVIOUS SURFACES WILL BE DIRECTED VIA A COMBINATION OF ENCLOSED STORM SEWER AS WELL AS OPEN SWALES NORTHERLY TO A MECHANICAL PRETREATMENT UNIT. THE MECHANICAL PRETREATMENT UNIT WILL TREAT THE STORMWATER FROM THE FIRST FLUSH PER NEW LCRC STANDARDS AND DISCHARGE TO THE EXISTING POND ON THE NORTHWEST PORTION OF THE PROPERTY. STORAGE IS WITHIN THE OPEN WATER POND PRIOR TO DISCHARGE INTO THE EAST WETLAND, WHICH IS PERMITTED UNDER MDEGLE PERMIT #WRP026826. THERE IS A NORTH FOREBAY WHOSE DRAINAGE AREAS IS LIMITED TO THE NORTHERN PORTION OF THE PROPOSED COMMERCIAL DRIVE. THIS NORTHERN FOREBAY DISCHARGES DIRECTLY TO THE EAST WETLAND AND IS PERMITTED UNDER MDEGLE PERMIT #WRP026826.

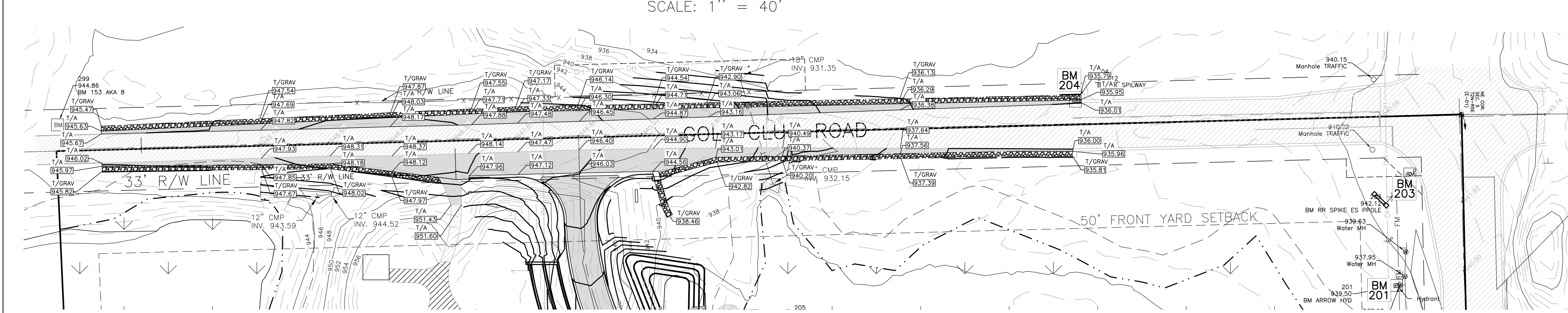
FUTURE DEVELOPMENT:
 THE PLANS FOR A CHURCH EXPANSION ARE ANTICIPATED AT A LATER DATE, WITH A REASONABLE EXPECTED LAYOUT PROVIDED AT THIS TIME FOR THE FUTURE EXPANSION. SINCE THIS FUTURE EXPANSION IS KNOWN, THE STORM SEWER CALCULATIONS AND FOREBAY/MECHANICAL PRETREATMENT UNITS HAVE BEEN SIZED ACCORDINGLY TO ACCOUNT FOR FUTURE CHURCH DEVELOPMENT, THUS MITIGATING UNNECESSARY DISTURBANCE DURING THE EXPANSION PROJECT AS WAS THE CASE IN THE POST-DEVELOPED CONDITION. THE DRAINAGE AREA DISCHARGING DIRECTLY TO THE ROLLING RIDGE SITE CONDO TO THE SOUTH WILL BE REDUCED YET AGAIN IN THE FUTURE CONDITION. THE DRAINAGE TO THE LATSON ROAD RIGHT OF WAY WILL NEED TO BE APPROVED BY LCRC.



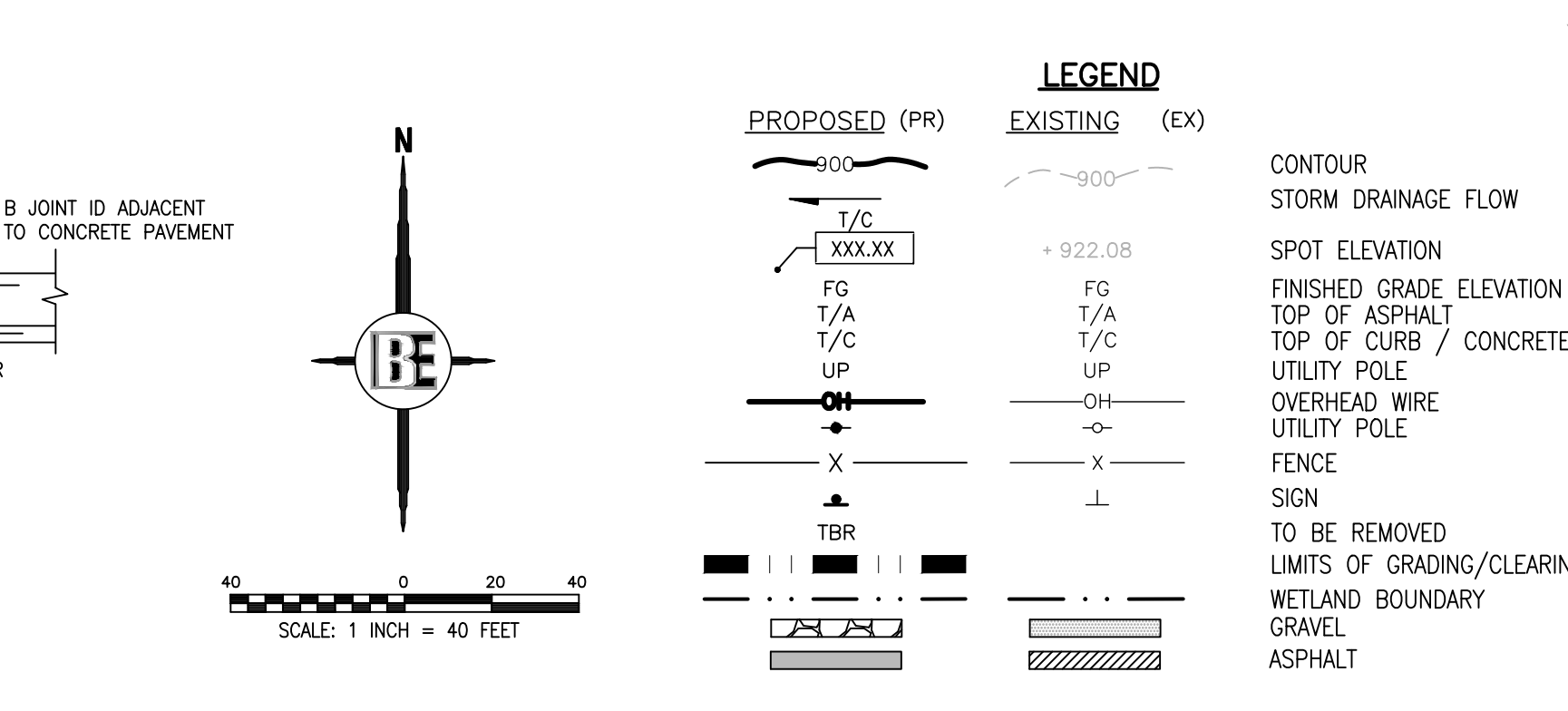
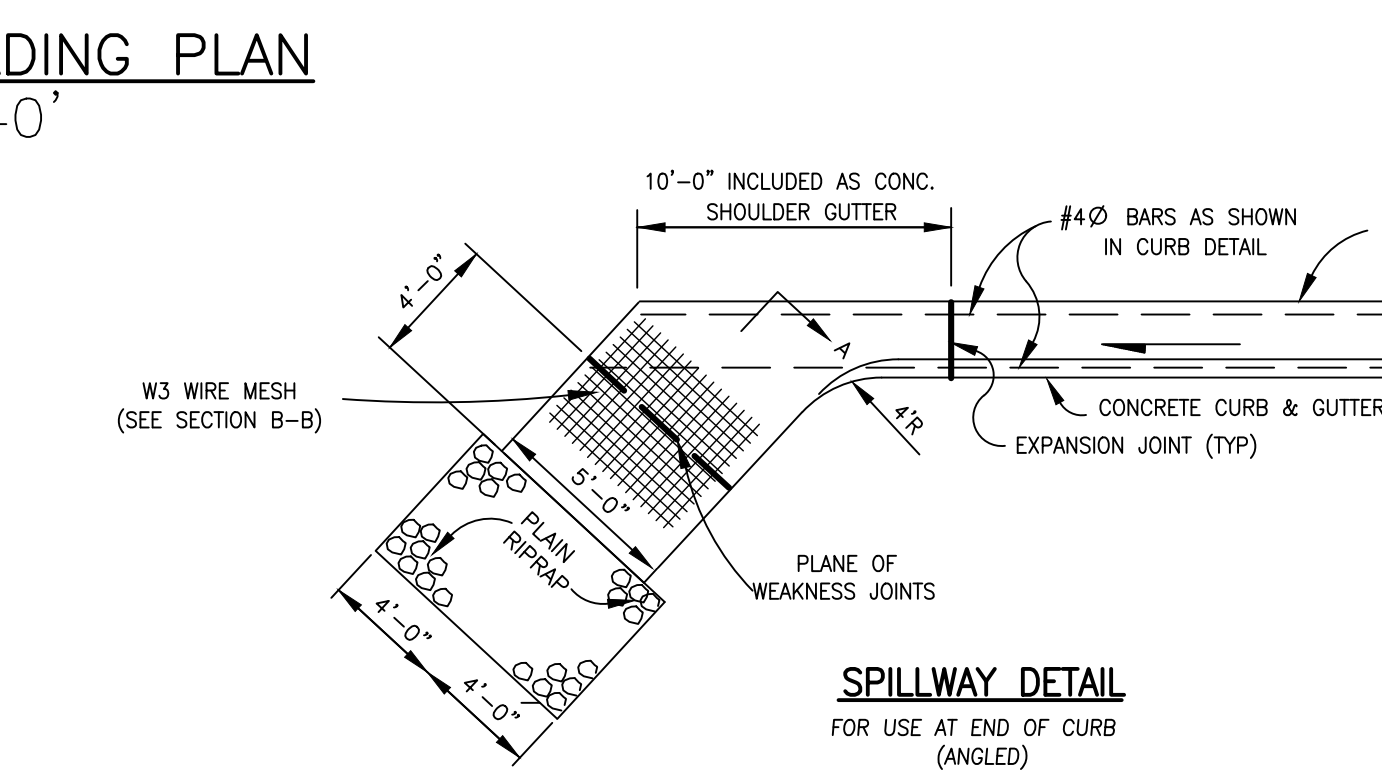
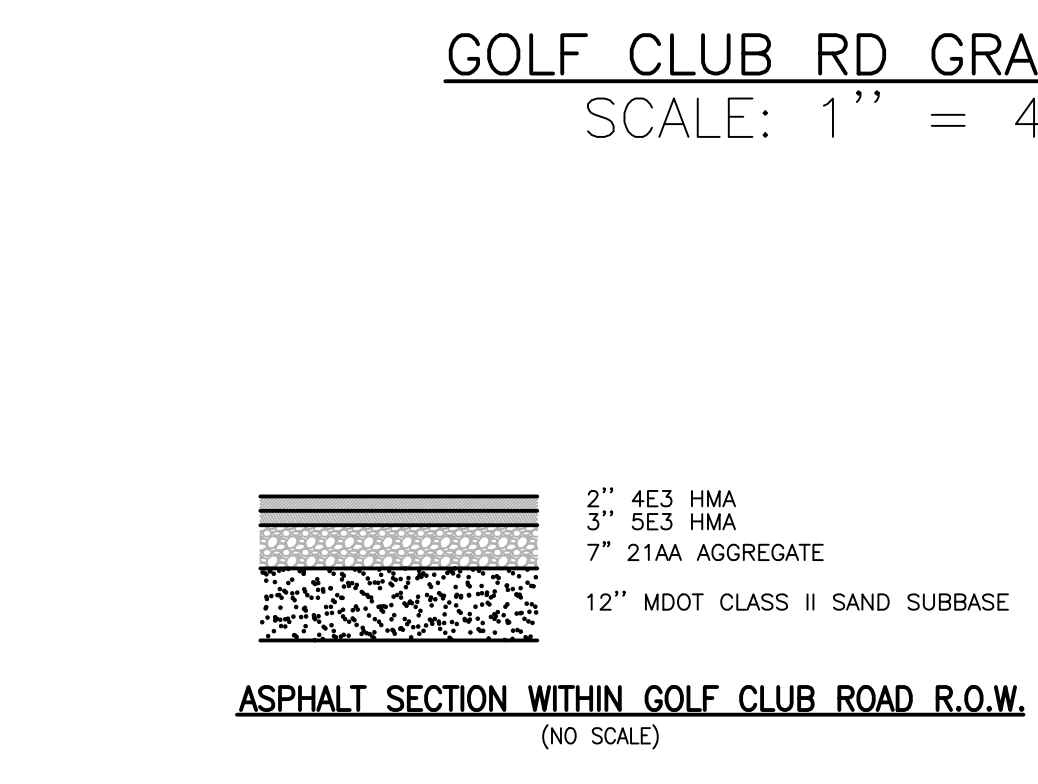
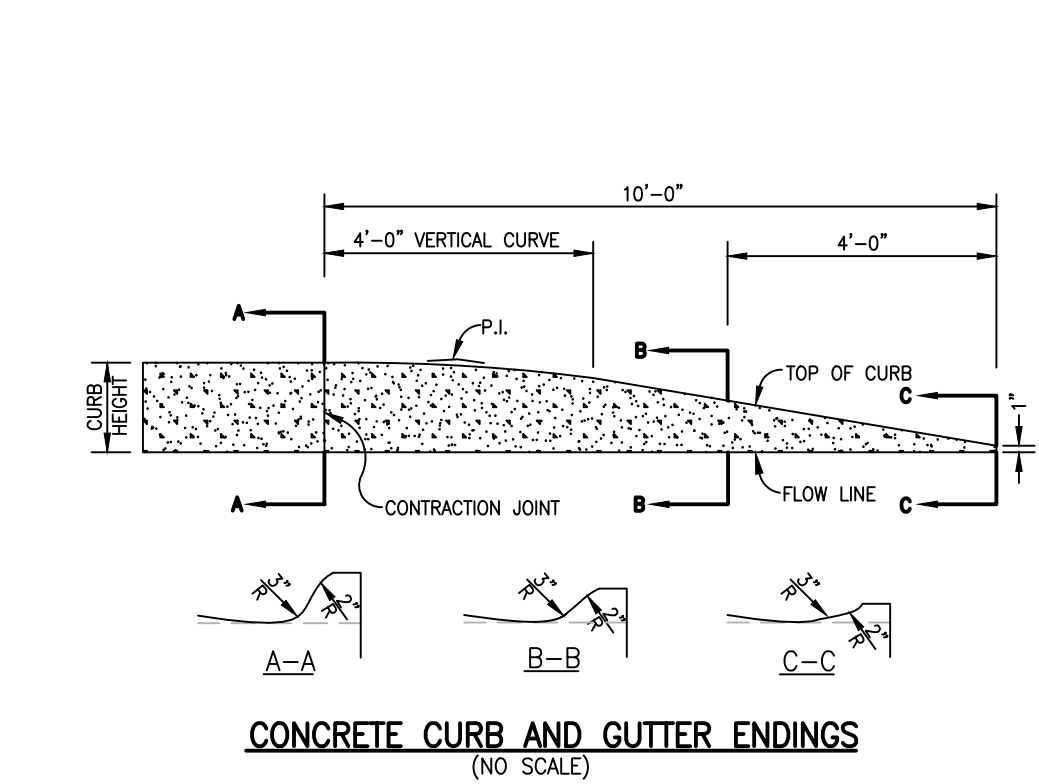
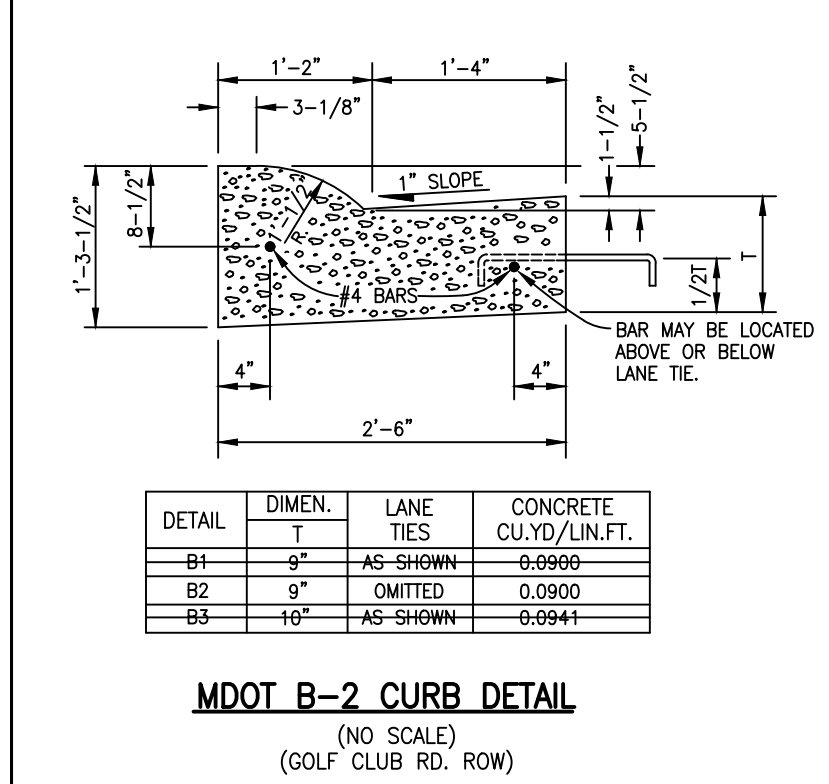
EXISTING CONDITIONS & DEMOLITION PLAN
SCALE: 1" = 40'



GOLF CLUB RD APPROACH PLAN
SCALE: 1" = 40'



GOLF CLUB RD GRADING PLAN
SCALE: 1" = 40'



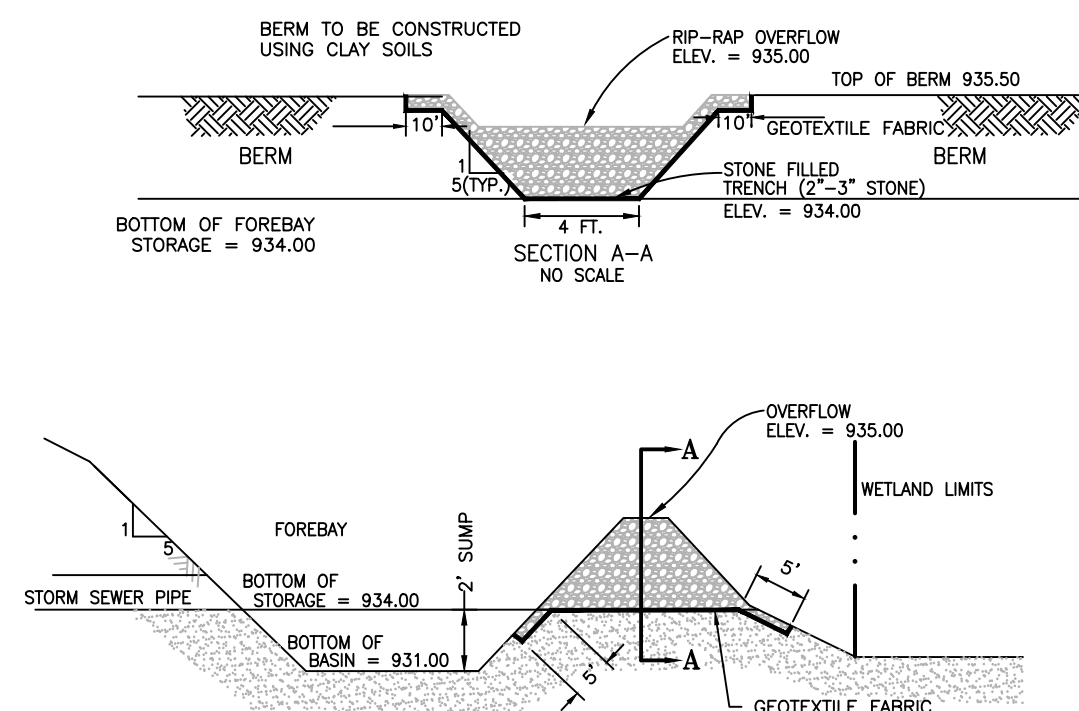
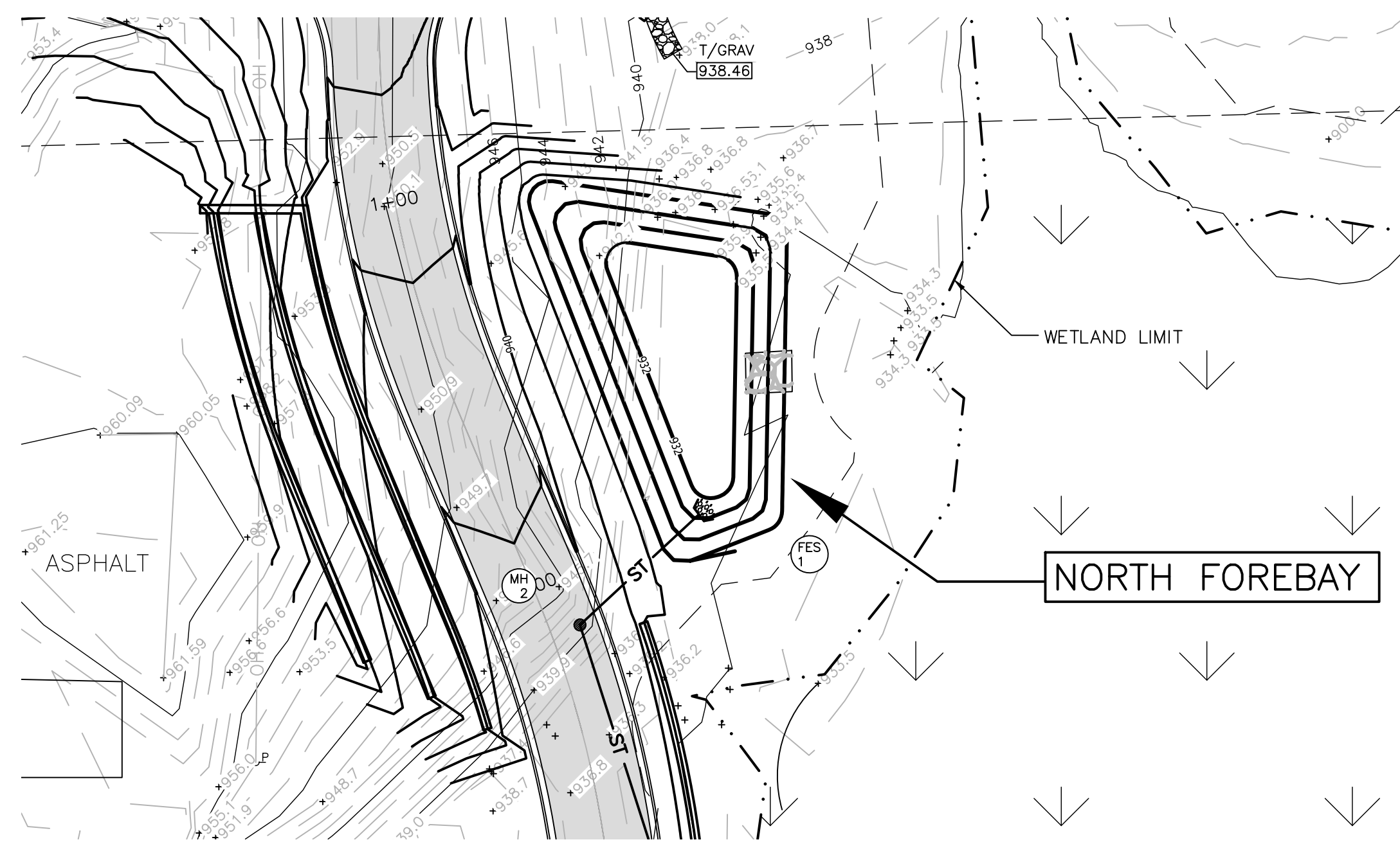
THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL, STATE, AND FEDERAL AGENCIES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL, STATE, AND FEDERAL AGENCIES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL, STATE, AND FEDERAL AGENCIES.

BEBOSS Engineering
Engineers Surveyors Planners Landscape Architects
3121 E. GRAND RIVER AVE.
HOWELL, MI. 48843
517.546.4836 FAX 517.548.1670

PROJECT: **BIBLE BAPTIST CHURCH**
PREPARED FOR: **BIBLE BAPTIST CHURCH**
2258 EAST HIGHLAND ROAD
HOWELL, MI 48843
517-715-9223

NO	BY	PER	DATE	REVISION
1	ST	PER	2/23/22	

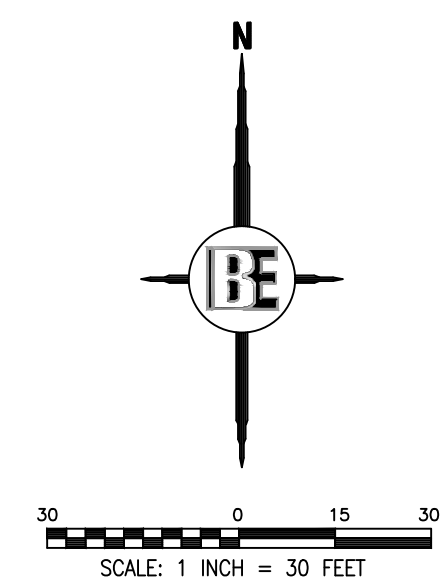
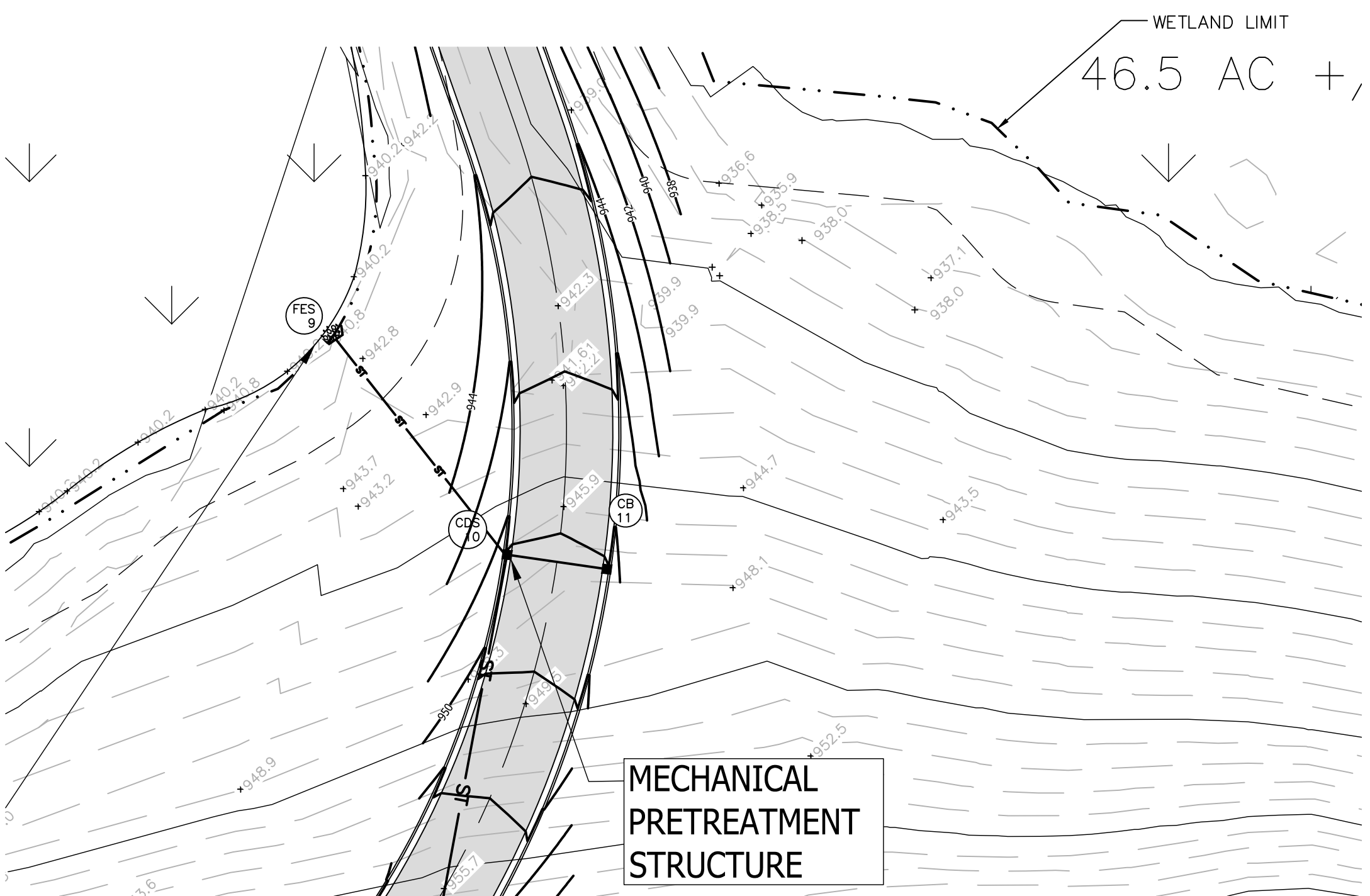
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DRAWN BY: JS
CHECKED BY: ST
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JOB NO. 21-542
DATE 2/1/2022
SHEET NO. 11



NORTH FOREBAY CROSS SECTION
NOT TO SCALE

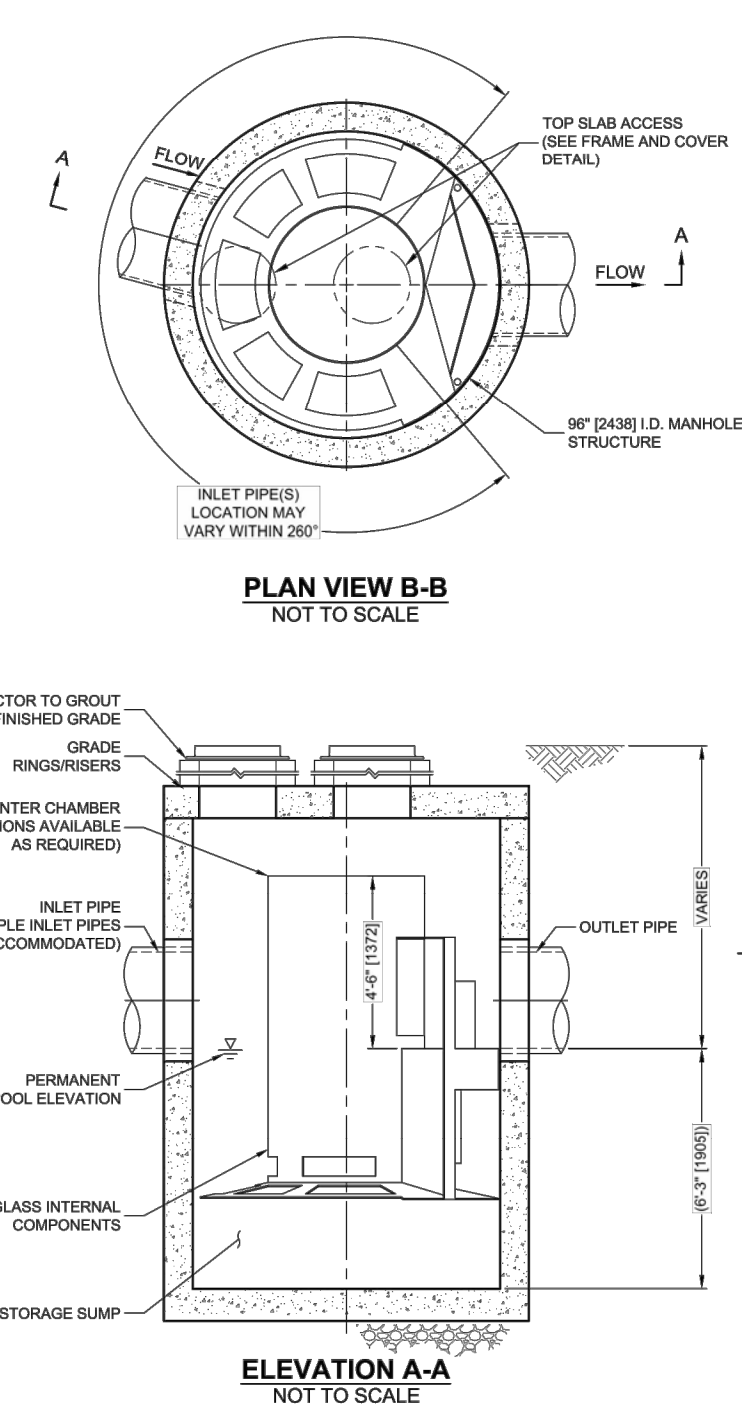
LIVINGSTON COUNTY DETENTION BASIN CALCULATIONS - NORTH FOREBAY

AREA (ACRES)	IMPERVIOUS FACTOR	ACRE IMPERVIOUS
0.73	0.9	0.66
0.00	0.7	0.00
1.16	0.2	0.23
COMPOUND C:		0.47
TOTAL DRAINAGE AREA:		1.89 ACRES
WATER QUALITY VOLUME		
$V_{wq} =$	3.630(C/A)	3225 CF
FOREBAY STORAGE VOLUME PROVIDED:		
ELEV	AREA	CUMULATIVE VOLUME
935	3913	3401
934	2988	2446
933	2003	1832
932	1260	0
931	0	0



LIVINGSTON COUNTY DETENTION BASIN CALCULATIONS

AREA (ACRES)	IMPERVIOUS FACTOR	ACRE IMPERVIOUS
3.60	0.9	3.24
3.50	0.9	3.15
5.72	0.2	1.14
COMPOUND C:		0.59
TOTAL DRAINAGE AREA:		12.83 ACRES
WATER QUALITY VOLUME		
$V_{wq} =$	3,630(C/A)	27478 CF
CHANNEL PROTECTION VOLUME		
$V_{CPVC} =$	4,719(C/A)	35721 CF
CHANNEL PROTECTION RATE CONTROL VOLUME		
$V_{CPRC} =$	6,897(C/A)	52208 CF
EXTENDED DETENTION OUTLET RATE		
$Q_{ED} =$	$(1.112)^4 V_{CPVC} (C/A) (P) =$	52208 CFS
$H =$	$V_{ED} / (48hr) =$	0.302 CFS
$H =$	$V_{ED} / (4,800 (H)^{1/4}) =$	5.8 1" HOLES
ELEV _{ED} = 945.49		
100-YEAR POST CONSTRUCTION INLET RATE		
$Q_{100in} =$	$(C/A) 30.2033 \times 100^{0.4411} / (T_c + 9.1747)^{0.9109}$	48.25 CFS
100-YEAR ALLOWABLE OUTLET RATE		
$Q_{DRAIN} =$	0.2 (A)	2.566 CFS
$Q_{VRR} =$	$1.1055 - 0.206LN(A)$	0.580 CFS
$Q_{100out} =$	LESSER OF Q_{DRAIN} & Q_{VRR}	0.580 CFS
100-YEAR DETENTION VOLUME		
$R =$	$0.206 - 15 \ln(Q_{100in} / Q_{100in})$	0.6461
$V_{100in} =$	$18985 (C/A)$	143711 CF
$V_{100out} =$	$V_{100in} - R \cdot V_{EP}$	92853 CF



CASCADE SEPARATOR DESIGN NOTES

THE STANDARD CS-8 CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	WATER QUALITY FLOW RATE (GAL) (GAL)	PEAK FLOW RATE (GAL) (GAL)	RETURN PERIOD OF PEAK FLOW (hrs)
PIPE DATA:	INVERT	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			

CONTECH

FRAME AND COVER
(DIAMETER VARIES)
NOT TO SCALE

GENERAL NOTES

- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE
- FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contech.com
- CASCADE SEPARATOR WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT
- CASCADE SEPARATOR STRUCTURE SHALL MEET ASHTO H20 AND H10 LOAD RATINGS ASSUMING EARTH COVER OF 2' (BTL) AND GROUNDWATER ELEVATION AT OR BELOW THE OUTLET PIPE INVERT. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET ASHTO M408 AND BE CAST WITH THE CONTECH LOGO
- CASCADE SEPARATOR STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASHTO C476 AND ASHTO LOAD FACTOR DESIGN METHOD.
- ALTERNATE UNITS ARE SHOWN IN MILLIMETERS (mm)

INSTALLATION NOTES

- ANY SUBBASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CASCADE SEPARATOR MANHOLE STRUCTURE.
- CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
- CONTRACTOR TO PROVIDE METALLIC AND GROUT INLET AND OUTLET PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
- CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH ENGINEERED SOLUTIONS LLC
www.contech.com
9333 Carver Pointe Ct., Suite 400, Wood Chester, OH 43086
603-388-1122 514-445-2900 514-445-7954 FAX

CS-8 CASCADE SEPARATOR STANDARD DETAIL

FROM	TO	ACRES	RUNOFF COEFF	EQUIV. AREA	INTEN-SITY	TIME OF CONC	ADD'L RUNOFF	RUNOFF	PIPE LENGTH	PIPE DIA.	VELOCITY	HYDRAULIC GRADIENT	ACTUAL SLOPE	MANNING FLOW CAPACITY	MANNING'S VELOCITY	TIME (MIN)	HG ELEV UPPER	HG ELEV LOWER	RIM ELEV UPPER	INVERT UPPER	INVERT LOWER	DROP DISTANCE	RIM-HG	PIPE COVER	FLOW THRU
		A	C	A * C	I	T _c	Q	Q	(LF)	(IN)	(FPS)	%	USED	CF	(FT/SEC)				END	END	(FT)	>1	>2.667	COVER	
4	3	1.6535	0.41	0.6762	4.38	15.00	2.96	26	12	3.77	0.69%	2.00%	5.05	6.43	0.07	935.24	934.72	938.80	934.44	933.92	4.36	3.56	3.36	2.96	
3	2	0.2401	0.90	0.2161	4.37	15.07	3.90	62	12	4.97	1.19%	1.50%	4.38	5.57	0.19	934.72	933.79	938.80	933.92	933.80	4.88	4.08	3.88	0.94	
2	1	0	0.00	0	4.35	15.2524	3.90	39	12	4.97	1.19%	1.25%	3.99	5.09	0.13	933.79	933.30	939.42	932.99	932.50	6.43	5.63	5.43	0.00	
6	5	0	0.00	0	4.38	15.00	0.00	81	24	0.00	0.00%	0.50%	16.04	5.11	0.26	936.87	936.46	940.50	935.27	934.86	5.23	3.63	3.23	0.00	
22	21	0.4555	0.90	0.41	4.38	15.00	1.79	255	12	2.28	0.25%	1.00%	3.57	4.55	0.93	976.60	974.05	979.75	975.80	973.25	3.95	3.15	2.95	1.79	
21	20	0	0.00	0	4.28	15.93	2.28	215	12	2.28	0.25%	1.50%	4.38	5.57	0.64	974.05	970.82	979.00	973.25	970.02	0.50	5.75	4.95	4.75	
20	19	0	0.00	0	4.21	16.58	1.53	332	15	2.71	0.26%	1.00%	6.48	5.28	0.42	970.32	969.00	979.02	969.32	968.00	9.70	8.70	8.45	0.00	
25	24	0.2975	0.59	0.1748	4.38	15.00	0.76	20	12	0.97	0.05%	1.20%	3.91	4.98	0.07	977.32	977.08	976.27	976.52	976.28	-0.25	-1.05	-1.25	0.76	
23	20	0.5949	0.59	0.3496	4.38	15.00	1.53	50	12	1.95	0.18%	4.00%	7.14	9.10	0.09	976.07	974.07	975.27	975.27	973.27	3.75	0.00	-0.80	-1.00	
15	14	1.3414	0.27	0.3576	4.38	15.00	3.32	4.89	50	15	3.98	0.57%	2.00%	9.16	7.46	0.11	966.00	965.00	968.00	965.00	964.00	3.00	2.00	1.75	1.56
13	12	6.3413	0.37	2.3322	4.38	15.00	4.89	15.09	195	18	8.54	2.05%	3.00%	18.24	10.32	0.31	966.53	960.68	964.33	965.33	959.48	6.00	-1.00	-2.20	10.20
12	10	0.0548	0.90	0.0493	4.34	15.31	5.03	20.33	279	18	11.51	3.73%	3.00%	18.24	10.32	0.45	956.71	946.31	966.00	953.48	945.11	3.00	12.52	9.29	11.02
10	9	0.1024	0.90	0.0922	4.35	15.19	0.85	21.59	71	24	6.87	0.91%	1.00%	22.68	7.22	0.16	943.31	942.60	948.10	941.71	941.00	6.39	4.79	4.39	0.40
11	10	0.6251	0.31	0.195	4.38	15.00	0.85	26	12	1.09	0.06%	1.00%	3.57	4.55	0.10	943.57	943.31	948.10	942.77	942.51	5.33	4.53	4.33	0.85	
18	17	0	0.00	0	4.38	15.00	0.00	60	15	0.00	0.00%	1.00%	6.48	5.28	0.19	972.60	972.00	971.60	971.60	971.00	0.00	-1.00	-1.25	0.00	
16	12	2.5924	0.44	1.1497	4.38	15.00	5.03	314	15	4.10	0.60%	1.50%	7.93	6.46	0.81	965.89	961.18	970.00	964.89	960.18	6.50	5.11	4.11	3.86	

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BIBLE BAPTIST CHURCH
2258 EAST HIGHLAND ROAD
HOWELL, MI 48843
517-715-9223

FOREBAY DETAILS

PROJECT: BIBLE BAPTIST CHURCH
PREPARED FOR: BIBLE BAPTIST CHURCH
DATE: 2/23/22

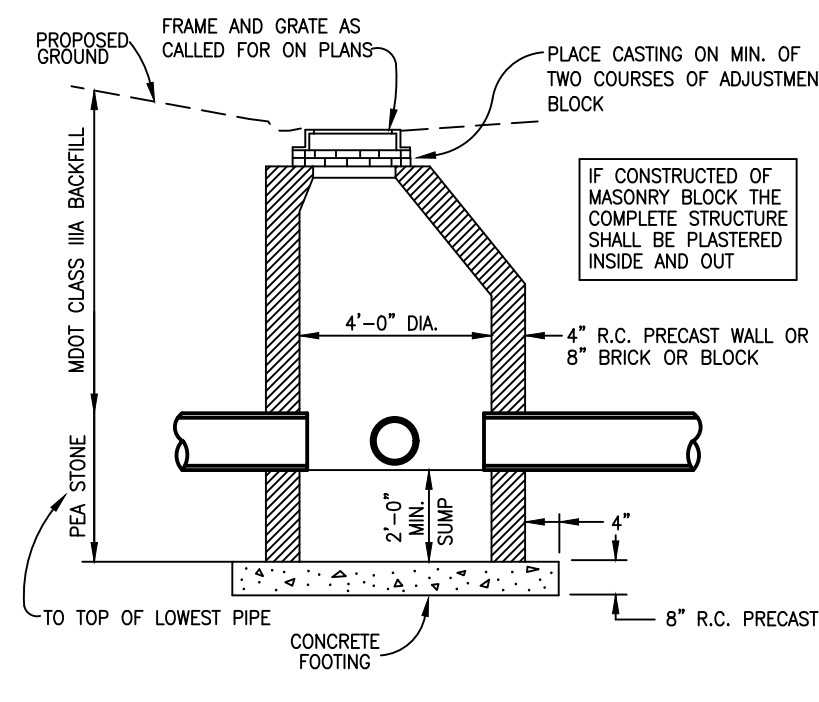
DESIGNED BY: ST
DRAWN BY: JS
CHECKED BY:

SCALE: 1" = 30'
JOB NO.: 21-542
DATE: 2/1/2022
SHEET NO.: 12

REVISION PER DATE

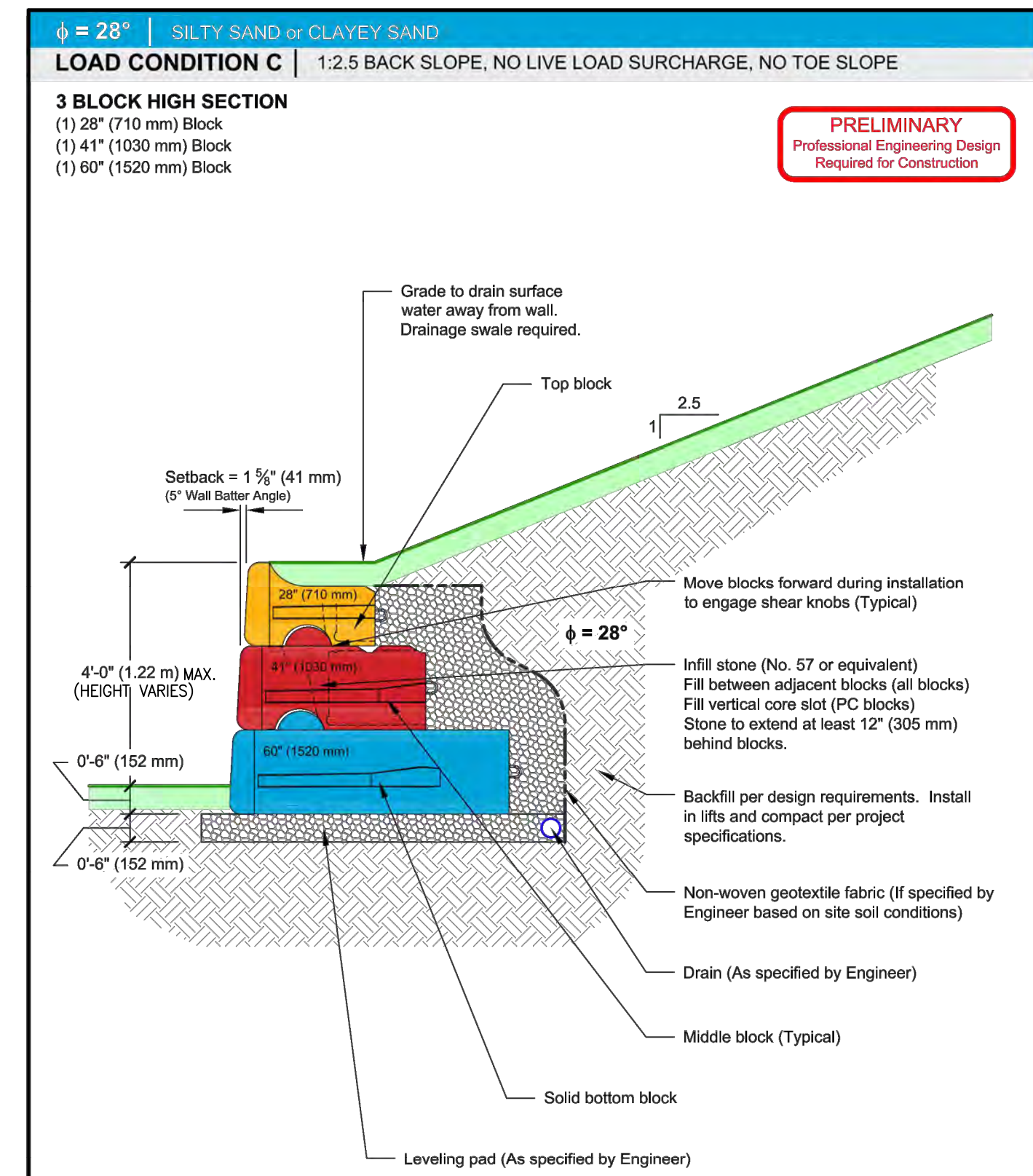
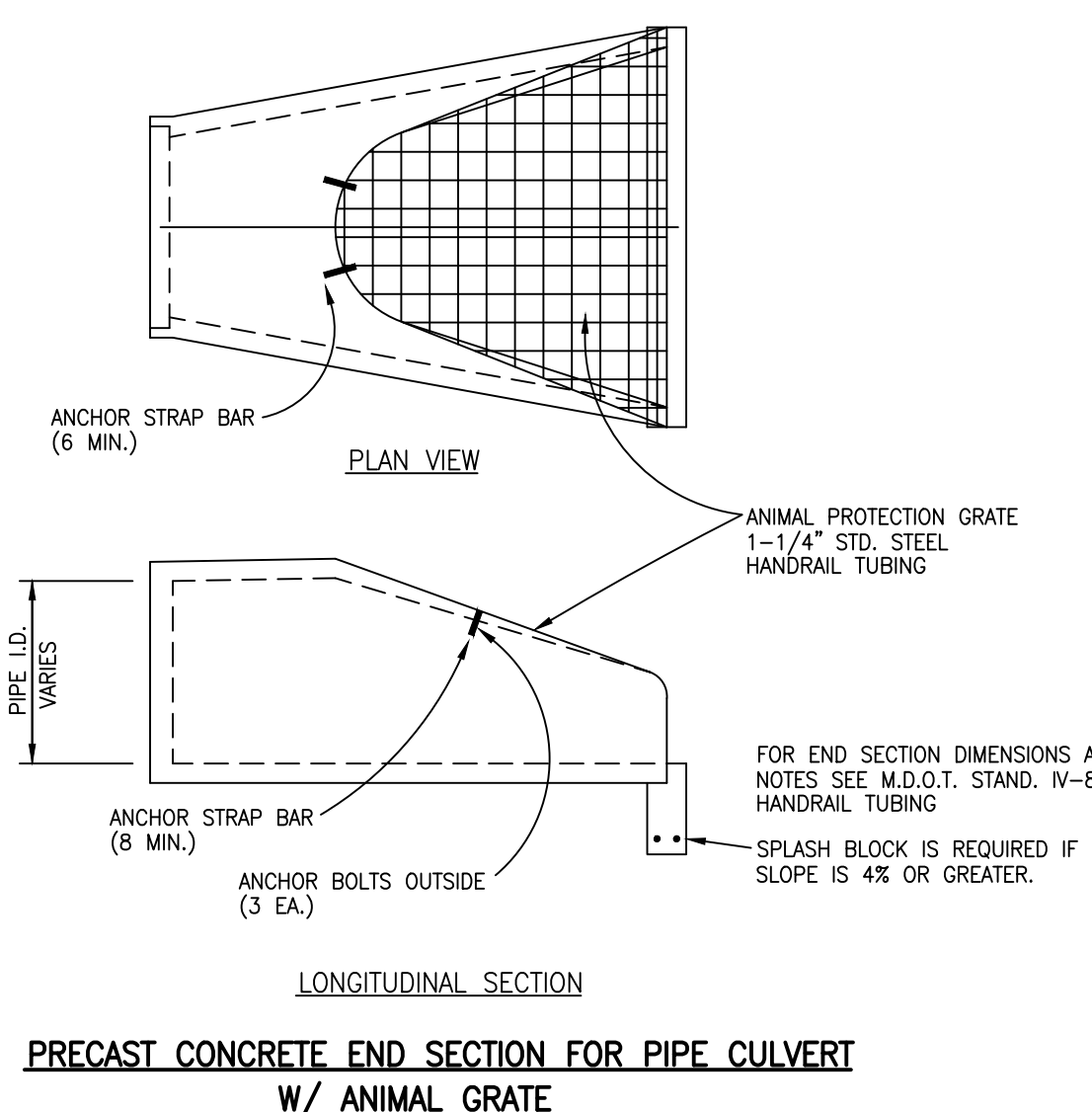
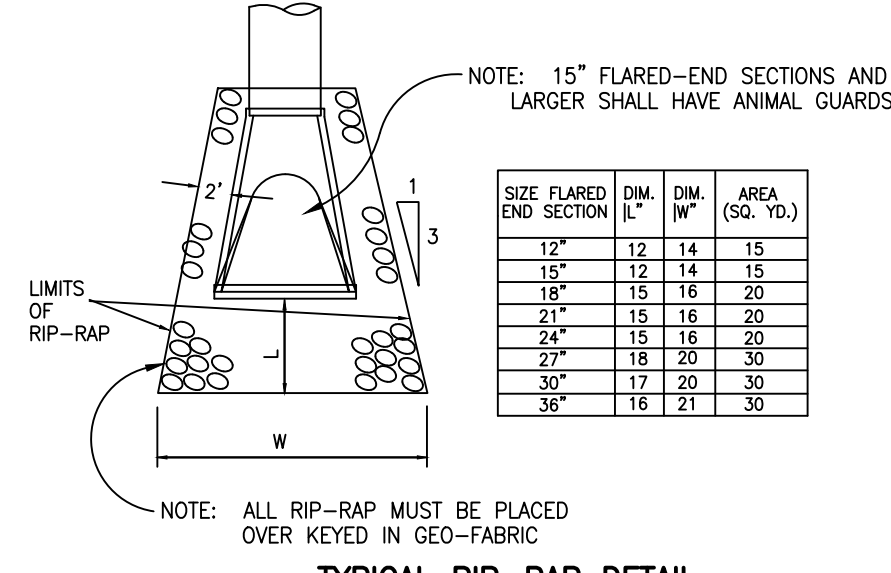
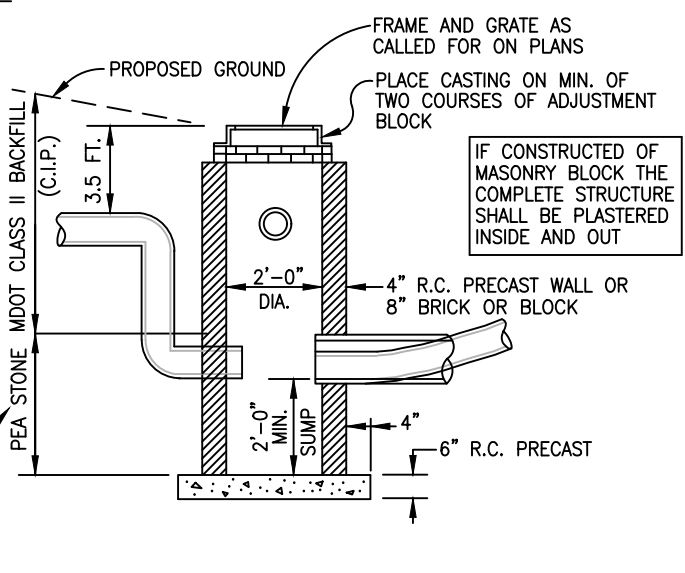
1 1ST PER TWP REVIEW NO BY

BOSS Engineering

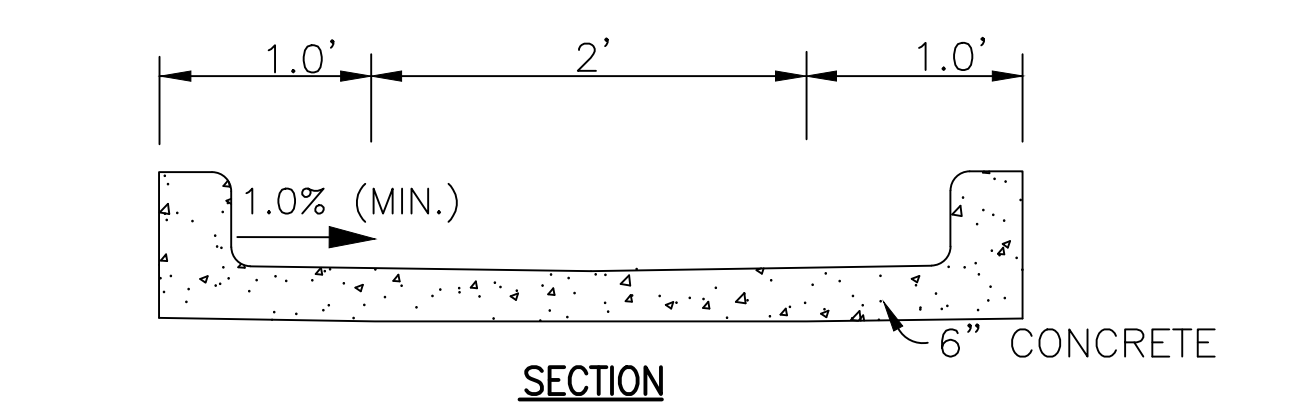
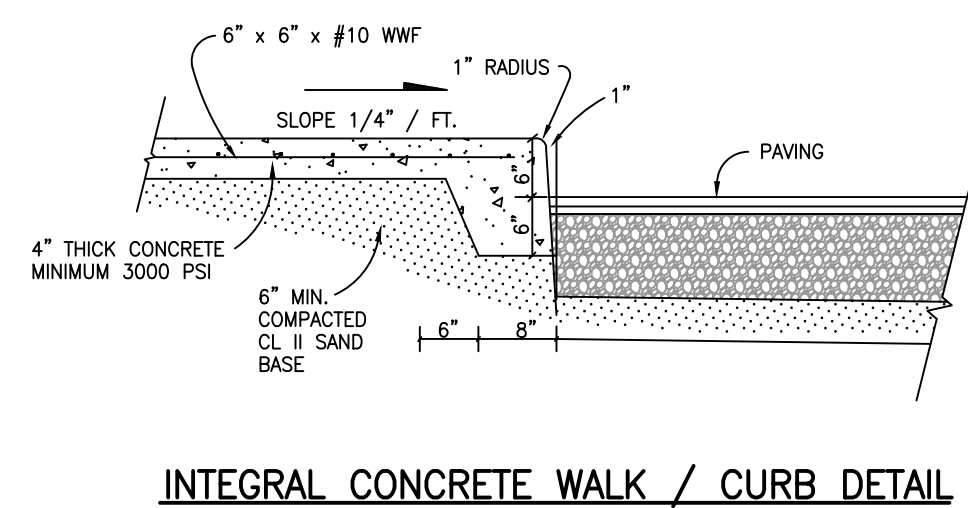
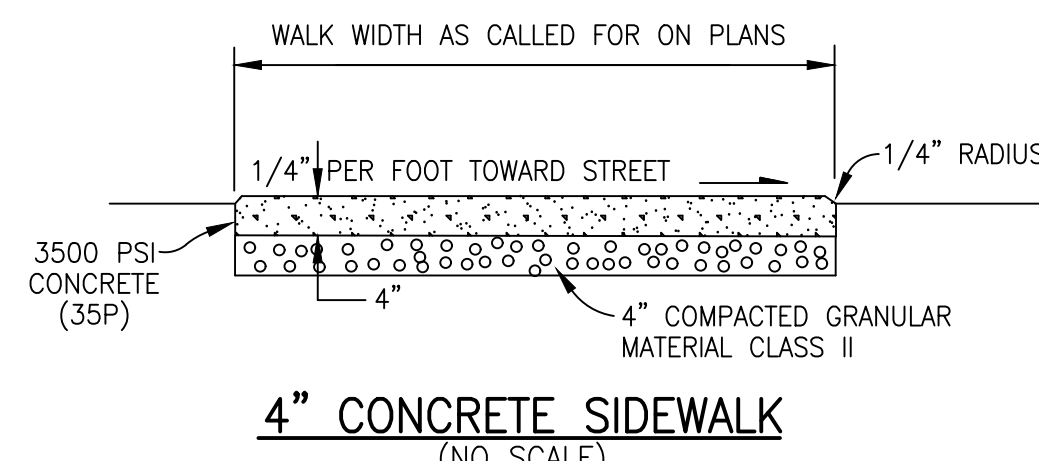
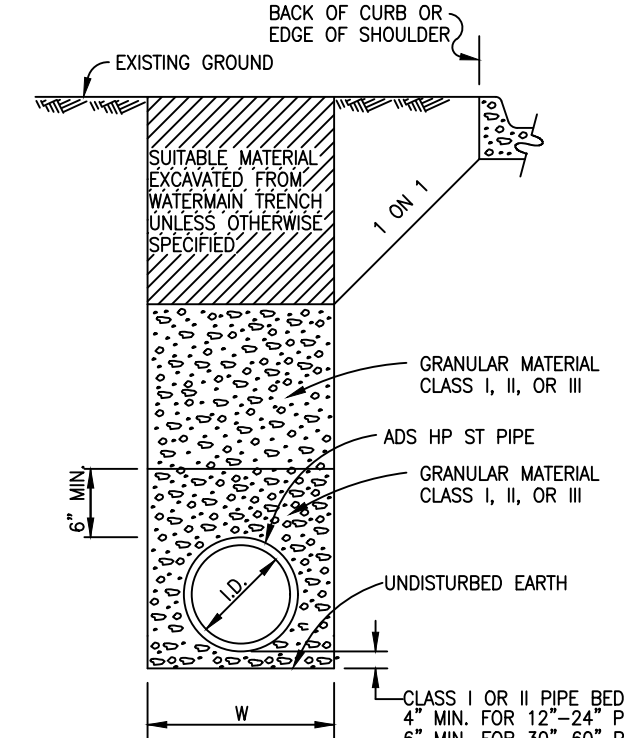
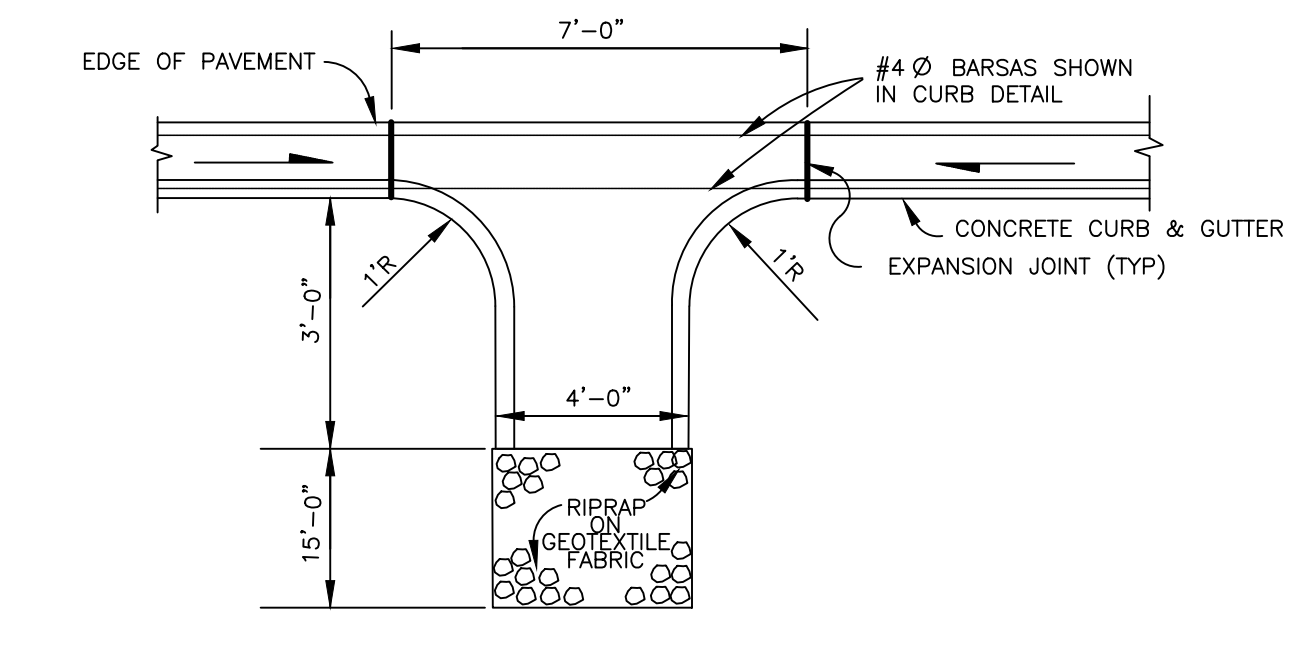
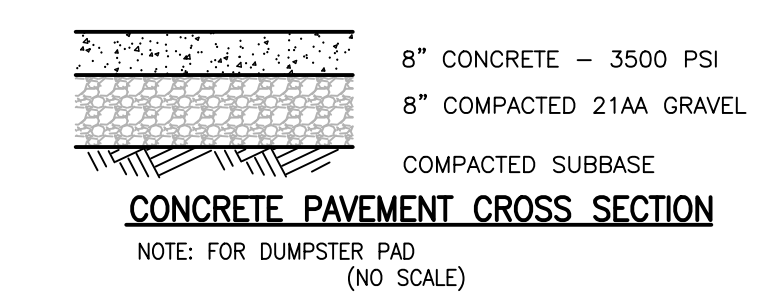
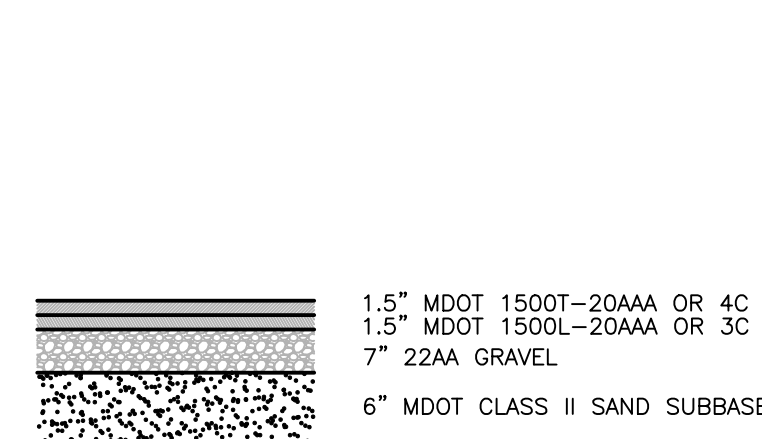
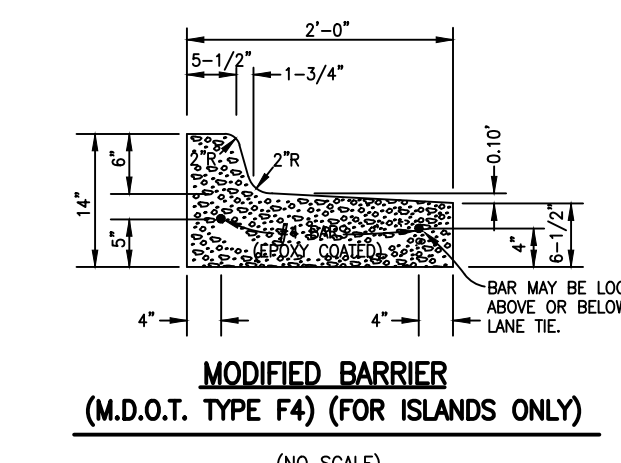
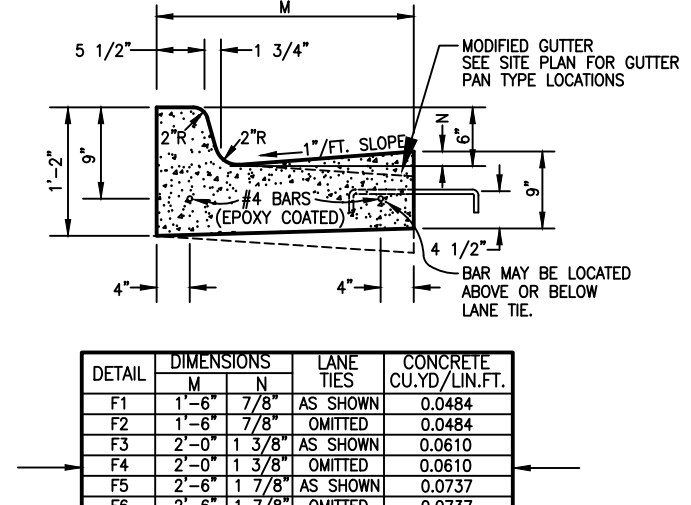


INSTALL SUBDRAINS AT ALL CATCH BASINS LOCATED WITHIN ROADWAY

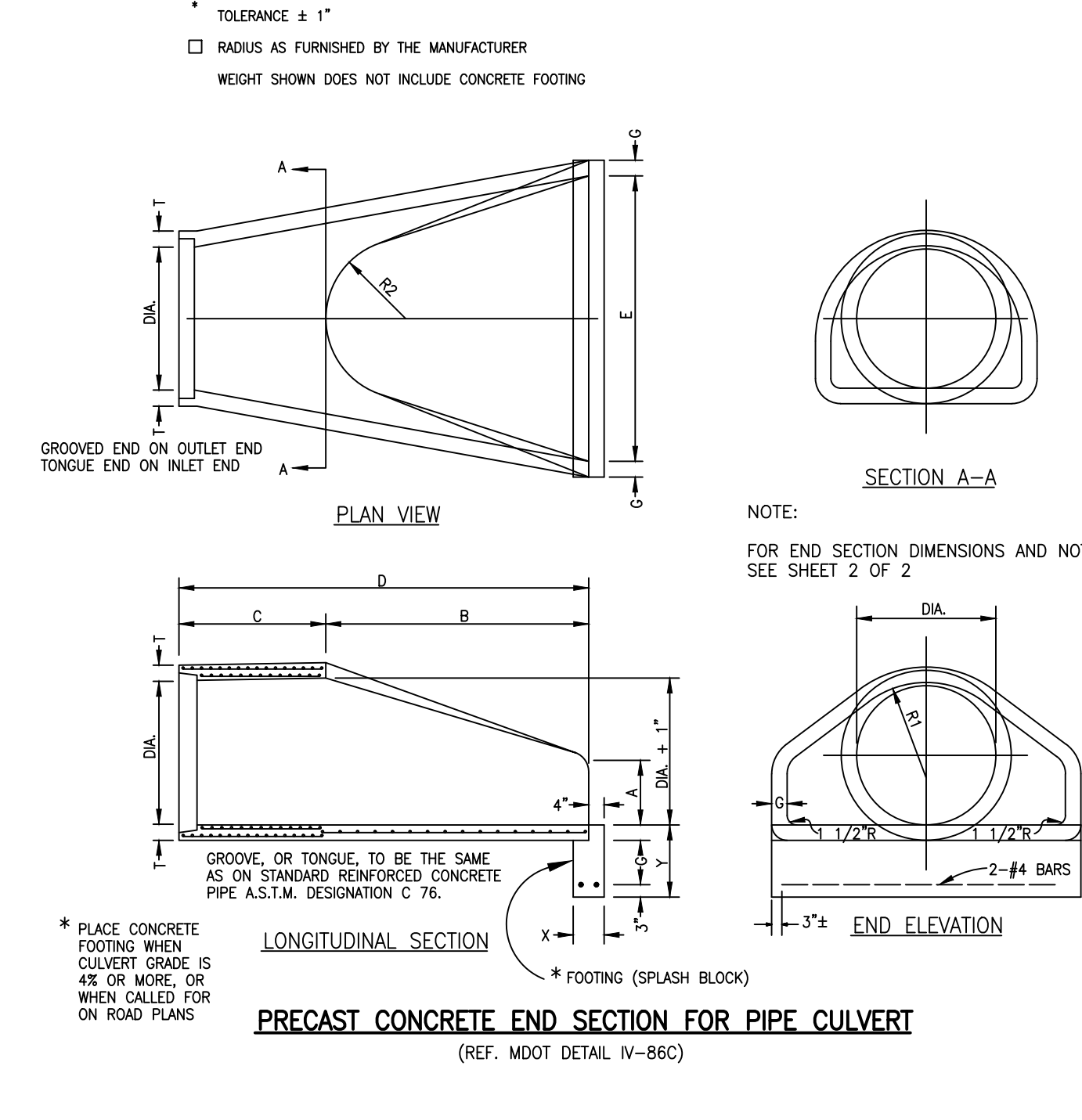
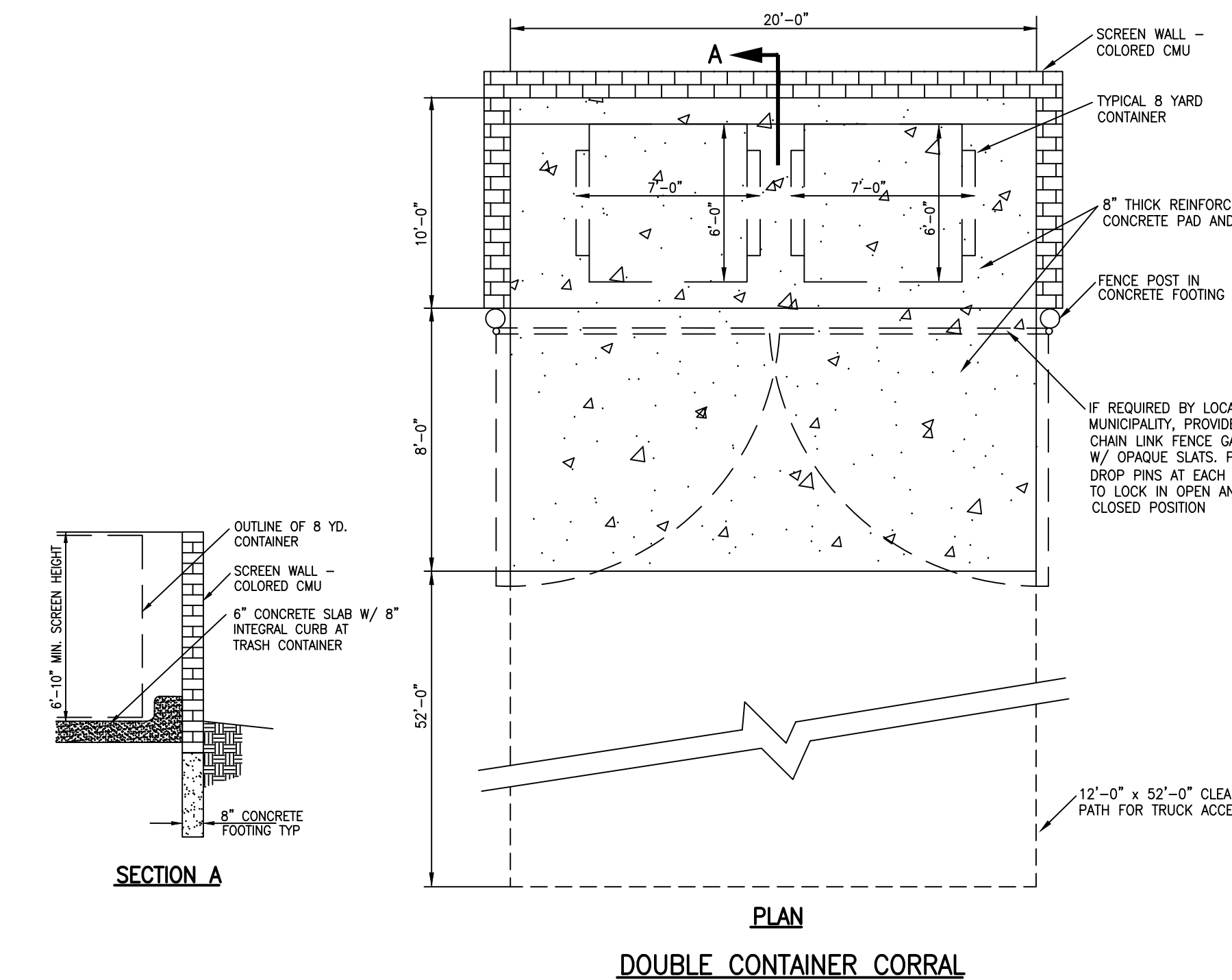
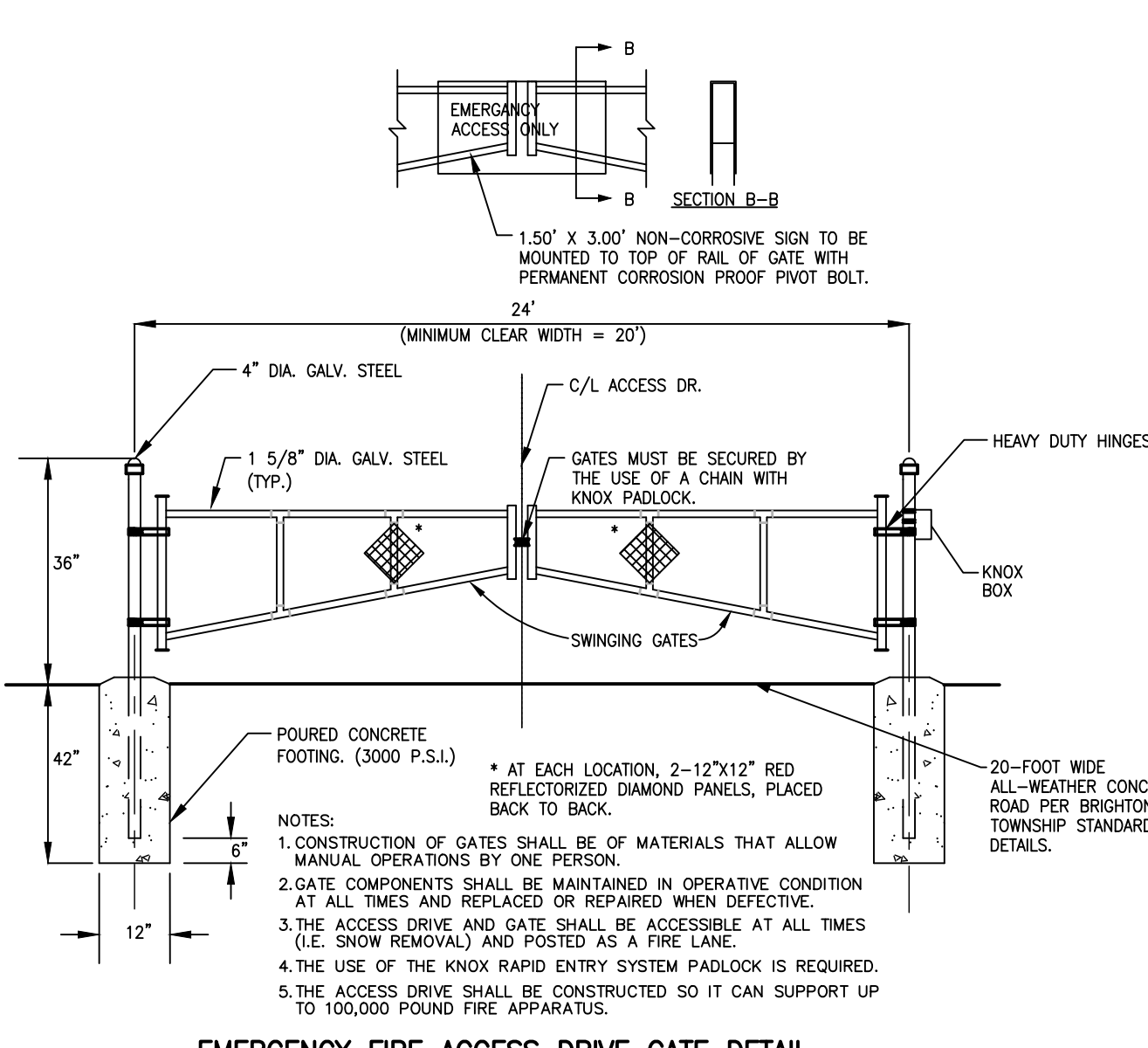
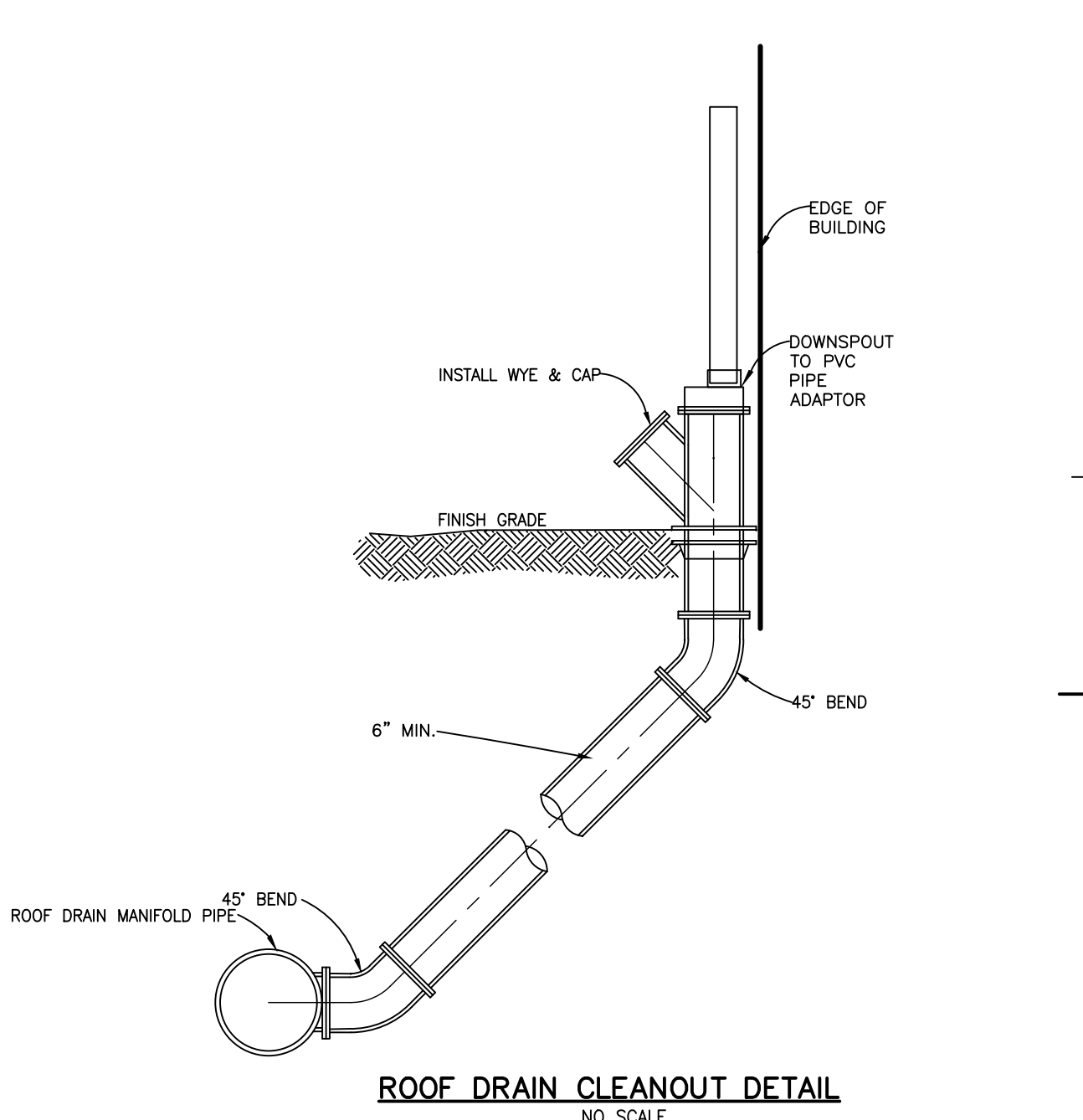
- 4 L.F. (MIN.) 6" PERFORATED P.V.C. PIPE WRAPPED WITH GEOTEXTILE FABRIC PLACED AT LOWEST INVERT PARALLEL TO ROAD OR LINE OF PIPE. BACK-FILLED WITH PEA STONE ONE FOOT ABOVE PIPE.
- AT LOWPOINT CATCH BASINS 20 L.F. (MIN.) OF 6" PERFORATED P.V.C. PIPE WRAPPED WITH GEOTEXTILE FABRIC, STARTING AT LOWEST INVERT AND CONTINUING AT 3.5 FT. BELOW ROADWAY, PARALLEL TO ROAD. (BOTH DIRECTIONS) BACK-FILLED WITH PEA STONE TO THE SUBBASE.



STRUCTURE FRAMES & COVERS					
COVER	TYPE	USE	MANUFACTURER OR EQUAL		TYPE OF COVER OR GRATE
			EAST JORDAN	NEENAH	
A	MH	ALL	1120	R-1415	VENTED
B	CB & INLET	TYPE B2 CURB	7085	R-3038-A	
K	CB & INLET	TYPE C & F CURB	7045	R-3031-B	FLAT GRATE WITH VERT. 4\"/>
C	CB & INLET	VALLEY CURB	7065	R-3034-B	
D	CB & INLET	PARKING LOTS	1020-M1 5105-M1	R-2560-D	FLAT GRATE
E	CB & INLET	LAWN AREA OR DITCH	1020-01		BEEHIVE GRATE 4\"/>



DIA.	T(MIN.)	A(MIN.)	B*	C*	D*	E*	G	R1	R2	X	Y	APPROX. WT. LBS.
12"	2"	5"	23"	51"	74"	24"	2"	10-1/8"	9"	8"	18"	800
15"	2-1/4"	7"	27"	48"	75"	30"	2-1/4"	12-1/2"	11"	8"	18"	1100
18"	2-1/2"	11"	25"	49"	74"	36"	2-1/2"	15-1/2"	12"	8"	18"	1300
21"	2-3/4"	11"	33"	49"	74"	42"	2-3/4"	16-1/8"	13"	8"	18"	1500
24"	3"	12"	43"	32"	75"	48"	3"	16-3/16"	14"	8"	18"	1800
30"	3-1/2"	14"	53"	22"	75"	60"	3-1/2"	18-1/2"	15"	8"	18"	2400
36"	4"	17"	62"	37"	99"	72"	4"	24-5/16"	20"	8"	18"	4200
42"	4-1/2"	22"	62"	37"	99"	78"	4-1/2"	27-1/2"	22"	10"	24"	5600
48"	5"	24"	72"	26"	98"	84"	5"	28-1/2"	22"	10"	24"	7400
54"	5-1/2"	27"	65"	33-1/4"-35"	98-1/4"-100"	90"	5"			10"	24"	8040
60"	6"	30"	60"	39"	99"	96"	6"			12"	24"	8730
66"	6-1/2"	24"	72"-78"	21"-27"	99"	102"	5-1/2"			12"	24"	10,630
72"	7"	24"	78"	21"	99"	108"	6"			12"	24"	12,320
78"	7-1/2"	24"	78"	21"	99"	114"	6-1/2"			12"	24"	14,430
84"	8"	36"	90-1/2"	21"	111-1/2"	120"	6-1/2"			12"	24"	18,160



BEBOSS Engineering
 Engineers Surveyors Planners Landscape Architects
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 HOWELL, MI. 48843
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PROJECT: BIBLE BAPTIST CHURCH
 PREPARED FOR: BIBLE BAPTIST CHURCH
 2258 EAST HIGHLAND ROAD
 HOWELL, MI 48843
 517-715-9223

TITLE: CONSTRUCTION DETAILS

NO	BY	REVISION	PER	DATE
1	ST	DESIGNED BY		2/23/22
1	JS	DRAWN BY		

CHECKED BY:

SCALE: NO SCALE
 JOB NO. 21-542
 DATE 2/2/2022
 SHEET NO. 13

THE USER SHALL BE RESPONSIBLE FOR VERIFYING THE ACCURACY OF THE INFORMATION PROVIDED HEREON. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS.

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BIBLE BAPTIST CHURCH
BIBLE BAPTIST CHURCH
2258 EAST HIGHLAND ROAD
HOWELL, MI 48843
517-715-9223

MHOG STANDARD WATERMAIN DETAILS (1)

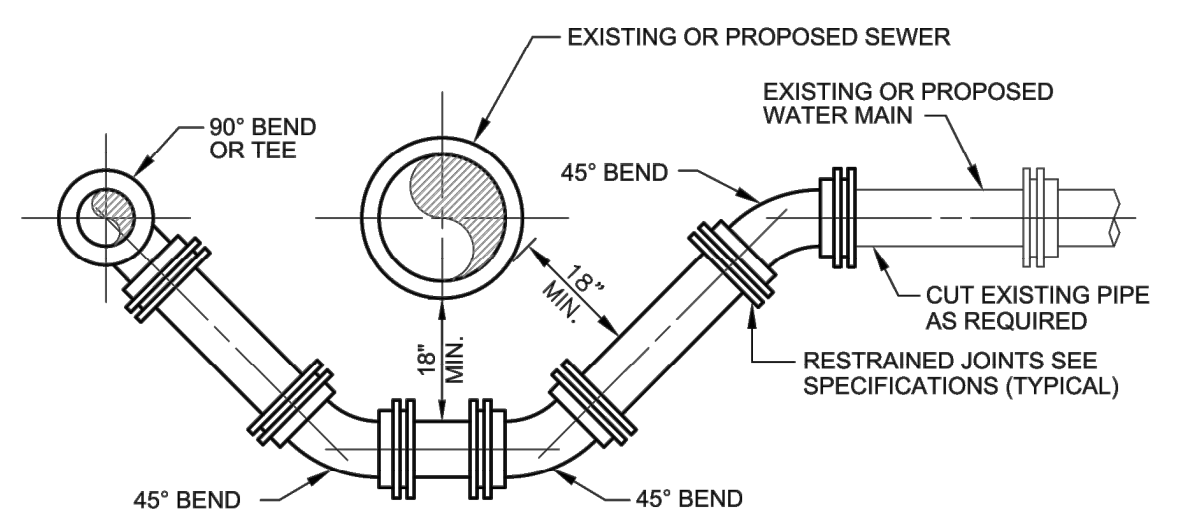
PROJECT: BIBLE BAPTIST CHURCH
PREPARED FOR: BIBLE BAPTIST CHURCH
DATE: 2/23/22
DESIGNED BY: ST
DRAWN BY: JS
CHECKED BY:
SCALE: AS SHOWN
JOB NO. 21-542
DATE 12/01/2021
SHEET NO. 14

PIPE RESTRAINT SCHEDULE

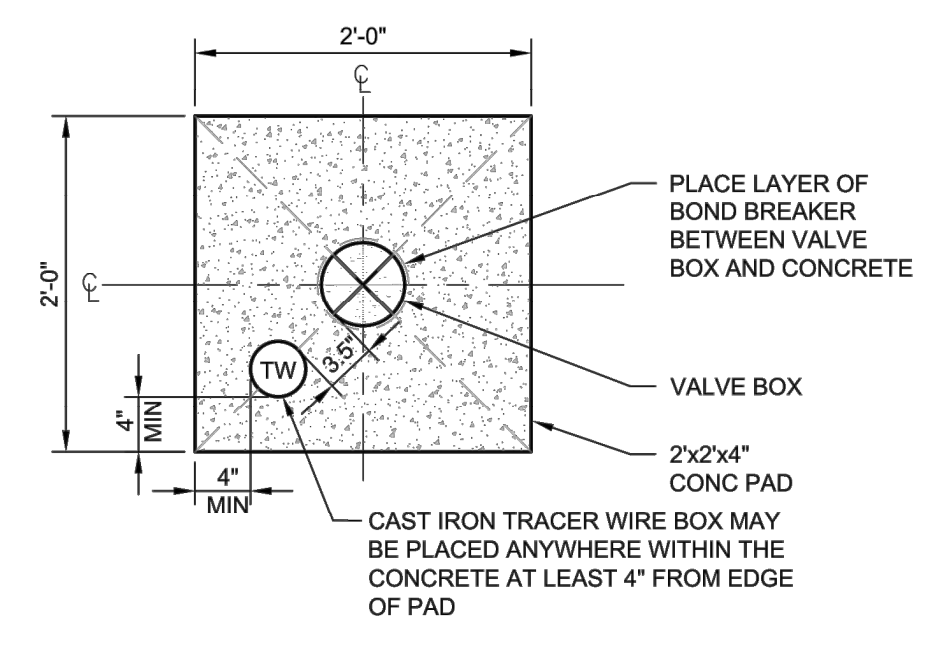
GROUND BURIED PRESSURE PIPE - POLYETHYLENE ENCASED DUCTILE IRON PIPE

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 THE 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

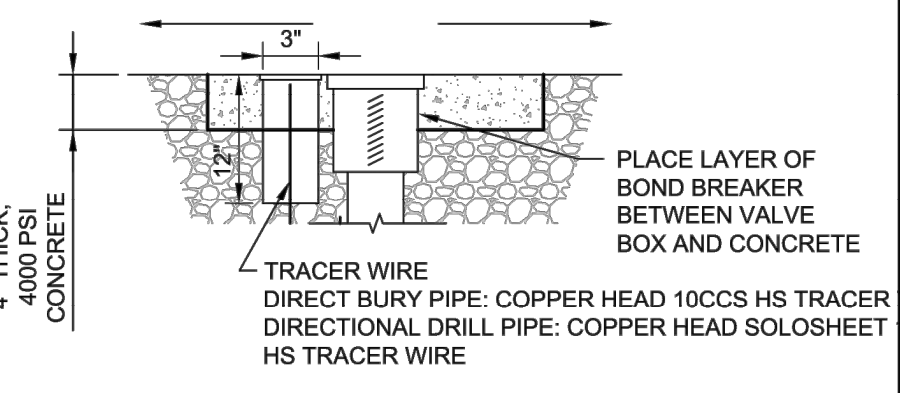


WATER MAIN UTILITY OFFSET



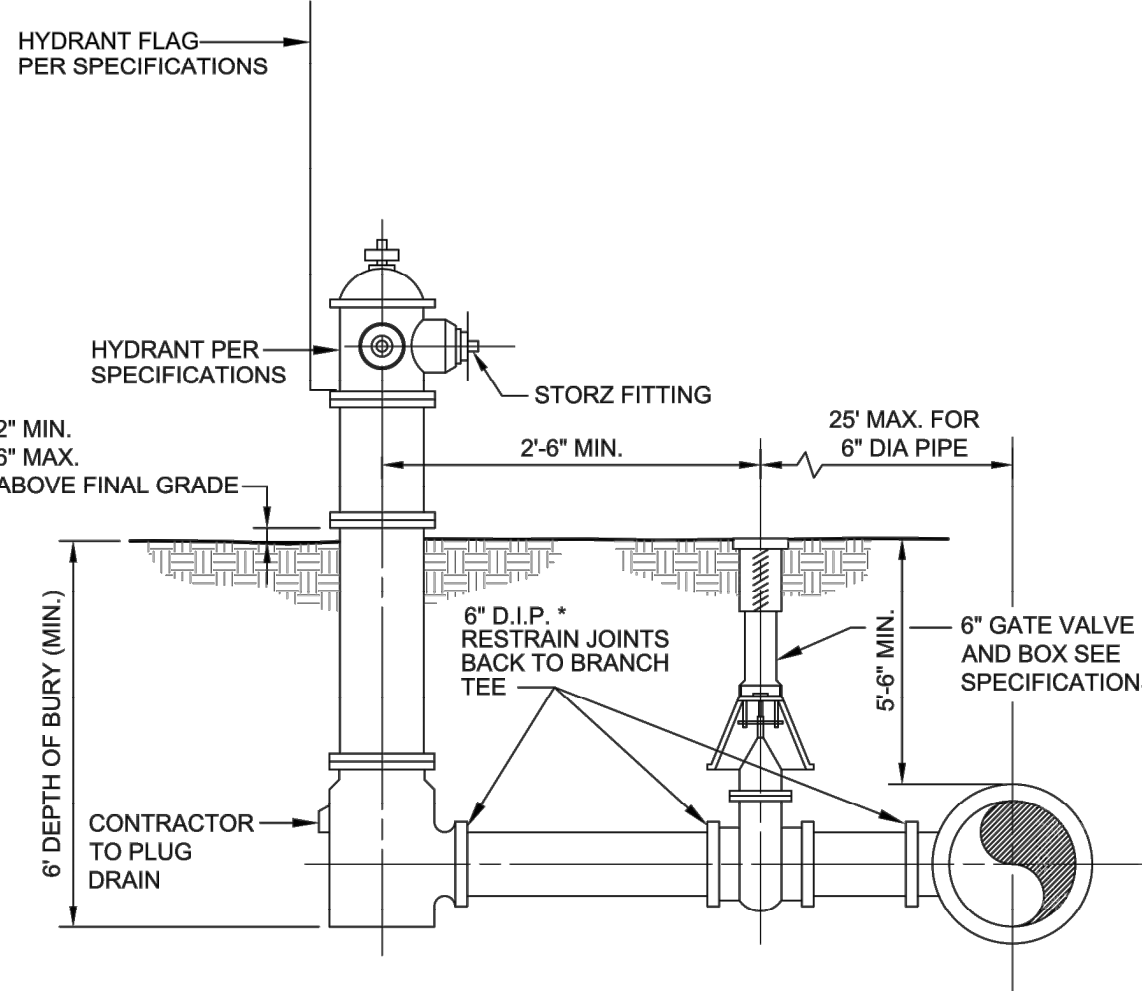
NOTE: ALL BOXES & ADJOINING TW BOXES SHALL BE ENCASED IN A CONC. PAD UNLESS OTHERWISE DETERMINED BY MHOG.

PLAN VALVE/TRACER WIRE BOX IN CONCRETE DETAIL
NO SCALE



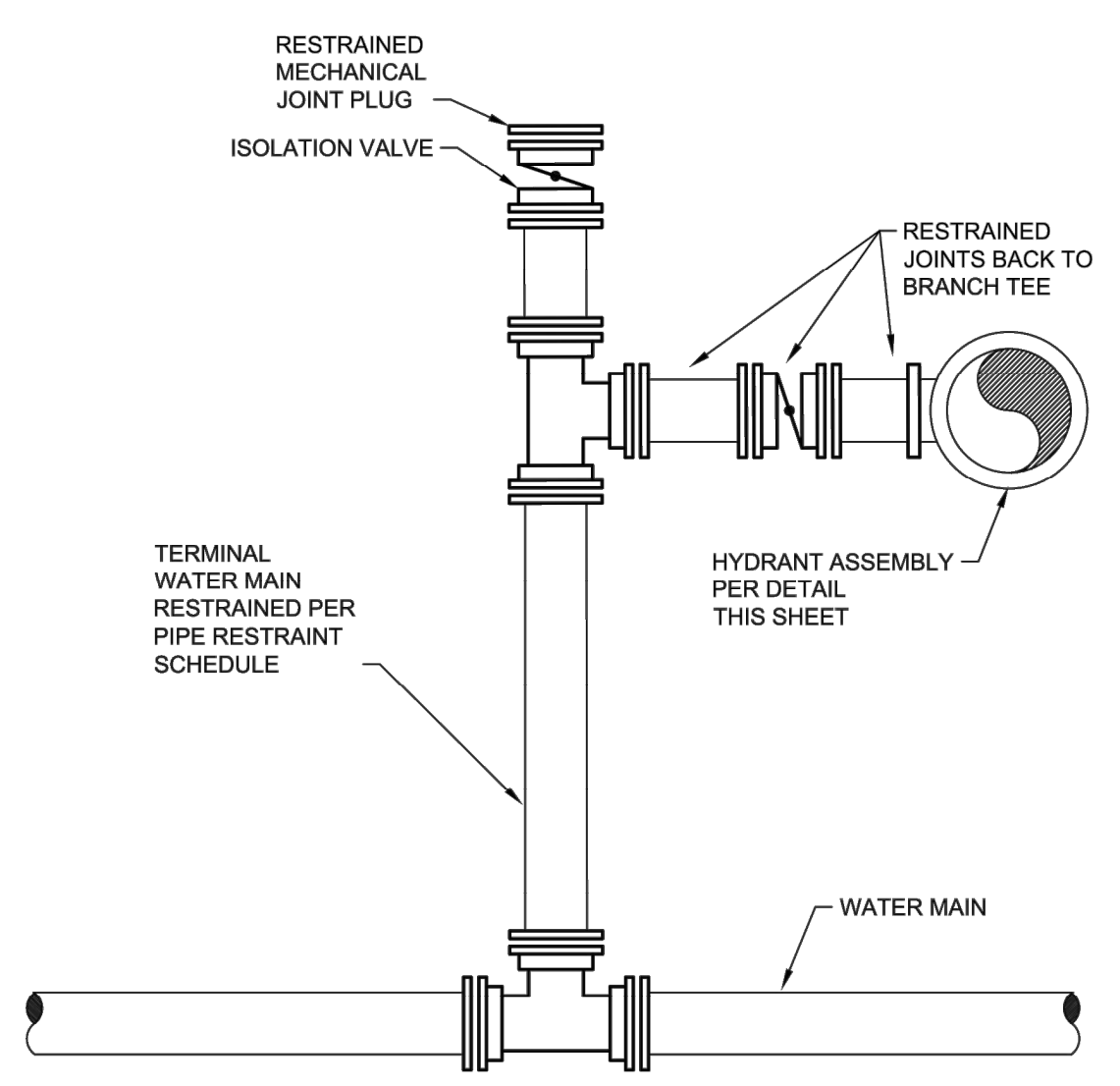
NOTE:
1. TRACER WIRE BOXES LOCATED WITHOUT A VALVE BOX ONLY REQUIRE AN 18" X 18" CONCRETE PAD.
2. TRACER WIRE BOX SHALL HAVE A LOCKING LID W/STANDARD AWWA PENTAGON KEY.
3. TRACER WIRE BOX SHALL BE COPPERHEAD RB14"TP IN ASPHALT INSTALLATIONS AND CD14"TP FOR ALL OTHER INSTALLATIONS.

SECTION

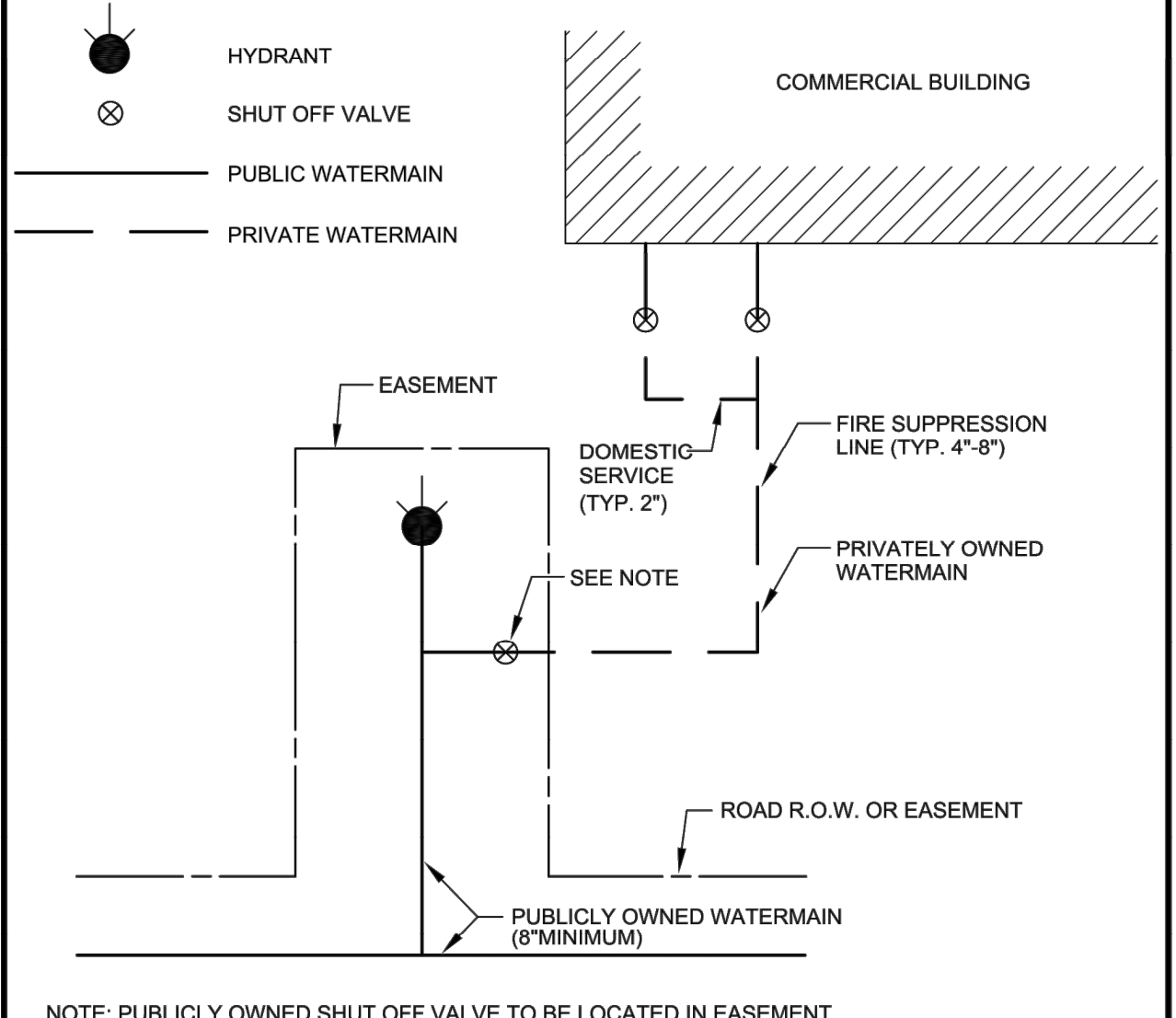


* THE LENGTH OF 6" PIPE FROM THE MAIN TO THE HYDRANT ASSEMBLY CANNOT EXCEED 25'. ANY PIPE OVER 25 FEET SHALL BE 8" DIAMETER MINIMUM AND DESIGNED PER MHOG SPECIFICATIONS.

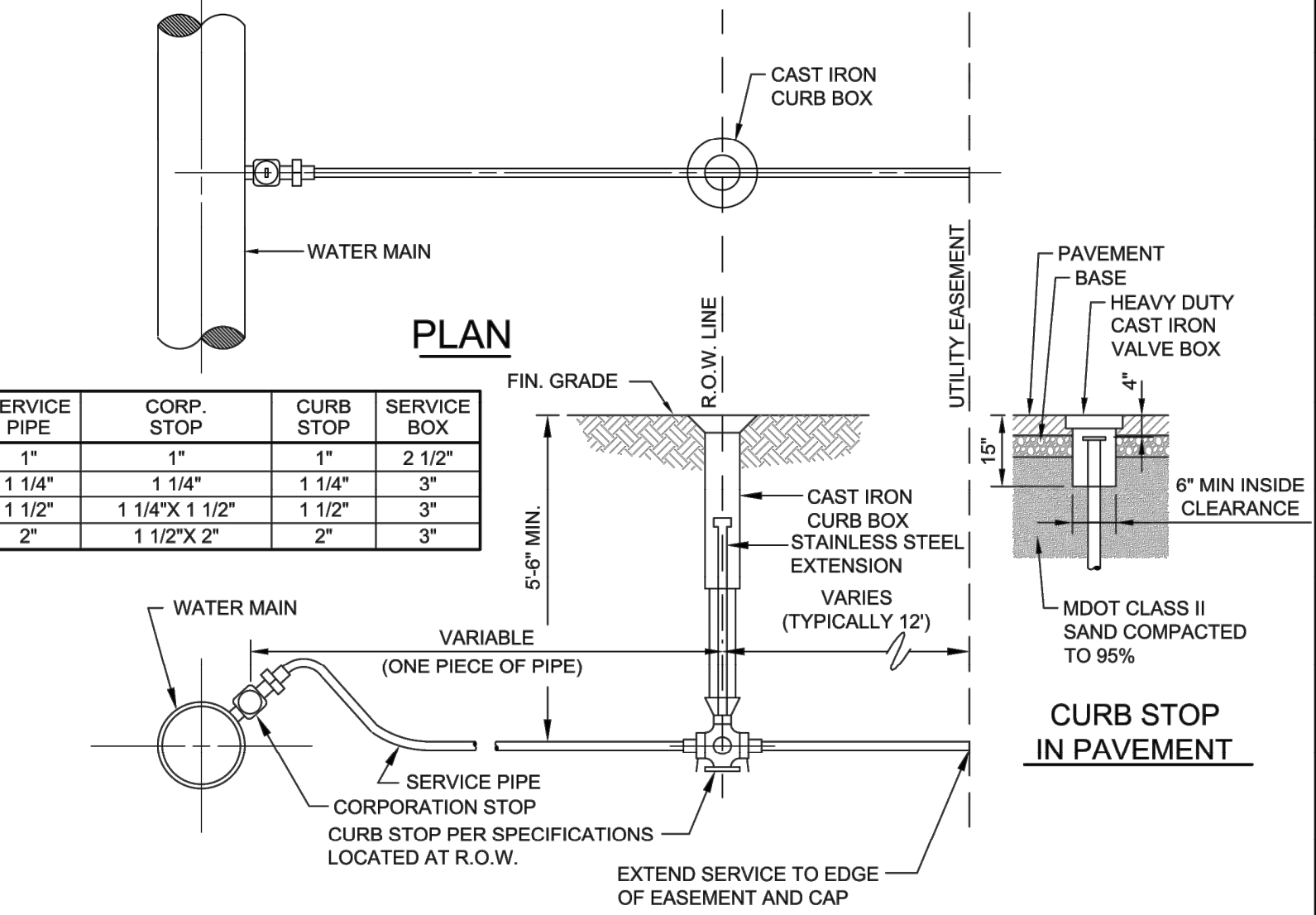
FIRE HYDRANT ASSEMBLY



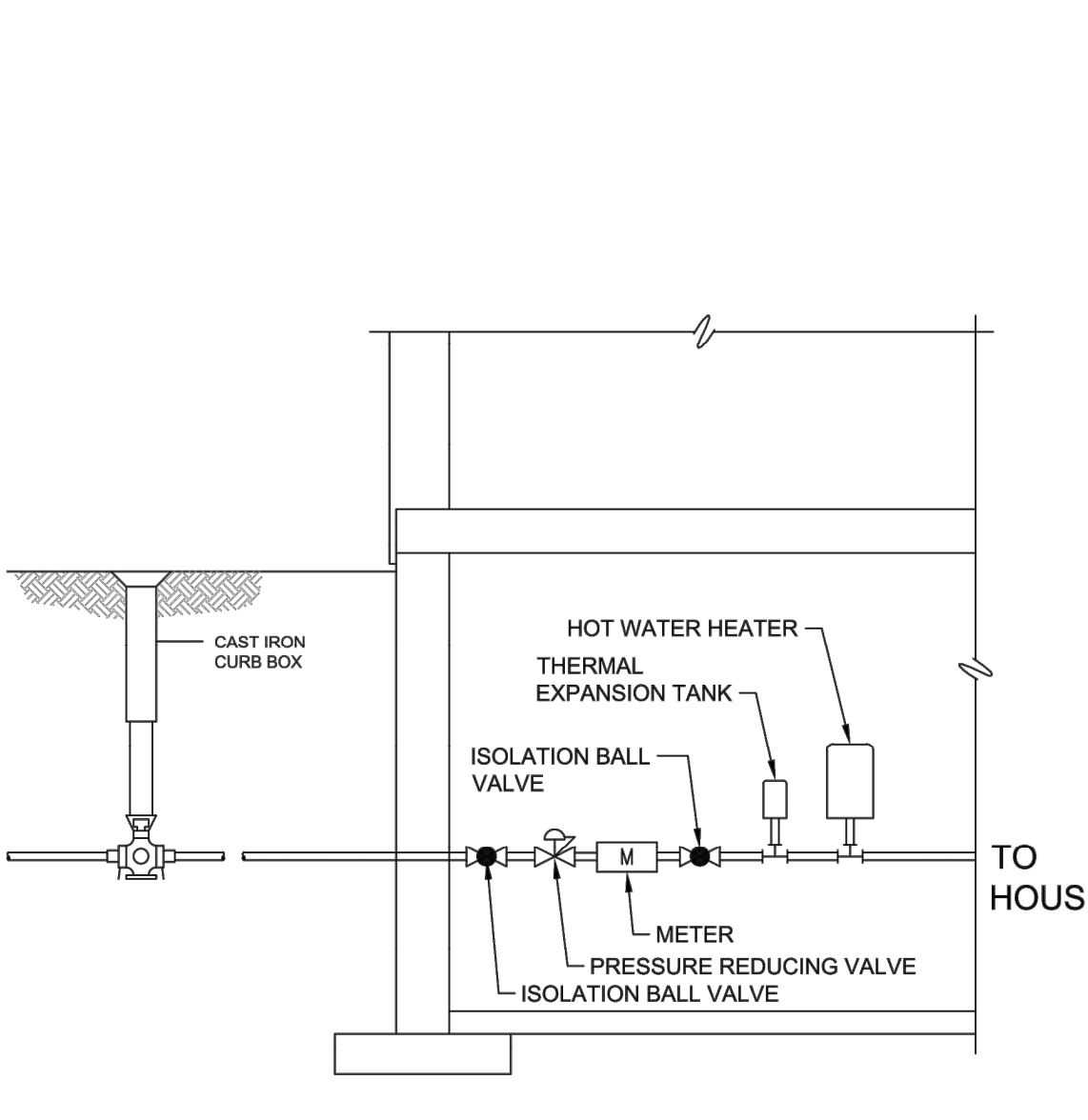
TERMINAL HYDRANT DETAIL



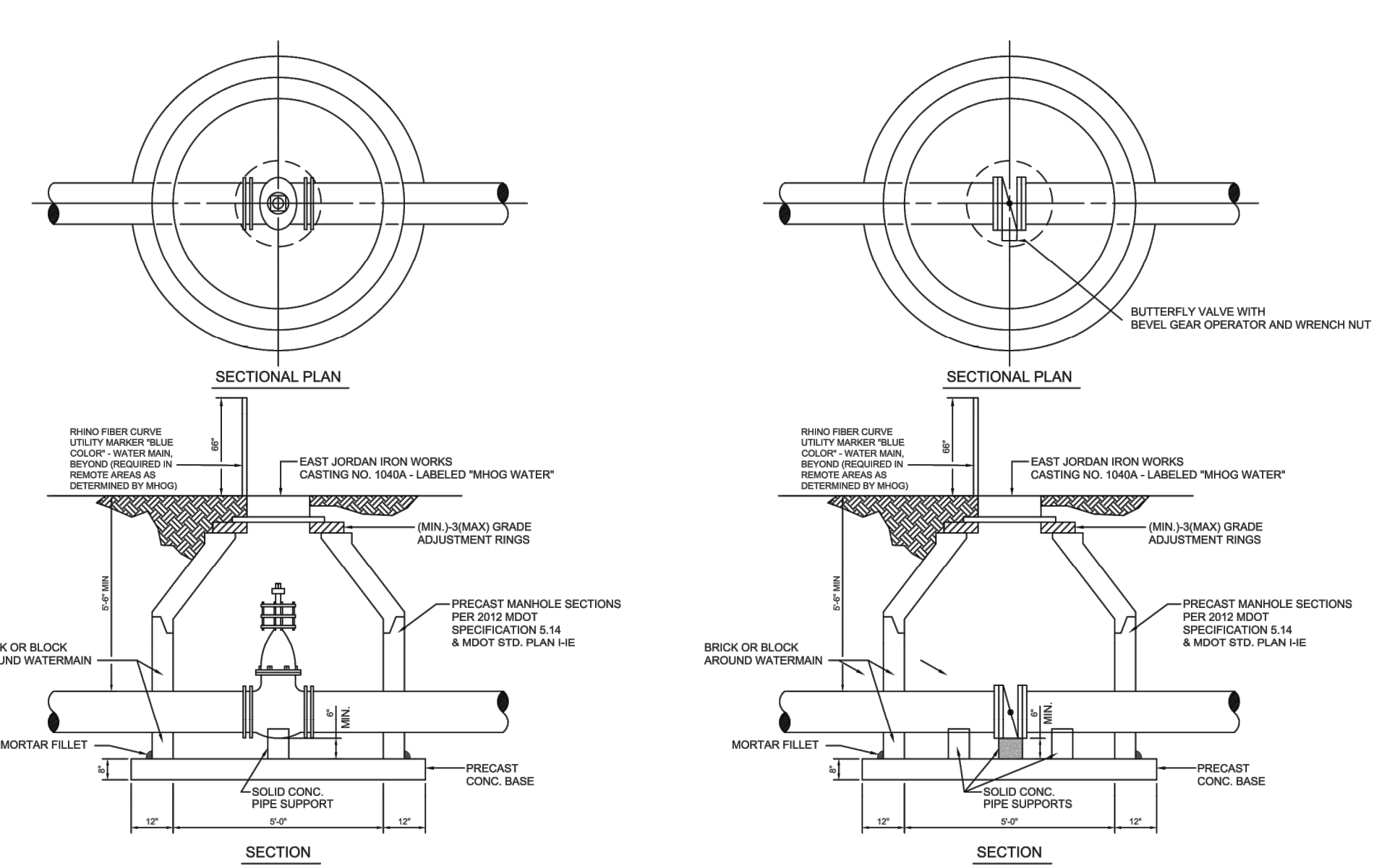
COMMERCIAL BUILDING WATER SERVICE LAYOUT



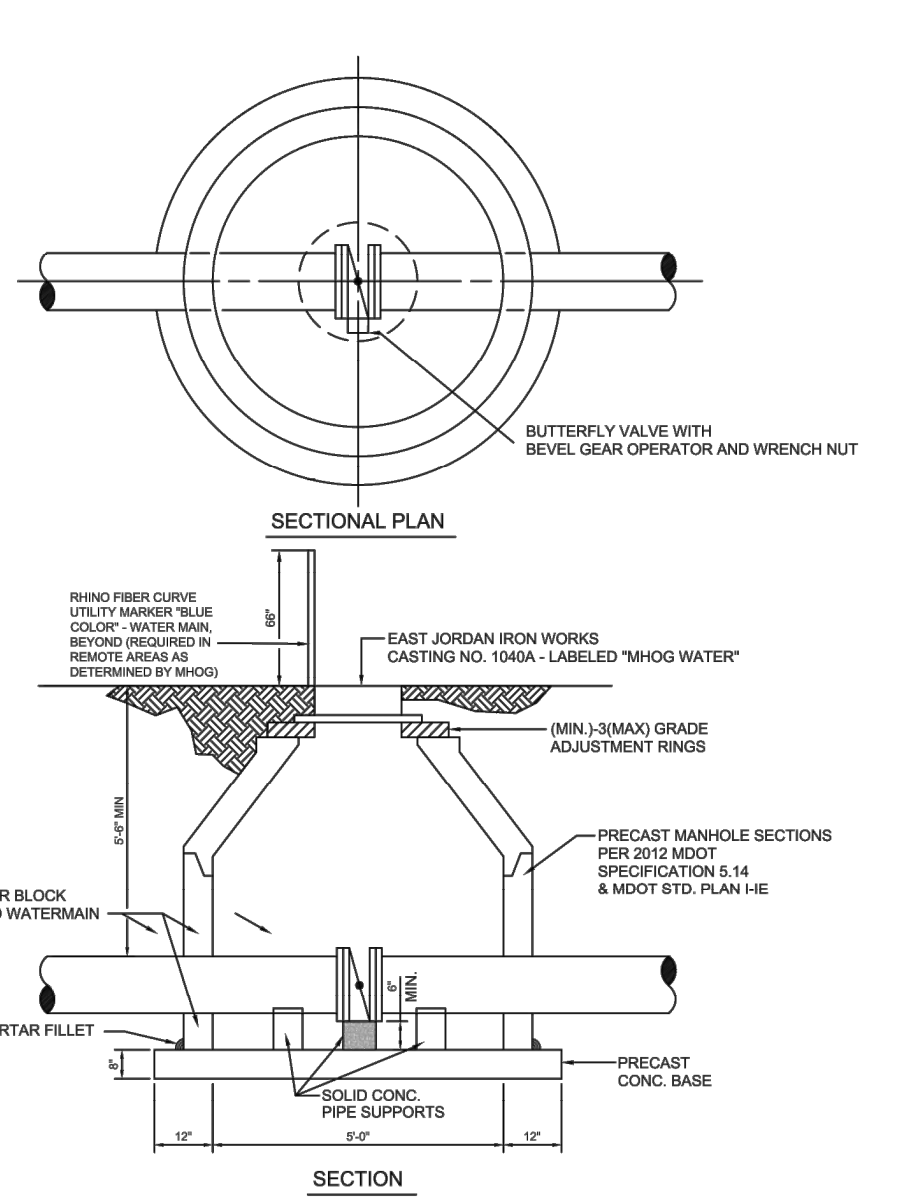
SECTION WATER SERVICE LATERAL



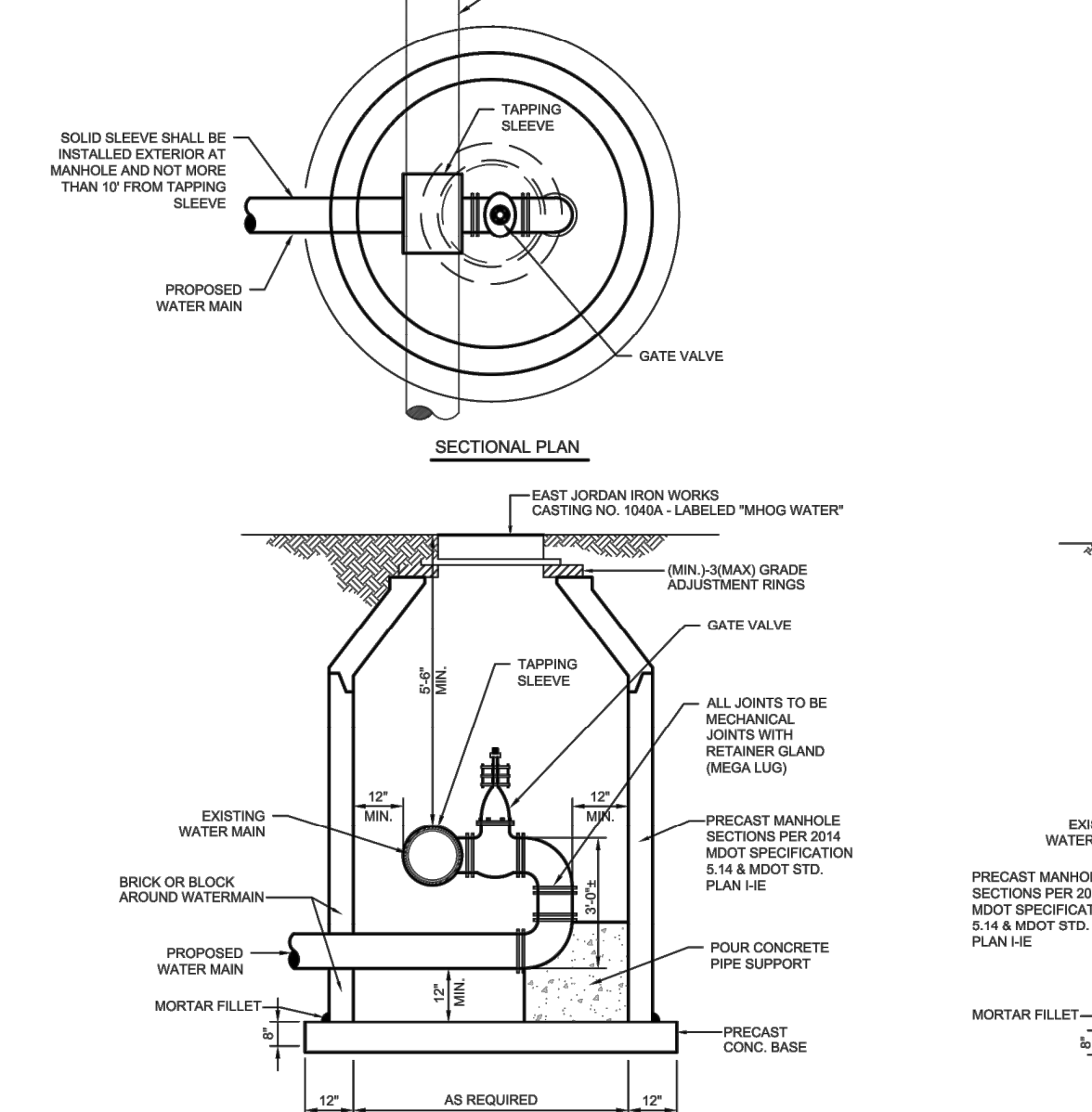
PRIVATE RESIDENCE PRESSURE REDUCING VALVE (PRV)



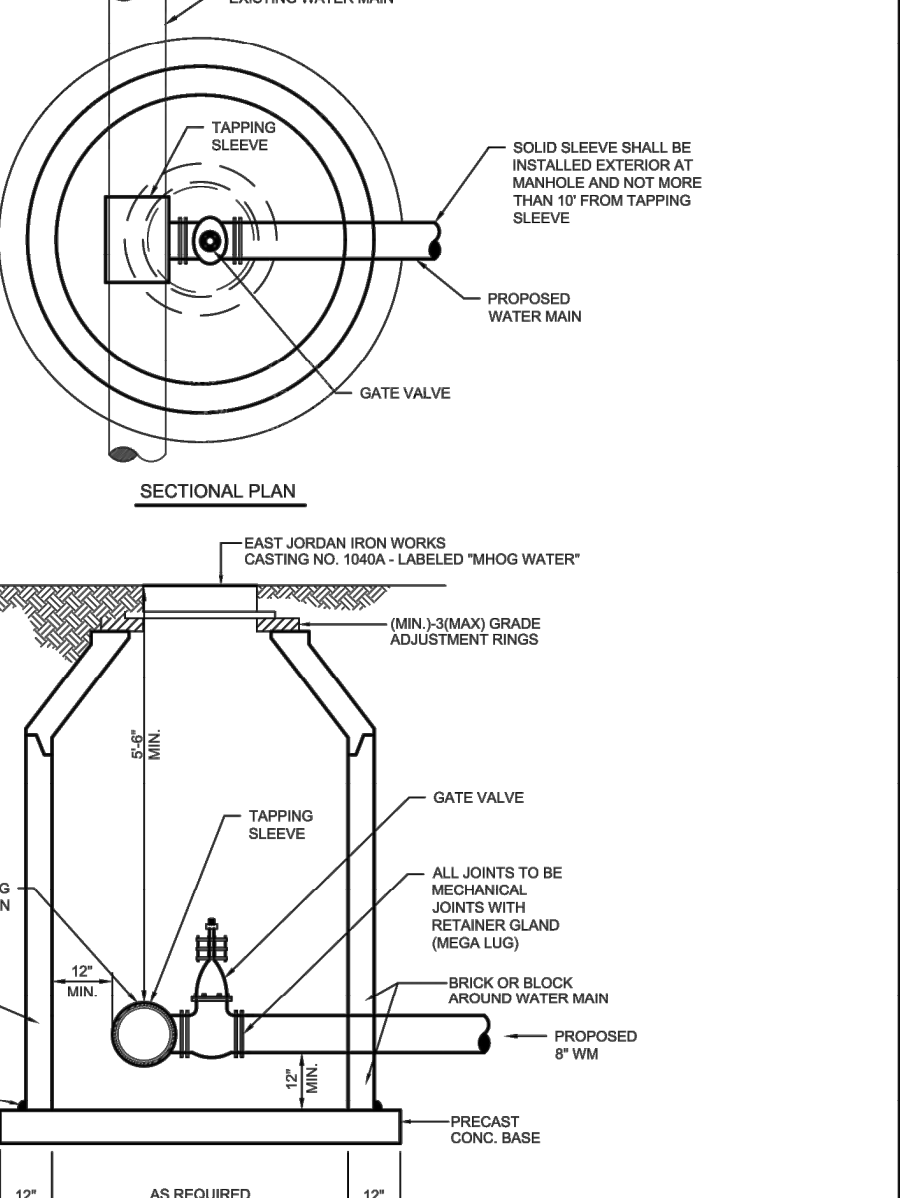
VALVE AND GATE WELL



BUTTERFLY VALVE AND WELL



REVERSE TAP GATE WELL



REGULAR TAP GATE WELL



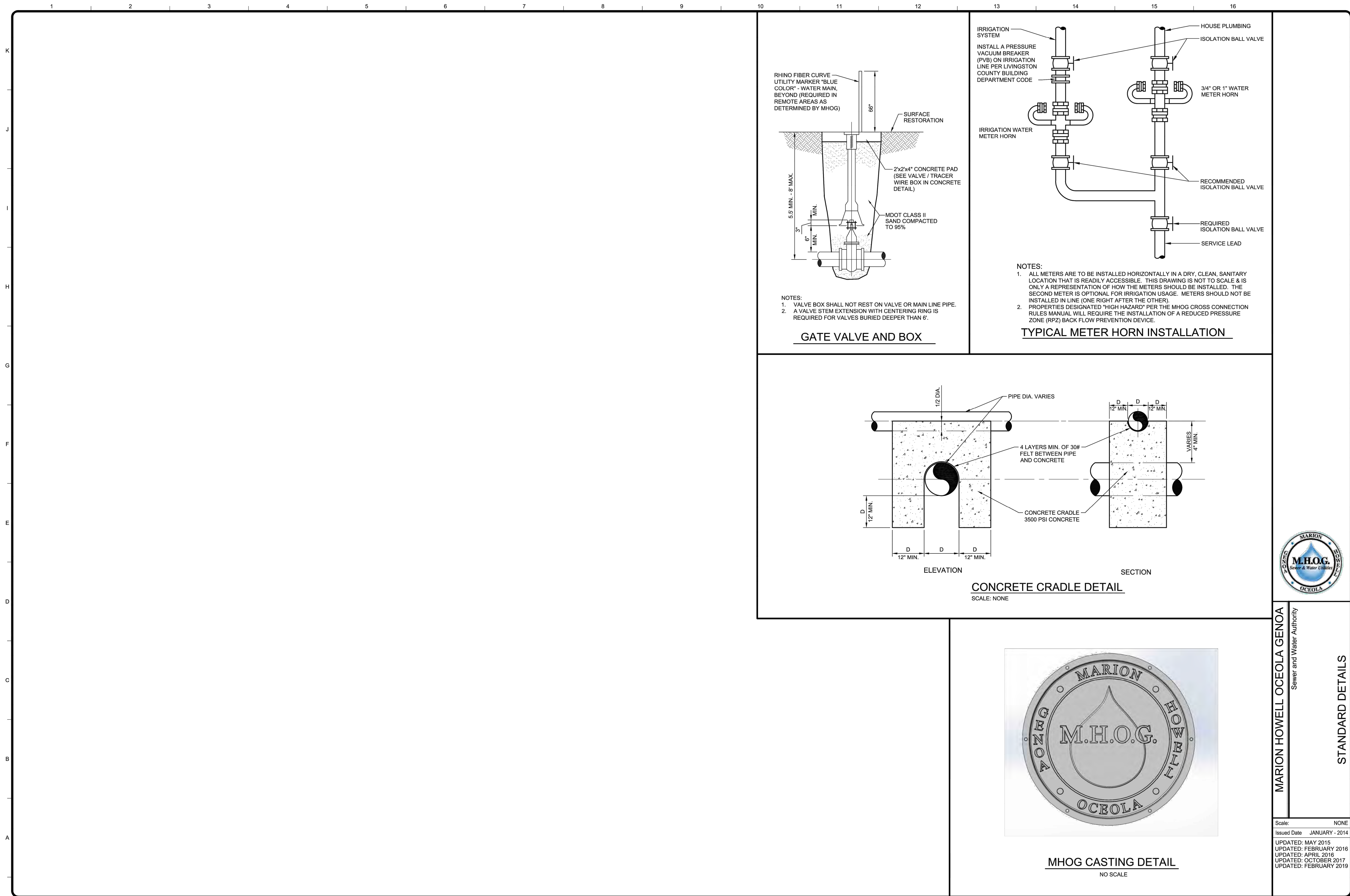
MARION HOWELL OCEOLA GENOA
Sewer and Water Authority

Scale: NONE
Issued Date: JANUARY 2014
UPDATED: MAY 2015
UPDATED: FEBRUARY 2016
UPDATED: APRIL 2016
UPDATED: OCTOBER 2017
UPDATED: FEBRUARY 2019

STANDARD DETAILS

Tuesday, February 26, 2019 4:02:14 PM DRAWING: P:\ERI\1271920\12719-00-000\CAD\SheetFiles\Wmg-std.dwg

Friday, February 8, 2019 9:13:59 AM DRAWING: F:\H\ER\2719\200-12719-00\CAD\SheetFiles\Mhog.ssd.DWG



THE USER SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES AS SHOWN ON THESE DRAWINGS. THE USER APPROXIMATE LOCATIONS OF UTILITIES AS SHOWN ON THESE DRAWINGS ARE FOR INFORMATION ONLY. THE USER SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES AS SHOWN ON THESE DRAWINGS. THE USER SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES AS SHOWN ON THESE DRAWINGS. THE USER SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES AS SHOWN ON THESE DRAWINGS.

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HOWELL, MI. 48843

517.546.4836 FAX 517.548.1670

BIBLE BAPTIST CHURCH
BIBLE BAPTIST CHURCH
2258 EAST HIGHLAND ROAD
HOWELL, MI 48843
517-715-9223

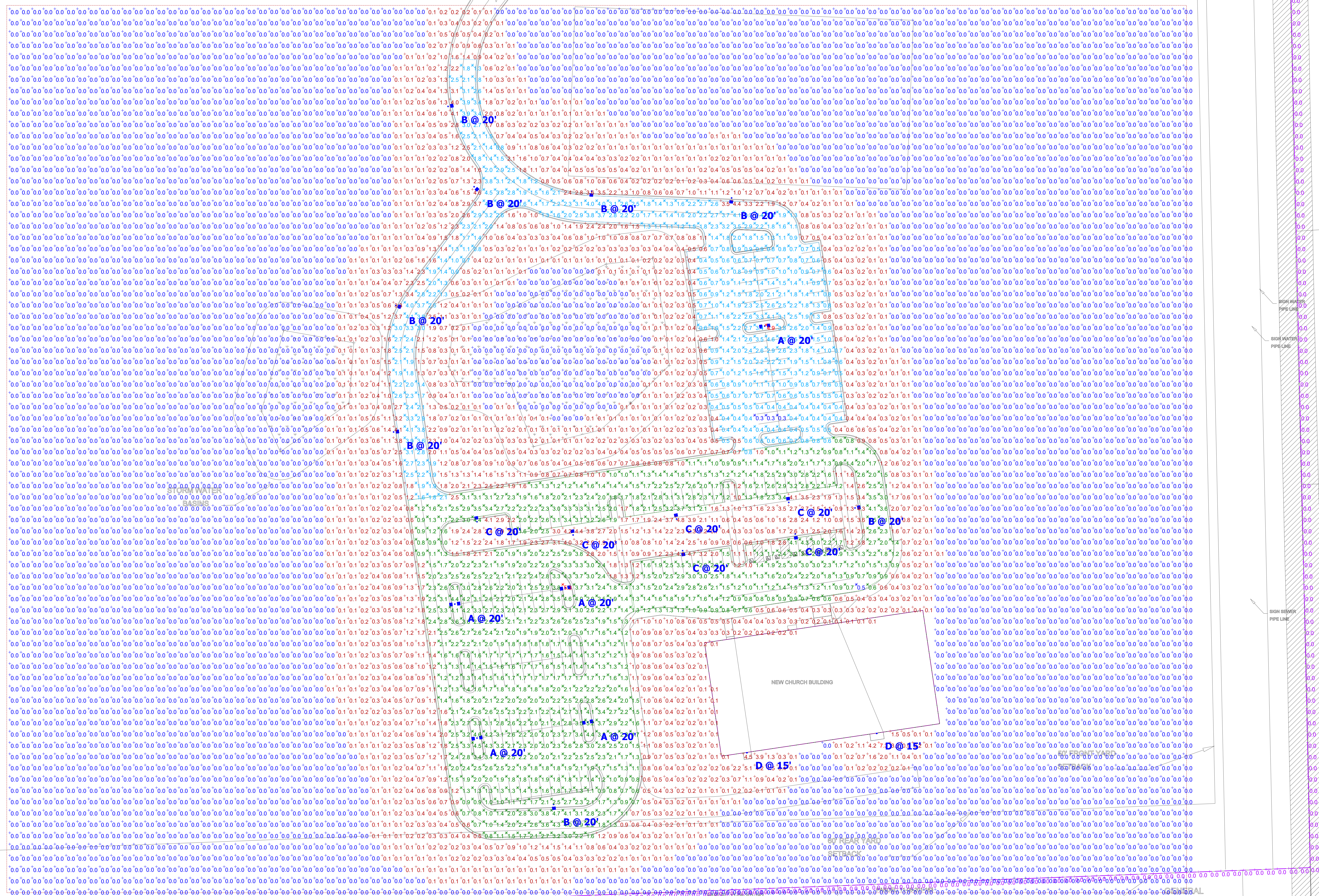
PROJECT	BIBLE BAPTIST CHURCH
PREPARED FOR	BIBLE BAPTIST CHURCH
TITLE	MHOG STANDARD WATERMAIN DETAILS (2)
DESIGNED BY:	ST
DRAWN BY:	JS
CHECKED BY:	
SCALE	
JOB NO.	21-542
DATE	2/1/2022
SHEET NO.	15



151 L

PROPOSED 75' HALF RIGHT-OF-WAY

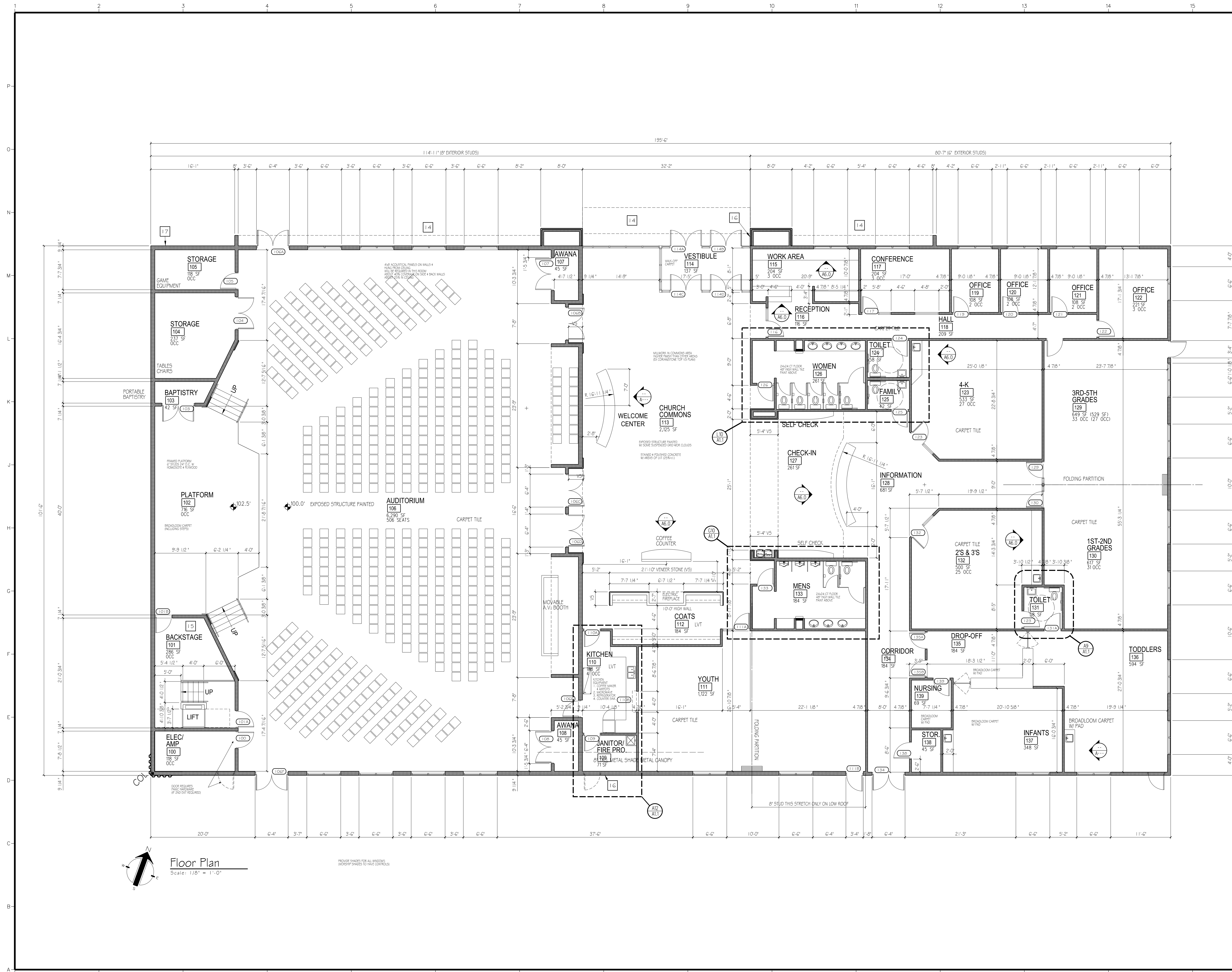
50' WIDE RIGHT OF WAY



PARCEL: 11-05-201-158 DOODY, STEFANI & JEREMY 3825 SUGARBUSH DR, HOWELL, MI 48843 ZONING: MUPUD	PARCEL: 11-05-201-159 ALESSANDRINI JOSEPH RENWICK JANICE 3837 SUGARBUSH DR, HOWELL, MI 48843 ZONING: MUPUD	PARCEL: 11-05-201-160 SHOUP, BRIAN & JANET 3848 SUGARBUSH DR, HOWELL, MI 48843 ZONING: MUPUD	PARCEL: 11-05-201-161 BROWN JAMES & MERRITT KATLEEN 3861 SUGARBUSH DR, HOWELL, MI 48843 ZONING: MUPUD	PARCEL: 11-05-201-162 HAUK, JEFFREY & KAREN 3873 SUGARBUSH DR, HOWELL, MI 48843 ZONING: MUPUD	PARCEL: 11-05-201-163 ROTTACH, PAUL & ASHLEY 3887 SUGARBUSH DR, HOWELL, MI 48843 ZONING: MUPUD	PARCEL: 11-05-201-164 BROWN, KATHLEEN 3909 SUGARBUSH DR, HOWELL, MI 48843 ZONING: MUPUD
---	---	--	--	---	--	---

BIBLE BAPTIST CHURCH
PHOTOMETRIC PLAN
PREPARED FOR: BOSS ENGINEERING
GASSER BUSH ASSOCIATES
WWW.GASSERBUSH.COM

Designer
DS
Date
01/26/2022
Scale
Not to Scale
Drawing No.
#22-71359 V1
2 of 2



GENERAL NOTES

- ALL DIMENSIONS ARE TO FACE OF FINISHED SURFACE OR COLUMN CENTER LINE UNLESS NOTED OTHERWISE
- COORDINATE W/ MECH. & ELEC DRAWINGS FOR ALL FLOOR/WALL/ROOF PENETRATIONS NOT SHOWN ON ARCHITECTURAL PLANS, COORDINATE WITH C.M.
- FIELD PAINT ALL MECHANICAL GRILLES & CABINETS TO MATCH ADJACENT SURFACES
- SITE DATUM: MAIN LEVEL FINISH FLOOR
ASSUMED = 100'-0"
ACTUAL = 100'-X"
- PROVIDE BLOCKING IN WALLS FOR ALL HANDRAILS, CABINETS, BRACKETS, AVL EQUIPMENT AS REQUIRED (PROVIDE NON-COM WHERE REQUIRED)
- PROVIDE FIRESTOPPING AS REQUIRED AT ALL PENETRATIONS OF RATED ASSEMBLIES
- PROVIDE PROPER FLASHING AT ALL PENETRATIONS, DOORS, WINDOWS, & DISSIMILAR MATERIAL JOINTS

KEY NOTES

- 36" GRAB BAR
- 42" GRAB BAR
- 1 1/2" VERTICAL GRAB BAR
- TOILET PAPER DISPENSER
- PAPER TOWEL DISPENSER
- RECESSED PAPER TOWEL DISPENSER & DISPOSAL UNIT
- FEMININE NAPKIN DISPOSAL
- 2x3 FRAMED MIRROR
- FRAMELESS MIRROR- SEE ELEVATION FOR SIZE
- URINAL SCREEN W/ CONT BRACKET
- BABY CHANGER
- COAT ROD & SHIELD- MOUNT ROD @ 5'-4" AFF BULKHEAD ABOVE
- SEE REFLECTED CEILING PLAN
- CANOPY ABOVE
- FIRE EXTINGUISHER W/ BRACKET
- KNOX BOX
- FIRE DEPARTMENT CONNECTION

WALL TYPES

- NOTE: REFER TO SECTIONS & DETAILS FOR EXTERIOR WALLS
- A** 5/8" GYPSUM WALLBOARD
3 5/8" METAL STUDS @ 16" O.C.
3" ACOUSTICAL BLANKETS
5/8" GYPSUM WALLBOARD
6" STUDS @ A1
 - B** 5/8" GYPSUM WALLBOARD
3 5/8" METAL STUDS @ 16" O.C.
5/8" GYPSUM WALLBOARD
6" STUDS @ B1
 - C** 5/8" GYPSUM WALLBOARD
3 5/8" METAL STUDS @ 16" O.C.
(ALL SHAFT WALLS & BULKHEADS)
 - D**

- NOTES:
- REFER TO STRUCTURAL DRAWING FOR CROSS BRACING LOCATIONS
 - GYPSUM WALLBOARD TO EXTEND DECK ABOVE CEILING UNLESS NOTED OTHERWISE
 - ALL EXPOSED CHW CORNERS TO BE BULLNOSE CORNERS
 - ALL WALLS TO BE EXTENDED TIGHT TO STRUCTURE ABOVE W/ SLIP TRACK U.N.O.
 - ALL WOOD FRAMING & SHEATHING IN A-HIB CONSTRUCTION IS REQUIRED TO BE NON-COMBUSTIBLE
 - PROVIDE DAMPERS AS REQUIRED IN ALL RATED ASSEMBLIES, COORDINATE WITH MECHANICAL CONTRACTOR
 - PROVIDE CONTROL JOINTS IN GYPSUM WALLBOARD 30'-0" O.C. MAX AT ALL WALLS
 - WATER RESISTANT GYPSUM WALLBOARD IN TOILET ROOMS & KITCHENS FROM FLOOR TO 4'-0" AFF MIN

Mark	Description	Date
	FOR INITIAL BUDGETING	01/04/22
	SITE PLAN APPROVAL	01/24/22
	30% BUDGETING	02/28/22

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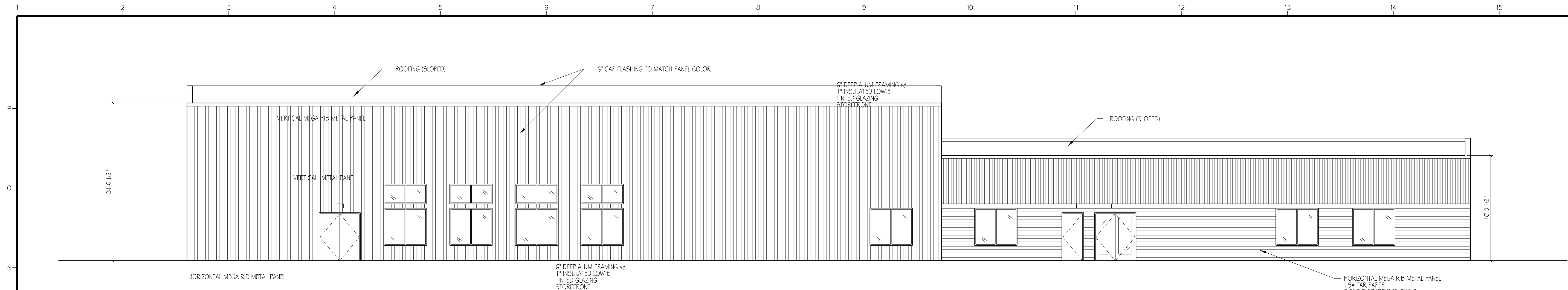
ARCHITECTURE PLANNING ENGINEERING
855 28th Street SE
Grand Rapids MI 49508
Phone: 616-241-0090
Fax: 616-241-0098

New Facility For:
Bible Baptist Church
Howell, Michigan

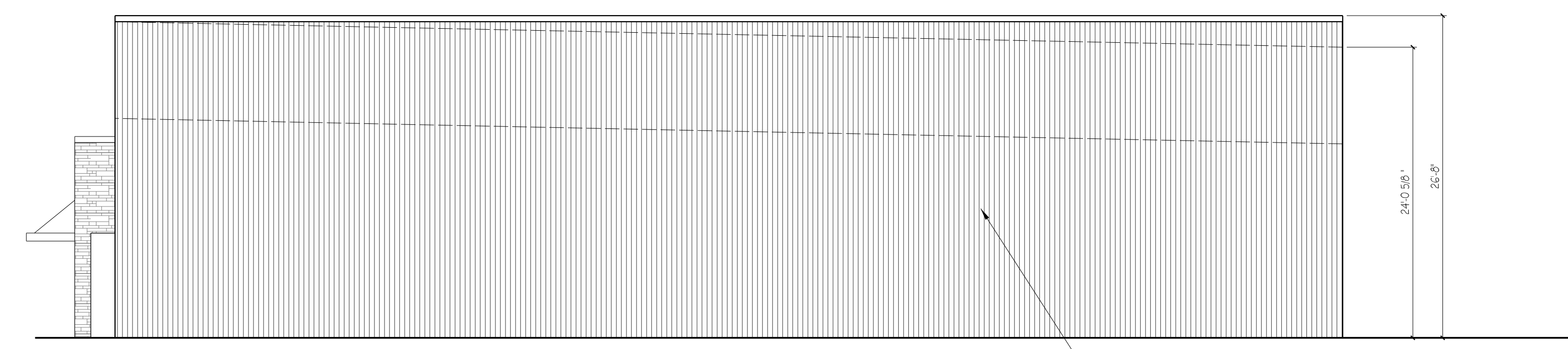
Floor Plan	
Issued	Drawing No.
-	A1.0
Project No.	
21111	

Floor Plan
Scale: 1/8" = 1'-0"

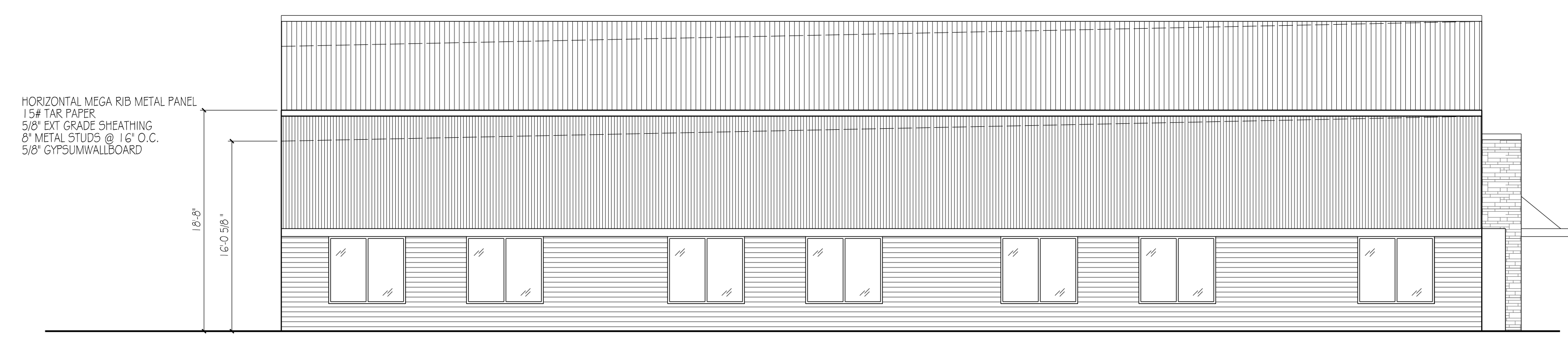
PROVIDE FINISHES FOR ALL EXPOSED INTERIOR FINISHES TO MATCH CONTRACTOR



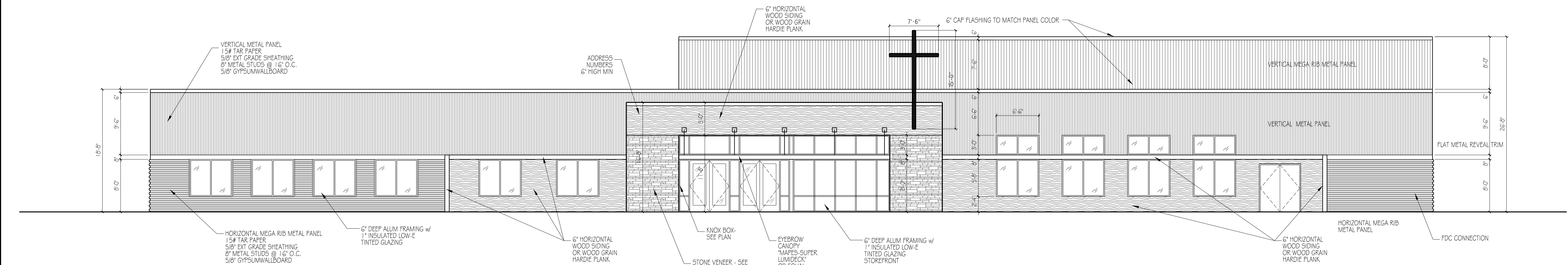
South Elevation
Scale: 1/8" = 1'-0"



East Elevation
Scale: 1/8" = 1'-0"



West Elevation
Scale: 1/8" = 1'-0"



North Elevation
Scale: 1/8" = 1'-0"

4712 SF TOTAL NORTH FACE
1870 SF IS STONE OR WOOD PRODUCT (39.7% OF TOTAL)

Mark	Description	Date
	FOR INITIAL BUDGETING	01/04/22
	SITE PLAN APPROVAL	01/24/22
	30% BUDGETING	02/28/22

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ARCHITECTURE PLANNING ENGINEERING

855 28th Street SE
Grand Rapids MI 49508
Phone: 616-241-0090
Fax: 616-241-0098

New Facility For:
Bible Baptist Church
Howell, Michigan

Exterior Elevations

Issued	Drawing No.
-	A3.0
Project No.	
21111	



BIBLE BAPTIST CHURCH





GENOA CHARTER TOWNSHIP CAPITAL IMPROVEMENT PLANNING

2022-2027

ROAD IMPROVEMENT FUND

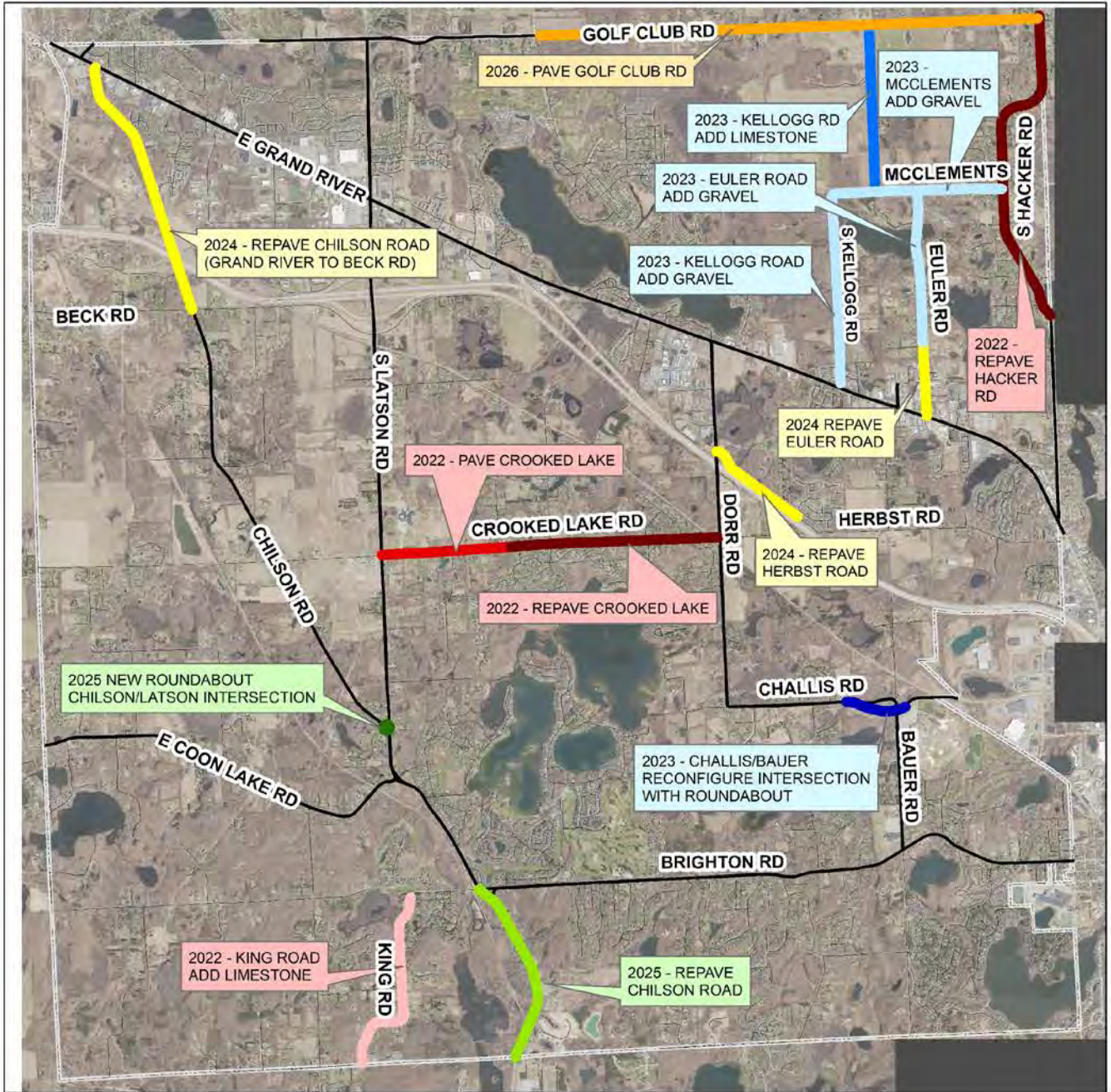
FUND 401

(FORMERLY FUND 261)

2022-2027 CAPITAL IMPROVEMENT ROAD PROJECTS FUND 401 (formerly 261)

2022-2027 ROAD PROJECTS

- 2022, Limestone
- 2022, Pave
- 2022, Re-pave
- 2023, Gravel
- 2023, Limestone
- 2023, Reconfigure/Roundabout
- 2024, Re-pave
- 2025, Re-pave
- 2025, Roundabout
- 2026, Pave



2022/2027 CIP
#261 ROADS

	2019 TRAFFIC COUNT	22/23	23/24	24/25	25/26	26/27
Crooked Lake Pave	2330 (19)	\$ 1,500,000				
Crooked Lake Re-Pave Dorr West	3010 (19)	\$ 250,000				
Challis/Bauer Roundabout*	4340 (519)		\$ 500,000			
Hacker Repave Clark Lk. To GC**	3870 (19)	\$ 410,000				
Euler Repave G.R. to Pvmt.	NA			\$ 140,000		
Herbst Repave Dorr to Acre Hill	NA			\$ 190,000		
King Limestone Schafer to Brighton	370 (19)	\$ 140,000				
Kellogg Limestone G.C. to McClements	580 (19)		\$ 92,000			
Kellogg Gravel G.R. to McClements	520 (19)		\$ 79,000			
Euler Gravel McClements to Pvmt.	470 (19)		\$ 66,000			
McClements Gravel Kellogg to Hacker	650 (19)		\$ 94,000			
Chilson Beck to Grand River Repave	3340 (19)			\$ 350,000		
Chilson/Latson Round-a-Bout					\$ 450,000	
Chilson Twp. Limit to Brighton Repave	10220 (19)				\$ 450,000	
Golf Club Pave Hughes to Hacker	740 (19)					\$ 2,000,000
Misc./Audit		\$ 20,000	\$ 20,000	\$ 22,000	\$ 22,000	\$ 24,000
Dust Control		\$ 75,000	\$ 75,000	\$ 75,000	\$ 80,000	\$ 80,000
SAD Matches		\$ 100,000	\$ 100,000	\$ 120,000	\$ 120,000	\$ 140,000
TOTAL CAPITAL APPROPRIATIONS		\$ 2,395,000	\$ 926,000	\$ 777,000	\$ 1,002,000	\$ 2,244,000
TOTAL REVENUES		\$ 1,010,000	\$ 1,010,000	\$ 1,212,000	\$ 1,212,000	\$ 1,313,000
NET REVENUES/APPROPRIATIONS		\$ (1,385,000)	\$ 84,000	\$ 435,000	\$ 210,000	\$ (931,000)
BEGINNING FUND BALANCE		\$ 1,775,536	\$ 390,536	\$ 474,536	\$ 909,536	\$ 1,119,536
ENDING FUND BALANCE		\$ 390,536	\$ 474,536	\$ 909,536	\$ 1,119,536	\$ 188,536

*FHA Safety Grant Dependent

**2293 LF Boundary with Bri. Twp.

**7547 LF Genoa Only

Estimated

DRAFT

2022 CROOKED LAKE PAVE/REPAVE



2022 HACKER ROAD RE-PAVE



2022 KING ROAD – LIMESTONE



2023 CHALLIS/BAUER RECONFIGURE



PARKS AND RECREATION

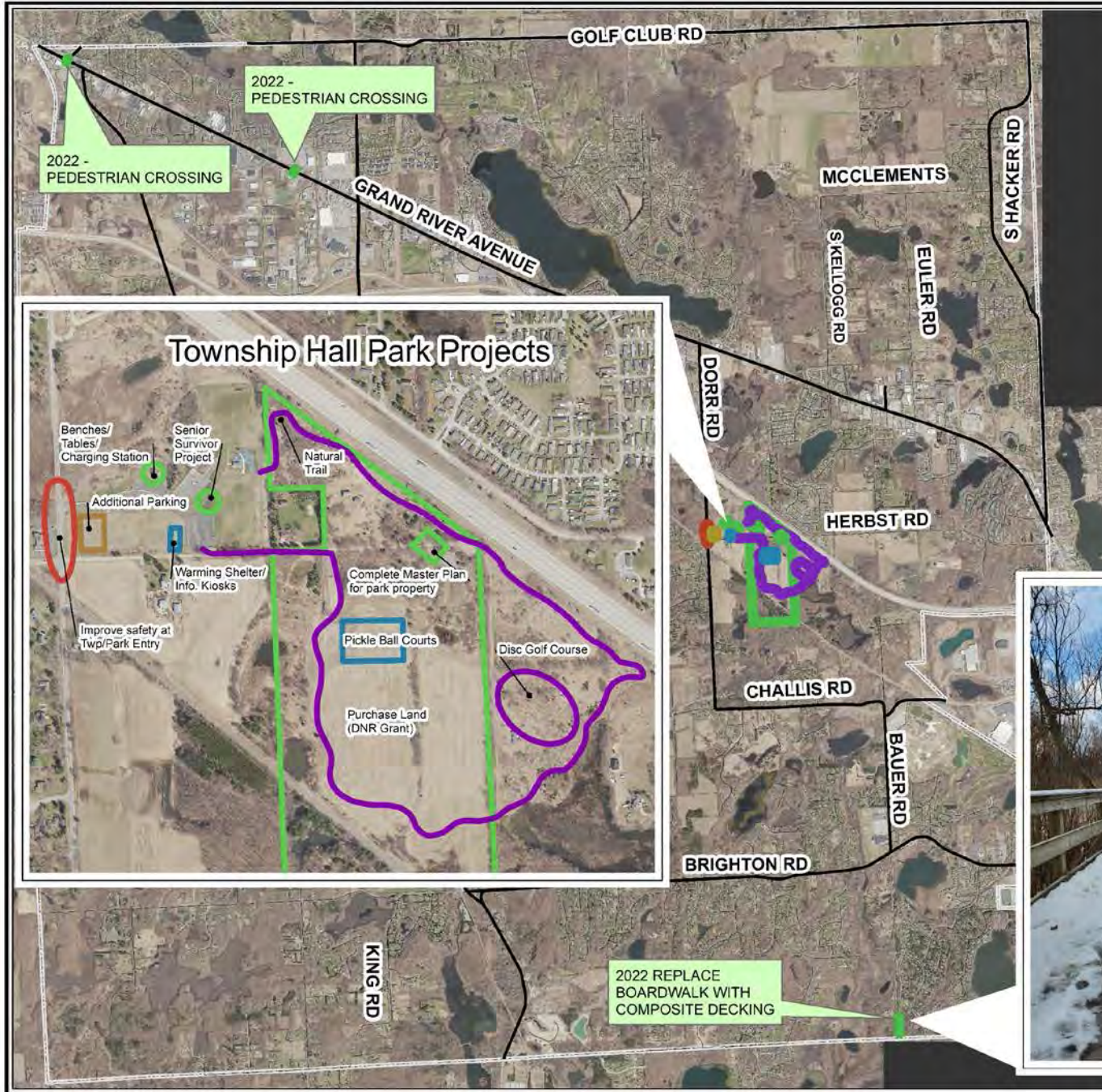
FUND 208

(FORMERLY FUND 270)

2022-2027 CAPITAL IMPROVEMENT
PARKS AND RECREATION PROJECTS
FUND 208
(formerly 270)

**2022-2027 PARKS AND
RECREATION PROJECTS**

- 2022
- 2023
- 2024
- 2025
- 2026



2022/2027 CIP
#270 PARKS AND RECREATION

	22/23	23/24	24/25	25/26	26/27
DNR Acquisition Grant	\$ 600,000				
Bauer Road Boardwalk Replacement	\$ 101,170				
Senior Survivor Park Project	\$ 110,000				
B-Ball Benches Picnic Tables Charger	\$ 17,000				
Park Master Plan	\$ 10,000				
Park Path Extension		\$ 200,000			
Disc Golf (36 holes)		\$ 200,000			
Crooked Lake Reconfigure			\$ 900,000		
Pickle Ball Courts				\$ 270,000	
Pedestrian Xing GR @ Speedway	\$ 55,000				
Pedestrian Xing GR @Golf Club	\$ 55,000				
Warming Shelter/Info. Kiosk				\$ 180,000	
Parking Lot Installation					\$ 500,000
Path/Park Maintenance	\$ 100,000	\$ 100,000	\$ 110,000	\$ 110,000	\$ 115,000
HAPRA	\$ 107,500	\$ 110,000	\$ 112,000	\$ 114,000	\$ 116,000
Audit	\$ 500	\$ 500	\$ 500	\$ 600	\$ 600
TOTAL APPROPRIATIONS	\$ 1,156,170	\$ 610,500	\$ 1,122,500	\$ 674,600	\$ 731,600

TOTAL REVENUES	\$ 850,000	\$ 650,000	\$ 650,000	\$ 700,000	\$ 700,000
NET REVENUES/APPROPRIATIONS	\$ (306,170)	\$ 39,500	\$ (472,500)	\$ 25,400	\$ (31,600)
BEGINNING FUND BALANCE	\$ 933,250	\$ 627,080	\$ 666,580	\$ 194,080	\$ 219,480
ENDING FUND BALANCE	\$ 627,080	\$ 666,580	\$ 194,080	\$ 219,480	\$ 187,880

Estimated

DRAFT

2022 BAUER ROAD BOADWALK UPGRADE



2022 - PEDESTRIAN IMPROVEMENT GRAND RIVER AND GOLF CLUB ROAD



2022 - PEDESTRIAN IMPROVEMENT GRAND RIVER AT CLEARY UNIVERSITY



BUILDINGS/GROUNDS AND CAPITAL OUTLAY

Building and Grounds – Fund 249 (formerly 271)

Capital Outlay – Fund 101-900 (formerly 101-853)

2022/2027 CIP
#271 BUILDING AND GROUNDS

	22/23	23/24	24/25	25/26	26/27
Township Hall Concrete Replacement	\$ 45,487				
Township Hall Drive/Parking Light Replacement	\$ 55,000				
Parking Lot Sealcoat and Restripe		\$ 25,000			
Dorr Road LED Sign	\$ 27,000				
Township Hall Carpet Replacement				\$ 30,000	
Office Lighting			\$ 25,000		
Window Replacement					\$ 85,000
Cemetery Maintenance	\$ 6,000	\$ 6,000	\$ 6,000	\$ 6,000	\$ 6,000
TOTAL APPROPRIATIONS	\$ 133,487	\$ 31,000	\$ 31,000	\$ 36,000	\$ 91,000

TOTAL REVENUES	\$ 150,000	\$ 150,000	\$ 160,000	\$ 160,000	\$ 170,000
NET REVENUES/APPROPRIATIONS	\$ 16,513	\$ 119,000	\$ 129,000	\$ 124,000	\$ 79,000
BEGINNING FUND BALANCE	\$ 200,682	\$ 213,366	\$ 236,241	\$ 254,091	\$ 301,891
ENDING FUND BALANCE	\$ 217,195	\$ 332,366	\$ 365,241	\$ 378,091	\$ 380,891

Estimated

DRAFT

2022/2027 CIP
#101 GF CAPITAL OUTLAY

	22/23	23/24	24/25	25/26	26/27
Boardroom Security Upgrades	\$ 50,000				
Boardroom AV Upgrades	\$ 60,000				
EV Charging Stations (2)		\$ 16,000			
Computer Rotation	\$ 4,500	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,500
Misc. Exp.	\$ 2,125	\$ 2,125	\$ 2,150	\$ 2,200	\$ 2,200
Cemetery Maintenance	\$ 6,000	\$ 6,000	\$ 6,000	\$ 6,000	\$ 6,000
TOTAL APPROPRIATIONS	\$ 122,625	\$ 29,125	\$ 13,150	\$ 13,200	\$ 13,700

DRAFT

2022 TOWNSHIP HALL - CONCRETE REPLACEMENT



2022 TOWNSHIP HALL – LIGHTING UPGRADES



**GENOA CHARTER TOWNSHIP
PLANNING COMMISSION
PUBLIC HEARING
FEBRUARY 14, 2022
6:30 P.M.
MINUTES**

CALL TO ORDER: Chairman Grajek called the meeting of the Genoa Charter Township Planning Commission to order at 6:30 p.m. Present were Chris Grajek, Jim Mortensen, Marianne McCreary, Eric Rauch, Glynis McBain, Jeff Dhaenens, and Tim Chouinard. Also present was Kelly VanMarter, Community Development Director/Asst. Township Manager, Brian Borden of Safebuilt, and Shelby Byrne of Tetra Tech.

PLEDGE OF ALLEGIANCE: The pledge of allegiance was recited.

APPROVAL OF AGENDA:

Ms. VanMarter stated that “DECLARATION OF CONFLICT OF INTEREST” needs to be added to the agenda.

Moved by Commissioner Dhaenens, seconded by Commissioner McCreary, to approve the agenda with the addition of “DECLARATION OF CONFLICT OF INTEREST”. **The motion carried unanimously.**

DECLARATION OF CONFLICT OF INTEREST: Ms. McCreary stated that she does not have a conflict of interest; however, she wanted it to be known that she has done business with Wonderland Marine in the past.

CALL TO THE PUBLIC: The call to the public was made at 6:32 pm.

Mr. Craig Leslie of 5680 Griffith Drive asked the Planning Commission to look at the contrast between the outcome of the gravel pit review and the outcome of the asphalt plant review with the recommendations from this commission to the Board with regard to the discussions regarding the Master Plan. There seems to be a disconnect between how the Planning Commission and the Board are reviewing it. It should be in balance.

Mr. John Palmer of 560 Black Oaks Trails asked why the Township only has industrial zoning and not heavy and light industrial. He is confused how some Townships can avoid heavy industrial, but Genoa is obligated to have industrial uses.

Mr. Tom Reader of 3478 Snowden Lane is an architect and has been before hundreds of Planning Commission meetings. He does not think the asphalt plant request should have been sent to the Township Board. It should not have been recommended for approval by the Planning Commission.

Ms. Dawn Condon of 3466 Snowden Lane watched the Tyrone Township Planning Commission meeting and the request from Capital Asphalt was reviewed there. They did their due diligence

and this Planning Commission did not. She submitted the information from the Tyrone Township review.

Ms. Christine Wetzel of 390 Natanna Drive asked that if the Planning Commission voted unanimously for an asphalt plant, what other uses will be approved.

The call to the public was closed at 6:44 pm.

OPEN PUBLIC HEARING # 1...Consideration of a special use application, environmental impact assessment and site plan for an expansion of an existing automobile dealership to expand a parking/vehicle storage lot located at 7100 Grand River Avenue, southeast corner of Grand River Avenue and Hubert Drive. The request is petitioned by Joshua Tauriainen.

- A. Recommendation of a Special Use Application
- B. Recommendation of an Environmental Impact Assessment (1-18-22)
- C. Recommendation of a Site Plan (1-3-22)

Mr. Joshua Tauriainen, the applicant, and Mr. Mark Shamoun, the general contractor for the project, were present.

Mr. Borden reviewed his letter dated February 8, 2022.

He noted that this site has had past ordinance violations so this project is being proposed to address those violations. He added that the violations preceded the current owner. Due to the scope of the project, approval of a revised Special Land Use is required.

- The special land use standards of Section 19.03 are generally met, though the applicant must address any comments raised by the Township Engineer and the Brighton Area Fire Authority.
- Additionally, given the request for a major amendment to an existing special land use and the history of Ordinance violations at this site, he suggests the applicant familiarize themselves with past special land use and site plan approvals and provide the Township with an assurance that they will maintain their expanded operation in accordance with past approvals, as well as any conditions applied to the current request, if approved.
- Most of the use conditions of Ordinance Section 7.02.02(c) are met; however, the applicant must combine the two parcels, and required buffer zones must be provided unless a waiver or alternate buffer is authorized by the Planning Commission.
- Section 14.06.07 requires looped striping for parking spaces; however, the Planning Commissioner can waive this requirement.
- The Planning Commission may approve a four-foot landscaped berm in lieu of a full Buffer Zone A along the south lot line.
- The landscape plan is deficient in terms of shrub plantings around the detention pond, though excess trees are provided.
- Any existing landscaping that is in poor condition should be replaced and brought into compliance with the ordinance.

Commissioner Mortensen questioned if irrigation is required for the landscaping. Ms. VanMarter stated the ordinance requires all landscaping to be irrigated. Mr. Shamoun agrees to irrigate all landscaped areas.

Ms. Byrne reviewed her letter dated February 9, 2022.

- The Petitioner has provided storm sewer calculations, but not all required information is provided. The proposed storm sewer calculations do not include the hydraulic grade line of the proposed system. The proposed pipe slopes do not match the provided invert elevations. With the provided pipe invert elevations, the pipes are below the required minimum slope of 0.32%. The provided calculations should be reviewed to ensure they match the requirements of the Township and Drain Commissioner. The Livingston County Drain Commissioner is in the process of updating their design standards, and the proposed storm improvements should meet those standards.
- The Livingston County Drain Commissioner's updated design standards also include changes to the required detention basin volume. The proposed pond is deficient by approximately 7,0000 cubic feet and should be designed to meet their new standard.
- All detention basins require a sediment forebay.
- The outlet structure design calculations should be provided.
- Details should be provided on the proposed catch basin design. Proposed catch basins should match Genoa Township's Engineering Standards.

Mr. Shamoun stated he will meet all requirements noted by Ms. Byrne.

Commissioner Mortensen asked if any of the engineering requirements will affect the plan. Ms. Byrne does not have the details; however, she stated it could change the layout of the parking lot.

The Brighton Area Fire Authority Fire Marshal Rick Boisvert's letter dated February 4, 2022 stated:

- Two-way emergency vehicle access roads shall be a minimum of 26-feet wide. Access roads shall be constructed to be capable of supporting the imposed load of fire apparatus weighing at least 84,000 pounds. The entrance to the new lot has been widened to 26-feet as required; however, the main drive widths have not been revised to accommodate the minimum width requirement. This includes the center drive, the southern drive, and the easternmost drive. The easternmost drive shall be signed as a fire lane every 50-feet along the curb line.

Mr. Shamoun stated he will revise the plans to accommodate this request, noting they may have to eliminate some parking spaces.

Commissioner Rauch questioned the site lighting. He asked for the details of the shielding of the lights. Mr. Shamoun stated they are only in the islands. They are downward directed lamps. Mr. Tauriainen stated they are left on overnight to deter theft; however, if the Township would like them to be off at night, they can accommodate that. Commissioner Rauch wants to ensure that they do not negatively affect the residential properties adjacent to this site.

He also would like to have the trash service pickup and delivery schedules included in the Impact Assessment. Mr. Tauriainen stated that most of their vehicles are driven onto their site. They have vehicles delivered approximately once a month. Commissioner Rauch requested a clear loading and unloading zone be delineated on the site and in the plans.

Commissioner Dhaenens asked if the detention pond can be placed at the rear of the site so as to help with buffering the site from the adjacent residential properties and help to place the parking closer to the existing building. Mr. Shamoun stated he planned that; however, it was not feasible based on the slope of the property.

The Commission discussed the buffer requirements for the rear property line. Mr. Tauriainen suggested a taller berm with added fencing. Mr. Shamoun agrees with the berm instead of the fence. Commissioner McBain agrees.

Commissioner McCreary reiterated that the current owner and applicant did not own the property when the prior ordinance violations occurred; however, based on Mr. Borden's letter, she would like them to know what those violations were. Ms. VanMarter stated she can provide that information and the original Special Land Use and Site Plan to the applicant.

Chairman Grajek noted that there were two emails received by residents. One from Kristian Smith of 6972 Rink Drive and one from Heather Koons of 6960 Rink Drive. They were concerned about the additional lighting, the additional traffic and the test drives being done on Rink Drive.

The call to the public was made at 7:33 pm.

Mr. Kristian Smith of 6972 Rink Drive thanked the Commission for addressing the issues he noted in his email. He stated that the current owner has done a great job improving and maintaining the site better than previous owners. He stressed his request that test drives do not occur in their neighborhood.

Mr. Adam Nankee of 7025 Lindsey lives directly south of this site. He agrees with Mr. Smith's compliments to the current owner. He wants to ensure that the buffer is sufficient to block the parked cars and that the lights will be shielded toward his property.

Mr. Doug Koons of 6960 Rink Drive is concerned with what could happen to that property if the current owner sells the business. He is questioned if the retention pond will also have standing water.

Mr. Duncan of 6979 Rink Drive is concerned with the test drives that occur on Hubert. He asked if any buffer will be planted on the west side of the site. Mr. Tauriainen showed the site plans noting where the additional trees will be planted.

The call to the public was closed at 7:45 pm.

Commissioner Rauch advised that the retention pond will not always have water in it. He questioned if an additional berm and plantings could be added to the west side of the site to help shield the parking lot from the residents across Hubert. Mr. Shamoun agreed to add the berm and plant evergreens.

Commissioner Rauch thanked the applicant for their willingness to make revisions and be a good neighbor; however, he would like the applicant to revise the Environmental Impact Assessment to include more details of the operations as discussed, this evening. Commissioner Chouinard agrees. He would also like to see additional details regarding the parking in the existing parking lot in the front of the site.

Commissioner Rauch noted the following items should be addressed:

- The applicants shall combine the parcels.
- The existing parking lots shall be striped as per the originally-approved site plan
- A 4-foot berm shall be added to the south lot line of the site.
- The evergreens along the south lot line will be eight feet high at the time of planting and placed on top of the berm.
- A 2-3-foot berm shall be added to the west lot line of the site.
- The parking spaces shall utilize looped striping.
- Any existing landscaping that is deficient shall be replaced.
- The deficiency of landscaping of the retention pond shall be added.
- All landscape areas shall be irrigated.
- A loading area shall be identified on the front parcel.
- The sight lighting along the south property line shall have physical shields added to the light source to direct all light away from the lot line.
- A right-turn-only sign shall be placed at the exit onto Hubert Road.
- The Environmental Impact Assessment shall contain hours of operation and the hours of trash pickup, will be during business hours.
- The Environmental Impact Assessment shall contain the plan for the lighting, including hours when they will be on.
- The engineer's and Fire Marshal's issues shall be addressed.
- The Environmental Impact Assessment shall state that there will be no vehicles of disrepair stored on the site.

Moved by Commissioner Rauch, seconded by Commissioner Dhaenens, to table Open Public Hearing #1 until the March 14, 2022 Planning Commission meeting. **The motion carried unanimously.**

OPEN PUBLIC HEARING #2... Request to postpone to March 14, 2022 consideration of a special use application, environmental impact assessment and site plan for a proposed 3,750 sq. ft. office building with outdoor storage located at 1247 Fendt Drive, north of Grand Oaks Drive. The request is petitioned by Al Halliday, A & J Cartage.

The call to the public was made at 8:09 pm with no response.

Moved by Commissioner Rauch, seconded by Commissioner Dhaenens, to postpone Open Public Hearing #2 until the March 14, 2022 Planning Commission meeting. **The motion carried unanimously.**

OPEN PUBLIC HEARING #3... Consideration of a sketch plan application and sketch plan for a proposed 10,920 sq. ft. storage building at Wonderland Marine West located at 5796 E. Grand River Avenue, south side of E. Grand River, west of Dorr Road. The request is petitioned by Wonderland Marine West, Inc.

A. Disposition of Sketch Plan (12-28-21)

Mr. Paul Mitter stated they are proposing to add a third storage building on their site. This will be their final building.

Mr. Borden reviewed his February 9, 2022 letter.

- The applicant needs to clarify the parcel configuration in the southerly portion of the site to ensure strict compliance with setback requirements. They must also demonstrate that allowable lot coverage ratios are met, which includes all buildings and impervious surfaces. Mr. Mitter provided this information and Mr. Borden stated they are in compliance.
- The metal building does not comply with the requirements of Section 12.01; however, the Commission has discretion over materials and design.
- Pending input from the Township Engineer and Brighton Area Fire Authority, the Commission may allow the gravel surfacing to remain as an existing condition.
- The parking notes on Sheet SP1 need to be revised or clarified with respect to whether parking modifications are proposed or are existing. Mr. Mitter stated it is existing and not proposed. He will have that changed on the plan.
- If new landscaping is proposed, a landscape plan must be provided.
- A Buffer Zone A is required between IND and SR zoning, though the building placement does not allow for the required width. The Commissioners discussed if this should be required.
- Any existing landscaping in poor condition should be replaced as part of this project.
- If new exterior lighting is proposed, a detailed lighting plan must be provided. Mr. Mitter stated lighting is required on the building per the building department. The Planning Commission agreed this information shall be provided on the site plan.

In her February 7, 2022 letter, Ms. Byrne stated she does not have any engineering concerns regarding this plan. They are not recommending the site be paved with curb and gutter.

Fire Marshall Boisvert's letter dated February 7, 2002 stated:

- The secondary access drive surface from Gray Road must be substantially improved. The drive is not well maintained, is not cleared of foliage and debris. The gate is in disarray and is lacking a proper Knox padlock. The surface must be brought to its original approved condition capable of supporting the weight of an 84,000-pound emergency vehicle extending from Gray Road and for the entire length of the drive. The width of the drive shall be maintained at 20' wide with a 13½' overhead clearance. A Knox padlock must be purchased and installed on the gate in conjunction with the owner's lock for emergency vehicle access.
- The applicant shall provide names, addresses, phone numbers, and emails of owner or agent, contractor, architect, on-site project supervisor.

The call to the public was made at 8:37 pm with no response.

Commissioner Rauch noted that this building will allow a lot of the current outdoor storage to be moved inside.

Moved by Commissioner Rauch, seconded by Commissioner Dhaenens, to approve the sketch plan for a proposed 10,920 sq. ft. storage building at Wonderland Marine West located at 5796 E. Grand River Avenue, south side of E. Grand River, west of Dorr Road, with the following conditions:

- The Planning commission finds the building materials presented this evening are acceptable and comparable to other facilities and buildings on the subject parcel.
- The parking notes shall be updated to show what areas are existing and what are proposed.
- The Planning Commission approves the 21-foot setback instead of the Buffer Zone A as required between zoning districts since the parcel is under one ownership.
- The applicant will update any existing landscaping that is in poor conditions per previous approvals.
- The applicant will provide details of all building lights to ensure they are within the standards of the Township.
- The Planning Commission finds the gravel parking surface to be acceptable in lieu of pavement and curb and gutter.
- The applicant shall comply with all concerns outlined in the Brighton Area Fire Authority Fire Marshal's letter dated February 7, 2022.
- The applicant shall comply with the request in the Livingston County Health Department's email from February 7, 2022.

The motion carried unanimously.

OPEN PUBLIC HEARING #4...Consideration of a request for an extension to a previously approved Impact Assessment and Site Plan for Misty Meadows Drive private road located on the west side of S. Latson Road, south of Crooked Lake Road. The request is petitioned by GFG Investments Properties.

A. Disposition of Site Plan Extension.

Mr. Guy Genzel of 15264 Bailey Street, Taylor, MI is the developer for this project. He stated he is continually working on this project; however, he still needs more time before it is complete.

Mr. Borden stated that since the applicant has already received two one-year extensions from Staff, he is required to receive any additional approval from the Planning Commission.

Commissioner Mortensen asked the applicant if he is going to provide asphalt roads as was originally approved. Ms. VanMarter stated that the Township Attorney has provided an opinion that the Township cannot require the applicant to install asphalt roadways as it is not required by the Township. The one property owner has acknowledged that the roadways will be gravel.

Ms. Byrne reviewed her letter dated February 8, 2022.

- Since there is no change proposed to the site plan, she has no objection to the requested permit extension.
- The Petitioner will need to provide a schedule for completing the road construction. Due to delays in the project, she will need additional escrow for the final road inspections.

Commissioner Rauch asked if the Soil erosion permit is still valid. Mr. Genzel stated the permit is good until 2023.

The call to the public was made at 8:53 pm with no response.

Moved by Commissioner Rauch, seconded by Commissioner Mortensen, to approve a 12-month extension for Misty Meadows Drive private road located on the west side of S. Latson Road, south of Crooked Lake Road for GFG Investments. **The motion carried unanimously.**

ADMINISTRATIVE BUSINESS

Staff Report

Ms. VanMarter stated there will be eight items on the March 14 meeting agenda.

There will also be a special meeting on March 28 to continue the Master Plan discussion.

Approval of the January 10, 2022 Planning Commission meeting minutes

Moved by Commissioner McCreary, seconded by Commissioner Dhaenens, to approve the minutes of the January 10, 2022 Planning Commission Meeting as presented. **The motion carried unanimously.**

Member Discussion

There were no items to discuss this evening.

Adjournment

Moved by Commissioner Dhaenens, seconded by Commissioner McCreary, to adjourn the meeting at 8:58 pm. **The motion carried unanimously.**

Respectfully Submitted,

Patty Thomas, Recording Secretary

DRAFT